

MARBLEMOUNT QUARRY MITIGATION PLAN

Prepared for: Skagit County

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1. INTRODUCTION

1.1 Purpose

The purpose of this mitigation plan is to provide mitigation measures to manage impacts resulting from the proposed Marblemount Quarry development and operations. This mitigation plan is Appendix K of the **State Environmental Policy Act (SEPA)** checklist submittal and includes mitigation required as part of the Marblemount Quarry **Special Use Permit** (submitted to Skagit County on January 22, 2019). This mitigation plan is a compilation of recommended mitigation measures for the elements of the environment that were analyzed through the SEPA process. ***All of the mitigation measures identified in the technical reports included with the SEPA Checklist have been incorporated into the Marblemount Quarry's design and/or Operations Proposal (Appendix L of the SEPA Checklist) to bring the Proposed Project's potential impacts below the level of significance. For convenience, these measures are summarized in this mitigation plan. Because these measures have already been incorporated into the Project's design and Operations Plan, no additional mitigation measures are anticipated to be necessary.***

1.2 Plan Organization

This summary of the mitigation measures is purposefully included in the Project Site Plan Design (Exhibit A) and Operations Plan (Appendix K) of the SEPA Checklist submitted for the Marblemount Quarry Project for environmental review. The technical analyses appended to that SEPA checklist should be referenced for details supporting these mitigation measures built into the proposed Project. The summary below follows the order of the SEPA checklist. Redundancy and duplicated mitigation measures from overlapping analyses and impacts were consolidated for efficiency.

2. MITIGATION MEASURES FOR IMPACTED ELEMENTS OF THE ENVIRONMENT

2.1 Earth

2.1.1 Regulations and Standards

The following regulations and standards apply and set the standard for analysis of significance for Earth impacts:

- Skagit County Code (SCC) 14.24.400 – Critical Areas Geologically Hazardous Areas.

2.1.2 Analysis

A geologically hazardous areas assessment was conducted for the Proposed Project (Element Solutions, January 15, 2019). See **Appendix A** of the **SEPA Checklist** for the Skagit County Geologically Hazardous Critical Areas Report. The relevant mitigation measures recommended from that analysis are included in the mitigation measures below.

2.1.3 Mitigation Measures

The following mitigation measures are included in the Proposal to reduce the risk associated with landslide, erosion, and/or seismic hazard occurrences in the study area to be compliant with applicable regulations and standards:

- 1) A minimum 200-foot setback will be established from the toe of slopes exceeding 40 percent grade and no structures that are to be occupied regularly by employees, with the exception of the access road, will be constructed in this setback.
- 2) During times of blasting, rock moving, or if rockfall activity is observed, the 200-foot setback area will be avoided until conditions stabilize.
- 3) The 200-foot setback area will be signed and notice of rockfall hazards identified.
- 4) Signage at the top of steep slopes will be placed to warn employees or site users of the hazardous steep slope conditions.
- 5) A geotechnical engineer will be available for site inspection during the construction of the road to help determine suitability of cuts and fills and to identify potential geologically- hazardous conditions that may be encountered.

A site-specific construction stormwater pollution prevention plan was developed in conformance with the requirements of SCC 14.32 and 14.24.430.1(b). Reference Section 2.3 of this report for Stormwater Management and Mitigation Measures.

2.2 Air

2.2.1 Regulations and Standards

The following regulations and standards apply and set the standard for analysis of significance s for Air impacts:

- Sections 401-403 of Regulation of the Northwest Clean Air Agency.

2.2.2 Analysis

A Fugitive Dust Plan was prepared for the Proposed Project (Element Solutions, January 16, 2019). See **Appendix B** of the **SEPA Checklist** for the Fugitive Dust Plan. The relevant mitigation measures included in the Proposed Project are outlined below.

2.2.3 Mitigation Measures

The following mitigation measures are included in the Proposal to reduce the risk associated with fugitive dust and air quality impacts potentially resulting from the Proposed Project and to comply with applicable regulations and standards:

- 6) Mulch or vegetation will be used to cover disturbed soils following clearing to stabilize potential sources of windblown dust.
- 7) Vegetation buffers along the project perimeter will be maintained to reduce the likelihood of windblown dust leaving the site.
- 8) Fine grained rock drill spoils from work areas will be covered to avoid wind disturbance.
- 9) Speed limits of 10-15 mph will be maintained for all gravel surface haul roads in the project area during dry conditions.

