

Evaluating Nonmetallic Mining: County Comprehensive Plans

Part 2 of a 4 Part Series



Center for Land Use Education



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Nonmetallic 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. The process and some local tools for managing the resource were discussed in a previous publication, “Planning and Zoning for Frac Sand Mining.” In this publication, we evaluate Wisconsin’s county comprehensive plans to understand how nonmetallic mining (NMM) is addressed. A comprehensive plan addresses natural resources as one of nine required elements. It is the first step in deciding how to manage nonmetallic resources in the future.

Method

We compiled a total of 60 of 72 county plans through internet sources. Plans we could not access through the internet were not reviewed and thus, not included in this analysis. We looked for five pieces of important information: 1) resource discussion (refers to background information on nonmetallic mining resources including maps), 2) ordinances, 3) goals and objectives, 4) policies, and 5) language strength. For each category, we assigned values and applied a simple equation, as explained on the next page, to obtain a final plan score.

- For the resource discussion, we looked for two important pieces of information a map and written discussion of nonmetallic mines and mineral resources (i.e., extent and type of sand and gravel). If the plan contained a map and written

*The top ten scoring counties for nonmetallic mining in a comprehensive plan are:
Polk, Shawano,
Columbia, Florence,
Kenosha, Lincoln,
Manitowoc, Oconto,
Ozaukee, and Waushara.*



Sand mining operation in Chippewa County

discussion, it was assigned a 1, and if it only had one or the other, it received a 0.5.

- For ordinances, we investigated if a plan cited either a reclamation ordinance, which is required by all counties under Wisconsin Statutes, Ch. NR 135, or a zoning ordinance. If both were referenced, the county received a score of 2, if only one or the other was referenced, it received a 1.
- For goals and objectives, we assigned a value of 1 if goals or objectives that addressed nonmetallic mining were included. We grouped goals and objectives together because the goals listed were sometimes too broad to cite nonmetallic mining specifically. While a goal may have explained the “protection of natural resources,” it may not have referenced mining specifically. In those cases we examined the objectives to see if any of them related specifically to nonmetallic mining.
- For policies, we looked for specific actions that would be taken to help reach the goals and objectives listed in the plan. If any policies were listed, the plan received a 1; if not, it received a 0.
- For strength of language, we assessed the wording used in the goals, objectives and policies. If wording such as “the county will identify,” or “ensure that the,” it was considered strong. If wording such as “the county should,” or “the county will work to,” it was considered to be of moderate strength. These phrases seemed to have the intent that the county would do something about nonmetallic mining eventually, but there was no guarantee that it would take action soon. Wording was considered weak if language such as “encourage,” “support” or “promote” was used. We consider it weak because the local government has no responsibility to follow through with any of the goals, objectives, or policies listed. If a mix of strong and weak language was used, the language was classified as moderate.
- The last task was to combine the scores from each category. Rather than simply adding all the scores, we gave more weight to plans that included goals, objectives and policies that used strong language. We used the following equation to score each plan: Total Score = RD+O+[(GO+P)*S] where RD = Resource Discussion, O = Ordinance, GO = Goals and Objectives, P = Policies, and S = language strength. Strongly worded goals, objectives and policies were multiplied by 1.5, moderate by 1.25, and weak by 1. The final scores are illustrated in Figure 3 and listed in Table 1.

For a list of comprehensive plans for counties, towns, and cities visit:

<http://www.doa.state.wi.us/category.asp?linkcatid=746&linkid=128&locid=9>

Findings

Resource Discussion

As shown in Figure 1, 21 of 60 counties included a written discussion and map of nonmetallic mining resources, and 30 included only a written discussion. Trempealeau County was the only county to have a map and no resource discussion. Eight counties had no discussion at all. While ideally both the mineral resource and extraction site would be discussed, many plans had one or the other. These plans were still assigned the additional 0.5 points if either was included. As shown in Map 1, Ozaukee County included a map of both the mineral resource and extraction sites, as well as an excellent discussion of each.

Ordinances

Thirteen counties made mention of both the zoning and nonmetallic mining reclamation ordinances, while 39 counties referenced only one. In most cases only the reclamation ordinances required by NR 135 was mentioned.

