APPENDIX A

Work Plan

This work plan presents the tasks that will be completed to appropriately analyze the potential for environmental impacts, and identify measures to mitigate for potential impacts for the identified alternatives related to the Zavoral Property Mining and Reclamation Project as part of the EIS process to be completed under Minn. R. 4410. The AECOM Team has reviewed the EAW, final SDD, comments, and available studies as part of the development of this work plan. Results of available studies that are determined to provide relevant and objective data will be incorporated into the preliminary draft EIS document along with the results of additional evaluations that will be conducted as identified in this work plan.

Task 1 - Project Management

Objectives

To effectively manage the project to:

- Maintain project schedule and contractual budget; provide timely and accurate reports and billing.
- Establish and maintain effective internal project team communication
- Develop a technically sound EIS that meets regulatory requirements, in a timely manner.
- Communicate to provide information to and obtain input from interested parties.

City of Scandia Interaction

- Participate in project meetings and facilitate coordination with Tiller Corporation (Tiller) and others.
- Provide review of administrative and technical documents in a timely manner.

Procedures

Task 1.1 - Detailed Work Plan

The scope of work outlined in this work plan will be reviewed and refined after the Project Initiation Meeting with the City. The outcome of this task will be a Detailed Work Plan, which will describe the activities associated with major tasks, key staff that will have primary responsibility for completing the tasks, related budget, mutually agreed upon schedule, and a final list of deliverables. The Plan will describe specific steps required to gather background information, address communication needs, and identify scheduling issues. The Plan will also specify technical data needs; required input from City staff, their consultants, or Tiller; and plans for stakeholder involvement.

As part of project controls and tracking, the AECOM Team project manager will update the preliminary project schedule as data gathering is initiated and dates for meetings and interim submittal dates are refined. The baseline schedule and budget will be compared to the actual schedule and budget on an ongoing basis as part of project reporting. A log of e-mails, correspondence, and meeting notes will be kept in an electronic file. Paper copies of these items will be filed for later retrieval if necessary.

Task 1.2 - Project Controls and Progress Reports

The AECOM Team project manager will prepare monthly progress reports in a form approved by the City. Progress reports will review progress on all tasks identified in the Plan, including cost to date, any significant interim findings, and any problems or conflicts that may affect the completion of any task within the allocated time and budget.

The AECOM Team project controls system is based on the balance of the three controlling factors in a project. These factors are time, cost and quality. In addition, project resources are considered in the controls system. Planning, monitoring, and controlling each of the project factors enables both the City and AECOM to proactively make decisions during the lifecycle of the project that will maintain the baseline project schedule, contain costs, maximize the allocation of resources, and manage project scope changes all while exceeding the City's expectations.

Deliverables

- Detailed Work Plan
- Progress Reports

Task 2 - Internal and External Communications

Objectives

To communicate effectively, educate and obtain input from internal and external stakeholders about issues related to the proposed project and alternatives, and to provide adequate notice and a variety of avenues for stakeholders to be involved in the process.

City of Scandia Interaction

- Participate in project meetings, conference calls, and facilitate coordination with Tiller and others.
- We have assumed that the City will pay for meeting location rental, if required, court recorders, audio-visual equipment and support, and any publication fees to newspapers or other publications.

Procedures

Task 2.1 - Internal Communication

We propose to hold a Project Initiation meeting and up to 10 additional internal meetings in Scandia. In addition, we propose to hold conference calls to result in weekly internal communication during the more intensely active portions of the project and biweekly communication during the less active periods. During these meetings/calls we will discuss project status regarding scope, schedule and budget, identify outstanding data needs, provide information as required and discuss future work, potential issues that could affect project progress or quality, and other information. We will also communicate with the City, their consultants, and other internal entities via telephone, mailed correspondence, and e-mail.

Task 2.2 - Other Communication

The AECOM Team will provide technical support to the City in meetings and other interaction with agencies and officials, organizations, the public, and other stakeholders. As part of this process we propose to hold a site review with agencies and officials to review key site issues. We have found that site reviews help agency staff become familiar with a project and related impacts, which helps to resolve or reach consensus on key issues early and result in more effective communication. In addition to the site review we propose to participate in up to three additional agency/stakeholder meetings as part of our base scope of work. We also will coordinate via telephone, mailed correspondence, and e-mail.

As the City knows, it is best to be proactive with public outreach efforts. Open, participatory public participation is conducive to an effective environmental review process. We understand that there is some history of citizen concerns towards sand and gravel mining in Scandia/New Scandia. Our proposed process allows the City to obtain critical input on complex environmental issues and local quality of life issues and to educate stakeholders. We understand that the City will want to continue to utilize its website to provide project updates and provide access to project documents. Work products developed as part of this project will be prepared in a format that is suitable for posting on the website. We will collaborate with the City staff to provide support in the preparation of notices, press releases, and other information for meetings as described in this work plan.

We have teamed with Richardson, Richter & Associates, Inc. (RRA) to provide public involvement support. We have worked extensively with RRA on other Minnesota environmental review projects with a critical public involvement component. We will work closely with the City to develop public outreach materials.

