

TILLER ZAVORAL MINE Draft EIS RESPONSE

May 18, 2012

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Dear Ms. Hurlburt and Members of the Commission,

My name is Missy Bowen. Our family property is located at 20699 Quint Ave. N., within ¼ mile of the proposed Zavoral mine, and is held in a scenic easement by the St. Croix Scenic Riverway. We have lived on the river since 1962. Thank you for providing the opportunity to comment on the draft Environmental Impact Statement on the proposed Tiller-Zavoral gravel mine.

The EIS is the primary source of information to the City Council when they make the decision as to whether to continue forward with this project. Therefore, the document must reflect, as truly as possible, the full scope of the situation and the possible outcomes of developing a gravel mine.

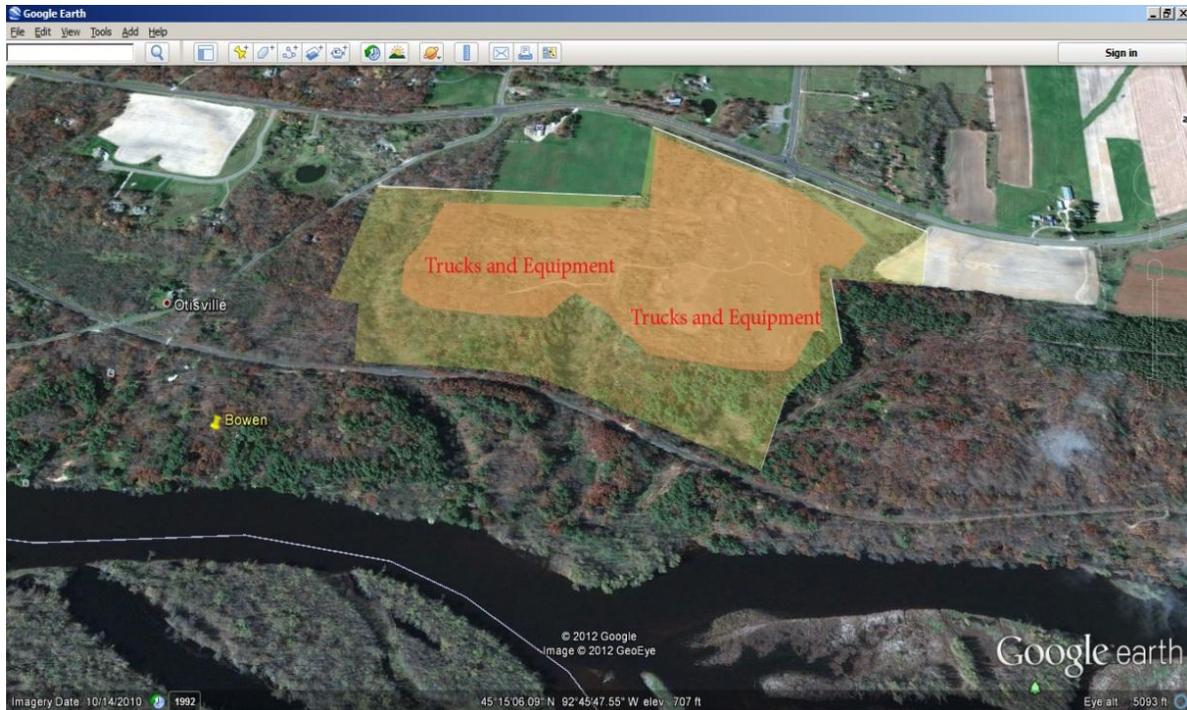
I feel this draft Environmental Impact Statement is incomplete and at times misleading. It glosses over key issues. The strict interpretation of the project's boundaries ignores the project's effects on the noise and ecology of the protected St. Croix River and surrounding areas, and on traffic and road safety.

This Environmental Impact Statement, as written, raises far more questions than it answers, and does not bear the burden of proof. I have many concerns about the project and about the way it is depicted in this document.

1. PROJECT, SCOPE, and NEED

It is not clear what the scope of the project is. Is completion based on time frame or volume of extraction? The amount of gravel to be mined seems set at 1.2 million tons. City taxes on gravel are computed at finite tonnage. The EIS does not clearly state the project is completed when 1.2 million tons of gravel are excavated (if that is the case). P. ES-2 refers to time to "complete the mining."