Goals and Objectives

Thirty-one counties included goals or objectives directly relating to nonmetallic mining.

Policies

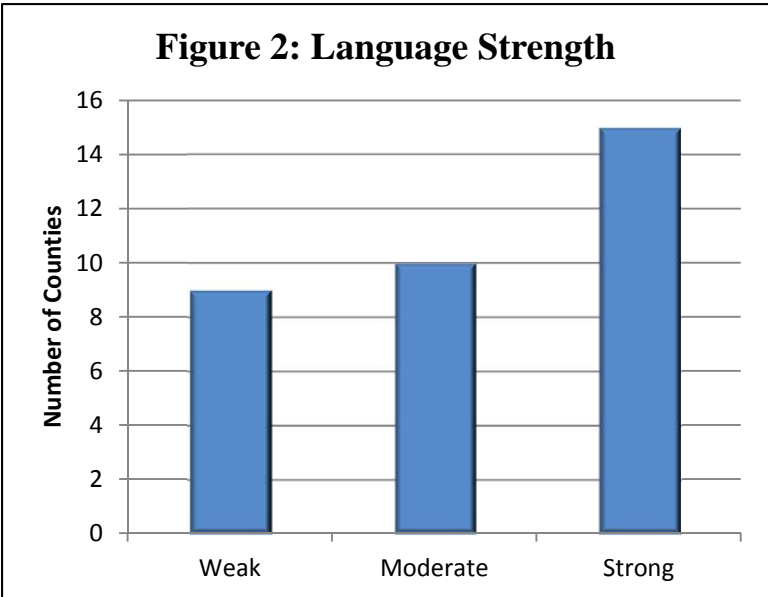
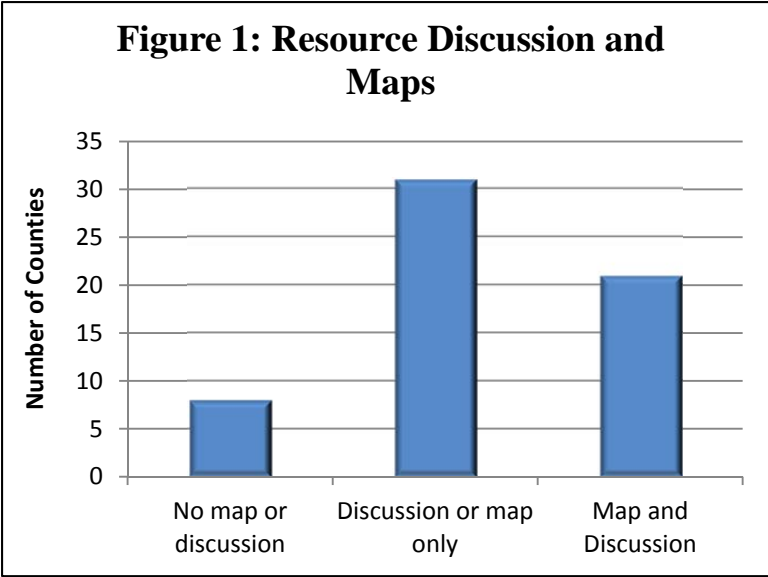
Twenty-six counties included nonmetallic mining policies.

Language

Of the 34 counties that had goals, objectives or policies related to nonmetallic mining, 15 counties had strong language, 10 had moderate language, and 9 had weak language (figure 2). Twenty-seven counties failed to include goals, objectives or policies related to nonmetallic mining, meaning that we were unable to assess the strength of their language.

Wisconsin Example

Polk County provides a good example of strong language used in a goal, objective, and policies. Below we have underlined which words indicate strong or moderate language. An example of weak language is to encourage.



26 counties failed to list any goals, objectives, or policies in relation to nonmetallic mining.

Goal: To protect, manage, and enhance the natural resources and environmental quality of Polk County.

Objective 2.304-A: Polk County shall continue to promote the efficient utilization of mineral resources in a manner which will lend itself to reclamation and limit significant impact to the natural environment.

