

WORSE THAN STATED AS WELL. WE LIVE WITHIN THAT  $\frac{1}{4}$  MI RADIUS WHICH INCLUDES MY SISTER WHO HAS C.O.P.D. OUR FEAR & CONCERN IS THAT HER CONDITION COULD WORSEN DUE TO POLLUTION CAUSED BY MINE ACTIVITY, SHOULD THIS UNFORTUNATELY OCCUR, LEGAL ACTION ON HER BEHALF WOULD BE SERIOUSLY CONSIDERED.

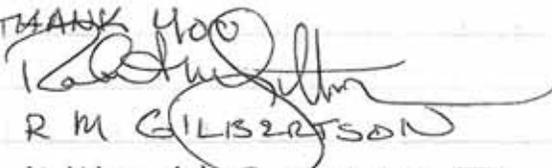
① OTHER QUESTIONS:

- ① WILL TILLER SUE IF DENIED PERMIT?
- ② IS COUNCIL CONCERNED ABOUT BEING SUED?
- ③ DOES LEAGUE OF CITIES PAY LEGAL COSTS IF MEMBER CITY IS SUED?
- ④ WHY WAS ZAVALA PIT CLOSED IN THE FIRST PLACE?
- ⑤ WHY DIDN'T OR DON'T THOSE SAME REASONS APPLY NOW?
- ⑥ WHY WASN'T ZAVALA MADE TO CLEAN-UP PIT OR FINED?
- ⑦ IF TILLER IS ALLOWED TO RESUME MINING, WILL IT BE OPEN TO PUBLIC OR FOR TILLER'S USE ONLY?
- ⑧ WHAT IS TILLER'S HISTORY OF PROPER & SAFE MANAGEMENT?  
(A VERY APPROPRIATE QUESTION IN LIGHT OF THEIR CURRENT PROBLEM OF A BLOWOUT OF BERM AT THEIR SITE IN NISC)
- ⑨ IN SPITE OF TILLER'S ASSURANCES, WONT THERE BE MAJOR & REAL CONCERNS ABOUT POLLUTION FROM BLOWOUTS AT ZAVALA SITE?
- ⑩ 1.2 MILLION TONS TAKEN @ 4<sup>00</sup> OR MORE @ TON. AND HOW MUCH DOES SCANDIA COMMUNITY RECEIVE IN COMPENSATION FOR ALL THE SACRIFICES & INCONVENIENCE?
- ⑪ DOES SCANDIA HAVE TO MONITOR TRUCKS, ETC. AT OWN EXPENSE?
- ⑫ IS THERE NOW A POSSIBLE 1000 GAL FUEL TANK TO BE ON MINE AFTER ASSURANCES THIS WOULDN'T HAPPEN?
- ⑬ HOW DO YOU TAKE OVER 1 MILLION TONS OF MATERIAL FROM AN AREA ALREADY DEEP AND STILL RESTORE IT TO ANY USABLE CONDITION? IN ADDITION, WITH A MINIMUM OF 4" TOPSOIL OVER SAND, IT WOULD TAKE MASSIVE AMOUNTS OF WATER TO ESTABLISH + MAINTAIN PLANTED VEGETATION OVER A 114 ACRE SITE.

- ⑭ WHY DOESN'T NEW COMP PLAN SUPERSEDE OUTDATED PLAN? (PARTICULARLY IN A MATTER THIS IMPORTANT)
- ⑮ ARE RESPONSES MADE PUBLIC?

I FEEL ITS VERY IMPORTANT TO ASK IF ALL OUR COUNCIL MEMBERS CAN BE TOTALLY OBJECTIVE IN THEIR DECISION MAKING. I MENTION THIS BECAUSE I RECALL STATEMENTS BEING MADE BY TIM SCHNEIDER WHILE STILL CAMPAIGNING TO BE ELECTED TO THE SCANDIA CITY COUNCIL. TO PARAPHRASE: HE SAID SCANDIA HAS THE SAND SO WE SHOULD USE IT. I BELIEVE HE ALSO SAID SCANDIA NEEDS IT.

WHILE I TOTALLY DISAGREE WITH HIS STATEMENTS, I RESPECT HIS HONESTY. HOWEVER, I BELIEVE ALL OUR COUNCIL MEMBERS + MAYOR HAVE THE BEST INTERESTS OF SCANDIA, ITS CITIZENS, AND SURROUNDING COMMUNITIES AT HEART. SO, IN LIGHT OF THE NEGATIVE IMPACT, BOTH REAL + POTENTIAL TO THIS AREA PLUS THE OVERWHELMING PUBLIC OPINION EXPRESSING OPPOSITION TO THE RE-OPENING OF THE ZAUBERL MINE, I BELIEVE THE COUNCIL WILL DENY TILLERS PERMIT ONCE AND FOR ALL AND THUS WILL PROTECT THIS AREA FOR OUR FUTURE GENERATIONS.

THANK YOU  
  
R M GILBRATSON  
16140 N. SCANDIA TR.  
SCANDIA, MI, 55073  
651-433-5639



Dear Scandia Board,

I am writing this letter to state my opposition to the proposed re-opening of the Zavoral/Tiller Mine near the conjunction of highways 95 & 97 in Scandia.

That junction alone would be full reason for me to insist that precautions be taken to prevent an already questionably dangerous intersection from becoming even more dangerous! The volume of added truck traffic could actually require a stop light at the intersection. Otherwise I see no alternative to the traffic problem were that mine reopened.

I also feel strongly that the EIS fell far short of addressing the challenges that will be put on the entire area due to the re-opening of the mine. It did not take into consideration the displacement of wild life adequately.

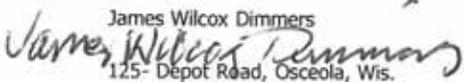
Nor did it address the noise pollution. Residents who have lived in basically natural sound settings will be bomb-blasted by truck sounds they did not know when they purchased their property would be a result of the reopening of Zavoral/Tiller mine. They are victims to something they should have never been asked to consider!

It did not adequately address the air and dust pollution. This chemical they propose to put on the land has a direct impact on stream water and the population of trout in the streams. I ask what it will do to human lungs? Anyone with a breathing condition will suffer extensively because of that mine. I for one and I will not let it go of whatever action I might be allowed to take towards their operation!

The land value study, if that is what one could call it, was so completely inaccurate I wonder how they thought intelligent people would fall for it! The lands surrounding that site stretching all the way into Wisconsin are of great value for what they have now, an interrupted view of a vast section of the St. Croix River Valley. To compare some western suburb to Northern Washington County land values is bogus! It WILL affect in a large amount the land values in the vicinity. Mounds of gravel will NOT enhance that aspect one bit and I believe will hinder tourists traffic to a measurable degree.

I could go on and on with many more reasons to oppose this conditional use permit but feel I have made for now enough clear reasons for NOT giving them the go ahead. Please consider what this would do to our lives out here and keep them away from the St. Croix River!

Thank You,

James Wilcox Dimmers  
  
125- Depot Road, Osceola, Wis.



May 17, 2012

Dear Scandia Board,

This is my second letter to you concerning the Zavoral/Tiller Mine proposed near the junction of highways 95 & 97.

At the last meeting on April 3, 2012 I suggested that Tiller Corp. hire an Artist to paint a rendering of what the site will look like when they are completed with their operation so we can 'see,' and not be expected to 'visualize,' what they say is their plan. Now I am requesting it. I think the public deserves this and that it is the responsibility of Tiller Corp. to stand behind what they 'say' they will do. Their track record is not a comfort in this aspect in the least!

Another part of my reason for this request stems from the urgency I feel after the failure of a berm at their (Tiller Corp) fracking site in Grantsburg. That sediment will filter into the St. Croix River. This Zavoral/Tiller site is on the edge, the vulnerable edge, of the St. Croix River, and it is of utmost importance that there is not a repeat of the washout that occurred some years back recorded in Mrs. Schlingermann's diary. It was right at the northern edge of their property and she clearly describes the disaster.

Thank You,

James Wilcox Dimmers  
*James Wilcox Dimmers*  
125- Depot Road, Osceola. Wis

Scandia Town Board Chairman  
City of Scandia  
Scandia Community Center  
Scandia MN, 55073



May 17, 2012

We would like to raise a voice on behalf of the creatures, flora and fauna of the natural world that would be endangered and "at risk" if the Zavoral-Tiller sand mine were to be allowed to go into operation in Scandia Township.

It is unfathomable that local citizens of Scandia and neighboring communities would not value it's "crown jewel " -having a scenic and wild river flowing along it's Eastern border. Many communities would give anything to duplicate this.

The recent incident in Grantsburg, of Tiller being responsible for spillage of silica-contamination into the watershed, is only a sample of what could very well happen on the St. Croix River and in everyone's back yard. It is evident from this incident that Tiller never took protective measures seriously and really had nothing in place to monitor or prevent such a catastrophe from happening.

Once nature is taken away, it will never be returned.

We appeal to those in power to rise up to a higher level of thinking, to noble ideas of stewardship and championing Scandia's priceless assets for future generations to come.

We appeal to those in power to **vote against** Tiller mining-scaring the fragile ecosystem and protective river-corridor that is integral to the river's health and well-being.

We appeal to a sense of ethics and ethics in protecting nature lest we forget our interdependence and connectedness to what was here before us.

Respectfully,

*Carol Pierce*  
*Lela Pierce*

May 17, 2012

Anne Hurlburt, City Administrator  
City of Scandia  
14747 209th St. NO.  
Scandia, MN. 55073



Dear Ms. Hurlburt,

Thank you for the opportunity to comment on the Zavoral Mine EIS.

My primary concern with the EIS is the 'probability of major storm event' in reference to Alternatives 3 and 3A (p. ES-6).

The period of risk in Alternatives 3 and 3A seems almost irrelevant when you consider that storm risk will remain high for years until vegetation is reestablished after site restoration.

Recent weather patterns are trending to more frequent extreme storm events – see [http://www.twincities.com/localnews/ci\\_20639967/severe-rains-happening-more-often-midwest-study-says](http://www.twincities.com/localnews/ci_20639967/severe-rains-happening-more-often-midwest-study-says) from today's Pioneer Press.

I do not believe that we should be relying on the traditional 100 year flood event predictions in planning for storm event management. It would seem that adequate protection for the St. Croix River should be more on the level of storm planning for a dam than for a temporary site as in the current EIS. For example, PMP (Probable Maximum Precipitation) for each month of the year should be the build-to standard, not historic 100 year flood, which has no real meaning in a period of unpredictable climate shift.

As a commuter, I also have a concern with traffic impact. The all-way stop at 97 and Olinda Trail is susceptible to rush-hour backups. Adding many more semis to the mix will likely create long backups and commuter diversion to side roads such as 220th that are not designed to handle high-speed traffic. I anticipate the need to finance upgraded traffic control at that intersection if the CUP is granted.

Yours truly,

A handwritten signature in black ink that reads "Jean Houlding". The signature is written in a cursive style with a large, sweeping flourish at the end.

Jean Houlding  
21922 Pomroy Av N  
Scandia, MN 55073  
651-433-5192



## Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | 651-282-5332 TTY | [www.pca.state.mn.us](http://www.pca.state.mn.us) | Equal Opportunity Employer

May 18, 2012

Ms. Anne Hurlburt  
Administrator, City of Scandia  
14727 209<sup>th</sup> Street North  
Scandia, MN 55073

Re: Zavoral Mine and Reclamation Project Draft Environmental Impact Statement

Dear Ms. Hurlburt:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement (EIS) for the Zavoral Mine and Reclamation Project (Project) located in the city of Scandia, Washington County, Minnesota. The Project consists of the operation of a 64-acre gravel mine. Regarding matters for which the Minnesota Pollution Control Agency (MPCA) has regulatory responsibility and other interests, MPCA staff has the following comments for your consideration.

### **Section 2.0 Permits and Approvals**

Please note that facilities that are eligible for the Nonmetallic Mineral Mining & Associated Activities NPDES/SDS General Permit (MNG490000, formerly the 'Construction Sand and Gravel, Rock Quarry and Hot Mix Asphalt Production Facilities General Permit'), a separate General Permit for Construction Stormwater Activity is not required. However, if the applicant chooses to be covered by the General Permit for Industrial Stormwater Activity (MNR10000) because they do not dewater, have multiple sites, or perform other activities covered under the Nonmetallic Mining & Associated Activities General Permit, then the initial construction phase must be covered by the General Permit for Construction Stormwater Activity.

We appreciate the opportunity to review this project. Please be aware that this letter does not constitute approval by the MPCA of any or all elements of the Project for the purpose of pending or future permit action(s) by the MPCA. Ultimately, it is the responsibility of the Project proposer to secure any required permits and to comply with any requisite permit conditions. If you have any questions concerning our review of this Draft EIS, please contact me at 651-757-2508.

Sincerely,

A handwritten signature in cursive script that reads "Karen Kromar".

Karen Kromar  
Planner Principal  
Environmental Review Unit  
Resource Management and Assistance Division

KK:mbo

cc: Craig Affeldt, MPCA, St. Paul  
Doug Wetzstein, MPCA, St. Paul

**Anne Hurlburt**

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**From:** Jan and Bruce [jbtock@frontiernet.net]  
**Sent:** Friday, May 18, 2012 10:36 AM  
**To:** council@ci.scandia.mn.us

This is in regard to the proposed mining project and EIS. I think the various speakers at the public meeting made good cases for the inadequacy of the EIS investigations of the noise, air and water issues. Same for the impact on property values. For me the most significant question is: how can anyone speak of rehabilitating a 50-70 foot, immense hole in the ground? I think each of you have a mandate to tend to the land within Scandia boundaries, to be good caretakers of this land for us and future generations of Scandia residents. And in keeping with our comprehensive plan that means to vote against this mining project.

Jan Tockman  
21788 Pomroy Ave. N  
Scandia, MN

## TILLER ZAVORAL MINE Draft EIS RESPONSE

May 18, 2012

Anne Hurlburt, City Administrator  
City of Scandia  
14727 209th St. N.  
Scandia, MN 55073  
[a.hurlburt@ci.scandia.mn.us](mailto:a.hurlburt@ci.scandia.mn.us)

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.

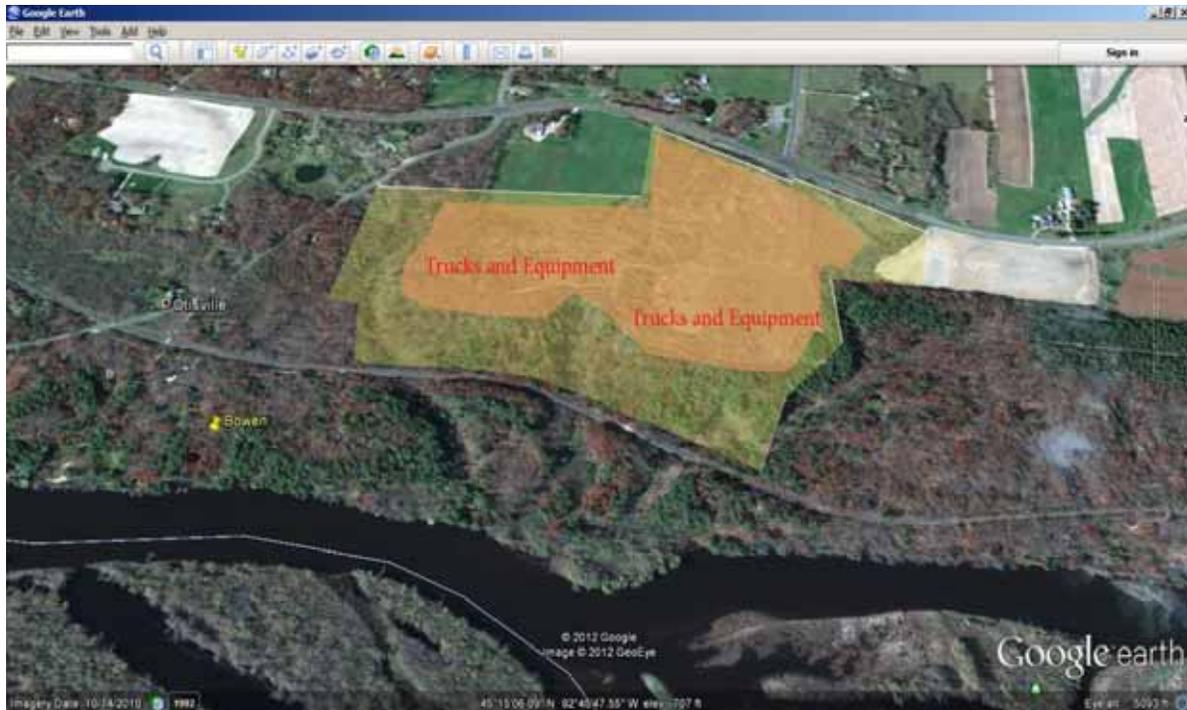
I feel this draft Environmental Impact Statement is incomplete and at times misleading. It glosses over key issues. The strict interpretation of the project's boundaries ignores the project's effects on the noise and ecology of the protected St. Croix River and surrounding areas, and on traffic and road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

Missy Bowen  
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Scandia, MN  
c/o 3570 Somerset Dr.  
New Orleans, LA 70131  
[missybowen@gmail.com](mailto:missybowen@gmail.com)

**Anne Hurlburt**

---

**From:** Ann Bancroft [ann@bancroftarnesen.com]  
**Sent:** Friday, May 18, 2012 11:23 AM  
**To:** a.hurlburt@ci.scandia.mn.us  
**Subject:** Scandia Mine

Dear City of Scandia:

I believe that the EIS for the Tiller Mining and Reclamation proposal does not adequately present the facts concerning impacts to this fragile and important site. Please request that Tiller Mining Corporation revise their analysis of impacts to this fragile area that borders a National Park. The revised proposal should include 100 foot set backs from the fragile boundary to our National Park, the St Croix River. The current EIS does not adequately consider impacts to the system of life on and near the mine site, including impacts to waters that feed the St Croix. Reports submitted by Scott Alexander from the University of Minnesota should be taken very seriously. They offer sound science that projects impacts to the seeps and streams below the site.

The EIS misrepresents the potential impacts to Scandia, and Marine on St Croix residents too. We need to know how truck traffic, noise and dust, as well as impacts to property values, and classifications will change the way we live in Scandia, and Marine. Since most of us live outside the 1 mile radius to the site, while Tiller's operations span all of Scandia, the scope of impact should be enlarged.

Recent gravel truck accidents at 95/97 intersection, police reports concerning gravel truck infractions in Scandia since January, and the Grantsburg Tiller mine wash-out should raise a flag of alarm to all who are responsible for making critical decisions on behalf of our community's future.

Finally, if the City Council allows the eventual Conditional Use Application to be considered from the old, and now 4-years defunct Comp Plan, then the EIS and conditions for mining should reveal how this ONE MINING PROJECT will or won't disrupt life for us (residents and businesses), for visitors to the river, and for commuters driving through Scandia and Marine who must follow the current comp plan. As I read the EIS, it is very difficult to determine what the real impacts to our life will be. I would like the city to create a Scandia-wide overlay showing the impacts of this one mine. This proposal should be reviewed like all building permit proposals in Scandia. The outcomes of this mine operation should be very concrete before a permit is issued, including the future use of the mine site, which looks to be a complete loss of both habitat, as well as usable land for any purpose except additional mining.

How will our ability to thrive as a community under the current Comp Plan be altered by one property owner and one business whose proposal serves a poorly planned, and potentially dangerous mining operation?

Comment #50, Page 2 of 2

Regards,

Ann Bancroft

BAE Access Water 2012

<http://www.yourexpedition.com>

Ann Bancroft Foundation

<http://www.AnnBancroftFoundation.org>



## United States Department of the Interior

NATIONAL PARK SERVICE  
St. Croix National Scenic Riverway  
401 Hamilton Street  
St. Croix Falls, Wisconsin 54024

IN REPLY REFER TO:

May 18, 2012

L7615 (SACN)

City of Scandia  
Attention: Anne Hurlburt, City Administrator  
14717 209<sup>th</sup> St. N.  
Scandia, Minnesota 55073

Dear Ms. Hurlburt:

The National Park Service (NPS) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Zavoral Mining and Reclamation Project. We appreciate the opportunity to provide comment, as well as the opportunity to serve on the Project Advisory Committee (PAC) for development of the EIS. The transparency afforded by the City of Scandia during the environmental process for this controversial proposal has been exemplary. As you know, the proposed mine is adjacent to the Lower St. Croix National Scenic Riverway (Riverway), which is managed by the NPS. If approved, the proposed mine would have significant impacts on the Riverway. Therefore, the NPS is opposed to issuance of a Conditional Use Permit for the proposed Zavoral Mine.

### **Introduction**

In 1968, the US Congress passed legislation entitled the Wild and Scenic Rivers Act (Public Law 92-542 as amended; 16 U.S.C. 1271-1287; WSR). Eight special rivers across the nation were originally designated as "Wild and Scenic" by this groundbreaking environmental law. Of those eight rivers, only one, the St. Croix, was to be managed by the NPS. Thus the St. Croix River became a full-fledged unit of the National Park System. As a national park unit, the St. Croix River is guided by the same management policies as better known national park areas such as Yellowstone, Gettysburg, Grand Canyon, Statue of Liberty, Apostle Islands, and Voyageurs. The St. Croix River is a "national park" for all people, but it especially serves the Twin Cities Metropolitan Area. Before we comment on the specifics of this DEIS, please know that, conceptually, activating a mine on the boundary of the Riverway is no different than activating a mine on the boundaries of any one of the parks listed above (or the almost 400 other national park units throughout the United States). In creating this national park, the U.S. Congress recognized that the St. Croix River is very special and stands out amongst the thousands of rivers found throughout America.

The mission of the NPS is to "...to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (Public Law 39 Stat. 535, U.S.C., Title 16 Sec. 1)

The concerns of the NPS fall into three main areas; 1) noise and its impacts to wildlife and recreational users; 2) erosion and sedimentation and impacts to water quality; and 3) cumulative impacts to the Riverway.

### **Noise**

The DEIS uses State of Minnesota noise standards as a basis for comparison in evaluating impacts to the Riverway. It applies NAC-1 standards to the Riverway and campsites near the proposed mine. The NAC-1 standards for “residential” areas include designated camping and picnicking areas and allow a  $L_{50}$  sound level of 60 decibel A-weighted (dBA). A sound level of 60 dBA would result in speech interference based on 95% speech intelligibility of normal voice communications at 2 meters (US EPA, 1974). In other words, if the NAC-1 standard applied to the Riverway, allowable noise levels would mean that two people canoeing side-by-side would not be able to carry on a conversation. As previously stated in our comments on the Preliminary DEIS, the State standards are clearly not in keeping with protecting the recreational value of the Riverway and should not be applied to the area.

The noise standards that do apply to the Riverway are from the 2006 NPS Management Policies (NPS, 2006). The 2006 NPS Management Policies require us to “preserve, to the greatest extent possible, the natural soundscapes of parks...and protect natural soundscapes from degradation due to noise.” Further, they require that the “natural ambient sound level – that is, the environment of sound that exists in the absence of human-caused noise” be used as the baseline condition and standard against which current and projected conditions are measured and evaluated. Because the DEIS uses State of Minnesota NAC-1 as the standard for comparison, instead of the natural ambient sound level, the DEIS greatly understates the impact that noise from the proposed mine would have to the Riverway.

The Final EIS should use natural ambient sound levels as the standard of comparison rather than continuing to apply State of Minnesota noise standards to a unit of the National Park System. The Natural Ambient Sound Levels on this stretch of the Riverway can reach 35 dBA during the day and 27 dBA at night (NPS, 2011). The Median Natural Ambient ( $L_{nat}$ ) in dBA for this section of river is 35.1 dBA during the day (NPS, 2011). Therefore, the projected increase from natural ambient with the mine operating would be from 5.6-6.9 dBA. The final report for 2011 acoustical monitoring at the Riverway is enclosed for use in correcting the noise analysis in the FEIS.

### Impact of Noise to Wildlife

The impact of noise to wildlife should have been considered in Section 4.5 of the DEIS; Fish, Wildlife, and Ecologically Sensitive Species and Threatened and Endangered Species. The document currently only references wildlife displacement that would result from the mine. However, the noise associated with the mine operation would also have an impact on area wildlife.

The preservation of an area’s acoustical environment is vitally important to overall ecosystem health. The peer-reviewed literature widely documents that sound plays a critical role in intra-species communication, courtship, predation and predator avoidance, and effective use of habitat. Additionally, similar studies have shown that wildlife can be adversely affected by sounds and sound characteristics that intrude on their habitats. While the severity of the impacts varies depending on the species being studied and other conditions, research strongly supports the fact that wildlife can suffer adverse behavioral and physiological changes from intrusive sounds (noise) and other human disturbances. Documented responses of wildlife to noise include increased heart rate, startle responses, flight, disruption of behavior, and separation of mothers and young (Selye 1956, Clough 1982, National Park Service 1994, US Department of Agriculture 1992, Anderssen et al. 1993).

When noise elevates ambient sound levels, signals that might otherwise have been detected and recognized are missed. Noise is said to mask these signals. Masking degrades an animal's auditory awareness of its environment, and fundamentally alters interactions among predators and prey. Masking also affects acoustical communication. Animals have been shown to alter their calling behavior and shift their vocalizations in response to noise (Brumm and Slabbekoorn 2005; Patricelli and Blickley 2006; Slabbekoorn and Ripmeester 2008; Warren et al. 2006). These shifts have been documented in a variety of signal types: begging calls of bird chicks (Leonard and Horn 2007), alarm signals in ground squirrels (Rabin et al. 2006), echolocation cries of bats (Gilman and McCracken 2007) and sexual communication signals in birds, frogs, and toads (Brumm and Slabbekoorn 2005, Patricelli and Blickley 2006, Warren et al. 2006, Slabbekoorn and Ripmeester 2007, Parris et al. 2009). Vocal adjustment likely comes at a cost to both energy balance and information transfer; however, no study has addressed receivers. Some species are unable to adjust the structure of their sounds to cope with noise even within the same group of organisms (Lengagne 2008)."

