



PAC Meeting 2

Zavoral Mine & Reclamation Project EIS

April 27, 2010



Agenda

- Approval of Minutes
- Revised Project Scope
 - Update
 - Proposed Pump Test
 - Agencies' Roles
 - Role of Mitigation
- Biological Assessment
 - Methods/Standards Used
 - What Results Mean
 - Follow-Up Work
 - Q&A
- Issues and Dates for Subsequent Meetings
- Public Questions



Approval of Minutes

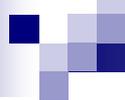
Approval of December 8, 2009
Meeting Minutes



Revised Project Scope



Update



Tiller's Revised Proposal

- Recent additional characterization of Zavoral site deposit indicated use as add-rock for Scandia Mine site & to other markets
- Re-initiating use of Zavoral Site Well at levels suitable for washing gravel would require significant investment to address DNR water appropriation requirements

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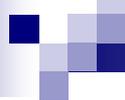
Tiller's Revised Proposal

- No washing, processing, or stockpiling at Zavoral site
- Load aggregate into trucks & haul to Scandia Mine site & other markets for use as add-rock
- Reduces impacts at Zavoral site
- Add-rock is rock of certain size ranges or quality not available at a facility, but needed to meet specifications for products produced there
- Add-rock is currently brought to Scandia Mine site from other locations

Revised EIS Scope & Work Plan

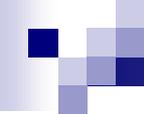
- City staff contacted EQB & reviewed state's rules regarding process to amend scope of EIS
- EQB provided guidance that EIS consider potential impacts at Zavoral & Scandia Mine sites
- City Council adopted Revised Scoping Decision Document (RSDD) on January 6, 2010
- Noticed in EQB Monitor
- AECOM modified work plan & contract to comply with RSDD

(Minnesota Rules 4410.2100 § 8)



EIS Items Modified

- Project description modifications- add-rock & timeframe, including alternatives
- Item 13 – Water Use
- Item 17 – Surface Water Quality & Quantity
- Item 21 – Traffic
- Item 23 – Stationary Source Air Emissions
- Item 24 – Odors, Noise, & Dust
- Item 26 – Visual Impacts



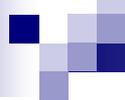
Alternatives

- #1 - Applicant's Preferred Alternative (10 years or less)
- #2 - No Build Alternative
- #3 - Reduced Mining Timeframe (5 years or less)
- Deleted: Impacts of Washing Scenarios
- Deleted: Impacts of Seasonal Scheduling of Processing Activities



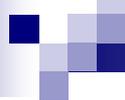
Water Use – Zavoral Site

- Water use for dust control only - lower usage
- Reduces water use from up to 1,200 gpm (864,000 gpd) to < 10,000 gpd & <1mgd
- No water appropriation permit required
- Comparison nursery well is permitted to use up to 7.2 mgd (420 gpm)
- Evaluate any identified impacts & identify mitigation measures



Water Use-Scandia Mine Site

- Currently permitted 18 mgy for washing, two mgy for dust control
- Actual usage < two mgy
- Add-rock is currently processed at Scandia Mine site
- EIS will identify & evaluate potential changes in water use & determine if will remain consistent EAWs & current water appropriation permit

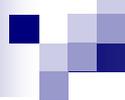


Water Use Monitoring

- Impacts of current water appropriation levels at Scandia Mine site were addressed in Scandia EAW & as part of DNR water appropriation permit process
- Annual water use at Scandia is reported to DNR
 - Dust control (daily)
 - Hours operating washing plant & amount of water used (daily)
 - Zavoral annual water use reported to City as part of Annual Operating Permit

Surface Water Quality & Quantity - Zavoral Site

- Identify & map groundwater & groundwater-dependent resources
- Identify surface waters that would receive runoff & their quality using existing information
- Describe proposed surface water controls
- Assess potential impacts of runoff to
 - Surface & groundwater quantity & quality
 - Waters of Special Concern, including St. Croix River & Zavoral Creek



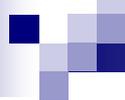
Surface Water Quality & Quantity – Scandia Mine Site

- Review historic operational data for Scandia Mine site
- Determine if potential for additional impacts, including areas of disturbance impacts to downstream water resources
- Evaluate any identified impacts & identify mitigation measures



Traffic

- Analysis of existing & alternative traffic operation impacts to key roadway network serving Zavoral & Scandia sites
- Assess impacts of mining only – Zavoral site
- Review historic operational data for Scandia Mine site
- Identify potential impacts at Scandia Mine site (traffic, safety, & infrastructure)
- Evaluate any identified impacts & identify mitigation measures

