

Reclamation

- 4 reclamation phases
- With exception of Phase 1 Reclamation (~4-acre area in River District & scenic easement where no new mining is proposed), reclamation would proceed as mining phases are completed

(continued)



Reclamation

- Site mined & existing stockpiles removed
- Slopes graded to maximum 4:1 & shaped
- Site seeded with native prairie grass & transplanted White pine trees
- Six shallow depressions constructed
- Surface water flow directed to low-lying areas; would infiltrate & recharge groundwater

EIS Alternatives

- Alternative 1: 5- to 10- year operation
 - ~6 to 12 weeks operation each year
 - Monday - Friday 7 a.m. - 7 p.m. (typically 10-hour days)
- Alternative 2: No-Build Alternative
 - Site unchanged, gravel resource not used
 - Class C still hauled to Scandia Mine from other sources

(continued)

EIS Alternatives

- Alternative 3: Reduced Timeframe, 3.3- to 5- year operation
 - ~12 to 18 weeks operation each year
 - Monday - Friday 7 a.m. - 7 p.m. (typically 10-hour days)

(continued)

Subalternative 3A

- Not required by Revised Scoping Decision Document
- Added to DEIS at PAC's request
 - Complete mining in 150 working days over ~ 1 year
 - ~30 weeks of operation over 1 year
 - Monday - Friday 7 a.m. - 7 p.m. (12-hour days)



Impact Analysis

Zavoral Mining & Reclamation Project

Required Impact Analysis

- Per Revised Scoping Decision Document
 1. Land Use
 2. Economic Impacts
 3. Cover Types
 4. Fish, Wildlife, & Ecologically-Sensitive Resources & T&E Species

(continued)

Required Impact Analysis

5. Physical Impacts on Water Resources
6. Water Use
7. Water-Related Land Use Management Districts
8. Erosion & Sedimentation
9. Surface Water Quality & Quantity

(continued)

Required Impact Analysis

10. Geologic Hazards & Soil Conditions
11. Traffic
12. Stationary Source Air Emissions
13. Noise
14. Visual Impacts
15. Compatibility with Plans & Land Use Regulations
16. Cumulative Impacts

Economics - Alternative 1

5- to 10- Year Operation

- Public cost - expense of monitoring
- Site taxed at higher rate during mining (increase ~\$1,762/year)
- Potential effect on residential property values (up to 2% or 5% reduction within ¼ mile), diminishes as reclamation occurs to no impact
- City gravel tax income ~ \$7,000 - 14,000/year (\$72,670 over life)

Economics – Alternative 2
No Build

- No monitoring expenses
- No changes in Site property tax
- No affect on nearby property values
- No gravel tax revenue

Economics – Alternatives 3/3A
Reduced timeframe

- Same as Alternative 1, except
 - Shorter period of taxing at higher rate
 - Shorter period of negative effect on residential property values
 - City gravel tax income
 - \$14,535 -\$21,802/year for Alternative 3 (~ \$72,670 life)
 - ~ \$72,670 /year for Subalternative 3A

Fish, Wildlife & Ecologically Sensitive Resources - Alternative 1
5- to 10- year operation

- No T&E species recorded (DNR records) or identified by Site surveys
- 1 healthy Butternut tree outside mining & reclamation areas
- Southern mesic cliff & Black ash swamp wetlands not negatively affected
- Temporary displacement of wildlife

Fish, Wildlife & Ecologically Sensitive Resources – Alternative 2
No Build

- No loss of woodland & cropland
- Gravel resource not used
- No reclamation of previously mined areas
- No displacement of wildlife

Fish, Wildlife & Ecologically Sensitive Resources – Alternatives 3/3A
Reduced Timeframe

- Same as Alternative 1, except
 - Reclamation completed earlier
 - Reduced period of wildlife displacement

Physical Impacts on Water Resources – Alternative 1
5- to 10- Year Operation

- Internal drainage within Site increases as mining progresses
- Reduces off-site peak flows, risk of erosion, & overflow
- Results in slightly increased infiltration improving baseflow to seeps, springs, & creeks