Policy 2.304-A1: Polk County shall require mining operations to submit permits from state and federal regulatory agencies prior to, or concurrent with, final development approval.

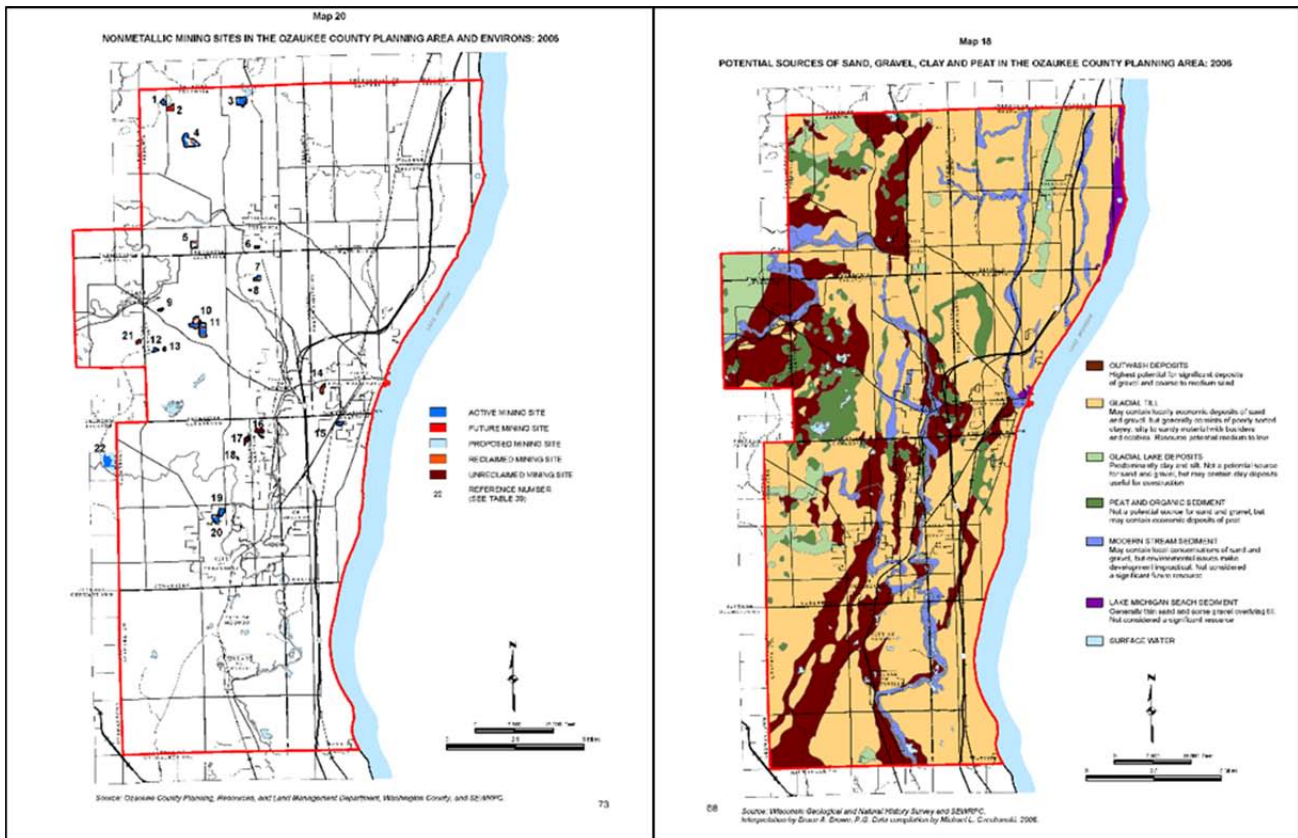
Policy 2.304-A2: Polk County shall support research to determine uses of phosphate mining and processing waste products such as phosphogypsum and clay, and shall support the use of those materials if such use is determined by Federal and State agencies to not pose a hazard to human health.

Policy 2.304-A3: Lands designated as Preservation on the Future Land Use Map Series, and/or through development regulations, shall not be disturbed by mining or mining support operations.

