



**DATE/TIME** Tuesday, August 23, 2011, 4:00 PM to 6:00 PM

**LOCATION** Scandia Community Center, Scandia, Minnesota

**ATTENDEES**

PAC Members Michael White (Community Representative), Tom Krinke (Scandia Planning Commission), Lisa Schlingerman (Community Representative), Kristin Tuenge (Community Representative), Bill Clapp (Community Representative), Jill Medland (National Park Service), Jed Chesnut (Community Representative), Jim Larson (Metropolitan Council), Jim Shaver (Carnelian-Marine-St. Croix Watershed District), Jyneen Thatcher (Washington Conservation District), Melissa Doperalski (Minnesota Department of Natural Resources)

City of Scandia Anne Hurlburt, City Administrator, Sherri Buss, City Planner (TKDA)

AECOM Team Leslie Knapp and Mark Rothfork (AECOM), and Trudy Richter (Richardson, Richter & Assoc. Inc.)

Tiller Corporation Mike Caron, Christina Morrison (Tiller Corporation), and Kirsten Pauly (Sunde Engineering), Ken Arndt and Jason Husveth (Critical Connections Ecological Services)

Public See attached sign-in sheet.

**MEETING NOTES**

**1. Introductions and Agenda Review**

Trudy Richter had the attendees introduce themselves. Trudy also asked PAC members and any other attendees to remember to sign-in.

Agenda items 3 through 16 are included in the PowerPoint presentation. Copies of the presentation are attached and are available on the City of Scandia Zavoral Mine and Reclamation Project EIS website at:

[http://www.ci.scandia.mn.us/vertical/Sites/%7B2F1D9A41-1D4D-4195-A3E4-159328E3F399%7D/uploads/Handouts\\_for\\_PPT\\_presentation\\_11-16-11\\_meeting.pdf](http://www.ci.scandia.mn.us/vertical/Sites/%7B2F1D9A41-1D4D-4195-A3E4-159328E3F399%7D/uploads/Handouts_for_PPT_presentation_11-16-11_meeting.pdf)



## 2. Approval of PAC #4 Meeting Minutes

Trudy asked for acceptance of the PAC 4 meeting notes. The PAC 4 meeting notes were accepted.

Trudy reviewed the agenda for the meeting and reviewed the next steps, EIS schedule, and PAC role and protocol.

## 3. Project Overview and Alternatives

Leslie presented an overview of the project and described the project alternatives evaluated in the EIS.

## 4. Impact and Mitigation Discussion

Leslie reviewed the definition of mitigation. Trudy introduced and described that the team was looking for input primarily regarding impacts and mitigation from the PAC.

## 5. Land Use and Reclamation

Leslie presented the findings of the impact analysis and the mitigation measures identified to date. The following comments were made by PAC members.

- The No Build alternative had little effort applied to it in the preliminary draft EIS. This alternative would benefit the residences of Scandia-need to describe benefits as well as adverse effects. For example, the No Build alternative fits better with the existing Development Code and 1,000 or more trees would not be removed.
- Dr. Zavoral has a history of not cooperating with reclamation. Recommend setting up an escrow account to pay for reclamation.
- Mitigation rules say that parts of project can be reduced. Recommend not mining 9-acre undisturbed area.
- How deep will the mining be in the undisturbed area? 30 feet?
  - Leslie responded that according to Tiller's proposal, the mine would be mined to an average depth of 15 feet in depth.
- In 1998 Washington County stated that the site was naturally reclaimed and no further mining could occur. That means to us that only current stockpiles should be removed. Dr. Zavoral has been under orders for years to reclaim the site. There are questions as to whether Dr. Zavoral would be a good steward of the site.
- The No Build alternative should include reclamation that has been ordered of Dr. Zavoral.
- Mitigation: There should be buffers around the proposed mining areas-there should be an extensive buffer area to the bluff.
- Reclamation to the lay person means that the hole will be filled in and that is not the case here. The hole will remain- it will just be vegetated. This should be clear in the draft EIS.
- A good description of the affected environment is lacking. It should be beefed up to identify and describe the purpose of all protected resources St. Croix Scenic Riverway, Falls Creek Natural Area, State Scenic Byway Highway 95, etc. and determine if these areas are impacted or not. The Riverway should be added to all maps. There is the



Rutstrum Wildlife Management Area below Zavoral's road (near blow-out) that was not in the EIS and should be. A discussion should be added.

- Mitigation should be considered as not being restricted to reducing impacts to permit levels.

## 6. Economics

Leslie presented the findings of the impact analysis and the mitigation measures identified to date. The following comments were made by PAC members.

- The No Build alternative would not reduce home values by \$400,000.
- Historically, the sound impact from the former Barton mine was noticed greater than 1-mile for residences.
- Tourism in St. Croix Valley was not addressed-not just on weekends-especially summer and fall. Tourism has been neglected in the EIS. The St. Croix River is second only to the Mall of America in tourism in MN.
- The long term economic effects of mining and tree removal should be addressed in the EIS.
- Impacts to sustainable farming (bee-keeping, etc.) within ½ mile should be added to the EIS.

## 7. Biological Resources

Leslie presented the findings of the impact analysis and the mitigation measures identified to date. The following comments were made by PAC members.

