

Evaluating Non-Metallic Mining: Comprehensive Plans and Zoning Ordinances

Part 4 of a 4 Part Series



Center for Land Use Education

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Non-metallic mining for silica sands has seen a recent boom in the state of Wisconsin. This sand is essential in the process of hydraulic fracturing for natural resources. Three other publications discussed non-metallic and frac sand mining. They include: “Planning and Zoning for Frac Sand Mining,” “Evaluating Non-Metallic Mining: County Comprehensive Plans,” and “Evaluating Non-Metallic Mining: County Zoning Ordinances.” In this publication, we combine the evaluation of plans and zoning ordinances. Counties with both of these planning tools in place should be well prepared for the increasing number of non-metallic mining activities in the state.

Less than half (48%) of Wisconsin’s 72 counties have both a county zoning ordinance and a comprehensive plan that address non-metallic mining.

Method

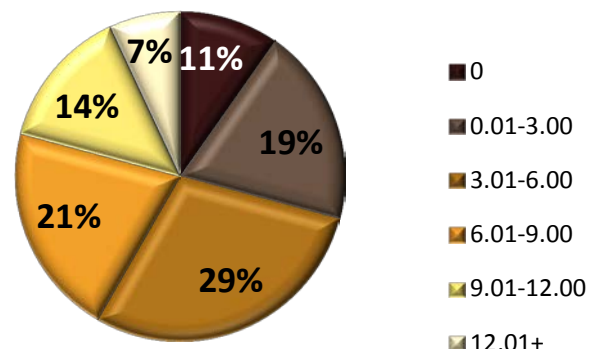
In the two previous studies, we evaluated comprehensive plans in one and zoning ordinances in the other. To conduct this analysis, we assumed that both county ordinances and comprehensive plans should have the same weight. To proceed, the scores from the previous ranking systems were equalized resulting in scores ranging from 0-10. In the case of the zoning ordinance score, each individual county score was divided by 24 (24 comes from the total number of standards that were found in all ordinances), and that number was multiplied by 10. For the comprehensive plans, county scores were divided by 6 (6 comes from the total possible score of all categories, and that number was multiplied by 10. The final step was to add the scores together, with scores ranging from 0-20.

Findings

Figure 1 shows a pie chart of the combined scores, Map 1 highlights these findings geographically and Table 1 shows individual and combined scores by county.

Fifteen counties (21%) received a score higher than 9 meaning that both their comprehensive plans and zoning ordinances addressed

