Legal and Practical Considerations in Support of a Zoning Ban on Frac Sand Operations in Winona County: A Review of Minnesota Statutes, Case Law, and County Policy

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LAND STEWARDSHIP PROJECT

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The **Land Stewardship Project (LSP)** is a private, nonprofit membership organization. The mission of the Land Stewardship Project is to foster an ethic of stewardship for farmland, to promote sustainable agriculture and to develop healthy communities. Johanna Rupprecht, LSP lead organizer on frac sand in Winona County, may be contacted at jrupprecht@landstewardshipproject.org or 507-523-3366.

Cover image: Winona County landscape, photo by Johanna Rupprecht.

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I. Executive Summary

Southeast Minnesota has been targeted by the oil and gas industry for its supply of silica sand, which is desired for use as "frac sand," an input for hydraulic fracturing. Over the past several years, there have been a growing number of proposals submitted for new and expanded frac sand mining, processing, and transportation operations in Winona and other area counties. Frac sand companies tend to tout exaggerated claims that these projects will bring local economic development, jobs, and government revenue, while unfoundedly discounting the profoundly negative impacts and associated costs of frac sand mining, processing, and transport for the local environment, citizens' health, local agriculture, county roads and other infrastructure, long-term economic development, and the ability of citizens to use and enjoy public and private land. Indeed, the devastating impacts of frac sand operations on local communities—despite regulatory efforts—have already been seen in western Wisconsin, and residents of Winona County have taken notice and are mobilized to prevent a similar outcome.

In light of these community concerns and in support of the vision and principles adopted by the County in its comprehensive plan, the citizens of Winona County are calling for an amendment to the County's zoning ordinance to ban the mining, processing, and transport of frac sand within its jurisdiction. When this option has been considered by various local governments, proponents of the frac sand industry have often introduced misinformation and confusion about the legality of a ban through zoning. Frac sand industry proponents have misconstrued the law to advance the belief that such an ordinance (a) would be presumed invalid by Minnesota courts and (b) would likely be struck down by courts unless the County can meet the very high standard of demonstrating a substantial government interest that could not be satisfied through less restrictive means such as regulation. Such assertions are misleading and inaccurate.

This report provides legal analysis of Minnesota state statutory law and relevant case law in conjunction with practical considerations of county goals, planning, and policy and concludes that Winona County *both can and should* amend its zoning ordinance to ban frac sand mining, processing, and transport within its jurisdiction. The report further provides analysis demonstrating that a ban is a better option for the County than attempts at regulating frac sand operations in terms of reducing the County's administrative and financial burdens, liability and litigation risks, and risks to the community's health, environment, and economy.

Why Winona County Should Ban Frac Sand Operations:

- **Frac sand operations threaten the health and safety of County residents.** The mining and processing of frac sand releases silica dust, a known but poorly studied health hazard that can cause a range of lung diseases including silicosis, emphysema, and lung cancer. The transport of frac sand would also produce hundreds or thousands of truck trips per day across the County, exposing residents to harmful diesel pollution and creating safety risks on the roads. The scale and intensity of chemical processing required by these operations also threaten to contaminate the County's drinking water.

- **Frac sand operations threaten the County's landscape and environment.** Winona County is known for its unique and highly sensitive karst geology. The very sand sought to be mined provides the primary filter for large volumes of groundwater travelling through aquifers and flowing to trout streams, springs, wetlands (including rare calcareous fen wetlands), rivers, and municipal and domestic wells. Predicting and monitoring pollution through karst features is a poorly understood process with a high incidence of failure.

- **Frac sand operations threaten the County's economic health**. Despite the claims of the frac sand mining industry that it will bring great economic opportunity to Winona County and the State of Minnesota, the historical lesson from across the United States presents a clear picture that mining seldom creates sustained prosperity, especially for the communities in which it is located. Frac sand operations threaten Winona County's agricultural, tourism, and recreation industries. Furthermore, frac sand industry jobs and profits are highly speculative and unstable due to their reliance on the volatile and declining oil and gas market, the impacts of which have been seen in recent layoffs and mine closures in Wisconsin.

- **Frac sand operations threaten the property rights of County landowners.** Multiple studies have demonstrated that mining, processing, and transport operations result in a decrease in neighboring property values. Furthermore, noise, dust, traffic congestion, and destruction of the natural landscape diminish quality of life and would reduce the appeal of Winona County to current and prospective residents and business owners.

Why Regulations Aren't Enough:

- **Regulation places an enormous burden on County resources and taxpayers.** Regulating frac sand operations requires that the County assume administrative and financial responsibility for all aspects of permitting, monitoring, and enforcement. This includes the time, expenses and resources necessary to adequately evaluate the various aspects of a proposed mining project, including the adequacy and accuracy of its environmental review and the adequacy of its proposed plan for monitoring, mitigating, controlling, and reclaiming its waste and pollution streams. Any impairment to the environment resulting from failed regulation could be irreparable and have wide-spread ecological, health and economic impacts for years or decades, and the County and its taxpayers may very well end up responsible for paying for much of the clean-up and reclamation.

- **The frac sand industry doesn't comply with regulations.** Public records and media reports demonstrate the high frequency with which frac sand companies have routinely violated federal, state, and local regulations and polluted streams, rivers, and wetlands.

- **Reclamation can't restore the land and damage caused by regulatory shortcomings cannot be repaired.** Restoring mine sites back to farmland is notoriously challenging, if not impossible, because it is very difficult to undo the profound changes to the ground surface and subsurface caused by blasting and digging, as well as to remediate soil and water pollution. Even if such efforts were to be successful, it would take a very long time to restore agricultural productivity to the land. Furthermore, damage to sensitive habitats and the destruction of landscape features such as bluffs can never be undone.

Despite Industry Claims, Winona County CAN Ban Frac Sand Operations:

- **The Minnesota State Legislature explicitly left it in the hands of counties and other local units of government to decide whether frac sand operations are compatible with local planning and community goals and visions.** Minnesota Statute 116C.99 and related guidance from the MN Environmental Quality Board make very clear the intention of the legislature to respect and acknowledge that local units of government have the authority to enact zoning ordinances specific to frac sand operations.

- **Minnesota State Law explicitly grants counties the authority to prohibit by zoning a particular land use when it is incompatible with the county's comprehensive plan. The prohibition is valid even if the land use in question is only incompatible with a subset of the comprehensive plan's principles.** Courts have repeatedly recognized comprehensive plans as a way for local governments to mediate competing interests for land use. Furthermore, Minnesota case law instructs that courts accept a county board's reasons "at face value" when considering their legal sufficiency.

- **The County does not have to prove to a court that a zoning ban on frac sand operations is legal—it is presumed legal and valid. Quite the contrary, it is the heavy legal burden of the party challenging the zoning ordinance to prove that it lacks *any and all* rational relationship to a valid government interest.**

- **A zoning ban on frac sand operations does not restrict other types of mining or sand mining for agricultural or construction applications.** A well-written zoning ordinance can differentiate frac sand operations from other types of mining operations such as those that provide silica sand for agricultural or construction applications. Furthermore, County officials have a great degree of authority to interpret the language of their zoning ordinance with respect to its scope and applicability, and courts are highly deferential to those interpretations.

- **Opting to regulate frac sand operations would saddle the County with tremendous administrative and financial burdens, as well as considerable liability and litigation risks, in order to achieve outcomes that still place the community at higher risk of environmental, health, and economic harms than an outright ban.**

II. Introduction and Background

Minnesota's state regulations do not adequately address many of the impacts of frac sand mining and its related processing and transportation—such as the production of noise, dust, air and water pollution, land disturbance, traffic congestion, etc.—that are ordinarily regarded as issues of local concern and regulation. Local authority to regulate such activities and impacts is derived from Minnesota's planning and zoning enabling laws and local police powers related to protecting public health, safety, and welfare. Ordinances enacted pursuant to these local government interests and authorities are presumed by Minnesota courts to be valid and are subject to the usual constitutional standard of reasonableness.

In light of these issues, a number of counties, cities, and townships across Minnesota and the Midwest have used or are considering using their local land use authorities to enact zoning ordinances that wholly prohibit frac sand operations within their borders. In these debates, proponents of the frac sand industry have often introduced misinformation and confusion about the legality of a ban through zoning. The fear or threat of litigation over a ban has sometimes discouraged local governments and their officials from moving forward with such ordinances. In arguing against these bans, frac sand proponents have misconstrued the law to suggest that such ordinances (a) would be presumed invalid by courts, (b) would likely be struck down by courts unless the local government can meet the very high standard of demonstrating a substantial government interest that could not be satisfied through less restrictive means such as regulation, and (c) would violate the constitutional private property rights, due process rights, and equal protection of property owners affected by the ban. Such assertions are misleading and inaccurate.

In reality, Minnesota state statutory language, as well as case law from Minnesota, other states, and federal courts all strongly support that courts would uphold the authority of Minnesota local governments to wholly ban frac sand operations through zoning. Furthermore, *it would be the burden of the party challenging the zoning ordinance to demonstrate that the ordinance bears no rational relationship to any valid government interest*—an extremely difficult burden to meet given the profound economic, environmental, health, and community impacts of frac sand operations. The existence of less restrictive means by which to regulate frac sand mining, processing, and transportation operations or limit the areas in which they may operate are unlikely to have bearing on the validity of a zoning ordinance that completely prohibits frac sand

operations as a permissible land use. In fact, Minnesota case law strongly holds that a local government's decision to prohibit a use by zoning is afforded a greater degree of deference and lower degree of judicial scrutiny than its decision to regulate it through special- or conditional-use permitting.

This document discusses the following topics:

- Factually-based reasons for why frac sand mining, processing, and transportation implicate valid and important local government interests with respect to protecting communities' health and environmental safety, long-term economic well-being, and historical character;
- Statutory and case law analysis demonstrating that Minnesota counties have the land use authority to ban frac sand operations through zoning;
- Legal analysis to demonstrate why such a ban would be upheld by courts if it were to be challenged;
- Policy analysis of why a ban on frac sand operations would be better than regulations or other less restrictive controls such as conditional use permitting; and
- Model statutory language to amend the Winona County zoning ordinance to ban frac sand operations.

III. Frac sand mining, processing, and transportation operations negatively impact communities and create valid government concerns

Frac sand mining is an industrial activity that enables hydraulic fracturing, or fracking, a form of oil and gas extraction that involves high-pressure injections of liquid colloquially called "fracking fluid" into deep-rock formations to create cracks through which oil and gas can flow. Fracking fluid is typically a mixture of water, chemicals, and granular materials called proppants that hold open the fractures created in the rock.[1] Silica sand found in large deposits in southeastern and south central Minnesota is one of the preferred proppants for fracking.[2] (It is worth noting that fracking itself is also highly environmentally damaging and is an extreme form

[1] Minnesota Environmental Quality Board, REPORT ON SILICA SAND: FINAL REPORT 3 (2013), https://www.eqb.state.mn.us/sites/default/files/documents/23.%20March%20Final%20Silica%20Sand%20report.pdf.
[2] *Id.* at 8.

of energy extraction which many government units have prohibited due to its harmful impacts on communities.)

Beginning in 2011 as a result of growing demand for frac sand (which has recently declined as discussed in Section III.c.), there have been a growing number of proposals submitted for new mining, processing, and transportation operations in these areas over the past several years. Among these have been the proposals for the Nisbit mine (permitted in 2013, but not currently operating for frac sand) and Dabelstein and Yoder mines (now under Environmental Impact Statement order) in Winona County for which environmental assessment worksheets were completed in 2013.[3] Others are anticipated, including the Wacholz mine proposed by Texas corporation Eagle Materials, Inc., and additional mines proposed in Saratoga Township by Minnesota Sands, LLC.[4] Frac sand companies tend to tout exaggerated claims that such projects will bring local economic development, jobs, and government revenue while unfoundedly discounting the profoundly negative impacts, and associated costs, of frac sand operations for the local environment, citizens' health, local agriculture, county roads and other infrastructure, long-term economic development, and the ability of citizens to use and enjoy public and private land.