- PAC cited evidence of Blanding's turtles in the area. Several PAC members are witness to this. Mitigation: Add MnDNR guidance regarding Blanding's turtle habitat be added as mitigation measures to the EIS.
- How was it determined that seeps would not be negatively impacted?
  - Leslie asked that we wait and discuss this under water resources.
- A new alternative should be proposed and analyzed. No mining within the 9-acre undisturbed area.
- A recommendation was made that mining not be allowed more than 100 feet from the limits of past mining activities.
- Quantify areas of cover before and after-Leslie referred to the tables in the draft EIS that present this information.
- Analyze the threat to trout in Crystal Creek. Crystal Creek may become a Minnesota trout stream.
- Submit another Natural Heritage Information System (NHIS) data request to MnDNR and include in EIS. Last one was in 2008.
  - Leslie agreed that this would be done.

## 8. Water Resources

Leslie presented the findings of the impact analysis and the mitigation measures identified to date. The following comments were made by PAC members.

- Why are the 6 depressions not further west?



- Leslie stated that the depressions are shallow and are located and would provide for increased infiltration and slightly higher discharge to seeps.
- Have confining layers been identified? Suggest adding monitoring of seeps for sediment laden water.
- What will happen to stormwater during vulnerable times of mining?
  - Leslie indicated that stormwater BMPs would be in-place to control runoff during mining and reclamation activities.
- The CMSCWD requested that more methodology be added to the surface water sections.
- What is the purpose of the depressions?
  - Leslie responded that her understanding was that the goals of the depressions were to provide increased stormwater infiltration, increase vegetative biodiversity, and add visual elements. This would result in a very slight increase of base flow to seeps and springs due to increased infiltration. Mike, Tiller, verified that those were the goals.
- How do you know when you are 3 feet from the groundwater?
  - Mike Carron, Tiller, stated that they had taken borings at the Zavoral Site and these showed that the groundwater is located in the sandstone and not the overlying sand and gravel. Tiller would not mine into the sandstone and, as a result, would stay at least 3 feet about the groundwater table.

## 9. Water Use

Leslie presented the findings of the impact analysis and the mitigation measures identified to date. The following comments were made by PAC members.

- Mitigation: Don't use water from the site well. Use DUSTLOCK™, which is a soy-based dust control product that is produced here in Minnesota.
- No build alternative should include abandoning the well. Agency asked that it be capped in 1999. They refused a permit until site he reclaimed the site and capped the well.
- According to a letter from Washington County in 1998 the well should be capped by Dr. Zavoral.
- The CMSCWD would like to review the pump test results and methods and asked when they could review pump test data.
  - Leslie said that information would be included as an appendix to the draft EIS.
- Have confining layers been identified? Suggest that seeps be monitored for sediment laden water.
- Mitigation: Monitor the creek and the Black ash seeps.
  - Leslie said that the current draft EIS states that Zavoral Creek should be monitored at the monitoring point installed by the CMSCWD and the Black ash seep boundaries to be reviewed on a 5 year basis.
- Caution should be used when using Calcium chloride. The seeps may accumulate the chemical. If calcium chloride is used the seeps should be sampled along with the creeks. There should be a level set for the seeps and creek and if that level is reached the application of calcium chloride should stop.
- Mitigation: Don't use calcium chloride, use DUSTLOCK™.



## 10. Solid Waste, Hazardous Waste, Storage Tanks

Leslie presented the findings of the impact analysis and the mitigation measures identified to date. The following comments were made by PAC members.

- Mitigation: No diesel or gas stored at the Zavoral Site.

## 11. Traffic

Leslie presented the findings of the impact analysis and the proposed mitigation measures. The following comments were made by PAC members.

- Traffic safety at the intersection of TH 95 and TH 97 not analyzed right, we know it's not safe.
- Mitigation: Construct a round-about of the correct size so that trucks could use it-this reduces deaths by 100%.
- What about the impacts of truck arriving and leaving the site at the separate from the hauling itself?
- No win situation on traffic-after Zavoral Site is mined it reverts back to hauling described under the No Build alternative anyway.
- TH 95 is a scenic byway and should be referenced that way in the DEIS.
- What are the alternative routes used by locals during a haul event to avoid the intersection and where is the analysis for this?
- Can Tiller extend the time trucks run each summer (more days or weeks) in order to reduce the number of trucks each day?
- The 6.5-mile difference is money for Tiller-doesn't do the City any good, then back to No build scenario hauling again once Zavoral is done.
- The DEIS should include an analysis of the trucks Tiller would use. Age and Condition?
  - Mike Caron stated that the trucks would be independently owned and operated.
  - Leslie said that the traffic analysis also used the peak volume of truck traffic and the air quality analysis used the heaviest trucks at this volume to model worst-case conditions.

## 12. Air Emissions, Dust, and Silica

Leslie presented the findings of the impact analysis and the proposed mitigation measures. The following comments were made by PAC members.

- Concerned that EPA is not keeping up-the impact from particulates is more dangerous than regulators had thought in the past. When it is humid there are issues with residences that are close to the Zavoral Site.
- What will happen to dust levels after mining is complete? If you remove the trees dust and emission impacts from trucks will increase.
- What impact will dust have on the waterways on the east side of the site?
  - Leslie said that these impacts will be described more in the draft EIS.
- River system is impaired for phosphorus-sediment is a carrier-should address this.
- A range of impacts (tons per year) should be included in the draft EIS (x and y) without the discussion of the flow regime. The flow regime would just muddy the issue.



### 13. Noise

Leslie presented the findings of the impact analysis and the mitigation measures identified to date. The following comments were made by PAC members.