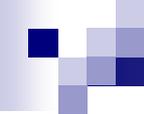


Stationary Source Air Emissions

- Assess impacts of mining only - Zavoral site
- Review historic operation data for Scandia Mine site to determine if proposed operation is consistent with EAWs & current permits
- Determine potential for additional air impacts at Scandia Mine site
- Evaluate any identified impacts & identify mitigation measures

Odors, Noise, & Dust

- Assess potential noise & dust impacts of mining only at Zavoral site for each alternative
- Evaluate potential for additional noise & dust impacts at Scandia Mine site
- Evaluate any identified impacts & identify mitigation measures



Visual

- Assess visual impacts of mining only at the Zavoral site
- Evaluate potential for additional visual impacts at Scandia Mine site
- Evaluate any identified impacts & identify mitigation measures



Proposed Pump Test

Zavoral Water Use Dust Control Only

- Dust control only
- <10,000 gpd based on discussions with Tiller – seasonal use, also < mgy permit threshold
- Pumped from Zavoral Site Well at 1,200 gpm for a few minutes a couple of times a day, or lesser rate for up to eight minutes

Modeled Simulation

- AECOM simulated lowering of water levels around Zavoral Site Well
 - Pumping at 1,200 gpm - 10-minute period
- Numerical program PT1 - Walton (1989)
 - Zavoral Site Well construction diagram
 - Hydraulic properties of aquifers based on available regional data (Runker et al. 2003)

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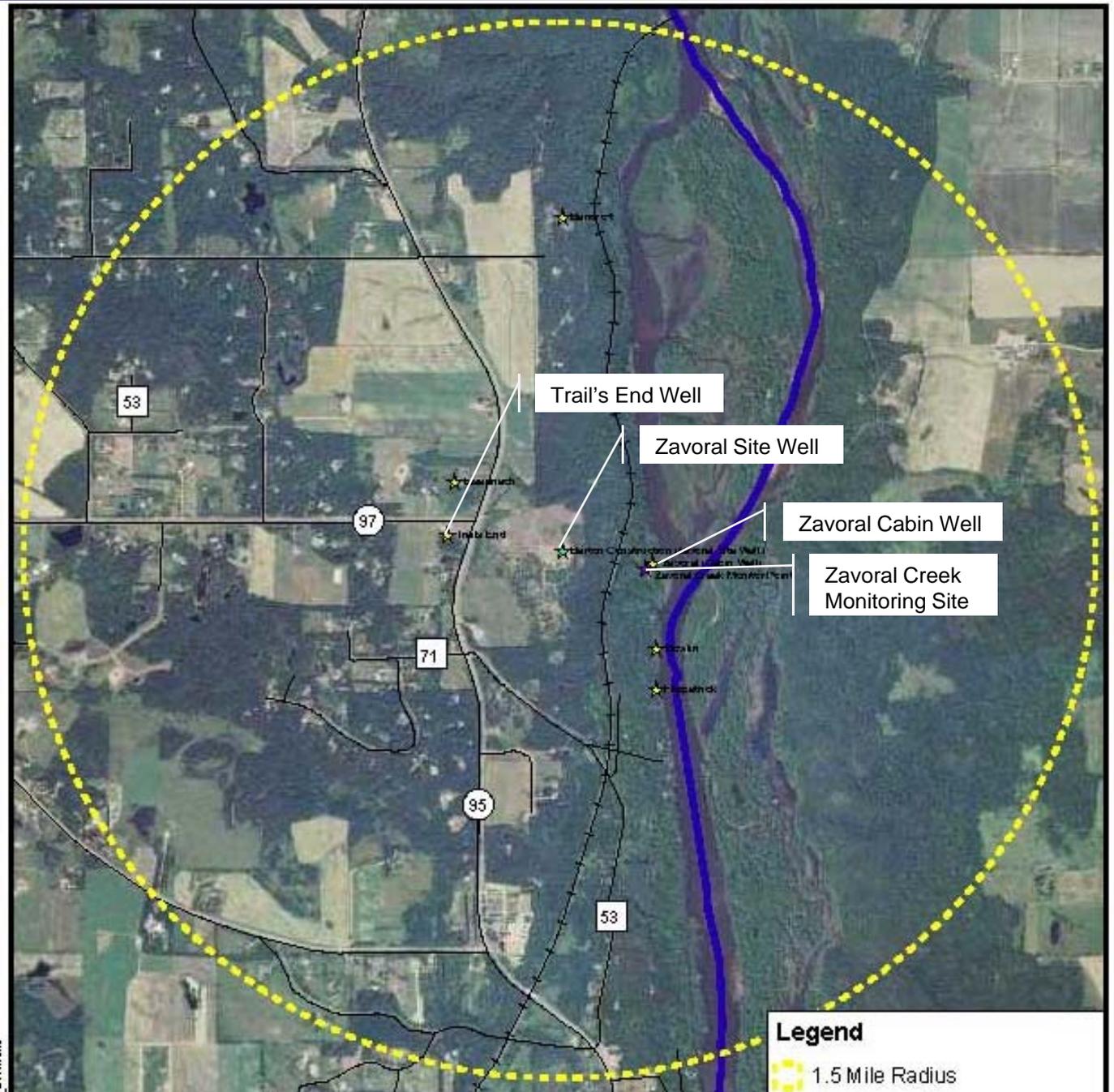
Modeled Simulation