This section provides a brief synopsis of the unique problems that frac sand mining presents for Winona County. As will be explained in subsequent sections of this document, concern about any one of these problems constitutes a valid reason to legally justify the County's decision to enact a zoning ordinance banning frac sand operations. In addition to the specific impacts detailed below, frac sand operations establishing themselves in rural communities also generate profound changes to the communities' character. These include the aesthetic impacts of the destruction of the rural landscape, diminished quality of life for rural residents due to the industrialization of rural areas, and the cultural and societal impacts of the arrival of a controversial industry whose proposals and tactics tend to divide neighbor against neighbor.[5]

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[3] Winona County, SILICA SAND MINING, http://www.co.winona.mn.us/page/3115.
[4] Chris Rogers, *Mine Interest Near Farmers Park*, WINONAPOST.COM, February 25, 2015, http://www.winonapost.com/Article/ArticleID/42940/Mine-interest-near-Farmers-Park; Chris Rogers, *Winona County Mining Proposals Reborn*, WINONAPOST.COM, February 4, 2015, http://www.winonapost.com/Archives/ArticleID/42599/Winona-County-mining-proposals-reborn.
[5] Curtis Brown, *Sand mining creates wealth and friction*, STAR TRIBUNE, December 3, 2012, http://www.startribune.com/for-one-couple-sand-mining-creates-wealth-and-friction/181691991/ (last visited Feb 3, 2016); Minnesota Environmental Quality Board, *supra* note 1 at 16.

a. Water Quality and Ecological Impacts

The many significant environmental concerns associated with industrial frac sand mining, processing, and transportation have been described in great scientific detail in many academic, government, and non-governmental reports, including in two reports by the Minnesota Environmental Quality Board that include specific discussion of impacts for Southeastern Minnesota.[6]

Southeastern Minnesota is unique for its karst topography characterized by a significant number of dolostone, limestone, and sandstone aquifers through which large volumes of groundwater flow to trout streams, springs, wetlands (including rare calcareous fen wetlands), lakes, rivers, and municipal and domestic wells. Subsurface karst features include zones of enhanced permeability called conduits through which groundwater flows at high velocity. Surface karst features, such as sinkholes, can result from hydrogeologic and land cover changes associated with different land uses. In its analysis of the environmental vulnerability of the region, the EQB stated:

> "Karst surface features such as sinkholes, coupled with conduit flow conditions, make this geographic region highly vulnerable to pollutants entering the aquifers with very limited filtering or biological treatment. Changes in surface hydrology or groundwater levels can induce the expression of karst features at the surface. There is a high potential for spills or pollutants associated with land use activities to travel great distances underground to domestic wells and water dependent resources such as trout streams and fish hatcheries."[7]

The risk of such pollution is especially problematic because it is very difficult and labor intensive to predict the direction of groundwater flow, with only a small area of the region having been mapped. Similarly, "[p]redicting where and when a karst surface feature will be

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[6] Minnesota Environmental Quality Board, *supra* note 1; Minnesota Environmental Quality Board, TOOLS TO ASSIST LOCAL GOVERNMENTS IN PLANNING FOR AND REGULATING SILICA SAND PROJECTS (2014), https://www.eqb.state.mn.us/sites/default/files/documents/Tools%20for%20Local%20Govt%20approved%20March%2019_with_Errata.pdf (last visited Sep 2, 2015).

[7] Minnesota Environmental Quality Board, *supra* note 6 at 16.

expressed in the future is very difficult if not impossible to determine."[8] In his comments on the Yoder and Dabelstein mines' Environmental Assessment Worksheets, University of Minnesota geology professor Dr. E. Calvin Alexander, Jr., widely considered the state's leading expert on karst geology, wrote:

> "The karst literature is replete with examples where monitoring systems simply fail. Contamination of karst groundwater is highly unpredictable. It is difficult, expensive and problematic to design any adequate monitoring system, because of the complexity of the integrated drainage system of highly variable and dispersed conduits which are unpredictably distributed and connected in three dimensions. No technical methods or new technology has yet been demonstrated to adequately determine the layout and connections of such systems.
>
> Contaminated groundwater might not be evident at off-site drinking water wells within a short time, or even a few years – particularly if those wells were not being systematically monitored. But if contamination does occur, it could reside in the system and pollute the drinking water sources for hundreds of local residents for decades to come. Repeated sampling for groundwater tracers, or for pollutants accidentally released, have been shown to be detected at widely diverging points, unpredictably through time, and in variable concentrations under changing wet-dry cycles. Therefore there is no way to design a monitoring system that would be protective enough to ensure that an early warning of contamination would provide security for local drinking water wells."[9]

It is further important to note that the land and water features of Southeastern Minnesota support a vast and unique regional ecosystem that is home to a large concentration of rare plant and animal species, including over 150 Species of Greatest Conservation Need (SGCN), and which includes the migratory path of many different rare birds.[10] The Environmental Assessment

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[8] *Id.* at 16.
[9] E. Calvin Alexander, Jr., COMMENTS ON THE DABELSTEIN AND YODER SAND MINING EAWS 5–6, http://landstewardshipproject.org/repository/1/735/alexander_comment.pdf.
[10] Minnesota Environmental Quality Board, *supra* note 6 at 151–152.

Worksheet for the proposed Dabelstein mine states that "native remnant plant species" have been found on the site and that "[t]he remaining remnant prairie plant communities will be mined."[11]

Southeastern Minnesota's rich sand deposits host a number of small mines producing sand for local uses such as for cattle bedding and construction fill.[12] Industrial silica sand mining to produce frac sand is fundamentally different from these small-scale mining operations in several ways. As explained by the Minnesota Department of Natural Resources (DNR), construction sand and gravel mining is typically episodic in nature, and tends not to require underground mining or blasting, nor washing with flocculants. Silica sand mining as required to produce frac sand, by contrast, is typically conducted for a long term, involves blasting and may involve underground mining, and involves washing with flocculants.[13] Furthermore, silica sand used for fracking has to meet specific standards established by the American Petroleum Institute (API) with respect to its purity and grain size, shape, and intactness.[14] Meeting these standards requires significant processing using chemicals and as much as 4500 to 6000 gallons of water per minute, which is often processed using unlined sedimentation ponds.[15] Furthermore, reclamation plans often return directly to the mine site flocculant-contaminated "waste" sand not meeting the standards for sale as frac sand.[16] Contamination may also be present in process wastewaters, stormwater runoff, and water that is pumped or drained from the mine.[17] These practices and processes raise considerable concerns about both overburdening local aquifers and risking their contamination with chemicals which could then easily reach the groundwater and, in a karst landscape, rapidly travel to lakes, streams, rivers, and even wells that provide drinking water.[18]

The flocculant most commonly used to process frac sand is polyacrylamide, and the second most common is polydiallyldimethyl aluminum chloride (polyDADMAC).[19] These flocculants are formed from acrylamide and diallyldimethyl aluminum chloride (DADMAC), respectively, and

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[11] Environmental Assessment Worksheet (Dabelstein mine), 13 (2013), http://www.co.winona.mn.us/sites/www.co.winona.mn.us/files/files/Dabelstein-Final%20EAW%2012_24_12.pdf.
[12] Minnesota Environmental Quality Board, *supra* note 1 at 8.
[13] *Id.* at 10.
[14] *Id.* at 4–5. American Petroleum Institute, Recommended Practice (RP) 19C.
[15] *Id.* at 11.
[16] *Id.* at 28.
[17] Minnesota Environmental Quality Board, *supra* note 6 at 50.
[18] Minnesota Environmental Quality Board, *supra* note 1 at 11, 28.
[19] Minnesota Environmental Quality Board, *supra* note 6 at 50.

residuals amounts of these component chemicals may contaminate ground and surface water.[20] The Minnesota Department of Health (MDH) reports that "[t]here is not enough information available on polyDADMAC to predict how long it may stay in the environment," nor sufficient information on DADMAC or polyDADMAC to "fully evaluate potential health effects."[21] Furthermore, there are currently no analytical methods available to fully evaluate the human and environmental risks of DADMAC or polyDADMAC.[22] The EPA has classified acrylamide as a well-established human neurotoxin and a probable human carcinogen.[23] Both polyacrylamide and acrylamide are highly water soluble and can translocate through a variety of soil types and deeply infiltrate aquifers.[24] Acrylamide is especially mobile and most persistent in "low oxygen environments, such as underground karst aquifers."[25] Karst features further make it likely that flocculant chemicals present in the groundwater would infiltrate surface waters and wells that provide drinking water.[26]

In 2013, the Wisconsin Department of Natural Resources reported having cited at least 15 frac sand mines for violating clean water regulations.[27] Many of these violations resulted from the overflow and dumping of sand and chemical-laden sand processing water from holding ponds into public waters.[28] These overflows were generally triggered by heavy rain events.[29] For Minnesota, the upward trend of extreme weather combined with the vulnerabilities of karst hydrological features makes the risk of such overflows particularly concerning. In addition, data from the Minnesota Department of Health shows that, while the EPA's drinking water standard

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[20] *Id.* at 50.
[21] Minnesota Department of Health, DADMAC AND POLYDADMAC SCREENING PROFILE (2015), http://www.health.state.mn.us/divs/eh/risk/guidance/dwec/screening/dadmac.pdf.
[22] Minnesota Environmental Quality Board, *supra* note 6 at 50.
[23] U.S. Environmental Protection Agency, INTEGRATED RISK INFORMATION SYSTEM (IRIS) CHEMICAL ASSESSMENT SUMMARY: ACRYLAMIDE (CASRN 79) (2010), http://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0286_summary.pdf.
[24] Eldon A. Smith, Susan L. Prues & Frederick W. Oehme, *Environmental Degradation of Polyacrylamides*, 37 ECOTOXICOL. ENVIRON. SAF. 76–91, 76–77 (1997).
[25] University of Minnesota School of Public Health Department of Environmental Health Sciences, ACRYLAMIDE PUBH 5103: EXPOSURE TO ENVIRONMENTAL HAZARDS (2003), http://enhs.umn.edu/current/5103/acryl/deposition.html.
[26] Minnesota Environmental Quality Board, *supra* note 1 at 11, 28.
[27] Pollution worries abound in frac sand waste streams, STAR TRIBUNE, http://www.startribune.com/pollution-worries-abound-in-frac-sand-waste-streams/215335701/ (last visited Feb 3, 2016).
[28] *Id.*
[29] *Id.*

for acrylamide sets a maximum limit of 0.5 µg/L,[30]concentrations of acrylamide in frac sand rinse water have been measured at 1.19 µg/L at one mine and are estimated to range from 1.3 to 9.1 µg/L at the Great Plains Sand mine in Scott County, MN.[31] Adding to these concerns is the fact that the Minnesota Pollution Control Agency (MPCA) does not routinely test ground, surface, or drinking water for acrylamide. Finally, beyond the uncertainties and risks posed by the chemicals in these wastes, the sandy sediment they contain can alone destroy aquatic plants, fish eggs, and spawning habitats. The president of the Wisconsin Industrial Sand Association has acknowledged the environmental harms of such sediment pollution.[32]

b. Transportation Impacts

Frac sand operations as proposed in Southeastern Minnesota typically use a "hub and spoke model" characterized by mining, processing, storing, and shipping the sand at multiple different sites and, consequently, using multiple modes of transport to move the sand between these sites. As explained by the EQB, "[S]and can be mined at one site, transported by truck to be processed or stored at a second site, transported again to a transload facility at a third site before it is finally hauled to market by either rail or barge. Consequently, ports and rail terminals along the Mississippi have developed within town and city limits which funnel haul trucks onto designated truck routes and interstate highways that intersect residential and commercial areas."[33]

The impact of such increased traffic is profoundly detrimental. Indeed, the Environmental Assessment Worksheets for the proposed Yoder and Dabelstein mines in Winona County indicate that mining activities from those two mines alone are expected to produce up to 1200 truck trips per day on County roads and highways.[34] This increase in truck traffic is likely to result in considerable traffic congestion, noise, and wear and tear on County roads, highways, and bridges. Increased traffic also presents health risks associated with higher levels of diesel

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[30] 40 C.F.R. §141.111 (2012). 0.5 µg/L is the maximum theoretical concentration that corresponds to the EPA's treatment limit of 0.05% dosed at 1 ppm.