Section 4.15 of the DEIS, Noise Analysis discusses potential changes in sound level up to approximately 3 dBA. This has the potential to cause a 50% loss in listening area for wildlife. Listening area is the area of circle whose radius is the alerting distance and is pertinent to wildlife that search for sounds (Barber, Crooks, & Fristrup, 2010).

As stated in our December 2011 comments on the Preliminary DEIS, the document should analyze the impact of noise to wildlife in the entire affected area. Sensitive bird species likely to be found in the affected area include Black-billed Cuckoo, Wood Thrush, Rose-breasted Grosbeak, Ovenbird, Eastern Meadowlark, Brown Thrasher, and Louisiana Waterthrush (Personal Communication between Jill Medland, Environmental Coordinator, NPS and Robin Maercklein, Biologist, NPS).

#### Impact of Noise to Recreational Enjoyment

Visitors to national parks often indicate that an important reason for visiting the parks is to enjoy the relative quiet that parks can offer. In a 1998 survey of the American public, 72% of people identified opportunities to experience natural quiet and the sounds of nature as an important reason for having national parks (Haas & Wakefield, 1998). Additionally, 91% of NPS visitors "consider enjoyment of natural quiet and the sounds of nature as compelling reasons for visiting national parks" (McDonald, Baumgartner, & Iachan, 1995). Table 42 acknowledges that mine operations would increase ambient noise levels from 1.3-2.6 dBA and that this increase "may be perceptible." In addition, it correctly points out the noise from the mine would be at a higher frequency than existing, increasing the likelihood that it would be audible.

#### **Erosion and Sedimentation**

Soils at the proposed mine site are sandy and the area immediately to the east of the site down to the St. Croix River has very steep slopes and bluffs that are at a high risk of erosion. Portions of the proposed mine site discharge to three different creeks that run down the steep slopes to the St. Croix River. The DEIS correctly acknowledges that the potential for erosion exists after the start of construction when soils are exposed for overburden removal or other activity. Mitigation measures listed in the DEIS that would reduce the potential for erosion and sedimentation include Best Management Practices (BMP's) such as double rows of silt fences, vegetated buffer strips, and berms that would be constructed on the north and south ends of the mine. The purpose of the proposed berms is to divert run-off so that it would drain into the mine rather than off-site. These BMP's would be developed in a Stormwater Pollution Protection Plan.

The DEIS reflects the good intentions of the proposed mine operator to avoid sedimentation impacts to the St. Croix River. However, intentions expressed during the permitting phase for projects like these are not always fully implemented during project operation. The NPS, Wisconsin Department of Natural Resources (WDNR), and Burnett County have been involved in responding to a significant sediment discharge to the St. Croix River from Soderbeck Pit (frac sand mine) near Grantsburg, Wisconsin, that occurred in April 2012. Because the Riverway runs through the City of Scandia and the City has zoning authority that can help protect the Riverway, the NPS believes we have an obligation to inform you of this event. Soderbeck Pit is also operated by Tiller and was to be internally drained. However, an improperly constructed berm around a washing pond leaked water laden with very fine sediment off-site and into an adjacent wetland. The wetland is drained by a creek that flows into the St. Croix River. At least 4 days of sediment discharge to the St. Croix River occurred before the problem was discovered by the proper authorities and addressed by Tiller. The owner of the mine has received a notice of violation from the WDNR for 1) discharging to a surface water without a permit, 2) failure to maintain dikes and berms utilized for holding or diverting wastewater, 3) failure to maintain physical controls (BMP's) to prevent discharge, and 4) failure to notify the WDNR of facility expansion (WDNR, 2012). Given the vulnerability of the sandy soils and steep slopes at Zavoral site, the potential for a similar sedimentation event exists, brought about by rainfall rather than wash water.

On a closely related note, the NPS remains concerned about the potential for slope failure. The "wall" that would be created between the mine and the steep slope to the east that goes down to the river seems vulnerable to collapse; at least until reclamation would be complete and vegetation is reestablished. A slope collapse could have a major impact on the bluff topography and the water quality of the St. Croix River.

### **Cumulative Impacts**

Cumulative impacts are the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what entity undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The DEIS does not address cumulative impacts to the Riverway or any other resource.

The NPS urges the City of Scandia to consider cumulative impacts in reaching a decision. Reasonably foreseeable actions that should be considered include the impacts (including traffic and noise) of additional gravel hauling trucks when those from the Zavoral site are added to those already on the road from other sites and companies; increased duration of truck traffic on the roads when hauling is complete from Zavoral and hauling is reinitiated from Tiller's Franconia and/or Dresser mine sites; the potential for future amendments to be made to any permit that the City of Scandia may issue to allow for the mine (including those that might allow on-site washing or extraction of other mineral resources). The Soderbeck Pit adjacent to the Riverway in Grantsburg, Wisconsin, is also on a dormant, unreclaimed sand and gravel mine. It was described in the March 11, 2011 *Notice of Public Hearing* and April 7, 2011 *Conditional Use Permit* issued by Burnett County as a "gravel pit." However, frac sand also exists on the site and is now the primary mineral being extracted, processed, and transported out by trucks. Information provided to the NPS by the Minnesota Geological Survey shows that Jordan Sandstone lies within 50 feet of the land surface at the Zavoral site. Jordan sandstone is quartz-rich and, of all the sandstone types, is the highest valued for the frac sand it yields (Personal Communication, Jill Medland, NPS and Tony Runkel, Minnesota Geological Survey). Mining gravel from the Zavoral site would make the Jordan sandstone more accessible and economically viable to mine. The possibility that, if permitted, the Zavoral Gravel Mine could be converted to a frac sand mine should be considered. The rate of frac sand mining in Wisconsin has been likened to that of the gold rush. The intensity at which it is mined is much greater than with the gravel mining that we are more familiar with in the St. Croix Valley.

## Conclusion

As stated above in the Introduction, the mission of the NPS, as spelled out in the 1916 Organic Act, is "...to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (Public Law 39 Stat. 535, U.S.C., Title 16 Sec. 1). The 2006 Management Policies provide the most important guidance the NPS has for achieving our mission. In terms of noise, NPS Management Policies state that "The National Park Service will preserve, to the greatest extent possible, the natural soundscapes of parks... The Service will restore to the natural condition wherever possible those park soundscapes that have become degraded by unnatural sounds (noise), and will protect natural soundscapes from unacceptable impacts..." Noise from the proposed mine would impact wildlife and recreational enjoyment and conflicts with the NPS Management Policies and the legislative purpose for setting the St. Croix River aside for protection.

The purpose of protecting a river under the Wild and Scenic Rivers Act is to protect its free-flowing character, water quality and the outstanding resource values of the river and its immediate environment. In addition, NPS Management Policies point out "pollution of waters can impair the natural functioning of aquatic and terrestrial ecosystems and diminish the utility of park waters for visitor use and enjoyment." The NPS is to "avoid, whenever possible, the pollution of park waters by human activities occurring within and outside park boundaries." The proposed mining project has the potential to impact the water quality of the Riverway through erosion and sedimentation, particularly if there is a significant rain event before slopes are stabilized, or if BMP's are not properly managed. Impacts to water quality would conflict with NPS Management Policies and the legislative purpose for setting the St. Croix River aside for protection.

The impacts of the proposed mine would conflict with the legislative purposes for which the Lower St. Croix National Scenic Riverway was established and the NPS Management Policies for taking care of the area. Therefore, the NPS is opposed to issuance of a Conditional Use Permit for the proposed Zavoral Mine. Selecting the no action alternative would appear to be the only option for avoiding the impacts of mining to the Riverway.

Thank you for the opportunity to provide comment. We look forward to continuing to work with the City of Scandia to protect the Riverway. If you have any questions, please call Jill Medland of my staff at 715-483-2284.

Sincerely,



Christopher E. Stein  
Superintendent

Enclosures 1

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National Park Service  
U.S. Department of the Interior



Natural Resource Stewardship and Science

# Saint Croix National Scenic Riverway

## *Acoustical Monitoring 2011*

Natural Resource Technical Report NPS/NRSS/NRTR—2012/XXX



**ON THE COVER**

Kayakers, taken at SACN in 2011

NPS Photo

# **Saint Croix National Scenic Riverway**

## *Acoustical Monitoring 2011*

Natural Resource Technical Report NPS/NRSS/NRTR—2012/XXX

Emma Lynch  
National Park Service  
Natural Sounds and Night Skies Division  
1201 Oakridge Drive, Suite 100  
Fort Collins, CO 80525

January 2012

U.S. Department of the Interior  
National Park Service  
Natural Resource Stewardship and Science  
Fort Collins, Colorado

The National Park Service, Natural Resource Stewardship and Science office in Fort Collins, Colorado publishes a range of reports that address natural resource topics of interest and applicability to a broad audience in the National Park Service and others in natural resource management, including scientists, conservation and environmental constituencies, and the public.

The Natural Resource Technical Report Series is used to disseminate results of scientific studies in the physical, biological, and social sciences for both the advancement of science and the achievement of the National Park Service mission. The series provides contributors with a forum for displaying comprehensive data that are often deleted from journals because of page limitations.

All manuscripts in the series receive the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner.

Data in this report were collected and analyzed using methods based on established, peer-reviewed protocols and were analyzed and interpreted within the guidelines of the protocols.

Views, statements, findings, conclusions, recommendations, and data in this report do not necessarily reflect views and policies of the National Park Service, U.S. Department of the Interior. Mention of trade names or commercial products does not constitute endorsement or recommendation for use by the U.S. Government.

This report is available from the Natural Sounds and Night Skies Division website (<http://www.nature.nps.gov/naturalsounds/>) and the Natural Resource Publications Management website (<http://www.nature.nps.gov/publications/nrpm/>).

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## Executive Summary

In 2011, one acoustical monitoring system was deployed at Saint Croix National Scenic Riverway (SACN) for 34 days. The purpose of this monitoring effort was to characterize existing sound levels and estimate natural ambient sound levels as well as identify audible sound sources prior to the proposed re-opening of the Zavoral Gravel Mine in Scandia, Minnesota. At the time that this report was written, an EIS was being prepared for the reopening of the gravel mine, as required under the State of Minnesota Rules of decision-making.

For the purposes of this document, we will refer to “noise” as any human-caused sound that masks or degrades natural sounds (Lynch et al. 2011). Sources of noise at SACN include vehicle noise from nearby roads, boat traffic, and aircraft. Table 1 displays percent time audible values for each of these common noise sources during the monitoring period as well as ambient sound levels. A number of biologic sounds were also present during the monitoring period. Song birds and wind through vegetation were particularly prominent sound sources, but coyotes (*Canis latrans*), gray tree frogs (*Hyla versicolor*), green frogs (*Rana clamitans*), and barred owls (*Strix varia*) also appeared with regularity. Ambient sound pressure levels were measured continuously over the 34 day monitoring period by a calibrated, Type 1, Larson Davis 831 sound level meter. Percent time audible metrics were calculated by a trained technician after monitoring was complete. See Methods section for protocol details and equipment specifications.

Table 1. Mean percent time audible for all extrinsic sounds, aircraft, watercraft, and vehicles

Site ID	Site Description	Mean percent time audible				Median Existing Ambient (L <sub>50</sub> ) in dBA		Median Natural Ambient (L <sub>nat</sub> ) in dBA	
		All Extrinsic	Aircraft	Watercraft	Vehicles	Day	Night	Day	Night
SACN001	Swing Bridge Island	56.06	13.72	10.03	16.91	39.4	29.80	35.10	26.60

In determining the current conditions of an acoustical environment, it is informative to examine how often sound pressure levels exceed certain values. Table 2 reports the percent of time that measured levels were above four key values. The first value, 35 dBA, is designed to address the health effects of sleep interruption. Recent studies suggest that sound events as low as 35 dB can have adverse effects on blood pressure while sleeping (Haralabidis, 2008). The second value addresses the World Health Organization’s recommendations that noise levels inside bedrooms remain below 45 dBA (Berglund et al., 1999). The third value, 52 dBA, is based on the EPA’s speech interference level for speaking in a raised voice to an audience at 10 meters. This value addresses the effects of sound on interpretive presentations in parks. The final value, 60 dBA, provides a basis for estimating impacts on normal voice communications at 1 meter. Kayakers, hikers, or visitors viewing scenic areas in the park would likely be conducting such conversations.

Table 2. Percent time above metrics

Site ID	% Time above sound level: 0700 to 1900 (Day)				% Time above sound level: 1900 to 0700 (Night)			
	35 dBA	45 dBA	52 dBA	60 dBA	35 dBA	45 dBA	52 dBA	60 dBA
SACN001	79.4	24.7	9.96	2.63	30.65	10.94	4.57	1.32



## Introduction

A 1998 survey of the American public revealed that 72 percent of respondents thought that providing opportunities to experience natural quiet and the sounds of nature was a very important reason for having national parks, while another 23 percent thought that it was somewhat important (Haas & Wakefield 1998). In another survey specific to park visitors, 91 percent of respondents considered enjoyment of natural quiet and the sounds of nature as compelling reasons for visiting national parks (McDonald et. al 1995). Acoustical monitoring provides a scientific basis for assessing the current status of acoustic resources, identifying trends in resource conditions, quantifying impacts from other actions, assessing consistency with park management objectives and standards, and informing management decisions regarding desired future conditions.

### ***National Park Service Natural Sounds and Night Skies Division***

The Natural Sounds and Night Skies Division (NSNSD) helps parks manage sounds in a way that balances access to the park with the expectations of park visitors and the protection of park resources. The NSNSD addresses acoustical issues raised by Congress, NPS Management Policies, and NPS Director's Orders. The NSNSD works to protect, maintain, or restore acoustical environments throughout the National Park System. Its goal is to provide coordination, guidance, and a consistent approach to soundscape protection with respect to park resources and visitor use. The program also provides technical assistance to parks in the form of acoustical monitoring, data processing, park planning support, and comparative analyses of acoustical environments.

### ***Soundscape Planning Authorities***

The National Park Service Organic Act of 1916 states that the purpose of national parks is "... to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." In addition to the NPS Organic Act, the Redwoods Act of 1978 affirmed that, "the protection, management, and administration of these areas shall be conducted in light of the high value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress."

Direction for management of natural soundscapes<sup>1</sup> is represented in 2006 Management Policy 4.9:

The Service will restore to the natural condition wherever possible those park soundscapes that have become degraded by unnatural sounds (noise), and will protect natural soundscapes from unacceptable impacts. Using appropriate management planning, superintendents will identify what levels and types of unnatural sound constitute acceptable impacts on park natural soundscapes. The frequencies, magnitudes, and durations of acceptable levels of unnatural sound will vary throughout a park, being generally greater in developed areas. In and adjacent to parks, the Service will monitor

<sup>1</sup> The 2006 Management Policy 4.9 and related documents refer to "soundscapes" instead of "acoustic resources." When quoting from this authority, it is advisable to note that the term often refers to resources rather than visitor perceptions.

human activities that generate noise that adversely affects park soundscapes [acoustic resources], including noise caused by mechanical or electronic devices. The Service will take action to prevent or minimize all noise that through frequency, magnitude, or duration adversely affects the natural soundscape [acoustic resource] or other park resources or values, or that exceeds levels that have been identified through monitoring as being acceptable to or appropriate for visitor uses at the sites being monitored (NPS 2006a).

It should be noted that “the natural ambient sound level—that is, the environment of sound that exists in the absence of human-caused noise—is the baseline condition, and the standard against which current conditions in a soundscape [acoustic resource] will be measured and evaluated” (NPS 2006b). However, the desired acoustical condition may also depend upon the resources and the values of the park. For instance, “culturally appropriate sounds are important elements of the national park experience in many parks” (NPS 2006b). In this case, “the Service will preserve soundscape resources and values of the parks to the greatest extent possible to protect opportunities for appropriate transmission of cultural and historic sounds that are fundamental components of the purposes and values for which the parks were established” (NPS 2006b).

## Study Area

Saint Croix National Scenic Riverway (SACN) was established to protect its natural, cultural, scenic, and recreational values for present and future generations. The park itself is a thin ribbon of protected land that includes the rivers and about ¼ mile of land on either side. Land within this strip is a combination of NPS, State and local government ownership and privately-owned lands over which the NPS has purchased easements. The 252 mile long Riverway runs through two states, 11 counties, 7 state parks, 3 state forests, county forests, and over 1500 parcels of private land. It is also designated as a National Wild and Scenic River. One acoustical monitoring station was deployed in SACN during June and July of 2011 for about 34 days. The site was selected because of its proximity to the proposed location of the Zavoral Gravel Mine, and because the vegetation and biologic activity near this site are representative of a large portion of the park. The park has plans to submit an SCC request for additional monitoring in 2013.

Table 3. Site Location

Site ID	Site Name	Dates Deployed	Vegetation	Elevation	Latitude	Longitude
SACN001	Swing Bridge Is.	6/22- 7/27/2011	Deciduous forest, wetland	227 m	45.26050	-92.75419



Figure 1. Acoustical and meteorological monitoring station at SACN001, Swing Bridge Island.

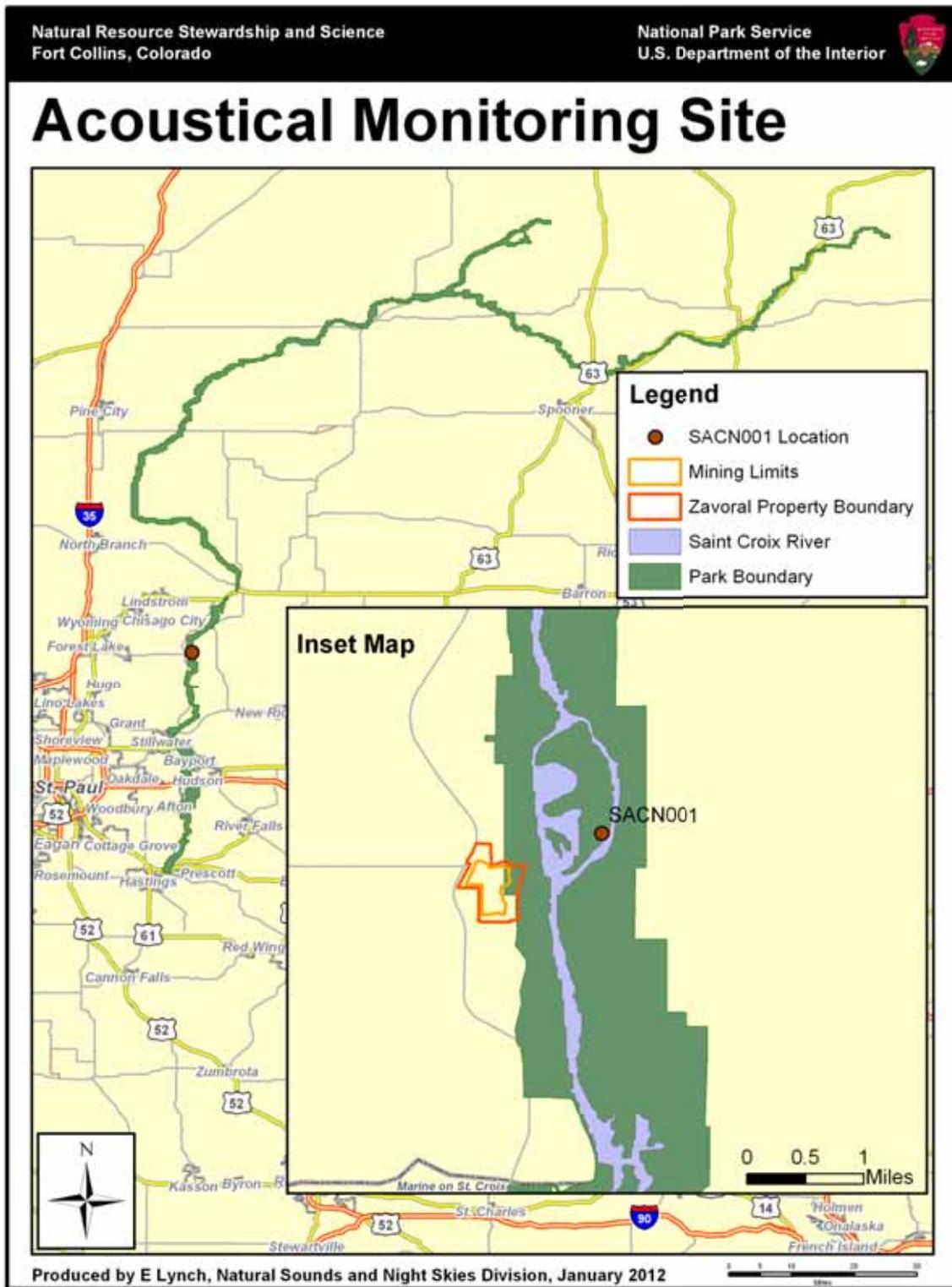


Figure 2. Location of monitoring site SACN001.

## Methods

### ***Automatic Monitoring***

One Larson Davis 831 sound level meter (SLM) was employed over the thirty-four day monitoring period at SACN. The Larson Davis SLM is a hardware-based, real-time analyzer which constantly records one second sound pressure level (SPL) and 1/3 octave band data. This Larson Davis-based site met American National Standards Institute (ANSI) Type 1 standards. This sound level meter provided the information needed to calculate metrics described below in Calculation of Metrics.

The sampling station at SACN consisted of:

- Microphone with environmental shroud
- Preamplifier
- 8 12V LiMH rechargeable battery packs
- Anemometer (wind speed and direction)
- Temperature and humidity probe
- MP3 recorder

The sampling station collected:

- SPL data in the form of A-weighted decibel readings (dBA) every second
- Continuous digital audio recordings
- One third octave band data every second ranging from 12.5 Hz – 20,000 Hz
- Continuous meteorological data including wind speed, direction, temperature, and relative humidity

### ***Calculation of Metrics***

The current status of the acoustical environment can be characterized by spectral measurements, durations, and overall sound levels (intensities). The NSNSD uses descriptive figures and metrics to interpret these characteristics. Two fundamental descriptors are existing ambient ( $L_{50}$ ) and natural ambient ( $L_{nat}$ ) sound levels. These are both examples of exceedence levels, where each  $L_x$  value refers to the sound pressure levels that is exceeded x% of the time. The  $L_{50}$  represents the median sound pressure level, and is comprised of spectra (in dB) drawn from a full dataset (removing data with wind speed > 5m/s to eliminate error from microphone distortion.). The natural ambient ( $L_{nat}$ ) is an estimate of what the ambient level for a site would be if all extrinsic or anthropogenic sources were removed. Unlike the existing ambient, the natural ambient is comprised of spectra drawn from a subset of the original data.

For a given hour (or other specified time period),  $L_{nat}$  is calculated to be the decibel level exceeded x percent of the time, where x is defined by equation (1):

$$x = \frac{100 - P_H}{2} + P_H, \quad (1)$$

and  $P_H$  is the percentage of samples containing extrinsic or anthropogenic sounds for the hour. For example, if human caused sounds are present 30% of the hour,  $x = 65$ , and the  $L_{nat}$  is equal to the  $L_{65}$ , or the level exceeded 65% of the time. To summarize and display these data, the median of the hourly  $L_{nat}$  values for the daytime hours (0700-1900) and the median of the hourly  $L_{nat}$  values for the nighttime (1900-0700) are displayed in Figure 3 in the results section. Additionally, this figure separates the data into 33 one-third octave bands.

### ***On-Site Listening***

While the sound level meter provides information about how loud or quiet the acoustical environment is at a given time, we need .mp3 recordings or on-site listening sessions to know *what* or *who* is making the sound. On-site listening is the practice of placing an observer near the acoustical monitoring station with a handheld personal digital assistant (PDA). The observer listens for a designated period of time (in this case, one hour), and identifies all sound sources and their durations. On-site listening takes full advantage of human binaural hearing capabilities, and closely matches the experience of park visitors. Logistic constraints prevent comprehensive sampling by this technique, but selective samples of on-site listening provide a basis for relating the results of off-site listening to the probable auditory perception of events by park visitors and wildlife. On-site listening sessions are also an excellent screening tool for parks initiating acoustical environment studies. They produce an extensive inventory of sound sources, require little equipment or training, and can help educate park staff and volunteers.

Thus, two periods of on-site listening were conducted in order to discern the type, timing, and duration during sound-level data collection at SACN. As recommended by NSNSD protocol (NPS 2005) these sessions generally began at the top or middle of an hour and lasted for one hour. Staff recorded the beginning and ending times of all audible sound sources using custom-designed PDA software. These on-site listening sessions provided the basis for the calculation of metrics including the period of time between noise events (average noise free interval [NFI]), percent time each sound source was audible, and maximum, minimum, and mean length (in seconds) of sound source events. The results of these on-site listening sessions are summarized in Table 4.

### ***Off-Site Listening/ Auditory Analysis***

Auditory analysis was used to calculate the audibility of sound sources at SACN. Natural Sounds and Night Skies Division (NSNSD) staff analyzed a subset of .mp3 samples (10 seconds every two minutes for eight days of audio) in order to identify durations of audible sound sources. Staff used the total percent time extrinsic sounds were audible to calculate the natural ambient sound level for each hour (see Equation 1 below for more information). Bose Quiet Comfort Noise Canceling headphones were used for off-site audio playback to minimize limitations imposed by the office acoustic environment. For the complete results of this thorough audibility analysis, see Table 7 in the Off-Site Data Analysis section below.