Task 2.3 - Project Advisory Committee Involvement

We will assist the city in the development and facilitation of an ongoing Project Advisory Council (PAC) that will meet up to four times during the project. Past experience has proven that this is an effective and efficient way to obtain early and ongoing valuable input from project stakeholders. We have assumed that the City will arrange for and provide meeting locations. We propose that the PAC would include area residents and landowners, key City and their consultant representatives, agency and local official representatives, environmental group representatives, and other identified interested parties. As part of this task we will work with the City to establish the goals/responsibilities, structure and types of representation for the PAC, develop a list of potential members, and contact them to request their participation.

We have included up to four meetings with the PAC in our current work scope:

- A kickoff meeting and possible site tour to describe the site features, the environmental review process, the proposed sand and gravel mining, and to define the PAC's role in the process This would include a preliminary review of conceptual mine plan and alternatives for evaluation in the EIS
- Up to two meetings to provide background and review technical work conducted for the EIS and obtain input, this includes the input on the development of potential mitigation measures
- Preliminary review of the draft EIS

EIS PREPARATION TASKS

The AECOM Team will complete the Zavoral Mine and Reclamation EIS to comply with the MEPA, Minn. Stat. 116D.01 et seq., the rules promulgated under MEPA, Minn. Rules Chapter 4410, and guidance documents issued by the EQB, including the following tasks and deliverables:

Task 3 - Cover Sheet

A cover sheet will be prepared to meet the requirements of Minnesota Rules 4410.2300.

Task 4 - Project Summary, Table of Contents, List of Preparers, and Project Description

The AECOM Team will prepare a functional working description of the proposed project and alternatives identifying the purpose, size, scope, environmental setting, limits, and anticipated phases of development in sufficient detail to meet EQB requirements. Early, effective development of a project description and alternatives are critical to maintaining project schedule and focus.

City of Scandia Interaction

This project description will use information from the EAW, Final SSD, the City, their consultant, and Tiller information.

Procedures

The project description will address the following:

- A summary of the project description.
- A summary of the EIS content requirement in Minn. R. 4410.2300, with page and section references to the sections of the EIS containing each required analysis.
- A general description of the area surrounding the site.
- A project description addressing siting, engineering, construction, operation, and reclamation.

Deliverables

- Cover sheet; project summary; table of contents; project description including text, tables, and graphics.

Task 5 - Permits and Approvals

Objectives

To identify known governmental permits and/or approvals required for the proposed Zavoral Mine and Reclamation Project, the unit of government responsible, status of any applications, and areas of dispute.

City of Scandia Interaction

Participation in meetings with agencies and discussions regarding permitting.

Procedures

The AECOM Team will incorporate permit information from the EAW and supporting documents, conduct coordination with agencies and local officials regarding permitting and/or approval needs, requirements, issues, areas of dispute, and other information. Agency and official coordination may include meetings, correspondence, telephone, or e-mail contacts. We will prepare a table presenting permitting and/or approval information in a concise manner supplemented with text.

Deliverables

- Copies of meeting notes, correspondence, and telephone memoranda, or e-mails.
- Table summarizing permitting and/or approval information, supplemented with text.

Task 6 - Description of the Proposed Alternatives

Objectives

The Final SDD identifies the four alternatives to be evaluated in the EIS. Each of the alternatives described below will include a detailed description of the site operations, including the type and quality of material to be extracted, depth of the proposed mining activities, potential impacts, and mitigation strategies. Based on the our understanding of gravel operations in the area, we believe that a major motivation for Tiller to utilize this pit is to use the coarse aggregate (gravel) that exists here in quite high percentages to supplement sand that they have lots of at the pit north on Manning Avenue where a large fixed asphalt plant exists. This deposit was mapped as significant by the MGS in 2000.

Alternative #1-Applicant's Preferred Alternative

This alternative is to re-open and expand the dormant aggregate mine and ancillary operation on the Zavoral site. The proposed project does not include mining below the water table. The 114-acre site falls within the Agricultural Zoning District (2020 Comp Plan). A portion of the site is located within the St. Croix National Scenic Riverway. Only reclamation, no mining, activities are proposed within this area.

Alternative #2 No-Build Alternative

The No-Build Alternative will describe the potential impacts, outcomes, constraints, benefits and disadvantages, and economics if existing land uses on the Zavoral site were to continue. The description will be based on existing and allowed use of the site for Agricultural and Rural Residential purposes, and will make projections or forecasts based on this use, to identify the No-build Alternative effects and impacts. The No-Build Alternative does not include the reclamation activities on previously-mined areas that are included in Alternative #1.

Alternative #3 – Mining and Reclamation Activities – Evaluate the Impacts of different Washing Scenarios

This Alternative will focus on the impacts of the washing activities at the site, particularly the impacts to groundwater, groundwater-dependent resources, springs, and wells. It will identify and compare the impacts and mitigation options for the project with up to three levels of water use for washing to the impacts of Alternative #1, which would represent the maximum level of washing that is expected to occur.