[31] Ginny Yingling, HEALTH CONCERNS WITH FRAC SAND MINING (2012), http://www.mehaonline.org/sites/default/files/meha/documents/Health%20Concerns%20with%20Frac%20Sand%20Mining_0.pdf.

[32] Pollution worries abound in frac sand waste streams, *supra* note 27.

[33] Minnesota Environmental Quality Board, *supra* note 6 at 17.

[34] Environmental Assessment Worksheet (Dabelstein mine), *supra* note 11; Environmental Assessment Worksheet (Yoder mine), (2013), http://www.co.winona.mn.us/sites/www.co.winona.mn.us/files/files/Yoder-Final%20EAW%2012_24_12.pdf.

emissions and risks of accidents. The location of proposed mines in rural areas means that much of this intensive truck traffic would travel along two-lane, rural roads that are not designed for such a high level of use. This amplifies not only the burden of road repairs, but also safety risks posed to users of the roads. Due to Winona County's landscape of bluffs and hills (out of which the frac sand is proposed to be mined), many of the roads are hilly with sharp curves, increasing the risk of accidents if heavy frac sand truck traffic is allowed. The risks to road users such as bicyclists and members of the Amish community (a substantial proportion of the population of Saratoga Township) using horse-drawn transportation are even more extreme than those to motorists.[35]

The imposition of a mandatory road use impact fee for heavy trucks carrying frac sand on county roads, which Winona County implemented in 2012,[36] does little to prevent or mitigate the serious accident risk, noise, pollution, or congestion caused by an increase in heavy truck traffic. The fee also does little to alleviate the burden on Winona County citizens of having to deal, first, with driving on damaged roads until such time as they are repaired and, then, with the annoyances and additional safety hazards of constant road repairs. Put simply, a road use impact fee provides no consolation whatsoever for the tremendous loss to quality of life that Winona County's rural residents living along these routes will suffer as a result of hundreds or thousands of heavy sand truck trips through their communities.

c. Economic Impacts

Despite the claims of the frac sand mining, processing, and transportation industry that it will bring great economic opportunity to Winona County and the State of Minnesota, the historical lesson from across the United States presents a clear picture that mining seldom creates sustained prosperity for the communities in which it is located. A 2013 economic analysis on frac sand mining prepared for the Wisconsin Farmers Union, Wisconsin Towns Association, and the Institute for Agriculture and Trade Policy by Thomas Michael Power, Princeton University trained economist and Research Professor and Professor Emeritus of Economics at the

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[35] Elizabeth Baier, AMISH SPEAK OUT AGAINST FRAC SAND FACILITY NEAR ST. CHARLES WINONA DAILY NEWS (2012), http://www.winonadailynews.com/news/local/amish-speak-out-against-frac-sand-facility-near-st-charles/article_e2644a4e-c658-11e1-9613-001a4bcf887a.html (last visited Feb 25, 2016).
[36] Sarah Squires, *County Board Okays Road Fee for Trucks Carrying Frac Sand*, WINONAPOST.COM, April 29, 2012, http://www.winonapost.com/News/ArticleID/33647/County-Board-okays-road-fee-for-trucks-carrying-frac-sand.

University of Montana, and Donovan Power, a geologist, provides some deep insights and valuable instructions for Winona County and Minnesota.[37] According to the authors' analysis, mining operations, especially when they are located in remote or rural areas, are seldom economically tied to local economies.[38] In fact, mining tends to displace other local economic activities, including tourism, by creating environmental damage and nuisance conditions that repel current and prospective residents and businesses who are more likely to contribute to the true long-term economic health of the community.[39]

The authors also present several compelling reasons for why the prospects of sustained economic prosperity are especially dubious for frac sand operations. Frac sand production and profitability is not only subject to volatility in the price of and demand for the sand itself, but also to changes in oil and gas supply, demand, and prices.[40] Several factors support the conclusion that frac sand mining is unlikely to remain profitable. First, the persistent decline in natural gas prices is reducing the overall demand for fracking production of shale oil and, as a result, also reducing the overall demand for frac sand used for fracking.[41] Furthermore, recent history demonstrates that a number of the states and local governments in the regions where fracking could take place are limiting or even prohibiting those activities,[42] which could further reduce demand for frac sand. Finally, there are also considerable efforts underway by oil and gas companies to develop alternative proppants that can be produced more cheaply, efficiently, and with more consistent quality than silica sand—such innovations may also displace demand.[43]

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[37] THOMAS MICHAEL POWER & DONOVAN POWER, THE ECONOMIC BENEFITS AND COSTS OF FRAC-SAND MINING IN WEST CENTRAL WISCONSIN (2013), http://www.wisconsinfarmersunion.com/webfiles/fnitools/documents/2013_10_18_fracsandmining.pdf.
[38] *Id.* at 22.
[39] *Id.* at 23.
[40] *Id.* at 25.
[41] *Id.* at 25.
[42] Municipality fracking bans - Baldwin Hills Oil Watch, , http://baldwinhillsoilwatch.org/action-center/municipality-fracking-bans/ (last visited Feb 3, 2016).
[43] Scott Detrow, ENERGY ENTREPRENEURS MARKET SAND ALTERNATIVE TO FRACKING COMPANIES STATEIMPACT PENNSYLVANIA (2013), https://stateimpact.npr.org/pennsylvania/2013/01/14/energy-entrepreneurs-market-sand-alternative-to-fracking-companies/ (last visited Feb 3, 2016).

The largest costs associated with frac sand mining are related to its transport.[44] Unlike Wisconsin and areas of central Minnesota with frac sand reserves that are situated close to rail transit, frac sand mined in Southeastern Minnesota has to be loaded, trucked, transferred, stored, and loaded again onto barges or railcars before finally being shipped.[45] The large costs associated with this additional transport make these Minnesota mines most susceptible to being closed in the event of price or demand drops.

Indeed, the poor economic outlook for frac sand mining is already being demonstrated. Falling oil prices in October 2015 triggered a substantial drop in demand for frac sand shipments, leading five out of six frac sand mines in Wisconsin's Chippewa County to halt operations.[46] According to one article, an energy industry analyst from Robert W. Baird & Co. described the frac sand industry as "100 percent oversupplied" and "on life support." The article also highlighted as an example the economic struggles of one local restaurant business that opened its doors specifically to capitalize on the hundreds of new employees that were hired to work at the frac sand mining and processing facilities but a large portion of whom have since been laid off.[47]

Finally, Winona County property owners situated near frac sand operations are likely to experience a decline in the value of their homes and property. The University of Wisconsin Cooperative Extension reports that while the issue of mining's impact on property values has not yet been extensively studied, the studies that have been done have repeatedly shown a decrease in value of homes and property located in close proximity to mines. Proximity to mine haul routes has also been shown to cause a decrease in property value.[48]

d. Agricultural Impacts

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[44] Holly Bellmund, FRAC SAND 101: WHAT DOES IT TAKE TO ENTER THE HIGH-VALUE FRAC SAND MARKET AND WHAT DOES IT MEAN FOR AGGREGATE PRODUCERS? (2015), http://www.aggman.com/frac-sand-101-what-does-it-take-to-enter-the-high-value-frac-sand-market-and-what-does-it-mean-for-aggregate-producers/ (last visited Feb 3, 2016).
[45] Minnesota Environmental Quality Board, *supra* note 1 at 15; Minnesota Environmental Quality Board, *supra* note 6 at 17.
[46] Eric Lindquist, *The Sandman taketh away: Local booming frac sand industry turns to bust*, EAU CLAIRE LEADER-TELEGRAM, October 25, 2015, http://www.leadertelegram.com/News/Front-Page/2015/10/25/The-Sandman-taketh-away.html (last visited Feb 3, 2016).
[47] *Id.*
[48] UNIVERSITY OF WISCONSIN-EXTENSION, THE ECONOMICS OF FRAC SAND MINING (2013).

Frac sand mining, processing, and transportation in Winona County are incompatible with local agriculture. These operations would significantly disrupt and displace agricultural operations in many ways, including by converting available farmland, competing for water resources, and producing potential hazards such as problematic surface and subsurface events (e.g., sinkholes) and contaminated runoff, groundwater and wells. Restoring mine sites back to farmland is notoriously challenging, and likely impossible in many cases, because it is very difficult to undo the profound changes to the ground surface and subsurface caused by blasting and digging, as well as to remediate soil and water pollution.[49] Even if such efforts were to be successful, it would take a very long time (decades) to restore agricultural productivity to the land.[50] In discussing reclamation and post-mining land use, the Environmental Assessment Worksheets for the Dabelstein and Yoder mines both state that, "[d]ue to the lack of adequate topsoil and subsoils, the reclaimed areas are not intended to be put into row crop cultivation."[51] Both sites currently include tillable land used for row crop production. Furthermore, reclamation may involve returning "waste sand" to the site from which it was removed, and may be contaminated with chemicals and other pollutants, such as the flocculants used during frac sand processing. This poses the risk of contaminating the groundwater not only during the reclamation process itself, but also when the reclaimed land is subsequently used for agriculture.[52]

Frac sand operations also conflict significantly with livestock production. Primarily, frac sand operations' excessive water use and high potential to cause water pollution in Winona County's karst terrain threaten the supply of drinking water farmers rely on not only for themselves and their families but also for their livestock. Concerns have also been raised about the impacts that blasting, dust, noise, light pollution, and other hazards from neighboring frac sand operations will pose to the health of livestock, especially pastured animals. Farmers in Winona County are

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[49] MIDWEST ENVIRONMENTAL ADVOCATES, PETITION FOR A STRATEGIC ANALYSIS OF FRAC SAND MINING 10 (2014), http://midwestadvocates.org/assets/resources/Frac%20Sand%20Mining/2014-9-12_FINAL_frac_sand_stratgic_analysis_petition_PDF_Color.pdf.

[50] POWER AND POWER, *supra* note 37 at 23; Thomas W. Pearson, *Frac Sand Mining in Wisconsin: Understanding Emerging Conflicts and Community Organizing*, 35 CULT. AGRIC. FOOD ENVIRON. 30–40 (2013).

[51] Environmental Assessment Worksheet (Dabelstein mine), *supra* note 11 at 7; Environmental Assessment Worksheet (Yoder mine), *supra* note 34 at 8.

[52] MIDWEST ENVIRONMENTAL ADVOCATES, *supra* note 49 at 10.

among those who have raised concerns about frac sand operations over the past several years for these and many other reasons.[53]

Additionally, the transport and shipping of frac sand is a detriment to farming and agriculture in Winona County. Increased truck traffic to haul frac sand, at a rate of hundreds of trucks or more per day on and across rural roads, seriously impedes the ability of farmers to use Winona County's roads to haul their products to market. This traffic is also highly problematic to farmers transporting farm equipment and operating farm vehicles, many of which are slow moving and extra wide. The risk of serious vehicle accidents would be quite large considering the narrow, hilly, and winding nature of many of these roads.

e. Air Quality Impacts

Frac sand operations produce silica particulates of varying size and chemical composition. Enough exposure to these particulates is well-established as contributing to a range of lung diseases, including silicosis, emphysema, tuberculosis, chronic obstructive pulmonary disease, and lung cancer.[54] These concerns are especially salient in the context of industrial frac sand operations because (a) they have the potential to produce high concentrations of respirable crystalline silica particles with a diameter under 4 microns, which are deposited deeper and lower in the lungs, and (b) they frequently operate for extensive hours and even around-the-clock for long periods of time, thereby increasing the level of exposure to these particulates. Exposure to respirable silica results from dust produced at many points during the mining process itself (e.g., blasting, digging, etc.), as well as from "fugitive dust" released during transport, sorting, processing, loading, trucking, and other activities. While there has still been relatively little long-term study of silica dust exposure and related health impacts on residents near frac sand operations, emerging research from University of Wisconsin – Eau Claire environmental health researcher Dr. Crispin Pierce and his colleagues has produced findings that demonstrate great cause for concern. Most recently, in a November 2015 article, these researchers published findings from a pilot study evaluating concentrations of particulates smaller than 2.5 microns in

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[53] *Cf., e.g.,* Bob Christie, GOV. DAYTON: THIS IS FARMLAND, NOT FRACLAND LAND STEWARDSHIP PROJECT (2014), http://landstewardshipproject.org/posts/535 (last visited Feb 25, 2016); STATEMENTS FROM THE LAND STEWARDSHIP PROJECT'S PRESS CONFERENCE ANNOUNCING THE RELEASE OF "THE PEOPLE"S EIS SCOPING REPORT', (2013).

