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DTDcompliance@clackamas.us | **503-742-4400**。

Để yêu cầu dịch vụ dịch thuật hoặc điều chỉnh liên quan đến tình trạng khuyết tật, vui lòng liên hệ với chúng tôi qua **DTDcompliance@clackamas.us** | **503-742-4400.**

Clackamas County
www.clackamas.us

BEFORE THE BOARD OF COUNTY COMMISSIONERS
OF CLACKAMAS COUNTY, STATE OF OREGON

In the Matter of a Comprehensive Plan Amendment, Zone Map Amendment, and Site Plan Review request from Tonquin Holdings, LLC, on property described asT3S R1W Section 04A, Tax Lots 100 and 102

ORDER NO. 2014-14
(Page 1 of 3)

FILED
MAR 4 2014
Sherry Hall
Clackamas County Clerk

File Nos.: ZO287-13-CP; ZO288-13-ZAP; and ZO289-13-MAR

This matter coming regularly before the Board of County Commissioners, and it appearing that Tonquin Holdings, LLC made application for a Comprehensive Plan Amendment, corresponding zoning map amendment, and site plan review to allow development of an aggregate mining and processing operation on undeveloped land in the RRFF-5 zoning district, on property described as T3S R1W Section 04A, Tax Lot(s) 100 and 102, located at the southwest corner of the intersection of Morgan Road and Tonquin Road.

It further appearing that the planning staff, by its report dated September 10, 2013, recommended approval of the application with conditions of approval; and

It further appearing that the Planning Commission at its October 7, 2013 public hearing, adopted a series of motions relating to different aspects of the application based on the findings and conditions in the planning staff report along with testimony received during their hearings process.

It further appearing that after appropriate notice a public hearing was held before the Board of County Commissioners on October 30, 2013, at which testimony and evidence were presented, and that a decision was made by the Board on November 13, 2013;

Based on the evidence and testimony presented this Board makes the following findings and conclusions:

1. The applicant requests approval of a Comprehensive Plan Amendment, corresponding zoning map amendment, and site plan review to allow development of an aggregate mining and processing operation on undeveloped land in the RRFF-5 zoning district.

2. This Board adopts as its findings and conclusions the *Findings of Fact and Conclusions of Law Approving the Land Use Applications for the Tonquin Aggregate Quarry* document attached hereto and incorporated herein as Exhibit B, which found the application to be in compliance with the applicable criteria.

Clackamas County Official Records
Sherry Hall, County Clerk
Commissioners' Journals
Agreements & Contracts
2014-0290
03/04/2014 3:35:00 PM

BEFORE THE BOARD OF COUNTY COMMISSIONERS
OF CLACKAMAS COUNTY, STATE OF OREGON

In the Matter of a Comprehensive Plan Amendment, Zone Map Amendment, and Site Plan Review request from Tonquin Holdings, LLC, on property described asT3S R1W Section 04A, Tax Lots 100 and 102

ORDER NO. 2014-14
(Page 2 of 3)

File Nos.: ZO287-13-CP; ZO288-13-ZAP; and ZO289-13-MAR

NOW THEREFORE, IT IS HEREBY ORDERED that the Planning Staff's recommendation to approve the requested Comprehensive Plan Amendment, Zone Map Amendment, and Site Plan Review request is hereby AFFIRMED, subject to the conditions of approval as contained in the staff report dated September 10, 2013, the conditions of approval submitted by the Applicant in a letter dated November 4, 2013 and identified as Exhibit 112 in the record, and the following amended conditions of approval:

Condition 48: "Subject to documented access permission from private property owners, the monitoring of existing offsite wells associated with the properties listed below is required. The following property owners and properties have been identified as having a potentially high risk of conflict with groundwater quantity:

a. Fred Smith, 12551 SW Morgan Road, Sherwood;

b. Lee and Andrea Patrick, 12535 SW Morgan Road, Sherwood;

c. James B. and Marilyn Kramer, 12525 SW Morgan Road, Sherwood;

d. James P. Kramer, 12885 SW Morgan Road, Sherwood; and

e. Mark S. Platt, 12557 SW Morgan Road, Sherwood.

Subject to access authorization, monitoring protocols shall include the development of a baseline well status report for the five domestic wells within 90 days after commencement of site construction. If access is provided, the Site Operator will monitor water levels within 30 days of a request from a property owner to assess potential impacts.

In the event private well monitoring indicates a measured loss of 20 percent of greater daily in daily domestic water supply, the following shall occur:

i. Supplemental mitigation shall be provided including but not limited to deepening or replacement of private wells to tap deeper aquifers that are isolated from shallower mining impacts;

BEFORE THE BOARD OF COUNTY COMMISSIONERS
OF CLACKAMAS COUNTY, STATE OF OREGON

In the Matter of a Comprehensive Plan Amendment, Zone Map Amendment, and Site Plan Review request from Tonquin Holdings, LLC, on property described asT3S R1W Section 04A, Tax Lots 100 and 102

ORDER NO. 2014-14
(Page 3 of 3)

File Nos.: ZO287-13-CP; ZO288-13-ZAP; and ZO289-13-MAR

ii. Within 72 hours the applicant/operator shall provide not less than 400 gallons per 24 hour period of potable water for domestic use, by water tanker or other source to the above referenced affected owner. **In the event that the provision of potable water becomes necessary, as requested by the affected property owner, a temporary above-ground potable water storage container shall be provided on the affected parcel. The container shall provide no less than 400 gallons of storage**."

Condition 49a: "In the event the applicant/operator implements injection wells or infiltration trenches as a groundwater quantity mitigation measure, applicant/operator will implement the groundwater quality baseline testing and periodic monitoring program outlined in the Shannon & Wilson Final Hydrogeologic Evaluation Report dated October 29, 2013 (Exhibit 92) to ensure that the injection/infiltration water complies with the Safe Drinking Water Act of 1974 and subsequent amendments."

Condition 74a: "Upon commencement of quarry operations, Morgan Road shall be cleaned with a street sweeper, not less than twice a month within the improved right-of-way between the site entrance and the Morgan Road/Tonquin Road intersection. Upon commencement of reclamation activities, street sweeping shall occur in this same area once a week."

A complete list of the applicable conditions of approval has been attached hereto and incorporated herein as Exhibit A. These conditions have been drafted and attached to this order to reflect the Board's decision, and to make final quality control edits for formatting and consistency purposes.

DATED this 27th Day of February, 2014

BOARD OF COUNTY COMMISSIONERS

Chair

Recording Secretary

CONDITIONS OF APPROVAL:

1. Comprehensive Plan Table III-2, "Inventory of Mineral and Aggregate Resource Sites", shall be amended to add the subject property as a "Significant Site".

2. The Board Order and all attachments allowing mining of the subject property together with limiting conditions and supporting background documents shall be adopted by reference in Comprehensive Plan, Appendix A, "Maps and Documents Adopted by Reference".

3. The official zoning map shall be amended by application of the Mineral and Aggregate Overlay Zoning District to the subject property; tax lots 100 & 102, Assessor's Map No. 31W04A.

General Operations Related:

4. Mining (including but not limited to excavation and processing) is restricted to the hours of 7:00 AM to 6:00 PM Monday through Friday, and 8:00 AM to 5:00 PM Saturday. Drilling and blasting is restricted to the hours of 9:00 AM to 4:00 PM Monday through Friday.

5. No mining (including but not limited to excavation and processing), drilling, or blasting operations shall take place on Sundays or the following legal holidays: New Year's Day, Memorial Day, the Fourth of July, Labor Day, Thanksgiving Day, and Christmas Day. Further, no drilling or blasting operations shall take place on Saturdays.

6. The applicant and/or operator shall not initiate mining and activities on the Quarry until the Oregon Department of Geologic and Mineral Industries (DOGAMI) approves the reclamation plan and operating permit for the Quarry.

7. The applicant and/or operator shall obtain approval from the DOGAMI of a reclamation plan for the subject property and shall implement the same.

8. The applicant and/or operator shall obtain Oregon DEQ approval of a Spill Prevention Controls and Countermeasures Plan for the Quarry and shall comply with same.

9. Copies of all permits issued for the Quarry shall be provided to the County including, but not limited to, any permits issued by DOGAMI, DSL, DEQ, the Oregon Water Resources Department, the Oregon Fire Marshal's Office, local Fire Marshal's Office if applicable, and the U.S. Army Corps of Engineers.

10. The Quarry operator shall carry a comprehensive liability policy covering mining and incidental activities during the term of the operation and reclamation, with an occurrence limit of at least $500,000. A certificate of insurance for a term of one (1) year shall be deposited with the

County prior to the commencement of mining, and a current certificate of insurance shall be kept on file with the County during the term of operation and reclamation.

11. Off-road equipment (i.e. excavators, front-end loaders, loading trucks, and bulldozers) used for internal quarry operations shall be fitted with broadband rather than traditional narrowband backup alarms.

12. Unless otherwise agreed to by Kinder Morgan, the quarry operator shall comply with the recommended guidelines dated October 7, 2010 (including attachment) provided by Kinder Morgan for blasting within 300 feet of their pipeline.

General Mine Plan Related Conditions:

13. The applicant and/or operator of the quarry shall maintain the following screening measures for the property: 1) a cyclone fence with wood slats and/or vegetation, installed around the property; 2) noise mitigation barriers in accordance with the Tonquin Quarry Noise Study dated September 23, 2013; and 3) natural and supplied screening as outlined by the Murase and Associates landscape plan dated April 2013, or as otherwise required herein.

14. Extraction, processing, and stockpiling activities shall be limited to those areas of the subject property labeled as appropriate for such activities and depicted on the site plan dated April 2013, or as otherwise required herein.

15. Slope inclinations shall not exceed an average slope of ½:1 (horizontal to vertical) within the rock mass during mining unless an alternative standard is permitted by the DOGAMI.

16. Identified setbacks from the property lines, utilities, and easements shall be maintained in accordance with the Mining Plan.

17. As depicted on the Mining Plan, no mining will occur within 50 feet of the Kinder Morgan pipeline crossing the subject property.

18. The PGE transmission line shall be relocated to the east boundary of the subject property, along the west side of SW Morgan Road, in accordance with PGE permission and standards.

19. Other than vegetation removal needed to address sight distance on Tonquin Road as described in the Kittelson & Associates report dated April 2013, no quarry related development shall occur on the north side of SW Tonquin Road.

20. The applicant and/or operator shall comply with the stormwater and erosion control plan in Appendix D of the application, or as it may be modified by the DOGAMI from time to time, when conducting mining activities on the subject property.

Transportation Related Conditions:

Clackamas County:

21. All proposed and required frontage improvements in, or adjacent to Clackamas County right-of-way, or on-site, shall be in compliance with the County Roadway Standards.

22. The applicant shall obtain a Development Permit from the Clackamas County Department of Transportation and Development, Engineering Division prior to the initiation of any construction activities associated with the project.

23. The applicant shall verify by survey that a 24-foot wide, one-half right-of-way width exists along the entire site frontage, on the westerly side of the Morgan Road right-of-way where the Morgan Road right-of-way is within Clackamas County, or shall dedicate additional right-of-way as necessary to provide the minimum width. Contact Deana Mulder for the specifics regarding exhibits to be included with submittals (Clackamas County Roadway Standards Table 2-4, ZDO subsections 1007.03 A and 1007.03 F).

24. The applicant shall grant an eight-foot wide public easement for signs, slopes, and public utilities purposes along the entire site frontage of tax lots 100 and 102 on the westerly side of Morgan Road where the Morgan Road right-of-way is within Clackamas County. Contact Deana Mulder for the specifics regarding exhibits to be included with submittals (Roadway Standards Drawing C110).

25. The applicant shall not transport more than one million tons of aggregate per year. Data shall be submitted to the Clackamas County Planning and Zoning staff on a yearly basis to verify compliance.

26. The applicant shall design and construct improvements to SW Morgan Road from the Morgan Road/Tonquin Road intersection to the site driveway approach. These improvements shall consist of:

a) Two-foot wide compacted gravel shoulders.

b) Drainage facilities in conformance with ZDO section 1008, Clackamas County Roadway Standards Chapter 4 and SWMACC rules and regulations.

c) One driveway approach designed and constructed in conformance with Roadway Standards Drawing D500. The minimum length of the paved surface from Morgan Rd. into the site shall be 50 feet, with the remainder being gravel-surfaced. The driveway shall be designed and constructed so that the skew angle of the driveway is no more than 10-degrees from the perpendicular unless a design modification for a greater skew angle is approved by County Engineering Division staff.

27. The applicant shall reconstruct the full width of SW Morgan Road between, and including, the site driveway approach and Tonquin Road.

a) The reconstruction shall consist of rototilling the existing pavement and base followed by the addition of cement to create a cement-treated base (CTB), 22 feet in width.

b) The applicant shall submit lab test results, to County Engineering staff, on representative samples of the soil material to determine the appropriate cement content, maximum dry density, and optimum moisture content required for construction, for review and approval prior to the construction of the CTB.

c) A four inch thick asphaltic concrete section shall be placed on top of the CTB.

d) Compacted gravel shoulders, two feet in width, on both sides of the reconstructed portion of the road will also be required to support the edges of the road and protect the edges from damage.

e) The applicant shall permanently close and remove the existing driveway approaches from the site onto Morgan Road. The driveway approaches shall be replaced with matching shoulder, ditch and landscaping.

28. The applicant shall provide a copy of the Engineer's drainage study, surface water management plan, and Engineer's detention calculations to DTD Engineering, Deana Mulder.

29. The applicant shall provide adequate on site circulation for the parking and maneuvering of all vehicles anticipated to use the parking and maneuvering areas, including a minimum of 24 feet of back up maneuvering room for all 90-degree parking spaces. Loading spaces shall also be afforded adequate maneuvering room. The applicant shall show the paths traced by the extremities of anticipated large vehicles (dump trucks with pups, delivery trucks, fire apparatus, garbage and recycling trucks), including off-tracking, on the site plan to insure adequate turning radii are provided for the anticipated large vehicles maneuvering on the site and at the site driveway intersection with Morgan Road (ZDO subsection 1007.07 A 12).

30. Parking spaces shall meet minimum ZDO section 1007 dimensional requirements. The plans shall list the number of parking spaces required and the number of parking spaces provided. The applicant shall label all compact, carpool, disabled, and loading berth spaces on the plans.

31. Parking spaces for disabled persons and the adjacent accessible areas shall be paved.

32. The on site truck scale shall be provided with a minimum of 150 feet of storage length for vehicles approaching the scale.

33. The applicant shall install, operate, and maintain a wheel wash and/or other necessary infrastructure on site to prevent mud and other debris from being tracked onto or otherwise being deposited onto the road systems of Clackamas or Washington Counties.

34. The applicant shall prohibit quarry traffic from travelling SW Morgan Road south of the site driveway except for delivery of product to properties on Morgan Road south of the site driveway. Quarry traffic may also travel to and from the site driveway to the Town Quarry at 12542 Morgan Road to the south. The applicant shall submit a plan to the County Engineering Division indicating all the measures included to enforce this restriction for review and approval.

35. The applicant shall provide and maintain adequate intersection sight distance and adequate stopping sight distance at the site driveway intersection with Morgan Road. Adequate intersection sight distance for drivers turning left into the site shall also be provided and maintained. In addition, no plantings at maturity, retaining walls, embankments, fences or any other objects shall be allowed to obstruct vehicular sight distance. Minimum intersection sight distance, at the driveway intersection with Morgan Road, shall be 415 feet northerly and 645 feet southerly along Morgan Road, measured 14.5 feet back from the edge of the travel lane. Minimum stopping sight distance shall be in accordance with AASHTO standards, appropriately adjusted for grades and measured along the middle of the individual travel lanes. Minimum intersection sight distance for drivers turning left into the site shall be 415 feet measured from the driver's location at the intersection to the middle of the oncoming travel lane. (Roadway Standards section 240 and AASHTO Tables 9-6, 9-8, and 9-14).

36. The applicant shall provide a plan and profile exhibit, based on survey data, illustrating adequate intersection sight distances and adequate stopping sight distances for the driveway approach intersection with Morgan Road.

37. The applicant shall comply with County Roadway Standards clear zone requirements in accordance with Roadway Standards section 245.

38. The applicant shall provide an Engineer's cost estimate to Clackamas County Engineering, to be reviewed and approved, for the asphalt concrete, aggregates, curbs, sidewalks and any other required public improvements required herein.

39. The applicant shall install and maintain a 30-inch "STOP" sign, with the bottom of the sign positioned five feet above the pavement surface, at the driveway intersection with Morgan Road. (Manual on Uniform Traffic Control Devices).

40. All traffic control devices on private property, located where private driveways intersect County facilities shall be installed and maintained by the applicant, and shall meet standards set forth in the Manual on Uniform Traffic Control Devices and relevant Oregon supplements.

41. Prior to the issuance of a building permit for any proposed structures, the applicant shall submit to the following to the Clackamas County Engineering Division:

a. Written approval from the local Fire District for the planned access, circulation, fire lanes and water source supply. The approval shall be in the form of site and utility plans stamped and signed by the Fire Marshal.

b. Written approval from the appropriate surface water management authority (SWMACC) for surface water management facilities and erosion control measures.

c. A set of street and site improvement construction plans, including a striping and signing plan (including but not necessarily limited to defined lane lines, stop bars, pavement arrows, etc), for review, in conformance with Clackamas County Roadway Standards Section 140, to Deana Mulder in Clackamas County's Engineering Division and obtain written approval, in the form of a Development Permit.

i. The permit will be for road, driveway, drainage, parking and maneuvering area, and other site improvements.

ii. The minimum fee is required for eight or fewer, new or reconstructed parking spaces. For projects with more than eight parking spaces, the fee will be calculated at a per parking space rate according to the current fee structure for commercial/industrial/multi-family development at the time of the Development Permit application.

iii. The applicant shall have an Engineer, registered in the state of Oregon, design and stamp the construction plans for all required improvements.

42. Before the County issues a Development Permit, the applicant shall submit a construction vehicle management and staging plan for review and approval by the County DTD, Construction and Development Section. That plan shall show that construction vehicles and materials will not be staged or queued-up on public streets and shoulders without specific authority from the County DTD, Engineering Division.