Policy 2.304-A4: Polk County shall require that use of reclaimed land be consistent with Future Land Use Element policies and land use designations.

Polk County received a total score of 5.5. Only one other county, Shawano, received that high of a score. Had these counties provided a map, they would have received maximum scores.

Map 1: Ozaukee County Mineral Resources and Nonmetallic Site Map



Policy 2.304-A5: Polk County's development regulations shall include minimum setbacks for all mining operations between the mine site and adjoining properties not owned by the mine operator.

Policy 2.304-A6: Polk County shall protect the availability and mineability of its mineral resources by implementing a Mineral Resource Overlay District, as defined within the Future Land Use Element of this plan. The overlay will delineate areas intended for mining through the time frame of the Comprehensive Plan. (See Objective 2.124-C and accompanying policies.) Mining activities (excluding phosphate) shall be allowed in those areas which are identified on the Mineral Resource Overlay District and/or where the mineral resources occur and where extraction is compatible with the surrounding land uses to be defined in the Land Development Code.

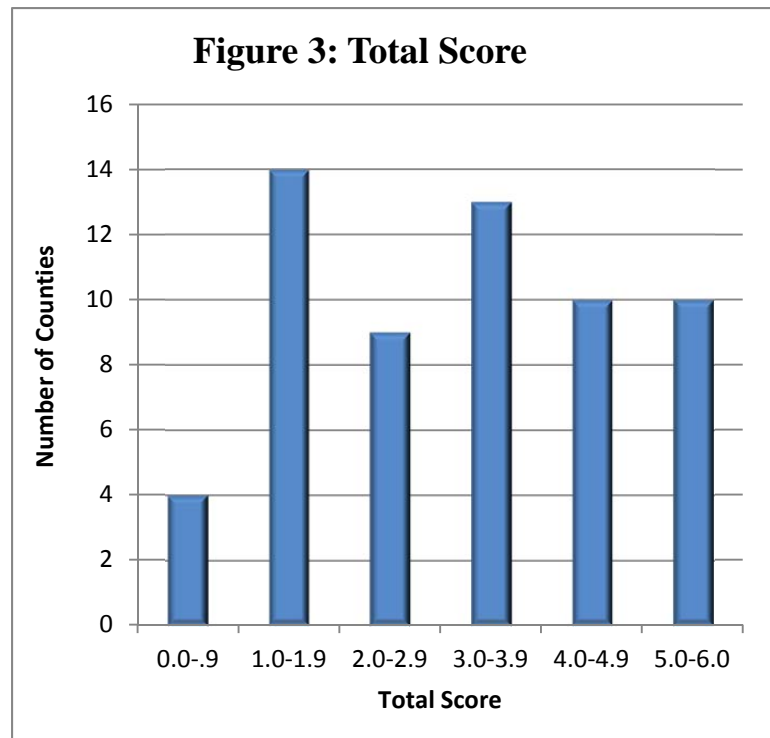
Total Score

Figure 3 and Table 1 show the total scores for all county comprehensive plans. While the highest possible score was 6, no plan scored higher than 5.5. Polk and Shawano were the two counties to receive this score. Only three out of twenty counties received a score of 4 or above and used weak language in their plan (Kenosha, Marinette, and Walworth). All but one of the counties (Barron) receiving a 2.5 or below had no goals or objectives listed.

Map 1 displays the scores for each county. Within the frac sand mining area, there are seven counties that do not have plans or whose plans could not be located. Of the counties with a score of 5 or above, Columbia, Oconto, Polk, Shawano, and Waushara are located within the frac sand area. Twenty one counties that overlap with the frac sand area have a score of 2.5 and higher, which means most of these plans included goals, objectives and policies. Eighteen counties within the frac sand area have scores below 2.5, and 17 of the 18 counties had no goals and objectives listed.

Conclusion

The study shows that a relatively small number of counties are maximizing the use of their comprehensive plans to manage nonmetallic mining. The average score for all counties was 2.93 out of 6 while the median was 3.0. A large number of counties have little language regarding nonmetallic mining; even fewer have strong language.