[54] Minnesota Environmental Quality Board, *supra* note 1 at 20.

ambient air samples collected from around four frac sand facilities in Wisconsin and Minnesota.[55] They found that five out of six samples contained particulate matter levels higher than the level used by the U.S. EPA to protect against long-term health effects. For one site sampled three times, findings varied but remained above the EPA level in all three cases, in one case more than 4 times the level. The authors note that, for half of the samples, weather conditions may have contributed to lower particulate levels. The study calls for more extensive, longer-term monitoring for particulate matter of this size to be carried out at existing frac sand operations.

In 2013, the National Institute for Occupational Health and Safety (NIOSH) evaluated air samples taken from 11 fracking sites across 5 states. They reported that particulate matter at each site exceeded occupational health standards and by a factor of 10 or more in 31% of the samples.[56] It follows with little leap of logic that if dust levels measure this high at a fracking site where silica sand is being pushed into the ground that levels may well be as high if not much higher at a frac sand mining site where large quantities of silica sand are being removed from the ground, and at sites where this sand is processed.

What is well established is that silica dust is a human carcinogen and that exposure to it risks serious health impacts. Silica dust causes chronic and incurable scarring of the lungs called silicosis, a serious condition that causes difficulty breathing, leaves the body more susceptible to infections, bronchitis, lung cancer, tuberculosis, and that can result in death. Those at greatest risk are children, the elderly, and people with respiratory conditions. Furthermore, the symptoms of silicosis may not be apparent until many years after exposure to silica dust. These health risks are especially concerning for the citizens of Winona County as it is well known that:

> "Freshly crushed silica is more damaging to the respiratory system and produces a more severe inflammatory response than 'aged' silica particles of the same size. Breathing sharp, freshly-cut sand dust, such as silica at sand mining and processing sites, carries a

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[55] Kristin Walters et al., *PM2.5 Airborne Particulates Near Frac Sand Operations - See more at: http://www.neha.org/node/4407#sthash.5yMVHSgf.dpuf*, 78 J. ENVIRON. HEALTH 8–12 (2015).
[56] Katrina Smith Korfmacher et al., *Public Health and High Volume Hydraulic Fracturing*, 23 NEW SOLUT. J. ENVIRON. OCCUP. HEALTH POLICY 13–31 (2013).

greater risk of pulmonary disease than breathing older, smoother particles weathered by heat, wind, and moisture ….”[57]

There is currently no federal air quality standard for silica.

In other jurisdictions, many frac sand operations have already been permitted, at which sites far more extensive research can be carried out over the coming decades to further illuminate the impacts of silica dust on air quality and residents’ health. Due to the nature of the potential health impacts which may not manifest until long after silica exposure begins, this long-term level of study is what is needed to fully determine the safety of any such operations for nearby residents. Meanwhile, Winona County has strong justification for taking a precautionary approach and not risking the health of its citizens by permitting frac sand operations.

IV. Minnesota counties have the authority to ban frac sand operations

a. State law authorizes county land use control for frac sand operations

Minnesota state law clearly establishes the broad authority of counties to use zoning to control the use of land under their jurisdictions. Minnesota Statute section 394.21, subdivision 1 grants counties the authority to make planning and zoning decisions “[f]or the purpose of promoting health, safety, morals, and general welfare of the community. . . .” [58] Included in this delegation is the authority for a county’s Board of Commissioners (“Board”) to adopt by ordinance a comprehensive plan[59] that establishes the county’s policies and goals pertaining to public and private land and water use for “guid[ing] the future development of the county. . . .”[60] Minnesota Statute section 394.25, subdivision 2 states that county boards may adopt zoning ordinances by which the “use of land or the use of water or the surface of water . . . may be . . . encouraged, regulated, ***or prohibited*** . . . as may be deemed best suited to carry out the [county’s] comprehensive plan.”[emphasis added]

Beyond this general grant of zoning authority, Minnesota state law makes very clear the intention of the legislature to respect and acknowledge that local units of government have strong

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[57] Environmental Working Group, DANGER IN THE AIR: HEALTH CONCERNS FOR SILICA IN OUTDOOR AIR, http://www.ewg.org/research/sandstorm/health-concerns-silica-outdoor-air (last visited Feb 25, 2016).
[58] Municipalities also have planning and zoning authority pursuant to Minn. Stat. § 462 (2015).
[59] Minn. Stat. § 394.23 (2015).
[60] Minn. Stat. § 394.22, subd. 9 (2015).

authority over silica sand projects. Minnesota Statute section 116C.99, subdivision 2 directs the State's Environmental Quality Board (EQB) to "develop model standards and criteria for mining, processing, and transporting silica sand" that local governments may use to develop local ordinances. Subdivision 3 of that same section further instructs the EQB to form a "technical assistance team to provide local units of government, at their request, with assistance with ***ordinance development, zoning*****,** environmental review and permitting, monitoring, or other issues arising from silica sand mining and processing operations." [emphasis added] Quite significantly, both the language of the statute and the EQB's subsequent guidance make explicitly clear the immense degree to which discretion over frac sand decisions rests with local governments. First, the statute provides explicit recognition that the one and only instance in which a local government must give consideration to the findings and recommendations of the EQB technical assistance team is when it pertains to the approval or denial of a specific silica sand project about which the local government has requested such assistance from the team.[61] Even then, the local government is free to disagree with and act in contravention of the technical assistance team's findings and recommendations so long as it records its justification for doing so.[62] Second, in its publication of the standards and criteria ordered by Minnesota Statute 116C.99, the EQB states in no uncertain terms:

- "Authority to plan for and regulate land use activities rest primarily with local government. Enabling statutes grant the authority for planning and zoning for counties, cities, and townships: Minnesota Statutes 394, 462, and 366, respectively. The EQB supports good local planning that articulates the future vision of a community. This should be supported with adoption of sound local ordinances as a means to implement the planning[;]"[63]
- "The information, recommendations, standards, criteria, and considerations included in this document are not substitutes for local government planning. Nor are they a comprehensive list of options available to local governments [;]"[64]

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[61] Minn. Stat. § 116C.99, subd. 4 (2015).
[62] *Id.*
[63] Minnesota Environmental Quality Board, *supra* note 6 at 1.
[64] *Id.* at 1.

- "Local units of governments are not required to adopt any elements in this document and Minn. Stat. 116C.99 does not authorize the EQB or any other state agency to impose or enforce anything on local governments. The EQB and its member agencies are not enforcing or attempting to enforce the suggestions in this document as if they are duly adopted state rules[;]"[65]and
- "The regulation of mining activities typically is included in a local government's zoning ordinance rather than with a separate ordinance."[66]

The document expressly states that local governments should select tools for addressing frac sand operations as is appropriate to meet their specific concerns based on their unique hydrology, geology, infrastructure, local character and culture, and other considerations.[67]

i. A ban is consistent with Winona County's comprehensive plan

Minnesota Statute section 394.23 provides that "[a] comprehensive plan or plans when adopted by ordinance must be the basis for official controls adopted" by the county pursuant to its granted planning and zoning authority. As comprehensive plans are themselves advisory, a zoning ordinance is one such official control that has the effect of giving the force of law to "***all or any part of the general objectives*** of the comprehensive plan."[68] [emphasis added] In other words, a zoning ordinance that prohibits a particular land use pursuant to its incompatibility with one or more of the general principles of a comprehensive plan is a valid exercise of the local government's authority.

In 2014, Winona County adopted by ordinance its updated comprehensive plan to "provide a citizen driven foundation of guidance for planning and policy considerations in Winona County" and to "provide a framework within which more specific implementation strategies and programs may be developed" over the next decade.[69] Throughout this comprehensive plan are numerous statements of values, principles, and goals, particularly regarding the preservation of agriculture

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[65] *Id.* at 2.
[66] *Id.* at 4.
[67] *Id.* at 1.
[68] Minn. Stat. § 394.22, subd. 6 (2015).
[69] Winona County, COMPREHENSIVE PLAN UPDATE: POLICY GUIDANCE FOR THE NEXT DECADE 5 (2014), http://www.co.winona.mn.us/sites/winonacounty.new.rschooltoday.com/files/files/Private_User/adsms/FinalPlan2014_0.pdf.

and the protection of natural resources, with which frac sand mining, processing, and transportation operations would be incompatible. Among such statements are:

- "The importance of farmland and preservation of agriculture is paramount in Winona County. Local decision-makers and the community need to be educated and made aware of the long-term implications of various land uses. Decisions that put high quality agricultural land out of production and into irreversible, non-agricultural use compel the use of less productive [land]."[70]

- "Winona County recognizes the cultural and economic importance of agriculture to the community. . . Furthermore, local decisions should support maintaining and sustaining the vitality of family farms, promoting policies that support Winona County's strong tradition of locally owned agricultural operations and the administration of best management practices that consider the conservation of soil, water quality, economic viability, innovative practices, the promotion of local food systems and the stewardship of the land and its resources to retain the viability of agriculture for future generations."[71]

- A goal of "protection and enhancement of the air, water and land resources in the County as a vital ingredient of the living environment."[72]

- A goal of "protection of all water resources in the County from sources of pollution."[73]

- A policy to "promote land management practices by all levels of government that protect the natural resources in the County, including streams, rivers, wetlands, aquifer recharge areas, woodland and forests, bluffs and agricultural areas."[74]

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[70] *Id.* at 59.
[71] *Id.* at 12.
[72] *Id.* at 31.
[73] *Id.* at 31.
[74] Winona County, *supra* note 69 at 31.

- A goal to "maintain, protect and improve the quality of groundwater resources particularly the high-yielding aquifers used for drinking water and connected to surface hydrological features."[75]

The comprehensive plan outlines in detail specific principles, policies, and implementation strategies for serving the community's values with respect to local agriculture protection, rural industrial development, economic development, natural resources protection, open space and recreation, public facilities, transportation, and community health and well-being. Frac sand operations—including the mining, processing, storage, and transport of frac sand—produce outcomes and concerns described in Section III that are highly incompatible with many of these principles, policies, and strategies.

Of particular significance here is the emphasis placed throughout the comprehensive plan on the importance of preservation of farmland and agriculture to the County. Of the three frac sand mines in Winona County for which EAWs were prepared— the permitted Nisbit mine and the proposed Dabelstein and Yoder mines —all are sited at least in part on land that is currently (or in the case of the Nisbit mine, was, before mining commenced) farmed.[76] As explained in Section III.d, any plans to reclaim such sites back to farmland are both highly speculative and optimistic given the profound disturbance the mining operations are likely to cause to the health and quality of the land's surface and subsurface and, even if successful, would keep the land out of production for a very long time. In fact, as noted above, both the Dabelstein and Yoder mine EAWs acknowledge that the reclaimed land post-mining would not be intended for row crop use because the soils would not be adequate.

Also of note are the numerous goals and statements in the Comprehensive Plan calling for not only the protection or maintenance, but in fact the enhancement or improvement of water quality in Winona County. As described in Section III.a above, the risks of water contamination, particularly in karst topography, are such that allowing frac sand operations would make these goals entirely unachievable for the County.

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[75] *Id.* at 34.

[76] Environmental Assessment Worksheet (Dabelstein mine), *supra* note 11; Environmental Assessment Worksheet (Yoder mine), *supra* note 34; Environmental Assessment Worksheet (Nisbit mine), (2013), http://www.co.winona.mn.us/sites/www.co.winona.mn.us/files/files/EAW-Nisbit%20submittal_01152013.pdf.