- During and after mining Tiller should be required to reduce noise levels below standards.
- Trees removed from the site will cause an increase in noise levels off-site.
- Not impressed with Minnesota noise Standards. There are no standards for wilderness.
- NPS will have more comments on noise. Are the methods for analyzing the noise in the technical memo? This should be included in the draft EIS.
  - Leslie responded that they would and had been described at the last PAC meeting that reviewed the Air Quality Tech Memo.
- NPS has also set up a monitoring station on the river and will be collecting data and is now analyzing that data. Also, the Wild and Scenic River noise policy needs to be revised-should use Water Management rather than Land Management areas.
- Is the EIS concluding little difference between Alternatives 1 and 3?
  - Leslie responded that was correct.
- Was noise measured for loading the trucks?
  - Leslie said that information is currently included in the draft EIS analysis.
- Will there be a generator?
  - Mike Caron said that there would not be, electricity would be run to the site.
- Steve Platisha, AECOM consultant team noise specialist, pointed out that the receptors described on the slides should be for groups of residences –not one residence/receptor.
- There is less noise now than when Barton operated the site.

### 14. Visual

Leslie presented the findings of the impact analysis and the mitigation measures identified to date. The following comments were made by PAC members.

- Surprised that the Zavoral Site is not visible from Wisconsin.
- What is the value of the land now and after reclamation?
- We know where the pictures in Wisconsin were taken and have seen the site from there.
- Will the trees on the south side of the southern berm be cut down?
  - Leslie verified with Mike Caron that that was a drainage berm that would be constructed.
- Don't rely on current vegetation levels.
- Driving down the highway everyone will know that the mine is there even if it can't be seen.
- Is lighting possible at the site?
  - Mike Caron-Yes. Late in the year during operation only.
- Need better description of how much lighting in the DEIS
- Mitigation: Limit operation to daylight hours.



## 15. Other Impacts and Mitigation

The following comments were made by PAC members.

- TH 95 and TH 97 should have complete configuration changes. This has been overlooked by MnDOT. Also, it is a TH 95 is a scenic byway and that needs to be addressed.
- Can the Scandia asphalt plant be moved to Zavoral?
  - Leslie and Mike-No. Anything like that would require a new permitting process.
- Mitigation: Investigate the possibility of not using back-up alarms or using a different, less intrusive alarm.
- Mitigation: Set operating limits to between 8AM and 5PM.
- Mitigation: No Jake braking. Need for enforcement.
- Develop and alternatives impact matrix for draft EIS.
- Perform a macro-invertebrate study before mining begins and after mining and reclamation activities are complete. Need to address trout stream and follow-up.
- Mitigation: Monitor seep wetlands for impacts from water withdrawal. Jyneen Thatcher (WCD) stated that if there is an impact noted they would require restoration rather than replacement.
- Mitigation: Long-term stewardship of the Zavoral Site after mining and reclamation activities are complete.
  - Tough to define (years of monitoring), also what happens if it is developed for residential use.
- Mitigation: Include Blandings turtle mitigation measures from MDNR in the draft EIS and discuss.
- Discuss value of land before and after mining. Describe economic impact on community.
- They should restore site back to pre-mining state.
- Can't believe that more enforcement or emergency services would not be needed.
- Review scoping document because the air quality section does not seem to address everything.

## 16. PAC Recommendations on Alternatives

The following comments were made by PAC members.

- Lengthen timeframe of adaptive management plans. Should learn from the adaptive management plant. The impact of revegetation on seeps-it would help to have a longer-term timeframe on that –if the accelerated alternative is selected may not see impacts within project life.
- Reclamation work timeframe for monitoring should be pushed out further.
- Shorten the mining period and lengthen the monitoring period.
- How long would it take to completely mine the Zavoral Site?
  - 150 days mining from 7AM to 7PM, but that would not remain within hauling traffic levels analyzed.
- If decide on 150 day alternative would need to begin immediately.
- A condition of the CUP should be that after the project is complete the site should be placed in a conservation easement. Dr. Zavoral should be required to put the area into Conservation Easement after mining and not be allowed to develop.



- Trudy indicated that this may not be possible to enforce.
- Advocate No Build-not risking potential public safety impacts. This project should not be undertaken potential risks. This area is too important and the No Build benefits need to be better addressed.
- After mining, there will be very limited soil over the groundwater, topsoil will need to be brought into the site if houses are constructed after reclamation activities. Recommend return site to agricultural production or set aside for other than residential use. Everything that infiltrates the site will re-charge the groundwater and not be filtered by soil as it would be if structured topsoil developed over time were in place. Residential development would require raised basements and more potential for problems due to fertilizer use, lawns, etc. Septic systems would need to be mound systems.
- The groundwater recharge may be good for the streams as long as there are no chemicals used on site.

## 17. Public Comments

Laurie Allman

- The DEIS is discussion on ecologically sensitive resources is limited. Further analysis outside the Zavoral Site is necessary. For instance, no mussel surveys were conducted within the river because the proposed project is not expected to affect these species-under what circumstances? What about material carried by the streams or dust? The DEIS should list all species potentially affected.
- If the streams base flow increases will this cause thermo pollution? This stream may become a Minnesota trout stream and that is a consideration.
- PAC members at the last meeting were told no fuel would be stored on-site. Now the draft EIS states that diesel fuel may be stored on-site.
- The reclamation goal should be higher for this site because it is surrounded by ecological sensitive areas.