Is the project needed? Does the good outweigh the harm? Gravel maps of the metro area show ample supplies, which contradicts some text in this report. The St. Croix River is a precious resource, a major national waterway, and significant tourism driver for the region. The EIS needs more discussion of the several sides of this proposal.



NOISE

Noise is one of the primary concerns regarding this project. The EIS is incomplete and misleading in addressing the issue. ANY noise increase is unacceptable, especially continuous, daily mechanical excavators and the constant din of rock on metal and truck engines.

I lived on the river when the Barton mine was in operation and it was loud on the river and in our home. Both my father and I remember clearly how the noise disrupted the tranquility of the river. The noise traveled outward from the mining operation, across the river, bounced back from the Wisconsin side, and reverberated down across the water. A fisherman in a boat, especially on the eastern side, definitely heard the machinery being operated up above.

It is no leap to understand that, no matter how one measures it, large diesel excavators filling 368 large unmuffled trucks a day with gravel some 1000 feet away from a National Riverway will generate significant noise on that river and in and around the homes in-between. Berms won't stop long, flexible low frequencies. The natural river experience will be significantly degraded for wildlife, for the thousands of day users and for tax-paying residents.

There is no mitigation possible other than to perhaps restrict mining to the area very close to Highway 95.

SOUND MEASUREMENT and PERCEPTION: The EIS states that noise levels adjacent to the site and in the St. Croix Riverway will be below applicable Minnesota Daytime standards.

Although Minnesota's noise regulations are based on dB(A), dB(A) measurements are faulty, according to my husband, a recording artist and audio engineer with 42 years experience.

"A-weighted measuring was created to help average sound within octaves. A-weighted measurements ignore and remove much of the low-end frequencies contained in noise, particularly the very frequency range produced by trucks and heavy machinery.

These waves/frequencies are of long length and travel far. They infiltrate the environment because these long waves are pliable, they travel around objects, and are not absorbed easily by the environment.

We have all heard thunder rolling down the valley. Those low frequencies permeate through the woods, through trees and homes. As an example, a 100 Hz low frequency sound wave is about 3 yards in length, and can wrap around most things in the environment, as sound waves are pliable. These frequencies will travel through the ground as well as through air and water.

dB(A) weighting is not the correct means to evaluate a project that produces mostly low-end sounds, as the measuring unit starts by de-emphasizing lower frequencies." Ref: <http://www.sengpielaudio.com/calculator-dba-spl.htm>

Human ears will quickly detect and be very aware of sounds not usually present in the natural environment. This contributes to the sense of loudness and of environmental disruption. Also the lower frequencies are the louder frequencies, and if the measure is A-weighted, the actual perception will be even greater.

The NPS noise monitoring on the St. Croix River occurred in summer; the level of 39.4 dB(A) is considered quiet. The trouble is, ***the ambient sounds on the river and the frequencies produced by mining operations are in very different parts of the frequency spectrum and will be acutely discerned by the ear.***

Minor note: Figures 59, 60 are not properly labeled, and we are not sure which weighted curve was used in the measuring. If they are using A-weighted, the actual loudness of the sound will be greater.

SOUND IN SURROUNDING HOMES: The EIS states that there will be a perceptible increase in noise levels at homes near the site. This means noise in our home for 12 hours a day for 12 weeks or more – in other words, the entire summer.

Our home is in the vicinity of Receptors 7, 8, and 9. The measurements and assumptions used in the EIS do not accurately reflect the low-frequency noise generated by earthmoving equipment, and make assumptions about terrain that do not include valleys and the sound-carrying capabilities of water. It will be loud and disruptive. Our home has many screen-only walls, covered with canvas blinds. We have no windows to close against the noise.

TRUCKS: Table 3, page ES-2 shows expected equipment use on the site. Elsewhere the EIS discusses that the reclamation activities on the site will take place concurrently with mining operations. Adding up, we get, on the mining site, on most days:

- 2 excavators/ front end loaders
- 15-25 haul trucks making as many as 368 trips per day
- 2 dozers
- 1 compactor
- 1 scraper
- 1 skid steer loader
- 2 graders
- 2 water trucks

The EIS does not take into account noise from idling trucks. Diesel truck engines are not usually turned off and on while waiting to be loaded.

Safety back-up alarms are not considered in the EIS, yet they are on every truck, grader, and excavator and are purposely set at the most acute level of hearing. There will be 10 machines on site and hundreds of truck trips made every day. The beep-beep-beep will constantly pierce through every neighbor's open windows along the river and into the ears of every human and animal.