It is important to note that the fact that frac sand operations may be regarded as consistent with some principles of the comprehensive plan is not sufficient to defeat a zoning ordinance that, supported by legislative findings of fact, bans frac sand operations on the basis of their incompatibility with other principles of that plan. Stated otherwise, a county's fact-based decision to institute a zoning ordinance that denies a land use as incompatible with some of the principles of the comprehensive plan is legally defensible even if there exist reasonable arguments against that decision, including arguments supported by other principles of the same comprehensive plan.[77] Section IV will provide a more thorough explanation of the very low legal standard a zoning ordinance must meet in order to be legally valid.

ii. State law gives counties zoning and public health authority to define, prevent, and abate nuisances

Minnesota Statute section 609.74 defines a public nuisance as activity that "unreasonably annoys, injures or endangers the safety, health, morals, comfort, or repose of any considerable number of members of the public" or interferes or obstructs access to and enjoyment of public spaces such as roads, lakes, and parks. State law grants counties authority through their zoning[78] and public health[79] powers to define, prevent, and abate nuisances. The Winona County zoning ordinance uses a similar definition to the State's for public nuisance and also provides an additional definition for a general nuisance as "[a]nything which is injurious to health, or indecent, or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property."[80]

Looking at the issues detailed in Section III, the reasonableness of the nexus between frac sand operations and the creation of nuisance conditions requires no leap of the imagination. In fact, the Minnesota EQB has explicitly stated that "[i]ncreased dust, noise, risk of accidents and increased levels of engine exhaust will present health and nuisance issues."[81] Indeed, in their EAW reports, the Nisbit (as proposed but not currently operating), Dabelstein, and Yoder frac sand mines propose mining activities producing a total of over 1,400 truck trips per day on

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[77] Newton v. County of Itasca, (2006); Hubbard Broadcasting, Inc. v. City of Afton, 323 NW 2d 757 (1982).
[78] Minn. Stat. § 394.21, subd. 3 (2015).
[79] Minn. Stat. § 145A.05, subd. 1 (2015).
[80] Winona County Zoning Ordinance, 38 (2011).
[81] Minnesota Environmental Quality Board, *supra* note 1 at 22.

County roads and highways.[82] The considerable noise, diesel exhaust, traffic congestion, and risk of accidents from these operations alone are enough to reasonably constitute a nuisance and public health concern within the jurisdiction of the County. Furthermore, the record from frac sand operations in Wisconsin demonstrates numerous instances in which frac sand mines and processing plants were issued citations based on community complaints about such things as noxious dust from sand load and transport operations, mudslide damage to private neighboring properties, and silt and wastewater leaking from holding ponds into streams, rivers, and drainage areas.[83]

b. Courts will uphold a zoning ban on frac sand operations

Minnesota courts have repeatedly held that zoning ordinances are presumed to be valid—that is, a court will presume that an ordinance is reasonably related to serving the health, safety, and welfare of the community or some other legitimate government interest, "even if the reasonableness of [the] zoning action is debatable…."[84] Indeed, the Minnesota Supreme Court has stated in no uncertain terms that:

> "Insofar as zoning ordinances are concerned, it has frequently been held that what best furthers public welfare is a matter primarily for determination of the legislative body concerned. . . . Even where the reasonableness of a zoning ordinance is debatable, or where there are conflicting opinions as to the desirability of the restrictions it imposes . . . it is not the function of courts to interfere with the legislative discretion on such issues."[85]

Minnesota courts have also held that "[l]egislative bodies generally are not required to articulate reasons for enacting a statute or ordinance" and that "[t]he rational basis test merely requires the

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[82] Environmental Assessment Worksheet (Dabelstein mine), *supra* note 11; Environmental Assessment Worksheet (Yoder mine), *supra* note 34; Environmental Assessment Worksheet (Nisbit mine), (2013), *supra* note 82.
[83] Kate Prengaman, MASSIVE ENVIRONMENTAL NONCOMPLIANCE IN WISCONSIN MINING INDUSTRY THE PROGRESSIVE (2013), http://www.progressive.org/news/2013/03/181144/massive-environmental-noncompliance-wisconsin-mining-industry.
[84] NEWTON V. COUNTY OF ITASCA, supra note 83; Honn v. City of Coon Rapids, 313 NW 2d 409, 417 (1981).
[85] Wensmann Realty, Inc. v. City of Eagan, 734 NW 2d 623, 630 (2007) (quoting State ex rel. Howard v. Village of Roseville, 244 Minn. 343, 347–348 (1955)).

challenged legislation to be supported by any set of facts either known or which could reasonably be assumed."[86]

It is the heavy burden of the challenging party to prove that the ordinance lacks ***any and all*** rational nexus to a valid government interest such that, in promulgating or enforcing the ordinance, the government acted arbitrarily or capriciously. It is important to note that Minnesota courts have explicitly held that a county's zoning and rezoning decisions are afforded a greater degree of judicial deference than its decisions of whether to approve or deny a special- or conditional-use permit or variance as the former is a legislative action while the latter is quasi-judicial in nature.[87] Furthermore, Minnesota's Supreme Court has held that a county's reason for denying a land use is regarded as legally indefensible only when it is "so general as to compel an inference that [it is] evading its responsibility to give reasons."[88] The state Supreme Court also instructs that courts should accept a county board's reasons "at face value" when considering their legal sufficiency.[89]As such, Winona County could make a finding of fact or state justifications based on any of the evidence presented in Section III of this document and thereby meet the minimal requirements for a rational nexus between the ban and the public interests it is intended to protect.

Frac sand industry proponents have claimed that a zoning ordinance imposing a total exclusion of frac sand operations is unlikely to withstand judicial review because it (a) does not have the presumption of being valid and (b) requires that the government prove a substantial or compelling state interest that cannot be met through less restrictive regulation. This assertion is a gross mischaracterization of the existing case law and especially has no basis in law or in fact when applied to Minnesota and the context of frac sand operations. Quite the contrary, statutory and case law from Minnesota and other states strongly supports that Minnesota courts will uphold such a zoning ordinance banning frac sand operations, especially when supported by such persuasive evidence as described and cited in Section III above. This conclusion is based on four critical factors. First, Minnesota by statute explicitly grants its counties authority to totally exclude a land use. Second, case law from Minnesota and other states indicates that Minnesota

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[86] Arcadia Develop. v. City of Bloomington, 552 NW 2d 281, 289 (1996).
[87] NEWTON V. COUNTY OF ITASCA, *supra* note 77; HONN V. CITY OF COON RAPIDS, *supra* note 84.
[88] Corwine v. Crow Wing County, 244 NW 2d 482, 486 (46151).
[89] *Id.* at 486.

courts will uphold total use exclusions on commercial activities like frac sand operations and that there have been no Minnesota court decisions indicating that such exclusions are presumed invalid or require a higher level of judicial scrutiny.[90] Third, even in states where total use exclusions are presumed invalid, courts have explicitly said that this presumption of invalidity applies exclusively to land uses that cannot reasonably constitute a nuisance. And, fourth, even if the presumption of validity did not exist, a zoning exclusion on frac sand operations would satisfy the court's balancing test. Indeed, we are unaware of any cases in which Minnesota courts have addressed a total use exclusion, despite the fact that such exclusions exist in the zoning ordinances of many counties and municipalities. Furthermore, cases from other states lend strong support to the conclusion that a prohibition on frac sand operations would be upheld.

i. Minnesota law explicitly authorizes total use exclusions

Minnesota Statute Section 645.08 requires that statutes be interpreted in accordance with common rules of grammar and common usage of words and phrases. Minnesota courts will similarly construe a statute's words and phrases according to their plain and ordinary meaning[91] so that "no word, phrase, or sentence should be deemed superfluous, void, or insignificant."[92] A court will only engage in further interpretation when there is a *prima facia* showing of ambiguity based on there being "more than one reasonable interpretation" of the language.[93] If necessary to resolve such ambiguity, a court will interpret the language in question according to the context of its surrounding sections.[94] Furthermore, ambiguities in meaning will be interpreted in such a way as to be consistent with the objective of the statute and to favor public interest over private interest.[95]

Minnesota Statute section 394.25, subdivision 2 plainly and explicitly authorizes a county to identify in its zoning ordinances land uses that are "encouraged, regulated, ***or prohibited***" and,

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[90] The only exception to this is in cases where a total use exclusion implicates the First Amendment (e.g., by excluding adult bookstores or particular religious institutions) or other fundamental right or is discriminatory toward a protected class. Such cases are incomparable to a total use exclusion on frac sand operations.
[91] See, e.g., Premier Bank v. Becker Development, LLC, 785 NW 2d 753, 759 (2010).
[92] Amaral v. Saint Cloud Hosp., 598 NW 2d 379, 384 (1999).
[93] *Id.* at 384.
[94] Asperen v. Darling Olds, Inc., 93 NW 2d 690, 698 (1958).
[95] Minn. Stat. § 645.16 (2015); Minn. Stat. § 645.17(5) (2015); *see also,* AMARAL V. SAINT CLOUD HOSP., *supra* note 92 at 384.

for the purposes of doing so, it "may divide the county into districts of such number, shape, and area as may be deemed best suited to carry out the comprehensive plan." [emphasis added] Not only is the plain meaning of the word "prohibited" clear, but there is no reasonable interpretation of this language that would conclude that a county is barred from excluding a land use in all zoning districts. Any trace of ambiguity is further eliminated by the remaining language in subdivision 2 which extends zoning authority to include "wetlands preservation,…, sewage disposal, protection of groundwater,…, protection of slope, soils, unconsolidated materials or bedrock from potentially damaging development, preservation of forests, woodlands and essential wildlife habitat,…, and the preservation of agricultural lands," all of which may transcend zoning districts. Additionally, subdivision 3 of the same section provides that all controls imposed by a zoning ordinance "shall be uniform for each class of land or building throughout each district, but the provisions in one district ***may*** differ from those in other districts." [emphasis added] In order for "may" to retain meaning in accordance with common grammar and usage, it must be concluded that zoning provisions are permitted, but not mandated, to differ across districts. Requiring that counties allow a particular land use in at least one district would mean that the provisions in one district *must* differ from those in other districts. Furthermore, Minnesota courts apply the canon of statutory interpretation that the same word must be given the same meaning when it is used in the same paragraph.[96] As such, interpreting "may" as "must" in this instance, would also change the meaning of the word the other four times it appears in the paragraph. Finally, even if the court were to look beyond the plain meaning of the statute to its purpose, it would uphold the authority to exclude a land use from all districts as consistent with the statute's objective to grant counties the planning authority to make land use decisions that best serve the health, well-being, and other interests of the public.

The U.S. Sixth Circuit Court of Appeals used this very reasoning in deciding the case of *Valley View Village v. Proffett*.[97] The case involved an ordinance that rezoned an entire town from five different use districts to a single district with uses limited to "single dwelling houses, churches,

[96] Akers v. Akers, 233 Minn. 133, 141 (1951).
[97] Valley View Village v. Proffett, 221 F 2d 412 (12179).

schools, and social, recreational, and welfare uses" and existing nonconforming uses.[98] The validity of the ordinance was challenged by a property owner who had entered into a lease with a company to excavate gravel and sand from the property, which the rezoning prohibited and effectively banned anywhere in the town. The court ruled that the town had the authority to rezone into a single use district based on the plain meaning interpretation of the state authorizing statute that said a municipality "may" divide its land into multiple zones, which the court said indicated that "[t]here is no requirement that in order to regulate and restrict it *must* divide the municipality into more than one district."[99]

Indeed, arguments against the validity of total use exclusions have often hinged on the absence of explicit authorizing language in states with statutes that only delegate the zoning authority to regulate or restrict land use. Many states—including Minnesota[100]—modeled their statutes granting zoning authority to local governments on the Standard Zoning Enabling Act (SZEA) issued by the U.S. Department of Commerce in 1926. The SZEA's enabling section granted local governments the power to "regulate and restrict" the use of land "[f]or the purpose of promoting health, safety, morals, or the general welfare of the community."[101] The SZEA further granted local governments the power to use zoning to, again, "regulate and restrict" particular land uses.[102] This language, some have argued, does not authorize total use exclusions but, rather, only the power to regulate uses.[103]

Both the language and history of Minnesota's county planning and zoning enabling statute suggests legislative intent to ensure counties have the power to exclude land uses by zoning. Minnesota's statue was first enacted in 1939 and was based on the model set forth by the SZEA.[104] While using much of the same language as the SZEA, section 394.21 of the 1939 law granted counties the broad authority to "carry on county planning and zoning activities" rather