## Results

### *On-site Listening*

Table 4 displays the results of the two on-site listening sessions. Each audible sound source is listed in the first column. Percent time audible, or PA, is the second column. The third column, Max Event, reports the maximum event length among the sessions for each sound source. Likewise, Mean Event and Min Event columns report the mean and minimum length of events, respectively. SD reports the standard deviation among event lengths, and the Count column reports the number of times that each sound source was audible. Max Event, Mean Event, Min Event, and SD Event are reported in seconds. The last row in the table, noise free interval (NFI), is a metric which describes the length of time between extrinsic or human-caused events (when only natural sounds were audible). NFI is also reported in seconds. These on-site listening tables are essentially a sound inventory of each site. They reveal the sounds one is likely to hear at or near this location.

Table 4. Summary of on-site audible sound sources for SACN001 n=2 hour-long sessions. Events are measured in minutes: seconds.

Sound Source Description	PA (%)	Max Event (mm:ss)	Mean Event (mm:ss)	Min Event (mm:ss)	SD Event (mm:ss)	Count (#)
Aircraft	0.0	0:02	0:02	0:02	0:01	1
Jet	17.0	2:30	1:05	0:06	0:43	19
Helicopter	4.0	2:05	1:35	0:48	0:41	3
Vehicle	81.0	24:40	3:27	0:03	6:03	28
Vehicle Door	0.0	0:02	0:02	0:02	0:01	1
Motorcycle	0.0	0:09	0:06	0:04	0:03	3
Watercraft	2.0	2:36	1:24	0:12	1:42	2
Grounds Care	6.0	6:35	3:24	0:12	4:31	2
Wind	0.0	0:04	0:04	0:04	0:01	1
Wind, Light	0.0	0:16	0:16	0:16	0:01	1
Bird	100.0	59:55	59:45	59:35	0:14	2
Insect	0.0	0:06	0:05	0:04	0:01	6
Natural Other	94.0	59:53	22:41	3:42	22:04	5
All Aircraft	21.2					
All Road Vehicles	80.7					
All Watercraft	2.3					
All Non-natural Sources	94.9					
All Natural Sources	99.6					
Noise Free Interval	5.1	1:04	0:22	0:01	0:21	17

The two sessions that informed this table were performed during daytime hours (2:25-3:25 pm and 3:00-4:00 pm) when human activity (particularly vehicle activity) was high. See the next section, Off-Site Data Analysis for results that summarize audibility over all hours of the day and night.

## **Off-Site Data Analysis**

### **Metrics**

In order to determine the effect that extrinsic noise audibility has on the acoustical environment, it is useful to examine the median hourly exceedence metrics. In Figure 3, the dB levels for 33 one-third octave band frequencies over the day and night periods are shown. High frequency sounds (a cricket chirping) and low frequency sounds (water flowing in a river) often occur simultaneously, so we split the frequency spectrum into 33 smaller ranges, each encompassing one-third of an octave. For each one-third octave band, dB level is recorded once per second for the duration of the monitoring period. Recording the sound intensity of each one-third octave band (combined with digital audio recordings) allows acoustic technicians to determine what types of sounds are contributing to the overall sound pressure level of a site. The grayed area of the graph represents sound levels outside of the typical range of human hearing. The exceedence levels ( $L_x$ ) are also shown for each one-third octave band. They represent the dB exceeded x percent of the time. For example,  $L_{90}$  is the dB that has been exceeded 90% of the time, and only the quietest 10% of the samples can be found below this point. On the other hand, the  $L_{10}$  is the dB that has been exceeded 10% of the time, and 90% of the measurements are quieter than the  $L_{10}$ . The bold portion of the column represents the difference between  $L_{50}$  (existing ambient) and  $L_{nat}$  (natural ambient). The height of this bold portion is a measure of the contribution of anthropogenic noise to the existing ambient sound levels at this site. The size of this portion of the column is directly related to the percent time that human caused sounds are audible. When bold portions of the column do not appear the natural and existing ambient levels were either very close to each other were or equal.

$L_{nat}$  and  $L_{50}$  are bordered above by  $L_{10}$  and below by  $L_{90}$ , which essentially mark the median, maximum, and minimum sounds pressure levels over the 30 day monitoring period. The typical frequency levels for transportation, conversation and songbirds are presented on the figure as examples for interpretation of the data. These ranges are estimates and are not vehicle-, species, or habitat-specific. Notice in Figure 3 that contributions of songbirds are prominent in daytime hours, and that nighttime sound levels in the same frequencies are much quieter. In fact, in all frequencies, nighttime levels were quieter than daytime levels. This is a common occurrence in park settings.

It can be useful to review each one third octave band on these figures to predict the audibility of one sound or the masking of another. Notice that songbirds and transportation noise are audible at different frequency spectrums. There may be times when transportation sounds are louder than the songbirds. In this case, bird sounds would not be masked because their song is audible at a different frequency. If both of these sounds are within similar or overlapping frequency ranges, and one sound is louder than the other, then the quieter sound could be masked.

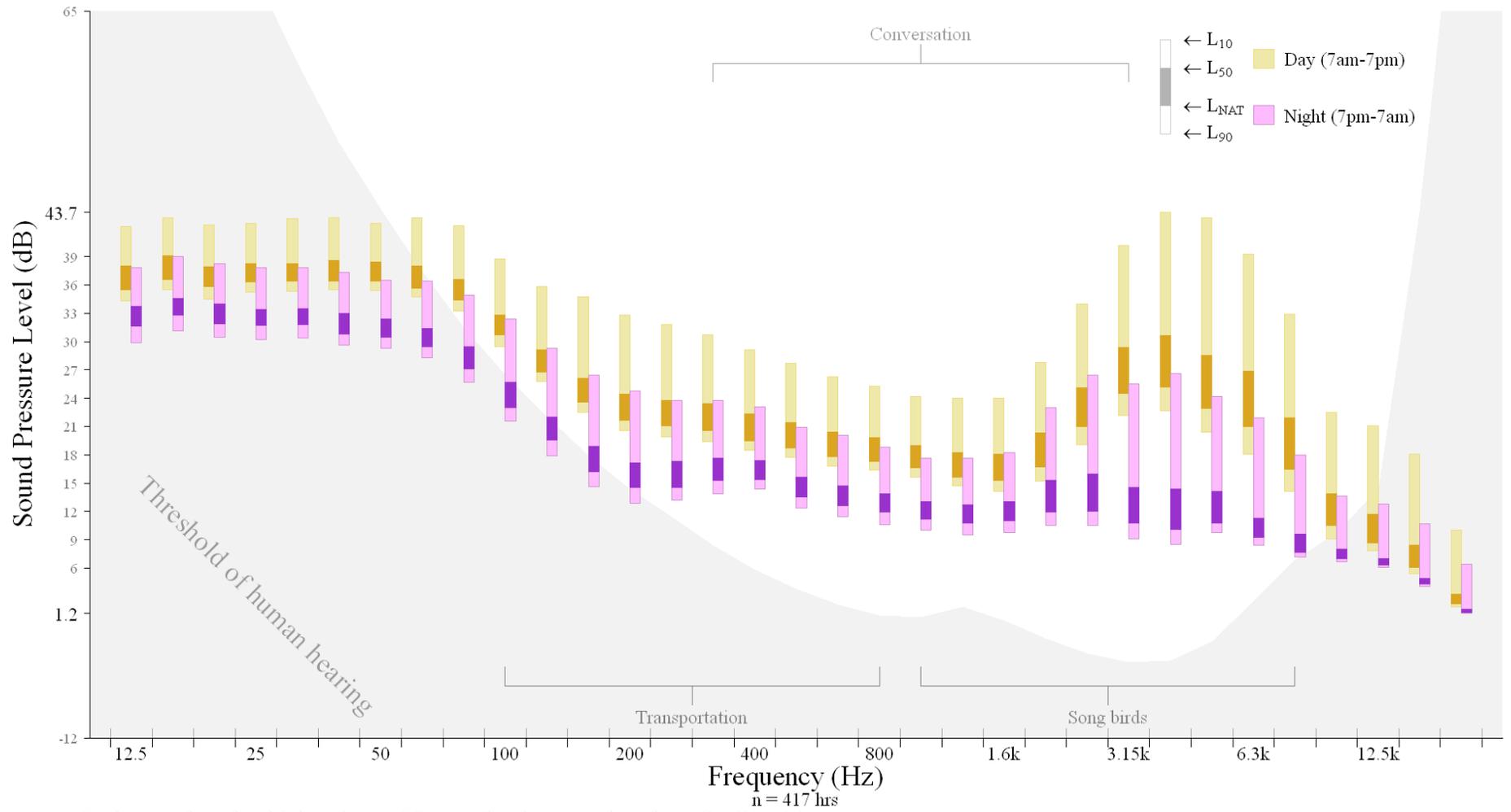


Figure 3. Day and night dB levels for 33 one-third octave bands at SACN001

Table 5 reports the L<sub>90</sub>, L<sub>nat</sub>, L<sub>50</sub>, and L<sub>10</sub> values for the sites measured at SACN. The top value in each cell focuses on frequencies affected by transportation noise whereas the lower values use the conventional full frequency range. Most human-caused noise is confined to the truncated, lower-frequency range, while many loud natural sounds, including insects and birds, are higher in pitch. Therefore, the truncated range is more appropriate for identifying noise levels in parks.

Table 5. Exceedence levels for existing conditions

Site	Frequency (Hz)	Exceedence levels (dBA): 0700 to 1900 hours (Day)				Exceedence levels (dBA): 1900 to 0700 hours (Night)			
		L <sub>90</sub>	L <sub>nat</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>nat</sub>	L <sub>50</sub>	L <sub>10</sub>
	20-1,250	26.0	26.9	29.2	35.5	20.4	21.5	23.6	28.5
SACN001	12.5-20,000	33.4	35.1	39.4	50.5	25.5	26.6	29.8	37.5

In determining the current conditions of an acoustical environment, it is important to examine how often sound pressure levels exceed certain values. Table 6 reports the percent of time that measured levels were above four key values. The top value in each split-cell focuses on frequencies affected by transportation noise whereas the lower values use the conventional full frequency range. The first, 35 dBA is designed to address the health effects of sleep interruption. Recent studies suggest that sound events as low as 35 dB can have adverse effects on blood pressure while sleeping (Haralabidis, 2008). The second value addresses the World Health Organization’s recommendations that noise levels inside bedrooms remain below 45 dBA (Berglund et al., 1999). The third value, 52 dBA, is based on the EPA’s speech interference threshold for speaking in a raised voice to an audience at 10 meters. This threshold addresses the effects of sound on interpretive presentations in parks. The final value, 60 dBA, provides a basis for estimating impacts on normal voice communications at 1 meter. Hikers and visitors viewing scenic vistas in the park would likely be conducting such conversations.

Table 6. Percent time above metrics

Site ID	Frequency (Hz)	% Time above sound level: 0700 to 1900 hours (Day)				% Time above sound level: 1900 to 0700 hours (Night)			
		35 dBA	45 dBA	52 dBA	60 dBA	35 dBA	45 dBA	52 dBA	60 dBA
	20-1250 <sup>1</sup>	13.84	1.83	0.31	0.03	5.37	0.64	0.13	0.02
SACN001	12.5-20,000 <sup>2</sup>	79.40	24.70	9.96	2.63	30.65	10.94	4.57	1.32

1. The top value in each cell focuses on frequencies affected by transportation, which approximately correspond to 20-1250 hertz. This range does not correspond to a specific vehicle or type of transportation.

2. The bottom value in each cell uses the full frequency spectrum, from 12.5-20,000 hertz.

### **Audibility**

Audibility results are presented on the following pages. Table 7 shows the mean percentage of time that all noise sources were audible, based on eight days of auditory analysis. Figure 4, Figure 5, and Figure 6 show hourly audibility results and compare overall noise audibility to sources of interest: aircraft, vehicles, and watercraft, respectively. Interestingly, although vehicle activity is probably highest during the day near SACN001, listening results indicated the opposite. It is likely that the presence of other noise sources and/or biologic sounds in the same frequency range (watercraft, aircraft, or wind) during the midday hours masked the sound of passing vehicles. When the masking sources subsided in the early morning and evening hours, the acoustical monitoring system was able to detect vehicle noise.



Table 7. Mean hourly percent time audible for each noise source at SACN001

Noise source	00h	01h	02h	03h	04h	05h	06h	07h	08h	09h	10h	11h	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h
Jet	1.2	2.5	3.3	4.2	7.1	3.3	3.8	18.8	7.1	9.2	18.8	10.8	4.6	13.3	12.1	13.8	15.8	8.7	5.8	23.7	11.3	4.2	11.7	3.3
Propeller	0.0	0.0	0.0	0.0	0.4	2.9	1.7	0.4	5.8	9.6	11.3	10.4	6.7	9.2	5.4	6.2	8.7	6.2	10.8	8.3	1.2	0.8	2.5	0.0
Helicopter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.8
Vehicle, unknown	0.0	0.0	0.0	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.8	0.0	0.8	0.4	0.4	0.4	2.1	0.0	0.0
Automobile	37.1	29.2	18.8	23.3	32.1	18.3	30.4	28.7	17.9	8.3	4.2	7.9	7.1	6.2	6.2	5.4	3.8	3.3	6.2	7.1	10.4	18.8	14.6	25.0
Vehicle alarm, horn	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	2.9	9.6	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle door	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Motorcycle	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.8	0.4	0.8	0.4	0.8	0.0	1.2	0.0	0.4
Truck	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Watercraft, unknown	0.0	0.8	2.9	0.4	1.2	7.9	3.8	8.7	12.5	8.7	17.1	15.8	13.3	13.8	17.5	12.9	8.3	22.1	20.0	19.6	17.5	11.3	2.1	2.1
Watercraft, non-motorized	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Train	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Train rumble	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.7	1.7	1.7	0.0	4.6	5.0	2.9	3.8	2.1	1.2	8.7	2.9	0.0
Train whistle	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.4	0.0	0.8	1.2	0.8	0.4	0.0	0.4	0.8	0.8	0.0
Generator	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grounds care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
People	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Voices	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	2.5	2.1	3.3	2.9	3.3	3.8	1.2	2.5	1.7	2.1	0.8	0.0
Portable audio devices	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Fireworks	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	4.2	4.6	16.3	5.0
Domestic dog	1.7	0.4	2.9	0.4	0.0	0.4	0.4	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.8	0.0	1.7	2.5
Construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.4	0.8	2.5	4.6	2.1	2.5	0.0	0.0	0.8	0.0	0.0	0.0
Non-natural unknown	1.7	5.8	7.1	4.2	7.5	18.3	12.1	12.1	15.0	12.1	10.4	12.9	14.6	15.4	14.6	16.7	7.5	16.3	12.1	17.1	27.9	10.0	16.7	11.3
All noise sources	40.8	38.3	36.2	34.2	48.8	51.7	52.1	67.9	59.2	48.3	62.9	59.6	52.5	66.7	62.1	63.3	53.3	64.2	60.0	78.7	72.9	59.6	64.2	47.9



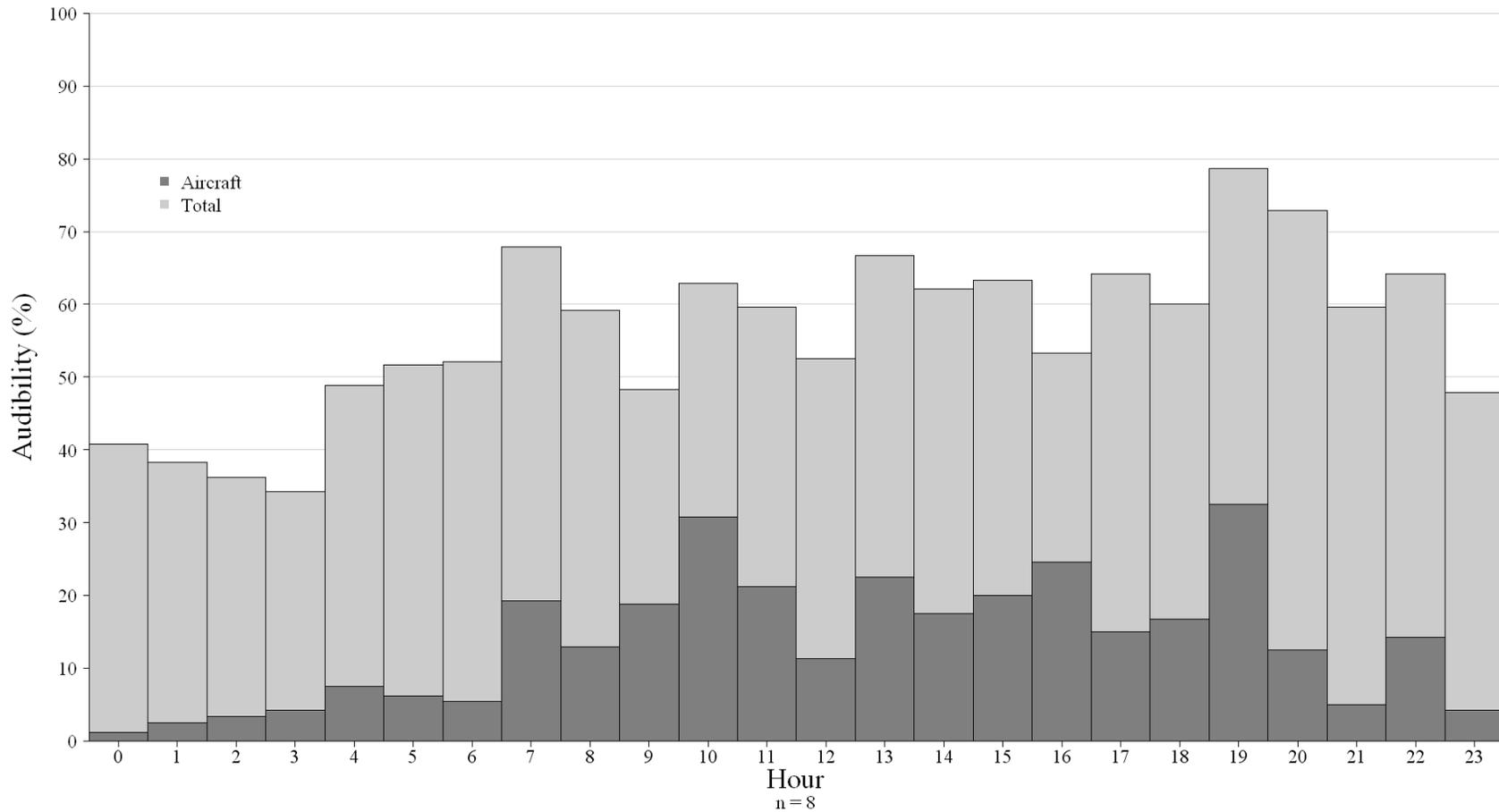


Figure 4. Comparison of hourly aircraft audibility and overall noise audibility at SACN001



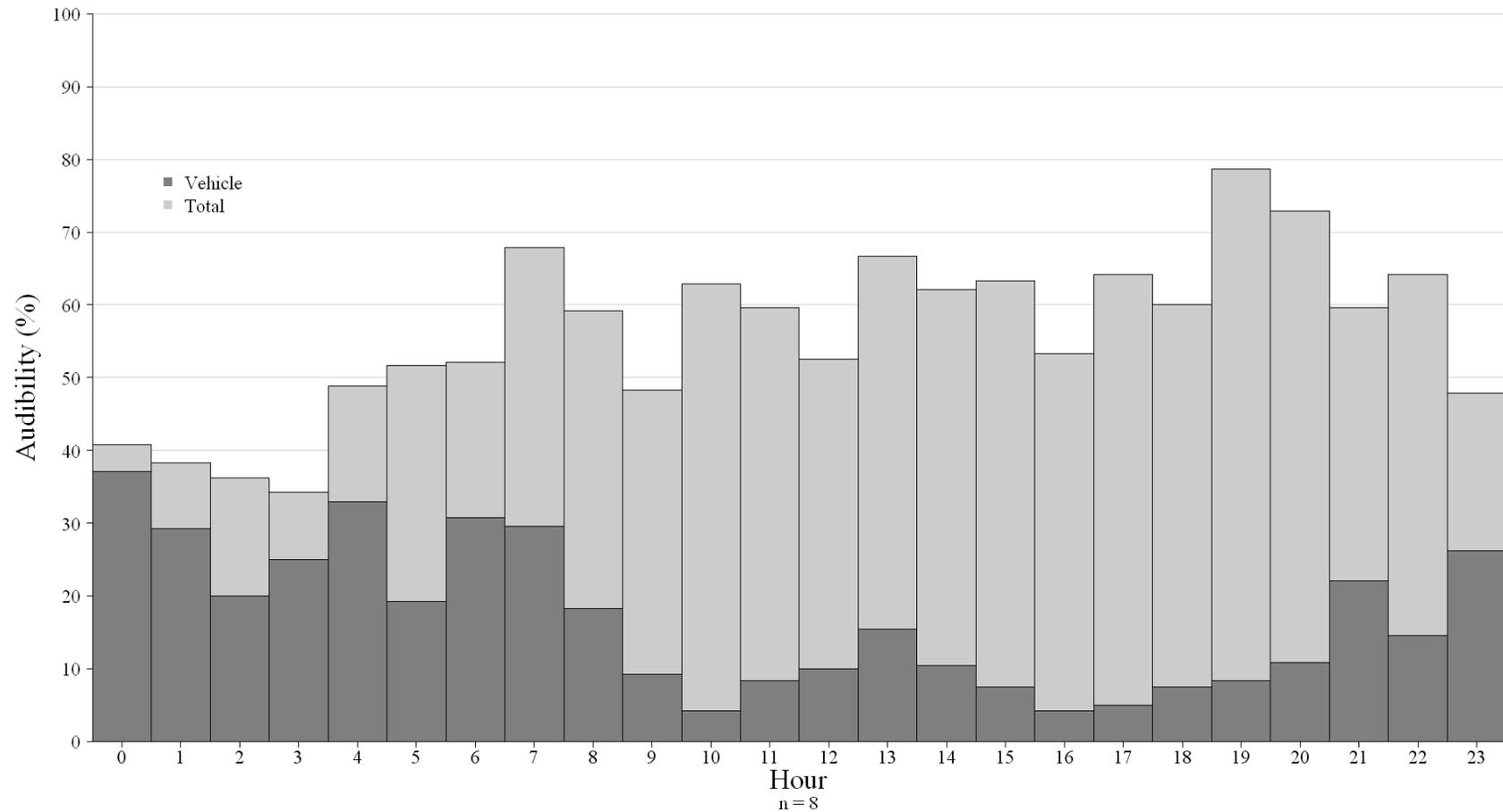


Figure 5. Comparison of hourly vehicle audibility and overall noise audibility at SACN001



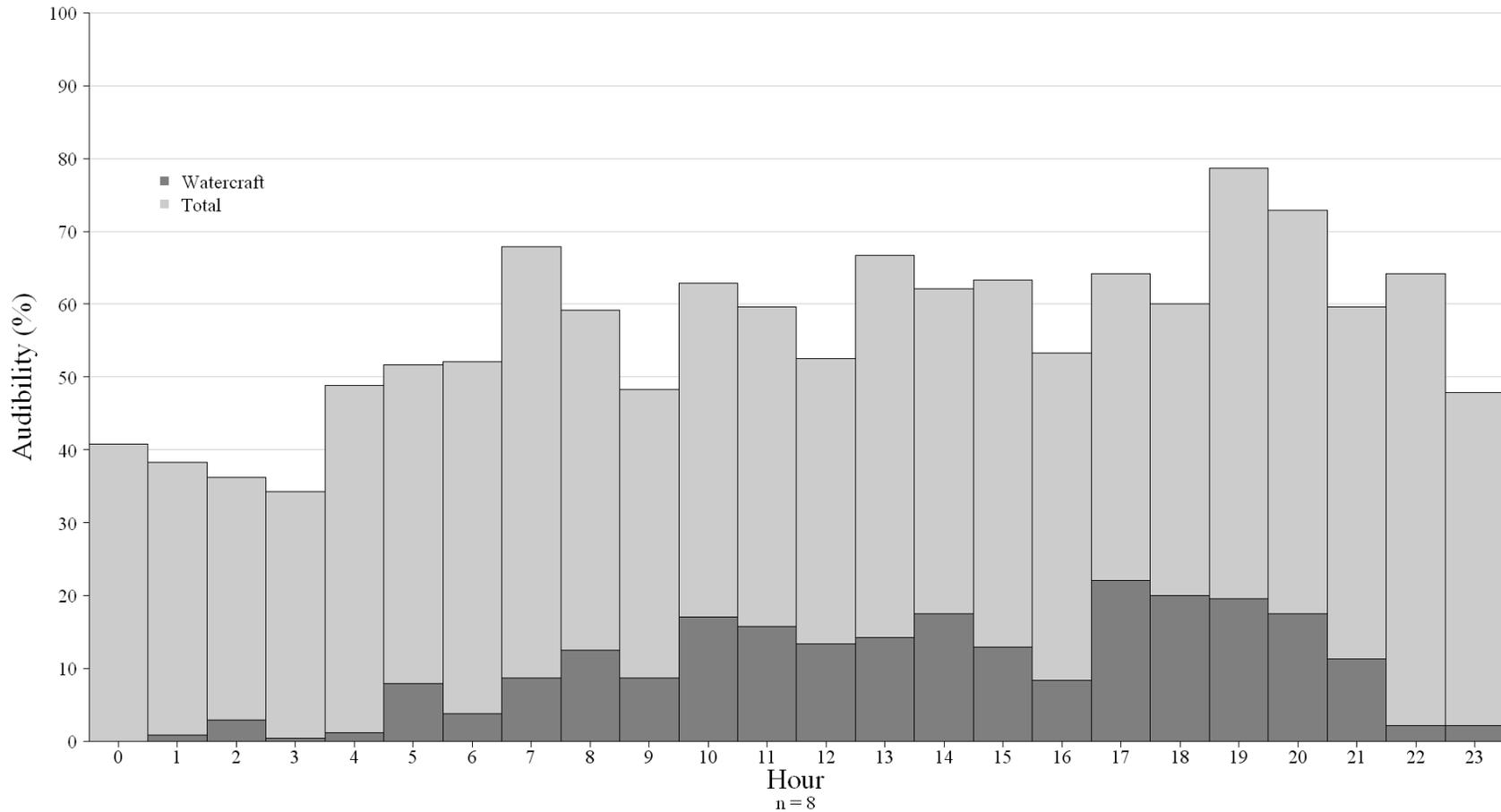


Figure 6. Comparison of hourly watercraft audibility and overall noise audibility at SACN001



## Discussion

The purpose of this study was twofold: characterize existing sound levels and estimate natural ambient sound levels at one site in Saint Croix National Scenic Riverway, and identify audible sound sources prior to the proposed re-opening of the Zavoral Gravel Mine in Scandia, Minnesota. Monitoring results were intended to give the park baseline information as well as inform management decisions. Sound pressure level data, meteorological data, and continuous audio were collected. Data were gathered from one site on Swing Bridge Island for approximately 34 days. The acoustical monitoring station was located here because of its proximity to the Zavoral Mine site and because the vegetation and biologic activity was representative of the rest of the scenic riverway. The park has plans to submit an SCC request for additional monitoring in 2013.