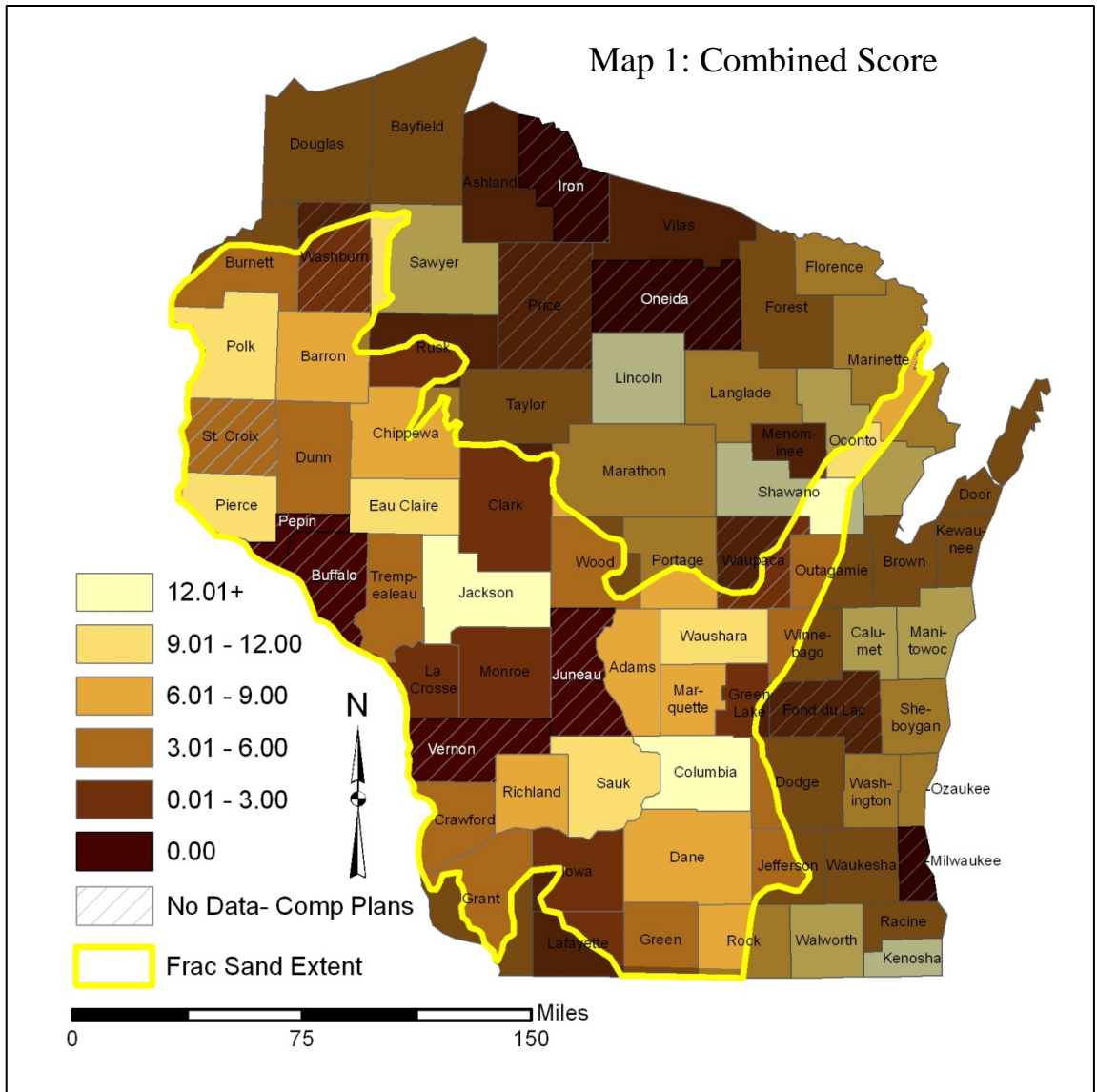
Figure 1: Combined Score



non-metallic mining in some detail using substantive or actionable language. Five of these counties, Columbia, Jackson, Polk, Eau Claire and Waushara, are located within the frac sand area. Shawano County received the highest score with 15.42 out of 20 points; however, only a small portion of the county is located within the frac sand area. The average score for all counties was 5.7. The median was 5.4 meaning that half the counties scored higher and half scored lower.

7 counties (11%) received a score of 0, meaning they did not receive any points for their comprehensive plan or zoning ordinance. Four of these counties fall within the frac sand area, including Buffalo, Juneau, Pepin, and Vernon. Twelve counties within the frac sand area received a score higher than 0 and less than 3. Approximately one-fourth of the counties statewide fell within this class. A score this low means that both their comprehensive plan and the zoning ordinance were weak or did not address non-metallic mining.

Over half of the counties (54%) received points for either a zoning ordinance or comprehensive plan, but did not have both of the regulations in place. Some counties received moderate scores due to the strength of their comprehensive plan or zoning ordinance. Florence County, for example, received a score of 8.33 for its high ranking comprehensive plan, but no points for its ordinance.



Conclusion

The results show that counties are not well prepared for the rapid pace and large scale of the recent frac sand mining activity in Wisconsin. Many counties could do more through the use of these two tools if they choose to do so. Many more counties have addressed non-metallic mining in their comprehensive plans than in zoning ordinances. While this step is a good first step, a comprehensive plan is not a regulatory tool and there is no good way to enforce it. In the end, it is up to each county to make use of the tools at its disposal.