Washington County:

43. Prior to the commencement of site clearing and mining operations, the applicant and/or operator shall comply with the requirements set forth in the letter dated August 30, 2013 from Naomi Vogel, Assoc. Planner, of the Washington County Dept. of Land Use and Transportation and attached as an Addendum to these conditions of approval.

44. Prior to the commencement of site clearing and mining operations, the applicant and/or operator shall provide written verification to the Clackamas County Planning and Zoning Division and Engineering Division that the Washington County requirements have been satisfied or guaranteed.

Groundwater Related Conditions:

45. Additional monitoring wells and hydrogeologic testing, coupled with ongoing groundwater level monitoring, will establish baseline conditions and identify early groundwater level declines should they occur during mining operations. Onsite observation wells currently focus on water-bearing zone #3. Prior to excavation to elevation -100 feet mean sea level (msl), three additional borings (core holes) shall be completed to directly identify and characterize water-bearing zone #4. Pressure transducers with dedicated dataloggers shall be installed to automate monitoring of groundwater levels. All three installations shall be located and protected to allow long-term use without disruption by mining. The existing observation wells shall be replaced if and when they are decommissioned due to the progression of mining activity.

46. Long-term groundwater level monitoring shall focus on water-bearing zones #3 and #4, and automated monitoring shall include existing and new observation wells. Monitoring data shall be reviewed and reported to DOGAMI at quarterly intervals for a minimum of 2 years, and shall continue per DOGAMI requirements until mining activities are complete. This monitoring program shall document current conditions and identify any recommended mitigation measures' that must be implemented to counter substantial loss of the water resource for the nearby residences.

47. Packer tests and slug tests should be performed during drilling to estimate the water-bearing zone's hydraulic conductivity, which will facilitate mitigation and dewatering system design. The tests should focus at the design depths for the proposed infiltration benches and at water-bearing zones #3 and #4.

48. Subject to documented access permission from private property owners, the monitoring of existing offsite wells associated with the properties listed below is required. The following property owners and properties have been identified as having a potentially high risk of conflict with groundwater quantity:

a. Fred Smith, 12551 SW Morgan Road, Sherwood;

b. Lee and Andrea Patrick, 12535 SW Morgan Road, Sherwood;

c. James B. and Marilyn Kramer, 12525 SW Morgan Road, Sherwood;

d. James P. Kramer, 12885 SW Morgan Road, Sherwood; and

e. Mark S. Platt, 12557 SW Morgan Road, Sherwood.

Subject to access authorization, monitoring protocols shall include the development of a baseline well status report for the five domestic wells within 90 days after commencement of Site construction. If access is provided, the Site Operator will monitor water levels within 30 days of a request from a property owner to assess potential impacts. In the event private well monitoring

indicates a measured loss of 20 percent or greater in daily domestic water supply, the following shall occur:

a. Supplemental mitigation shall be provided including, but not limited to, deepening or replacement of private wells to tap deeper aquifers that are isolated from shallower mining impacts;

b. Within 72 hours the applicant/operator shall provide not less than 400 gallons of potable water for domestic use per 24 hour period by water tanker or other source to the above referenced affected owner. In the event that the provision of potable water becomes necessary, as requested by the affected property owner(s), a temporary above-ground potable water storage container shall be provided on the affected parcel. The container shall provide no less than 400 gallons of storage.

49. Mitigation measures, including infiltration benches or injection wells along the south property boundary, shall be designed, built, and monitored to proactively avoid offsite impacts. Infiltration benches shall be constructed above water-bearing zone # 3 (about 75 feet msl) in rock suitable to facilitate infiltration. Water applied to the infiltration bench provides a positive hydrostatic head in the rock mass that reduces groundwater declines adjacent to the quarry. The additional test borings, instrumentation, and monitoring, as well as observed seepage into the active quarry shall be utilized for development of final design and evaluation of mitigation measures. Should proactive infiltration fail or be deemed inappropriate, well improvements such as resetting pumps at deeper depths, well deepening, or changes in well operation and storage capacity shall be considered as alternate mitigation options to alleviate water quality or quantity impacts.

49a. In the event the applicant/operator implements injection wells or infiltration trenches as a groundwater quantity mitigation measure, applicant/operator will implement the groundwater quality baseline testing and periodic monitoring program outlined in the Shannon & Wilson Final Hydrogeologic Evaluation Report dated October 29, 2013 (Exhibit 92) to ensure that the injection/infiltration water complies with the Safe Drinking Water Act of 1974 and subsequent amendments.

50. The quarry's excavation depth shall be maintained above water bearing zone #4 identified in the Shannon & Wilson Final Hydrogeologic Evaluation Report dated October 29, 2013 (Exhibit 92).

51. Prior to mine operation, a final Spill Prevention Control and Countermeasure (SPCC) Plan shall be developed for the facility substantially consistent with the sample document provided by the U.S. Environmental Protection Agency and shown in Appendix M of the Application.

Acoustic Related/Noise Control Conditions:

52. The Quarry operator shall comply with the recommendations contained in the noise study prepared by Daly-Standlee and Associates, Inc. (DSA) dated September 23, 2013 and the supplemental letter dated September 5, 2013 by DSA.

53. Noise mitigation barriers shall be constructed in accordance with the DSA report along portions of the western and southern property lines.

54. The Quarry operator shall utilize polyurethane or rubber screens or proximate berms or buffers in accordance with the DSA report in order to mitigate the noise impacts associated with operation of crushing and screening equipment when it is located in Crusher Operating Area #1; this requirement ends when the crushing and screening equipment is relocated to Crusher Operating Area #2. Both Crusher Operating areas are depicted on Figure #3 of the DSA report.

55. The Quarry operator is not required to monitor or mitigate noise impacts to any off-site dwelling or property in the event the owner of the off-site dwelling or property grants the Quarry operator a written and recorded noise easement allowing unmonitored and unmitigated noise impacts from the Quarry on the property and/or at the dwelling.

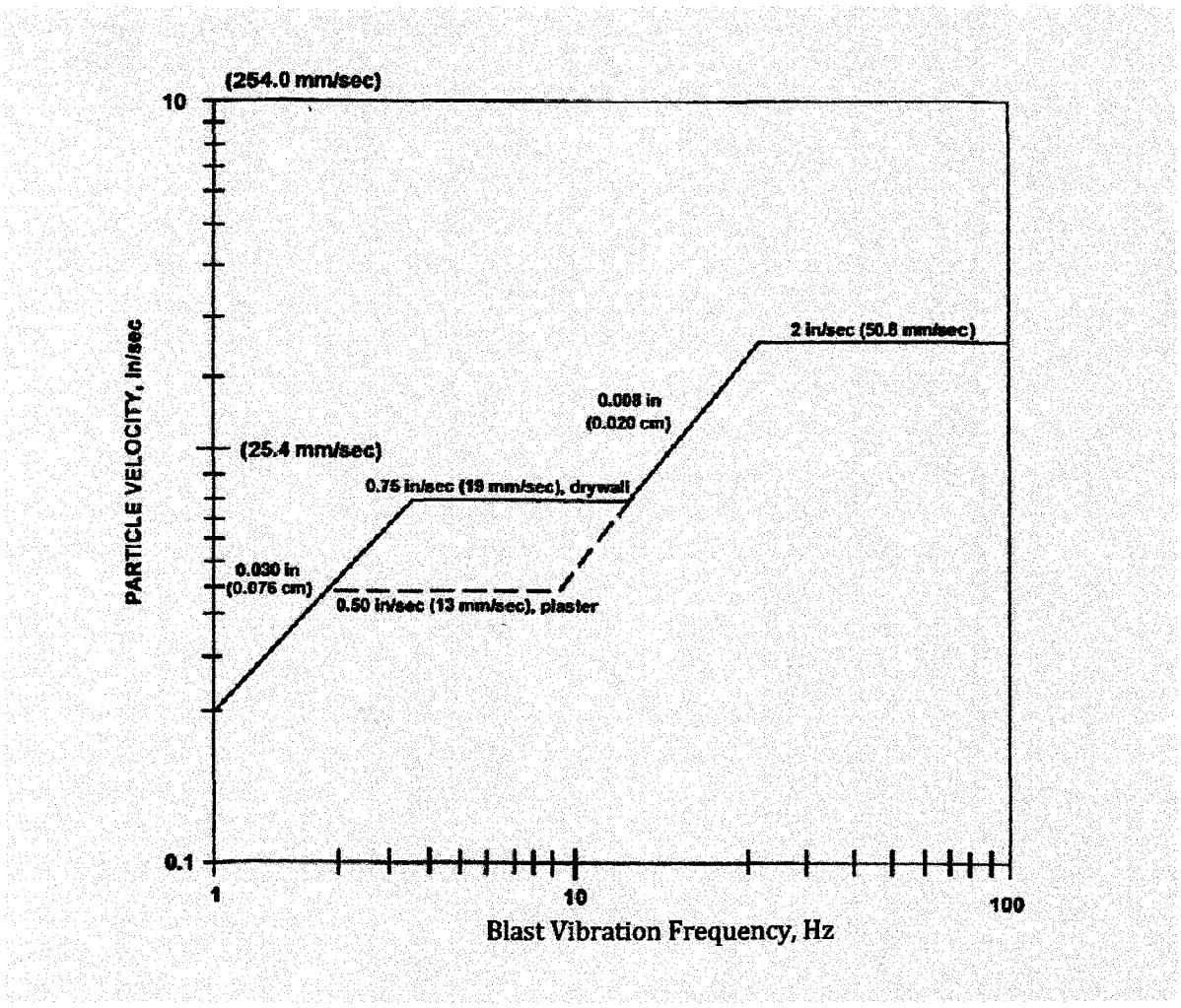
55a. Noise generated by blasting activities shall comply with the DEQ noise standard of 98dBC, slow response, at all noise sensitive receptors as identified in the Tonquin Quarry Goal 5 Noise Study dated September 18, 2013.

Drilling and Blasting Related Conditions:

56. The Quarry operator shall comply with the blasting plan prepared by Wallace Technical Blasting, Inc. dated April 12, 2013.

57. Notice of blasting events shall be posted at the Extraction Area in a manner calculated to be seen by landowners, tenants and the public at least 48 hours prior to the blasting event. In the case of ongoing blasting activities, notice shall be provided once each month for the period of blasting activities, and specify the days and hours when the blasting event is expected to occur.

57a. Blasting activities shall comply with the Z-curve vibration limits adopted by reference by the Oregon State Fire Marshal, as depicted in the following figure:



Wetland / Resource Related Conditions:

58. Mining and processing shall not occur within 100 feet of the mean high water line of Rock Creek and otherwise within the mapped riparian corridor as identified in the Clackamas County Comprehensive Plan River and Stream Corridor Area maps.

59. The applicant and/or operator shall not fill, excavate or otherwise disturb wetlands on the property until applicant first obtains appropriate permits from the Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (Corps) and implements any required pre-disturbance mitigation measures. The applicant shall provide County Planning and/or WES/SWMACC with copies of any annual monitoring reports required by DSL and/or Corps.

60. Within 90 days after commencement of site construction, the quarry operator shall provide the Tualatin River National Wildlife Refuge and Clackamas County with calculations showing planned reductions in contributing upland watershed that will result in measurable

declines in surface water flowing towards the Refuge. In compliance with WES/SWMACC standards, the proposed operation shall provide replenishment water for wetlands to maintain the average rainfall contribution during the rainy season (November-May). Subject to participation by the Refuge, Department of State Lands and other applicable agencies, wetland recharge rates to the Refuge may be enhanced (increased).

61. The Quarry operator shall monitor annual water levels within the undisturbed buffer areas to the offsite portions of Wetlands B and C, and take appropriate actions to maintain pre-disturbance wetness in those wetlands. The operator may install distribution systems (infiltration trenches, drip lines, etc.) for the replenishment water in the undisturbed buffer where such installation results in removal of no more than 15% of the native trees and shrubs located in such buffers as of June 1, 2013.

62. The operator shall not excavate within the boundaries, as determined by the DSL, of any on-site portion of Wetland B or C when there is surface water within the on-site portion of such wetland area.

62a. The operator shall install a clay barrier between the excavation area and buffer for the preserved portions of Wetlands B and C. Said clay barrier shall be compacted to prohibit water intrusion from Wetlands B and C into the excavation boundary.

63. The operator shall install and maintain an elevated area (above existing grade) of approximately 20 feet in width between the excavation boundary and the south edge of the proposed 50 foot buffer to the off-site portion of Wetland B (found in the northwest corner of the subject property). This elevated area is to be located outside of the excavation boundary, but can be occupied by an access road, stormwater facilities, or other activities ancillary to those occurring within the excavation boundary.

64. The operator shall maintain the approximate same condition of the undisturbed buffers as exist on the effective date of Clackamas County land use approval to facilitate wildlife movement and protect adjacent wetland functions. The undisturbed buffers are located immediately east and north of the Kramer parcel, adjacent to Rock Creek and the 50 foot buffer where Wetland B extends offsite to the north. Such maintenance shall include, but not limited to, control of increased Himalayan blackberry and reed canarygrass growth, replacement of dead trees (>12 in. DBH) when more than 10 percent have died, and related vegetative management.

65. Any artificial lighting for exterior illumination shall not directly cast light into the Tualatin River National Wildlife Refuge and undisturbed buffer areas where pre-disturbance vegetation has been preserved.

66. Where perimeter landscaping is required, the applicant shall install native trees and shrubs in accordance with County screening regulations for perimeter areas and PGE easement policies (where applicable).

67. Access roads adjacent to the northerly and westerly mining area boundaries shall include a gravel surface consisting of crushed rock with nominal sizing of at least one inch maximum dimension.

Air Quality Related Conditions:

68. The Quarry Operator shall comply with OAR 340-200 through 340-246 requirements.

69. The Quarry Operator shall comply with 40 CFR Part 60 Subpart OOOO requirements.

70. The main facility access road shall include a gravel surface consisting of crushed rock with nominal sizing of at least one inch maximum dimension within 300 feet of any public road.

71. The main facility access road shall be watered to prevent the generation of dust within 300 feet of any public road.

72. The operator shall maintain a truck wheel wash system for product trucks exiting the access road to the public road to reduce soil track-out onto the public road.

73. Onsite surfaces travelled by off-road or on-road mobile sources shall be watered whenever significant visible dust emissions (opacity approaching 20%) are observed behind or beside a moving vehicle.

74. Water sprayers shall be used to control dust emissions from crushers and screens operating onsite.

74a. Upon commencement of quarry operations, Morgan Road shall be cleaned with a street sweeper, not less than twice a month within the improved right-of-way between the site entrance and the Morgan Road/Tonquin Road intersection. Upon commencement of reclamation activities, street sweeping shall occur in this same area once a week.

75. The majority (51% or more in terms of total fleet horsepower) of diesel engines powering off-road equipment shall meet federal Tier 2 off-road engine standards or better. This requirement can be met by using equipment with engines originally built to meet these standards or through retrofit to reduce emissions to these levels.

76. Onsite idle times for heavy heavy-duty diesel truck engines shall be limited to no more than five minutes per truck trip.

Conditions Agreed to with the Metropolitan Service District (Metro) Related to proposed Tonquin Ice Age Trail – Per letter dated October 7, 2010 (Tab C, Application)

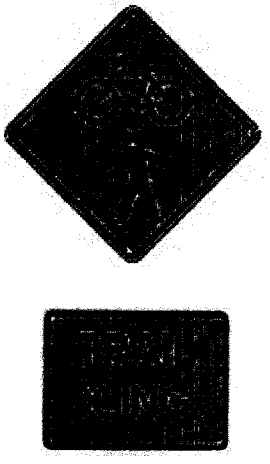
77. If Metro determines, by official enactment, that the east boundary of the subject property is an appropriate location for a portion of the Tonquin Trail, then the property owner will agree to the following implementation measures:

a. Dedication of a 20' trail easement within 50 feet of the Morgan Road right-of-way (south of Tonquin Road) and within 50 feet of site's east boundary (north of Tonquin Road) as shown on the attached exhibit, and subject to the following:

1) Agreement from Portland General Electric that the proposed easement can be placed within the 50' powerline easement for overhead utilities adjacent to the Morgan Road right-of-way.

2) If necessary, agreement from Clackamas County for placement of their requested 8' public utility easement within the proposed trail easement.

b. Placement of trail crossing signage (shown below) at the site egress to notify quarry traffic of bicycle and pedestrian activity. One sign will be provided for site egress. Replacement signs will be provided when necessary.



c. Additional signage requiring exiting vehicles to stop prior to crossing of the trail shall be provided.

d. Trail maintenance by the quarry operator will be limited to the area of the trail crossing and 10 feet north and south of that crossing. Trail maintenance to include the following:

1) The trail shall be swept weekly.

2) Other maintenance items include sign replacement, litter pickup and clearing of brush on an "as needed" basis.

e. An internal wheel wash shall be implemented for trucks leaving the site.

f. The property owner shall provide a sight obscuring fence along the west edge of the of the Portland General Electric easement adjacent to the Morgan Road right-of-way.

Conditions Proposed by the Oregon Department of Geology and Mineral Industries (DOGAMI) for a Surface Mining Operating Permit for the Tonquin Quarry – February 14, 2011 (See Exh. 19):

78. The following conditions of approval in this section were generated by DOGAMI staff for the proposed Tonquin Quarry. These proposed conditions accompanied a DOGAMI staff recommendation of approval. Although they will require minor amendments in order to reflect updated report dates, small adjustments to the mining plan, etc., these conditions very closely represent those that DOGAMI will impose upon the Tonquin Quarry (Note: verified by Planning staff in email message dated August 27, 2013 from Isaac Sanders of DOGAMI; See Exh. 19). Where these may conflict with other conditions, the more restrictive shall apply.

79. Clearly mark the DOGAMI permit boundary and required setbacks in the field, visible to all equipment operators.

80. Salvage, stockpile and retain all available soil and overburden material for final reclamation. Soil and overburden stockpiles and berms must be seeded in a cover crop to reduce erosion.

81. Implement the provisions in the Daly- Standlee & Associates noise abatement study.

82. Implement all aspects of the Westlake Consultants SWPCP to ensure all storm water is contained within the DOGAMI permit boundary. A DEQ NPDES 1200-A permit will be required before any storm water or pumped ground water is discharged to jurisdictional wetlands, Rock Creek or off site.