NSNSD staff calculated that the natural ambient sound level at this site ranged between 39.4 dBA during the daytime and 26.6 dBA at night. For comparison, a comprehensive 1982 study of noise levels in residential areas found that nearly 87% of US residents were exposed to day-night sound levels over 55 dB (and an additional 53% was exposed to day-night sound levels over 60 dB)(EPA 1982). Therefore, our results imply that the natural ambient sound level during the monitoring period was considerably quieter than most residential areas. However, noise still exists in SACN's acoustical environment. A detailed analysis of audibility at this site found that the three major noise sources (aircraft, vehicles, and watercraft) contributed significant amounts of noise to the acoustical environment (ranging from 10 to 17% audibility overall). Trains were also audible, to a lesser degree. The remaining sources of noise were intermittent (dogs, construction, personal audio devices), and could be characterized as "seasonal." For instance, although NSNSD avoided analyzing the 4<sup>th</sup> of July, fireworks were noted up to a few weeks before and after the holiday.

In addition to the various noise sources at SACN, many natural sounds were also recorded. Birds, insects, and amphibian sounds were recorded each day. Thunderstorms rolled in. Something jumped out of the water near the microphone. A pair of barred owls called to each other late at night. The proverbial tree even fell in the forest. These were just a handful of the many sounds that create the acoustical environment at Saint Croix National Scenic Riverway, and contribute to its unique acoustical environment.



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## **Glossary of Acoustical Terms**

### **Acoustical Environment**

The actual physical sound resources, regardless of audibility, at a particular location.

### **Amplitude**

The instantaneous magnitude of an oscillating quantity such as sound pressure. The peak amplitude is the maximum value.

### **Audibility**

The ability of animals with normal hearing, including humans, to hear a given sound. Audibility is affected by the hearing ability of the animal, the masking effects of other sound sources, and by the frequency content and amplitude of the sound.

### **dBA**

A-weighted decibel. A-Weighted sum of sound energy across the range of human hearing. Humans do not hear well at very low or very high frequencies. Weighting adjusts for this.

### **Decibel**

A logarithmic measure of acoustic or electrical signals. The formula for computing decibels is:  $10(\text{Log}_{10}(\text{sound level}/\text{reference sound level}))$ . 0 dB represents the lowest sound level that can be perceived by a human with healthy hearing. Conversational speech is about 65 dB.

### **Diel**

A 24-hour period usually consisting of a day and the adjoining night.

### **Extrinsic Sound**

Any sound not forming an essential part of the park unit, or a sound originating from outside the park boundary.

### **Frequency**

The number of times per second that the sine wave of sound repeats itself. It can be expressed in cycles per second, or Hertz (Hz). Frequency equals Speed of Sound/ Wavelength.

### **Hearing Range (frequency)**

By convention, an average, healthy, young person is said to hear frequencies from approximately 20Hz to 20000 Hz.

### **Hertz**

A measure of frequency, or the number of pressure variations per second. A person with normal hearing can hear between 20 Hz and 20,000 Hz.

### **Human-Caused Sound**

Noise. Any sound that is attributable to a human source.

**Intrinsic sound**

A sound which belongs to a park by its very nature, based on the park unit purposes, values, and establishing legislation. The term “intrinsic sounds” has replaced “natural sounds” in order to incorporate both cultural and historic sounds as part of the acoustic environment of a park.

**Listening Horizon**

The range or limit of one’s hearing capabilities. Just as smog limits the visual horizon, so noise limits the acoustic horizon.

**$L_{eq}$**

Energy Equivalent Sound Level. The level of a constant sound over a specific time period that has the same sound energy as the actual (unsteady) sound over the same period.

**$L_x$**

A metric used to describe acoustic data. It represents the level of sound exceeded x percent of the time during the given measurement period.

**Masking**

The process by which the threshold of audibility for a sound is raised by the presence of another sound.

**Noise-Free Interval**

The period of time between noise events (not silence).

**Noise**

Sound which is unwanted, either because of its effects on humans, its effect on fatigue or malfunction of physical equipment, or its interference with the perception or detection of other sounds (Source: McGraw Hill Dictionary of Scientific and Technical Terms).

**Off-site Listening**

The systematic identification of sound sources using digital recordings previously collected in the field.

**Sound Level Floor (Noise Floor)**

The lowest amplitude measurable by sound monitoring equipment.

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

**National Park Service**  
**U.S. Department of the Interior**



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**Natural Resource Stewardship and Science**

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Randy S. Ferrin  
23290 Quentin Ave N  
Scandia, MN 55073  
May 18, 2012

Dear Mayor Simonson and Scandia City Council Members:

I am commenting on the Draft Environmental Impact Statement (DEIS) for the proposed Tiller Corporation mine at the Zavoral property in Scandia. As you are aware, this site lies adjacent to very steep slopes that are highly vulnerable to erosion, as stated in the DEIS. The document makes many references to Tiller's draft Stormwater Pollution Prevention Plan (SWPPP) and BMPs to control erosion and sedimentation. In section 4.6.2 (Potential Mitigation Measures), the document states: "The key component (of mitigation) is that the SWPPP, erosion and sedimentation control, and BMPs are implemented and maintained." I can't emphasize enough how important this statement is in protecting the three adjacent streams and the St. Croix National Scenic Riverway. Despite that importance, nowhere in the DEIS, the appendices, or any document filed on the city's very fine website can the draft SWPPP be found. How does the public know that the SWPPP is adequate and complete and covers all contingencies? Likewise, BMPs (Best Management Practices) are frequently referred to in the document, yet there are only brief descriptions of some BMP examples such as in Section 3.2.3. The public does not get to see or read descriptions of the proposed BMPs anywhere in the document.

On page 3-11, the following is stated:

**" 3.2.3 Scandia Mine Stormwater Management**

Surface water is managed during active mining in accordance with the NPDES/SDS SWPPP and is consistent with local surface water management plans. This plan includes a number of best management practices (BMPs), which are incorporated into **daily** Site operations." (Emphasis added.) The Tiller sand operation near Grantsburg, Wisconsin recently had an erosion event that released sediment into the St. Croix River for several days before a citizen spotted the problem and alerted authorities. Tiller obviously did not inspect its erosion control practices on a daily basis as is evident from this incident. How can we expect them to do better at the Zavoral site?

Sincerely,

Randy S. Ferrin  
WI Professional Hydrologist, License #8-111



May 18, 2012

Ms. Anne Hurlburt  
City Administrator  
City of Scandia  
14717 209<sup>th</sup> Street North  
Scandia, MN 55073

Re: Zavoral Mining and Reclamation Project  
Comments on Draft Environmental Impact Statement

Dear Ms. Hurlburt:

We write to provide you with comments on the Draft Environmental Impact Statement (DEIS) for the proposed operation of a gravel mine on portions of a 114-acre site along St. Croix Trail North (TH 95) near the intersection with TH 97 in Scandia. This site is adjacent to portions of the Lower St. Croix National Scenic Riverway, which is a unit of the national park system and thus managed by the National Park Service (NPS). NPS holds a scenic easement on portions of this site.

Based on the information contained in the DEIS, it is clear that the operation of this mine will harm the scenic and recreational values for which this river was included for protection under the Wild and Scenic Rivers Act, 16 USC §§1271-1287 and the Lower St. Croix Wild and Scenic River Act, Minn. Stat. §107F.351. However, the DEIS fails to take into consideration the special nature and designation of this river in its analysis. The operation of a gravel mine in this location so close to the St. Croix River will result in negative impacts on the river and the surrounding area, displacement of existing wildlife, and harm to other sensitive resources, and there exists a strong potential for other negative environmental impacts that cannot be foreseen. We discuss each of these concerns more fully below.

#### Purpose of Designation/Applicable Laws

Congress passed the Wild and Scenic Rivers Act to protect our nation's rivers that "...possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values..." and determined that such rivers "shall be

preserved in free-flowing condition, and that they and *their immediate environments* shall be protected for the benefit and enjoyment of present and future generations.” 16 U.S.C. § 1271 (Emphasis added).

In 1972, the lower St. Croix River, between the dam near Taylors Falls and its confluence with the Mississippi River, was designated as a wild and scenic river pursuant to the Lower Saint Croix River Act, Pub. L. 92-560, 86 Stat. 1174. Subsequently, Minnesota enacted the Lower St. Croix Wild and Scenic River Act to protect the river and its values, finding that:

The Lower St. Croix River...constitutes a relatively undeveloped scenic and recreational asset lying close to the largest densely populated area of the state. The preservation of this unique scenic and recreational asset is in the public interest and will benefit the health and welfare of the citizens of the state.

Minn. Stat. §107F.351 Subd. 1.

In order to protect this asset, Minnesota developed minimum standards and criteria for the management and development of the Lower Saint Croix National Scenic Riverway. Minn. Rules Chapter 6105.0351-.0440. Minn. R. 6105.0370 sets forth use standards and criteria designed to “to protect and preserve existing natural, scenic, and recreational values, to maintain proper relationships between various land use types, and to prohibit new residential, commercial, or industrial uses that are inconsistent with the National Wild and Scenic Rivers Act, and the federal and state Lower Saint Croix River Acts.”

Minn. R. 6105.0370 Subp. 9(A) specifically prohibits sand and gravel operations in all districts in recognition that these uses are not consistent with the special nature of the River. However, prohibited uses in existence prior are considered “nonconforming uses... [that]...shall not be enlarged or expanded..” *Id.* at Subp. 10. The City of Scandia has adopted by reference the Washington County Lower St. Croix River Bluffland and Shoreland Management Ordinance, which contains the same prohibitions and language regarding nonconforming uses. Section 5 at 505-506.

According to the proposal by Tiller Corporation, it intends to operate the gravel mine on 64-acres, 55 acres of which were previously mined starting in the mid-1960s, so it intends to expand its operations by nine (9) acres. However, those 9 acres are not within the St. Croix River District Zone. Four (4) acres of the previously mined area are within the St. Croix River District Zone, but those mining activities do pre-date the land use zoning district designation and ordinance (1976). According to the DEIS, only reclamation activities are planned on these four acres. The property has sat as vacant open space since sometime in the 1980s when operations ceased. The proposed mine is contrary to the current City comprehensive plan.

Given all of the existing laws and designations that govern this area, we feel the DEIS analysis is inadequate. Consideration should be given to the special nature of the St. Croix River as a unit of our national park system, the fact the River is directly adjacent to the

proposed mining site, the fact the Park Service holds a scenic easement on portions of the site, and the recognition that gravel mining activities are inconsistent with this special nature and were thus strictly prohibited.

### Noise

The Draft EIS acknowledges that mining noise would be audible on the St. Croix Riverway, although not above current ambient levels. Section 4.15.4.2.1 (4-97). However, such noise is not characteristic of this river regardless of the ambient level.

The St. Croix River is enjoyed because of the tranquility it brings and was protected because it was close to the most densely populated area of the state yet it retained its “undeveloped” nature. Thus, preservation of this unique scenic asset was considered in the public interest. Minn. Stat. §107F.351 Subd. 1

Since the operation of this mine will be audible on the river, there will be a disruption of the use and enjoyment of the river, and consequently, the operation of this mine runs contrary to the very purpose for which the river was protected. None of the alternatives will mitigate this issue outside of the No Build Alternative.

There should be an analysis about the impact this noise will have on the St. Croix given its special status under federal and state law and specific purpose as a recreational and scenic asset.

Additionally, the EIS asserts that the noise generated from trucks hauling will essentially be a wash given trucks already haul gravel along this route. However, that analysis fails to take into consideration the true impact that operation of this mine will have on noise. In fact, if you allow operation of the Zavoral Mine for any period proposed, and cease hauling from the other mines during that period, what you have done is extended the number of years that the surrounding area will be subjected to the noise generated from trucks hauling on the roadway. The extended duration of truck-hauling noise that will result should be included in the noise analysis in the DEIS.

### Air

The DEIS indicates that uncontrolled emissions from operations would exceed National Ambient Air Quality Standards (NAAQS) and would also exceed nuisance dust levels. Such emissions will negatively impact vegetation or fauna around the site. DEIS (4-76 to 80). However, it does not appear an analysis was done regarding the impact of such emissions on wildlife. Tiller does propose several ways to mitigate the emissions to avoid such negative impacts. DEIS (4-85).

The DEIS indicates that it is unlikely that fugitive dust would adversely affect the water quality in the St. Croix River under either uncontrolled or mitigated conditions. DEIS (4-82). However, most of the mitigation measures include application of water, including calcium chloride in some instances, and there are concerns that these and other chemical

used in the mine will then be able to seep into water sources leading to the river. The DEIS should address the potential for this to occur.

### Methodology and Edge Effects

We have concerns regarding the methodology used, some of which was already raised during the public hearing on April 3, 2012, regarding the inadequate analysis of the mine's impact on traffic and property values.

We have similar concerns that the DEIS does not analyze the impact the mine will have on surrounding areas, especially in regard to the fish, wildlife and other sensitive resources. Any time there are activities undertaken by humans in a natural environment, there are consequences. Since sometime in the mid-1980s, this site has been essentially vacant of activity and has remained an open space. In the intervening 25 or so years, many species of wildlife and plant life have made their home in and around the area.

The DEIS indicates that no threatened or endangered species were found on site, therefore no impacts would occur. DEIS 4.5.1.3 (4-28). Also, no surveys were conducted for threatened and endangered mussel species within the St. Croix River because activities are not expected to directly or indirectly affect these species. DEIS 4.5.1.1 (4-23).

However, we disagree with this analysis. The law requires a more thorough look at direct, indirect and cumulative effects and goes beyond boundaries of site:

Environmental, economic, employment, and sociological impacts: for the proposed project and each major alternative there shall be a thorough but succinct discussion of potentially significant adverse or beneficial effects generated, *be they direct, indirect, or cumulative.*

Minn. R. 4410.2300 (H) (Emphasis added). Merely stating the mine is “not expected to...affect these species” is insufficient. We believe a more thorough analysis is warranted, especially given the mine's close proximity to the river, the history of a blow-out and subsequent damage to the river, and the concerns regarding the stability of the area and the steep slopes from the mine that go down to the river. Analysis should be done of species in the river and potential impacts from the mine.

It is also not clear what the long-term effects will result from the displacement of wildlife. The DEIS indicates that species displaced during mining activities would be expected to return to the area once mining and reclamation activities are complete. DEIS 4.5.1.3.1 (4-28). However, it is not clear what serves as the basis for this assertion. Additionally, there does not appear to be any analysis regarding the impact the mine will have on nesting birds and other wildlife in the surrounding areas due to the resulting noise and air pollution that will most certainly occur.

Finally, this area cannot be looked at in isolation. Adjacent to and in the immediate vicinity of the proposed mine are several areas of note aside from the national park, including a

trout stream under consideration for state designation, two federally endangered mussel species, the St. Croix Bluffs Important Bird Area (Audubon designation), a DNR-designated Regionally Significant Ecological Area, and the Rustrum Wildlife Management Area. As a whole, you have a very valuable and sensitive landscape that will be disrupted by the operation of this mine; therefore, a thorough analysis of the potential impacts should be undertaken of the entire area.

### Unexpected Environmental Impacts

On May 9, 2012, The Leader reported that Tiller Corporation had a significant sediment discharge from their washing ponds at the frac sand mine they operate near Grantsburg, WI. This sediment did reach the St. Croix River and the matter is now under investigation. While the proposed mine in Scandia is different in nature, it is such unexpected impacts that should weigh heavily on this decision-making process. The ongoing investigations of this operator should be a red flag when determining whether to allow this same operator to conduct gravel mining within Scandia's jurisdiction.

Furthermore, there is precedent for such unintended environmental impacts at the proposed site. When this mine was operated previously, there was apparently an incident in 1971 in which there was a blow-out and sediment reached the St. Croix River, resulting in damage to the river that still exists today. As the National Park Service pointed out in its previous comments on the DEIS, there is concern about the stability of the area given its location between the mine and a steep slope that goes down to the river. NPCA is concerned that the operation of this mine will have unintended consequences outside of those already raised in our comments, and that such damage will not be able to be mitigated or repaired.

### Future Uses

The City of Scandia adopted a new comprehensive plan on March 17, 2009, resulting in new zoning for the proposed mining area. The area is now designated as an Agricultural Core Area where agriculture is the prominent use and residential, park and recreational uses are secondary. Therefore, under the current plan, the proposed mine would not be allowed. However, the Conditional Use Permit (CUP) application was submitted on November 18, 2008, prior to the formal adoption of this new comp plan, thus the applicants argue that the new plan is not applicable.

While NPCA does not support operation of this mine as it will negatively impact the St. Croix River and the surrounding area, we recommend that should the conditional use permit be granted, that some type of assurance, such as a perpetual easement, be placed upon the property that would preclude any future mining of any type. This is appropriate given the clear intent by the City to disallow this proposed use in this location, and the fact this gravel mine sits atop sandstone, which has been mined for use in hydraulic fracturing and may be sought out for mining purposes following the gravel mining operations.

Conclusion

The DEIS is incomplete and lacks the comprehensive analysis required by law. The proposed mine is adjacent to the St. Croix National Scenic Riverway, an area specially designated as a part of our national park system that should be protected for its scenic and recreational values. However, this special nature seems to be ignored in the DEIS. Yet, even as written, it is clear that the mining operations will negatively harm this national park, and such operations are inconsistent with the purpose for which it was protected by federal and state law.

We thank you for the opportunity to submit comments on the DEIS for the proposed mine.

Kindest regards,

A handwritten signature in blue ink that reads "C. Goepfert".

Christine R. Goepfert  
Upper Midwest Program Manager

## **Comments on Draft Environmental Impact Statement for the Proposed Zavoral Mine and Reclamation Plan, City of Scandia**

Peter L. Gove  
2885 50th Ave.  
Osceola, WI 54020

Our family owns property on the St. Croix River in Wisconsin within the boundary of the St. Croix National Scenic Riverway, less than 2 river miles north of the proposed Zavoral mine.

Our land is subject to development conditions in a scenic easement negotiated between the previous owner and the National Park Service. The Park Service compensated that owner -- and more than a thousand other property owners along the Riverway -- who agreed to development constraints in perpetuity as part of a congressional mandate to set aside the St. Croix River for the enjoyment of future generations. The negotiation of these easements, plus the acquisition of thousands of acres in fee, were the building blocks to protect land, scenic views and other natural resources of the St. Croix river valley, consistent with the Wild and Scenic Rivers Act. I understand this federal land protection investment was in excess of \$40M in mid-1970's dollars.

From a review of land ownership maps in the area around the proposed mining site, there are properties similar to ours where the federal government, on behalf of all citizens and future rivers users, protected significant portions of river front and bluff acres. It is this investment in landscape protection that the City of Scandia must keep in mind in reviewing this proposed project and draft EIS. Your city, as does Osceola and many other river towns, benefits in terms of property values and tourism by the federal investment in the St. Croix National Scenic Riverway.

I believe you must weight the value of your community's proximity to this unit of the National Park System in evaluating this project, along with other factors in the EIS. Scandia's decision on this proposal will have far-ranging impacts beyond your boundaries and the financial interests of this particular owner and the permit applicant. I urge you to keep the broader community in mind; this is much more than a local decision.

Our family and neighbors along 50th Ave. will be impacted by this mining operation, regardless of the duration of the gravel extraction if the City of Scandia decides to issue a conditional use permit. I defer to the comments of the TA-COS group, St. Croix River Association and the National Park Service on the specifics of the EIS. From my reading of the draft EIS, it is inadequate as a decision document on this project of local, regional and bi-state significance.

One of our 50<sup>th</sup> Ave. neighbors lived near the river when the property was previously mined. He clearly recalls the dust and noise from the operation. As you deliberate on this matter in the months ahead, the impact of the proposed mining and reclamation project on adjacent property owners in both Minnesota and Wisconsin should be considered, along with the tens of thousands of surface water users of this stretch of the river as they enjoy the relative peace in their canoe, kayak or boat.

I am the current chair of the St. Croix River Association. Our board of directors supports the comments submitted on the draft EIS by Bill Clapp and Randy Ferrin. I underscore the point made in those comments by Messrs. Clapp and Ferrin that the proposed site is just adjacent to and will substantially impact the St. Croix National Scenic Riverway.

As stated above, the elected leaders of Scandia need to consider the potential impacts on this nationally designated area. Our Association is the watershed advocate for the St. Croix River. Land protection is one of our priorities. We recognize that the geology of the St. Croix watershed includes substantial mineable gravel and sand resources. And in fact, considerable gravel mining occurs at present with multiple environmental impacts including extensive road traffic impacts.

As citizens focused on the protection of the St. Croix River and supporting our National Park in the St. Croix Valley - the St. Croix National Scenic Riverway - we are particularly sensitive to mining operations immediately adjacent to the boundary of this unit of the National Park system. As the elected leaders in a community adjoining this protected area, this sensitivity extends to you and your stewardship responsibilities to future generations.

I am also the current vice chair of The Trust for Public Land's Minnesota Advisory Board. The Trust for Public Land (TPL) is a national land conservation organization that works to protect key parcels of land for subsequent sale to a local, state or federal agency for public use and enjoyment. Minnesota and Wisconsin are fortunate to have both The Trust for Public Land and The Conservation Fund (TCF) active in protecting land in this region. TPL and TCF have acquired over the years private properties adjacent to the St. Croix, its tributaries and throughout the large St. Croix watershed. These parcels are now managed for public use by city or county park departments, the MN or WI DNRs and agencies of the federal government.

In addition, the Minnesota Land Trust has worked to protect on behalf of Minnesota landowners tens of thousands of acres of land. MLT uses innovative conservation tools that protect natural and scenic land in cooperation with willing communities and landowners. We donated a conservation easement to the West Wisconsin Land Trust a number of years ago to ensure our St. Croix riverfront land is conserved forever.

In 2008, Minnesotans by a wide margin approved the Clean Water Land Legacy program where sales tax revenue are dedicated for the next 22 years to protect and restore habitat and water quality, and, support parks and trails and cultural resources. The CWLLA funds are in addition to funds available for natural resources projects from the MN Lottery, as recommended to the Legislature by the Legislative Citizens Commission on Minnesota's Resources (LCCMR). Few states have the benefit of similar programs to assist local units of government and community organizations in protecting our natural and cultural heritage.

It has been my view for several years that there can be an alternative solution to the Zavoral property instead of additional mining and the substantial environmental impacts during and after extraction – whatever the length of a conditional use permit - of this sensitive, high value parcel adjacent to the St. Croix National Scenic Riverway.

I propose that the EIS applicant, with the support of the Zavoral family, withdraw their application to mine this property once the draft EIS process is complete. During this hiatus, the City of Scandia would work with the Trust for Public Land, the Minnesota Land Trust and the St. Croix River Association to define a project to protect this parcel, owned and managed by Scandia, Washington County or the MN DNR, perhaps in cooperation with the National Park Service.

Under this scenario TPL would acquire an option to purchase the property at fair market value, with the assumption of subsequent public funding. The new park or natural area could be configured with some parking, trails to the river, river overlook, other park amenities and interpretive signage. Financing sources for the project include both the habitat and park funds of the CWLLA, LCCMR, the 2013-4 bonding bills, Scandia, Washington County and private funds raised by TPL or another land management entity. A portion of the property could be subject to a conservation easement and the owner would receive a tax deduction against income from the sale of the property.

The other parcels the Zavoral family owns in this area, including within the NPS boundary, could be included in this project, providing additional income to the family. It is possible given the proximity of the 114-acre mine site to the NPS Riverway boundary, that the Park Service would consider adjusting the Riverway boundary to include all or part of this parcel. As a result, the acquisition costs would be eligible for federal funds from the Land and Water Conservation Fund (LAWCON), with the assistance of the Minnesota congressional delegation.

I realize there are several complications with this idea at this late date in the city's consideration of this permit application. I understand the property owner has a contract with Tiller Corporation and Tiller has expended considerable funds on this project, including the development of the EIS.

If Tiller Corporation and the property owner agreed to grant the city time to work with the aforementioned groups to define a land protection project for this site - - versus proceeding with the conditional use permit process and likely litigation if a permit is approved - - it would be my view that all parties benefit: Tiller, the land owner, the city of Scandia, adjacent property owners in Minnesota and Wisconsin and the general public.