Alternative #4 – Mining and Reclamation Activities – Evaluate Impact and Seasonal Scheduling of Processing Activities

This Alternative will focus on the impacts of processing activities that are proposed to be part of site operations, including screening, sorting, and primary and secondary crushing. It will identify and compare the impacts of each of these activities to the impacts of Alternative #1 that includes all of these activities at the site. It will look at options for scheduling and processing activities, to avoid times of impacts to recreational use or other impacts. Noise and dust impacts are expected to be issues of particular focus for potential impacts and mitigation.

City of Scandia Interaction

Participation in working sessions and communication with the Tiller to define the alternatives in sufficient detail to conduct impact analysis and the development of mitigation measures.

Procedures

We propose holding up to one working session that include Peter Rzepecki, Bob DeGroot, Leslie Knapp, the City, and Tiller to facilitate the development of alternative descriptions, operational scenarios, and reclamation plan(s) to be used in the EIS. Based on information provided by the City and interaction with Tiller, the AECOM Team will prepare a concise description of the four alternatives for mining and reclamation.

Deliverables

Alternative and related reclamation descriptions, tables, and graphics developed in sufficient detail to conduct impact analysis and the development of mitigation measures.

Task 7 - Environmental, Economic, and Sociological Impacts

Objectives

To apply the expertise of the AECOM Team and City to develop a technically sound, unbiased, thorough, EIS that meets regulatory requirements, in a timely manner.

City of Scandia Interaction

- The AECOM Team will work with the City and utilize available project information to prepare the EIS. This will include a Project Initiation meeting and site review with City staff and the proposer to obtain and review all available information, and refine scope. We have assumed that the City will facilitate data transfer from the proposer, provide a location for meetings, and provide review of deliverables.
- The AECOM Team will provide a data needs list to the City for the project. Data needs will include, at a minimum, processing equipment description, process rates, proposed locations of stockpiles, water use projections, site base mapping, and site development plan (in electronic format).
- We have assumed that the City or Tiller Corporation will arrange for required access to the site and all potential impact areas, including access to nearby residential wells/springs if a pump test of the site well is conducted.
- Additional meetings, interaction, and the review of EIS section and other work products will be required as described in the following sections to obtain information and conduct analyses to produce a technically sound EIS, in a timely manner.

Procedures

The AECOM Team will collect (with City and Tiller Corporation assistance) and assess the data, conduct coordination, and complete analyses required to address the issues as specified in the Final SDD and as described below.

Deliverables

EIS text, tables, graphics, and supporting documentation to describe and quantify identified impacts.

Task 7.1 - Land Use

This section will primarily pertain to the City of Scandia and St. Croix Wild and Scenic Riverway District. The EIS will address:

- Planning authority for the project site.
- Existing and planned future land use and how that would be impacted by the alternatives, and how the rural character of the area expressed as a value by local residents would be affected.
- A description of planned end use and an assessment of its compatibility with surrounding land uses and recreational goals.

Task 7.2 - Environmental Hazards

The AECOM Team will obtain information on the potential location of storage tanks and other potentially contaminated sites at or in the vicinity of the site from review of the Minnesota Pollution Control Agency (MPCA) “What’s in My Backyard” website. We will review files related to any identified sites and coordinate with the MPCA regarding mining methods and mitigation in the vicinity of the site(s). We will identify potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines from existing databases.

Task 7.3 - Reclamation Plan

The AECOM Team will:

- Participate in two working sessions identified in Task 6 to develop the reclamation plan(s) for each alternative in detail. The reclamation plan(s) will include proposed use, the conceptual grading plans, plant communities, phasing and timing of reclamation activities, planting schedule, habitat reconstruction and invasive species management, and monitoring and maintenance to ensure the success of reclamation efforts.
- Evaluate the compatibility of the alternatives with existing and future land uses, and the potential impacts of the reclamation plans on habitat areas and future land use in the area.
- Coordinate and consult with the DNR, NPS, Washington Conservation District, Carnelian-Marine Watershed District, City, Tiller, and others as required to develop the viable reclamation plans

suitable for impact analysis and the development of mitigation measures. We understand that reclamation requirements for areas within the St. Croix River District may be different from those areas outside of the District.

Task 7.4 - Economic Impacts

The AECOM Team will:

- Determine the area(s) and types of potential economic and social impacts of the proposed project.
- Quantify the social, economic, and environmental impacts of each alternative on the local community using existing information, including impacts to the following:
    - Local economy
    - Tourism (including impact to the St. Croix Riverway and City of Scandia)
    - Property values
    - Public services, such as police, fire, or other costs to city services
- Identify strategies that will be implemented to avoid, minimize, or mitigate for the potential impacts.
- Conduct and document coordination completed with the City, DNR, NPS, Washington County, and others to complete the analysis and identify mitigation strategies.
- Team member BRKW Appraisals will review available property value information and provide the evaluation of the potential impact of the project on property values within 1-mile of the project site. The evaluation will include an analysis of the extent to which the project would deter desirable development, and the degradation of tax revenue potential to local units of government as a result of the project. The analysis would include documented experience with similar situations elsewhere as well as the documented professional judgment of BRKW Appraisals. The first step in the process will be to identify the types of properties within the 1-mile radius. The next step will be to research sales of similar properties that are located away from and not influenced by a gravel mining operation in relation to sales of properties that are in close proximity to such an operation in order to measure the value impact resulting from the project. Given the current economic situation, where property values are already declining, it will be important to establish whether the impact on property values is due to mining operations or to other forces.