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[98] *Id.* at 414.
[99] *Id.* at 416.
[100] SUZANNE RHEES, MINNESOTA'S PLANNING AND ZONING ENABLING LAWS: ANALYSIS AND OPTIONS FOR REPORT 3 (2015), http://www.planningmn.org/vertical/sites/%7B90040865-D256-42F0-9D0D-9C70F73691EF%7D/uploads/White_Paper_APRIL_6_2015.pdf.
[101] US Dep't of Commerce, *A Standard State Zoning Enabling Act*, , 1 (1926).
[102] *Id.* at 2.
[103] Robert A DuPuy, *Legitimate Use Exclusions Through Zoning Applying a Balancing Test*, 57 CORNELL REV 461, 465 (1971).
[104] RHEES, *supra* note 100 at 3.

than the power to "regulate and restrict."[105] This section remains identical today.[106] Also the same as today's statute, the 1939 law granted counties the power to use zoning to "encourage[ ], regulate[ ], or prohibit[ ]" particular land uses.[107]

It is worth also noting that even the SZEA included a marginal note stating, "This phrase [restrict and regulate] is considered sufficiently all-embracing. Nothing will be gained by adding such terms as 'exclude' . . . ."[108] Furthermore, courts have typically recognized the power to regulate or restrict uses by zoning also includes the authority to exclude a use.[109]

ii. Numerous jurisdictions already enact total use exclusions

Even the most cursory of searches reveals an enormous number of zoning ordinances from across the country that place total use exclusions on all different types of structures and activities either by directly banning specific uses in all districts or by indirectly prohibiting from all districts any uses not explicitly listed as permissible. For example, the town of Smithfield, Rhode Island wholly prohibits sixty different types of industrial uses from all of its zoning districts, including sand and gravel extraction.[110] The town of Lawrence, Massachusetts prohibits, among other things, "the business of removing soil, loam, sand, gravel or quarrying except where incidental to on-site construction."[111] These are but a couple from hundreds of examples.

It is telling that, despite the pervasiveness of total use exclusions across the thousands of municipalities, there is very little case law on legal challenges to them. Indeed, in Minnesota as in other states, the significant majority of the case law on municipal zoning stems from challenges to the validity of ordinances prohibiting a use in one district but permitting it in another and—the most frequently found cases—challenges to municipal denials of special- and conditional-use permits. This should come as no surprise for a number of reasons. First, is the inherency that the more complicated and variable a regulatory scheme is, the more prone it is to legal challenges. Second, as aforementioned, zoning and rezoning are regarded by Minnesota

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[105] Minn. Stat. § 394.21 (1939).
[106] Minn. Stat. § 394.21 (2015).
[107] Minn. Stat. § 394.25, subd. 2 (1939); Minn. Stat. § 394.25, subd. 2 (2015).
[108] US Dep't of Commerce, *supra* note 101 at 6.
[109] See, e.g., Oregon City v. Hartke, 400 P 2d 255, 259 (1964).
[110] Smithfield, Rhode Island, 2015. *Zoning Ordinance* Sec. 4.6.
[111] See, e.g., Lawrence, Massachusetts, 1998. *Revised Zoning Ordinance* Sec. 29.9(d).

and other courts as purely legislative acts given the highest degree of deference and presumed validity while special- and conditional-use decisions are quasi-judicial and, when a permit is denied, impose a burden of proof on the municipality to show a factual determination that the denial serves a compelling government interest.[112]

iii. Minnesota courts uphold the validity of total use exclusions

Minnesota case law strongly supports that courts will uphold a county zoning ordinance that imposes a total use exclusion on frac sand operations.

Citing to the U.S. Sixth Circuit Court of Appeals' decision in *Valley View Village v. Proffett*, the Minnesota Supreme Court stated in *Connor v. Township of Chanhassen* that even the enactment of a one-use zoning ordinance is both presumed to be a constitutional exercise of municipal police powers and presumed to be based on valid legislative findings by the municipality.[113] One-use zoning refers to an ordinance that applies a single zoning classification to an entire municipality such that an excluded use is prohibited entirely within that municipality. For example, in reference to *Valley View*, the court in *Connor* affirmed:

> "Merely because the town board provided in the original ordinance that the entire township was classified as farm-residential does not make the ordinance so arbitrary as to render the ordinance unconstitutional. A municipality on the periphery of a large metropolitan center may constitutionally pass a one-use ordinance in order to retain its residential character."[114]

Montana's Supreme Court cited to both of these cases in deciding to reverse its position on one-use zoning and begin recognizing it as a valid.[115] A California Court of Appeals has stated that "there is no necessity to provide a district for every type of use."[116]

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[112] Kismet Investors, Inc. v. County of Benton, 617 NW 2d 85, 90 (2000).
[113] Connor v. Township of Chanhassen, 81 NW 2d 789, 211–212 (1957); VALLEY VIEW VILLAGE V. PROFFETT, *supra* note 97.
[114] CONNOR V. TOWNSHIP OF CHANHASSEN, *supra* note 113 at 211.
[115] McDermott v. Village of Calverton Park, 454 SW 2d 577, 581 (55224).
[116] Town of Los Altos Hills v. Adobe Creek Properties, 32 Cal App 3d 488, 501 (No. 30116); Snow v. City of Garden Grove, 188 Cal App 2d 496, 502 (6396); Wood v. City Planning Commission, 130 Cal App 2d 356, 364 (1955).

The acceptability of total exclusions by zoning ordinance is perhaps best demonstrated by the growing nationwide movement of municipalities enacting total use bans on fast food restaurants in order to combat rising obesity rates among their communities pursuant to their police powers to protect the public health. In fact, the use of local zoning ordinances to ban fast food has been a strategy actively promoted by the U.S. Centers for Disease Control and Prevention (CDC) Public Health Law Program, which maintains a website on the topic with links to model ordinances and legal analyses upholding the constitutionality of such bans.[117] The Centers for Law and the Public's Health at Johns Hopkins and Georgetown Universities have also published a lengthy report detailing the legal bases by which zoning bans on fast food are valid, as well as a guide to implementing such bans for city planners that includes sample ordinance language.[118] The authors state:

> "The most obvious way to curtail the development of fast food outlets is to ban them entirely. A wholesale ban could be accomplished in various ways. For example, a specific provision in the zoning code could prohibit the development of fast food outlets anywhere in the locality. A ban could also be indirect if there is no specific provision prohibiting fast food outlets but, in an exclusive list of permitted uses in the zoning districts, fast food outlets are not listed."[119]

The report provides a few examples of such outright bans. One comes from the zoning ordinance of Concord, Massachusetts, which provides that:

> "Drive-in or fast food restaurants are expressly prohibited. A drive-in or fast-food restaurant is defined as any establishment whose principal business is the sale of foods or beverages in a ready-to-consume state, for consumption within the building or off-premises, and whose principal method of operation includes: (1) sale of foods and

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[117] Centers for Disease Control and Prevention Public Health Law Program, ZONING TO ENCOURAGE HEALTHY EATING (2015), http://www.cdc.gov/phlp/winnable/zoning_obesity.html.

[118] Julie Samia Mair, Matthew W Pierce & Stephen P Teret, *The use of zoning to restrict fast food outlets: a potential strategy to combat obesity*, CENT. LAW PUBLIC'S HEALTH JOHNS HOPKINS GEORGET. UNIV. (2005); JS Mair, MW Pierce & SP Teret, *The city planner's guide to the obesity epidemic: zoning and fast food*, 7 CENT. LAW PUBLIC'S HEALTH JOHNS HOPKINS GEORGET. UNIV. RETRIEVED JULY 2010 (2005).

[119] Mair, Pierce, and Teret, *supra* note 118 at 40.

> beverages in paper, plastic or other disposable containers; or (2) service of food and beverages directly to a customer in a motor vehicle."[120]

Apropos to the situation of frac sand operations, the zoning ordinance states that the purpose of the ban is "to lessen congestion in the streets" and "to preserve and enhance the development of the natural, scenic and aesthetic qualities of the community," which the authors of the report explain are "two general purposes [that] have been used to justify restrictions on fast food outlets."[121]

Another example is that of Carlsbad, California which, the authors of the report note, bans drive-through restaurants in all of its zoning districts while permitting drive-through service for all other businesses by conditional use permit in most of the districts:

> "Drive-thru restaurants are prohibited within all zones in the city, including coastal zone properties. The drive-thru restaurant prohibition applies citywide to all existing and proposed specific plans, master plans, and related amendments."[122]

Further demonstrating the nuance by which municipalities differentiate between permitted and prohibited uses, the zoning code of Newport, Rhode Island permits by right standard restaurants in all commercial districts, permits by special use permit fast food restaurants in some commercial districts, and wholly prohibits drive-in and carry-out restaurants in all districts. The authors of the report note the detail with which the Newport code defines a drive-in restaurant:

> "'Drive-in restaurant' means any establishment whose principal business is the sale of foods, frozen desserts or beverages to the customer in a ready-to-consume state and whose design, method of operation or any portion of whose business is such that foods, frozen desserts or beverages are served directly to the customer in a motor vehicle, either by a car-hop or by other means which eliminate the need for the customer to exit the motor vehicle, or where the consumption of food, frozen desserts or beverages within a motor vehicle parked on the premises is allowed, encouraged or permitted."[123]

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[120] *Id.* at 40–41;Town of Concord, Massachusetts Zoning Bylaws § 4.7.1 (2015).
[121] *Id.* at 41; Town of Concord, Massachusetts Zoning Bylaws § 1.2 (2015).
[122] *Id.* at 41; Carlsbad, California Zoning Ordinance § 21.42.140, subd. B(50).
[123] *Id.* at 42 (citing City of Newport, Rhode Island Zoning Code § 17.08.010 (2000)).

The report also cites to a number of municipalities that have enacted outright bans on so called "formula restaurants" (typically national chains) in order to protect their communities' historic characters.[124]

In surveying case law supporting zoning restrictions of fast food restaurants (meaning total zoning bans, but also requirements for conditional and special use permits) the authors report that courts have widely upheld such restrictions as serving a range of legitimate municipal interests, including: traffic concerns such as congestion, road safety, and air quality; public health necessity; public convenience; preservation of neighborhood character and aesthetics; and economic factors such as the displacement of local businesses.[125]

Again, not surprisingly, one observation made reading this report is that none of the two-dozen or so cases described in which a zoning restriction was challenged in court involves a municipal zoning ordinance that imposes an outright ban on fast-food restaurants. Rather, every single case profiled arose out of a municipality's decision to deny a special or conditional use permit pursuant to more lenient ordinances that limit fast food to certain zones and under certain conditions. This observation is consistent with the higher degree of deference that is typically afforded to municipalities' exercise of legislative authority in writing zoning ordinances as compared to their more adjudicatory role when deciding to approve or deny special- or conditional-use permits.

iv. The presumption of the ordinance's validity does not flip if the ordinance is a ban

Relying on rulings from a narrow set of cases in other states, pro-frac sand interests have argued that the presumption of validity does not apply when a zoning ordinance constitutes a total exclusion of a particular land use and that, without this presumption, the burden shifts to the government to justify the exclusion as, not just related but, necessary to an important state interest that cannot be met through less restrictive means. *Once again, this argument is substantially mischaracterizing the case law and how it applies to the situation at hand.*

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[124] *Id.* at 44. *See, e.g.,* Calistoga, California Zoning Code § 17.04.616.
[125] *Id.* at 54–67.

Cases in Minnesota and most other states in which total use exclusions or other land use restrictions have been struck down or subject to a stricter standard of review by courts have generally involved restrictions that either implicated First Amendment rights (e.g., exclusions on the sale of pornography or establishment of religious organizations) or impacted the cost, availability, or access to affordable housing resulting in the exclusion of lower-income or minority individuals or families from being able to move into the community. Indeed, Minnesota's Court of Appeals has explicitly ruled that "First Amendment challenges to zoning ordinances [are distinguished] from police-power challenges, which require the challenger to demonstrate an unconstitutional exercise of a local government's police powers."[126] Restricting a purely economic activity with no nexus to a fundamental constitutional right and no discriminatory impacts against a protected class is presumed to be constitutionally valid and subject only to the standard test for reasonable exercise of the government's police power..