83. Submit a stamped slope stability study to DOGAMI for approval before creating any final excavated slope in excess of 40 feet in height. All fill slopes steeper than 2H:1V must be covered by a DOGAMI-approved engineered storm water drainage plain prior to final slope construction.

84. Maintain a minimum 50-foot property line setback for excavation and processing along Tonquin Road, SW Morgan Road and the southern boundary. A 25-foot setback will be allowed along the western and the northwestern boundaries. Sound and noise berms, stockpiling of aggregate materials, construction of internal access roads, construction of DOGAMI-approved recharge trenches, and construction of DOGAMI-approved storm water control measures are allowed within the setback areas.

85. Install a ground water monitoring well to a depth of -100 feet AMSL with minimum 10-foot screened intervals over the three water-bearing zones identified in the Hydrogeologic Evaluation Report dated June 7, 2010. Position the well in the setback on the west side of the infiltration trench shown in Plate 3.

86. Install a continuous water level recorder in the well and begin recording water level measurements one (1) week prior to dewatering activities. Also collect a baseline sample for water chemistry from the newly installed well, prior to dewatering activities, and analyze for turbidity, oil and grease, nitrogen as nitrate/nitrite, total iron, and coliform.

87. Submit a report to DOGAMI, within 30 days following installation of the well, documenting the well construction details, a location map, and the water chemistry analyses from the baseline sample. Submit the water level data on a semi-annual basis to DOGAMI in a hydrograph format.

88. Install additional wells, if determined necessary by DOGAMI, based on the findings of the water level monitoring data, and as pit dewatering is expanded.

89. Prior to conducting pit dewatering, submit cross sectional drawings showing the design (i.e. depth and construction) of the perimeter recharge structures depicted in Plate 3, as well as the recharge bench described in the supplemental notes for 5a,b of the July 2, 2010 reclamation plan.

90. Modify recharge trench dimensions (i.e. lengthen or deepen) if deemed necessary by DOGAMI.

91. Submit an annual report to DOGAMI that summarizes the blasting information for each year.

92. Reclaim all rock benches by replacing a minimum of 4 feet of growth medium, and revegetating with Douglas-fir trees planted on 10-foot centers.

93. Agree that if mining operations disturb any area outside of the permit area or area designated for active mining in the reclamation plan, including but not limited to disturbances caused by landslide, erosion or fly rock, the operator must restore the disturbed area to a condition that is comparable to what it was prior to the disturbance. Further, if areas outside of the permit boundary or outside of the area proposed for active mining in the reclamation plan are disturbed, DOGAMI may increase the amount of the required financial security to cover the cost of such restoration.

Clackamas County WES/SWMACC related conditions:

94. The Water Environment Services (WES) department, a Department of Clackamas County, has reviewed the application for the above development. WES manages and operates the Surface Water Management Agency of Clackamas County (SWMACC). SWMACC provides surface water management and erosion control services in the Tualatin drainage basin for those areas within Clackamas County and not within City boundaries such as Lake Oswego or Tualatin. SWMACC was formed by Clackamas County as a direct result of the 1986 lawsuit

filed by the Northwest Environmental Defense Center against the United States Environmental Protection Agency.

95. The proposed development is inside SWMACC boundaries and is subject to the Rules & Regulations and Standard Specifications. Therefore, the applicant/operator is required to submit plans for review and approval through Water Environment Services. The current Rules and Regulations for Surface Water Management apply. The current rates and charges for SWMACC apply.

96. The applicant submitted a preliminary report to SWMACC - "Offsite Storm water Analysis for the Poole Quarry" dated February, 2013 from Bernard Smith of Westlake Consultants, Inc. The preliminary report identified the separate responsibilities for permitting for surface water management. The surface mining operation will be permitted by the Oregon Department of Geology and Mineral Industries (DOGAMI). SWMACC shall review and permit surface water related items for those areas outside of the mining operations boundary (Extraction Area). SWMACC shall review and permit the storm water impacts that are outside the extraction area boundary, including the storm plan, report, erosion control and onsite wetland buffers.

97. The onsite quarry operations are administered by the DOGAMI. The mining operations shall have a clear excavation/extraction boundary established in the field.

98. DOGAMI will administer the mining operation permit and the methods that the mining operation uses to control impacts to surface water. The erosion and sediment control plan for the mining operations will be submitted, inspected and permitted by DOGAMI or the Oregon DEQ, whichever is appropriate. The applicant is required to coordinate with state and local agencies to determine if a National Pollutant Discharge Elimination System Stormwater Discharge Permit (NPDES) 1200-C or 1200-A is applicable.

99. The development is subject to the Surface Water Management Rules & Regulations of the SWMACC for storm drainage and erosion control to the extent discussed above.

100. The costs of the required and proposed surface water management facilities shall be borne entirely by the applicant. This development is subject to a storm water System Development Charge (SDC).

101. This development is subject to a minimum plan review fee for Surface Water plan review

102. This development is subject to a minimum plan review fees for erosion control plan review. Final plan review fees are based on the area to be disturbed. Plan review fees are due with the first submittal for plan review. A NPDES Permit for erosion control may be required if the disturbed area administered by SWMACC is greater than one acre.

103. Complete erosion control plans, shall be submitted to Water Environment Services and reviewed for conformance to the SWMACC stormwater regulations. Plans must be signed and sealed by an engineer registered in the State of Oregon and shall be submitted to the Technical Services Coordinator.

104. On-site detention facilities shall be designed to reduce the 2-year storm to ½ of the 2-year storm.

105. Water quality facilities must be designed to treat the remove 65 percent of the phosphorous from the runoff from 100 percent of the newly constructed surfaces.

106. Stormwater infiltration shall be provided. Infiltration systems must be sized to infiltrate the entire runoff volume from a one-half inch 24-hour rainfall event within a period of 96 hours.

107. An Upstream and Downstream Stormwater Drainage analysis is required. Drainage must be routed around the site to an acceptable outfall or through the on-site conveyance/detention system.

108. All springs, seeps, wetlands, sensitive areas, and required buffers shall be clearly shown and noted on the plans and identified by a certified professional. In addition, the location of any proposed buildings shall be shown on the plans so that potential storm water impacts can be effectively evaluated.

109. Any impacts to natural resource areas and required buffers shall be protected. SWMACC requires a minimum 50-foot wide buffer to retained wetlands and creeks. Any proposed work within jurisdictional waters also requires a permit from the Oregon DSL and COE and copies of the permit shall be submitted to the SWMACC prior to construction plan approval.

110. The applicant is required to protect the retained natural resource area and associated buffer. The means of protection can be a tract with development restrictions, a conservation easement, a restricted development area or some other means acceptable to the WES/SWMACC and the Clackamas County Planning and Zoning Division.

111. The approval of the land use application does not include any conclusions by the SWMACC regarding acceptability by the DSL or COE of the wetland delineation. This decision should not be construed to or represented to authorize any activity that will conflict with or violate the DSL or COE requirements. It is the applicant's responsibility to coordinate with the DSL or COE and (if necessary) other responsible agencies to ensure that the development activities are designed, constructed, operated and maintained in a manner that complies with the DSL or COE approval.

112. The developer is required to address long term maintenance of the surface management facilities. The owner shall submit a written storm water maintenance agreement to the SWMACC. The agreement shall indicate that the owner will have the on-site storm sewer

facilities inspected at least once per year (August or September), and clean or repair the facilities as needed. All sediment and debris removed shall be disposed of to an approved site. Blackberry vines and dead vegetation shall be removed once annually during the months of August or September. This agreement shall be signed by the owner and notarized, and the original copy sent to Water Environment Services.

113. Prior to final civil plans approval, a final storm water civil plan and report shall be submitted and approved. The plans must be stamped by an Oregon State licensed civil engineer. The civil engineering plans shall be designed according to the Surface Water Management Agency of Clackamas County Rules and Regulations and Standard Specifications and as directed by the SWMACC during the plan review process. Any substantial deviation from the approved construction plans must have prior approval of the WES.

114. SWMACC shall review and approve the plans for the storm sewer systems for those areas outside of the mining operations boundary prior to commencement of site preparation and mining.

Addendum-Washington County Dept. of Land Use and Transportation Recommended Conditions of Approval:

(See following pages)

ILLEGIBLE PAGE(S) FOLLOW

POOR QUALITY OF SCANNED

IMAGE

WASHINGTON COUNTY, OREGON
Department of Land Use and Transportation - Operations & Maintenance Division
1400 SW Walnut Street, MS 51, Hillsboro, Oregon 97123-5625
503-846-7623 · FAX 503-846-7620

August 30, 2013

Clackamas County Planning Division
c/o Rick McIntire
Clackamas County DTD
150 Beavercreek Road
Oregon City, OR 97045

(Sent via electronic mail)

Re: Proposed Comprehensive Plan Amendment/Zoning Map Amendment/Mineral & Aggregate Overlay District Site Plan Review
Clackamas County Casefile No. Z0287-13-CP/Z0288-13-Z/Z0289-13-MAR

Thank you for the opportunity to review and comment on the above noted application for a proposed quarry operation to be located at the southwest corner of SW Tonquin Road and SW Morgan Road in Clackamas County. Washington County Land Use and Transportation submits the following conditions of approval for access to SW Tonquin Road.

RECOMMENDED CONDITIONS OF APPROVAL

Staff from both counties previously agreed that Washington County will be responsible for the review, permitting and inspection of required road improvements on SW Tonquin Road, and that Clackamas County will be responsible for the same on SW Morgan Road.

I. **PRIOR TO ISSUANCE OF ANY SITE DEVELOPMENT OR BUILDING PERMITS BY CLACKAMAS COUNTY:**

A. Submit the following to Washington County Land Use and Transportation Public Assurance Staff (503-846-3843):

1. A copy of Clackamas County's **final** Notice of Decision, signed and dated.

2. Completed "Design Option" form.

3. $5,000.00 Administration Deposit.

NOTE: *The Administration Deposit is a cost-recovery account used to pay for Washington County services provided to the developer, including plan review and approval, field inspections, as-built approval, and project administration. The Administration Deposit amount noted above is an estimate of what it will cost to provide these services. If, during the course of the project, the Administration Deposit account is running low, additional funds will be requested to cover the estimated time left on the project (at then-current rates per the adopted Washington County Fee Schedule). If there are any unspent funds at project close out, they will be refunded to the applicant. PLEASE NOTE: Any point of contact with Washington County staff can be a chargeable cost. If project plans are not*

complete or do not comply with County standards and codes, costs will be higher. There is a charge to cover the cost of every field inspection. Costs for enforcement actions will also be charged to the applicant.

4. Preliminary certification of adequate intersection sight distance prepared and stamped by a registered professional engineer, for the following locations:

   a. Intersection of SW Morgan Road at SW Tonquin Road (based on acceptable industry standard for heavy trucks); and

   The preliminary certification shall include a detailed list of any improvements required within or outside of existing right-of-way that are necessary to provide adequate intersection sight distance.

5. Three (3) sets of complete engineering plans for the construction of the following public improvements:

   a. Road widening, striping, shoulders, roadside drainage, and other required improvements (including necessary right-of-way and/or easements) to accommodate a westbound left-turn lane on SW Tonquin Road at SW Morgan Road, with a minimum storage length of 125 feet and appropriate tapers (refer to Traffic Staff Report dated August 14, 2013).

   NOTE: *Plans must provide a sufficient level of plan and profile information to develop an accurate cost estimate for the left-turn lane improvement.*

   b. Any improvements necessary to provide adequate intersection sight distance pursuant to the preliminary sight distance certification noted in I.A.4.a. of this letter.

   c. Adequate illumination at the intersection of SW Tonquin Road and SW Morgan Road.

   NOTE: *Adequate illumination shall consist of at least one 200-watt high-pressure sodium cobra head luminaire mounted at a minimum mounting height of 20 feet, on existing utility poles if available. The fixture shall have a medium full-cutoff Type III distribution. The pole shall be within the area defined by the radius returns of the intersection. The fixture shall be oriented at 90 degrees to centerline of the arterial road. If no existing utility poles are available within the intersection area as defined by the radius returns, the developer shall meet the requirements of the Department of Land Use and Transportation Roadway Illumination Standards, latest revision. Illumination within the prescribed intersection area shall be a minimum of 1.5 times the required illumination level of the roadway classification at the access. The County Traffic Engineer may require illumination in addition to the above-stated minimums.*

   d. Defined lane lines, stop bars, and pavement arrows on SW Morgan Road at its intersection with SW Tonquin Road.

6. Cost estimate and proportionality analysis for future left-turn lane improvement on SW Tonquin Road, as described in I.A.5.a. above, for consideration by the County Engineer. Cost estimate shall include purchase of additional off-site right-of-way or easements required to facilitate construction of the left-turn lane.

B. Obtain a Washington County **Facility Permit** upon completion of the following:

1. Obtain Washington County Engineering Division approval, subject to concurrence from Clackamas County, of the sight distance certification and plans in Conditions I.A.4. and 5. above, and provide a financial assurance for the construction of the improvements required pursuant to conditions I.A.5. b. thru d. above.

NOTE: *The Washington County Public Assurance staff will send the required forms and documents to the applicant's representative after submittal and approval of the public improvement engineering plans.*

2. Submit payment of a proportionate share for future construction of a dedicated left-turn lane as described in Condition I.A.5.a. above (including right-of-way or easement dedications), in an amount to be determined by the Washington County Engineer.

3. Provide evidence that the documents required by condition I.C. have been recorded.

C. The following documents shall be executed and recorded with the appropriate County or Counties:

1. Dedication of additional right-of-way to provide a minimum of 45 feet from each side of centerline along the site's frontage of SW Tonquin Road, including adequate corner radius at SW Morgan Road.

2. Dedication of any on-site right-of-way or easements necessary to accommodate future construction of a left-turn lane as described in Condition I.A.5.a. above, including adequate pavement width for a minimum of 125 feet of storage, appropriate tapers, required shoulders, roadside drainage, adequate intersection sight distance, etc.

3. Dedication of on-site sight distance easements needed to provide adequate intersection sight distance, pursuant to condition I.A.4. above.

4. Dedication of any off-site sight distance easement(s) needed to provide adequate intersection sight distance, pursuant to condition I.A.4. above, if determined necessary by the County Engineer.

NOTE: *Preparation of documents for recordation within Washington County shall be coordinated with Scott Young, Washington County Engineering/Survey Division (503-846-7933).*

II. PRIOR TO COMMENCEMENT OF QUARRY OPERATIONS ON THE SITE:

A. All conditions indicated above shall have been met.

B. All required public improvements pursuant to conditions I.A.5. b. thru d. shall be completed and accepted by Washington County.

C. Submit and obtain Washington County approval of final certification of adequate intersection sight distance (as described in Condition I.A.4. above), prepared and

stamped by a registered professional engineer, upon completion of required improvements.

Thank you again for the opportunity to comment. Please send a copy of Clackamas County's notice of decision on the conditional use permit application when it becomes available. If you have any questions, please contact me at 503-846-7639.

Naomi Vogel
Associate Planner

Attachment: Washington County Traffic Staff Report – August 14, 2013 (3 pages)

cc: Gary Stockhoff, County Engineer (via e-mail)
Jinde Zhu, Traffic Analyst, Engineering Division (via e-mail)
Dave Schamp, Operations & Maintenance Manager (via e-mail)
Todd Watkins, Operations Senior Engineer (via e-mail)
Matt Wellner, Tonquin Holdings, LLC (via e-mail)

WASHINGTON COUNTY
OREGON

DATE: August 14, 2013

TO: Naomi Vogel, Associate Planner

FROM: Jinde Zhu, P.E., Traffic Engineer

C: Gary Stockhoff, Traffic Analysis File #1482, C/File

RE: **TRAFFIC STAFF REPORT**
TONQUIN QUARRY
CLACKAMAS COUNTY

This report examines the traffic safety impacts of the proposed Tonquin Quarry development in the southwest quadrant of the intersection of SW Tonquin Road and SW Morgan Road in Clackamas County. This development is expected to be fully completed in 2015. Even though this proposed development is located in Clackamas County, the impacts on the Washington County roadways are assessed and improvements are recommended on the basis of the Washington County R&O 86-95 to ensure an adequate level of traffic safety.

Access to the site is proposed on SW Morgan Road located approximately 415 feet south of SW Tonquin Road. SW Tonquin Road east of SW Morgan Road is a Washington county roadway and classified as an arterial by the county. SW Morgan Road near the intersection is within Washington County. Therefore, this traffic report only assesses the traffic safety impacts at the intersection.

An Access Report was submitted by the applicant's traffic engineer ("Transportation Impact Analysis, Tonquin Quarry, Clackamas County, Oregon", Kittelson & Associates Inc., April 2013). The findings and recommendations given below are based, in part, on the information provided in the access report.

FINDINGS:

1. The site trip generation from the proposed development, based on the trip generation info from other similar sites, is as follows:

Site Trip Generation			
	ADT (vpd)	AM Peak Hour (vph)	PM Peak Hour (vph)
Enter	225	25	10
Exit	225	20	20
Total	450	45	30

Washington County • Department of Land Use & Transportation
Engineering, (503) 846-7900, MS 17 • Survey, (503) 846-7925, MS 17 • Traffic Engineering, (503) 846-7950, MS 17
1400 SW Walnut Street, Hillsboro, OR 97123-5625
Fax: (503) 846-7910

Of the 450 daily trips, 390 trips are trucks (35 trucks during the AM peak hour and 15 trucks during the PM peak hour).

2. The site impact on streets under Washington County jurisdiction, based on a 10 percent increase in average daily traffic or the minimum impact area, is described below.

Site Impact Area		
Link	From	To
SW Tonquin Road	SW Morgan Road	SW Morgan Road

3. Intersections within the impact area under Washington County jurisdiction were analyzed for the weekday AM and PM peak hours with the following results.

Intersection Analysis				
Intersection	LOS	Left Turn Lane Rec.	Signal Warrant	SPIS
SW Tonquin Road/Morgan Road	C*	*Yes*	*No*	No

* Level of service for STOP-controlled movement(s).

As indicated in the above table, the STOP-controlled movements at the intersection were estimated to operate at level of service C or better during the weekday peak hours.