Task 7.5 - Cover Types

AECOM Team member NRC will identify and map existing landcover types, including wetlands at a NEPA scale; determine the acreages of landcover types under current conditions, disturbed by each alternative during operation, and post-reclamation. A site reconnaissance will be conducted to ground truth the landcover types. The reconnaissance will be conducted concurrent with the reconnaissance described in Tasks 7.6 and 7.7 below.

Task 7.6 - Fish, Wildlife and Ecologically Sensitive Resources and Threatened and Endangered Species

We understand that Tiller has contracted with Critical Connections Ecological Services to perform a biological assessment of the site and that a final report detailing results of the field surveys will be available. AECOM Team member NRC, will:

- Review work conducted by Tiller. We have assumed that the survey of plants, animals, and land and water habitats provided will be sufficient for EIS preparation and agency coordination. We have included only a site reconnaissance for ground verification purposes as part of our review of the survey provided by Tiller's representative in our scope of work. We have also assumed that all report information, including maps and figures, will be provided in electronic format suitable for incorporation in the EIS minimal modification.
- Determine the area of potential impacts of the proposed project and alternatives on natural habitats and state-listed protected species.
- Complete a biological assessment based on the fieldwork conducted by Tiller. We have assumed that the biological assessment will include only state-listed threatened and endangered species and that a biological assessment for impacts to federally-listed species under Section 7 of the Endangered Species Act will not be required.
- Analyze the potential impacts of each of the alternatives on the sensitive resources (species and habitats), and the reversibility of the potential impacts.

- Identify strategies that would be implemented to avoid, minimize, or mitigate potential impacts. Identify coordination completed with the DNR, U.S. Fish & Wildlife Service, and any other agencies to complete the biological assessment. This would likely include a site review with agency staff.

Task 7.7 - Physical Impacts on Water Resources

The AECOM Team will:

- Identify the project area and area of potential impact of each of the alternatives.
- Identify and map surface water resources (rivers, streams, wetlands, springs, seeps, and lakes). A site reconnaissance for ground verification purposes will be conducted. We assume that this site reconnaissance will be conducted concurrently with the site reconnaissance described in Tasks 7.5 and 7.6.
- Prepare figures depicting identified water resources, descriptions of the resources identified, and regulations that apply to each resource. The AECOM team will map private wells within a 1.5-mile radius and high capacity wells within a 3-mile radius using information from the County Well Index. If warranted, based on a review of this information, we will work with the City to develop a scope and cost to conduct a field review to identify unmapped wells near the site.
- Provide a qualitative description of the current quality and regulatory status of these resources, potential physical impacts of each of the alternatives on the resources, and the reversibility of the potential impacts.
- Coordinate with agencies and organizations, including the Washington Conservation District, Carnelian-Marine Watershed District, DNR, NPS, and others to obtain existing water resources information and to identify potential impacts, issues, and mitigation measures.

Task 7.8 - Water Use

The AECOM team will:

- Identify the quantity and sources(s) of water to be used for washing, processing, and dust control activities based on input from Tiller and as developed as part of the alternative process .
- Identify existing production well construction details based on existing records, including locations, well depths, screened intervals, and geologic logs. Incorporate any proposed well information.
- Quantify the potential water use under each of the up to three proposed scenarios, and diurnal or seasonal variation in water use.
- Compile and review information about wells and groundwater production in the area of influence.
- Identify the potential impacts of site-related water use on groundwater resources and local wells in the project area, under each of the alternatives.
- Identify the potential impacts of project-related water use on groundwater-dependent resources such as bluff springs, Zavoral Creek (trout stream), as seepage swamps and any unique water-dependent ecosystems, under each of the alternatives.
- Evaluate potential surface water impacts caused by increasing the temperature of interflow water and shallow groundwater as a result of water infiltration into the ground from the settlement pond(s), and magnitude of that impact depending of the pond(s)' location relative to the bluffs, seepage faces, springs and surface water (trout stream).
- Design and conduct one, up to 72-hour aquifer test. If pump test equilibrium is reached prior to 72 hours, and sufficient data is gathered, the test will be terminated earlier than 72 hours with a corresponding reduction in cost. Our cost proposal is based on monitoring up to three area residential wells (within 1.5-mile radius around of the Zavoral Property Mining and Reclamation Project), two springs or seeps and Zavoral Creek (at a total of three locations upgradient and downgradient relative to the proposed settlement pond) during the aquifer test. Monitoring associated with this test will only be feasible if the City can arrange for access to private wells and spring, seeps, and other surface water features to measure drawdown during this test. AECOM has not included providing water to residents whose wells are pulled for the test in our cost.
- Meet with the DNR to determine the Agency's requirements for an aquifer test that would be needed to obtain a Water Appropriation Permit for the proposed Tiller project. If the DNR requirements are more stringent or extensive than the current AECOM scope of work the City may want to consider the option of expanding the AECOM work scope to meet the DNR requirements. If so, we will work with the City to establish an appropriate scope and budget for that work.