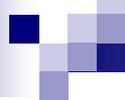
- Results indicated after 10 minutes of pumping Zavoral Site Well at a rate of 1,200 gpm
 - Water levels may drop by 0.2 ft at 670 ft
 - No drawdown at a distance of 1,682 ft
- Simulation based on several assumptions
- AECOM proposes pump test to provide direct evidence of effect of pumping on area wells & surrounding environment

Pump Test

- Propose two, 10-min pump tests - second test following first after two-hour recovery
- Water levels monitored at
 - Zavoral Cabin Well - about 1,300 ft east of Zavoral Site Well
 - Trail's End Bar & Grill 1 - about 1,700 ft west of Zavoral Site Well
 - Zavoral Creek at culvert
- Plan to conduct in May

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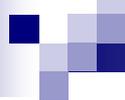




Pump Test

- Pre-pumping monitoring is aimed at detecting trends in water levels that may be present
- Knowledge of such trends may be important for interpreting pump test data
- Post-pumping data will be inspected for possible presence of delayed effects of pumping from Zavoral Site Well

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Pre & Post Pumping Monitoring

- Two selected wells initiated three hours prior to pumping & terminated two hours after pump is turned off (after the end of the second 10-minute pump test).
- Zavoral Creek initiated three hours prior to start of pumping & terminated three hours after pump is turned off

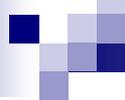


Coordination with DNR

- Although no DNR is permit required, continue to coordinate with DNR to facilitate their ongoing involvement with EIS process
- DNR agreed proposed tests technically represent actual water use scenarios
- Suggested longer test to help address public perceptions related to water use
- Looking at extending the test accordingly



Agencies' Roles

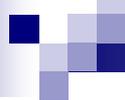


Environmental Impact Statement

- Provides information to evaluate proposed projects with potential for significant environmental effects
- Considers alternatives
- Explores methods to reduce adverse environmental effects (mitigation measures)

Minnesota Rules 4410.2000

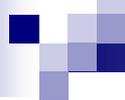
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Environmental Impact Statement

- Not an approval process
- Information gathering process to help governmental units with permitting authority over a project make better-informed decisions
- Has no authority to enforce measures
 - Is a source of information - must be integrated with permitting & approval processes
 - Regulatory agencies carry out protection measures identified in environmental review

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Environmental Impact Statement

- Agency representatives on PAC to provide early input
- Agencies have opportunity to provide comments on draft EIS
- Regulatory agencies carry out protection measures identified in environmental review & other relevant measures as part of permitting processes



Role of Mitigation

Mitigation

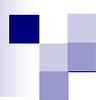
- A key purpose of an EIS is to provide information about potential environmental effects & how to avoid or minimize those effects to each of governmental units that approve or conduct project
- Mitigation may be meeting permit requirements or other methods developed as part of EIS process

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Mitigation

- Reason all decisions approving project are prohibited until EIS completed
- Does not preclude governmental units from reviewing permit applications, working on permits, preparing draft permits, etc.



City Tree & Woodland Preservation Standards

- Review
- Relationship to proposed project



Biological Assessment



Q & A



PAC Meetings

PAC Schedule

March 23, 2009	Record of Decision & Positive Declaration for EIS published in EQB Monitor
April 7, 2009	Public Scoping Meeting
April 21, 2009	Document
Jan-May 2010	Final Scoping Decision
Jan 2009	Revise Scoping Decision
May 26 (?)	Reviewing Technical Issues
June 29 (?)	Reviewing Technical Issues
August –Sept	Review of Draft EIS



Public Questions