UN-SOUND STATEMENT: The EIS states that noise would likely be audible on the St. Croix River "depending on weather conditions and other activities occurring on the river." This makes no sense in this context. The same is true on land or anywhere else. The noise *will* be audible no matter weather, motorboats, or the twitter of swallows.

SOUND IN NATIONAL PARKS: The National Park Service has asked that soundscapes be included in the EIS as a controversial issue. The St. Croix Scenic Waterway is operated by the NPS. The importance of natural sound in our parks and protected areas cannot be overstated. There may be shades of gray in terms of expectations for various levels of the St. Croix River, but a project of this scale should follow the larger letter of intent as stated in numerous Park Service documents and directives,, such as <http://www.nps.gov/policy/DOrders/DOrder47.html>:

Natural Sounds and the NPS Mission. *An important part of the NPS mission is to preserve and/or restore the natural resources of the parks, including the natural soundscapes associated with units of the national park system. Natural sounds are intrinsic elements of the environment that are often associated with parks and park purposes. They are inherent components of "the scenery and the natural and historic objects and the wild life" protected by the NPS Organic Act. They are vital to the natural functioning of many parks and may provide valuable indicators of the health of various ecosystems. Intrusive sounds are of concern to the NPS because they sometimes impede the Service's ability to accomplish its mission.*

Intrusive sounds are also a matter of concern to park visitors. As was reported to the U.S. Congress in the "Report on the Effects of Aircraft Overflights on the National Park System," a system-wide survey of park visitors revealed that nearly as many visitors come to national parks to enjoy the natural soundscape (91 percent) as come to view the scenery (93 percent). Noise can also distract visitors from the resources and purposes of cultural areas--the tranquility of historic settings and the solemnity of memorials, battlefields, prehistoric ruins, and sacred sites.

On page ES-10 and in several other places the EIS states “No significant impacts to nearby public natural and recreational resources have been identified. Potential impacts to these resources are addressed under the applicable sections of this EIS.” This is misleading to the reader. The noise of 600 truck trips a day, front end loaders, and other equipment is a significant impact to nearby public natural and recreational resources. Mining-related erosion could very significantly impact wetlands, seeps, and creeks that feed into the St. Croix River and adjacent NPS land.

WILDLIFE

The draft EIS fails to fully acknowledge the effect a 64-acre gravel mine will have on birds, fish, and other wildlife, both directly in the potential mining area and in the adjacent forest and riverine St. Croix corridor. The area proposed to be mined is one piece of a larger ecological web. Simply examining that small piece presents an inaccurate and incomplete view.

Endangered maple-winged mussels reside just below the mine in the St. Croix River. The EIS must not just show that no red-tailed hawks were on the property on particular sampling days. The EIS has a responsibility to examine the proposed project’s impacts to *all* related components of this fragile and precious ecosystem.

RECLAMATION

The need for reclamation is given as one of the two primary drivers of this project. This portion of the EIS needs far more context and details.

- Is reclamation needed at all? Has rehabilitation already taken place?

The public and the Council need to have an accurate history of the mining activity and the genesis of the rehabilitation situation in order to make an informed decision. As Lisa Schlingerman pointed out in the April 3 meeting, there is a question as to whether this site has already been rehabilitated. She quoted several documents from over the years as Dr. Zavoral interacted with officials after the Barton mining ceased, when the land should have been formally rehabilitated but was not. She noted that in 1998 Dennis O’Donnell recommended that, by that point, any efforts to rehabilitate the site would do more harm than good, as so much vegetation had already been established.

As noted on p 4-18, the site has populations of cottonwood, white pine and other trees, early succession species whose presence indicates that Nature is well on its way to reclaiming the land on its own. The land has not been disturbed for 30 years. Nonetheless, the EIS continually states or implies that the current land is in need of rehabilitation and that this mine project is the only way for it to be fixed.

- Timetable for reclamation is unclear.

The EIS states that there will be “several relatively short periods (a matter of days for each occurrence) when potential impacts to downstream water resources could occur.” In other words, a rainstorm could wash large amounts of gravel into streams and to the St. Croix.

How long will the seeds take to sprout? How long does it take for the vegetative stabilization to take effect?

How many trees will be planted and what type? IS there a survival guarantee (Tiller will replace dead trees up to x years, e.g.) How many years will it take for current stands of trees to be replaced?

- Is there an erosion issue now?
- What will reclamation do for future land use?