- Develop a groundwater monitoring plan that could be used to identify potential impacts to the groundwater and groundwater-dependent resources as a result of the water use, and proposed mitigation strategies for potential impacts.
- Develop a plan for abandoning the existing well and proposed monitoring wells on the site when these are no longer required.

Task 7.9 – Water-Related land Use Management Districts

The AECOM Team will:

- Identify potential adverse effects on the natural, cultural, and recreational values of the Riverway. Potential adverse effects may include impact to the use, purpose, and values of the Riverway District, alteration of the setting, or deterioration of water quality.
- Consult with the NPS regarding impact analysis and identification of strategies to avoid, minimize, and mitigate impacts. This will include an agency site review as described in Task 2.2.
- Identify measures that will be used to avoid, minimize, or mitigate impacts.

Task 7.10 - Erosion and Sedimentation

The AECOM Team will:

- Review areas of potential erosion and sedimentation impacts.
- Include a detailed discussion of erosion and sediment control management techniques to be implemented during construction and operation periods, including a discussion of resources to be protected and the adequacy of the proposed measures.
- Assess proposed erosion and sedimentation control measures, including an analysis of potential impacts on water resources identified by Task 7.7, as well as other land areas where project-related soil erosion could occur.
- Evaluate potential susceptibility of natural slopes down-gradient from the Site to erosion as a result of a variety of the Site activities' related factors, such as catastrophic runoff from the settlement pond(s), or excessive project induced erosion during major storm events.
- Evaluate potential for adverse soil conditions and susceptibility of soils to erosion and the resulting increase in sediment delivery to nearby water resources as a consequence of removing vegetation and project related disturbance and modification of the land surface and slopes.
- Address post-project conditions, including a description of proposed post-project long-term erosion and sedimentation control measures and their ability to adequately stabilize project areas soils such that post-project erosion impacts do not occur.

Task 7.11 - Surface Water Quality and Quantity

The AECOM Team will:

- Assess the potential impacts of runoff to surface and groundwater quantity and quality during construction, operation, and post-project.
- Obtain and review existing information in order to address surface water quality and quantity. We will coordinate with Tiller regarding proposed stormwater management during construction and operation to assess changes in the volume of total runoff and in water quality.
- Describe proposed surface water controls and practices to be implemented to determine if control measures and the ultimate disposition of runoff will meet regulatory requirements and assess potential impacts.
- Address the ability of the site to safely infiltrate the runoff, including an analysis of potential groundwater impacts and long-term sustainability of infiltration in a gravel mine setting. It is expected the proposed project will result in the majority of runoff generated within the area of gravel mining will be infiltrated.
- Analyze runoff discharge rates for the project area under existing, operation, and post-project conditions to provide a comparative analysis of these conditions.
- Address surface water quality, including project-induced:
    - Stream bed and bank scour
    - Increases in sediment and phosphorus discharged from the site, and (due to the water quality impairments identified for the St. Croix River) discuss the potential, or lack thereof, for PCBs or mercury to be discharged from the site.

- Thermal impacts on water resources will be addressed, including information on the complete range of runoff management techniques that will be used at the site.

- Operations and interim design features of the gravel mine will be reviewed and evaluated. Based on AECOM's experience with other facilities and based on applicable regulatory criteria, adequacy of the proposed surface water control design will be determined. If applicable, potential mitigation measures will be identified. We have included a site review in our scope of work. The surface water quality and quantity analysis will include:
  - Summary and citation of applicable surface water, stormwater and water quality regulations and permits in tabular format with supporting text.
  - An assessment of runoff quantity and quality impacts to surface and ground waters at and near the proposed project site. The assessment will address the St. Croix River, Zavoral's Creek and other surface water resources identified through completion of Task 7.7, along with aquifers in the project area. It will also include stormwater management during construction and operation periods of the gravel mine, potential increases in the volume of water or pollutant loading caused by the project, nondegradation regulations of the State of Minnesota and potential impacts on impaired waters.
  - A description of the stormwater management infrastructure and practices to be implemented at the proposed project site.

Task 7.12 - Geologic Hazards and Soil Conditions

The AECOM Team will use existing data sources to:

- Evaluate potential geologic hazards associated with mining activities at the site, such as instability and ground failures such as slumping or landslides on excavation slopes and engineered structures, such as roads and retention/settlement ponds. Both short-term and long-term stability will be evaluated.
- Evaluate potential susceptibility of natural slopes down-gradient from the site to slope failure and instability as a result of a variety of the site activities such as excessive infiltration within the gravel mine during major storm events.