Second, flipping the presumption of validity for total use exclusions of commercial activities can hardly be described as the dominant or even prevailing judicial thought process. Indeed, Pennsylvania is the only state whose courts have taken the pure position that a total use exclusion lifts the presumption of a zoning ordinance's constitutionality and shifts the burden to the government to demonstrate a more substantial relationship to a state interest that cannot be met through less restrictive zoning.[127] Courts in other states have declined to adopt such a singular position with at least one, Missouri, reversing its position on the issue to acknowledge the validity of single-use zoning.[128]

Third, as a related matter, even the Pennsylvania court that established the state's uniform presumption against the validity of total use exclusions explicitly stated that this only applies when there is a total exclusion of an otherwise legitimate land use, meaning a use that cannot reasonably constitute a nuisance:

"Common knowledge indicates that certain types of business activities, by reason of the particularly objectionable quality of those activities, are undesirable land uses and total

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[126] KISMET INVESTORS, INC. V. COUNTY OF BENTON, *supra* note 112 at 93; *see also,* City of St. Paul v. Dalsin, 245 Minn. 325 (1955).
[127] Beaver Gas. Co. v. Osborne Boro. Et Al., 445 Pa. 571, 574 (1971).
[128] WOOD V. CITY PLANNING COMMISSION, *supra* note 116.

prohibition would appear prima facie to be designed to protect those public interests which zoning statutes permit municipalities to protect. In the instant case [involving a gasoline service station], we are not dealing with such an activity. Were this ordinance to ban from the borough an activity generally known to give off noxious odors, disturb the tranquility of a large area by making loud noises, have the obvious potential of poisoning the air or the water of the area, or similarly have clearly deleterious effects upon the general public, the situation would be entirely different from that in the instant case."[129]As explained in section III, frac sand operations—including mining, processing, storage, and transport of frac sand—clearly produce the very types of public health, safety, and community impacts which the state's grant of zoning authority is intended to address. Furthermore, as explained in section IV.a.2, frac sand operations also satisfy the state's statutory definition for a public nuisance. Frac sand operations undeniably fall within the Winona County zoning ordinance definition for both a general and public nuisance, and the types of conditions that have widely and repeatedly been held by Minnesota courts as constituting a nuisance. Thus, there is no basis for the presumption of validity to be lifted for a total prohibition on frac sand operations.

v. Even if the presumption of validity were lifted, the ordinance would meet the court's balancing test

Consistent with other situations where the presumption of validity is lifted for a legislative enactment, a court lifting the presumption of validity for a total use prohibition, would instead apply some form of balancing test of the importance of the government's need to serve the public interest against the importance of the rights of the individual or entity whose use is being prohibited.[130] At their most rigorous, these balancing tests would mirror and evaluate the same factors as courts use in the context of challenges to the constitutional validity of zoning ordinances—namely, claims of regulatory takings and violations of due process and equal protection. As the next section of this report will demonstrate, a zoning ban on frac sand mining in Winona County would prevail.

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[129] BEAVER GAS. CO. V. OSBORNE BORO. ET AL., *supra* note 127 at 575.
[130] DuPuy, *supra* note 103 at 471.

c. There is no constitutional violation

Pro-frac sand interests have also suggested that a zoning ordinance banning frac sand operations would constitute a regulatory taking and violation of due process and equal protection under the constitutions of the United States and State of Minnesota. Again, these arguments have no basis in fact or in law.

While we address regulatory takings and equal protection claims in detail here, it is not necessary to provide separate analysis on substantive due process. As aforementioned, zoning ordinances are presumed to be constitutional and are subject to rational basis review, including for the purposes of substantive due process under both the federal and Minnesota constitutions.[131] Furthermore, both U.S. and Minnesota courts have held that an ordinance that serves a legitimate government purpose under a takings analysis will necessarily meet the rational-basis test used for due process and equal protection challenges.[132] Similarly, an ordinance that prevails against a substantive due process challenge will almost certainly prevail against a takings claim, as will substantive due process and equal protection either be both or neither violated.[133]

i. Not a regulatory taking

The Fifth Amendment of the U.S. Constitution and Article I, Section 13 of the Minnesota State Constitution prohibit the taking of private property by the government without just compensation.

In the seminal case on regulatory takings under the U.S. Constitution, *Lucas v. South Carolina Coastal Council*, the U.S. Supreme Court held that a "total taking," that is a regulation that constitutes a taking as a categorical matter, exists when a government regulation deprives a property owner of *all* economically beneficial use of his or her property *and* the regulation is not consistent with "restrictions that background principles of the State's law of property and

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[131] Arcadia Develop. v. City of Bloomington, 552 NW 2d 281, 288 (1996) (citing FCC v. Beach Communications, Inc., 508 US 307, 313 (1993)); Grussing v. Kvam Implement Co., 478 NW 2d 200, 202 (1991).
[132] ARCADIA DEVELOP. V. CITY OF BLOOMINGTON, *supra* note 136 at 288 (citing Concrete Pipe & Products of Cal., Inc. v. Construction Laborers Pension Trust for Southern Cal., 508 US 602, 2289 (1992)).
[133] ARCADIA DEVELOP. V. CITY OF BLOOMINGTON, *supra* note 136 at 288 (citing Skeen v. State, 505 NW 2d 299, 312 (1993) and State v. Morrow, 492 NW 2d 539, 547 (1992)).

nuisance already placed upon ownership."[134] A regulation that does not qualify as a total taking could still be a taking *per se* based on the particular facts of the case and the court's "careful examination and weighting of all the facts."[135] In evaluating whether a regulation that stops short of denying all economic use of a private property can still constitute a *per se* taking, courts will analyze a complex set of factors established by the Supreme Court in *Penn Central Transportation v. New York City*. These factors look at the totality of the regulation's economic impacts on the property owner, the degree to which the regulation interferes with the property owner's reasonable investment-backed expectations, whether the benefits of the regulation are shared by many while its costs are imposed on a few, and whether there exists any "average reciprocity of advantage" in which the property owner burdened by the regulation also shares in the public benefits it creates.[136]

In 2002, the U.S. Supreme Court addressed in *Tahoe-Sierra Preservation Council v. Tahoe Regional Planning Agency* the issue of whether a moratorium on a land use constitutes a taking under the federal constitution.[137] In looking to its prior precedents, the Court held that precedents from takings cases involving the government's physical interference with or occupation of private property (that is, the public use of private property) are not applicable to cases where there is a claim of a regulatory taking resulting from the government prohibiting a private use of private property.[138] The Court also reaffirmed that the categorical rule established in *Lucas* is inapplicable to any regulation that does not "100%" eliminate all "productive [and] economically beneficial use of [the] land."[139]

Minnesota's jurisprudence around takings challenges that arise under violations of the state constitution is notably different than that of the U.S. Supreme Court. Under the U.S. Supreme Court decision in *Williamson County Regional Planning Commission v. Hamilton Bank*, a petitioner cannot bring a Fifth Amendment takings claim in a federal court until she has exhausted state proceedings for just compensation (i.e., condemnation proceedings) and, under

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[134] Lucas v. South Carolina Coastal Council, 505 US 1003 (1992).
[135] Tahoe-Sierra Preservation Council, Inc. v. Tahoe Regional Planning Agency, 535 US 302, 321 (2002); Penn Central Transp. Co. v. New York City, 438 US 104, 124 (1978); Palazzolo v. Rhode Island, 533 US 606, 636 (2001).
[136] PENN CENTRAL TRANSP. CO. v. NEW YORK CITY, *supra* note 135.
[137] TAHOE-SIERRA PRESERVATION COUNCIL, INC. v. TAHOE REGIONAL PLANNING AGENCY, *supra* note 135.
[138] *Id.* at 322.
[139] *Id.* at 330.; LUCAS v. SOUTH CAROLINA COASTAL COUNCIL, *supra* note 134 at 1017.

the Court's subsequent decision in *San Remo Hotel v. City of San Francisco*, the litigant also cannot bring the claim once it has been decided by a state court. [140] Furthermore, the takings clause of the Minnesota Constitution is more expansive than that of the U.S. Constitution.[141] The approach of Minnesota courts to takings claims is to engage in inquiry that is "highly fact-specific, depending on the circumstances underlying each case"[142] and to apply analysis that "relies heavily on reasoning by analogy to previous takings cases."[143] As such, were a zoning ordinance that bans frac sand mining challenged as a taking under either or both U.S. and Minnesota constitutions, it is Minnesota case law that would be the primary determinant of how these claims would be evaluated.

Under Minnesota case law, a regulatory taking occurs when a government regulation reduces the economic value of a property so much that the property owner is unfairly left to "bear the burden rightly borne by the public."[144] Minnesota courts will apply the "enterprise-arbitration" test to determine whether a zoning ordinance that diminishes the value of private property constitutes a taking.[145] Under this test, a zoning regulation that serves a government enterprise (that is, benefits the government financially from use of the land) and results in substantial loss of value for a property owner may be a compensable taking. However, when a zoning ordinance serves to arbitrate between competing land use interests, such as those provided in a comprehensive plan, and is based on the exercise of valid planning or police powers, then the court will look to whether the regulation deprives the property owner of *all* reasonable uses and, if it does not, then the regulation is not a taking.[146] Furthermore, the entire burden of demonstrating that the

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[140] Williamson County Regional Planning Comm'n v. Hamilton Bank of Johnson City, 473 US 172 (84-4); San Remo Hotel, LP v. City and County of San Francisco, 545 US 323 (2005).
[141] State by Humphrey v. Strom, 493 NW 2d 554, 558 (1992).
[142] Decook v. Rochester Intern. Airport, 796 NW 2d 299, 305 (2011); Westling v. County of Mille Lacs, 581 NW 2d 815, 823 (1998).
[143] DECOOK V. ROCHESTER INTERN. AIRPORT, *supra* note 142 at 305; Zeman v. City of Minneapolis, 552 NW 2d 548, 552 n. 3 (1996).
[144] ZEMAN V. CITY OF MINNEAPOLIS, *supra* note 143 at 552; WESTLING V. COUNTY OF MILLE LACS, *supra* note 142 at 823; Meriwether Minnesota Land & Timber v. State, 818 NW 2d 557, 570 (2012); Armstrong v. United States, 364 US 40, 1569 (270AD).
[145] McShane v. City of Faribault, 292 NW 2d 253 (49531); Concept Prop. v. City of Minnetrista, 694 NW 2d 804, 822 (2005).
[146] MCSHANE V. CITY OF FARIBAULT, *supra* note 145 at 257; CONCEPT PROP. V. CITY OF MINNETRISTA, *supra* note 145 at 283.

ordinance prevents all reasonable uses of the property rests with the property owner bringing the takings claim and fails if any secondary uses for the property exist.[147]

It is readily apparent that a zoning ordinance banning frac sand operations would not deprive property owners of *all* economically beneficial or reasonable use of their properties. Most Winona County real estate has not heretofore been used for frac sand operations and has and will continue to have considerable value for agricultural, recreational, residential, and other permissible commercial uses. In fact, a zoning ordinance that prohibits the use of land for frac sand operations need not interfere with the ability of property owners to use that land to mine, transport, and sell silica sand for other uses such as in agriculture and construction [see Appendix A.].

While the existence of other reasonable uses would alone be sufficient for courts to uphold a zoning ban on frac sand operations, there are many additional factors that would lead courts to this same conclusion. For one, the zoning ban would be consistent with restrictions on frac sand operations allowed under state nuisance laws and public health laws. Furthermore, most frac sand operations would be restricted under Winona County's existing zoning ordinance subject to conditional use permitting, as well as covered by state and local nuisance laws and state and federal environmental regulations that could result in denial of approval for such projects. A zoning ban on frac sand operations would also confer broad, publically shared economic, environmental, health, community, aesthetic, and convenience benefits in which the burdened property owner would share. In contrast, the ordinance would impose very few private costs as the land in question would retain its economic value for agricultural production and other uses. Furthermore, the zoning ban on frac sand operations also would not interfere with the property owners' investment-backed expectations.