Currently, a westbound left turn lane on SW Tonquin Road at the intersection is not warranted during the weekday AM peak hour, but is warranted during the PM peak hour based on the traffic volumes. With the proposed development this westbound left turn lane will also be warranted during the AM peak hour. With the proposed development this left turn lane requires 125 feet of storage.

As indicated in the applicant engineer's report the existing sight distance from the Morgan Road northbound approach along SW Tonquin Road to both the east and west does not meet the industry standards for heavy trucks.

RECOMMENDATIONS:

1. Construct a westbound left turn lane with minimum storage of 125 feet on SW Tonquin Road at the intersection with SW Morgan Road.

Exhibit B to Board Order

Findings of Fact and Conclusions of Law Approving the Land Use Applications for the Tonquin Aggregate Quarry

BEFORE THE BOARD OF COMMISSIONERS
OF CLACKAMAS COUNTY, OREGON

FINDINGS OF FACT AND CONCLUSIONS OF LAW APPROVING THE LAND USE APPLICATIONS FOR THE TONQUIN AGGREGATE QUARRY

In the matter of Applications for: (1) a Post-Acknowledgment Plan Amendment to the Clackamas County Comprehensive Plan to Designate a Goal 5 Significant Mineral and Aggregate Resource Site in Chapter III, Table III-02 of the Plan; (2) a Zoning Map Amendment to Apply the Mineral and Aggregate Overlay (MAO) Designation; and (3) Site Plan Review Application for Proposed Aggregate Mining and Processing Operations, on Property Zoned RRFF-5, Located at the Southwest Corner of Tonquin Road and Morgan Road.	**COUNTY FILE NOS.** **Z0287-13-CP** **Z0288-13-ZAP** **Z0289-13-MAR**

PREAMBLE

In this matter, the Clackamas County Board of Commissioners ("Board") considered applications from Tonquin Holdings, LLC ("Applicant") for a post-acknowledgment comprehensive plan amendment ("PAPA Application"), corresponding zoning map amendment ("Zone Change Application"), and site plan review ("Site Plan Review Application") to allow development of an aggregate mining and processing operation on undeveloped land in the RRFF-5 zoning district. The three applications shall be collectively referred to herein as the "Applications."

For the reasons explained below, and based upon the identified evidence and argument in the record, the Board finds that the Applications satisfy all applicable approval criteria. The Board has considered the opponents' issues and contentions to the contrary and does not find these to be persuasive for the reasons discussed herein. Accordingly, the Board approves the Applications, subject to the conditions identified below.

Summary of Project

The Applications request permission to mine and process aggregate materials from an approximately 34-acre site located at the southwest corner of the intersection of Morgan

Road and Tonquin Road ("Property"). The total excavation area is approximately 26 acres in size and will be set back between 25-100 feet from the Property lines. The mining area will be surrounded by a fence for safety, and where possible, natural vegetation will remain along the Property lines to provide a visual buffer. Noise mitigation barriers will be located within the setbacks.

Applicant has estimated that there are approximately 9,500,000 tons of in-place rock reserves on the Property. Excavation will occur in four phases over 15-20 years, progressing from the north to the south and southwest until a quarry floor of approximately minus (-) 100 feet MSL is achieved. Once excavated, the material will be processed on-site through a crusher and then hauled off-site. The Property will be reclaimed by backfilling with clean fill dirt for redevelopment, as allowed in the underlying RRFF-5 zoning district. In addition to the quarry, the proposed operation includes a temporary office, parking, and scale area.

The Property is currently undeveloped, with the exception of a Portland General Electric transmission line that traverses the Property in a north-south direction. Tri-County Investments, LLC is the owner of the Property.

Notice

On August 12, 2013, the County transmitted notice of the Applications to the Department of Land Conservation and Development ("DLCD") in accordance with ORS 197.610. A copy of that notice is set forth in the record.

On July 25, 2013, the County mailed notice of the public hearings on the Applications to owners of property located within 2,000 feet of the Property, Community Planning Organizations, agencies, and other interested persons. A copy of that notice is set forth in the record. A revised notice of the public hearings on the Application was mailed to persons described in this section on October 10, 2013. A copy of that notice is set forth in the record.

Planning Commission Proceedings

The Planning Commission held a public hearing on the Applications on September 16, 2013. At the hearing, the Planning Commission accepted oral and written testimony from staff, the Applicant, public agencies, proponents of the Applications, opponents of the Applications, and others. At the conclusion of the testimony, Commissioner Wagner moved, and Commissioner Andreen seconded, a motion to keep the record open until September 24, 2013, at 12 noon, and to continue the rebuttal and staff report to September 30, 2013. The Planning Commission passed the motion 6-0.

The Planning Commission reconvened on September 30, 2013. At this meeting, the Planning Commission accepted rebuttal testimony from the Applicant and then closed the hearing. After closing the hearing, the Planning Commission proceeded into deliberations.

The Planning Commission reconvened on October 7, 2013. At this meeting, the Planning Commission continued its deliberations. After concluding its deliberations, the Planning Commission adopted a series of motions relating to different aspects of the Applications. These motions are detailed in the Staff Report to the Board presented at the October 30, 2013 Board meeting.

The Planning Commission was not required to and did not make an overall decision or recommendation to the Board on the Applications; however, the Planning Commission did recommend consideration of several issues also detailed in the Staff Report to the Board There were no procedural objections that arose from the Planning Commission proceedings.

Board Proceedings

The Board conducted a *de novo* review of the Applications.

On October 30, 2013, the Board held a public hearing on the Applications. Chair John Ludlow and Commissioners Paul Savas, Martha Schrader, and Tootie Smith were present. Commissioner Jim Bernard was absent. At the commencement of the hearing, Assistant County Counsel Nate Boderman read the quasi-judicial announcements required by ORS 197.763 into the record. Mr. Boderman asked the Board if any members had any ex parte contacts, bias, or conflicts of interest to report. No Board members made any disclosures. No one from the public challenged the ability of any member of the Board to participate in the matter.

At the hearing, Rick McIntire presented the Staff Report. Then, the Applicant presented its case, which included oral testimony by Matt Wellner, regarding the general aspects of the project; Steven Pfeiffer, regarding the scope of the hearing, applicable criteria, and related legal issues; Jerry Wallace, regarding the impacts from and oversight of blasting at the quarry; Gary Peterson, regarding potential impacts to wells in the vicinity of the quarry; and Phil Scoles, regarding measures that will prevent or mitigate impacts from the quarry to wetlands and wildlife. Following the Applicant's presentation, the Board accepted public testimony. No persons other than the applicant and applicant's consultant team spoke in favor of the Applications. The following persons spoke in opposition to the Application: Sparkle Anderson, on behalf of the Far West CPO; Erin Holmes, on behalf of the U.S. Department of Fish and Wildlife; Mary Byrnes; Vicki Norris; Hilde Coeckx; Jos Jacobs; David Crawford; Erin Madden, on behalf of Friends of Rock Creek; Tristan Hartfield; Gary Dimbat; John Jenkins; Narendra Varma; Phillip Ballarche; Rex Scott; Sharon Scott; Lee Patrick; Andrea Patrick; Marilyn Kramer; and Jim Kramer. The Applicant declined to provide oral rebuttal but requested the opportunity to provide written rebuttal on a condensed schedule.

The Board then closed the public hearing and held the record open as follows:

- Until November 4, 2013, at 5pm to allow any party to submit argument or evidence on any issue;
- Until November 8, 2013, at 5pm to allow any party to submit rebuttal argument or evidence; and
- Until November 12, 2013, at 12 noon to allow the Applicant to submit final written argument.

Various parties submitted written argument and evidence into the record in accordance with this schedule. These materials are all included in the record in this matter.

The Board reconvened on November 13, 2013. All Board members were present. At the commencement of the meeting, the Board members disclosed the following ex parte contacts: Chair Ludlow and Commissioners Savas and Smith disclosed site visits. Commissioner Savas disclosed that he bumped into Mr. Wellner at an unrelated meeting and they had a brief conversation at that time, but it would not affect his ability to remain impartial on the Applications. Commissioner Bernard disclosed that he had received inquiries from neighbors on the Applications but the conversations were general in nature and would not affect his ability to remain impartial on the Applications. Commissioner Bernard also stated that he reviewed the record and Board proceedings from October 30, 2013, so he would be able to participate in this matter. No one challenged the ability of any Board member to participate in this matter.

The Board then proceeded to deliberate on the matter. At the conclusion of deliberations, Commissioner Smith moved to approve the Applications, subject to staff's proposed conditions, as modified by the Applicant in its November 4, 2013, open record submittal. Commissioner Bernard seconded the motion. After further deliberations, the Board also passed motions amending the main motion to request a new condition pertaining to use of a street sweeper on Morgan Road with some regularity and to request a new or amended condition addressing storage of interim potable water for one or more of the five properties identified in Condition 48.

The Board adopted the motion, as amended, 5-0. Chair Ludlow directed staff to return with an implementing ordinance at a later meeting.

Applicable Criteria

The County's July 25, 2013 public notice identified the following criteria as applicable to the Applications:

> "Sections 309, 708, 1202 and 1302 of the Zoning and Development Ordinance (ZDO). The Post-Acknowledgment Comprehensive Plan amendment (PAPA) is subject to the Statewide Planning Goals, Oregon Administrative Rule Chapter 660, Division 23 and may be subject to one or more of the following applicable policies in the Clackamas County Comprehensive Plan including; Chapter 2, Citizen Involvement; Chapter 3, Water resources, Mineral and Aggregate Resources, and Noise and Air

Quality; Chapter 4, Land Use Plan Designations; Chapter 5, Transportation; Chapter 7, Public Facilities and Services; Chapter 8, Economics; and Chapter 11, The Planning Process."

For the reasons explained below, the Board finds that the County is preempted from applying local criteria to the PAPA Application and Zone Change Application. Instead, the provisions of OAR Chapter 660, Division 23 are applicable to these two applications.

Record Before the Board

The record before the Board consists of the following:

- Oral testimony presented by the Applicant and other parties at the public hearings in this matter on September 16, 2013; September 30, 2013; and October 30, 2013, as reflected in the official recordings of these hearings.

- Written testimony (and an aggregate rock sample) set forth in Exhibits 1-144.

GENERAL FINDINGS AND CONCLUSIONS RELATED TO THE APPLICATIONS (Z0287-13-CP/Z0288-13-ZAP/Z0289-13-MAR)

1. The Board finds that, as described above, the County has followed the correct procedures in this matter by providing requisite notice to area landowners, DLCD, and other affected government agencies and by conducting multiple public hearings for the Applications in accordance with the quasi-judicial procedures required by state and local law. Further, the Board finds that no one has raised any objection to the County's procedures in this matter or to the impartiality of any member of the Planning Commission or the Board.

2. As findings supporting approval of the Applications, the Board hereby accepts, adopts, and incorporates within this Decision by reference, in their entirety, the following materials: the Applicant's narrative for the PAPA Application and the Zone Change Application dated June 5, 2013; the Applicant's narrative for the Site Plan Review Application dated June 5, 2013; and the Staff Report to the Planning Commission dated September 10, 2013 ("Staff Report"). The above-referenced documents shall be referred to in these findings as the "Incorporated Findings." The findings below (the "Supplemental Findings") supplement and elaborate on the findings contained in the materials noted above, all of which are incorporated herein by reference.

3. The Board finds that the Applicant's two application narratives, the Applicant's testimony received at the public hearings, the Staff Report, and the Applicant's November 4, 2013, letter, and the additional sources cited in these findings explain the need for imposing Conditions of Approval #1-114. The Board finds, based upon this substantial evidence, that each of these conditions is a reasonable condition that is feasible for the Applicant to comply with and is necessary to satisfy the applicable criteria presented in the Staff Report and the Supplemental Findings presented below.

4. The Board finds that the record contains all evidence and argument needed to evaluate the Applications for compliance with the relevant criteria.

5. The Board finds that it has considered these relevant criteria and other issues raised through public testimony.

6. The Incorporated Findings list all of the applicable approval criteria, and demonstrate compliance with these approval criteria. These supplemental findings elaborate upon and clarify the Incorporated Findings, and primarily address issues raised in opposition to the Applications. These Supplemental Findings are grouped into issues, with findings included in response to each issue. The issues are organized in traditional outline format and are assigned chronological numbers and alphabetical letters as appropriate. In the event of a conflict between the Incorporated Findings and the Supplemental Findings, the Supplemental Findings shall control.

SUPPLEMENTAL FINDINGS FOR THE PAPA AND ZONE CHANGE APPLICATIONS

I. STATEWIDE PLANNING GOALS ("GOALS")

The Board finds that the Oregon Statewide Planning Goals apply to the PAPA Application and the Zone Change Application because they request post-acknowledgment plan amendments. ORS 197.175(2)(a); *Beaver State Sand and Gravel, Inc. v. Douglas County*, 43 Or LUBA 140 (2002) (post-acknowledgment plan amendment to add a new site to County's Goal 5 inventory must comply with applicable Goals). For the reasons explained below, the Board finds that the PAPA Application and the Zone Change Application are consistent with the Goals.

Goal 1: Citizen Involvement.

To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.

Goal 1 requires local governments to adopt and administer programs to ensure the opportunity for citizens to be involved in all phases of the planning process. The County has adopted such a program for PAPA's, and it is incorporated within the CCCP and CCZDO and has been acknowledged by LCDC. Among other things, the County's program requires notice to citizens, agencies, neighbors, and other interested parties followed by multiple public hearings before the County makes a decision on the Applications. The Board finds that the County has complied with its adopted notice and hearing procedures applicable to PAPA's, including the notice requirements of CCZDO 1302. Further, no one objected to the procedures followed by the County in this matter. Therefore, the Board finds that the PAPA Application and the Zone Change Application are consistent with Goal 1. *See Wade v. Lane County*, 20 Or LUBA 369, 376 (1990) (Goal 1 is satisfied as long as the local government follows its acknowledged citizen involvement program).

Goal 2: Land Use Planning.

To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.

The Board finds that the provisions of OAR chapter 660, division 23 establish the land use planning process and policy framework for considering the PAPA Application and the Zone Change Application. Further, the evidence in the record, which includes detailed expert reports across a number of disciplines, demonstrates that the PAPA Application and the Zone Change Application satisfy all applicable substantive standards of OAR chapter 660, division 23. As such, there is an adequate factual base for the County's decision. Therefore, the Board finds that the County has met the evidentiary requirements of Goal 2.

The Board further finds that Goal 2 requires that the County coordinate its review and decision on the Applications with appropriate government agencies. The County provided notice and an opportunity to comment on the Applications to affected government agencies, including nearby cities and the State Department of Land Conservation and Development. The Board addresses the comments from these agencies in the findings below. Therefore, the Board finds that the County has met the coordination requirements of Goal 2.

The County finds that the PAPA Application and the Zone Change Application are consistent with Goal 2.

Goal 3: Agricultural Lands.

To preserve and maintain agricultural lands.

Goal 3 is not applicable to a zone change from one non-resource designation to another. *Caldwell v. Klamath County*, 45 Or LUBA 548 (2003). The Property is located in the RRFF-5 zoning district, and the Board finds that the County does not apply this district to resource lands. *See generally* CCCP at IV-55 through IV-59. No one contended on the record that Goal 3 was an applicable approval criterion. Therefore, the Board finds that Goal 3 is not applicable to the Applications.

Goal 4: Forest Lands.

To conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest tree species as the leading use on forest land consistent with sound management of soil, air, water, and fish and wildlife resources and to provide for recreational opportunities and agriculture.

The Property is not located on designated forest resource land. No one contended on the record that Goal 4 was an applicable approval criterion. Therefore, the Board finds that Goal 4 is not applicable to the Applications.

Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces.

To protect natural resources and conserve scenic and historic areas and open spaces.

Goal 5 identifies mineral and aggregate resources as a significant resource. As applied to mineral and aggregate sites, Goal 5 is implemented by OAR 660-023-0180. For the reasons explained in these Supplemental Findings in response to OAR 660-023-0180(5)(b)(D), which reasons are incorporated herein by reference, the Board finds that there is substantial evidence in the whole record to support the conclusion that the PAPA Application and the Zone Change Application satisfy the requirements of OAR 660-023-0180, including how the location, quantity, and quality of the mineral and aggregate resource on the Property is significant; the identification of conflicts between the Project and allowed uses, including all other inventoried Goal 5 resources; identification of reasonable and practicable measures to minimize these conflicts; and the analysis of the economic, social, environmental, and energy consequences of allowing, not allowing, or limiting the Project based upon the only conflict that cannot be minimized.

For these reasons and the additional reasons set forth at pages 9-10 of the Staff Report, the Board finds that the PAPA Application and the Zone Change Application are consistent with Goal 5.

Goal 6: Air, Water and Land Resources Quality.

To maintain and improve the quality of the air, water and land resources of the state.

The Board finds for the reasons explained in these Supplemental Findings in response to OAR 660-023-0180(5)(b)(A), which reasons are incorporated herein by reference, the Applicant has minimized the conflicts between the Project and allowed uses, including conflicts relating to discharges to air, water, and land. Further, the Board finds that the County has implemented Goal 6, in part, by adopting provisions of CCZDO 708 that apply directly to the Site Plan Review Application and are designed to maintain and improve the quality of the air, water, and land resources. For the reasons explained in these Supplemental Findings in response to CCZDO 708.05.C. and H. below, which reasons are incorporated herein by reference, the Board finds that the Site Plan Review Application satisfies these provisions, subject to conditions. Further, the Board finds that no one contended on the record that the Project was inconsistent with Goal 6. Accordingly, the Board finds that the PAPA Application and the Zone Change Application are consistent with Goal 6.

Goal 7: Areas Subject to Natural Hazards.

To protect people and property from natural hazards.

The Board finds that there are no identified or inventoried natural hazards in the general area of the Property, and the Project is not located within the designated floodplain. Further, the Board finds that the Project includes measures designed to reduce risk to people and property from natural hazards, including a surface water management plan to reduce or avoid potentially adverse flooding impacts to off-site properties due to stormwater runoff. No one contended on the record that the Project did not satisfy Goal 7. The Board finds that the PAPA Application and the Zone Change Application are consistent with Goal 7.