Table 3 describes Alternative 1 as rendering the site to be suitable for future uses allowed in the Development Code. However, as pointed out at the April 3, 2012 hearing, the land very well may be inappropriate for residential development given the nature of the soils.
- Why is it beneficial to clear 64 acres of mixed white pine hardwood forest, maturing deciduous forest, and grasses and replace them entirely with dry/mesic prairie?

The EIS emphasizes that the site holds noxious weeds (thistle, poison ivy) and secondary noxious weeds. Giant foxtail, spotted knapweed, lambsquarters, milkweed, and goldenrod, and tall and short non-native grasses form the basis of much of our Minnesota landscape. Please put this in context, perhaps a map showing lands of similar makeup in the area.

What is the benefit of dry prairie in a transitional landscape adjacent to a riverway of hardwood and pine? It is hard to believe that stripping 30 years of established vegetation and waiting at least several years after mining has finished before new vegetation is soundly established is an advantage to anyone except the gravel company and the Zavorals. If the land is to be restored to original prairie, it should be considered that the original state did not have 70-foot holes dug into it.

- Language

The EIS uses terms such as “largely disturbed,” “vacant,” and “open land” to describe the site. A cursory glance at the site from Highway 95 or Quinnell shows open woodlands with well-established grasses and stands of mature trees, resistant to erosion and maturing into a more natural state. This is an important distinction to make: this is not a bare, scarred tract of land, with streams of gravel eroding into streets and streams with the slightest snowmelt. These are maturing open woodlands.

THISTLES & BUCKTHORN

Thistles and buckthorn are invasive species far more devastating to our landscape than the primary plant populations presently found on the Zavoral property. They thrive in disturbed areas. The proposed mine will disturb at least 64 acres of land.

The proposed project relies heavily on seeding to stabilize the land after the gravel has been stripped away. How will thistle and buckthorn populations be limited? How will Alternatives 1, 3, and 3a be better at controlling these threats than Alternative 2 (no build)? Again, this land has not been disturbed for some three decades.

LIGHTING

The draft EIS only mentions lighting once, stating that any light will be kept to a minimum and should be shaded. This is insufficient information.

Human lighting fundamentally changes the natural environment. This report fails to address the issue of light and its impact on the riverway. A large mining operation, working from 7 am to 7 pm at least 12 weeks of the year will likely have need for artificial lighting. Traffic safety would seem to demand substantial lighting at the mine's entrance to Highway 95. A single guard shack light – even if shaded - will affect the night sky and be directly viewable at the least from Standing Cedars, and will thus be affecting the natural setting of the St. Croix Valley Riverway.

Details of all proposed lighting should be included, including quantity, placement, types of bulb and wattage.

DUST and PARTICULATES – SUFFICIENT WATER?

In Table 3 (Page ES-8) the EIS states that uncontrolled emissions will likely exceed NAAQS and nuisance dust levels, and that these may have an adverse impact on vegetation and fauna (and, presumably, mammalia).

Tiller's mitigation plan is to keep the mining activity watered down with water drawn from an on-site well. However, with an allowable well draw of 10,000 gallons per day, it is estimated that Tiller will only be pumping water for 15 minutes per day. Will Tiller reasonably be able to keep dust from all its gravel (that being mined and that waiting for ground cover to grow) under control with just 8-20 minutes of pumping per day?

WATER – WELLS

The EIS states that Alternatives 1, 3, and 3A will have “no significant effects on area wells.” Well testing was not sufficient, especially for a project of this scope. All wells between the proposed mining area and the river – those most vulnerable to infiltration and compromise – should have a baseline water flow and content established, with re-testing throughout the life of the project. It is incumbent upon the project operators to show that residential well water will not be harmed. Of the tested wells, only the Zavoral Cabin well lies between the mining area and the river, and as the EIS notes, is in a deep aquifer. It is also on the northern edge of the proposed mine. Other homeowners have wells that are far more vulnerable.

No mention is made of remediation should taxpaying homeowners find their water quality or quantity compromised after mining begins. Baselines need to be established and Tiller Mining held accountable.

WATER - DRAINAGE and EROSION

- The topography is such and wetlands so inter-related with the protected St. Croix that the EIS has a responsibility to consider all waterways and wetlands between the proposed mine and the river. Adjacent wetlands were deemed out of the project area by the EIS, but water discharged from the site goes into those wetlands and affects them directly. The scope needs to be broadened.
- The EIS glosses over the threat of erosion, stating that stormwater and erosion control best management practices will minimize this risk. More concrete plans and methods need to be included, as well as specific plans for monitoring and remediation.