Task 7.13 - Solid Waste, Hazardous Waste, Storage Tanks

Based on the information and analysis completed for Task 7.12 Geologic Hazards and Soil Conditions, the AECOM Team will:

- Identify potential impacts from toxic waste, hazardous waste, or storage tanks at the site on surface water resources, groundwater resources, groundwater-dependent resources, or local wells under each of the alternatives.
- Identify strategies that would be implemented to monitor groundwater resources and avoid, minimize, or mitigate for potential impacts on surface water resources, groundwater resources, groundwater dependent resources, or local wells on-site.
- Include estimates of the types, amounts, and compositions of solid and hazardous wastes produced from future operations. Potential disposal locations for municipal solid waste and hazardous waste will be provided in the EIS. The EIS will also detail any applicable state or local AST and/or UST regulatory requirements related to tanks that will be located on-site during mining operations.

Task 7.14 - Traffic

In assessing the impacts of the proposed operations and impacts on the existing and future traffic for the proposed action, traffic analyses will include a macro-analysis of the regional traffic impacts and a micro-analysis of the area directly impacted by the proposed development of the gravel mine. Analyses of traffic for each of the alternatives will take into account primary and secondary impacts as well as construction and operational impacts. The roadway network is limited in the study area with St. Croix Trail and Olinda Trail being the only continuous north-south roadways. Additionally, Oakhill Road, Scandia Trail, 220th St. / Pilar Road and 240th St. provide the means of access between St. Croix and Olinda Road. The traffic analysis will identify the cumulative and secondary impacts to these roadways and their intersections with one another.

Based on our current understanding of the local aggregate industry, we understand that Tiller's asphalt plant in Scandia supplies asphalt to a large area in northern Washington and southern Chisago counties.

We will determine if the operation of a gravel mine on the Zavoral Property would increase aggregate demand (or truck traffic) in the area or result in a redistribution of traffic. Trucks use area roadways to supply aggregate to the local market, including Tiller's New Scandia asphalt plant. Some of this truck traffic may originate in Bayport at a Tiller limestone quarry, or in Dresser Wisconsin, coming through Scandia from both directions. From an economic perspective, we understand that aggregate is a very localized commodity that can only be transported so far before another more local source, becomes the less expensive option.

The AECOM Team will**:**

- Conduct a traffic evaluation based upon local conditions and projected future land uses.
- Catalogue accident and existing traffic data for the area from the Washington/Chicago County line to south of Oakhill Road and from Highway 95 (St. Croix Trail) to west of Olinda Trail through Scandia.
- Collect traffic data related to seasonal recreational uses from the park.
- Collect existing roadway and intersection information.
- Determine existing peak hour traffic and levels of service.
- Determine projected traffic for the traffic study area based upon the alternatives and projected future land uses in the traffic study area.
- Assess directional traffic distributions and apply this to the projected traffic for the roadway system in the study area to determine projected levels of service for the roadways and roadway system.
- Identify mitigation measures to reduce the traffic impacts resulting from the proposed project.

Task 7.15 - Stationary Source Air Emissions and Dust

Potential environmental impacts from stationary sources and fugitive emissions (dust) are interrelated. The analysis of these sources must be considered together to properly assess discrete and cumulative impacts. Therefore, the AECOM Team proposes to address both Stationary Emission Sources and Dust as a single topic within the EIS. The AECOM Team understands that the project and subsequent reclamation will include the following air pollutant emitting activities:

- Stripping of vegetation and overburden and stockpiling the material on site
- Extraction of aggregate using front end loaders
- Transporting the aggregate to a wash plant
- Crushing, washing, and stockpiling of aggregate materials
- Transport of finished aggregate materials internally for subsequent processing and to construction sites beyond the mine area
- Reclamation activities, including grading, placing topsoil, and seeding.

These activities will generate airborne concentrations of fugitive dust, and to a much lesser degree, particulate from combustion that can be transported off site and deposited onto nearby land, vegetation, rivers and lakes.

The AECOM Team will:

- Prepare potential to emit (PTE) calculations for both point and fugitive emission sources for particulate matter (TSP), inhalable particulate matter (PM10), and fine particulate matter (PM2.5). AECOM will use the PTE to complete a project ambient air quality analysis and deposition analysis.
- Simulate the atmospheric transport processes (dispersion and deposition) using the USEPA Guideline model AERMOD to calculate ambient concentrations of total suspended particulate (TSP), inhalable particulate (PM10) and fine particulate (PM2.5). The process of deposition to the earth's surfaces will also be simulated with AERMOD. These include dry deposition due to gravitational settling and surface impaction due to turbulent air flow near surface elements as well as wet deposition due to wash-out by precipitation. To ensure defensibility of model predicted results, all modeling will be conducted according to approved USEPA methodologies presented in the Guideline on Air Quality Models (40 CFR Part 51 Appendix W), and in accordance with MPCA Modeling Guidance posted at http://www.pca.state.mn.us/air/modeling.html#guidance.
- Model total PM, PM_{10}, and $PM_{2.5}$ emissions from the aggregate operations and reclamation activities. Modeling will be performed for the preferred Alternative # 1 and for Alternative # 4 (Task 6).
- Model results for ambient particulate concentration will be processed in order to calculate appropriate statistics for comparison with the 24-hour and annual average ambient standards. The

model will also calculate 24-hour and annual deposition of particulate for input to an ecological assessment (see below).