Goal 8: Recreational Needs.

To satisfy the recreational needs of the citizens of the state and visitors, and where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.

The Board finds, for two different reasons, that the Project will not interfere with any existing recreational facilities. First, the Project does not involve any designated recreational or open space lands or affect access to any significant recreational uses in the area. Second, although the Property is adjacent to the Tualatin River National Wildlife Refuge ("Refuge"), for the reasons explained below, and based upon the evidence in the record, the Board finds that the Project will not conflict with the Refuge and its recreational goals. In fact, the Project includes several conditions, such as setbacks, noise barriers, limited hours of operation, and fencing that the Board finds will minimize any impacts of the Project to the Refuge, including its related recreational aspects. Finally, as required by Condition 77a, Applicant will facilitate the siting of additional recreational facilities by dedicating a 20-foot wide trail easement along the eastern portion of the Property (in the event Metro determines by official enactment that it is an appropriate location for the Tonquin Ice Age Trail). The Board finds that the PAPA Application and the Zone Change Application are consistent with Goal 8.

Goal 9: Economic Development.

To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.

In general, Goal 9 is only applicable to areas within urban growth boundaries. The Property is located outside the Metropolitan Portland Urban Growth Boundary. OAR 660-009-0010(1). Therefore, the Board finds that Goal 9 is not applicable to the Project. Alternatively, to the extent Goal 9 is applicable, the Board finds that the Project furthers the objectives of this goal by providing a material (rock) that is essential to the

construction of a variety of infrastructure projects. Development of these infrastructure projects will support a variety of economic activities across the state. The Board finds that the PAPA Application and the Zone Change Application are consistent with Goal 9, to the extent it is applicable at all.

Goal 10: Housing

To provide for the housing needs of citizens of the state.

The Board finds that Goal 10 is not applicable to the Project because the Property is not located within the Metropolitan Portland UGB and because it does not concern lands proposed for urban reserve designation or planned for urban residential housing. Further, the PAPA Application and Zone Change Application do not change the underlying zoning designation, which allows rural residential uses. Finally, the Project anticipates future uses after reclamation, which may include residential uses. However, the Board finds that the Project nevertheless furthers the objectives of this goal by providing a material (rock) that is essential to the construction and rehabilitation of many forms of housing in the Portland Metro and surrounding areas. Therefore, the Board finds that the PAPA Application and the Zone Change Application are consistent with Goal 10, to the extent it is applicable at all.

Goal 11: Public Facilities and Services.

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

The Property is not located within, or served by, any public or private water or sewer service district. *See* page 13 of the Staff Report. Further, the Project does not require the extension of public sewer, water, or storm drainage facilities, and Applicant does not propose to extend same. Further, for the reasons explained in these Supplemental Findings in response to OAR 660-023-0180(5)(b)(B) and CCZDO 708.05.H below, which reasons are incorporated herein by reference, the transportation and stormwater systems are adequate to serve the Project, subject to identified conditions. Finally, County Planning staff stated that designating the Property as a significant aggregate site would not affect the planning for public facilities or services by the County or any nearby City. *See* page 14 of Staff Report. No one contended on the record that the PAPA Application and Zone Change Application would not be consistent with Goal 11. For the foregoing reasons, the Board finds that the PAPA Application and the Zone Change Application are consistent with Goal 11.

Goal 12: Transportation.

To provide and encourage a safe, convenient and economic transportation system.

The Board finds that the Project will further the objectives of this goal by providing a material (rock) that is essential to the construction and reconstruction of a variety of transportation projects, including roads, airports, railroads, sidewalks, and bikeways.

Goal 12 is implemented by the Oregon Transportation Planning Rule ("TPR"), which requires local governments to determine whether or not a proposed PAPA will "significantly affect" an existing or planned transportation facility. OAR 660-012-0060(1). A PAPA will "significantly affect" an existing or planned transportation facility if it will: (1) change the functional classification of a facility; (2) change standards implementing a functional classification system; (3) as measured at the end of the planning period, result in types or levels of travel or access that are inconsistent with the functional classification of an existing facility; or (4) degrade the performance of an existing facility either below applicable performance standards, or if already performing below these standards, degrade it further. *Id.*

LUBA has stated that the initial question under the TPR is "whether the plan amendment causes a net increase in impacts on transportation facilities, comparing uses allowed under the unamended plan and zoning code with uses allowed under the amended plan and zoning code." *Griffiths v. City of Corvallis*, 50 Or LUBA 588, 593 (2005). This is commonly applied to require that an applicant compare the traffic associated with a reasonable worst case scenario development under the existing zoning district with a reasonable worst case scenario under the proposed zoning district.

The Board finds that the Project will not significantly affect any existing or planned transportation facilities. In support of this conclusion, the Board relies upon the "worst case scenario" analysis prepared by Applicant's transportation consultant, Kittelson & Associates, Inc. ("KAI"). In that analysis, KAI compared the reasonable worst-case trip generation scenario of the Property under the existing zoning designation (RRFF-5, with no MAO) with the reasonable worst-case trip generation scenario under the proposed zoning designation (RRFF-5, with MAO). *See* Appendix H of the Applications. This comparison indicated that the Property would generate more trips under the proposed zoning designation; however, at the end of the planning period (2035), all site access points and off-site intersections were forecast to perform within acceptable performance standards during weekday AM and PM peak hours. Based upon these results, KAI concluded that the Applications would not significantly affect any existing or planned transportation facilities for purposes of the TPR. The Board finds that transportation engineers with both the County and Washington County reviewed and concurred with KAI's conclusions. *See* pages 15-16 of the Staff Report. No substantial evidence was presented that undermined this testimony.

Therefore, the Board finds that the PAPA Application and the Zone Change Application are consistent with Goal 12 and the TPR.

Goal 13: Energy Conservation.

To conserve energy.

Based upon the testimony of Applicant and the concurrence of County Planning staff, the Board finds the Project will have at least two significant positive energy consequences. First, the Board finds that mining the aggregate resource will facilitate completion of many needed transportation improvements, which will, in turn, provide greater capacity and smoother road surfaces. As a result, the Board finds that vehicles on roads throughout the region will be able to consume less fuel because they will spend less time idling in traffic and/or confronting substandard road conditions.

Second, the Board finds that the energy consequences of allowing a mine are also positive because the Property is less than one mile from each of the respective city limits of Sherwood, Tualatin, and Wilsonville, all locations where there is a significant amount of growth and demand for aggregate. Locating a mine near these markets will reduce the distance the product must travel to the consumer, resulting in lower fuel consumption. The Board finds that the Property's proximity to major transportation corridors, such as Interstate 5, also reduces fuel consumption and energy impacts compared to more remote locations. As support for this conclusion, the Board accepts Applicant's testimony that a proposed site in Molalla requiring 250 truck trips would generate an additional 3,750 miles in haul distance, add 83 hours of travel time, use an additional 469 gallons of fuel, and add approximately $15,000 to the project cost. *See* Applicant letter re: "Discussion of Economic Benefits" dated November 4, 2013 (Exhibit 113). No one presented substantial evidence that undermined this testimony.

The Board finds that the PAPA Application and the Zone Change Application are consistent with Goal 13.

Goal 14: Urbanization.

To provide for an orderly and efficient transition from rural to urban land use.

The Board finds that Goal 14 is not an applicable approval criterion for three reasons. First, the Property is located outside of the Metropolitan Portland Urban Growth Boundary, and it is not a designated Urban Reserve. Second, the proposal does not involve a change in location of the UGB. Third, the Property is zoned for rural uses, and the proposal does not change this fact.

Goal 15: Willamette River Greenway.

To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

The Board finds that no portion of the Property is located in the Willamette River Greenway, and no lands within the Greenway are affected by this proposal. Therefore, the Board finds that Goal 15 is not an applicable approval criterion for the PAPA Application and the Zone Change Application.

Goal 16: Estuarine Resources

To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and

To protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity, and benefits of Oregon's estuaries.

The Board finds that no portion of the Property or the designated impact area is located within an estuary. As a result, the Board finds that the Project will not adversely affect any estuarine resources. Accordingly, the Board finds that Goal 16 is not applicable to the PAPA Application and the Zone Change Application.

Goal 17: Coastal Shorelands.

To conserve, protect, where appropriate, develop and where appropriate restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics. The management of these shoreland areas shall be compatible with the characteristics of the adjacent coastal waters; and

To reduce the hazard to human life and property, and the adverse effects upon water quality and fish and wildlife habitat, resulting from the use and enjoyment of Oregon's coastal shorelands.

The Board finds that no portion of the Property or the designated impact area is located within a coastal shorelands area. As a result, the Board finds that the Project will not adversely affect any coastal shorelands resources. Accordingly, the Board finds that Goal 17 is not applicable to the PAPA Application and the Zone Change Application.

Goal 18: Beaches and Dunes.

To conserve, protect, where appropriate develop, and where appropriate restore the resources and benefits of coastal beach and dune areas; and

To reduce the hazard to human life and property from natural or man-induced actions associated with these areas.

No portion of the Property or the designated impact area is located within a designated beach or dune. As a result, the Board finds that the Project will not adversely affect beach or dune resources. Accordingly, the Board finds that Goal 18 is not applicable to the PAPA Application and the Zone Change Application.

Goal 19: Ocean Resources.

To conserve marine resources and ecological functions for the purpose of providing long-term ecological, economic, and social value and benefits to future generations.

The Property does not include or abut any ocean resources, and the Project will not impact any ocean resources. No party contended in the County proceedings that Goal 19 was applicable to the PAPA Application and the Zone Change Application. Therefore, the Board finds that Goal 19 is not applicable to the PAPA Application and the Zone Change Application.

II. OREGON ADMINISTRATIVE RULES

OAR 660-023-0180 Mineral and Aggregate Resources

(3) An aggregate resource site shall be considered significant if adequate information regarding the quantity, quality, and location of the resource demonstrates that the site meets any one of the criteria in (a) through (c) of this section, except as provided in subsection (d) of this section:

(a) A representative set of samples of aggregate material in the deposit on the site meets applicable Oregon Department of Transportation (ODOT) specifications for base rock for air degradation, abrasion, and soundness, and the estimated amount of material is more than 2,000,000 tons in the Willamette Valley, or more than 500,000 tons outside the Willamette Valley;

QUALITY

The Board finds that a representative set of samples from the site meet ODOT specifications for base rock as required by this rule. As support for this conclusion, the Board relies upon the results of industry-standard tests, which demonstrated that six samples of aggregate materials from the site meet ODOT specifications for base rock, together with expert opinions from two different geologists who independently analyzed the samples collected from the site.

Specifically, the Board finds that the Applicant presented test results reporting that six samples of aggregate materials from the site satisfied applicable criteria set forth in ODOT's *Standard Specifications for Highway Construction* (revised 2008, current

edition) Section 02630 for air degradation, abrasion, and Sodium Sulfate soundness. *See* Table 1 of Appendix A of the Applications. The Board finds that an ODOT-accredited aggregate testing laboratory, ACS Soils Testing, Inc. ("ACS"), conducted these tests in accordance with industry standard. *See* Appendix A of the Applications (Aggregate Resource Evaluation and Significance Determination prepared by Kuper Consulting LLC). No party challenged the methodology or results of these tests once the samples were identified. The opponents' primary challenge with respect to the quality of resource, which is discussed more fully below, related to a single sample that failed to satisfy ODOT specifications. The Applicant also submitted a portion of one of the six samples into the record in this matter. *See* Exhibit 97. No party contended that the submitted sample failed ODOT's specifications. Additionally, no party submitted a different sample from the site that failed ODOT's specifications. The Board finds that the six samples of aggregate material from the site meet applicable ODOT specifications for base rock for air degradation, abrasion, and soundness.

Further, the Board finds that these samples are a "representative set of samples of aggregate material in the deposit on the site" as required by the Goal 5 rule based upon the testimony of two different geologists. First, the Kupers testified that the samples were representative because they followed industry standard in selecting them. *See* Kuper Consulting letter to Planning Commission dated September 20, 2013 (Exhibit 65b). Specifically, the Kupers testified that they characterized the site and selected samples based upon the Kupers' analysis of published geologic maps, the Kupers' familiarity with the geology in the immediate vicinity (which includes many productive aggregate quarries), the Kupers' review of subsurface work completed by other consultants (including 14 air track borings, which indicated that the resource was consistent across the site, and 11 excavated trenches, which demonstrated the amount of topsoil and weather rock that covered the basalt). *Id.* Further, the Kupers testified that the samples were geographically distributed across the site and spanned the outer edges of the proposed mine in order to allow the Kupers to further analyze the site geology in three dimensions. *Id.*

Second, HGSA testified that the samples were "representative" because they were selected from all three core holes and from varying depths on the site. *See* HGSA Peer Review of Site Aggregate Resources (Exhibit 90). Further, HGSA noted that the number and location of the samples was reasonable in light of the relatively small size of the site (34 acres) and the well-known geology of the area. *Id.* Specifically, HGSA noted that literature in the field has established that the area encompassing the site is part of the Columbia River Basalt Group, where rock units are estimated to be more than 1,000 feet thick. *Id.* As a result, HGSA concluded that the site warranted less exploration and sampling than a location along Oregon's coast, where the rock body was thinner, more discontinuous, and thus more uncertain. *Id.*

The County finds that these test results and related expert opinions constitute substantial evidence to support the conclusion that the site satisfies the quality threshold of OAR 660-023-0180(3)(a).

Although Ms. Madden and Dr. Lewis contend that the site is not "significant" because a

single sample failed to satisfy ODOT specifications, the Board denies this contention because the Board finds that the Goal 5 rule does not require that each sample from the site meet all ODOT specifications. Rather, the rule requires that a "representative set of samples" meet these specifications.

Further, although Ms. Madden and Dr. Lewis contend that the Applicant has not generated sufficient samples from the site to carry its burden of demonstrating that the Applications satisfy the quality standard of the Goal 5 rule, the Board denies this contention. The Board finds that the only two geologists who testified on the record both opined that the six samples from the site that meet ODOT specifications are "representative" in light of the relatively small size of the site (approximately 34 acres), the varied location and depth of samples, the extensive pre-sampling trenching and air track borings, the established geology of the site, and the existence of six highly productive aggregate mines in the area drawing from the same geological formation. *See* Appendix A to Applications, Kuper Consulting letter dated September 20, 2013 (Exhibit 65b), and HGSA Peer Review of Site Aggregate Resources (Exhibit 90). No geologists rebutted this testimony or offered a counter-opinion regarding the quality of aggregate material in the deposit on the site.

Although Dr. Lewis contends that the data in the six samples reflected the existence of "two populations" of rock on the site, the Board denies this contention because, as noted above, the only geologists who testified on the record testified with great confidence that the samples were "representative" in nature. Dr. Lewis is not a geologist but a statistician. As a result, the Board finds that Dr. Lewis has expertise with statistics, but he is not an expert in characterizing or analyzing the distribution of subsurface rock materials or in understanding how many samples are necessary to be "representative" for purposes of the Goal 5 rule at a given site. Therefore, the Board finds Dr. Lewis' testimony regarding the quality of the material in the deposit on the site to be less credible than the testimony offered by the Kupers and HGSA on this subject.

Additionally, although Ms. Madden contends that the Applicant is proposing improper "blending" of high-quality and low-quality samples to obtain samples that satisfy the quality standard, the Board denies this contention because it misconstrues the facts. In fact, the Applicant did not conduct any such "blending" in order to demonstrate compliance with the Goal 5 rule. As explained in their significance analysis, the Kupers analyzed each of the samples independently without blending. *See* Appendix A of the Applications. The Kupers' reference to "blending" referred to the common practice of blending higher quality basalts with lower quality basalts once mining is occurring on a site, long after significance has been demonstrated. Further, the Kupers offered the statement to explain that, even if lower quality aggregate exists, it can and will ultimately be used, which justifies the Kupers' point that the intent of the "significance" standards is to ensure that only commercially viable mines are approved. *See* Kuper Consulting LLC letter dated September 20, 2013 (Exhibit 65b).

Finally, although Ms. Madden suggests that the Applicant's consultants engaged in "cherry-picking" of more favorable samples in an effort to skew the results, HGSA refuted this contention by explaining that the Kupers adhered to industry standard in

their selection of aggregate samples. *See* HGSA Letter dated November 7, 2013 (Exhibit 143). Further, HGSA noted that the rule itself calls for "samples of aggregate material," not samples of non-aggregate materials. *Id.* The Board further finds that Ms. Madden has not presented any evidence of improper sample selection by the Applicant or its consultants. For these reasons, the Board denies Ms. Madden's contentions on this issue.

On the basis of the testimony presented, and for the reasons stated above, the Board finds that a representative set of samples of aggregate material in the deposit on the site meets applicable ODOT specifications for base rock for air degradation, abrasion, and soundness.

QUANTITY

The Board finds that the site is located in the "Willamette Valley" as that term is defined in OAR 660-023-0180(1)(m) because the site is located in Clackamas County. Therefore, the Board finds that the rule requires that the estimated amount of material in the deposit on the site must exceed 2,000,000 tons. The Board finds that the estimated amount of quality material in the deposit on the site is more than 2,000,000 tons. As support for this conclusion, the Board relies upon the Kupers' expert testimony that at least 9,500,000 tons of in-place aggregate exists in the deposit on the site. *See* Appendix A of the Applications. The Kupers reached this conclusion by examining a base topographic map and the logs of the on-site subsurface exploration; making allowances for setbacks, slopes, and the anticipated mining depth; and then interpolating the location of the resource between known points of elevation. *Id.* Westlake Engineering ("Westlake") supplemented this analysis by conducting industry-standard volumetric models. *Id.* The Board finds that the Kupers' analysis and testimony is particularly credible in light of their extensive expertise characterizing aggregate mines. See Appendix N of the Applications.