Pam Arnold

- Confused over graphics (Figures 37, 38, and 39). Higher impacts because add rock still hauled from other locations. Add this to map. Work hard to make graphics less biased.
- Geometry of the current roadway is the cause for people going off the road.
- Trucks Jake brake and that makes it so residences can't have their windows open because of the noise.
- Why was the nursery south of the site asked to stop pumping from their well during the Zavoral pump test?
- The Zavoral site has a long history. There have been several reclamation plans and requirements by the County that the site be reclaimed. Also-site was not to be mined because of the extent of revegetation that occurred regardless of whether there was a sale, lease, or other change. If we consider that the site still needs to be reclaimed that offers a different perspective on the No Build alternative.

Pat Brannan

- An increased number of fire, police, and ambulance staff will be needed if the project approved. Who will pay of this? There are motorcycles traveling these roads every weekend in the summer.



- The Tiller CUP should include verbiage about not allowing them back to the site after project completed. Don't want it to be a permanent fixture in the area.

Chris Ness

- Concerned about traffic at the intersection of TH 95 and TH 97. It will be different with trucks starting from a dead stop at the intersection.
- MnDOT determined that there is adequate distance for 55 MPH. Police have issued many tickets for speeding in this area (64-83 mph).
- The maps don't show traffic from the south.

Stuart Grubb

- Stuart was hired by the watershed district to review the pump test and results.
- There are several issues with the pump test. First, the St. Lawrence is not necessarily an aquitard in this area. Second, the 4 hour pump test was not long enough; pump tests for industrial site wells are sometime 24 hours or longer-although these were for wells that would require a water appropriation permit. Third, the discharge from the pump test may have been too close to the pumping well resulting in recharge.
- Should require groundwater monitoring wells on the site.

Pam Smith

- Has noted a remarkable change in the noise environment along the river from when she was growing up there to now. There is a lot more truck and motorcycle noise along TH 95 and TH 97 now. This is along the border of Scandia and noise reduction should be considered. Construct berms along this area to preserve visual beauty and provide sound attenuation. Do not only look at increased noise impacts but how to reduce noise in the area.

Lisa Plowman

- Where is the economic study that shows the value loss caused by the mine?
  - Leslie responded that it is on the City website.
- The current Comprehensive Plan does not allow mining in this area. Explain why the Comprehensive Plan in place was not applied.
- Noise is measured as an average over time and does not consider brief spikes of noise. Mitigation for families would be to minimize operating hours 8AM to 5PM. Maybe take it all out in 5 months and get it over with. Need to consider noise and the NPS area, people using canoes, etc. Look forward to the NPS noise review.

Cliff Guggisberg

- Is in favor of the project. The City is like a Utility and it is blessed with a resource - gravel.
- 35E is new and nice because of this commodity.
- Back-up alarms on trucks are for safety and should not be removed.
- Exhaust from new trucks is cleaner when it exits the truck than it is before it enters the truck. We are all guilty of carbon production because we drove here tonight.



Sonja Borg

- Moved here 1.5 years ago.
- How is noise measured? What time of the year is mining occurring? Can it occur in the winter when noise would be less of an issue?
  - Mike Caron responded that winter mining can occur.
- Why should we believe that reclamation will happen this time?
- What about gravel litter on the road?
  - Mike , Tiller, responded that all trucks would be covered.

Randy Ferrin

- There should be a sub alternative: Change Phase 2 to Phase 3 and Phase 3 to Phase 2. That way the reclamation of the area already disturbed by mining would occur earlier.

Additional comments cards, submitted comments, and sign-in sheets are attached.



**PAC Meeting**  
Zavoral Mine & Reclamation  
Project EIS

November 16, 2011



**Agenda**

- 4:00 Agenda Review
- 4:05 EIS Schedule
- 4:10 Draft EIS Overview
  - Project Overview
  - Alternatives
- 4:20 PAC Discussion
  - Impact Analysis
  - Mitigation Measures
- 5:45 Break
- 6:00 PAC Discussion
  - Other Impacts or Mitigation Measures
  - Recommendations on Alternatives
- 6:30 Public Comment
- 7:00 Adjourn



**Approval of Meeting  
Notes**

August 23, 2011



**EIS Schedule**



**EIS Schedule**

- PAC input tonight & written ( by Dec. 1, 2011)
- AECOM reviews comments & prepares draft EIS
- Council releases draft EIS (Jan. 31, 2012)
- Publish notice of draft EIS (Feb. 20, 2012)
- Information meeting for public comment (Mar. 6, 2012)
- 45-day comment period (ends Apr. 5, 2012)
- AECOM prepares responses & final EIS
- Notice & 10 day comment period on final EIS
- Council determines adequacy of final EIS



**Project Overview &  
Alternatives**

Zavoral Mining &  
Reclamation Project

### Tiller's Proposal

- Mine & reclaim 64 acres of 114-acre Site
- Site previously-mined, 9-acre unmined area
- 15' maximum mining depth
- Minimum 3' separation from groundwater
- Zavoral Site Well used for dust control only

### Mining Activities

- No washing, processing, or aggregate stockpiling at Zavoral Site
- Aggregate loaded into trucks & hauled to Scandia Mine or directly to construction sites
- Add-rock currently hauled to Scandia Mine from other locations

### EIS Alternatives

- **Alternative 1:** Tiller's Preferred
  - 5- to 10- yr operation
  - ~6 to 12 weeks operation each year
- **Alternative 2:** No-Build Alternative
- **Alternative 3:** Reduced Timeframe
  - 3.3- to 5- yr operation
  - ~12 to 18 weeks operation each year