- Model results for PM10 along with appropriate citations from refereed literature will be used to address the siliotic effects from ambient exposures to fugitive dust from the proposed operations. A recent air quality issue with respect to particulate is the fraction of crystalline silica in the particulate. The major concern regarding silica exposure has been the issue of silicosis, a disease of the lungs caused by chronic exposure to relatively high airborne concentrations of crystalline silica.

The AECOM Team will utilize USEPA screening techniques to evaluate the potential for ecosystem impacts in downwind areas, especially in the St. Croix Riverway and scenic easement areas. The following types of effects will be evaluated:

Deposition to Land

- Direct physical effects on leaf surfaces, e.g., reducing photosynthesis.

Deposition to Water

- Physical effects including light interruption, smothering of organisms, coverage of sites used for germination, feeding, spawning, and other activities;
- Biotic effects include direct mortality, reduced fecundity, reduced disease resistance, and inhibited feeding, growth, and reproduction.

Task 7.16 - Odors, Noise and Dust

Odors

The Final SSD did not identify odors as an issue requiring further analysis. Therefore, AECOM is not proposing to complete any task items related to odors for this EIS.

Noise

We understand that Tiller has conducted a noise study. The summary indicated that a noise analysis and model have been prepared, a noise study has been largely completed (pending summer noise background monitoring), and noise impacts will be at (within one or two db) or below Minnesota standards.

The AECOM Team member SBP will:

- Review available project information, including Tiller's noise study to confirm that the study was completed in accordance with current state of the practice methods and procedures, and gain an understanding of the projected impacts.
- Identify additional information needs to complete the EIS assessment.
- Visit the proposed site area to verify sensitive receptor locations, existing potential mitigation structures and gain an understanding of the potential impacts.
- Use the information from Tiller's noise study to evaluate the impacts of processing activities and how they may vary on a seasonal basis given variations in the activities themselves and variations in ground cover and vegetation.
- Prepare the noise chapter of the EIS based on the information contained in the proposer's noise study. This proposal assumes no additional monitoring or modeling will be required to prepare the EIS section.

Dust – See Task 7.15.

Task 7.17 - Visual Impacts

We understand that Tiller will have conducted a viewshed analysis of the project area from the river. The initial phase of the analysis included a plan view terrain model of the topography of the area to determine potential areas where views could be impacted during the project. The second phase of the analysis consisted of collecting views of the site during leaf off conditions. Photographs were taken at known positions using GPS equipment along Highways 95 and 97, Quarry Avenue North and along the St. Croix

River by boat during leaf-off conditions. These photographs are hyperlinked to a base map and by clicking along points, the associated photograph for that location appears. A proposed third phase of the viewshed analysis will gather photographs from the same locations during leaf-on conditions.

We understand that Tiller has prepared a plan view terrain model that shows the locations where the facility may be visible from off-site. The plan view terrain model indicated that the entrance to the facility, under the planned access improvements, would allow a view into the facility at the site entrance from eastbound Highway 97. Revisions are underway on the design of the entrance of the facility to minimize and screen the potential views into the facility from eastbound traffic on Highway 97. Revised design will be ready for analysis in the EIS.

The AECOM Team will:

- Work with Tiller to identify the location and maximum potential height of equipment, stockpiles, and other site elements that may be visible from adjacent areas as part of the working sessions (Task 6).
- Verify key view areas identified by Tiller are adequate for EIS analysis and show key view areas on a map. Key view areas are likely to include neighboring residences, the St. Croix River, nearby bluff areas in Wisconsin, and TH95 and TH97.
- Develop a model in GIS or other software such as 3D Studio Max that models site-specific conditions such as topography, vegetation, seasonal conditions, proposed lighting, and equipment and stockpiles on the site. We use state of the art software including ArcGIS, SketchUp, 3D Studio Max, and Photoshop to create photo-realistic 3D models.
- Accurately represent the view of the site from key view areas through drawings, photographs, or other imaging methods that clearly show the views of the site so that they may be easily understood by reviewing agencies and the public. Photographic simulations and 3D visualizations will be developed from identified key view areas that simulate proposed project conditions, including equipment and stockpiles. We will utilize a GIS-based approach to producing these simulations, incorporating GPS locations and GIS data to ensure the accuracy of spatial relationships in the virtual environment. We assume that the photographs taken by Tiller and key view locations are adequate for this EIS.
- Complete a written analysis describing the visual impacts of the site
- Identify the strategies to avoid, minimize, or mitigate visual impacts to key viewing areas.