The Board also finds support for its conclusion that the estimated amount of quality material in the deposit on the site exceeds 2,000,000 tons in testimony presented by HGSA, which estimated that there were 14,997,868 mineable tons of aggregate material in the deposit on the site. *See* HGSA report dated October 23, 2013 (Exhibit 90). HGSA determined that the "proven reserve" within 100 feet of the surface, after factoring in buffers and slopes, was at least 4,532,459 tons. *Id.* The Board finds this independent analysis to be compelling because J. Douglas Gless, the author of the HGSA report, also has extensive experience estimating the quality and quantity of aggregate materials, as set forth on his resume in the record. *Id.*

The Board finds that opponents' contentions to the contrary do not undermine the Kupers' analysis and conclusions. First, although Dr. Lewis raises various contentions that call into question the Applicant's sampling methodology, the Board denies these contentions. For example, although Dr. Lewis contends that because the Applicant has not taken enough samples, the Applicant could be overstating the volume of aggregate supply by nearly double, the Board denies this contention for two reasons. First, for the reasons stated in response to the quality standard in this rule, the Board finds that the

Applicant's sampling methodology is sound, and thus, the Applicant has not overestimated the amount of material on the site. Second, the Board finds that, even assuming Dr. Lewis is correct and approximately 50% of the material is "bad rock" (to use his term), the estimated amount of aggregate material in the deposit on the site is still more than 4,750,000 tons, which exceeds the minimum quantity requirements of the rule by more than double. Additionally, although Dr. Lewis contends that the Applicant's analysis is incomplete because the Applicant has only collected samples within 100 feet of the surface, the Board denies this contention as well because, even if all of the material deeper than 100 feet below the surface failed to meet quality specifications, HGSA's "proven reserve" of 4,532,459 tons is all located within 100 feet of the surface.

Further, although Dr. Lewis and Ms. Madden contend that the variability in the sampling data indicates that there are two populations of rock in the deposit on the site, the Board denies this contention because it is irrelevant. The relevant inquiry under the quantity standard is whether the estimated amount of quality material is more than 2,000,000 tons. The Applicant has easily demonstrated that this is the case. That there may be some evidence that some material in the deposit on the site would not meet quality standards does not take away from the fact that the estimated amount of quality material is more than four times the minimum threshold.

The Board denies Dr. Jenkins' contentions for another reason: Unlike the Kupers, Dr. Jenkins is not a geologist; he is a statistician. Thus, for the reasons explained in the findings addressing the quality standard, the Board finds Dr. Lewis' testimony regarding the quantity of the material in the deposit on the site to be less credible than the testimony offered by the Kupers and HGSA on this subject.

Finally, although Ms. Madden contends that HGSA offered a non-conservative yardage to tonnage conversion rate (1.25) in estimating the amount of aggregate material in the deposit on the site, the Board denies this contention based upon the rebuttal offered by HGSA, which explained that a more typical conversion rate would be 1.7 tons per cubic yard. *See* HGSA letter dated November 7, 2013 (Exhibit 143). HGSA also noted that its estimate of the quantity of material on the site was especially conservative because HGSA first subtracted overburden and non-aggregate quality layers before applying the conservative conversion rate of 1.25 tons per cubic yard. *Id.*

LOCATION

The Board finds that the site meets the locational requirements of this rule for three reasons. First, for the reasons explained above, which reasons are incorporated by reference, the Board finds that the site is located in the "Willamette Valley" and meets the quality and quantity thresholds applicable to an aggregate site in the Willamette Valley (more than 2,000,000 tons).

Second, the Board finds that the site is located in an area replete with aggregate resources. As support for this conclusion, the Board relies upon testimony from the Kupers that the site is underlain by basalt flows associated with the Columbia River Basalt Group Grande. *See* Appendix A of the Applications. These flows have been

associated with productive aggregate mines in the area. The Board finds that there are numerous active and inactive aggregates quarries in the surrounding area, including to the north, Eaton Quarry, Coffee Lake Quarry, and Tigard Sand & Gravel; to the north and east, Town Quarry, Knife River Quarry, and a reclaimed quarry that is now the Tualatin Fire & Rescue Department facility; and to the south, the inactive Clackamas Quarry, which has been reclaimed into a residential home site. *Id.* Additionally, the Board finds that the Property was formerly permitted for aggregate mining in 1982. *Id.* Finally, the Board finds that the quarries within the geographic area that includes the Property produce good to high quality aggregate for base, riprap, fill, and embankment fill materials. *Id.*

Third, for the reasons explained in response to subsection (d) below, which reasons are incorporated herein by reference, the Board finds that the site consists entirely of Class III, IV, and VII soils. Therefore, the resource on the site is not rendered not significant due to the presence of high-quality soils in this location.

(b) The material meets local government standards establishing a lower threshold for significance than subsection (a) of this section; or

The Board finds that this subsection is not applicable because the County has not adopted standards establishing a lower threshold for significance than subsection (a) of this section.

(c) The aggregate site was on an inventory of significant aggregate sites in an acknowledged plan on September 1, 1996.

The Board finds that the Property is not significant under this subsection because it was not on an inventory of significant aggregate sites in an acknowledged plan on September 1, 1996.

(d) Notwithstanding subsections (a) and (b) of this section, except for an expansion area of an existing site if the operator of the existing site on March 1, 1996, had an enforceable property interest in the expansion area on that date, an aggregate site is not significant if the criteria in either paragraphs (A) or (B) of this subsection apply:

(A) More than 35 percent of the proposed mining area consists of soil classified as Class I on Natural Resource and Conservation Service (NRCS) maps on June 11, 2004; or

(B) More than 35 percent of the proposed mining area consists of soil classified as Class II, or of a combination of Class II and Class I or Unique soil, on NRCS maps available on June 11, 2004, unless the average thickness of the aggregate layer within the mining area exceeds:

(ii) 25 feet in Polk, Yamhill, and Clackamas counties

The Board finds that the criteria in paragraphs (A) and (B) do not apply because, according to the applicable NRCS maps, the site consists entirely of Class III, IV, and VII soils. *See* Aggregate Resource Evaluation and Significance Determination prepared by Kuper Consulting, LLC in Appendix A of the Applications. Therefore, no Class I or II soils are present. Furthermore, as further explained in Appendix A, after reviewing water well reports and the area's geologic conditions, the Kupers opined that the basalt bedrock on the site extends to an elevation of at least -160 feet MSL. Because the average existing elevation of the Property is approximately 150 MSL, the Board finds that the average thickness of the mining area is approximately 300 feet, well above the 25-foot minimum. For these reasons, the Board finds that the Property is not rendered not significant due to soils.

In sum, the Board finds that the site is significant based upon its quality, quantity, and location.

(5) For significant mineral and aggregate sites, local governments shall decide whether mining is permitted. For a PAPA application involving an aggregate site determined to be significant under section (3) of this rule, the process for this decision is set out in subsections (a) through (g) of this section. A local government must complete the process within 180 days after receipt of a complete application that is consistent with section (8) of this rule, or by the earliest date after 180 days allowed by local charter.

The Board finds, for two reasons, that the County has correctly processed the Applications. First, as explained below, the County applied the criteria in subsections (a) through (g) of this section to decide that mining is permitted on the Property. Second, the Board finds that it is adopting an ordinance approving the Applications on February 27, 2014, a date that is within the time period allowed by this rule, as extended by the Applicant. Specifically, the County deemed the Applications complete on July 16, 2013. The Applicant provided the County two separate extensions to the County's obligation under ORS 215.427. These extensions were dated December 10, 2013 and January 28, 2014 and each provided the County an additional 30 days to take final action on the application for a total extension period of 60 days. Therefore, as extended, the County had 240 days in which to make a decision under this rule, and the County has made its decision within 226 days. No one contended that the County committed a procedural error under this section. Therefore, the Board finds that it has complied with the procedural requirements of this section.

(a) The local government shall determine an impact area for the purpose of identifying conflicts with proposed mining and processing activities. The impact area shall be large enough to include uses listed in subsection (b) of this section and shall be limited to 1,500 feet from the boundaries of the mining area, except where factual information indicates significant potential conflicts beyond this distance. For a proposed expansion of an existing aggregate site, the impact area shall be measured from the perimeter of the proposed expansion area rather

than the boundaries of the existing aggregate site and shall not include the existing aggregate site.

The Board finds that the impact area for purposes of identifying conflicts with the proposed mine under the Goal 5 rules is limited to 1,500 feet from the boundaries of the mining area ("Impact Area"). *See* map at Tab D, Exhibit 6 of Applications. For the reasons explained below, the Board finds that there is no factual evidence in the record that indicates significant potential conflicts beyond this distance.

EXPANSION OF IMPACT AREA TO ADDRESS NATURAL RESOURCE IMPACTS

Opponents contend that the County should expand the Impact Area to include additional Goal 5 inventoried resources to the north and to the southeast of the Property, the Board denies these contentions for three reasons. First, the Board finds that there is no basis to expand the Impact Area to include additional Goal 5 resources. OAR 660-023-0180(5)(a) permits expanding the Impact Area beyond 1,500 feet from the boundaries of the mine, but only when "factual information indicates significant potential conflicts beyond this distance." Opponents submitted a map and a paragraph-long explanation from their attorney identifying other potential resources. *See* letter from Erin Madden dated September 16, 2013 and attached map (Exhibit 48). The map and letter do not explain in what way the development of the mine will cause a "significant potential conflict" with these resources. As such, the Board finds that the opponents have not presented "factual information" sufficient to require the Board to expand the Impact Area to include the additional resource areas.

Second and in the alternative, the Board finds that Ms. Madden and Mr. Leyda have presented "factual information" of "significant potential conflicts" with these additional resources based upon "loss of forested and wetland habitat on the proposed quarry property within an extensive wildlife corridor;" however, the Board finds that there will not be significant potential conflicts on this basis, and the Board therefore declines to expand the Impact Area. As support for this conclusion, the Board relies upon the testimony of scientist Phil Scoles of Terra Science Inc. ("TSI"), who concluded that development of the quarry "would not create a constriction [in the wildlife corridor] that adversely affects wildlife." *See* TSI Letter dated October 29, 2013 (Exhibit 98). Mr. Scoles reached his conclusion after examining the entire context of the corridor, which begins well north of the Property near the Tualatin River and then continues south to the Willamette River. *See* map attached to TSI Letter dated October 29, 2013 (Exhibit 98). As the map depicts, the corridor varies in width from approximately 3100 feet in width to as few as 75 feet in width. *Id.* Mr. Scoles calculated that, even with development of the quarry, the corridor would be approximately 1600 feet wide, much larger than other areas of constriction, and still sufficient to allow animals to feed, pair, and nest, in part due to the additional buffers installed around the mining area. *Id.* Although the Oregon Department of Fish and Wildlife ("ODFW") presented a wildlife corridor map, the Board finds that this map does not undermine the TSI map because the ODFW map is very generalized in nature, does not identify the Property, does not identify the locations of any Goal 5 resources, and is not accompanied by any rebuttal of the TSI map. *See*

ODFW Letter dated September 16, 2013 (Exhibit 32). The Board also finds that Mr. Leyda did not directly rebut Mr. Scoles' October 29, 2013 testimony regarding the wildlife corridor at all.

Further, although Ms. Madden testified that the home ranges for bobcat, coyotes, and woodpeckers extended from several thousand acres to several kilometers and thus the Impact Area should be expanded commensurate with same, the Board finds that it is unreasonable to conclude that there will be significant potential conflicts over such a broad area. Rather, as Mr. Scoles testified, the Property represents a very small percentage of the total home range for these animals. *See* TSI Letter dated November 8, 2013 (Exhibit 141). The Board finds that a reasonable person would rely upon this testimony to conclude that there would not be significant potential conflicts due to loss of a wildlife corridor caused by the Project.

The Board relies on three other bases to conclude that there is insufficient evidence of "significant potential conflicts" beyond 1,500 feet. First, the Board relies upon Mr. Scoles' testimony that the existence of wildlife within the area, which is already dominated by aggregate mines, is *prima facie* evidence that wildlife have tolerated and adapted to impacts of mines on habitats. *See* TSI Letter dated November 4, 2013 (Exhibit 119). Second, the Board finds that the Project conditions of approval will adequately control impacts to offsite natural resources relating to dust, noise, vibration, lighting, traffic, groundwater, and stormwater. *Id.* The fact that these conditions protect resources within the 1,500-foot area ensures that locations that are even farther away are also adequately protected. Third, the Board relies upon and incorporates by reference the findings set forth below in response to opponents' contentions concerning conflicts with Goal 5 resources, as a basis to conclude that there is no basis to expand the Impact Area.

EXPANSION OF IMPACT AREA TO ADDRESS TRAFFIC IMPACTS

Although the City of Wilsonville contends that the County should expand the impact area to consider impacts to Day Road and Graham's Ferry Road, the Board finds that there is no legal basis to expand the Impact Area on these grounds. For the reasons explained below in response to OAR 660-023-0180(5)(b)(B), the Board finds that the Applicant's Transportation Impact Analysis prepared by Kittelson & Associates, Inc. ("TIA") complies with the requirements of that subsection because it evaluates potential conflicts to local roads used for accessing the mine within one mile of the entrance to the mining site, and this radius includes an intersection with an arterial road. *See* TIA at Appendix H of the Applications. Further, the TIA addresses each of the potential conflict areas recited in the rule. *Id.*

The Board finds that the plain language of the rule only requires expanding the one-mile radius when local roads accessing the mine have not yet intersected with an arterial road. In the case of the proposed quarry, SW Morgan Road is a local road, and it first intersects with an arterial at SW Tonquin Road, which is well within one mile of the

Property. Therefore, there is no basis in this case to expand the impact area to examine transportation conflicts outside of a mile.

Even if there were a legal basis to expand the impact area for transportation review, the Board finds that the City has not established that the roads in question (Grahams Ferry and Day) are classified as "local roads" as required by the rule. LUBA has held that the term "local roads" refers to streets classified as local roads in the applicable transportation system plan. *Morse Bros., Inc. v. Columbia County*, 37 Or LUBA 85 (1999). Impacts to arterials (after the first arterial) are not relevant. The Board finds that Grahams Ferry is classified as an arterial road, and Day Road is a major arterial road (but neither is the first arterial road intersected). Therefore, the Board denies the City's contention on this issue.

Based upon the foregoing, the Board limits the Impact Area to 1,500 feet from the boundaries of the mining area.

(b) The local government shall determine existing or approved land uses within the impact area that will be adversely affected by proposed mining operations and shall specify the predicted conflicts. For purposes of this section, "approved land uses" are dwellings allowed by a residential zone on existing platted lots and other uses for which conditional or final approvals have been granted by the local government. For determination of conflicts from the proposed mining of a significant aggregate resource site, the local government shall limit its consideration to the following:

(c) The local government shall determine reasonable and practicable measures that would minimize the conflicts identified under subsection (b) of this section. To determine whether measures would minimize conflicts to agricultural practices, the requirements of ORS 215.296 shall be followed rather than the requirements of this section. If reasonable and practicable measures are identified to minimize all identified conflicts, mining shall be allowed at the site and subsection (d) of this section is not applicable. If identified conflicts cannot be minimized, subsection (d) of this section applies.

The Board adopts joint findings in response to these two subsections below. First, regarding "approved uses," Applicant has identified the following "approved uses" within 1,500 feet from the boundaries of the mining area:

Location	**Existing Use**
North	Undeveloped Dog Kennel
Northwest	Tri-County Gun Club

	Eaton Quarry Tualatin River National Wildlife Refuge
Northeast	Tigard Sand & Gravel and Knife River Coffee Lake Quarries
East	Knife River Quarry Town Quarry Tualatin Valley Fire and Rescue Department training center
West	Rock Creek Rural residential dwellings
South	Rural residential dwellings Open farmland

County Planning staff concurred with this list of uses. *See* Staff Report at 38.

Although Andrea Patrick testified that she operates a dog boarding kennel on her property within the Impact Area, the Board finds that this type of operation is a conditional use in the applicable RRFF-5 zoning district, and the County has no record of an approved conditional use authorizing the kennel on the Patricks' property. *See* Email Correspondence from R. McIntire (Exhibit 117). Additionally, even if this operation were permitted, it would require minimum setbacks of at least 200 feet from all property lines. *Id.* Therefore, for purposes of review of the Applications only, the Board finds that the kennel is not an "approved use," and the Board is not required to consider conflicts with the kennel use in this location.

No party has identified any other allowed uses within 1,500 feet of the proposed mining and processing area. Therefore, the Board finds that this list accurately describes the "allowed uses" within the Impact Area.

(b)(A) Conflicts due to noise, dust, or other discharges with regard to those existing and approved uses and associated activities (e.g., houses and schools) that are sensitive to such discharges;

As explained in more detail below, the Board finds that there are limited conflicts due to noise, dust, or other discharges to sensitive uses within the Impact Area; however, the Board finds that there are reasonable and practicable measures that will minimize these conflicts. The Board adopts these reasonable and practicable measures as conditions of approval in order to assure that the identified conflicts are minimized.

i. Noise:

IDENTIFICATION OF CONFLICTS:

The Board makes the following findings as to the noise impacts of the Project:

- Pursuant to DEQ classifications, the Property is a "previously unused industrial or commercial site," because it has not been used by an industrial or commercial noise source in the 20 years prior to the commencement of mining operations on the Property. OAR 340-035-0015(47).

- As a result, the more restrictive of the following standards apply to the mine: (1) the maximum allowable noise levels for industrial and commercial noise sources set forth in Table 8 of OAR 340-035-0035, which are set for 1%, 10%, and 50% of an hour; or (2) the "ambient noise degradation" levels which require that any "new industrial or commercial noise source" on a "previously unused industrial or commercial site" cannot produce noise sufficient to cause existing ambient noise levels to increase by more than 10 decibels ("dB") pursuant to OAR 340-035-0035(1)(b)(B).

- The more restrictive of the two DEQ standards—and thus the one applicable to the Property—is the "ambient noise degradation" level (ambient noise levels plus 10 dB).

- There are no nearby residences north of the site that would be adversely affected by noise from the mine.

- There are 12 noise-sensitive uses (all single-family residences) within 1,500 feet south or west of the site.

- Blasting noise was not expected to exceed the applicable DEQ standard at any residence, assuming the blaster takes appropriate steps to minimize the size of the charges used to fracture the rock and the number of holes detonated simultaneously.

- Three of the identified residences in the Impact Area would experience noise conflicts under a worst-case noise scenario because the predicted loudest hourly statistical noise levels at these residences would exceed the identified "ambient noise degradation" level. This worst-case scenario would occur when excavation operations occur above the 112-foot elevation in some portions of the excavation area and when the processing equipment is located in the initial processing area.