Map 2: Total Score

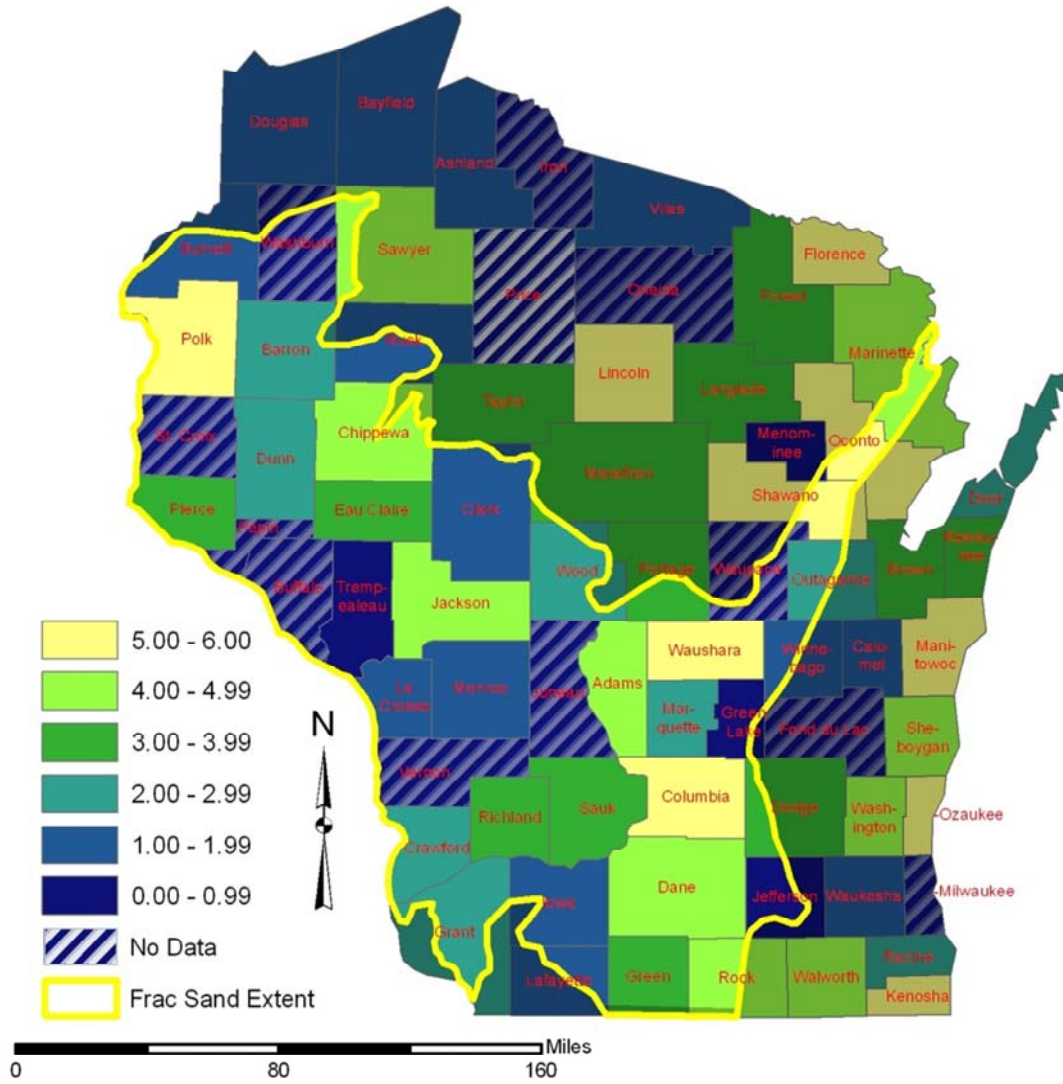


Table 1: Individual and total scores for Wisconsin Counties

County Name	Resource Discussion	Ordinances	Goals and Objectives	Policies	Language	TOTAL
Polk	0.5	2	1	1	Strong	5.50
Shawano	0.5	2	1	1	Strong	5.50
Columbia	0.5	2	1	1	Moderate	5.00
Florence	1	1	1	1	Strong	5.00
Kenosha	1	2	1	1	Weak	5.00
Lincoln	1	1	1	1	Strong	5.00
Manitowoc	0.5	2	1	1	Moderate	5.00
Oconto	1	1	1	1	Strong	5.00
Ozaukee	1	1	1	1	Strong	5.00
Waushara	0.5	2	1	1	Moderate	5.00
Chippewa	1	1	1	1	Moderate	4.50
Jackson	0.5	1	1	1	Strong	4.50
Sawyer	0.5	1	1	1	Strong	4.50
Sheboygan	1	1	1	1	Moderate	4.50
Washington	1	1	1	1	Moderate	4.50
Adams	0.5	1	1	1	Moderate	4.00
Dane	0	1	1	1	Strong	4.00
Marinette	1	1	1	1	Weak	4.00
Rock	0.5	2	1	0	Strong	4.00
Walworth	1	2	0	1	Weak	4.00
Brown	0.5	0	1	1	Strong	3.50
Eau Claire	1	1	0	1	Strong	3.50
Marathon	0.5	1	1	1	Weak	3.50
Pierce	0	1	1	1	Moderate	3.50
Taylor	0.5	1	1	1	Weak	3.50
Langlade	1	1	1	0	Moderate	3.25
Portage	1	1	1	0	Moderate	3.25
Dodge	0	2	1	0	Weak	3.00
Forest	0.5	1	1	0	Strong	3.00
Green	1	1	1	0	Weak	3.00
Kewaunee	0.5	1	1	0	Strong	3.00
Richland	1	1	0	1	Weak	3.00
Sauk	0	0	1	1	Strong	3.00
Barron	0.5	1	1	0	Weak	2.50
Door	0.5	2	0	0	N/A	2.50
Dunn	0.5	2	0	0	N/A	2.50
Marquette	0.5	2	0	0	N/A	2.50
Wood	0.5	2	0	0	N/A	2.50
Crawford	1	1	0	0	N/A	2.00
Grant	1	1	0	0	N/A	2.00
Outagamie	1	1	0	0	N/A	2.00