### Role of Mitigation

### Mitigation (Definition)

- Minn. R. ch.4410.02002 Subp. 51:
  - Avoiding impacts altogether by not undertaking a certain project or parts of a project
  - Minimizing impacts by limiting degree of magnitude of a project
  - Rectifying impacts by repairing, rehabilitating, or restoring affected environment
  - Reducing or eliminating impacts over time by preservation & maintenance operations during life of project
  - Compensating for impacts by replacing or providing substitute resources or environments
  - Reducing or avoiding impacts by implementation of pollution prevention measures



### Impact & Mitigation Discussion - PAC Input

### Land Use & Reclamation

- **Alternative 1:**
  - Site reclaimed - native prairie & White pines
  - Reclaims previously-mined 3.1 acres in Riverway District
  - Post-reclamation consistent with future allowable uses (Dev. Code)

### Land Use & Reclamation

- **Alternative 2:**
  - No alteration of unreclaimed, formerly mined vacant land, forested land, & small areas of agricultural land
  - 3.1 acres within Riverway District remain unreclaimed
  - Consistent with allowable uses (Dev. Code)
  - Site may require grading, etc. prior to development other than vacant land, open space, & possibly pasture
- **Alternative 3:**
  - Same as Alternative 1, reclamation completed earlier

### Land Use & Reclamation

- **Mitigation:**
  - If Project proceeds, City to work with Tiller to address in CUP process:
    - Identify funding mechanism for monitoring
    - City decides on topsoil ordinance modification
    - Monitor reclamation activities: City defines successful reclamation & establishes actions taken if reclamation not successful
    - Require 5 yr establishment & monitoring period
    - Develop adaptive management plan
    - Identify party & funding source for long-term stewardship

### Economics

- **Alternative 1:**
  - Site taxed at higher commercial rate (~\$1,762/yr) during mining
  - Effect on residential property value (~up to 2 or 5% reduction within ¼ mile) – diminishes as reclamation occurs to zero
  - City gravel tax income ~\$7,000-14,000/yr (~\$72,670 life)
  - Public & emergency services – expense of monitoring

### Economics

- **Alternative 2:**
  - No changes in Site property tax, no affect on nearby property values, no gravel tax revenue, no monitoring
- **Alternative 3:**
  - Shorter period of taxing at higher commercial rate
  - Shorter period of effect on residential property values
  - City gravel tax income \$14,535 - \$21,802/yr (same over life)
  - Public & emergency services – expense of monitoring
- **Mitigation:**
  - Identify funding mechanism for Site monitoring

### Biological Resources

- **Alternative 1:**
  - Unmined 9-acre area - loss of:
    - 5.2 acres of White Pine Hardwood Forest
    - 0.2 acre of Maple Basswood Forest
    - 3.4 acres of cropland
  - Disease-free Butternut tree (State special concern) outside mining & reclamation area
  - Except Bald eagle (State special concern), no listed species
  - Less woodland, forest, nonnative grass & cropland - more native prairie cover
  - Maderate cliffs & Black ash seeps not negatively affected
  - Temporary displacement of wildlife

### Biological Resources

- **Alternative 2:**
  - No loss of woodland & cropland
  - Gravel resource not used
  - No reclamation of previously mined areas
- **Alternative 3:**
  - Same as Alternative 1, reclamation completed earlier & reduced period of wildlife displacement
- **Mitigation:** Monitoring of:
  - Reclamation to accomplish successful revegetation
  - Pumping from Zavoral Site Well
  - WCD Zavoral Creek monitoring point
  - Black ash seep wetland boundary (5 yr interval)

### Water Resources

- **Alternative 1:**
  - Increases internal Site drainage as mining progresses
  - Reduces off-site peak flows, risk of erosion, & overflow
  - Improves infiltration resulting in slightly improved base flow to seeps, springs, & creeks
- **Alternative 2:**
  - No change from existing conditions
- **Alternative 3:**
  - Same as Alternative 1
  - Lower probability of major storm event during operation
  - Earlier increase in internal drainage

### Water Resources

- **Mitigation:**
  - Identify funding mechanism for monitoring
  - Require appropriate permits & monitor compliance with permit requirements & application of BMPs
  - Require stormwater & erosion control BMPs – particularly immediately after soil stripping & prior to overburden removal
  - Construct berm on south end of Site as close to mining & reclamation limits as possible to lower off-site peak flow rates & increase infiltration

### Water Use

- Maximum use is 10,000 gpd & < 1M gpy (~8 to 20 minutes pumping/day)
- 4-hour aquifer test & recovery
  - St. Lawrence acts as aquitard limiting influence on shallow Drift & Prairie du Chien aquifers, Black ash seeps, & moderate cliffs
  - Drawdown insignificant at Zavoral cabin well (closest in Franconia aquifer) - more distant wells less effect

### Water Use

- **Alternative 1:**
  - No significant effects on area wells, Black ash seeps, moderate cliffs, or other surface water bodies
  - Maximum volume over 10 yrs is 10M gallons; annual use could be less than Alternative 3 - mining fewer wks/yr
- **Alternative 2:**
  - No mining or mining-related water use
- **Alternative 3:**
  - Same as Alternative 1, maximum volume over 5 yrs is 5M gallons; annual use could be more than Alternative 1

### Water Use

- **Mitigation:**
  - Identify funding mechanism for monitoring
  - Tiller document daily & annual rates & volumes pumped for Site well
  - Monitor Zavoral Creek WCD monitoring point
  - Monitor Black ash seep wetland baseline boundary every 5 yrs

## Water-related Land Use Management Districts

- Project consistent with CMSCWD, WCD, & St. Croix River District requirements
- Requires Permit for Stormwater Management from CMSCWD – must meet related requirements