Physical Impacts on Water Resources – Alternative 2

No Build

- No change from existing conditions

Physical Impacts on Water Resources – Alternatives 3/3A

Reduced Timeframe

- Same as Alternative 1 except
 - Lower probability of major storm event during operation because of reduced timeframe
 - Increase in internal drainage & infiltration would occur earlier

Water Use – Alternative 1

5- to 10- Year Operation

- No significant effects on area wells, Black ash swamp wetlands, Southern mesic cliffs, or other surface water bodies
- Maximum volume of groundwater pumped over 10 years is 10 million gallons
- Annual use could be less than Alternatives 3/3A because mining would occur for fewer weeks/year; but never more than 1 mgly or 10,000 gpd

Water Use – Alternative 2

No Build

- No mining or mining related water use

Water Use – Alternatives 3/3A

Reduce Timeframe

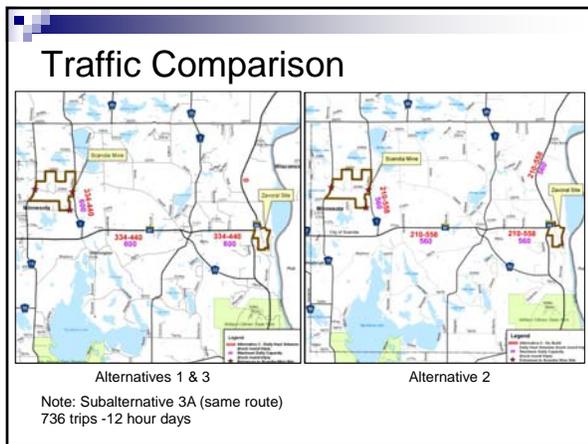
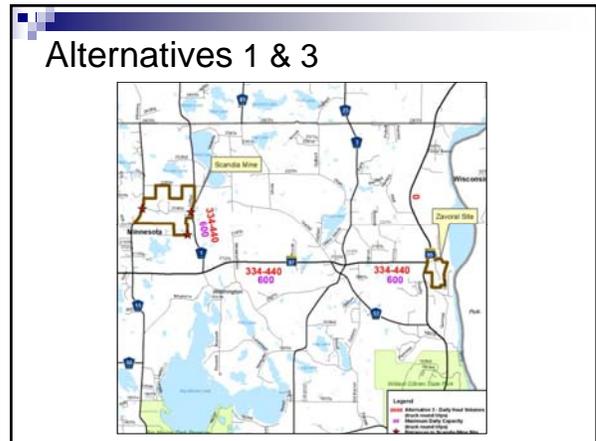
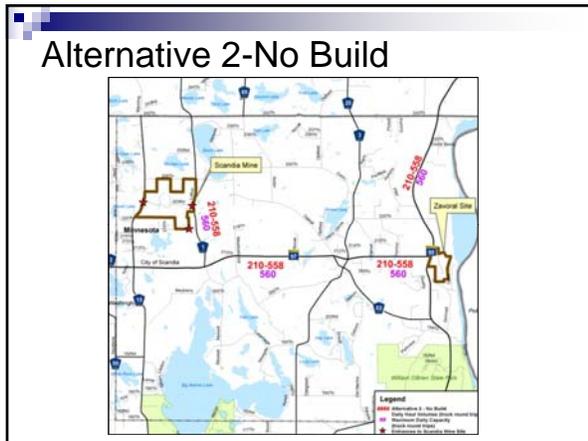
- Same as Alternative 1 except
 - Maximum volume pumped is less due to fewer years of operation
 - Annual use could be more than Alternative 1 because mining would occur for more weeks/year; but never more than 1 mgly or 10,000 gpd

Traffic

- Zavoral Site Class C add-rock replaces add-rock currently hauled to Scandia Mine Franconia Township, MN & Osceola, WI, area
- 13.5-mile haul route in MN reduced to 6.5 miles on TH 97 & CR 1 until Zavoral Site resources exhausted