- 10) Water trucks will spray the ground surface of gravel surface roads in the project area during dry conditions to prevent dust from becoming airborne. The surface will be wetted until moist, while controlling excessive water application to avoid concentrated discharge.
- 11) During dry conditions, operators will pre-wet fill and spoil materials during placement to avoid wind induced drift.
- 12) Operations managers will observe conditions during periods of high wind and stop dust-generating activities as needed or apply wetting techniques as necessary to mitigate dust.

2.3 Water

2.3.1 Regulations and Standards – Surface Water/Stormwater

The following regulations and standards apply and set the standard for analysis of significance for Surface Water impacts:

- SCC 14.32;
- Washington State Department of Ecology “Stormwater Management Manual for Western Washington”, 2012 publication, as amended in December 2014; and
- Chapter 3 of the WSDOT Hydraulics Manual (M 23-03.05), March 2017 issue.

2.3.2 Analysis

A stormwater assessment was conducted for the proposed project actions (Pacific Surveying and Engineering, January 15, 2019). See **Appendix J** of the **SEPA Checklist** for the Engineering Analysis and Drainage Plan and Exhibit A – Engineering Site Plan. This project will create more than 20,000 square feet of new plus replaced hard surface area. The relevant mitigation measures recommended from that analysis are included in the Proposed Project.

2.3.3 Mitigation Measures

The following mitigation measures are included in the Proposal to reduce the risk to potential surface water impacts potentially resulting from the Proposed Project and to comply with applicable regulations and standards:

- 13) A stormwater site plan was integrated into the project design.
- 14) A Stormwater Pollution Prevention Plan (SWPPP) was prepared and was integrated into the Proposed Project’s designs and operations plan.
- 15) Applicable stormwater source control measures were integrated into the SWPPP and operation plan.
- 16) Onsite stormwater management, treatment, and flow control were integrated into project design.
- 17) Culverts were designed to meet engineering standards.

2.3.4 Regulations and Standards - Groundwater

The following regulations and standards apply and set the standard for analysis of significance for potential Groundwater impacts:

- SCC 14.24.330 and 14.16.440;

- U.S. Code 40 Code of Federal Regulations (CFR) 264.193; and
- Washington Administrative Code (WAC) 173-180-320.

2.3.5 Analysis

A Hydrogeologic Site Assessment was conducted for the Proposed Project (Element Solutions, January 16, 2019). See **Appendix C** of the **SEPA Checklist** for the Hydrogeologic Site Assessment. The relevant mitigation measures from that analysis are included in the Proposal.

2.3.6 Mitigation Measures

The following mitigation measures are included in the Proposal to reduce the risk to potential groundwater impacts potentially resulting from the proposed project and to comply with applicable regulations and standards:

- 18) Aboveground Storage Tanks (ASTs) and maintenance facilities will have secondary containment structures to further reduce the potential for hazardous fluids from spilling and/or being released into the environment. Specifications for the secondary containment will be compliant with the following code: U.S. Code 40 CFR 264.193, Washington Administrative Code (WAC) 173-180-320, and SCC 14.16.440.(10)(e)(ii).
- 19) At the end of the mining operations, the ASTs and maintenance facilities will be decommissioned and removed from the site.

2.4 Animals

2.4.1 Regulations and Standards – Fish and Wildlife

The following regulations and standards apply and set the standard for analysis of significance for potential Fish and Wildlife impacts:

- Section 7(c) of the Federal Endangered Species Act (ESA) of 1973;
- Federal Migratory Bird Treaty Act (MBTA) of 1918 (16 United States Code 703-712)
- Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson Stevens Act; 50 CFR 600);
- Fish and Wildlife Coordination Act of 1934 (revised 1995);
- Revised Code of Washington (RCW) 36.70A.170;
- RCW 36.70A.172;
- RCW 36.70A.175;
- RCW 90.48.030;
- RCW 90.58.380;
- WAC 365-196-830(8)(a);
- WAC 22-16-030;
- SCC 14.24.080; and
- SCC 14.23.520.



2.4.2 Analysis

A Biological Assessment (BA) was conducted for the Proposed Project (Element Solutions, January 15, 2019). See **Appendix D** of the **SEPA Checklist** for the study. The relevant mitigation measures recommended from that assessment are included in the Proposal.