At this juncture in this long-standing and controversial project, it appears that Tiller does not need this gravel for its supply system for the foreseeable future. The City would be well served given the considerable opposition to this project by its own citizens, to explore this alternative with the talented and experienced land protection organizations in this state that have demonstrated their capability to access public funds for similar projects. Given Tiller's mixed operating record, the company's reputation would also benefit by supporting the exploration of this alternative.

And, for the Zavoral family, who have a long history in this area and profess an affection for this river, this potential solution not only provides them income, but preserves their reputation with neighbors and the community. They are not absentee owners, rather members of the Scandia community.

I am not privy to the potential revenue the family will receive from Tiller for the extraction of the gravel. From my view, that revenue stream needs to be evaluated against the potential revenue of a project I have outlined plus -- and while difficult to quantify but more important in my view -- the enmity Dr. Zavoral and his family will endure for decades to come from the consequences to the natural environment, Riverway users and his neighbors if this project goes forward under any of the alternatives outlined in the draft EIS. Included in that calculation for this family would be an accident during the extraction phase, or, more likely from the massive increase in truck traffic on highways 97 and 95.

Perhaps this option should have been put forward at any earlier date. I know there have been conversations with Dr. Zavoral about alternatives to mining the site but sense he and his family feel constrained by their contractual obligations to Tiller Corporation. The solution proposed in this option would reasonably compensate Tiller for their project costs and provide the opportunity to resolve the Zavoral's obligations to Tiller. In addition, my observation from watching this project from a distance is that all parties are looking for an alternative to the continued, contentious battle between the project proposers, neighbors and local officials over a reopened gravel mine in a special, sensitive place.

I urge the City of Scandia to declare a moratorium on reviewing a permit for this project until the end of 2013 to allow the previously mentioned land protection organizations to work with city staff, the permit applicant and land owner to define a win-win solution for all concerned, from both public and private funding sources. The draft EIS process could be completed, the EIS accepted by the City and then put in hiatus. Hopefully the project applicant would cooperate in this process.

In the interim, the gravel is still on site, Tiller apparently does not need the supply at this time and the focus could be on finding a solution that protects this special property, and makes it available for public use while providing just compensation for both the land owner and permit applicant. This outcome I believe would be accepted by a large majority in Scandia instead of the continued contentious debate in this community.

I believe this piece of property so close to a nationally designated and protected river deserves a fair evaluation of this alternative.

Thank you for your consideration.

Peter Gove  
Osceola, WI  
pmgove@comcast.net

**Anne Hurlburt**

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**From:** Carla Johnson [carlajohnsongabriel@gmail.com]  
**Sent:** Friday, May 18, 2012 1:35 PM  
**To:** a.hurlburt@ci.scandia.mn.us  
**Subject:** Zavoral Property Mining and Reclamation Project

Tiller Corporation proposes to operate a gravel mine and processing facility on a 114-acre site located east of State Highway 95 (St. Croix Trail) at State Highway 97 (Scandia Trail) owned by Dr. James Zavoral. Today's leading news story 5/18 revealed that a hiker discovered mining runoff flowing into a creek adjacent to the site, an flowed from there into the St. Croix national Waterway, and adjoining National Park.

The leaking holding pond was designed and maintained by Tiller Corporation, who operates and owns this mine. [Frac sand sediment spills into St. Croix River](#)

From MPR: "A spill at a sand mining facility in Wisconsin has dumped an unknown amount of sand and other sediment into the St. Croix River and wetlands near the Minnesota border, the Wisconsin Department of Natural Resources confirmed."

Tiller Corporation is proposing to open a new site in Scandia when they cannot even maintain their 67 acre site in Grantsburg. Tiller employees did not discover this leak-- a hiker noticed the previously pristine trout stream was polluted with runoff and reported it to the DNR. Is this what you want for Scandia? If a company is to be entrusted with a communities approval to *forever* change the landscape and remove precious national resources from our land, the expectation should be-- should be demanded--- that they are responsible, diligent and aware of their operations. This company has failed to adhere to this so far, and should be summarily denied their permit at Scandia. Their money,manpower and infrastructure is desperately needed in Grantsburg-- to repair, upgrade and maintain their current sand mine operation and rebuild the people's trust.

Sincerely,

Carla M. Johnson

Anne Hurlburt, Scandia City Administrator  
a.hurlburt@ci.scandia.mn.us

To the Scandia City Council  
From Sally Leider, Scandia citizen

Currently in our river valley and watershed, a broad community project is underway that asks our neighbors if becoming a National Heritage Area would be a good fit for our area. Having an opportunity to meet with those who are engaged in this initiative, I have witnessed how citizens of Scandia and other towns nearby have celebrated their stories of history, culture and natural resources. Hundreds of citizens in our region have met with The Heritage Initiative” last fall and this spring to identify the landscapes, places, traditions and the stories that characterize this unique and treasured region.

We live in a time when preserving heritage rich places is critical and has become a priority for many forward thinking communities. Our city of Scandia has a treasured national park in its front yard that is enjoyed and revered by people far and wide. We have rolling hills, farms, lakes, streams, wetlands, restored prairies and woodlands, and historical sites that make us a destination for all who seek a refuge from life’s pressures.

We can not allow Scandia’s natural resource heritage to be trumped by a gravel mining operation on one of its most pristine sites adjacent to the federally designated National Wild and Scenic St. Croix Riverway! We can’t afford to be guided by short sighted views that rob our future... not only for the 2- 10 years of operation, but for decades to come. Once lost and degraded, this area can never be restored to what it is today!

We are a city rich in history and with a vibrant cultural life. In 2012, we celebrate 40 years of Swedish Heritage at the Gammelgarden, whose mission is “preserving, presenting and promoting Swedish Immigrant Heritage”. Visitors to our Gammelgarden look deeply into the lives of immigrants who worked hard to preserve this land, their heritage and their traditions.

As our representative Scandia Council, I urge you to preserve our heritage by saying NO to a gravel mining operation in this location. You will be saying YES to a stronger, more prosperous community for people of all ages. We care about our city’s heritage and our reputation. Quite simply, our future, depends on your very thoughtful decision. We will be known as the *gravel mine city* not the *Gammelgarden city* if you approve this mine.

We want Scandia to be guided by the conviction that by working together, we can meet challenges. We can be a community that retains our vision for preserving rural character and cultural richness. We can’t succumb to pressures and fears that would result in gravel trucks dominating our highways and a gravel mine operating in a place that now welcomes visitors and local citizens to a National Scenic Byway (Hwy 95) and an enchanting view over our wild and scenic river into the hills of Wisconsin.

The following additional comments to the Scandia City Council are from Sally Leider, Scandia citizen and watershed educator who would like to **give voice to our city's youth**.

In my work as a watershed education teacher in local schools, I have the privilege of working with youth at Scandia Elementary. Students study the St. Croix Watershed and its diverse native species. They learn about water quality and "best practices" for a healthy watershed. They read literature about natural places, create art and write poems and stories about the special places they appreciate right in their own backyard.

In "Ode to My Place", a fifth grader shares what she loves about the outside landscape she explores and revisits daily near her home. She gives voice to her inner landscape, a world where:

"Past the skyscrapers there lies a quiet marsh.  
A creek glides gracefully nearby and sings a quiet song.  
In front of all this magic, I'll relax and feel my breath.  
I hope this place will last forever and is never put to death."

What message would be given to a Scandia fifth grader if a field trip was offered to see what NOT to do with land adjacent to one of the nation's first eight National Wild and Scenic Riverways? Our gift to an incoming kindergardener should NOT be seven years of trucks hauling gravel past the school playground all day long. What kind of message are we giving to our youth if we sanction this while we teach about honoring, respecting, and protecting our land and water legacy.

I can't imagine a prouder moment than if I would be able to share with my students that their futures were courageously defended not only by caring citizens, but by a City Council who wisely declined the wishes of one business whose track record is weak in protection of the land, the water, the air, and the quiet our area offers.

Scandia is dear to all of us... especially to our youth! What rich stories and traditions could possibly unfold in the future if our young people lived with role models who honored peoples' relationship to the special places they love?

Scandia itself is one of those special places. So please stand up and defend it!

Mayor Simonson and Scandia City Councilmembers,

As a resident of the St. Croix Valley for 30+ years and a landowner who resides in the Carnelian Marine St. Croix Watershed District, I would like to offer my comments to the Draft EIS prepared for the proposed Tiller/Zavoral gravel mine. Our children were fortunate to attend Scandia Elementary School, and our family has been enthusiastic in our support of the school and civic groups in Scandia. I offer these comments out of a deep appreciation for both the people of this community and the natural assets of the St. Croix Valley region, in hopes that tomorrow's kids have the benefit of living in such a remarkable place. Although issues such as this can be framed as "pro" and "anti" business, I truly believe that protection of these assets is also in the long-term economic interests of the community, as such places become increasingly rare and in demand.

As a professional environmental writer whose clients have included many of the state's natural resource agencies and leading nonprofits, I have a fair amount of experience relevant to review of an EIS. I was initially encouraged that the City called for an EIS on the proposed mine. But after careful review of this document, I can only urge the City to order that its many inadequacies be remedied, so that you have what you asked for: a thorough understanding of the potential impacts to guide your decision. There is plenty of information in this DEIS, but many of the conclusions made regarding "No Significant Impact" are simply not justified by the evidence presented. Please consider my comments the tip of the iceberg.

Laurie Allmann  
Resident, May Township

### **Noncompliance with EIS content requirements**

#### **1. Insufficient justification is provided for failure to provide reasonable alternatives to the proposed project, including alternative site and reduced scale. (Table 1, G)**

Other local sources of comparable aggregate exist in less environmentally sensitive areas. It is the applicant's premise that these other sites would not meet the two identified primary "needs" of the project which are, in effect: (1) to use the gravel resource at the Zavoral site and (2) reclamation of the Zavoral site. As preparers of the EIS accountable to the City of Scandia, AECOM should evaluate the validity of these stated "needs." Tiller has not made the case that there is a current need for the gravel at the Zavoral site, since there is abundant gravel to meet current demand at Tiller's other mines and they will actually suspend hauling from these mines while the Zavoral mine would be in operation. The fact that Tiller Corp will save money by hauling a shorter distance may be of interest to Tiller's bottom line, but does not meet the standard of a "need." There is also no "need" to operate the mine in order to reclaim it. The site can be reclaimed without mining it first: with a far better end result that does not include the topographic scar of a large pit. Given the level of community interest in this site and its many special

designations, it is reasonable to assume that a funding source could be identified for such a reclamation. Similarly, financial implications for Tiller are not sufficient reason to eliminate from possibility a reduction in scale of the project by excluding the previously unmined 9 acres (which have high ecological value) from the project.

## **2. Failure to adequately investigate and present sociological impacts (Table 1, H)**

Overall, the DEIS lacks investigation and presentation of results assessing the sociological impacts of the proposed mine: quantitatively or qualitatively. While various user groups are mentioned (neighboring landowners, boaters, bikers, drivers on the scenic roadway) AECOM's team did not include appropriately credentialed experts using professional methodology to assess likely sociological impacts *from the unique perspective of these users* in such areas as noise, health affects of air pollution, public safety issues, value of recreational experience and property enjoyment, reliance on the protection of shared community assets as embodied in the comprehensive plan, or overall quality of life over the duration of the mining operation. At minimum, a reasonable good faith effort could have included surveys/interviews of owners of pontoon boats who dock in marinas at Osceola or Marine; bike touring clubs who routinely host events on local roads; landowners whose property borders the proposed site; and the average 1500 people who rent canoes/kayaks each year from Taylor's Falls Recreation, the primary vendor supplying boats for people who paddle from Taylor's Falls to William O'Brien, and would therefore be directly exposed to mine noise. Sociological values can and should be measured, with methodology no less sophisticated than that applied to other parameters.

## **3. Lack of objective language.**

**(Reference Table 1: EIS Content Requirements: "An EIS shall be written in plain and objective language.")**

Bias favoring the proposed mine permeates this DEIS, exemplified in summary statements that downplay negative impacts while overstating benefits, by nonsensical and obtuse reasoning not justified by evidence, and by significant potential impacts that have been excluded from the document despite having been brought to the attention of AECOM during preparation of the document. Selected examples include:

(p. 26 and p. 31) The No-Build Alternative is said to GENERATE TRAFFIC of over 500 truck trips per day, with projections of 20 to 30+ years attributed to this alternative. In fact, the No-build Alternative is not GENERATING anything. This traffic already exists due to Tiller's other business activity.

(p. 29) Re. Impact Summary Table: cover types. The table indicates a change from 1.80 acres of "Dry Prairie" pre-mine to 40.44 acres of Dry Prairie post-mine. The language suggests that the net result of the mine would be an increase in acreage of native plant communities. In fact, there would be a serious loss in native plant communities; namely the 5+ acres of maple-basswood forest and white pine-hardwood forest that would be destroyed in the mining operation. Under the Minnesota Land Cover Classification System, a planting of selected native grasses and forbs does not constitute a "Dry Prairie". Without qualifying language, this table is misleading.

(p. 34) DEIS states: "No significant impacts to nearby public natural and recreational resources have been identified." This statement is unsubstantiated. AECOM

essentially pulled descriptions of nearby sites from agency websites, but did not engage in a reasonable effort to identify and assess potential impacts, including but not limited to: impacts on rare mussels (given Tiller's past and recent history of contaminating the St. Croix with sediment from mining operations due to failed Best Management Practices); impacts on habitat for rare species in Farmington Bottoms SNA (.2 miles east of the proposed mine) whose range may include the Zavoral property; potential for thermal pollution of a trout stream (Zavoral's Creek, also known as Crystal Springs Creek); impacts of disturbance on known nests of bald eagles; the impacts of the edge effect created by the mine on nesting success of neo-tropical migrant birds on property held in easement by the National Park Service; and the degrading influence of mine noise on the value of the St. Croix Scenic Riverway as a recreational resource *as defined by its users*.

(p. 33) DEIS states: "The site can be seen from some limited viewpoints but does not attract attention because most activities are screened." Statement is nonsensical: if something can be seen, it can attract one's attention.

(p. 54) DEIS states: "It is unlikely that fugitive dust would adversely affect the water quality in the St. Croix River under either uncontrolled or mitigated conditions, given (that) a high degree of variability exists in the sediment loading in the St. Croix River." Statement defies reason: the existing variability of sediment loading in the St. Croix River has nothing to do with the potential for a new source of sediment loading to adversely affect the water quality in the river.

(p. 41) DEIS states: Although the proposed mining would involve the loss of some wildlife habitat, approximately 86% (55 acres) of the impact would occur in previously mined areas... ." Impact is not measured solely in acres but in the nature and function of the habitat present. This phrasing has the affect of minimizing the true significance of the mine's impact, namely along its boundary with Scenic Riverway easement land, and the destruction of 5+ acres of native forest land. The DEIS should detail the ecological values and contributions and impacts to the "14%."

#### **4. Arbitrarily narrow definition of affected environment and inadequate representation of topic included in scope: Impacts to Fish, Wildlife and Ecologically Sensitive Resources and Threatened and Endangered Species**

State guidelines for preparation of this section of an EIS have not been followed, as the Biological Survey upon which it relies was narrowly prescribed, largely focused on state-listed rare species on the Zavoral property. In fact, by law, this section is to include "ecologically sensitive resources" which may not necessarily be rare species. The "affected area" is not limited to the Zavoral property. This section does not include reference to readily available and more up-to-date natural features data from agencies such as the National Park Service and DNR. While the natural features data reported from the Critical Connections survey is no doubt accurate, it is incomplete. As such, there is not sufficient data to make the conclusions being made.

## **Additional Comments**

The following insufficiencies and inadequacies in the DEIS require attention:

- Traffic data and related impacts to noise and public safety need to be adjusted to account for the increased DURATION of the mine-related traffic. Tiller would decrease hauling from Osceola/Franconia while hauling from the Zavoral pit, but every day of hauling from the Zavoral pit over the life of the mine (up to ten years) would be in addition to Tiller's other mine activity, given that Tiller would simply resume operation at the other mines following their work at the Zavoral mine.
- Greater focus in the DEIS should be given to Zavoral's Creek, also known as Crystal Springs Creek, which is under active DNR consideration for designation as a state-designated trout stream. Field studies have confirmed that the stream meets the qualitative criteria for state designation. According to Brian Nerbonne, Stream Habitat Program Consultant in the Fish and Wildlife Division of DNR (quoted with permission): "Throughout the environmental review process of the proposed gravel mine we've maintained that Zavoral's Creek should be considered a trout stream, and should receive all protections that a formally designated stream would have. We found water temperature and habitat conditions to be suitable, and a health population of trout in the stream. All of these support the conclusion that Zavoral's would meet the conditions necessary to be considered a trout stream. Of course, any formal designation would have to follow landowner notification and public comment requirements, as well as a DNR rule-making process." Consideration should be given in the DEIS to how the proposed project would be designed so meet the protection standards afforded to the state's finest trout streams.
- Tiller has previously gone on record stating that there would be no on-site fuel storage at the site. This should be affirmed in the DEIS. See minutes from November 11 PAC meeting:  
<http://www.ci.scandia.mn.us/vertical/Sites/%7B2F1D9A41-1D4D-4195-A3E4-159328E3F399%7D/uploads/%7B2601B4FE-E205-4FE5-BFFA-F627EAC7F3A6%7D.PDF>
- Throughout the document, the No-Build Alternative gets short shrift, when it should receive the same analysis of values (projected over time) as the other alternatives. The current cryptic treatment of the No-Build Alternative supports the impression of bias in the document, in that it favors the proposed mine. To state "no change from current conditions" is inadequate. Before the EIS is considered complete, AECOM should be directed to remedy this inadequacy. For

example, values of the No-Build Alternative for the next 10 years would include but are not limited to: 1) No mine-related loss of 5+ acres of native woodland, 2) No mine-related increased exposure of neighbors to airborne particulates, 3) No noise of mine operation heard by boaters on the St. Croix, 4) No post-reclamation topographic scar on the landscape from a pit remaining after excavation of 1.2 million tons of aggregate, 5) No risk of future variance requests by Tiller to expand or extend an existing mine, 6) Affirmation of the City Council's responsibility to uphold the rights of Scandia residents to have their community governed by their own current approved Comprehensive Plan, 7) No mine-related warming and thermal pollution of waters feeding Crystal Springs, a high quality trout stream, 7) No additional conflict points affecting public safety at the intersection of Highways 97 and 95, 8) Ecological benefits from preservation of contiguous forest cover and buffering of the forest communities along the bluff line, 9) Reduced risk for another catastrophic event depositing a load of sediment in the St. Croix and potentially harming Federally Endangered mussels, 10) Opportunity for neighboring landowners to take solace and enjoyment from time spent in nature, without the noise of a mine operating for up to 18 weeks out of the year for up to ten years.

Please submit into the record as well this feature article posted to the website St. Croix 360, which includes my additional comments related to the proposed mine and Draft EIS:

<http://www.stcroix360.com/2012/04/guest-post-a-gravel-mine-on-the-st-croix-river-bluff-at-scandia/>

Thank you for your consideration.

L.A.

**Anne Hurlburt**

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**From:** Johnson, Ron [rjohnson@Hazelden.org]  
**Sent:** Friday, May 18, 2012 2:36 PM  
**To:** 'a.hurlburt@ci.scandia.mn.us'  
**Subject:** Comments on Draft EIS for Zavoral Project

Dear Anne Hurlburt,

At the last minute (nearly), here are my comments on the Draft EIS for the Zavoral Project.

My name is Ron Johnson. I am a resident of Farmington Township in Wisconsin. I live right across the river from the Zavoral property.

I have reviewed the Draft EIS for the Zavoral Property Mining Project to the best of my ability. Here are some comments and questions that I have:

The EIS says that Tiller will not haul Class C add-rock from Osceola or Franconia to the Scandia mine during the years the proposed Zavoral mine is active. As a result, it says that the number of daily trips on Hwy 97 will not increase from current levels, and that the number of daily trips on Hwy 243 and Hwy 95 from Osceola/Franconia to the Scandia mine will essentially drop to zero. But won't the Osceola and Franconia mines still remain active? And couldn't gravel from them be transported directly to construction sites or to facilities other than Scandia? If that happened, the number of daily trips on Hwy 243 and Hwy 95 might not be reduced at all, or at least not to the extent that is claimed.

The EIS says that a north-bound right turn lane will be added to Hwy 95 at the Zavoral mine entrance. If the gravel from the Zavoral mine is to be transported directly to the Scandia mine via Hwy 97, then why the need for the north-bound right turn lane? Does Tiller also plan to send gravel to the south (on Hwy 95) as well as to the west (on Hwy 97)? Will trucks be coming from the south and then hauling their loads back to the south?

The EIS says that the use of the material from the Zavoral Site, as opposed to the more distant sources (Osceola and Franconia) currently used, will reduce environmental impacts related to hauling, such as the use of fossil fuels and air impacts. What they neglect to say is that as soon as mining operations are completed at Zavoral, the add-rock hauling from the more distant sites will resume, along with all the problems associated with it. It seems dishonest to use this "distance" argument as justification for reopening the Zavoral mine.

The EIS says that there may be a perceptible increase in noise levels at a number of residences as a result of mining operations at the Zavoral Site. Right now, neighbors of the Zavoral Site are subjected to the noise from trucks hauling add-rock from Franconia/Osceola to the Scandia mine. When the Zavoral mine is reopened, there will be additional noise from dozer, excavator, compactor, scraper, chipper, skidder, grader, and skid steer loader operations, as well as noise from water trucks, off-road trucks, and of course haul trucks. These noises will occur during site preparation, mining operations, and the reclamation phase. There may be times when site prep, actual mining, and reclamation activities will be going on simultaneously. Judging from the amount of activity that will be occurring and all the equipment involved, it seems to me that the EIS is really underestimating the potential increase in noise levels.

Back when the Zavoral mine was in operation in the 1970's and 80's, I remember that one of the most irritating sounds coming from the mine was the constant "beep-beep" of back up warning alarms on trucks and other equipment. I cannot find any reference to this type of noise in the EIS. Is there any way to mitigate this type of noise pollution?

The EIS says that berms will be used to screen mining activities and reduce visual impacts of the mine. But berms themselves are not attractive land features (a quick tour of the Tiller mine sites along the Hwy 95 in Franconia is proof of this). The EIS says that the berms may be removed as part of the reclamation. If the berms are near the highway, then I think they should definitely be removed as part of the reclamation.

The EIS says that the Zavoral Project would meet two primary needs: 1) Provide local aggregate material to surrounding communities; and 2) Reclamation at the end of mining operations would improve the character of the site. This raises some questions for me: Aren't there already enough gravel mines in the St Croix Valley, and especially along Hwy 95? Doesn't an awful lot of the gravel mined here end up going to places far from the St Croix Valley? Aren't the residents of this area already paying a high "price" in terms of increased noise, increased traffic, wear and tear on our roads, and degradation of the scenic qualities of our beautiful river valley, all resulting from the current mining activity? And how can removing hundreds of mature trees, removing 1.2 million tons of gravel, and then covering the hole with a few inches of topsoil, some prairie grasses and pine trees improve the character of the site?

It feels to me like the EIS minimizes every impact that the mine will have.

Thanks for taking the time to read this. I thank the Scandia City Council and Planning Commission for all the work that they have done during this long process.

Respectfully,

Ron Johnson  
2878A 50<sup>th</sup> Ave  
Osceola, WI 54020

Edmund K. Summersby  
20457 Quinnell Avenue  
Scandia, MN 55073

18 May 2012

Ms. Anne Hurlburt  
City Administrator  
14727 209<sup>th</sup> Street N.  
Scandia, MN 55073

Subject: Comments in Opposition to Granting CUP for Tiller/Zavoral Gravel Mine

Dear Anne Hurlburt:

I have reviewed the Draft EIS for the proposed Tiller/Zavoral gravel mine, and I remain convinced that this project has absolutely no redeeming merits or benefits that should lead the City of Scandia to grant approval of the Conditional Use Permit sought by Tiller Corporation. The City authorities have an inherent obligation to serve the public interest, and this proposed project is not in the public interest. In short, the reasons the permit should be denied can be summarized as follows:

1. Outdated Zoning. This entire proposed project is based on the now long-outdated 2020 Comprehensive Plan zoning, which has been replaced by the current 2030 Plan, and under current zoning, mining is not permitted on the Zavoral site. Although Tiller filed the original application while the old zoning was in effect, the time has long-since expired for them to complete the application, and despite granting Tiller unwarranted time extensions, the City has no right to allow such a blatant misapplication of the intentions of the zoning ordinance as this project would be. Essentially, Tiller missed their chance.
2. The City's Conflict of Interest. Due to the potential for increased tax revenues from the project, the City of Scandia has an inherent conflict of interest in the decision whether or not to allow this project to proceed. The City is not in a position to be objective in its decision.
3. Increased Traffic Impacts. The Draft EIS does not adequately address the traffic situation that will result if the project goes ahead. The addition of 600 truck trips per day on hwy 97 is dismissed as "negligible" or words to that effect, but is in fact unacceptable. Evening rush hour traffic at the junction of hwy 97 and hwy 95 even today is heavy, and the addition of a steady stream of trucks exiting the mine site and crossing 95 and accelerating through the gears to head uphill and west on 97 is unthinkable. The potential for serious collisions at that intersection is not "negligible", and the likely resulting addition of a stop light is unwelcome and should be unnecessary.
4. Alternative Routes to Avoid the Intersection. The suggestion in the Draft EIS that there are "alternative routes" that drivers may take to avoid the predicted congestion at the hwy 97/95 intersection is ludicrous on its face. Residents may be aware of County Road 52 as a route to reach Scandia and points west, but visitors and recreation traffic will not, and certainly not before encountering the congestion at the exit from the Tiller mine site.