Traffic			
Alternative 1	Alternative 2	Alternative 3	Subalternative 3A
5 to 10 years	20 to 30+ Years (from existing sources)	3.3 to 5 years	Approximately 1 year
6-12 weeks operation/year	6-20 weeks operation/year (from existing sources)	12-18 weeks operation/year	30 weeks operation 1 year
Typical range 167-220 trucks 334-440 trips	Typical range 105-279 trucks 210-558 trips	Typical range 167-220 trucks 334-440 trips	Typical range 368 trucks 736 trips
Peak: 300 trucks, 600 trips	Peak: 280 trucks, 560 trips	Peak: 300 trucks, 600 trips	Peak: 368 trucks, 736 trips
6.5 mile haul route on TH 97 & CR 1, reduction of ~7 miles from current haul route until material from Zavoral Site exhausted	Maintain current add-rock use & approximately 13.5-mile haul route in Minnesota	Same as Alternative 1	Same as Alternative 3
Monday - Friday 7 a.m.-7 p.m. (Typically 10-hour days)	None at Zavoral Site	Same as Alternative 1	Monday - Friday 7 a.m. - 7 p.m. (12-hour days)
Existing roadway network sufficient to handle daily traffic volumes			Tiller could not comply with current requirement to restrict use of CR 1 (Lofton Ave.) access at Scandia Mine during non-daylight hours.
Mn/DOT requires northbound right-turn lane.			





Potential Mitigation Measures

Zavoral Mining & Reclamation Project

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

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Mitigation (Definition)

- Minn. R. ch.4410.02002 Subp. 51:
 - 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

Mitigation Measures

- City will use this EIS & identified mitigation measures as part of CUP process

Reclamation Mitigation

- Tiller to include reclamation plan in CUP application
- Tiller to address list of reclamation items
- Reclamation plan incorporating mitigation measures would exceed minimum Development Code requirements

(continued)

Reclamation Mitigation

- Require 5 year monitoring period
- Establish criteria for measuring & defining success
- Specify actions taken by Tiller if reclamation were determined not to be successful
- Identify responsible party & funding source for active long-term stewardship of Site

Monitoring Expenses

- Tiller to provide funding mechanism for City to conduct any & all required monitoring

Water Resources Mitigation

- Locate berm on south end of Site to reduce off-site surface water flow & increase on-site infiltration
- Document & report pumping from Site Well
- Require monitoring Zavoral Creek at WCD monitoring point
- Monitor Black Ash swamp wetland boundary

(continued)

Water Resources Mitigation

- Locate any fuel tanks more than 500 feet from surface water
- Sample & analyze groundwater for diesel range organics, if diesel fuel stored on-site

Traffic Mitigation

- Construct new driveway access directly across from TH 97 & add northbound right-turn lane required by Mn/DOT
- Reconnect bicycle trail along TH 95
- Document number & source of trucks hauling add-rock to Scandia Mine
- Install truck warning signs on TH 95 to advise drivers of trucks crossing TH 97 in & out of Zavoral Site

Air & Noise Mitigation

- Monitor performance of dust control
- Implement identified noise mitigation techniques, such as berms & screens

Visual Mitigation

- Monitor proposed screening & reclamation
- Establish maximum stockpile height limit of ~ 880 feet msl
- Minimize locating stockpiles on west side
- Limit non-daylight lighting to that required for safety & security
- All lighting should be shielded & downward



Public Comments

Zavoral Mining & Reclamation Project

Public Comments Tonight

- Please be sure you signed up if you want to comment
- Comments limited to 5 minutes a person
- City, Tiller, & Consultants will be listening, not responding tonight

Court Reporter

- Comments are part of formal record
- Please provide & spell name
- Provide address
- Identify group or organization that you are representing, if any
- You can also provide written comments or submittals tonight

Written Comments

- All comments due to City of Scandia by 4:00 p.m. on May 18, 2012
- In writing or via e-mail during comment period to:

Ms. Anne Hurlburt
Administrator
City of Scandia
14727 209th Street North
Scandia, MN 55073
a.hurlburt@ci.scandia.mn.us



Closing

Zavoral Mining & Reclamation Project