## Solid Waste, Hazardous Waste, & Storage Tanks

- **Alternative 1:**
  - Portable sanitary facilities
  - Solid waste collected & hauled to Tiller's MG facility
  - No hazardous wastes generated
  - If diesel fuel stored at Site - 1,000 gal mobile tank
- **Alternative 2:**
  - No change
- **Alternative 3:**
  - Same as Alternative 1, but shorter duration

## Solid Waste, Hazardous Waste, & Storage Tanks

- **Mitigation:**
  - Monitor equipment for leaks
  - Fueling & maintenance in active mining & reclamation areas only - No topping off of tanks
  - Require AST located > 500' from surface water
  - Notify MPCA of AST
  - Sample & analyze groundwater for diesel range organics
  - If gasoline stored on site add sampling & analysis for gasoline range organics & benzene

## Traffic

- **Alternative 1:**
  - Class C add-rock from Zavoral Site replaces material from other locations (Franconia Township, MN & Osceola, WI)
  - ~334 to 440 trips/day, 5-10 yrs, ~6-12 wks/yr
  - Peak 600 trips/day (includes reclamation)
  - 13.5-mile haul route in MN reduced to 6.5 miles on TH 97 & CR 1
  - Roadway network sufficient to handle projected traffic volumes

## Traffic

- **Alternative 2:**
  - Maintain current add-rock use & ~13.5 mile haul route in MN
  - ~210 to 558 trips/day for ~20-30 yrs
  - Peak 560 trips/day (no reclamation haul for Zavoral Site)
- **Alternative 3:**
  - Alternative 3 same as Alternative 1, but condenses to 3.3-5 yrs for ~12-18 wks/yr

## Traffic

- **Mitigation:**
  - Realign new access across from TH 97 & construct right-turn lane
  - Require Tiller to report number & source location of trucks hauling add-rock to Scandia Mine
  - Limit Class C add-rock to Scandia Mine to 560 trips/day
  - Consider use of truck warning signs on TH 95, Mn/DOT approval
  - Require Tiller to provide funding for bicycle trail construction

### Air Emissions, Dust, & Silica

- **Alternative 1:**
  - Worst case, uncontrolled PTE:
    - Exceeds PM<sub>10</sub> & PM<sub>2.5</sub> NAAQS
    - Could adversely affect vegetation
    - No adverse on affect St. Croix River water quality
  - AECOM requested Tiller prepare Fugitive Dust Control Plan
  - Plan implementation - would not exceed NAAQS, adversely affect vegetation, or St. Croix River
  - AECOM requested crystalline silica analysis
  - 25% crystalline silica in fine within guidelines

### Air Emissions, Dust, & Silica

- **Alternative 2:**
  - Site not source of new fugitive emissions
- **Alternative 3:**
  - Same as Alternative 1
  - Emissions potential 3.3-5 yrs, but longer duration each yr

### Air Emissions, Dust, & Silica

- **Mitigation:**
  - Obtain & comply with required permit
  - Monitor dust control mitigation measures identified in Tiller's Fugitive Dust Control Plan for life of Project
  - Maintain records of sweeping & water application
  - Identify funding mechanism for monitoring

### Noise

- **Alternative 1:**
  - Site Noise
    - SBP reviewed Tiller report & conducted additional work
    - Operations audible, but below Minnesota Daytime Noise Standards for residential areas
    - Operations audible in St. Croix Riverway, but within state requirements & NPS guidelines

### Noise

- **Alternative 1:**
  - Haul Route Noise
    - SPB assessed noise along proposed haul route
    - Residences & school along current route are impacted by traffic noise
    - Impacts along TH 97 & CR 1 not predicted to change (hauling from current sources or Zavoral Site)
      - MN L<sub>10</sub> standard exceeded at 1 residence under low traffic noise conditions
      - Under maximum haul truck traffic projected L<sub>10</sub> standard exceeded at 6 residences & L<sub>50</sub> at 1 residence
    - Part of haul route no longer used experience lower noise during life of Zavoral Site

### Noise

- **Alternative 2:**
  - Noise levels in vicinity of Zavoral Site would not increase
  - Haul road noise same as Alternative 1 & would continue along portion of haul route in MN north of TH 97 from Franconia Township, MN & Osceola, WI
- **Alternative 3:**
  - Same as Alternative 1
  - Operation 3.3-5 yrs, but longer duration each yr

### Noise

- **Mitigation:**
  - Implement noise mitigation techniques (berms & screening) identified in Tiller's Plan
  - Identify funding mechanism for monitoring

### Visual

- **Alternative 1:**
  - Short-term Site preparation most visible
  - Project not visible to boaters & other recreationists on St. Croix River, or from WI
  - Can be seen from some viewpoints, but does not attract attention, because most activities screened
- **Alternative 2:**
  - No change, no reclamation of previously-mined areas
- **Alternative 3:**
  - Same as Alternative 1
  - Site reclaimed earlier, shorter period of operation

### Visual

- **Mitigation:**
  - Monitor to ensure proposed screening & reclamation strategies are successfully implemented
  - Establish maximum stockpile height limit of 880' msl
  - Locating stockpiles on the west side of Site should be minimized
  - Limit non-daylight lighting, shielded, & downward directed