Ms. Ann Hurlbert  
18 May 2012

5. Truck Accidents and Spilled Gravel. On April 25<sup>th</sup> of this year a loaded gravel truck turned over at the hwy 97/95 intersection and spilled its load across the highway and beyond. I believe we can expect many more such accidents if this project is approved. An additional hazard resulting from such a major increase in truck traffic (600 truck trips per day) will be spilled gravel that falls from the loaded trucks even in normal operation (when they don't turn over). An increase in cracked windshields, dented fenders and the like can be expected, and again leads to the question – why should Scandia bring this upon its citizens?

6. Noise Impacts. The Draft EIS discusses at length the noise problem that clearly will result from the gravel mining activities and the exiting and arriving trucks, backhoes, excavator machinery and so forth, but essentially dismisses it as something inherent in gravel mining, and therefore acceptable. It is not. Whether or not the cited “noise standards” will or will not be exceeded misses the point that said “standards” were not established for such a peaceful and quiet scenic recreational riverway 7 AM to 7 PM hours of operation will be a nightmare for local residents, and worse for those using the federally “protected” St. Croix River due to the fact that sound travels long distances on water. It is hard to imagine a more inappropriate location for a gravel mine.

7. Sediment Impact on the St. Croix River. It is well known locally that during operation of the mine in the 1980s by Barton/Tiller a major break in a containment dike or some similar event caused a major outwash of gravel at the mouth of Zavoral Creek into the river, resulting in a distinct gravel delta that local boaters know about. The Draft EIS seems confident that such an event will not occur again, but such assurances carry little weight in light of the very recent (April 2012) failure of a containment berm at the Interstate Energy frac sand mine in Grantsberg that allowed a heavy concentration of silica sediment to wash into a nearby stream and then enter the St. Croix River as a creamy coffee colored tailing. Despite assurances in the EIS, Tiller cannot guarantee similar events will not happen here.

8. Conclusion. In closing, I reiterate that the City of Scandia has no reason (or right) whatever to approve Tiller's request for a CUP and many reasons to deny it, as cited above. The City's decision should be directed to the benefit of all the residents and visitors to Scandia, and not to reward one citizen and one corporation at the expense of all others. The fact that current zoning does not allow gravel mining on this site must not be turned on its head because of a technicality in the timing of the original application. That time has passed. This project does not serve the public interest.

Sincerely,

Edmund K. Summersby

## Anne Hurlburt

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**From:** Suzanne Lundgren [Suzanne.Lundgren@mpls.k12.mn.us]  
**Sent:** Friday, May 18, 2012 2:46 PM  
**To:** Anne Hurlburt  
**Subject:** Zavoral Mining and Reclamation Project DEIS

To:  
Anne Hurlbut, City Administrator, and City of Scandia Council Members

From: Suzanne K. Lundgren, Harriet E. Lerdal  
21565 St. Croix Trail N.  
Scandia, Minnesota 55476

We own a cabin on the St. Croix River less than 1/2 mile from the proposed gravel mine, and approximately 22 acres west of the railroad tracks. The cabin property has been in my family for 75 years and the acreage was bought several years ago to preserve for future generations. I grew up during the original mining operations and remember the small farmhouse on the site and the stand of old growth pines and oaks, all of which have been removed due to the previous mining operations. I also remember the incessant noise of the operation, bulldozers, trucks backing up being loaded, and washing processes. I can still remember the day when all was quiet...it had stopped and we could again hear the silence. I certainly don't want to spend the rest of my life ( 69 ) years, listening to this again. There are, however, more serious issues that have been addressed by a volume of studies which I would like to highlight.

No one really knows what the impact of reopening the mine will be except those proposing it and the owner of the property. It will mean \$\$ to them and lots of it. I am not one to discourage others from realizing a life long dream but am in this case! Many people have cited concerns regarding the reopening of this pit, particularly from the TA-COS group. They have initiated studies, and spent relentless hours working against the reopening of this mine. They love The St Croix River and the surrounding areas contiguous to the Riverway as I do, and many others. This will have impacts not only to us but for generations to come and probably forever.

I know you have heard all of this and must make a decision but please listen again:

- There will be immediate increases to traffic and noise pollution, people already have difficulty trying to get onto 95 from the east due to heavy truck traffic going north/south, and reclamation activities will create more noise.
- There will be an immediate visual impact during site preparation, and screening mitigations.
- The operation will result in mining an additional 9 acres, as deep as 70 feet ( 55 additional feet of excavation ) that will contribute 50% of the aggregate hauled out of the mine.
- How can you reclaim a 70 foot hole, and what impact will this have on contiguous water supplies, excavating only 3 feet from ground water supplies. This is very porous gravel/sand and is extremely close to streams and seepages that feed wet lands, marshes, and the St. Croix River; not only on the Zavoral site, but the Page property and my property.
- Any mining of this significance will certainly require extraordinary reclamation measures. Is laying down 4-6 inches of topsoil, adding seed, and planting trees appropriate for an area lying next to the St. Croix Scenic Riverway which was established by leaders who had foresight for generations to come. Is this proposal that short sighted.....except to fill the pockets of those proposing the mine.
- Is it true a reclaimed area will be non-suitable for farming, and will require specialized septic systems for any kind of development? What will the City of Scandia propose for this after it has been mined and reclaimed.... or do you leave this to your successors, who may have to clean up after the present council?
- Most of my concerns are included in the article on your website by Dave Crawford, a retired Minnesota DNR naturalist which was submitted by Laurie Allman ( 2010). Before you put down my e-mail please read it again. Ask yourselves if this is what the City of Scandia wants their legacy to be? Allowing the CUP might allow mining for up to 10 years but what does and does not remain will be there forever!

I could go on but I won't. This is probably the most important vote this council will make! Think of the founders of the St. Croix Scenic Riverway, and the millions of people who enjoy it and use it, much longer than any of us will be here. What do you want to leave for them?

Sincerely,

Sue Lundgren , Harriet Lerdal

21509 Lofton Ave N  
Scandia, MN 55073  
May 17, 2012

To the Scandia City Council:

Thank you for the opportunity to comment on the Zavoral Draft EIS. As residents and business owners in this community we have very strong feelings about this proposed project. After looking through the draft and attending various meetings for the project, it is not apparent to us that this could go forward under any of the proposed plans, other than the no-build option, without adversely affecting the delicate balance of the St. Croix Riverway, the quality of life of those living along the proposed haul route, or the health of locally owned businesses (such as ours) that rely on clean and green growing conditions.

As outlined below, several areas of the draft EIS are lacking in detail or substance, or are missing altogether. The most basic question, however, has not, to our knowledge, been either asked or answered: How does this project benefit the citizens of Scandia? Certainly clean up of the pit is desirable, but further excavation and mining has extreme costs and no return for anyone other than Dr. Zavoral and his business. In fact, allowing his business to move forward with this proposal will at the very least undermine the profitability of our business, and could do so much as destroy it all together. Most egregious is that any of the options to proceed would destroy the quality of life for our household while seriously compromising our business and making it difficult for us to sell our property and relocate.

Specifically, here are some important questions we have after reviewing the Draft EIS:

1. The most important issue to the community in general is that of the fragile environment of the Riverway. Others have commented on this in great detail and with more expertise than we can offer but we would like to add our concerns that nothing in the Draft EIS comes close to reassuring us that damaging mistakes will not be made again as they have in the past.
2. The use of Calcium Chloride as a dust suppressant is poorly addressed. What is the impact of using CaCl on this sensitive environment? Although essential to plant health, many plants are able to tolerate only small concentrations of this mineral. Since most metal chlorides are very water soluble, excess chloride ions are prone to transport essential cations such as sodium, potassium, and magnesium to nearby lakes or streams leaving the soil deficient in those elements and likely causing an imbalance in areas downstream.
3. We did not find discussion on regulations for the efficiencies of load covers or a plan for mitigating the buildup of aggregate on roadside berms. Buildup of debris on berms is a safety hazard for bicyclists and pedestrians. The current truck traffic creates varying levels of debris on the side of the road, enough so that it interferes with cycling, walking, or running. In the case of our household, this already limits the use of the road outside our home, and if traffic increases, it would be reasonable to expect debris to increase accordingly. Additional gravel on the roadside could be expected to eliminate our use of the road for fitness or recreation. How would this hazard be avoided, how would it be

monitored, and how would we be compensated for loss of use resulting from failure to prevent it?

4. Road surface damage is not adequately addressed. The current level of truck traffic has left Lofton with a damaged road surface and minimally repaired cracks, breaks, and scattered roadside debris. It would be reasonable to expect that increased truck traffic of any number would increase the damage to the road. It does not appear that the tax revenue from this proposed project would come close to pay for road maintenance, repairs, and berm cleanup.

In addition to the effect on general road traffic, damage to Lofton results in increased water drainage to our property and increased damage to our driveways. How will this be mitigated and monitored, and how will we be compensated for damage to our property and driveways if it is not prevented?

5. Real estate values as described in the Draft EIS are inadequate and misleading. A portion of our property has been offered for sale for the past decade. We have had inquiries regarding the property but no sale. Those who have explained their lack (or loss) of interest have given as reasons for looking elsewhere: the location of the pit across from us (Scandia Pit) and the truck traffic currently hauling to and from that pit.

From this empirical data, we can reasonably expect that increased truck traffic would increase the level of disinterest and lower the value of our property from the standpoint of sale-ability. Where in the Draft EIS was consultation with property owners near either pit or along the transport route reported? It appears that research never happened, even though it would be a reasonable course of action in the evaluation of the impact of this project on real estate sales.

6. The reclaimed pit site...a pit fifty-plus foot deep, reclaimed with grass and trees? What research was done to conclude that this is an acceptable outcome? It is certainly at odds with the results of community surveys over the past decade that detail the community's preferences and expectations.
7. Fragile species survey timing was restricted and inadequate. The Draft EIS discusses a biological survey of fragile species on the Zavoral pit site. The survey was attempted during June to look for adult plants, but for some species such as American Ginseng, which had been found on the Zavoral property in the past, the best time during the year to look for immature plants is in the fall. It is entirely possible that American Ginseng, and perhaps other fragile species is on the property but was not found due to a highly restricted survey period.
8. The survey of noise from current traffic included in the Draft EIS is inadequate. Noise generation from truck traffic is multidimensional and far more complex than described in this draft. In the Draft EIS, only a simple survey of decibel readings was included at a site where traffic was flowing near an open field, and even then noise levels were at a maximum allowed. Nothing was included in the report that reflected the noise of trucks slowing or accelerating after a turn or a stop sign, or coming up or down a hillside, or passing an area where sound would be reflected from a hillside along one side of a road to a residence and business on the other.

Our property includes all of these variables, any one of which increases truck noise. When these factors are combined, the perceived noise levels in our home and business is often too loud to hold a conversation at arms length with a customer or a family member. Some days this disruption occurs for a few minutes, and other days it spans several hours. The current traffic levels are too loud, too often. Any proposal that increases truck traffic will increase this disruption and would be unacceptable. If the proposed hauling takes place, how would this noise be abated and monitored, and how would we and our business be compensated for failure to prevent it?

Low Frequency (LF) noise generation was not addressed anywhere in the Draft EIS that we could locate. No plan was found to estimate LF noise, prevent it, or compensate for it. LF noise triggers stress responses in plants, adversely affecting growth and resistance to pests and disease. This is an obvious problem for crops growing along the haul route. LF noise also adversely affects animals including humans but in particular those who are elderly, suffer from PTSD or migraines, or from neurological disorders such as Parkinson's or Lyme Disease. These are mentioned in particular because all of these health issues are found in our household. Not only would our family members be adversely affected by LF noise, but our business growing plants would suffer as well. Extrapolating from existing truck traffic, it would be reasonable to expect the magnitude, timing, and incidence of LF noise generation from increased truck traffic from any of the proposed plans (other than the no-build option) would be tortuous. If any of the proposed hauling takes place, how would Low Frequency vibration be limited and monitored, and how would our household and our business be compensated for failure to do so?

9. Adverse effects on air quality along the haul route due to dust and contaminants from the number of trucks proposed was not addressed in any manner that we could determine from the draft. Again, our personal health and green business is highly sensitive to environmental stressors and we find nothing in the draft that assures us that we will not be physically and economically damaged by the proposed project.

In conclusion, we find the Draft EIS to be lengthy, yet lacking. We are concerned about the health of the St. Croix Riverway as well as that of our household and business. The Draft EIS raises many questions, and for us fails to address how this proposal will benefit us in any way. In fact, it reinforces our belief that this proposal will destroy our peace, torture our health, destroy our business, and leave us in a position where we are unable to sell our property and move.

Scandia residents have said that they want Scandia to be rural, with positive rural values. We fail to see how any part of this proposed project is rural in any positive sense of the word.

Sincerely,

Donald and Marilyn Hogle, Gary Hogle, Jan Hogle  
Twin Pine Farm

Friday, May 18, 2012

Anne Hurlburt, City Administrator  
City of Scandia

RE: Tiller Zavoral Draft EIS Questions / Comments:

Dear Anne,

Please include the following questions in the record of public comments – apologies in advance for the many acronyms, including:

NSTDC = New Scandia Township Development Code  
CoSDC = City of Scandia Development Code

Procedural Question:

With respect to the City's authority relative to updating and implementing it's most current Comprehensive Plan and Development Code, I understand the law as revealed through the exchange between lawyers representing Tiller and TA-COS with the City's attorney to confirm the following: Scandia may exercise it's authority to either impose the latest Comp Plan and Development Code, or allow the former versions to apply, or some combination of former zoning controls with current goals and procedures, at it's discretion. I do not believe the City has relinquished this discretion, contrary to what is asserted in the DEIS executive summary. Please confirm.

As I read the texts without the benefit of legal advice, I believe that this posture is critical for the simple reason that the NSTDC, 6/1/1999 contains the following, under its Intent and Purpose, Section 1.1(20): "To provide for the orderly, economic and safe removal and processing of sand, gravel, rock, soil and other material." No such reference appears in the CoSDC Intents and Purposes, 11/3/2010, indicating a clear intent to remove it from the code. Yet even in applying the NSTDC, the same Intent and Purpose pairs the following in clause 1.1(19): "To provide for the gradual and equitable elimination of those uses of land and structures, which do not conform to the standards for the area in which they are located." I submit that the City's responsibility, authority, and actions to date place it squarely between the "elimination clause" and the new CoSDC. Please consult and advise.

"Allowed Use" versus "Conditionally Permitted Use":

The DEIS refers to mining as an “allowed use”. As “allowed use” is not defined [in either version of the Development Code would it be more accurate to call mining a “conditionally permitted use” or a “conditional use” under the NSTDC.

Proposer’s Operational Description:

I understand the proposer’s primary role in an EIS is to provide the operational detail that is the basis of the study. In regard to the operational detail, I personally find the information provided to be unclear on a number of counts. For example, the report states that the proposer, Tiller Corporation, will be excavating the mine to an average depth of 15 feet. In fact, one document presented publicly at the final PAC meeting even stated a maximum depth of 15 feet. By my calculations, it would take only about a 50% yield of sand and aggregate over the 64-acre area of the proposed operation to an average depth of 15 feet to yield the 1.2 million tons. Yet the site sections furnished by the proposer and the summary text indicate excavation depths of up to 70 feet, with up to 25 feet of fill to reclamation elevations. Section ‘A’, for example, indicates a maximum depth of excavation of about 50’ even though the reclaimed grade is in virtually the same place as the existing grade. Beyond that, the sections provided curiously exclude the virtual center of the site. A north-south section roughly midway between sections ‘D’ and ‘E’ should be produced to illustrate the proposer’s intentions in relation to known subsurface conditions there. Proposer requested to better explain the “math of mining”.

Alternatives / Preferred Alternative:

The preferred alternative should be established at the conclusion of public deliberations over the alternatives, not as a precursor to public discussions. While neither Dev Code expressly discusses the role of the PC in an EIS process, both the NSTDC and the CoSDC assign/grant broad responsibility/authority to the PC in a CUP Ap in determining what if any combination of mitigating measures should be adopted in order to render a proposed use “consistent with the goals and purposes” of the Comp Plan. With that in mind, the scope of alternatives studied in the EIS should establish a complete range of alternatives from which the City may choose with respect to: area of mining, intensity [depth] of mining, duration of mining. Similarly, the nature and extent of reclamation plan should be subject to public discourse. In other words, all options should be on the table: a full range of area of mining from 0 to 64 acres; a full range of intensity of mining from an average depth of 0 to 15 feet; a full range a duration of mining from 0 to 10 years. And given the sensitivity of the site location and its significance to the future health of Scandia and indeed the entire Saint Croix Valley, the extent and quality of the reclamation plan should also be publicly critiqued. How and when can this happen?

Reclamation Plan:

The City has a legitimate interest in ensuring that the reclaimed property has value for uses consistent with the long-range goals and plans of the community. A site that has been excavated to a depth of up to 60 feet and backfilled to a net depth of 25 feet may not

be of use for the allowed uses present in the current zoning. A site that is not restored with topsoil equivalent to what was present prior to any mining on the site will not be useful for agriculture. A site with significant amounts of backfill, especially non-granular soils, may take many years before it is sufficiently consolidated for conventional foundations, whereas deep pile foundations would likely be cost-prohibitive. Suitability for future uses should be addressed.

Graphic representation / Viewshed Analysis:

The selective use of limited views can be easily chosen and manipulated to represent conditions that are not representative of the actual result of the activity and may not even take into consideration significant viewshed impacts. The city should require that a 3D model be made publicly available so that all potentially significant views of the operational and post-operational states of the property are considered.

Statements of Fact supported by Study versus statements of Opinion or Conclusions unsupported by the Study:

Will acceptance of the DEIS mean that the numerous statements that may be opinion rather than fact be legally construed as statements of fact and not subject to challenge? For example, a search of the document for the phrase “no significant impacts” finds twelve such statements. [34, 46(3), 58(2), 93, 134(3), 193, 194]. Will the city representatives – elected and appointed - have the opportunity to publicly vet these statements?

Respectfully submitted,

Steven Philippi  
21813 Quarry Avenue North  
Scandia, MN 55073

# Minnesota Department of Natural Resources



Division of Ecological and Water Resources  
1200 Warner Road  
St. Paul, MN 55106  
651-259-5738

May 18, 2012

Transmitted via E-mail

Ann Hurlburt, Administrator  
City of Scandia  
14727 209<sup>th</sup> Street North  
Scandia, Minnesota 55073  
[a.hurlburt@ci.scandia.mn.us](mailto:a.hurlburt@ci.scandia.mn.us)

Re: Zavoral Mine and Reclamation Project Draft Environmental Impact Statement (EIS)

Ms. Hurlburt:

The Minnesota Department of Natural Resources (DNR) Central Region has reviewed the Draft EIS for the Zavoral Mine and Reclamation Project (the Project) located in Scandia, Washington County. The following comments are for your consideration.

It is noted that the Environmental Assessment Worksheet (EAW) and the Scoping Decision Document (SDD) identified the proposed mining area to consist of 56 acres previously mined and 8 acres undisturbed by previous mining activities. The Draft EIS describes the proposed mining area as 54 acres previously mined and 9 acres of undisturbed. Please clarify the changes in acreage noted in these records.

The EAW and SDD detailed mining activities as being an "additional" 15 feet in depth. The Project Advisory Committee (PAC) meeting documents described proposed mining activities as an "average" of 15 feet. The PAC reviewed preliminary Draft EIS stated "maximum" depth of 15 feet and the Draft EIS details mining activities as "average" depth of 15 feet (ranging from approximately 10 to 70 feet deep). Please note and clarify the discrepancies in these descriptions.

When discussing the impacts of mining activities to wildlife, the Draft EIS document reads that "approximately 86% (55 acres) of the impact would occur in previously mined areas that remain unreclaimed...". Eighty-six percent would be accurate if the Project consisted only of the 64 acres that is proposed to be mined. However, the Project area is described throughout the document to consist of 114 acres with a proposed 64 acres of that to be mined. Performing the percentage calculation using the Project's entire acreage would actually result in 48% of the Project area as being previously mined.

Several butternut trees, state-listed as special concern, have been documented within the proposed mining boundary. This status of this species is proposed to change to endangered within the next year. If tree clearing occurs after this reclassification takes place, a takings

permit will be needed. The potential need for a takings permit should be acknowledged in Section 2.0 Permits and Approvals, Table 4. Anticipated Required Permits and Approvals. This should also be acknowledged in other applicable sections of the document.

Section 3.1.1.5 Reclamation Plan Summary and Review. The Draft EIS includes a discussion on two possible reclamation approaches for the site. On February 15, 2011 the DNR participated in a meeting with the City, project proposers and their consultants to discuss reclamation activities proposed. The DNR expressed support for Tiller's original reclamation plan referred to as the Prairie Reclamation Approach 1 in the Draft EIS. This plan entails revegetating the Site using the sandy subsoil available at the site with added organic soil amendments. The DNR also encourages incorporating managed burns for the site at a 5 to 10 year interval once the site is established.

Section 3.3 Alternatives. The DNR considers the proposed mining of the 9-acre white pine-hardwood forest a loss of biodiversity value. Although this area is described in the Draft EIS as being of "moderate quality", this diverse native plant community is rare along the St. Croix River. The creation of a planted prairie following reclamation activities, although positive, should not be perceived the same as a naturally occurring native dry prairie in terms of its biodiversity value. Further consideration of this modified scale alternative should be considered by the City.

Section 4.5 Fish, Wildlife, and Ecologically Sensitive Resources and Threatened and Endangered Species, page 4-23, Section 4.5.1.1. On February 9, 2012 a Natural Heritage email was sent to AECOM. The email included an updated Natural Heritage database report (no new records) and stated that the EIS should include a discussion on the issues raised in the July 21, 2008 Natural Heritage letter and a discussion regarding the butternuts. No further Natural Heritage response is pending.

Section 4.5.1.3 Impact Analysis. The statement "No threatened or endangered species were found during surveys conducted on the Zavoral Site or are known to exist on the Site. Therefore no impacts to threatened or endangered species would occur as a result of Alternatives...". NHIS records indicated that there were a potential for listed species to occur on the site. Although no species were found during surveys that should not be inferred as "no impacts...would occur". Survey results should be interpreted more accurately as the project is not likely to affect threatened or endangered species. Please refer to the previous comment on butternut. The Impact Analysis should take the proposed status change of this species into consideration.

Although no occurrences of Blanding's turtles were detected during the survey, Blanding's turtles are known to occur in the vicinity and may occur on site. The Draft EIS included the DNR provided Blanding's turtle flyer and fact sheet as Appendix C in the Draft EIS. The DNR through early correspondence requested that the proposer identify specific mitigation measures from the flyer and factsheet that will be adopted and applied through the life of the project and reclamation activities. This is not addressed in the Draft EIS. In addition, Section 4.5.2 Potential Mitigation Measures did not include a discussion on Blanding's turtles.

Mitigation measures should include that trees be inspected for raptor nests prior to any tree clearing.

Section 4.6 Physical Impacts on Water Resources. The DNR completed a site survey of Zavoral Creek in September 2010. The creek had been identified as being a potential trout stream but had not been sampled previously by the DNR as the stream is located entirely within private land. The DNR was granted access by project proposers through discussions regarding the Project. The draft summary and findings of the assessment were provided to the City during the preparation of the Draft EIS. The DNR confirmed that the stream supported a healthy population of brook trout and is interested in pursuing a trout stream designation for Zavoral Creek. The presence of this trout stream should have been identified more clearly in the Draft EIS under Section 4.1 Land Use and in other applicable sections.

The DNR is aware that there is a concern raised regarding the effect the Project would have on the trout stream. Data provided in the Draft EIS and through site observations indicate that Zavoral Creek is fed by seeps. Infiltration of surface water that feeds seeps has the potential to alter the current environment of the stream. The concern is for the potential of a thermal plume reaching the trout stream resulting from the reduction of overburden atop the groundwater in the area proposed to be mined. The concern is valid as trout are sensitive to temperature variations.

The DNR has reviewed the information prepared by Dr. Scott C. Alexander regarding the springs (PowerPoint presentation posted for April 3, 2012 and "Preliminary Results of Spring Survey and Monitoring below Zavoral Property, Scandia, Minnesota" [no date]). DNR comments are based on the limited information provided. The minimum depth to groundwater during mining is proposed to be 30 feet for this project, and the final reclamation plan leaves a minimum of 50 feet above groundwater. Warming of groundwater at these depths should be less than 0.3 degrees Celsius, based on research conducted by the St. Anthony Falls Laboratory at the University of Minnesota (Taylor and Steffan 2008). The warming at the spring outlet will likely be less, because not all groundwater will travel beneath the mining area in the case of Zavoral Creek. The potential for increased infiltration in the project area due to almost all post-mining drainage being contained on site may actually cool the trout stream, as more flow in the stream will be from groundwater than surface water. It is probable that thermal impacts to the trout stream will be minimal. Monitoring of stream flow and temperature could be requirements for the project to ensure that the mining operations are not affecting the stream.

Section 4.7 Water Use. The Draft EIS correctly identifies that the Site's multi-aquifer well is an open hole in two systems, one of which is the Mt. Simon-Hinckley aquifer. The document also correctly identifies that the commissioner (DNR) may not issue new water use permits that will appropriate water from the Mt. Simon-Hinckley aquifer unless the appropriation is for potable water use and there are no feasible or practical alternatives to this source (*Minnesota Statutes* 103G.271, subpart 4a.). The proposer has stated the intent to use the onsite well for dust suppression purposes and that this proposed use will be below the appropriation triggered threshold of 10,000 gallons per day and 1 million gallons per year. Even though this use of the well as proposed would not trigger the water appropriation statute, the DNR strongly encourages that use below this threshold be limited and when used that it be limited to potable water use. The DNR recommends that the well not be used for the purposes of the project and be properly sealed in accordance with Minnesota Department of Health guidelines.