As support for these conclusions, the Board relies upon the testimony of the Applicant's acoustical engineer, Kerrie G. Standlee, P.E. of Daly Standlee and Associates ("DSA"). *See* Tonquin Quarry Noise Study dated September 18, 2013 (Exhibit 65c). In that

study, DSA reached each of the conclusions adopted by the Board as findings above. *Id.* The Board finds DSA's testimony to be particularly credible due to DSA's substantial experience and its utilization of industry-standard equipment and methodologies. *See* Appendix N of the Applications. The Board finds that a reasonable person would rely upon DSA's testimony to reach the above conclusions regarding noise impacts associated with the Project.

Further, the Board finds that opponents' contentions to the contrary do not undermine DSA's testimony. The Board addresses each of the opponents' contentions below.

METHODOLOGY CONCERNS AS TO RESIDENCES

First, although Erin Madden contends that DSA incorrectly measured ambient noise levels and incorrectly predicted noise levels from the Project as to area residences, the Board denies this contention because it misconstrues applicable law and the evidence in the record. The Board finds that DSA correctly measured ambient noise levels and predicted future noise levels in its analysis.

Although Ms. Madden contends that DSA erred by failing to make noise measurements either 25 feet toward the noise source from affected residences or that point on the noise-sensitive property line nearest the noise source, the Board denies this contention because the Board finds that, as permitted by OAR 340-035-0035(3), DSA utilized an alternative measurement approach outlined in DEQ's "Sound Measurement Procedures Manual" to conduct ambient noise measurements for residences in the vicinity of the Property. *See* Memorandum from DSA dated September 27, 2013 (Exhibit 66b) and Memorandum from DSA dated November 8, 2013 (Exhibit 142). Further, the Board finds that DSA was justified in utilizing this alternative measurement approach because, otherwise, area residents would have been able to deny access to their properties and thus thwart DSA's ability to conduct noise measurements. *Id.*

Additionally, although Ms. Madden contends that DSA erred by conducting noise predictions at the residences rather than "25 feet toward the noise source from that point on the noise sensitive building nearest the source," the Board denies this contention because DEQ's "Sound Measurement Procedures Manual" does not require predictions at the 25-foot location unless that is the loudest location. *See* Memorandum from DSA dated September 27, 2013 (Exhibit 66b).

Further, the Board finds that DSA correctly made noise predictions for the two affected residences. First, as to residence R5, the Board finds that, due to topography and the "shadow effect" of berms, the location 25 feet toward the Project would be in a " noise reduction" zone while the residence R5 would not. Therefore, DSA correctly selected a prediction point at the eastern edge of the residence where the noise reduction effect was less. Similar circumstances prevail as to residence R12. As support for its conclusions regarding residences R5 and R12, the Board relies upon DSA's rebuttal of Ms. Madden's contention. *Id.*

Although Ms. Madden offered a response to DSA's rebuttal, the Board finds this response restated her previous points on this issue and the Board further finds that no party provided a compelling rebuttal to DSA's September 27, 2013, memorandum. *Compare* Madden letter dated September 24, 2013 (Exhibit 55) and Madden letter dated November 4, 2013 (Exhibit 132). Accordingly, the Board agrees with the substantial evidence presented by DSA regarding the measurement and prediction of noise levels near residences.

METHODOLOGY CONCERNS AS TO REFUGE

Further, although Madden contends that the Applicant failed to make ambient noise measurements or predictions for impacts to the Refuge property, the Board finds that Ms. Madden is mistaken on both of these points. First, the Board finds that, with the Refuge's permission, DSA measured ambient noise levels at a location on the Refuge property. *See* DSA Study, Figure 4 (Exhibit 65c) and Refuge permission form attached to DSA memorandum dated November 8, 2013 (Exhibit 142). Second, DSA utilized a variety of locations to predict noise impacts (including many points on the Refuge), as shown in the DEQ compliance boundaries. *See* DSA Study, Figures 5, 6, 8, and 9 (Exhibit 65c) and DSA memorandum dated November 8, 2013 (Exhibit 142). Opponents did not present evidence that rebutted or undermined this evidence. Therefore, the Board denies Ms. Madden's contention on this issue.

Finally, although Ms. Madden and Mr. Leyda contend that noise impacts from the Project will adversely affect wildlife, the Board denies this contention based upon the findings and evidence cited in response to OAR 660-023-0180(5)(b)(D), which findings are incorporated herein by reference.

IMPACTS TO CITY OF TUALATIN

Additionally, although the City of Tualatin contends that the Project will generate noise levels that will adversely affect livability in the City, the Board denies this contention because DSA determined that "worst case" predictions of noise impacts from the mine on the nearest residences in Tualatin would be well below existing ambient noise levels at these locations and thus would have no discernable impact on Tualatin residents. *See* DSA memo dated October 21, 2010 (Exhibit 120). No one presented substantial evidence to rebut this testimony. Therefore, the Board finds that noise from the Project will not constitute a significant conflict with Tualatin residences.

BLASTING NOISE

Although Ms. Madden contends that noise associated with blasts at the Project will likely be 133 dBA and thus exceed the pain threshold, the Board finds that Ms. Madden misconstrues the testimony of the Applicant's blasting expert, Jerry Wallace. In fact, Mr. Wallace testified that the applicable limit was 133 dB(L), not 133 dBA. *See* Wallace letter dated November 7, 2013 (Exhibit 138). As DSA explained, the applicable dB(L) standard referenced by Mr. Wallace is an overpressure limit, where the majority of the

energy is below the low-frequency cut-off of hearing for a healthy adult. *See* DSA memorandum dated November 8, 2013 (Exhibit 142). By contrast, the dBA limit, which is not applicable here, refers to the sound energy that falls in the range of human hearing. *Id.* DSA further stated that a sound level of 133 dB(L) would correspond to an A-weighted overall sound level significantly lower than 133 dBA and nowhere near the pain threshold. *Id.* Based upon the expert testimony of Mr. Wallace and DSA, the Board finds that noise from blasts at the Project will not exceed the pain threshold.

The Board further finds that noise from blasts at the site will not create a significant conflict with sensitive uses because such noise will not exceed the applicable standard of 98 dBC, slow response, set forth in OAR 340-035-0035. As support for this conclusion, the Board relies upon the testimony of Mr. Wallace, who stated that it was feasible to meet the DEQ standard, subject to compliance with industry standard practices set forth in the blasting plan. *See* Wallace letter dated November 7, 2013 (Exhibit 138). The Board finds that imposing the following condition of approval will ensure that blasting noise will comply with the DEQ standard and thus, by definition, ensure that blasting noise will not create a significant conflict:

> "55a. Noise generated by blasting activities shall comply with the DEQ noise standard of 98 dBC, slow response, at all noise sensitive receptors, as identified in the Tonquin Quarry Goal 5 Noise Study dated September 18, 2013."

MEASURES TO MINIMIZE CONFLICT:

The Board finds that reasonable and practicable measures will minimize the limited conflicts identified by DSA. Specifically, the Board finds that implementing the following mitigation measures on the site will ensure that noise levels at each of the residences would conform with DEQ standards:

- To mitigate the drill noise, use a close-up barrier or curtain system and construct a barrier along the south and west sides of the mine

- To mitigate noise from the crushing and screening equipment, use polyurethane or rubber screens or close-up barriers around the screens and barriers around the initial processing area

As support for this conclusion, the Board relies upon DSA's conclusions in the noise study. *See* Tonquin Quarry Noise Study (Exhibit 65c). The Board has incorporated these reasonable and practicable mitigation measures into the conditions of approval for the Project as follows:

- "52. The Quarry operator shall comply with the final noise study prepared by Daly-Standlee and Associates, Inc. (DSA) dated September 23, 2013 and the supplemental letter dated September 5, 2013 by DSA."

- "53. Noise mitigation barriers shall be constructed in accordance with the DSA report along portions of the western and southern property lines."

- "54. The Quarry operator shall utilize polyurethane or rubber screens or proximate berms or buffers in accordance with the DSA report in order to mitigate the noise impacts associated with operation of crushing and screening equipment when it is located in Crusher Operating Area #1; this requirement ends when the crushing and screening equipment is relocated to Crusher Operating Area #2. Both Crusher Operating areas are depicted on Figure #3 of the DSA report.

- "55. The Quarry operator is not required to monitor or mitigate noise impacts to any off-site dwelling or property in the event the owner of the off-site dwelling or property grants the Quarry operator a written and recorded noise easement allowing unmonitored and unmitigated noise impacts from the Quarry on the property and/or at the dwelling."

Because DSA has determined that these measures will ensure conformance with the applicable DEQ standard, the Board finds that these measures will, by definition, minimize noise conflicts from the mine for purposes of OAR 660-023-0180. Accordingly, the Board adopts them as conditions of approval for the Project.

ii. Dust:

IDENTIFICATION OF CONFLICTS:

The Board finds that there will be potential dust conflicts associated with the Project, at least when mining operations are occurring above the water-bearing zones. As support for this conclusion, the Board relies upon the analysis of projected dust impacts of the mine prepared by the Applicant's air quality expert, Brian Patterson, Ph.D. of Golder Associates ("Golder"). *See* Appendix I of the Applications.

The Board finds that Dr. Patterson's testimony is particularly compelling because it is based upon his experience and expertise in evaluating the air quality impacts of other, more intensive mining operations and his knowledge of DEQ's air quality standards set forth in OAR chapter 340 division 208.

MEASURES TO MINIMIZE CONFLICTS:

The Board further finds that these conflicts are minimized to a level that is not significant through compliance with the following reasonable and practicable measures, which the Board imposes as conditions of approval on the Project:

- "70. The main facility access road shall include a gravel surface consisting of crushed rock with nominal sizing of at least one inch maximum dimension within 300 feet of any public road.

- "71. The main facility access road shall be watered to prevent the generation of dust within 300 feet of any public road.

- "72. The operator shall maintain a truck wheel wash system for product trucks exiting the access road to the public road to reduce soil track-out onto the public road.

- "73. Onsite surfaces travelled by off-road or on-road mobile sources shall be watered whenever significant visible dust emissions (opacity approaching 20%) are observed behind or beside a moving vehicle.

- "74. Water sprayers shall be used to control dust emissions from crushers and screens operating onsite."

As support for this conclusion, the Board relies upon Dr. Patterson's testimony that implementing the following mitigation measures on the site would ensure that fugitive dust levels would conform with DEQ standards. *See* Appendix I of the Applications. The Board finds that, because Dr. Patterson concluded that these measures would ensure conformance with DEQ standards, these measures will, by definition, minimize dust conflicts from the mine for purposes of OAR 660-023-0180. Although some opposition testimony expressed concerns about dust, the Board finds that it did not undermine the evidence presented by Dr. Patterson.

Based upon the evidence cited above, the Board finds it necessary to impose the above five conditions on its approval of the Project to ensure conformance with applicable DEQ dust standards and to minimize dust conflicts associated with the Project.

iii. Other Discharges:

The Board finds that other potential discharges at the site include: (1) diesel engine emissions from onsite mobile equipment and vehicle travel; (2) combustion byproduct emissions from use of explosives during blasting operations; and (3) stormwater.

Diesel Engine Emissions:

IDENTIFICATION OF CONFLICTS:

The Board finds that there will be potential conflicts with allowed uses in the Impact Area resulting from the use of mining equipment and vehicles that generate diesel engine exhaust, which contains pollutants such as nitrogen oxides, carbon monoxide, sulfur dioxide, and particulate matter. As support for its conclusion, the Board relies upon the Golder report. *See* Appendix I of the Applications.

MEASURES TO MINIMIZE CONFLICTS:

The Board further finds that these conflicts are minimized to a level that is not significant through compliance with the following reasonable and practicable measures, which the Board imposes as conditions of approval on the Project:

- "45. The Quarry Operator shall comply with OAR 340-200 through 340-246 requirements.

- "46. The Quarry Operator shall comply with 40 CFR Part 60 Subpart OOOO requirements."

- "52. The majority (51% or more in terms of total fleet horsepower) of diesel engines powering off-road equipment shall meet federal Tier 2 off-road engine standards or better. This requirement can be met by using equipment with engines originally built to meet these standards or through retrofit to reduce emissions to these levels.

- "53. Onsite idle times for heavy heavy-duty diesel truck engines will be limited to no more than five minutes per trip."

As support for this conclusion, the Board relies upon Dr. Patterson's testimony that implementing these measures would ensure that diesel emission levels would conform with DEQ and EPA standards. *See* Appendix I of the Applications. The Board finds that, because Dr. Patterson concluded that these measures would ensure conformance with applicable DEQ and EPA standards, these measures will, by definition, minimize diesel emission conflicts from the mine for purposes of OAR 660-023-0180. The Board finds that Dr. Patterson's testimony was unrebutted.

Based upon the evidence cited above, the Board finds it necessary to impose the above four conditions on its approval of the Project to ensure conformance with applicable DEQ and EPA air quality standards and to minimize conflicts resulting from diesel exhaust associated with the Project.

Combustion Byproduct Emissions:

IDENTIFICATION OF CONFLICTS:

The Board finds that there will be no potential conflicts associated with combustion byproducts (including criteria pollutants such as nitrogen oxides, carbon monoxide, and particulate matter) resulting from explosives used in blasting at the Project. As support for this conclusion, the Board relies upon the Golder report, which analyzed the release of these combustion byproducts and determined that they would not create conflicts with residential uses in the Impact Area because these emissions are very short-lived. *See* Appendix I of the Applications. The Board also relies on the fact that there was no rebuttal testimony.

MEASURES TO MINIMIZE CONFLICTS:

Because there are no identified conflicts associated with combustion byproduct emissions, the Board finds that it is not required to identify or adopt measures that would minimize such conflicts.

Water:

IDENTIFICATION OF CONFLICTS:

The Board finds that there will be no potential conflicts with approved uses in the Impact Area due to stormwater discharges. As support for this conclusion, the Board relies upon two sources. First, as to stormwater, the Board relies upon testimony from the Project civil engineer, Westlake. *See* Offsite Stormwater Analysis dated April 20, 2013 at Appendix D of the Applications. As explained in Westlake's report, Applicant will develop and implement a stormwater control plan in accordance with the Best Management Practices in the Water Environment Services Erosion Prevention and Settlement Control Planning and Design Manual dated December 2008. *Id.* Further, Westlake explained that the Applicant has designed the Project such that there will be no offsite stormwater point discharge from the Property. *Id.* In short, there will be no stormwater flowing from the Property to offsite locations.

The Board finds that there will be potential conflicts with approved uses in the Impact Area due to the Project's use of replenishment water to the offsite portions of Wetlands B and C.

The Board further finds that there will be potential conflicts with approved uses in the Impact Area in the event Applicant attempts to counteract groundwater dewatering by use of re-injection measures.

MEASURES TO MINIMIZE CONFLICTS:

Because there are no identified conflicts associated with offsite stormwater discharges, the Board finds that it is not required to identify measures that would minimize such conflicts.

The Board finds that the potential conflict associated with using replenishment water is minimized to a level that is insignificant for the reasons set forth in these Findings in response to OAR 660-023-0180(5)(b)(D) pertaining to replenishment water and the retained wetlands, and subject to imposing Conditions 59-64. These reasons and conditions are incorporated herein by reference.

The Board finds that the potential conflict associated with the use of re-injection measures to counteract groundwater dewatering is minimized to a level that is insignificant for the reasons set forth in these Findings in response to CCZDO 708.05.H pertaining to groundwater quality and quantity, and subject to imposing Conditions 45-

51, including Condition 49a. These reasons and conditions are incorporated herein by reference.

(B) Potential conflicts to local roads used for access and egress to the mining site within one mile of the entrance to the mining site unless a greater distance is necessary in order to include the intersection with the nearest arterial identified in the local transportation plan. Conflicts shall be determined based on clear and objective standards regarding sight distances, road capacity, cross section elements, horizontal and vertical alignment, and similar items in the transportation plan and implementing ordinances. Such standards for trucks associated with the mining operation shall be equivalent to standards for other trucks of equivalent size, weight, and capacity that haul other materials;

IDENTIFICATION OF CONFLICTS:

The Board makes the following findings as to each potential conflict to local roads used for access and egress to the mining site within one mile of the entrance to the mining site:

- Sight Distance: There are existing trees, shrubs, roadside embankment slopes, and other obstructions along SW Tonquin Road and SW Morgan Road that are located within the recommended intersection sight triangles at both the SW Tonquin Road/SW Morgan Road intersection and the proposed site access driveway on SW Morgan Road. This may create a potential conflict to local roads.

- Access Spacing: The proposed site access driveway on SW Morgan Road is located approximately 415 feet south of the SW Tonquin Road/SW Morgan Road intersection and thus exceeds both County and Washington County minimum spacing standards for a full-access driveway.

- Road Capacity: The SW Tonquin Road/SW Morgan Road intersection and the proposed site access driveway on SW Morgan Road are forecast to operate within acceptable performance standards established by Washington County (V/C ratio of 0.90 or less) and the County (LOS D or better), respectively, during the AM and PM peak hours in both 2015 and 2035, with the proposed mine operation. No road capacity improvements are required as a result of the proposed development.

- Cross Section Elements: SW Tonquin Road has a two-lane cross-section with a pavement width of approximately 24 feet, which is adequate to accommodate traffic generated by the mine. As needed, the roadway will be widened to accommodate a new westbound left-turn lane. SW Morgan Road does not currently meet the County's cross-section standards for the applicable road classification.

- Horizontal and Vertical Alignment: The horizontal alignment of the affected segment of SW Morgan Road is appropriate. Although the horizontal alignment of SW Tonquin Road is generally acceptable, Washington County is proposing an improvement project that will substantially realign this segment of the roadway to increase the radii of a couple of curves along SW Tonquin Road and improve horizontal alignment in these locations. Washington County's project is funded and scheduled for construction in spring 2015. Vertical alignments of both SW Tonquin and SW Morgan Roads are adequate.

- Truck Turning: The existing pavement width within the SW Tonquin Road/SW Morgan Road intersection is adequate to safely accommodate the turning movements of trucks that will serve the mine; however, the lack of pavement markings to provide defined lane lines, stop bars, and pavement arrows could create a safety conflict.