2.4.3 Mitigation Measures

The following mitigation measures are included in the Proposal to reduce the risk to potential biological impacts potentially resulting from the Proposed Project and to comply with applicable regulations and standards:

- 20) Impacts to the recommended water quality buffers of Watercourses A and B will be compensated at a 1:1 ratio such that a total of 3 acres of riparian area will be enhanced by removing existing invasive species and by installing native species in the enhancement area designated in the site plans and using methods and standards described in the Biological Assessment.
- 21) Impacts to Herbaceous Balds will be compensated for at a 1.5:1 ratio to account for temporal loss in habitat functions such that a minimum of 0.58 acres of bald habitat will be created. Mitigation for this Priority Habitat will occur during the Reclamation Phase of the Proposed Project.
- 22) Impacts to Talus will be compensated for at a 1.5:1 ratio to account for temporal loss in habitat functions such that a minimum of 1.10 acres of talus will be created. Mitigation for this Priority Habitat will occur during the Reclamation Phase of the Proposed Project.
- 23) Impacts to existing snag (dead tree) habitat removed for mining activities will be mitigated at a 1.5:1 ratio to account for temporal loss in habitat functions. It is estimated that up to approximately 100 significant snags will be removed for this project. Snags will be mitigated in the following ways:
 - a. A total of 100 snags will be created in the remaining on-site forested areas. Snags created from second-growth living trees will be done by girdling.
 - b. A total of 50 snags cleared for the project will be repurposed as logs placed as woody debris in the water quality enhancement area such that the snags are spread out evenly throughout the enhancement area.

2.5 Noise and Vibration

2.5.1 Regulations and Standards - Noise

The following noise regulations and standards that apply to and set the standard for analysis of significance related to noise impacts resulting from the Proposed Project:

- SCC Chapter 9.50;
- SCC 14.16.440;
- SCC 14.16.480; and
- WAC 173-60.

2.5.2 Analysis - Noise

A Sound Analysis was conducted for the Proposed Project. See **Appendix E** of the **SEPA Checklist** for the Sound Analysis (BRC Acoustics, January 18, 2019). Sound levels at one evaluation location are modeled to exceed the nighttime noise limit of 50 dBA during initial mining and late-stage mining activities. This exceedance would only occur during one hour of the nighttime period. The elevated sound level would be produced during the first hour of the daytime work shift of 6:00 AM to 7:00 AM and result from truck traffic on the haul route. Mitigation measures included in the Proposal to address this potential exceedance of allowable standards are described below.

2.5.3 Mitigation Measures - Noise

The following mitigation measures are included in the Proposal to reduce the risk of potential noise impacts potentially resulting from the proposed project and to comply with applicable regulations and standards:

- 24) Either construct a berm using materials, methods, and location as described in the Sound Analysis (Level I mitigation), or
- 25) Restrict hours of operations to delay noise generating activities until 7:00 AM.

2.5.4 Regulations and Standards - Vibration

A summary of the regulations and standards that apply to and set the standard for analysis of significance related to vibration impacts resulting the proposed project are:

- SCC14.16.840(2);
- WAC Chapter 296-52;
- RCW 70.74;
- USBM RI 8507; and
- FTA-VA-90-1003-06.

2.5.5 Analyses - Vibration

Two vibration assessments were conducted for the Proposed Project: one to address vibration from blasting operations and another to address vibration from trucking operations. See **Appendix F** of the **SEPA Checklist** for the two vibration analyses (Revey Associates, Inc., January 14, 2019 and Ramboll, January 14, 2019). As proposed, the Proposed Project will have 4-6 small blasts per day for access road construction in Step 1 of the Proposed Project (for a duration approximately three months) and up to two blasts per day during mining operations. The mitigation measures recommended from these analyses are included in the Proposal.

2.5.6 Mitigation Measures - Vibration

The following mitigation measures are included in the Proposal to reduce potential vibration impacts resulting from the Proposed Project and to comply with applicable regulations and standards:

- 26) Blast-hole diameter will not exceed 5.0 inches.
- 27) Charge-weight-per-delay will not exceed 50 pounds without notification and monitoring (see #34 below).