Break



Other Impacts/Mitigation



PAC Recommendations on Alternatives





**City of Scandia**  
Zavoral Mining and Reclamation  
Project EIS

**Sign-In Sheet November 16, 2011 4 p.m.-7 p.m.**

Name	Address	Email	Phone Number
Mary-Larry Whitaker	Marner		
Anton Soggenman	Scandia		
Ken Andt	WBlake		
ED CHENUT	RESIDENS		
JIM SCHWEIDER	SCANDIA		
Bob <sup>Bestley</sup> Glesne	Scandia		
JASON HUSVETH	MAY TWP / SCANDIA		
Tom Rammer	19671 OXBORO CIRCLE <sup>Mining</sup>		
Jandra Geadyax	21810 Olinda Ln		
Janice Borg	19609 Oxboro Cir. No.		
Janice Lundquist	16290 Scandia Tr N		
ROSS GROTSBECK	17491 OLINDA TR N		
Pat Redie	16099 509 <sup>th</sup>		



**City of Scandia**  
Zavoral Mining and Reclamation  
Project EIS

**Sign-In Sheet November 16, 2011 4 p.m.-7 p.m.**

Name	Address	Email	Phone Number
Louise Ahlman	May Twp /		
Justin Puel	Scandia, MN		
Frank [unclear]	Scandia		
Larry Martin	FT. Collins, CO		
CLIFF GUBBISBERG	12780 182ND MARINESTEROIX		
Jane Thatcher	WED		
Michael [unclear]	Tiller Corp		
Christine Morrison	Tiller Corp.		
USIA Schuyler	Scandia		
Karen Kromaw	MPCA		
Stuart Grobb	St. James		
Jill Medland	National Part Service		
Jan [unclear]	217 88 Farming Hill		
Adriane Kruger	19205 24600 Ln N Marine		
Phillip Bock	Country Messenger News		



City of Scandia  
Zavoral Mining and Reclamation  
Project EIS

Sign-In Sheet November 16, 2011 4 p.m.-7 p.m.

Name	Address	Email	Phone Number
Randy Ferrin	23290 Quentin Ave		
PAT BROWNAY	21455 Tomroy Ave N.		
Connie & Angus	21980 PARRIS N		
JIM SHAWER	23250 St Croix Tr		
Jen Helletson	16140 N Scandia Tr		
Bob Helletson	16140 N Scandia Tr		
Lucas Sager	21350 N Paring		
Jim Mills	26357 Forest Blvd Wyke		
Tom Hunkle	15510 215th St N		
Ann Redig	16099 209th St. N		
Lisa Plouman	Scandia		
Tom & Mike Smith	20919 Quint Ave N. Scandia		
Katherine Lewis	20453 Quinwell Ave. N.		
Elly Linder	23229 Stillix Ave. N		



**City of Scandia**  
Zavoral Mining and Reclamation  
Project EIS

**Sign-In Sheet November 16, 2011 4 p.m.-7 p.m.**

Name	Address	Email	Phone Number
Kim Chisholm	15450 220 <sup>th</sup> St N	[REDACTED]	[REDACTED]
Chris Ness	18440 Norell	[REDACTED]	[REDACTED]
Karen Schute	13860 236 <sup>th</sup> St N	[REDACTED]	[REDACTED]
James Wilcox Dunnington	125 - Depot Road Osceola	[REDACTED]	[REDACTED]
Craig Christensen	20661 Quirt Ave N Scandia	[REDACTED]	[REDACTED]
Barbara Booth	11050 Scandia Trce Scandia	[REDACTED]	[REDACTED]
Steve Phillips	21803 Quarry Ave N	[REDACTED]	[REDACTED]
Juli Hagstrom	17790 St Croix Tr N Marine	[REDACTED]	[REDACTED]



## We want to hear from you!

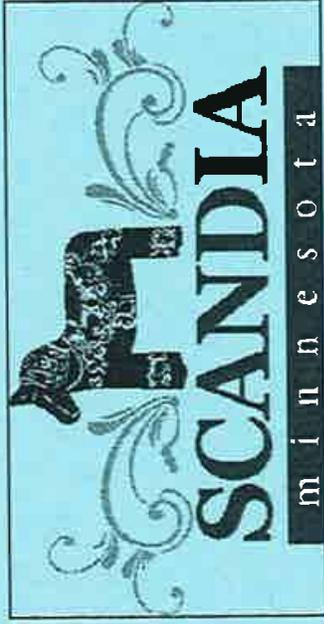
Please feel free to use this card to share any comments or concerns you have related to the Zavoral Mining and Reclamation Project EIS.

Name Bonnie Hendrickson  
Address 16200 Scandia Trail N  
Scandia, MN 55073  
Phone 651-433-5113  
Email Hippie@x44@aol.com

### Comments:

*I have attended 2 meetings where Zavoral requested conditional use permits to remove the existing piles of gravel (and has granted them). Both times he promised the land would then be reclaimed to a park like appearance. "Pastorial" was one of words he actually used. He never did, either time. The last time I asked what the benefits would*

Thank you for your time and interest! *—over—*



**For more information about the Zavoral Mining and Reclamation Project EIS:**  
Project Website: [www.ci.scandia.mn.us/](http://www.ci.scandia.mn.us/)  
Project Email: [a.hurlburt@ci.scandia.mn.us](mailto:a.hurlburt@ci.scandia.mn.us)  
Project Contact: Anne Hurlburt, (651) 433-2274



to the people in Scandia, esp  
the one who lived so close.  
I basically got no answer,  
other than it was his land  
to use as he wanted.

I feel he lost that privilege when he  
reneged on his promise twice!