- Section 4.6 discusses watersheds of the three main creeks in the area and notes that all 3 are considered wetlands downstream of the site. There are other creeks as well (one runs through our property) and all are vulnerable to run-off generated from the mine. The “highly erodible” soil is also vulnerable. This is of great concern when the proposed project seeks to remove 1.2 million tons of gravel from 64 acres of adjacent land, and rely on grading and fast-growing grass to keep the water from running off. Given Tiller Corp.’s failure to properly grade a berm at Grantsburg, this is not a reassuring plan.
- The EIS states there are limited data for water quality. It is incumbent upon the EIS to provide accurate, thorough data on creeks and waterways that could potentially be affected by this massive project to establish benchmarks for evaluation .

TRAFFIC SAFETY

Traffic, especially at the Highway 95/97 intersection, is of great concern. The EIS uses annual averages and, as was noted at the April 3 hearing, presents a simplistic analysis of the potential for crashes. It seems that a traffic study conducted in both summer and winter would yield more accurate data for such an important component of this project. The intersection becomes far more complicated than just trucks from Franconia making a right turn, or return trucks pulling left onto 95. If this project goes forward, trucks will be pulling out of the mine, crossing oncoming 95 traffic from both directions as they swing into the right turn lane to turn onto 97. They may not yield right-of-way as they should. Oncoming traffic from both directions and traffic turning north from 97 will be vulnerable to collision.

Below, a gravel truck traveling east on Highway 97 in June, 2011. The truck repeatedly crossed the center line and veered off the right-hand shoulder. The left-hand turn signal was on from Manning Trail to Highway 95. In the left picture, the truck is in the oncoming lane at the top of a rise, unseen by oncoming traffic. In the photo on the right, the truck has crossed completely into the oncoming lane as it approaches the Scandia Elementary school crossing,



PROPERTY VALUES

I am not an expert in real estate or property values. However, it only takes common sense to understand that 2006 and 2007 comparables from suburban subdivisions do not bear any relevance to current market values or potential loss of value to the unique rural homes adjacent to the proposed mine.

No bank would allow the comparables used in this EIS. Scandia should demand that the preparers of this report provide data that are valid in the current market, use the most appropriate and accurate data

evaluation methodologies, and draw from a large enough sample base to provide statistically meaningful results. (Accurate spelling would also add to the firm's credibility. A "perspective" buyer?)

VISUAL IMPACT

The EIS statement that "little change would occur in the scenic attractiveness of the overall landscape" due to berms is specious. Stands of trees will be ripped out, including about 5 wooded acres near Highway 95, a Scenic Byway, that are on previously unmined land. More explanation is needed to justify this statement, as well as a timetable. When will the berms be removed?

We are seeing reclamation from the Barton mine now, and we know what 20-30 years after mining looks like. What is different is the prevalence of invasive species; it is likely that buckthorn and thistle will dominate the landscape for years in lieu of meadow and woodland currently in place. The EIS implies that the reclamation will restore the landscape: in fact, it will replace the landscape with something that will look quite different and less pleasant for many years.

BENEFITS OF ALTERNATIVE 2

Throughout the draft EIS, the "No Build" option gets short shrift. The EIS does not accurately or adequately reflect the advantages of not allowing a gravel pit to operate in a rural wooded setting next to a national park.

The phrase "no reclamation will occur" is mentioned repeatedly under Option 2 assessments, yet there is very little – if any – mention of the many advantages (or disadvantages) of maintaining the status quo: that the land will continue to mature on its own, that healthy stands of trees will remain alive and in place, there won't be a 70-foot pit carved into the ground, that drivers, cyclists and pedestrians will be safer, that the St. Croix Riverway soundscape will not be substantially degraded, that critical buffer eco-zones will remain intact, potentially toxic dust won't be released into the air, etc.

It is important that this document appropriately and accurately summarizes the benefits and detriments of all options.

For example, Table 3 cites as one of the four major impacts of Alternative 2, "3.1 acres within Riverway District & scenic easement would remain unreclaimed." Another way to phrase this would be "3.1 acres...would remain undisturbed and continue to mature, thereby contributing to the health of a fragile ecological corridor and preventing erosion."

I thank the Commission very much for seeking public comment and making this process transparent and open to all concerned. I'm especially grateful for the online resources made available, and the posting of minutes and presentations.

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