Racine	1	1	0	0	N/A	2.00
Ashland	0.5	1	0	0	N/A	1.50
Bayfield	0.5	1	0	0	N/A	1.50
Burnett	0.5	1	0	0	N/A	1.50
Calumet	0.5	1	0	0	N/A	1.50
Douglas	0.5	1	0	0	N/A	1.50
La Crosse	0.5	1	0	0	N/A	1.50
Lafayette	0.5	1	0	0	N/A	1.50
Monroe	0.5	1	0	0	N/A	1.50
Vilas	0.5	1	0	0	N/A	1.50
Winnebago	0.5	1	0	0	N/A	1.50
Clark	0	1	0	0	N/A	1.00
Iowa	1	0	0	0	N/A	1.00
Rusk	0	1	0	0	N/A	1.00
Waukesha	1	0	0	0	N/A	1.00
Menominee	0.5	0	0	0	N/A	0.50
Trempealeau	0.5	0	0	0	N/A	0.50
Green Lake	0	0	0	0	N/A	0.00
Jefferson	0	0	0	0	N/A	0.00
Average						2.93

Resources

- Haines, A. Apr. 2012. “Planning and Zoning for Frac Sand Mining.” Center for Land Use Education. <http://www.uwsp.edu/cnr-ap/clue/Documents/FracSand1.pdf>
- Haines, A and Risse, W. Aug. 2012. “Evaluating Nonmetallic Mining: County Zoning Ordinances.” Center for Land Use Education. <http://www.uwsp.edu/cnr-ap/clue/Documents/FracSand3.pdf>
- Wisconsin Department of Natural Resources (DNR). Jan. 2012. “Silica Sand Mining in Wisconsin.” <http://dnr.wi.gov/topic/Mines/documents/SilicaSandMiningFinal.pdf> This resource has an exhaustive list of applicable statutes 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>
- Wisconsin Department of Administration. 2012. Library of Comprehensive Plans. <http://www.doa.state.wi.us/category.asp?linkcatid=746&linkid=128&locid=9>

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