- 28) Minimum confining rock burden on all charges shall be at least 25 charge-diameters.
- 29) All charges shall be stemmed with at least 20 charge-diameters of clean washed crushed stone.
- 30) Height of blasted rock benches will not exceed 40 feet.
- 31) Kiewit Infrastructure Co. (KIC) or their contractors will apply spill cleanup procedures whereby measurable explosive spills are cleaned up immediately to prevent losses of nitrates and ammonia to the ground and neighboring water resources.
- 32) PPV at residential property will not exceed 0.2 in/s, and PPV on ground above buried utilities should not exceed 4.0 in/s.
- 33) Air-overpressure measured at nearest offsite structures will not exceed 133 dBL.
- 34) If vibrations occurring during operations are determined to be a significant concern at the nearest structures, at least two seismographs may be deployed to measure PPV and air-overpressure at nearest structures or utilities of concern and adaptive management strategies may be developed. All monitoring should conform to ISEE Guidelines.
- 35) Blast benches will be wetted with sprayed water to suppress dust on days when wind speed is greater than 15 mph.
- 36) If KIC hires subcontractors to perform blasting work, these mitigation measures will be listed as specific contract requirements with any drilling and blasting contractors.

2.6 Land Use

2.6.1 Regulations and Standards

The Proposed Project is consistent with Skagit County land use zoning, overlays, and Comprehensive Plan goals and policies. The proposed project will comply with all existing applicable regulations to ensure that the quarry has minimal land use impacts to adjacent properties.

2.6.2 Mitigation Measures

The following mitigation measures are included in the Proposal to reduce potential land use impacts resulting from the Proposed Project and to comply with applicable regulations and standards:

- 37) Reclamation of the site will restore the site for future forestry land use.

2.7 Aesthetics

2.7.1 Regulations and Standards

The Proposed Project is consistent with Skagit County land use, zoning, overlays, and Comprehensive Plan goals and policies.

2.7.2 Analysis

A Visual Resources Report was prepared for the Proposed Project (Element Solutions, January 17, 2019). See **Appendix G** of the **SEPA Checklist** for the Visual Resources Report.

The Proposed Project will result in temporary aesthetic impacts. The mitigation measures recommended from that analysis are included in the Proposal.

2.7.3 Mitigation Measures

The following mitigation measures are included in the Proposal to reduce potential visual impacts resulting from the Proposed Project and to comply with applicable regulations and standards:

- 38) Reclamation of the site will restore native vegetation at the site which will mitigate the aesthetic impacts of the site over time.

2.8 Historic and Cultural Preservation

2.8.1 Regulations and Standards

- RCW 27.53;
- RCW Chapter 27.53;
- RCW Chapter 27.44; and
- RCW 68.50.645.

2.8.2 Analysis

A **Cultural Resources Report** was completed by Drayton Archeology (January 17, 2019; Appendix H of SEPA Checklist). No significant archaeological observations were made; only the ubiquitous signs of past logging activities. Several boulder crevices were inspected for human shelter, but none contained any sign of occupation. Given the scope of the project and the low probability for cultural materials, it appears highly unlikely that intact deposits will be encountered, and the project can proceed without further archaeological oversight. An inadvertent discovery plan is part of the Project operations.

2.8.3 Mitigation Measures

The following mitigation measures are included in the Project to reduce risk of potential cultural resources impacts resulting from the Proposed Project and to comply with applicable regulations and standards:

- 39) The Proposed Project will adopt an Inadvertent Discovery Plan. The Inadvertent Discovery Plan will include the following elements:
 - a. in the event that archaeological materials (e.g. shell midden, faunal remains [bones], stone tools, historic glass, metal, or other concentrations) are encountered during the development of the property,
 - b. an archaeologist will be notified immediately and work will be halted in the vicinity of the find until the materials can be inspected and assessed.
 - c. The project archaeologist will review the find and contact the relevant parties. An assessment of the discovery and consultation with government and tribal cultural resources staff is a requirement of law. Once the situation has been assessed, steps to proceed can be determined.

2.9 Transportation

Based on findings in the Traffic Impact Analysis, the Proposed Project is not forecast to adversely impact the local road network and conditions (TSI, January 18, 2019). The study intersections satisfy the local level of service standards and there are no significant crash trends that warrant mitigation. The proposed site access is designed to meet Skagit County requirements.