Zavoral Mine and Reclamation Project Draft EIS  
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DNR Comments

If the proposers proceed with the use of the well as described in the Draft EIS, the DNR recommends that mining activities occur outside of summer months when water use is at its peak. This timing recommendation may conflict with Sub alternative 3A which is proposed to occur from approximately the second week of March through the second week in October. The City should require Tiller to keep records of when the Zavoral Site Well is pumped and that these records are provided to the City to monitor groundwater activities. The DNR requests copies of these records.

Although the City is responsible for determining appropriate mitigation measures as conditions of the Conditional Use Permit, the Draft EIS should identify and inform reviewers of not only potential impacts from the proposed project, but also proposed mitigation to minimize those impacts that will be carried out by the proposers. Numerous sections within the Draft EIS including subsections of Section 5.0 Summary of Potential Mitigation Measures use of the term "potential" for mitigation discussions. Mitigation should have some level of commitment when discussed in an EIS document as it provides reviewers with what the proposer would be required to employ to mitigate identified or potential effects as a result of project activities. Section 5.0 Summary of Potential Mitigation Measures and appropriate Sections throughout the document need to address this more clearly.

Appendix A7 Tiller Dust Control Plan. Calcium chloride is proposed to be used as a dust suppressant and would be applied to internal haul roads throughout all phases of the Project. There is no information provided in this plan that indicated how often applications would occur and at what levels. Calcium chloride can be detrimental to vegetation and can leach into the nearby streams. More information should be provided to better assess potential impacts to nearby resources.

The DNR appreciates the opportunity to review the Draft EIS and to have been invited to participate in early coordination and PAC meetings. For any questions on the comments discussed in this letter, please contact Melissa Doperalski, Central Region Regional Environmental Assessment Ecologist, at 651.259.5738 or at [melissa.doperalski@state.mn.us](mailto:melissa.doperalski@state.mn.us).

Sincerely,



Keith Parker  
Regional Director

CC: Steve Colvin, Bernice Cramblit, Melissa Doperalski, Liz Harper, Molly Shodeen, Scot Johnson, Erica Hoaglund, Hannah Texler, Brian Nerbonne, Joel Stiras, Art Widerstrom, Rich Baker, Lisa Joyal, Bryan Lueth, Gerald Johnson, REAT (DNR)

## Comment #63, Page 5 of 5

Zavoral Mine and Reclamation Project Draft EIS  
May 18, 2012  
DNR Comments

Bob Patton (EQB)

### Reference Cited:

Taylor, C. and H. Steffan. 2008. Shallow groundwater temperature response to urbanization and climate change in the Twin Cities Metropolitan Area: Analysis of vertical heat convection effects from the ground surface. Project Report 504, St. Antony Falls Laboratory, Minneapolis, MN.

SC12 Zavoral Mine and Reclamation Draft EIS\_DNR Comments 18May2012  
ERDB#20080847-0005



**Anne Hurlburt**

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**From:** Andrew\_Horton@fws.gov  
**Sent:** Friday, May 18, 2012 4:59 PM  
**To:** a.hurlburt@ci.scandia.mn.us  
**Subject:** Zavoral Mine and Reclamation Project Draft EIS

May 18, 2012

Anne Hurlburt  
City Administrator  
City of Scandia  
14727 209<sup>th</sup> Street North  
Scandia, Minnesota

Re: Zavoral Mine & Reclamation Project Draft EIS  
03E19000-2012-CPA-0049

Dear Ms. Hurlburt:

Thank you for the opportunity to comment on the Zavoral Mine & Reclamation Project Draft Environmental Impact Statement (EIS). The proposed mining operation is located near the St. Croix River and within 2000 feet of federally endangered winged mapleleaf (*Quadrula fragosa*) and snuffbox (*Epioblasma triquetra*) mussel species. Higgins eye pearlymussel (*Lampsilis higginsii*) and spectaclecase (*Cumberlandia monodonta*) are also anticipated to be within this area of the St. Croix River and east of the three creeks currently draining the Zavoral Mine site. This project is anticipated to reduce off-site peak flow, risk of erosion, & overflow and improve infiltration which may benefit mussels. However, we still have concerns over increased sedimentation that may occur during the mining process, potentially resulting in impacts to mussel species. We have reviewed the Zavoral Mine Draft EIS and provide the following comments.

1) The last paragraph on ES-1 states that the average depth of mining will be 15 feet (ranging from approximately 10-70 feet deep) and that the maximum depth between mining excavation and groundwater would range from approximately 25-50 feet. Based on cross-section figures 35-39 it appears that the site would encompass more than a 15-foot average excavation. Please clarify this. We would also like clarification from the applicant that while the required minimum separation distance is 3-feet, this project will only mine to within 25 feet of the groundwater table. It appears there has been some confusion by previous commenters over the mining depth in relation to the groundwater table that this may clarify.

2) Page ES-5 states that no threatened or endangered species are known to exist or identified during site surveys. We believe this section should say that two endangered winged mapleleaf (*Quadrula fragosa*) and snuffbox (*Epioblasma triquetra*) mussel species are known to occur within 2000 feet of the project; however, these species do not occur on site.

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4) Page ES-6 & ES-19 state that “immediately after soil stripping, & prior to overburden removal, several short periods (matter of days or less for each occurrence) when potential impacts to downstream water resources could occur.” Please include an estimate of the number and scale of each occurrence that is expected and determine if there will be any cumulative effects that may impact listed mussels.

5) It appears that peak flow rates off the property will be significantly decreased during the mining process. To help ensure that all best management practices are followed and unexpected sedimentation does not occur and harm mussels, please provide a list of the Best Management Practices (BMP) that you are intending to use.

Thank you for the opportunity to provide comments on this project.

Sincerely,

Andrew Horton  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
Twin Cities ES Field Office  
4101 American Blvd East  
Bloomington, MN 55425-1665  
(612) 725-3548 ext. 2208

May 18, 2012

Ms. Anne Hurlburt, City Administrator  
and Scandia Planning Commission  
City of Scandia  
14727 209<sup>th</sup> Street  
Scandia, MN 55073

Re: Zavoral Mining Project draft Environmental Impact Statement

Dear Ms. Hurlburt and Planning Commission Members

The Environmental Impact Statement was not properly scoped in terms of the area studied, issues addressed and potential cumulative effects - and many of its findings are inadequate or in question. Expert witnesses have given testimony that has raised significant questions about numerous areas of the Worksheet's findings, to date, including traffic/safety issues.

Two recently reported incidents, the gravel truck roll over at HW 95 and HW 97 and the containment dam failure at a mining operation in Grantsburg, Wisconsin, prove that things can go wrong, confirming, or in spite of, expert opinions on both sides of issues, and prudent cautions.

Further, the EIS was restricted in physical scope to an area so small so as not to deal with effects on adjacent water, wildlife and fauna, and the Scandia community as a whole, as well as limiting the issues addressed.

The flora and fauna examined in the EAW was inadequate, dealing only with endangered, threatened or special concern species on "or near" the site. This scoping did not propose to adequately address the impact of the potential natural habitat degradation of the immediately adjacent St Croix Wild and Scenic River corridor or the immediately adjacent Crystal Spring (also known as Zavoral Creek) trout stream and southern mesic cliff/ravine.

The hydrology studies have still not adequately addressed the question about the proposed mine's effect on the springs, seeps and trout stream. The proposed depth of the mining will, I believe, reach into and below the depth of the ground water that gives life to Crystal Spring and flows out of the southern mesic cliff that wraps the north and east side of the proposed mine. Words to the contrary in the EIS do not suffice; simple math can provide the answer: mine down up to 70 feet from original ground level and you exceed the depth from ground level of source of Crystal Spring and the seeps emanating from the southern mesic cliff.

NOTE: the depth to the "aquifer level" in the area is different than the depth of the seam of sandstone that feeds the Crystal Spring and the mesic seeps. What happens to the trout stream when the water source for Crystal Spring and seeps that give the trout stream life are laid open or polluted by close proximity of such a wound? What happens to the unique ecosystem of the mesic (cool damp)

cliff/ravine? And how does one reconcile that the mining will dig down 10 – 70 feet, but the post-mining reclaimed surface will be down further down: 40 – 75 feet?

It seems ironic that the field north and west of Crystal Spring/Zavoral Creek ravine was just last year graded, planted and silt fenced to treat and IMPROVE storm water runoff that might enter the creek.

The EAW has quantified the potential tax income to Scandia, should the proposed mine become operational, but I don't believe that it has adequately identified the hard costs of the project that must be borne by Scandia – or someone; e.g. additional traffic and/or warning signage, moving or terminating the bikeway adjacent to the proposed mine, road repair necessitated by the truck traffic and gravel debris (of note as bids are requested for the 2012 Scandia Seal Coat and Bituminous Patching Project), and loss of tax valuation in the area (there has been expert testimony calling into question the draft EIS's finding of only a modest drop in adjacent property values. (Imagine living next to the gravel pit for 10 years – or on the hauling route. The drop in value is most certainly more than 5%.)

Certainly the soft costs are harder to quantify – but ultimately part of your decision: quality of life for residents, wildlife and flora in the adjacent area, noise effect on quiet river traffic, the scenic quality of Scandia's approach to the St. Croix (at best a raised mound – proposed to try and mask mine operations from view and deaden some of the sound, but all but obliterating the view of the scenic valley from HW 97, the gateway to the St Croix Wild and Scenic River valley and HW 95 Scenic Byway.

I would like to note that the word “restore” the site was use several times in the 2008 EAW and now (as often also used in the EAW), “reclaim” the site is used exclusively. Too bad.

To “restore” something means to: “To bring back into existence or use; reestablish; To bring back to an original condition.”

To “reclaim” something means only: “ To bring into or return to a suitable condition for use, as cultivation or habitation; To procure (usable substances) from refuse or waste products; To bring back, as from error, to a right or proper course.” The proposed reclamation will not even make the site suitable for cultivation or habitation.

The EIS should clearly state that, and Scandia should understand that “reclaiming” the deep pit - remnant of the proposed gravel mine with a modicum of topsoil and growing predominantly grasses is a far cry from “bringing back into existence, reestablishing, or bringing back to an original condition” the land contour and forestation of the site, or even restoring it to its current modest depression with groves of trees and cropland (6.92 acres of existing forest will be sacrificed for new mining, and an additional 8.54 acres of regrowth cut down and to be mined again. Plus the permanent loss of 2.04 acres of cropland for mining and reclamation.) Adding a small amount of White Pine monoculture reclamation, susceptible to White Pine Blister Rust, is not even good reclamation.

It bears mention that on May 15 the City Council accepted the Planning Commission's recommendations to adopt new “Guidelines for the Protection of Scandia's Scenic Viewsheds” and a related zoning ordinance amendment increasing incentives for property owners to protect scenic views when they

develop their land. The plan includes a goal (LU Goal 14) to “protect scenic rural roads, viewpoints and vistas identified through the planning process from visually intrusive or incompatible development”.

Alas, again, Scandia’s Zoning Ordinances are (will be) implemented too late to impact development proposals already submitted, such as the Zavoral Mine proposal. And although the guidelines are all voluntary and have no effect on property owners who do not want to take advantage of the incentives when they develop their land, proceeding with the “no build” scenario of the proposed mine site – and remediation of the site as legally contracted years ago could afford Zavoral and the City the opportunity to designate the property as a “Scandia Scenic Heritage Partner” in recognition of private efforts to preserve the scenic, rural and historic character of the community.

The draft Environmental Impact Statement is inadequate as currently written, and needs significantly more work – unless you believe, as I do, that it already shows that this propose project should not proceed.

Thank you for your time and careful consideration of this critical issue.

Gregory Page

[gregory@minneboha.mn](mailto:gregory@minneboha.mn)

To: Anne Hurlbert, City Administrator  
City of Scandia  
14727 209<sup>th</sup> St. N.  
Scandia, MN 55073

Once again I implore the City Council and Planning Commission to reject the reopening of the Zavoral mine. You were chosen to represent the people of Scandia. Look how many of us are opposed to this project and have fought against it for 3+ years. Please stand up and say "NO" to Tiller Corporation!

Say "no" to destroying the natural beauty and health of the St. Croix River & its valley.

Say "no" to excessive noise and pollution by hundreds of gravel trucks.

Say "no" to making a heavily traveled intersection & scenic roadway extremely dangerous.

Sincerely,  
Karen Sogge  
May 18, 2012

Karen Sogge  
21350 N. Pomroy Av.  
Scandia, MN 55073

**Anne Hurlburt**

---

**From:** Joni [aslice@frontiernet.net]  
**Sent:** Sunday, May 20, 2012 9:52 PM  
**To:** a.hurlburt@ci.scandia.mn.us  
**Subject:** Zavoral Mine Project - Comment

Hello Ann,  
I would like to submit a comment regarding the Zavoral Mine Project.

At one meeting, the representative for the Zavoral Mining company stated that they could finish their mining in "**150 days, unfettered.**" I think we should allow them the 150 days unfettered.

I believe this would be the best solution because it allows the mining company to complete their work, and the residents wouldn't have to endure the traffic, etc. for very long...kind of like ripping off a band aid - get it over with quickly and it will hurt a lot less!

Sincerely,

Joni Freier  
21799 Pomroy Ave No  
Scandia, MN 55073



Anne Hurlburt, City Administrator  
City of Scandia  
14747 209<sup>th</sup> St N  
Scandia, MN 55073

May 17, 2012

Dear Anne,

Please forward our concerns To Mayor Simonson and the city council regarding the proposal to resume mining operations at he Tiller/Zavoral site.

My wife Mary and I attended the planning commission meeting on April 3<sup>rd</sup>. We are very concerned with the prospect of having another mining operation in the city.

We live on Oland Ave, about 6 blocks from Hwy 97. We are definitely within earshot of the current truck traffic there. The trucks are especially audible when they down shift approaching the stop sign, and start up again after the stop at the intersection of Hwy 3 and Hwy 97. The prospects of increasing the number of trucks along the highway to accommodate the mining concern is most troubling. With the increase in trucks comes an increase in noise as well as additional safety concerns. More trucks create and even more difficult crossing 97 at Oakhill—already a tricky intersection.

We read in the Country Messenger last week about the frac blow out in Grantsburg recently . We are not reassured when Tiller tells us they will do a good job of containment. We have lived long enough to know that accidents do happen. An accident at the Zavoral site will potentially be devastating to the St Croix river and the land surrounding the mine.

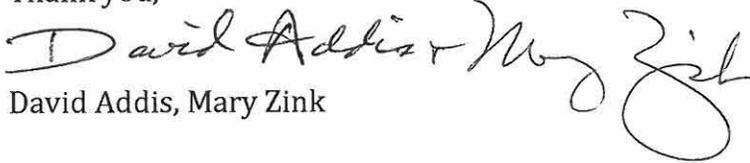
We are not convinced that the reclamation of the site will restore the area in any way near the its current state. We have lived long enough to know what special interests tell us, like politicians, is many times what they want us to believe, rather than what actually is true.

Finally, we don't see the opening of the Zavoral mine as a win/ win proposition benefiting both Tiller, Zavoral/and the City of Scandia and its residents. We know

that we have lived long enough to see that the City of Scandia and we its residents, will definitely lose out in our quality of life if the mine is reopened.

Please reevaluate and deny any proposals to increase mining in our city.

Thank you,

A handwritten signature in cursive script that reads "David Addis & Mary Zink". The signature is written in black ink and is positioned to the right of the typed names.

David Addis, Mary Zink

Planning Commission Meeting (Transcript p. 33-38) –  
Scott Alexander  
University of Minnesota in the Department of Earth Sciences, Groundwater hydrologist.  
Representing the TA-COS Citizens Group

I'm directing most of this at some of the issues with groundwater at the site.

And at the site here we have three main areas that are fed by groundwater. There is a north, Zavoral Creek, a middle creek, and then a southern one here.

The head of Zavoral Creek there is a nice rock out crop of springs emerging from the bluff. The rock formations here are Jordan Sandstone, which is the main rock unit right below the surficial sands and gravels. A protective aquifer layer and then another sandstone layer underneath that. And this picture here zoomed in on one of the springs there.

So basically the groundwater feeding these springs is coming from the surface originally. The Jordan sandstone is fed much more locally. This lower sandstone is fed from a much more regional scale. And in many of these valleys along the St. Croix River here these springs come straight out of the bedrock.

The middle creek has actually been partially buried by surficial sediments, and now these springs come up through some soft sediments to the surface and form a very different type of spring, much more diffuse. So instead of a nice point coming out of the rock, there is water just coming up just about everywhere.

One of the things that I've been doing at the site here is looking at the water temperature of the spring, and this is very important from the standpoint of trout, and the habitat in the stream below the spring.

In Minnesota we have a very large seasonal flux in temperature. This winter not so much, but most years we have on average about a 50-degree swing from the average summer temperatures to the winter, coldest winter days.  
And that surface signal is propagated down into the subsurface.

In the case of Crystal Spring here, which we just had a picture of, the signal is damped down quite a bit. It looks like it's probably on the order of about half a degree of Fahrenheit. So our surface signal is about 50 degrees, that's damped down to about one part in 100 of that surface signal, and it's also shifted in time.

The highest or the warmest temperatures in the spring are actually coming out in October here for the surface temperature's peak right about in July. So there is a time shift and a dampening of that signal, but there is a definite signal coming through to the springs from surface water.

And part of my research across Minnesota is identifying the sensitivity of springs to surface impacts. We have some springs that turn muddy after every storm event. These are not those kind of springs. Currently there is a lot of buffer between the surface and getting down to the bedrock spring. It has to come through the surficial sediments and then it has to work its way through the bedrock unit as well, and that's what's dampening out that temperature signal.

And in one of our recent papers it creates this type three pattern. It's a damp signal that is shifted in time. And that tells us quite a bit about how much water is interacting with the rock, how quickly the water is moving through the rock.

And then just a finish-up here with a few air photos showing the locations of some of these springs relative to the site.

Most of these springs we have mapped based on infrared aerial photos. So the dark lines are the warm springs. These are photos taken on a cool winter day, and so the springs of the streams actually show up as dark lines here.

So we have one set of springs in the middle creek here coming out below the current site.

Zavoral Creek actually has quite a series of bedrock springs from -- starting from a big alcove in here and from a second alcove down below. And I just point out here the scale bar here is about 100 feet. One of the interesting things, this site is also quite vertical. A horizontal scale here is about 100 feet. There is also 100 feet or more vertical variation as well, so very steep gradients through here. The last slide here showing the south creek, again quite close to the edge of the site.

The groundwater flow measurements that we took for base flow showed that the Zavoral Creek, the northern one flows at about 120 gallons per minute base flow. The middle one at about 40 gallons per minute, and the south one at about ten. And 120 gallons per minute makes a very nice trout stream. The south one at ten gallons per minute just about freezes solid in the winter.

Planning Commission Meeting (Transcript p. 89-92) Additional Question part of meeting –  
Scott Alexander  
University of Minnesota in the Department of Earth Sciences, Groundwater hydrologist.  
Representing the TA-COS Citizens Group

I think the main point is that there will be impacts to the groundwater and to the streams that are fed by the groundwater.

The question is, and what I can't as a groundwater geologist, I can't speak to what those impacts will be on the trout and vegetation, but there will be measurable impacts due to the changes in the land surface there.

COMMISSIONER KRINKE: I assume you mean negative impacts?

MR. ALEXANDER: That's -- I'm not certain if it will be -- if they do a full reclamation it's possible it may be better.

COMMISSIONER KRINKE: It could improve the location up there?

MR. ALEXANDER: But that would be part of their design how to remediate and reclaim the site.

CHAIR MAEFSKY: Have you, as you have read the plan so far, do you feel that it's adequate in that way? I mean, if you're not sure, just -- I don't want to put you on the spot.

MR. ALEXANDER: I don't know if it's adequate. I think they have glossed over a lot of the groundwater issues in this site and it would be a significant impact. There will be measurable impacts. Whether those translate to impacts on the biology and aquatic species, I don't know.

CHAIR MAEFSKY: Okay

COMMISSIONER PHILIPPI: Scott, what I took from the text when I read the portion of the report on the groundwater is that -- or when I listened to you, you said that the temperature that's being seeped into the Zavoral Creek would increase by .5 degrees Fahrenheit.

MR. ALEXANDER: The current surface signal that reaches the springs produces a .5-degree swing in temperature through the year. By shortening the flow path that temperature swing will be larger.

COMMISSIONER PHILIPPI: But at this point you can't quantify that?

MR. ALEXANDER: No, I can't.

COMMISSIONER PHILIPPI: And your specialty wouldn't allow you to predict what temperature swing might have a critical effect on the trout that are there? That may be another specialist?

MR. ALEXANDER: Given some resources we could do some modeling and make some estimates. The flow path, by removing 50 feet or more of material, you're definitely shortening the flow path by a significant amount.

COMMISSIONER PHILIPPI: And then reducing the depth of soil that is filtered by?

MR. ALEXANDER: And reducing the thickness that buffers that temperature as well.

COMMISSIONER PHILIPPI: I guess in my mind this goes to the issue of the -- in the EIS it's purported that any alteration of the drainage that would internally drain the current mining site is better than the existing conditions. Are you saying that's -- can you say that's not the case, or it may be the case?

MR. ALEXANDER: Again, it would depend on the extent of the reclamation. The current site with fairly sparse vegetation on sandy soils produces a lot of infiltration, which feeds a lot of water down to the springs.

A fully reclaimed site with good soils and lots of vegetation, a lot of that recharging groundwater could be sent back to the atmosphere by plant transportation. So it's possible that a very extensive reclamation would actually reduce the groundwater recharge there.

COMMISSIONER PHILIPPI: And what about during the life of the mine, if it's a five to 10-year, versus a one-year, can you speculate on that?

MR. ALEXANDER: In terms of the recharge during the mining, I don't think the recharge during the mining will probably be very high. And then once plants are reestablished that transportation will start redirecting and sending some of the water back to the atmosphere.

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Planning Commission Meeting (Transcript p. 40-45) –  
Kim Chapman  
1846 Berkley Avenue, St. Paul, Minnesota.  
Principal ecologist with Applied Ecological Services

We were brought into this project by the TA-COS Group. Our job was to evaluate the draft Environmental Impact Statement for completeness and accuracy, and I'm here to report on what we have found, and we will be submitting written comments also.

The DEIS stated that the proposed mine is in an environmentally significant area, but in our opinion was an incomplete analysis.

The black hatched areas that you see are the regionally significant ecological areas. The red area, the red circle, is the mined site that you can see that it is penetrating into that regionally ecological significant area.

And another thing that I would like to point out is the continuous forested corridor, all three that you see there in a largely agricultural region.

There was no discussion of this very important regional feature in the landscape. The proposed mine is going to narrow that forested corridor and affect these regionally significant ecological areas.

The DEIS also notes the proximity to nationally regionally significant public lands. But we, again, feel that analysis is incomplete. The proposed mine provides no buffer to the National Park Service easement, which is the green area right here. And all of the green areas of National Park Service either owned or scenic easement within holdings inside it. There is a common problem that occurs when private land abuts land in which the public has an interest, or has made an investment. And generally what happens is that the activities on the private land affect the adjacent public land with no compensation.

Another point is the DEIS insufficiently addresses edge effects, a very important habitat concept, and forest fragmentation in this narrow corridor. We looked at the aerial photos starting in the 1930s. All of this pink here is now more or less contiguous -- continuous forest canopy that is buffering the edge of the intact forest here. And this is the area that has never been cleared, that forest right there also buffering this area.

As AECOM discussed, it removes 5.4 acres of the native forest, but 18.2 acres of this buffer that has developed over the last 30 years. And that exposes the -- that opens the forest edge along here and exposes it to edge effects.

And the DEIS inadequately addresses these edge effects. They include such things as invasive species, Honeysuckle and Buckthorne are in the vicinity. Opening up the edge of that forest is going to cause -- it's going to increase the possibility of invasion by those species at the edge and into the forest. Predators, such as cats and raccoons, now can make forays into the forest more deeply to prey on young and eggs of songbirds, and vegetation microclimate change is predicted to occur as well.

The DEIS noise monitoring and also the National Park Service data, which we examined, suggests to us that given studies that have been done on the effect of noise on forest songbirds, that the density of forest songbirds nests in this vicinity here will likely be lower during the period of mining.

So those are the edge effects that the mine has on the adjacent National Park Service easement land, as well as the high quality forests.

These are just some of the species that could very well be affected if the mine is approved.

To address these issues we feel that there should be allowed sufficient buffer on the east and the south edges -- on the east and the south edges in order to protect the ecologically significant forest and the public investment.

It should also address the deficiencies in the reclamation plan. Specifics are needed on the density and the size of trees planted at the new forest edges in order to reduce the edge effects.

No mention also of how are you going to protect White Pine from deer browsing, White Pine being a favored browse of deer during the wintertime.

Conservation easements should be placed on that buffer, and the forest along east and south edge, to ensure that the high quality natural areas and the public investment is retained.

Just one word on Zavoral Creek. I studied trout streams in the State, I worked on the Vermillion Verbetron Stream, and I'm very interested in this particular one because it is shown to be a Brook trout stream. Brook trout, of course, being a quite difficult species to keep in streams in the agricultural regions of the state. They're highly sensitive to all sorts of pollution. It is a small creek, just one to two inches deep on average, not a whole lot of flow in there, and a small stream like that has -- is challenged to absorb pollution, such as sediment.

The proposed BMP, Best Management Practice, in the EIS consisted of two silt fences and perhaps a vegetation filter strip of undefined width. We feel that that is just not a sufficient emphasis for large storms, given the risk and the high quality resource.

Last slide -- Is the DEIS does not address the issue of alternate sites given the national regional significance of this location. We feel an alternative site should have been investigated. Here is just one example of what exists out there in the Met Council Study from 1997.