Task 7:18 - Compatibility with Plans and Land Use Regulations

The EIS will analyze the relationship of the proposed project to the water resource plans of the Carnelian-Marine Watershed District and the St. Croix Riverway Management Plan (2002).

Task 7.19 - Cumulative Impacts

Cumulative impacts are defined as the impact on the environment that results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. Our understanding is that there is very little development planned for the area. We will hold a meeting with the City of Scandia, including staff to develop the framework for addressing cumulative impacts and refine scope as necessary to address the potential implications of Citizens Advocating Responsible Development (CARD) v. Kandiyohi County, 713 N.W.2d 817 (Minn. 2006). Our current scope includes addressing the cumulative impacts of:

- Gravel mining operations or other development in the vicinity that would affect water use, traffic levels, noise, vegetation removal, or air quality.
- Future development that could affect area traffic levels.
- Other actions occurring within the St. Croix River District or vicinity or in the project vicinity, particularly those that would affect natural resources, groundwater, or surface water resources.

Task 8 - Mitigation Measures

Objectives

To identify and incorporate measures that could avoid, minimize, or mitigate impacts of the proposed project and alternatives.

City of Scandia Interaction

Assistance in the identification, review, and selection of potential mitigation measures.

Procedures

The AECOM Team will identify the measures that could eliminate or mitigate for the adverse impacts of the project, as identified in the analyses completed for Task 7 and through public and agency input.

Deliverables

Text, tables, and graphics for the EIS describing mitigation measures.

EIS DELIVERY TASKS

Objectives

To prepare, distribute, address comments, and participate in meetings to facilitate an effective, objective, and transparent environmental review process.

City of Scandia Interaction

- Review of documents in a timely manner and compilation of internal comments in order for the AECOM Team to address in revising the draft EIS.
- The City shall be responsible for paying for the meeting location, audiovisual equipment, and recording or hiring a court reporter to transcribe the meeting.

Procedures

Task 9 - Preparation of a Draft EIS

The AECOM Team will prepare a draft EIS for the City's review and approval. The draft EIS will be completed to satisfy MEPA requirements and will be written in a concise, accurate and thorough manner and use language understandable by the public. The draft EIS will analyze the environmental impacts for the mining alternatives and reclamation. The draft EIS will also address mitigation measures that may be taken as a result of sand and gravel mining. The AECOM Team will submit draft chapters in electronic format as they are completed for the City's review. Any technical data used to support the discussion in any chapter will be attached as an appendix or referenced.

Task 10 - Public Meeting, Draft EIS

AECOM will provide information and help develop presentation materials for a public meeting to discuss and receive public comment on the draft EIS. The public meeting will be held not less than 15 days after publication of notice of availability of the draft EIS. The AECOM Team and any subcontracted consultants who are knowledgeable about the contents and preparation of the draft EIS will be made available to attend, present material, and answer questions at the meeting.

Task 11– Response to Public Comments

The AECOM Team, in cooperation with the City, will compile, catalogue, review, and prepare draft responses to timely oral and written public and agency comments on the draft EIS.

Task 12- Final EIS

Based upon comments received, The AECOM Team will prepare and submit to the City for review a Final EIS/Response to Comments that complies with MEPA and Minn. Rule 4410, particularly part 4410.2700.

Task 13 – EIS Adequacy Hearing

The AECOM Team will attend and participate in the Final EIS adequacy determination hearing before the Scandia City Council. If the EIS is determined to be inadequate, we will work with the City to prepare an adequate EIS during the 60 days allowed under Minn. Rules. If required, we will work with the City to develop a scope and cost for any related investigations and evaluations that were not in this scope of work.

Deliverables

- Preliminary draft EIS sections in electronic format for review by City staff and their designees as they become available.
- Revisions to the preliminary draft EIS as needed to respond to City staff and designee comments
- A PowerPoint slideshow, to be approved by City of Scandia staff, for presentation at the City of Scandia Final EIS adequacy meeting.
- Distribution of the draft EIS as required by Minn. Rules 4100.2600, submit the required notice to the EQB for publication in the EQB Monitor, and complete a press release for distribution to local newspapers. AECOM will provide twelve (12) paper copies and one electronic copy of the Draft EIS to the City of Scandia.
- A PowerPoint slideshow, or other presentation format, to be developed with and approved by City, for presentation at the required draft EIS public meeting

- Up to 10 graphic on boards prepared from figures included in the EIS for use at the public meeting
- A comment form (up to 150 copies), up to three page fact sheet (up to 150 copies), and sign-in forms.
- A preliminary draft Final EIS/Response to Comments document in electronic format for review by City of Scandia staff and their designees.
- Revisions to the preliminary draft Final EIS/Response to Comments document as needed to respond to public comments on the draft EIS.
- Distribution of the final EIS as required by Minn. Rules 4100.2600, submit the required notice to the EQB for publication in the EQB Monitor, and complete a press release for distribution to local newspapers. AECOM will provide twelve (12) paper copies and one electronic copy of the Draft EIS to the City of Scandia.