Here, the relevant case law is further informed by the U.S. Supreme Court's decision in Palazzolo v. Rhode Island, which held that "[t]he regulatory regime in place at the time the claimant acquires the property at issue helps to shape the reasonableness of those [investment-backed] expectations."[148] Application of the holding in Palazzolo means that the frac sand

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[147] Czech v. City of Blaine, 253 NW 2d 272, 274 (46481).
[148] PALAZZOLO V. RHODE ISLAND, *supra* note 135 at 633.

companies would have to demonstrate that they reasonably expected that they would be allowed to operate in Winona County when they entered into leasing agreements. This would be difficult to demonstrate because frac sand operations are subject to permitting approvals which may or may not be granted, including local conditional use permitting and in many cases state environmental permits. Finally, a total frac sand prohibition ordinance would not target an individualized harm or nuisance, but rather a public nuisance and harms identified as inconsistent with comprehensive plan provisions designed to serve all residents of the county.

ii. No violation of equal protection

Among the more absurd legal objections to a zoning ban hinted at by some frac sand industry proponents are claims that such a ban would constitute a violation of equal protection rights afforded under the Minnesota and United States Constitutions. These claims, again, have no merit in law or fact.

Equal protection claims allege that a law results in unequal treatment or impacts for persons who are similarly situated. Unless the purported discrimination implicates a fundamental constitutional right or targets the member of a protected class such as a discrete racial group, federal and Minnesota courts will apply the default rational-basis level of scrutiny in which they will uphold the law if it is rationally related to a legitimate government interest.[149] Furthermore, Minnesota case law states that equal protection in the context of a zoning ordinance requires that "one applicant not be preferred over another for reasons unexpressed or unrelated to the health, welfare, or safety of the community or any other particular and permissible standards or conditions imposed by the relevant zoning ordinances."[150]

Equal protection claims by the frac sand interest against an ordinance that bans frac sand operations would presumably be premised on an argument that other types of mining, as well as silica sand mining for uses such as animal bedding and fill would still be permitted and, as such, would be "discriminatory" toward the frac sand industry or those who wish to mine their land for frac sand. There is no reason here for a court to apply any higher level of scrutiny than rational-

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[149] ARCADIA DEVELOP. V. CITY OF BLOOMINGTON, *supra* note 86 at 288; FCC V. BEACH COMMUNICATIONS, INC., *supra* note 131 at 2101.

[150] Hay v. Township of Grow, Anoka County, 206 NW 2d 19, 23 (43492).

basis review. First, the very essence of zoning power is premised on the notion that one does not have a right, fundamental or otherwise, to do whatever one wants with one's land in contravention of valid government interests. Furthermore, because no protected classes would be implicated by a zoning ordinance that bans frac sand operations, any rational reason related by which a municipality may differentiate frac sand mining operations from other types of mining operations, so long as it is related to its police powers, would be sufficient for the ordinance to be upheld.

Again, the case of total zoning bans on fast food restaurants is informative here. In all respects, frac sand operations differ from other sand mining operations in ways that are far more clearly and significantly related to the kinds of municipal interests that courts have ruled are valid justifications for differentiating between fast-food restaurants and other types of eating establishments: traffic concerns such as congestion, road safety, and air quality; public health necessity; public convenience; preservation of neighborhood character and aesthetics; and economic factors such as the displacement of local businesses.

Clear distinctions can easily be recognized between the impacts of frac sand operations and the impacts of small-scale mining of sand (even if it may include silica sand) for local or regional uses such as construction or agricultural bedding. The intensity of frac sand operations is extreme, with a flow of hundreds or thousands of truckloads per day along the same routes between the mining, processing, and transport steps. Along with other harmful impacts to neighbors of these sites and routes, this level of activity creates far more opportunity for exposure to dangerous silica dust, as compared to the intermittent digging and hauling of occasional loads of sand to a particular site for construction or agricultural purposes. As another example, unlike sand operations for these other purposes, frac sand operations typically require the use of flocculants, which threaten water quality as discussed above. Further, the small-scale mining of sand for local uses can be viewed as a necessary component of the local economy, while, as discussed above, frac sand operations offer no lasting economic benefits to be balanced against their serious negative impacts.

In fact, in its regulation of the only operation it has so far permitted to mine silica sand (the Nisbit mine), Winona County already recognizes and implements a distinction which is explicitly tied to the use of the sand being produced. The Nisbit mine, as proposed by the

operators and permitted by the County in 2013, is designed to be able to produce both frac sand and sand for local uses such as dairy bedding and construction.[151] In October 2013, before operations commenced, the County implemented a Road Use and Maintenance Agreement governing the mine, including the requirement of a road impact fee. However, the agreement states that "[d]ocumented loads of sand for construction fill purposes or agricultural bedding purposes will not be subject to the road impact fee."[152] The Road Use and Maintenance Agreement also includes a requirement for quarterly reports to include the number of trucks and tonnage of material being hauled from the site. However, Winona County staff have since confirmed in email correspondence that these reports are not currently being collected, because the mine is not currently producing frac sand. In this correspondence Winona County Engineer David Kramer wrote:

> "In retrospect, we could have included a provision in the agreement to not require a quarterly report for any quarter in which all of the sand hauled from the quarry is for construction fill or bedding purposes (thus exempt from the Road Impact Fee), but at the time the agreement was drafted we did not think of that contingency, since so much of the discussion was focused on use of the sand as proppant for the hydraulic fracturing of petroleum wells (frac sand). We have not historically tracked or been concerned with the rate and quantity of materials that are quarried for construction fill or agricultural bedding purposes."[153]

Winona County's rationale for such a distinction undoubtedly includes the fact that these historically established uses have never even approached the intensity levels, and attendant negative impacts, of frac sand operations – such as the up to 140 loaded trucks (280 truck trips) per day of frac sand proposed to be generated by the Nisbit mine.

V. Legal and practical considerations *against* opting to regulate on a case by case basis through such means as conditional use permits

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[151] Environmental Assessment Worksheet (Nisbit mine), (2013), *supra* note 82 at 3.
[152] Winona County Road Use and Maintenance Agreement (Nisbit mine), (signed October 11, 2013), 4
[153] January 29, 2016 email from Winona County Engineer David Kramer to Land Stewardship Project staff in response to a public data request

If the County were, instead, to opt for regulating frac sand operations through such means as conditional use permitting, it would have to take on considerable administrative and financial burdens, as well as liability and litigation risks, in order to achieve outcomes that would still place its community at higher risk of environmental and health risks than an outright ban.

The County would have to be prepared to accept, review, and make an approval decision on every application for a new mine or processing or transportation facility. To do so, it would have to devote the time, expenses and resources necessary to provide the public with an opportunity for comment on the proposed application. It would also have to have in place the resources and expertise to adequately evaluate the various aspects of a proposed frac sand project, including the adequacy and accuracy of its environmental review and the adequacy of its proposed plan for monitoring, mitigating, controlling, and reclaiming its waste and pollution streams. While the county would have access to technical assistance from State agencies to do so, it would still be ultimately responsible for ensuring that the standards and requirements adopted are suitable for the complex hydrological and ecological characteristics unique not only to the County, but to the specific site on which the project is being built. The County would also need to assume responsibility for monitoring and enforcing compliance with the requirements set forth in its permits. And finally, it would have to be prepared for legal challenges to each decision to approve or deny a given permit, as well as lawsuits by those who might suffer injury or harm as a result of subsequent inadequate regulation of a permitted frac sand operation.

If the County were to fail to adequately monitor and enforce the requirements of its permit for any reason and there were resulting damage to the environment or to the health of its citizens, it would likely be expensive and difficult, if not impossible, to undo the physical and legal harm. Indeed, as discussed above, the history of frac sand operations in Wisconsin demonstrates the high frequency with which these companies are in violation of federal, state, and local requirements and the resulting harms to public health and the environment that can result. Many of these impacts to the environment—for example, impairment of the groundwater—could be irreparable and have wide-spread ecological and economic impacts for years or decades, and the County and its taxpayers may very well end up responsible for paying for much of the clean-up and reclamation. Furthermore, if there were harm resulting from a mining incident or if a frac sand operation were to not comply with the county's regulations, the county might have to

decide whether to seek damages or to compel compliance—in both of these cases, the County would be acting as the *plaintiff* in the legal proceeding and, the County would be required to finance the litigation out of its general revenues. On the other hand, if the County were sued by a frac sand company or property owner who challenged a properly drafted and enacted total frac sand prohibition ordinance, there is no reason to assume the County would not be covered by its insurance. Second, the County should be prepared that each and every approval or denial of a CUP inherently involves the risk of challenge or suit. Here, the County may find itself in a legally more precarious situation as it would have to be prepared to provide technical and zoning justification for the approval or denial of the requested CUP. These kinds of challenges will likely come both from neighboring property owners who object to a particular project being permitted and from companies who have their CUP applications rejected. Here, the County should especially take notice that a court will apply a stricter standard of review to a challenged CUP denial than it will to a challenged zoning ordinance that bans frac sand operations. In essence, if the government has decided that a particular use is wholly incompatible and prohibited by zoning ordinance, a plaintiff challenging that ordinance would have to prove to the court that that ordinance has no rational relationship to any government interest whatsoever—be that interest real or hypothetical. However, once the government has decided that a particular use can be compatible with zoning in a particular district subject to a CUP approval, a permit applicant appealing a denial only has the burden of persuading a reviewing court that the permit denial has no factual basis in the record pertaining to that particular permit request.[154]

VI. Conclusion

Winona County possesses the state statutory and inherent legislative power to totally prohibit frac sand mining, processing, and transportation operations, based on established land use zoning principles, within its jurisdictional boundaries. A properly drafted and enacted county zoning ordinance that totally prohibits frac sand operations would place the burden of proving the ordinance unconstitutional on the industry or property owner who may wish to challenge it. As such, the County would be able to rely upon insurance coverage, rather than having to finance the litigation from its general revenues.

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[154] Honn v. City of Coon Rapids, 313 N.W.2d 409, 417 (1981); Zylka v. City of Crystal, 283 Minn. 192, 196, 167 N.W.2d 45, 49 (1969).

More significantly and fundamentally proper, a Winona County zoning ordinance prohibiting frac sand mining would undeniably promote the health and general welfare of the citizens of the county. At the same time, the ordinance would serve to preserve and enhance the unique and special quality of the agricultural and environmentally beautiful land of Winona County.

VII. Appendix A. Model Ordinance Language

WINONA COUNTY

ZONING ORDINANCE AMENDMENT

REGARDING FRAC SAND

CHAPTER 4: RULES AND DEFINITIONS

4.2 Definitions – AMEND TO ADD THE FOLLOWING:

FRAC SAND: Silica sand that, when processed, is suitable for use as a proppant for the exploration, drilling, production, and recovery of oil and gas and that is intended to be sold or used as such. Frac sand does not include silica sand that is intended to be sold or used for construction, agriculture, or other applications where its use is other than as frac sand.

FRAC SAND OPERATIONS: Includes each and all of the following:

(a) Excavation and mining, including but not limited to any process or method of digging, excavating, mining, drilling, blasting, tunneling, dredging, stripping or removing frac sand from the land surface or underground. Excavation and mining applies to all activities occurring at excavation or mining sites, including sites commonly identified as quarries and sand or extraction pits.
(b) Processing, including but not limited to preparation, processing, washing, cleaning, screening, filtering, crushing, drying, sorting, and refining of all excavated, mined, stockpiled, stored, or other frac sand either at the mining site or at any other site within Winona County.
(c) Storing or stockpiling of all excavated, mined, or other frac sand either at the mining site or at any other site within Winona County.
(d) Hauling or transport, including but not limited to the loading, unloading, transfer, hauling, moving, and transporting of frac sand at or from a mining site, transfer facility, or other site within Winona County by rail, barge, truck, or other means of transport.

The term "frac sand operations" does not apply to the excavation and mining, processing, storage, hauling, or transport of silica sand that is intended to be sold or used for construction, agriculture, or other applications where its use is other than as frac sand.

CHAPTER 10: ZONING DISTRICTS-- AMEND TO ADD THE FOLLOWING:

10.11 Uses Prohibited in All Districts

1. The following uses are prohibited in all zoning districts:

(a) Frac sand operations

2. This section does not apply to any use legally established prior to the adoption of this Section 10.11. Any change to an established use shall, however, be done in accordance with the provisions of this Section 10.11.