Planning Commission Meeting (Transcript p. 93) Additional Question part of meeting --  
Kim Chapman  
1846 Berkley Avenue, St. Paul, Minnesota.  
Principal ecologist with Applied Ecological Services

CHAIR MAEFSKY: It was towards the end of your talk, of your presentation, you made reference to the Met Council study of 1997.

CHAIR MAEFSKY: And how does that -- how does that relate to what we're talking about?

MR. CHAPMAN: That was a very thorough analysis of gravel resources that were available in the metropolitan area for use, and documented also in places that already had been spoken for, either owned and in operation, or about to be opened up.

So the -- as you look at that figure you see that there are quite a number of deposits away from the river that, at least in 1997, were available for mining.

The question I don't know is what has happened between then and now to those deposits.

COMMISSIONER SCHWARZ: Excuse me. Where would we get that information? Is there a more recent study that tells us what the conditions are today rather than '97?

MR. CHAPMAN: I'm not aware of one. Sherri Buss at one point was very much involved in this.

MS. BUSS: There isn't a more recent study. The map, I believe, is in your Comprehensive Plan.

COMMISSIONER SCHWARZ: Okay. But that relates to '97.

MS. BUSS: Right. But they have not done a more recent study, as far as I know.

COMMISSIONER SCHWARZ: So we don't know really what and where any gravel would be available today?

MR. CHAPMAN: We know where it might be, but then that would have to be followed up on and confirmed that it's still available today. Some additional study would be needed.

COMMISSIONER SCHWARZ: All right.

COMMISSIONER PHILIPPI: We also don't know what the use was compared to the projected use over that period?

Planning Commission Meeting (Transcript p. 45-50)  
Vernon Swing  
Principal traffic engineer at RLK, Incorporated.  
6110 Blue Circle Drive, Minnetonka.

And I also represent the TA-COS Group, and the review of the Zavoral Mine DEIS.

And specifically we were asked review question 21 as to the adequacy of the response, and the completeness of the response, and we will also be submitting written comments.

In general, our findings indicate that the answers to question 21 are as yet incomplete, and there are some unsubstantiated conclusions that have been brought forward.

In general, I think it's important to consider that MnDOT, as well as the Institute of Transportation Engineers, has put together some typical standards and typical things that you would expect to see in a traffic study done for an environmental impact review.

Included in those would be:  
Traffic counts.  
Capacity analysis.  
Safety analysis.

And a comparison between the future no-build versus build conditions. Generally this information is included in the technical appendix, but as far as we could tell there is nothing yet published that includes that information.

As to traffic counts, what is presently in there are some ADTs that were provided by MnDOT. ADTs being average daily traffic numbers.

However, there are no turning movement counts at any of the driveways or intersections that are critical in this as far as an analysis would be concerned. And there is no information given as to whether or not the volumes listed have been adjusted for seasonal conditions when there may be more tourists, or those type of vehicles out on the road. There is no capacity analysis included. There is some discussion that the roadway segments have enough room, but to accommodate the truck traffic as they -- as it's claimed that there is not much change in that.

However, there is no intersection or driveway analysis done so it's impossible to determine whether or not there is an impact at the driveways. Generally speaking, those type of analysis would be provided in an output that is referred to as "level of service", and you could then determine whether or not there is a change, and if any kind of mitigation really, truly, is necessary.

There is some safety analysis referred to, however it is also incomplete. There is discussion of sight distance but there is no numbers provided as to what that sight distance is. Nobody it appears has gone out to actually measure that physically in the field.

There is crash data provided, but there is not an analysis along with the segments to -- or at the intersections as dictated by MnDOT.

You would generally put that type of -- you would analyze that and put that output out there as crash rates so that you could compare that segment with other segments in the state, and again see whether or not any kind of mitigation is appropriate.

The future, generally speaking, when we conduct the future no-build versus build in which you would determine what the background conditions are one year after activities begin, and then you would put the build traffic on top of that and do a comparison to see if there is any change.

And you would do the same thing for a future design year that is out perhaps five years or 10 years, whatever it is that is the life of the operation. And this would again help you to determine what your mitigation strategies ought to be, and then again you would test those to see whether or not those mitigation strategies are in effect resolving the issue at hand.

Like I mentioned earlier, there is some unsubstantiated conclusions. An example of that is the discussion of the Class C aggregate. Basically in that it says that there is no change in volume as there are the Class C is arriving and today coming down 95 turning right on 97, and then going into the site to be processed.

The future condition, of course, is slightly different and they indicate it showed on that that it would be an obviously shorter trip. However, those truck trips are no longer just taking a right turn from 95 to 97, they're in fact crossing 95. This would provide for a change in conflict points from two to six, and I can show you that means here on the next slide.

Two conflict points basically would be a rear-end, possible rear-end accidents and a left turn. And a left turn conflict versus the six conflict points from crossing the road, which would show, as you can see, there are significantly more opportunities for collisions and crashes out there.

So for the conclusion to be drawn that there is no impact clearly seems to need to be explored a little further.

In conclusion, it's our opinion the Question 21 is still at this point incomplete.

Planning Commission Meeting (Transcript p. 51-57)  
Lisa Philippi

I have reviewed the adequacy of the BRKW's market analysis regarding property value losses in Scandia due to the proposed mine.

I have 32 years of mortgage banking experience, and knowledge of appraisal practices in property value trends.

To review this I consulted a local commercial appraiser to determine what is required in a reliable and credible market analysis. This commercial appraisal firm does have a history of completing EISs and doing market analysis.

There are only several appraisal firms in the Twin Cities that do these types of analysis. There is only about three of them, and this firm happened to be one of them.

So I looked at the time frame of home sales comparables that BRKW used. They say in their report that they're using home sales comparables from 2006 and 2007, as this was the period of market stabilization unlike the sharp decline in values today.

For a reliable market analysis current comparables should have been used.

2006 was the peak of the housing market, and this would result in less the value loss than using today's values during the depressed market.

Current lending practices would not allow for home sales comparables older than six months to year. Lenders would never allow an appraiser to use comps from a peak market when the market is not like that today.

This is a Case Schiller history of home value graph, and it shows that in July of 2006 was the peak of the housing market. So then BRKW felt that they wanted to use a market that was more stable, then the year 2000 might have been a better year to use.

BRKW also states the following in their study conclusion. They state: In a declining market the introduction of a perceived negative factor, mining for example, into this environment can have a stronger impact than if appearing in a growth market where demand is more important.

So why didn't BRKW use recent home sale comparables to reflect closer to what the actual property value loss would be for our residents of Scandia today?

BRKW also used some of the same comparables for another EIS study that they have done. They have done a study for Xcel Energy in 2007 for a Fly Ash landfill site in West Lakeland, Minnesota on a Tiller-owned property. They utilized comps from 2006 and 2007, which at that time were current comps.

They used three of the same comps at the Rosemount Mine, and six of the same comps at the Andover Mine. So half of the comparables that they used in the study for us were used in this other EIS.

This brings into question whether they used 2006 and 2007 comps just to shortcut the work needed to prepare the study for Zavoral Tiller Mine rather than finding new, recent comparables. So property value study approach, BRKW used a matched pair comparable approach. They used four gravel mines, two, three pairs of property comps. They compared one property close to the mine, and one farther away. This was a very small sampling of information.

There is another method called the Hedonic Pricing Model. The Hedonic Pricing Model uses a statistical regression technique that allows for estimating the impact of one factor, while holding the other factors

impacting the house value constant. This method uses the large sampling of properties to determine value loss, and is often used in a mass appraisal project, such as this.

Diane Hite, a professor of agricultural economics, used this method in a study that she did regarding the property value loss due to a gravel pit in Delaware County, Ohio. She examined 2,552 residential properties from 1996 to 1998, versus BRKW's using 22 properties. This is an example in graph of what kind of property value loss you would be looking at, according to the Diane Hite study. You would see a 25 percent reduction in value a quarter mile from the mine, and then three miles from the mine you would see a five percent reduction in property values.

Here is a map of Scandia, and then the effects of property value losses from the quarter mile to three miles. So, as you can see, a quarter mile the 25 percent reduction in value would be like a \$300,000 house now being worth \$225,000. And then to the other extreme, the three-mile radius, a five percent value loss you would be looking at a \$300,000 home now worth \$285,000.

So as you can see, with a three-mile radius from the mine that's almost covering half of Scandia. So half of Scandia could be affected. I looked at two other property value studies, a Richland, Michigan, gravel mine that Upjohn Institute used. They utilized the Diane Hite study.

Rockford Quarry, they also used the Diane Hite study, so I would conclude that there was not enough data by BRKW to determine property value loss. So I found the market analysis to inadequate. They used a small sampling, 22 homes versus 2,500. They used a small data set analysis called the Matched Pair Approach, when they could have also used the large data source like the Hedonic Method. They didn't explain why one, they used one mile radius of effected properties and then ended up with only a quarter mile of effected properties.

They didn't do cross sections, like a high priced home to a low priced home. Large acreage, small acreage. They only looked at the properties in the \$200,000 to \$300,000 range. They didn't use recent comps for 2006, and 2007, which from the peak of the market would have been shown less of an effect in value loss.

They never compared the existing Scandia Mine, or the Franconia Mine to see property value effects of those two mines. They didn't analyze the ten-year, five-year and one-year plan. For example, the one-year plan due to extreme traffic would have more impact on value, but for a shorter period of time.

They also compared mines in Maple Grove, Rosemount and Andover, which are very high density housing suburban settings. This is not at all comparable to Scandia's rural nature and unique river front properties.

So, lastly, my review opinion is that BRKW's market analysis was not adequate to determine value losses. And BRKW actually states in their study conclusion, they state: Basically this analysis is inconclusive. Then they go on to give an arbitrary value reduction of 2 to 5 percent in a quarter mile radius from the mine.

Scandia residents expect this report to be accurate and reflect an impact of property values on their homes, and it does not.

Planning Commission Meeting (Transcript p. 58-59)  
Randy Ferrin - Resident since May of 1995  
23290 Quentin Avenue, Scandia

For background, and for credentials, I worked for over 33 years with the US Forest Service in the National Park Service as an ecologist and a hydrologist. My last assignment was as the Chief of Natural Resources for the St. Croix National Scenic Riverway, which is a National Park unit at the gateway of Scandia. To keep this brief, as a natural resource specialist I concur with the findings and statements of the specialists that are assisting Take Action, Conserve Our Scandia, that have presented tonight. Those are real concerns and need to be dealt with.

While I'm not a traffic impact specialist, I do drive and bike the streets and highways of Scandia, and I feel the impact of the truck traffic coming in and out of the mine was not adequately evaluated, as pointed out earlier.

I'm also not a real estate specialist. But we recently refinanced our house, and as part of good lending practices our mortgage company required a full appraisal. And as Lisa pointed out, the appraisal did not use comp sales in the west metro area. This appraisal was in sales in the Scandia area in the current market conditions.

So I think the property value analysis in the draft EIS is severely flawed, and needs to be redone. Please consider these points as you evaluate the draft EIS.

Planning Commission Meeting (Transcript p. 60-63)  
Kristin Tuenge  
20595 Quinnell Avenue North, Scandia

I'm also a member of TA-COS which means Take Action, Conserve Our Scandia. And, in a nutshell, our vision is to conserve the natural resources in Scandia and follow the current 2030 comprehensive plan.

I've got a couple of points that I want to make and then I will also be submitting written comments.

First of all, this whole mining project has been sold on two premises with two goals. One is to reopen a dormant mine because there is a need, which I agree with, for gravel in the metro area.

In following it along in finding out the outcome, I found that 50 percent of the aggregate that Tiller wants to mine is from the additional nine acres.

The second point is that the site -- the second point that it's -- the premise is based on is that the site will be bettered after reclamation. And I have read Tiller's reclamation plan.

What I don't think is substantiated is that a hole that is going to be up to 55 feet deep, a loss of 18 areas -- I'm sorry, 18 acres of woodland, some of it as old as 40 years old and established trees, is going to be better. To me there isn't substantiation for that. And it sounds like the replacement for all of those trees, including the 5.2 in the unmined area, is two to four acres of trees, the rest being kind of prairie in a big hole; which to me doesn't at all fit with our current or future land uses for this area. It's also said that it will be more stable and less subject to erosion. I'm not aware that there has been instability or erosion in the last many years.

The second issue I want to bring up is the use of calcium chloride for dust control. Anyway, I don't know if everyone is aware, it wasn't in our report, that there is [*sic*] a lot of hazards to chloride, which does get absorbed into the groundwater and the other waters from the surface very readily and it will seep into the areas three streams.

There was a report done by the Met Council in 2010, a ten-year report that followed a report done in 2000 about the stream water quality in the metro area. And what they found is that within ten years the chloride in the metro streams, especially in the streams going into the St. Croix River, had greatly increased for chloride and actually exceeded the standards on ten occasions. I think that one of the mitigations should be to not use chloride, and a couple of the reasons being is that there is clear evidence to show that chloride is toxic to trout, the trout that Kim Chapman talked about here. And it's also hazardous to the growth of many plants, including Pine trees. And we all know that this area has a number of native Pine trees, especially if you consider the edge effect also. So that would be one of the mitigation suggestions.

I also think that we shouldn't be using herbicides in that area, and even though the EIS kind of refers to it, it doesn't say. There is really no effective suppression of the small particles that will be generated by this project.

And those small particles do cause lung disease, or increase lung disease. So at this point those are my comments.

Planning Commission Meeting (Transcript p. 63-65)  
Gregory Page  
17001 220<sup>th</sup> Street North, Scandia

My issue has always been I didn't think that the scope, that is to say the things within the EIS proposed, nor the geographic boundaries, were full and rich enough to do a good job.

I'm glad we're hearing from professionals today that are raising some of those issues, just one of which I would mention which is the groundwater.

Kim Chapman talked about the topography of the site. It's not just the distance, but also the depth. We have heard about Crystal Spring which emanates on my property. The mesic southern cliff, which is on both my property and Zavoral's where it comes out less as springs and more as seeps, and the Black Ash swamp. If the mine goes down 50 feet it is going hit those streams.

You just heard about the chloride. The water is going to be warmer, it's not going to travel from Forest Lake through the bedrock. It's going to flush through this. We heard that there may be a greater charge to the ground water. That means more water coming through more quickly, potentially carrying pollutants and higher temperatures. This is the -- it's not unique, but it is very rare to have one of these cold north facing, damp cliffs and the trout, the Brook trout as we've already heard are very special.

So I think there are a lot of issues and I think you're now getting a richness of several sides and several professional views of this, and hope that you will review that very carefully.

Planning Commission Meeting (Transcript p. 65-70)  
Bill Clapp  
19955 Quinnell Avenue North, Scandia.  
Representing the St. Croix River Association

We will likely submit a more complete set of comments before the comment period is over. For this evening I want to focus on three aspects of the proposed project.

One is the nine-acre previously unmined area.  
The second is the depth of the excavation.  
And the third is the no-build alternative.

The unmined area, as you have already heard, hosts a handsome stand of trees. It seems a shame to sacrifice them to the demand for gravel. The EIS puts up a pretty feeble case for doing so. It's inadequate in this area.

First it says the area has been modified, the wood area. So you think, well, somebody has been in there cutting down the trees or something. Well, it turns out there has been earth worms in there. That doesn't strike me as somehow writing it off as no longer worth anything.

The second, it says that if the gravel is not extracted it will become available because of other futures uses put in place on the property. That's true. But Tiller has shown it has no immediate need for the gravel, because if they don't mine here they'll just keep hauling from Franconia. They have got the gravel already.

And then there is no evidence as presented in this EIS that this part of the metropolitan area is starving for gravel.

Kristin says she understands that gravel is needed, but I don't understand it. I need to see it in the EIS.

And, finally, the EIS says; well, why worry about the wooded area because the area will be reclaimed? Well, how is it going to be reclaimed? It's going to be this hole that's about 60 feet deeper than now. It's wooded, and basically it's going to be covered with grass and a tree here and there.

What the EIS does not say is that the reclaiming will be at the bottom of a very deep hole, where there now is no hole.

And this gets to the second issue that I want to address, which is nowhere in the narrative parts of the EIS, the parts that you read, is the depth of the area after the mining discussed.

It talks about we won't go, you know, into the groundwater, but you never can read in there how much is being excavated. You have to look at Figure 10, and looking at Figure 10 on the computer is a struggle. At any rate, Figure 10 first of all, has a flaw. One of the three illustrations in it purports to show the pre-project bottom land depths, but it doesn't show any numbers, as the top green area. If you look at it there is no numbers in there.

It does show that the basic bottom depth of the end product after mining will be an elevation 840 feet, and it shows that this will result from digging down 40 feet in the wooded area, and 30 to 40 feet down in the previously mined areas. The resulting pit bottom is, according to Figure 10, 60 to 80 feet below the edge of the pit along Highway 95. You know, you would think you're up in the Iron Range to look at this thing.

Just think how long it would take for trees planted in the pit bottom for their tops to reach up to the level of the viewer standing at the edge of the hole? And you're looking down into this forest.

This is not a reclamation that strikes me as being too nifty. I want to emphasize this because all of the talk of restoration lulls one into forgetting that basically the end product will be a far deeper hole than at present, basically just covered with grass.

Which brings me to our third issue, the no-build alternative. The draft EIS is woefully anemic in discussing this alternative.

It treats it as if it's an uff (sic), that's not nice to think about doing. The only, and we repeat, the only argument for going ahead with this project is that Tiller can use the gravel. It's not that it needs it, it's already got the gravel. It just says it can use it.

The grassy, deep hole that Tiller's project would leave us with is a worse situation, in the opinion of the St. Croix River Association, by far than the land as it presently exists.

There are many other issues that the project raises. We refer you particularly to the comments of the TA-COS professionals, which I think have been great, very excellent, and also the National Park Service. Why do I say the National Park Service? Because the point, and one of the TA-COS speakers made, is this baby abuts a national park. And you've got to be doggone careful when you're doing something this drastic to the landscape right next to a national park.

Planning Commission Meeting (Transcript p. 70-76)  
Lisa Schlingerman  
20661 Quint Avenue North

I'm going to give a little history of this proposed site, this proposed gravel pit.

I may make reference to Barton Sand and Gravel. Barton and Tiller are one and the same.

Around 1971 an incident occurred at the site that allowed massive amounts of sediment to wash down what we know as Middle Creek in the site into the St. Croix River. You can see the sand today in the river.

I have three letters describing this washout, or blowout. We don't know exactly what occurred. Scandia resident Robert Bowen, now Judge Bowen, referred to the silt and wash water which was discharged on residents' properties and into the river.

This was 1971, a letter from my mother, Barbara Schlingerman. Barton Company is operating their gravel pit to considerable damage to the environment of New Scandia. She mentions noise, as well as damage already done to the streams and the river.

Another letter from State Representative Fred C. Norton. Barton has made statements in the past that previous plans would not result in the seepage of effluent for their operation. This has not proved to be true.

And another one from June 1991, a letter from Washington County Soil and Water Conservation District to Delores Peterson. This site has quite a storied past regarding environmental impacts to the St. Croix River as a result of some poorly executed mining and reclamation activities. Files in our office indicate extensive erosion problems that severely impacted downstream properties and the St. Croix during the late 1960s.

This is the background for water problems at that site.

Then I move to the history of the so-called reclamation.

1991, I have letters between Washington County, Scandia Town Board and Dr. Zavoral between 1991 and 1998.

September '91, TKDA, the engineering group to the Town Board, it's about a site review of the Zavoral gravel pit. The purpose was to review the reclamation plan on-site with the developer's engineer LeRoy Neimus. It is stressed by Mr. Neimus that the developer did not wish to disrupt growth of natural vegetation, which has already begun to take place on the majority of the site. This natural vegetation includes numerous trees and foliage. The attendees agree that restoring areas which already had good ground cover would not be required.

June 28, 1991, from the Soil and Water Conservation. In conversations with Mr. Neimus it is indicated that Mr. Zavoral only plans on removing existing stockpiles in the near future. It may be beneficial for your township, New Scandia Township, to have Mr. Zavoral provide you with some assurance that there is indeed a market for the material in these stockpiles prior to your granting him a permit. This would help alleviate any unnecessary disturbance at the site.

1992, Special Mining Permit for Dr. Zavoral. Special conditions:

Number one. This permit allows for the removal of existing stockpiles on this property only.

Number two: The existing wells on the property must be sealed in accordance with state and county standards. This has never been done.

Number seven: Special conditions, final restoration. Restoration must take place in accordance with the plan submitted. Never been done.

Number 13: Bond. Dr. James Zavoral shall furnish a surety bond in the amount of \$12,000 to run continuously until all operations and final restorations are completed, and thereafter for an additional period of 18 months.

Number 15 of the special conditions: No fuel storage is allowed on the property.

1993, from Kathleen Nordeen, Land Use Specialist from Washington County. In response to your request -- this is to Dr. Zavoral. In response to your request to reduce the required bond for your mining operation I reviewed it, and the restoration has not occurred according to the approved plan, and therefore the bond cannot be reduced. She continues to say: In addition, it is my understanding that the future restoration being planned consists of the construction of a dike to reroute water which has caused erosion problems.

The final one: 1998 to Washington County from Dennis O'Donnell. We all know him, Senior Land Use Specialist. He gives a background to getting the permit for this five year mining permit.

In the analysis: The property still has varied and rough terrain. We realize that not all of reclamation standards of our mining ordinance would be met. The site was stabilized, and more harm than good would be done to try and further and flatten the slopes. The reclamation we felt needed to be done has completed. There is no drainage or erosion offsite. Once again, we felt its best not to disturb the vegetation that has been established by nature. If the owner develops the property someday, some of the irregular terrain will be corrected.

It is very clear from these letters, and the background, that the restoration is completed. That if anything is disturbed that water will find its course, and the course is to the river.

Planning Commission Meeting (Transcript p. 76-78)  
Greg Korstad  
Larkin, Hoffman Law Firm  
Representing Mike Caron of Tiller Corporation

What I wanted to do is just mention a couple of things about this project.

First of all, in doing the Environmental Impact Statement, this is probably the most well-studied gravel pit in Minnesota. It is certainly the most well-studied gravel pit in Minnesota that does not have a wash plant; the most well-studied gravel pit in Minnesota that does not process materials; and one of the most well-studied gravel pits that has been as responsive to comments and issues and questions raised by both public and government officials with jurisdiction over the project. And it's been a real effort to get disbar in the process.

The second thing that I want to say is that that is unique in the industry, and so as we move forward we're going to see that this Environmental Impact Statement is reviewing a project that really has very little of the traditional characteristics that you see in a gravel mining operation. And it, frankly, has very little of the characteristics that have existed at the Scandia pit for dozens of years here in this community without significant adverse effects.

We have seen criticisms of the EIS. The criticisms that we have seen are those that you would expect to see in an EIS. There are things that need to be addressed. The process will include responding to each one of those, as that's the City's obligation, and Tiller Corporation and its consultants will work with you to provide information at the direction of the City to be able to make sure that we have a full and complete disclosure of everything that is going on with this project. And we look forward to continuing to work on the Environmental Impact Statement.

Planning Commission Meeting (Transcript p. 78-79)  
Janet Anderson  
20453 Quinnell Avenue North

I have not heard the question of dust and silicon addressed adequately to my mind in any of this. I will be happy to have somebody take that on because it's a great concern to me.

Planning Commission Meeting (Transcript p. 84-85)  
James Wilcox Dimmers  
Osceola, Wisconsin

My first concern, of course, is the ecology, what this project is going to do and affect the river, and the residents who are many friends, and people that should not be affected in this way. I would like to address that we have heard so much about the reclamation. Tiller says they will do this and they will do that.

I've looked at their other gravel pits and I don't think they're very attractive. And I think a picture is worth a thousand words. Remember that old saying? Could they not do some renderings, hire an artist to do a painting of what that site is going to look like when it's an 80-foot deep pit? So none of us have to stand here and wonder, well, now they say they'll do this, and they're going to plant some trees and they're going to pull out all of these trees. Show us a picture, please. Maybe that would help.

Planning Commission Meeting (Transcript p. 85-86)  
Pam Smith  
20919 Quint Avenue North

One of the concerns that I have that I don't think has been adequately addressed is that of sound, the impact during the process, but also after if they're going to remove all of those trees. Sound, not only from the gravel pit but from the highway behind it. The noise. So right now there is a fair amount of noise that you can hear from the river.

I would hate to see that increased, and if there is any way to see that decreased if they're moving -- if this goes forward and there is a lot of dirt being moved around it would be an ideal time to berm, high berms, trees planted. You know, if there is an 80-foot pit or 60-foot pit, you know, maybe there needs to be some significant berming in front of it, or along the highway, to mitigate some of the noise issues that are along the river. So I would like that to be considered in the entire process.

Planning Commission Meeting (Transcript p. 87-87)  
Jean Houlding  
21922 Pomroy Avenue North

You mentioned a major storm event, being able to accommodate it in the different plan, year plans, multi-year plans.

So I'm wondering what a major storm event is, and what the anticipated effect is.

Planning Commission Meeting (Transcript p. 88-89)  
Pam Arnold  
16560 220th Street North

For those on the Planning Commission that were not at the last PAC meeting I wanted to repeat something that one of the PAC members who represents the Met Council said.

He said: When this mining operation if it goes forward is done, this site will be not be adequate for agriculture because of the porosity of the surface sands of the site, nor will it be an easy site to develop for residential development. It would require significantly exotic sewage systems, septic systems, again because of the porosity of the site.

So given that you are the Planning Commission here in Scandia, and those of us who propose to build in Scandia have to show you what the outcome of our building projects will be, I think one legitimate question you could ask is what will this site be appropriate for when the mining process is completed, besides more mining?