I can not understand why the favored is  
so set on granting this. There is NO ONE

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

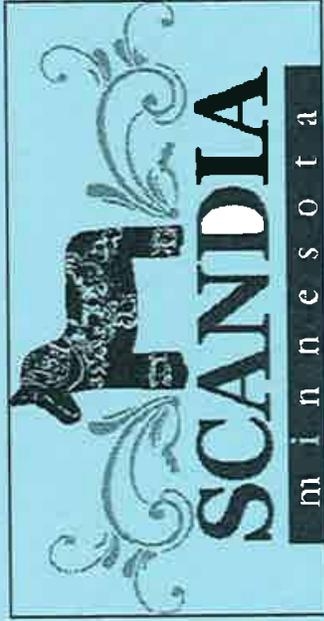
Why?

Place  
Stamp  
Here

## We want to hear from you!

Please feel free to use this card to share any comments or concerns you have related to the Zavoral Mining and Reclamation Project EIS.

Name Karen Sojce  
Address 21350 Parkway Dr N.  
Scandia  
Phone 651-433-3989  
Email KSOJCE@Frontier.net



For more information about the Zavoral Mining and Reclamation Project EIS:  
Project Website: [www.ci.scandia.mn.us/](http://www.ci.scandia.mn.us/)  
Project Email: [a.hurlburt@ci.scandia.mn.us](mailto:a.hurlburt@ci.scandia.mn.us)  
Project Contact: Anne Hurlburt, (651) 433-2274

### Comments:

I want to know how those of us who live on the north side of  
highway 97 are going to turn left onto our driveway/streets  
when you have trucks coming up the hill & trucks backing  
down on you from behind. What a nightmare! Please  
stop this project!!

Thank you for your time and interest!

## We want to hear from you!

Please feel free to use this card to share any comments or concerns you have related to the Zavoral Mining and Reclamation Project EIS.

Name

Larry Whitaker

Address

675 Pine Cove Tr  
MARIETTA

Phone

651-433-3896

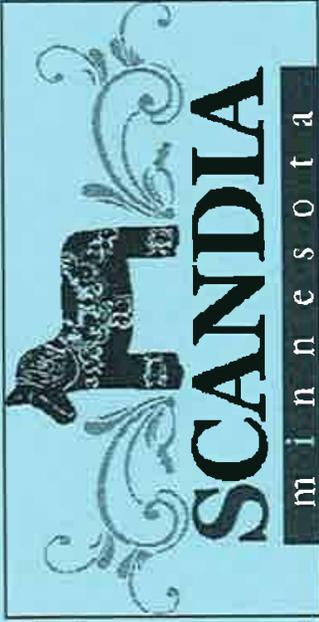
Email

LHW186@GMAIL.COM

### Comments:

SENFIRE WATER MONITORING - ESTABLISH BENCH MARKS  
PRIOR TO MINING - GET ANNUAL OR MONTHLY SCHEDULE DURING  
MINING PERIODS - CLEARLY DEFINE WHAT IS BEING MONITORED.  
ADD MACRO INVERTEBRATE STUDY TO MONITORING ACTIVITY  
IDENTIFY WHAT CHEMICALS ARE BEING MEASURED  
SPECIFIC  
MITIGATION - HOW WILL STREAMS & SCOPS BE RESTORED IF  
THEY ARE DAMAGED? REQUIRE A DETAILED PLAN.

Thank you for your time and interest!



For more information about the Zavoral Mining and Reclamation Project EIS:  
Project Website: [www.ci.scandia.mn.us/](http://www.ci.scandia.mn.us/)  
Project Email: [a.hurlburt@ci.scandia.mn.us](mailto:a.hurlburt@ci.scandia.mn.us)  
Project Contact: Anne Hurlburt, (651) 433-2274

## We want to hear from you!

Please feel free to use this card to share any comments or concerns you have related to the Zavoral Mining and Reclamation Project EIS.

Name Randy Ferrin  
Address 25240 Quentin Ave  
Scandia  
Phone 433-4929  
Email rsferrin@frontiernet.net

For more information about the Zavoral Mining and Reclamation Project EIS:  
Project Website: [www.ci.scandia.mn.us/](http://www.ci.scandia.mn.us/)  
Project Email: [a.hurlburt@ci.scandia.mn.us](mailto:a.hurlburt@ci.scandia.mn.us)  
Project Contact: Anne Hurlburt, (651) 433-2274

### Comments:

Please consider an alternative that does not mine the 9.1 acre area that has not been mined previously. As another alternative ~~to that~~ considered (if the above alternative will not be considered) switching Phase 2 and Phase 3 around so that the old mined site is in Phase 1 & Phase 2 and is reclaimed before moving into the unmined site (the new Phase 3). Thanks  
Randy

Thank you for your time and interest!



## We want to hear from you!

Please feel free to use this card to share any comments or concerns you have related to the Zavoral Mining and Reclamation Project EIS.

Name Phil Fitzpatrick  
Address 1609 E 6th St  
Duluth MN 55812  
Phone 218-343-2561  
Email Fitzpatrick@gmail.com

Summer  
2013  
Quit 20

### Comments:

I am concerned that the tourism both Scandia and Marine enjoy and rely on in the summer will be adversely affected. When summer visitors learn they'll be competing with gravel pits on 97 and 95, they are apt to choose alternate routes, if not alternate locations at which to vacation.

Thank you for your time and interest!

RECEIVED



For more information about the Zavoral Mining and Reclamation Project EIS:

Project Website: [www.ci.scandia.mn.us/](http://www.ci.scandia.mn.us/)

Project Email: [a.hurlburt@ci.scandia.mn.us](mailto:a.hurlburt@ci.scandia.mn.us)

Project Contact: Anne Hurlburt, (651) 433-2274