Table 1: Individual and Combined County Scores

County	Comprehensive Plan		Ordinance Review		Total
	Original Score	Equalized Score	Original Score	Equalized Score	
Shawano	5.5	9.2	15.0	6.3	15.4
Kenosha	5.0	8.3	16.0	6.7	15.0
Columbia	5.0	8.3	14.0	5.8	14.2
Lincoln	5.0	8.3	12.0	5.0	13.3
Jackson	4.5	7.5	14.0	5.8	13.3
Manitowoc	5.0	8.3	7.0	2.9	11.3
Oconto	5.0	8.3	5.0	2.1	10.4
Walworth	4.0	6.7	8.0	3.3	10.0
Pierce	3.5	5.8	10.0	4.2	10.0
Sauk	3.0	5.0	12.0	5.0	10.0
Calumet	1.5	2.5	18.0	7.5	10.0
Sawyer	4.5	7.5	5.0	2.1	9.6
Polk	5.5	9.2	1.0	0.4	9.6
Waushara	5.0	8.3	2.0	0.8	9.2
Eau Claire	3.5	5.8	8.0	3.3	9.2
Chippewa	4.5	7.5	3.0	1.3	8.8
Richland	3.0	5.0	9.0	3.8	8.8
Florence	5.0	8.3	0.0	0.0	8.3
Ozaukee	5.0	8.3	0.0	0.0	8.3
Portage	3.3	5.4	7.0	2.9	8.3
Dane	4.0	6.7	3.0	1.3	7.9
Sheboygan	4.5	7.5	0.0	0.0	7.5
Washington	4.5	7.5	0.0	0.0	7.5
Marathon	3.5	5.8	4.0	1.7	7.5
Langlade	3.3	5.4	5.0	2.1	7.5
Adams	4.0	6.7	2.0	0.8	7.5
Barron	2.5	4.2	7.0	2.9	7.1
Marquette	2.5	4.2	7.0	2.9	7.1
Marinette	4.0	6.7	0.0	0.0	6.7
Rock	4.0	6.7	0.0	0.0	6.7
Brown	3.5	5.8	0.0	0.0	5.8
Taylor	3.5	5.8	0.0	0.0	5.8
Winnebago	1.5	2.5	8.0	3.3	5.8
Green	3.0	5.0	1.0	0.4	5.4
Bayfield	1.5	2.5	7.0	2.9	5.4
Racine	2.0	3.3	5.0	2.1	5.4
Waukesha	1.0	1.7	9.0	3.8	5.4
Dodge	3.0	5.0	0.0	0.0	5.0
Forest	3.0	5.0	0.0	0.0	5.0
Kewaunee	3.0	5.0	0.0	0.0	5.0
Burnett	1.5	2.5	6.0	2.5	5.0
Douglas	1.5	2.5	6.0	2.5	5.0
Jefferson	0.0	0.0	12.0	5.0	5.0
Door	2.5	4.2	0.0	0.0	4.2
Dunn	2.5	4.2	0.0	0.0	4.2
Wood	2.5	4.2	0.0	0.0	4.2
Trempealeau	0.5	0.8	7.0	2.9	3.8
Crawford	2.0	3.3	0.0	0.0	3.3
Grant	2.0	3.3	0.0	0.0	3.3
Outagamie	2.0	3.3	0.0	0.0	3.3
St. Croix	0.0	0.0	8.0	3.3	3.3
Ashland	1.5	2.5	0.0	0.0	2.5
La Crosse	1.5	2.5	0.0	0.0	2.5
Lafayette	1.5	2.5	0.0	0.0	2.5
Monroe	1.5	2.5	0.0	0.0	2.5
Vilas	1.5	2.5	0.0	0.0	2.5
Price	0.0	0.0	6.0	2.5	2.5
Iowa	1.0	1.7	1.0	0.4	2.1
Clark	1.0	1.7	0.0	0.0	1.7
Rusk	1.0	1.7	0.0	0.0	1.7
Fond du Lac	0.0	0.0	4.0	1.7	1.7
Waupaca	0.0	0.0	3.0	1.3	1.3
Menominee	0.5	0.8	0.0	0.0	0.8
Green Lake	0.0	0.0	2.0	0.8	0.8
Washburn	0.0	0.0	2.0	0.8	0.8
Buffalo	0.0	0.0	0.0	0.0	0.0
Iron	0.0	0.0	0.0	0.0	0.0
Juneau	0.0	0.0	0.0	0.0	0.0
Milwaukee	0.0	0.0	0.0	0.0	0.0
Oneida	0.0	0.0	0.0	0.0	0.0
Pepin	0.0	0.0	0.0	0.0	0.0
Vernon	0.0	0.0	0.0	0.0	0.0

Resources

- Haines, A. 2012, “Planning and Zoning for Frac Sand Mining.” Center for Land Use Education. April. <http://www.uwsp.edu/cnrap/clue/Documents/PlanImplementation/Planning%20and%20Zoning%20for%20Frac%20Sand%20Mining.pdf>
- Haines, A. and W. Risse. 2012. “Evaluating Non-Metallic Mining in County Zoning Ordinances.” July.
- Risse, W. and A. Haines. 2012. “Evaluating Non-Metallic Mining in County Comprehensive Plans.” July.
- Wisconsin Department of Natural Resources. Jan. 2012. “Silica Sand Mining in Wisconsin.” Non-Metallic Mining in Wisconsin. <http://dnr.wi.gov/org/aw/wm/mining/nonmetallic/> This resource has an exhaustive list of applicable statues and administrative codes.
- Wisconsin Geological and Natural History Survey, 2011. Frac sand mines and processing facilities, active or in development as of December 2011, compiled by Bruce Brown. <http://wisconsingeologicalsurvey.org/pdfs/frac-sand-factsheet.pdf>

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