- Westbound Left Turn Lane: After modeling existing conditions, KAI determined that the SW Tonquin Road/SW Morgan Road intersection currently meets the threshold for a westbound left-turn lane on SW Tonquin Road. Although the turn lane is not required for capacity or operational reasons, the lack of a separate turn lane in this location could create a safety conflict.

As support for these conclusions, the Board relies upon the testimony of the Applicant's traffic engineer, Kittelson & Associates, Inc. ("KAI"), who completed an analysis of existing conditions, projected transportation impacts of the proposed mine, and compliance with applicable standards. *See* TIA in Appendix H of the Applications. In the TIA, KAI reached each of the conclusions adopted by the Board as findings above.

In sum, the Board finds that there will be potential conflicts to local roads associated with the Project due to: (1) inadequate sight distance at both the SW Tonquin Road/SW Morgan Road intersection and the proposed site access driveway on SW Morgan Road; (2) potential safety conflicts at the SW Tonquin Road/SW Morgan Road intersection due to the lack of pavement markings to provide defined lane lines, stop bars, and pavement arrows; and (3) potential safety conflicts on SW Tonquin Road due to the lack of a separate westbound left-turn lane.

MEASURES TO MINIMIZE CONFLICTS:

The Board further finds that reasonable and practicable measures will minimize these conflicts. Specifically, KAI concluded that implementing the following mitigation measures on the site would minimize these potential conflicts to local roads for purposes of OAR 660-023-0180:

- Prior to mine operation, adding pavement markings on SW Morgan Road at the approach to the SW Tonquin Road intersection to provide defined lane lines, stop bars, and pavement arrows.

- Clearing and/or modifying existing trees, shrubs, roadside embankment slopes, and other obstructions along both SW Tonquin Road and SW Morgan Road within the areas shown on Figures 13 and 14 of the TIA to provide the required sight distances consistent with County standards.

- Adding a westbound left-turn lane at the SW Tonquin Road/SW Morgan Road intersection as a potential safety enhancement, with Applicant only required to pay its proportionate share for the improvement, consistent with the recommendation of Washington County staff.

Although Ms. Madden contends that Applicant has not demonstrated that it is feasible to comply with the condition relating to clearing vegetation and other obstructions because some of the vegetation and obstructions are located on properties owned by third parties, the Board denies this contention. In fact, the Applicant responded to this contention by submitting an executed, recorded Right of Entry for Clearing Purposes that allows Applicant to enter the third party's property to complete the clearing. *See* Exhibit 115. The Board finds that this evidence demonstrates that compliance with sight distance standards is feasible.

Further, although several opponents express concern about the Project generating increased traffic (particularly truck traffic), the Board finds that this testimony was generalized and speculative in nature. It was not presented by an expert, and it did not reasonably call into question the conclusions reached by KAI. Therefore, the Board finds that a reasonable person would rely upon KAI's testimony to conclude that, subject to the above-referenced conditions, the Project will minimize all potential impacts to local roads used for access and egress to the mining site within one mile of the site entrance. The Board further finds that County staff and Washington County staff have proposed conditions of approval. See Staff Report at pages 88-92 (Conditions 21-44). The Board finds that these proposed conditions incorporate KAI's proposed conditions and are reasonable, practicable, and will minimize any traffic conflicts with local roads. Accordingly, the Board imposes these measures as conditions of approval on the Project.

(C) Safety conflicts with existing public airports due to bird attractants, i.e., open water impoundments as specified under OAR chapter 660, division 013;

IDENTIFICATION OF CONFLICTS:

As specified in OAR chapter 660, division 013, and ORS 836.623, the County is only permitted to regulate water impoundments when they are located within 10,000 feet of a runway outside of an approach corridor and within 40,000 feet of a runway within an approach corridor for an airport with an instrument approach ("Regulatory Zone"). The Property is not located within the Regulatory Zone of any public airports. Thus, the Board finds that the proposed mining use will not cause any safety conflicts with any existing public airports.

MEASURES TO MINIMIZE CONFLICTS:

Because there are no identified safety conflicts with existing public airports, the Board finds that it is not required to identify measures that would minimize such conflicts.

(D) Conflicts with Goal 5 resources within the impact area that are shown on an acknowledged list of significant resources and for which the requirements of Goal 5 have been completed at the time the PAPA is initiated;

IDENTIFICATION OF CONFLICTS:

The Board makes the following findings as to the existence of conflicts with inventoried Goal 5 resources:

- Metro Regional Resources: No conflicts because: (1) there are no such inventoried resources within this area of the County; and (2) such inventoried resources in Washington County are redundant with other inventoried resources that would not be subject to significant conflicts.

- Riparian Corridors: No conflicts because Project would avoid any intrusion into inventoried riparian corridors and would preserve a 100-foot setback to the adjacent Rock Creek Corridor. Further, the Project would not cause dewatering of the Rock Creek Corridor because it is sustained by precipitation, upgradient runoff, and low permeable soils that perch water.

- Federal Wild and Scenic Rivers: No conflicts because no inventoried resources within 20 miles of the Property.

- Oregon Scenic Waterways: No conflicts because no inventoried resources within 10 miles of the Property.

- Oregon Recreation Trails: No conflicts because no inventoried resources located within the Impact Area.

- Natural Areas: No conflicts because no inventoried Natural Areas within the County and because Project would not remove or interfere with the use of Washington County's inventoried Natural Area (Tonquin Scablands).

- Wilderness Areas and Open Space: No conflicts because no inventoried Wilderness Areas within 20 miles and no inventoried Open Space within 1 mile of the Property.

- Scenic Views and Sites: No conflicts with County-inventoried viewpoints on Parrett Mountain because the Project will be indistinguishable from neighboring lands to the north, south, and west due to the distance from the viewpoints and the preservation of the rocky knoll on the west side of the Property. No conflicts

with Washington County-inventoried scenic features because they are located outside the Impact Area and the Project would not interfere with views of these features.

- Wetlands: Conflict with 1.78 acres of on-site wetlands that will be removed and/or filled to allow for mining. Potential conflicts with avoided portions of Wetlands B and C due to their dependence upon upgradient contributing watershed that Project would remove.

- Wildlife Habitat: No conflicts in the County because no inventoried wildlife habitat resources. Potential conflicts with Washington County-inventoried resources due to noise and vibration disturbances, which would redirect wildlife movement around the Property.

As support for these conclusions, the Board relies upon the analysis of the scientists at TSI, who conducted an analysis of potential conflicts between the Project and inventoried Goal 5 resources. *See* "Goal 5 and Natural Resource Assessment Report for the Proposed Tonquin Quarry Project," by TSI dated April 2013 at Appendix E of the Applications. In that report, TSI reached each of the conclusions adopted by the Board as findings above. *Id.* The Board finds TSI's testimony to be particularly credible due to the site-specific nature of TSI's observations, TSI's knowledge of the Project, TSI's scientific training, and TSI's experience conducting natural resource assessments. *See* TSI Resumes at Appendix N of the Applications.

Further, the Board finds that opponents' contentions to the contrary do not undermine TSI's testimony. The Board adopts specific findings as to each of these contentions below.

REPLENISHMENT OF OFFSITE WETLAND HYDROLOGY

Although Ms. Madden, Mr. Leyda, and others contend that Applicant's proposal to replenish hydrology to the retained portions of Wetlands B and C is not feasible and thus, there is a significant conflict between the Project and those retained wetlands, the Board denies this contention. The Board finds that Applicant's proposed wetland replenishment system is both technically feasible and will mitigate adverse impacts to wetland hydrology caused by removing portions of Wetlands B and C. As support for this conclusion, the Board relies upon testimony from Applicant's civil engineer and Applicant's natural resources scientists. First, Applicant's civil engineer, Westlake, submitted a detailed description and depiction of the proposed infiltration system, together with calculations of the amount of basin that was impacted and the amount of replenishment water that would need to be provided. *See* Westlake Memorandum re: "Wetland stormwater replenishment" dated September 24, 2013 (Exhibit 65f). Westlake's memorandum further explains that providing clean water to wetlands is a common practice and subject to stringent requirements from federal, state, and local agencies. *Id.* Bernard Smith, Project civil engineer, also stated that he had obtained 25 such permits. *Id.* In reaching its conclusion that the system is feasible, the Board also

relies upon testimony from Applicant's natural resource scientists, TSI, which explained how the system would mimic existing conditions by delivering subsurface water and would not result in untoward impacts to the retained wetlands. *See* TSI Letters dated October 29, 2013 (Exhibit 98) and November 8, 2013 (Exhibit 141). The Board also relies upon Applicant's proposal to install a clay barrier between the excavation area and the buffer for the preserved wetland in order to prohibit water intrusion from the wetlands "backflowing" into the excavation boundary, which TSI has opined will be effective for this purpose. *See* TSI Letter dated November 4, 2013 (Exhibit 119). The Board finds the testimony from TSI and Westlake to be compelling both in its detail and in its site-specific nature. Finally, the Board relies upon Conditions 59-64, including 62a, to ensure that Applicant will appropriately replenish offsite wetland hydrology.

Further, the Board finds that opponents failed to undermine the testimony presented by Westlake and TSI regarding the wetland replenishment system. Although Mr. Leyda, the Refuge, and ODFW all contend that the proposed replenishment system would not adequately mimic natural recharge because there has been inadequate modeling and because the system will not account for variations in rainfall intensity, the Board finds that the opponents are mistaken. The Board finds that Westlake utilized an appropriate hydrology model that calculated both the amount of each wetland basin that was lost by wetland removal and the average amount of precipitation during the local rainy season to predict the expected water necessary to sustain the subject wetlands. *See* Westlake Memorandum re: "Wetland stormwater replenishment" dated September 24, 2013 (Exhibit 65f). Based upon its modeling, Westlake concluded that the Project would need to pump 0.1 cfs water on a continuous basis from November to May to provide the water volume lost by removing the watershed upgradient of the impacted Wetlands B and C. *Id.* No one specifically challenged Westlake's methodology. In denying the opponents' contention on this issue, the Board also relies upon the following testimony from TSI explaining how the infiltration system emulates existing conditions:

> "This approach provides a consistent subsurface base flow that replenishes the avoided and offsite wetlands. This type of infiltration system mimics the way these wetlands are naturally sustained - water is delivered via subsurface flow, because pre-quarry conditions do not have measurable amounts of runoff. Thus, the offsite wetlands would continue to have water levels that naturally rise and fall in response to periods of unusually high or low rainfall, because they would still receive water inputs in the form of direct rainfall and subsurface recharge from adjacent, offsite slopes. And as an added precaution, a network of shallow observation tubes would be established along the fringes of each avoided wetland to provide regular feedback on the water levels (fluctuations, duration, etc.) to inform the quarry operator if any adjustments are needed to properly sustain the wetlands."

See TSI Letter dated October 29, 2013 at 6 (Exhibit 98). Based upon the testimony from Westlake and TSI, the Board finds that Applicant has refuted opponents'

contention that Applicant has not completed adequate modeling and has not accounted for variations in rainfall in developing the wetland replenishment system.

Although Mr. Leyda further contends that the proposed wetland infiltration system will deliver impaired water to the remaining portions of Wetlands B and C, potentially causing scouring of wetlands, allowing sediment to enter wetlands, and/or creating increased turbidity, the Board denies this contention because Applicant's proposed infiltration system will be similar to pre-mining conditions where precipitation infiltrates the ground, then moves vertically to a naturally confining layer (claypan, bedrock), then flows subsurface toward each wetland. As support for this conclusion, the Board relies upon testimony from TSI explaining that the replenishment system functions in this manner. *Id.* The Board also relies upon TSI's expert opinion that the replenishment water would be substantially cleaner than urban stormwater and that there would no opportunity for scouring, sediments, or turbidity because the water would be delivered subsurface. *Id.* The Board finds that, although Mr. Leyda submitted supplemental testimony after this TSI Letter, Mr. Leyda's supplemental testimony did not offer any surrebuttal on the water quality issue. *See* Leyda Letter dated November 8, 2013 (Exhibit 134). Further, the Board finds that Mr. Leyda's initial testimony on the water quality issue was general in nature and grounded in literature, not a specific examination of the proposed system in context. *See* Leyda Letter dated September 23, 2013 (Exhibit 57). Accordingly, the Board finds that TSI's detailed and site-specific testimony is more reliable on this issue.

On similar grounds, the Board denies contentions by Mr. Leyda and Ms. Madden that the replenishment system will result in an increase in invasive weeds or changed plant diversity. TSI testified that one advantage of the system was its ability to trap invasive weed seeds and prevent them from flowing into the retained wetlands. *See* TSI Letter dated November 8, 2013 (Exhibit 141).

Although Mr. Jenkins contends that the wetland replenishment system is also defective because it does not replace groundwater flow to the retained wetlands, the Board finds that there is considerable testimony in the record from Applicant and the Refuge that the wetlands are primarily fed by precipitation, not groundwater. *See* Holmes Letter dated September 23, 2013 (Exhibit 57); TSI Letter dated October 29, 2013 (Exhibit 98); and Shannon & Wilson Letter dated November 8, 2013 (Exhibit 140). The Board finds this testimony more reliable than Mr. Jenkins' testimony for two reasons. First, the Board finds that the testimony that the wetlands are fed by precipitation was made by three independent parties, one of whom is opposed to the Project. Second, the Board finds that Shannon & Wilson has not simply asserted this point but has explained why Mr. Jenkins is incorrect: Topographic maps indicate that the wetlands are surficial ponds in closed basins atop the basalt. *See* Shannon & Wilson Revised Hydrogeologic Report (Exhibit 92). As such, the Board finds that these wetlands are isolated from and not connected with water-bearing zones that are connected to regional groundwater supplies. *Id.* Mr. Jenkins made a subsequent written submittal into the record in which he restated his point; however, he did not offer any additional response to Shannon & Wilson's point regarding water elevations. *See* Jenkins Letter dated November 8, 2013

(Exhibit 134). As such, the Board finds that Mr. Jenkins did not adequately rebut Shannon & Wilson's testimony. Therefore, the Board denies Mr. Jenkins' contention on this issue.

Further, although Mr. Jenkins contends that Applicant has not demonstrated that the proposed clay barrier component of the replenishment system is feasible because Applicant has not provided any design or analysis to support the concept, the Board finds that Mr. Jenkins is incorrect. In fact, Applicant has provided a detailed drawing of the proposed clay barrier. *See* Westlake Exhibit attached to TSI Letter dated November 4, 2013 (Exhibit 119). That letter also includes a detailed description of the purpose and composition of the clay barrier, as well as TSI's opinion that the clay barrier will be effective:

> "Although both wetlands [B and C] naturally slope away from the excavated quarry, the clay barrier would serve to prevent wetland water from seeping toward the pit * * * The barrier, shown on the attached figure from Westlake Consultants, would be constructed by excavating a 3- to 4-foot wide trench to the depth of the underlying bedrock or an existing clay layer atop of the bedrock. The trench would be backfilled with a 15 percent bentonite clay/85 percent soil mixture, or other water barrier system. The barrier would rise at least 6 inches above the elevation of the adjacent wetland, then it would be capped with either road construction materials or topsoil. When complete, the barrier would prevent both replenishment water and wetland water from 'backflowing' toward the quarry area."

Id. at 1. Based upon this evidence, the Board finds that Mr. Jenkins' contention misconstrues the record. Therefore, the Board denies Mr. Jenkins' contention.

Although Mr. Jenkins and Mr. Leyda contend that there is no evidence that the replenishment system will remain in place and effective through and after site reclamation, the Board finds that Mr. Jenkins is incorrect. The Board finds that Applicant has proposed to rebuild the contributing watershed to the avoided portions of Wetlands B and C once mining is complete in order "to provide a permanent water source for the wetlands in perpetuity." *See* TSI Letter dated October 29, 2013 at 1-2 (Exhibit 98). The Board has relied upon the Applicant's representations to that effect in making its finding. The Board's approval of the Applications necessarily requires compliance with all representations made by Applicant in this proceeding. *See Perry v. Yamhill County*, 26 Or LUBA 73, 87-88, *aff'd* 125 Or App 588, 865 P2d 1344 (1993). Further, the Board finds that the language of the applicable conditions quoted below (Conditions 59, 60, and 61) does not limit the duration of Applicant's obligation to provide replenishment water. As a result, it is reasonable to conclude that the obligation extends through reclamation. Therefore, the Board does not find Mr. Jenkins' and Mr. Leyda's contentions on this issue persuasive.

Finally, although opponents contend that the adverse effects to the retained wetlands will include ancillary adverse effects to habitat or wildlife, the Board denies these contentions because, based upon the substantial evidence cited above, there will be no adverse impacts to offsite wetland hydrology and thus, no ancillary adverse effects to habitat or wildlife.

IMPACTS TO ROCK CREEK

Although Ms. Madden, Mr. Jenkins, and Mr. Leyda contend that development of the Project will constitute a significant conflict with the Rock Creek riparian corridor, the Board denies this contention for three reasons. First, Applicant will retain the required 70-foot buffer along Rock Creek. *See* TSI Goal 5 report set forth at Appendix E of the Applications. Second, the Board finds that Rock Creek is primarily fed by runoff and groundwater flow from the east by northeastern flank of Parrett Mountain. *See* TSI Letter dated November 8, 2013 (Exhibit 141). By contrast, the Property and its vicinity primarily drain to the east toward Coffee Lake Creek. *Id.* The Board finds that only approximately 15 acres of the Property drains to Rock Creek, and only 10.7 of those acres would be excavated by the Project, which is a very small percentage of the total Rock Creek watershed. *Id.*

Third, the Board finds that the Project will not dewater Rock Creek. As support for this conclusion, the Board relies upon expert testimony from the Project hydrogeologist that Project impacts to Water-Bearing Zones #2 and #3 will not impact Rock Creek or its associated Wetland D because these Water-Bearing Zones are not connected with Rock Creek or Wetland D due to differences in elevation. *See* Shannon & Wilson Rebuttal Memorandum dated November 4, 2013 (Exhibit 118). Although Mr. Leyda contends that the loss of portions of Wetlands B and C will adversely affect Rock Creek because these wetlands are hydraulically connected with the creek, the Board finds that no significant relationship exists between these wetlands and Rock Creek. As support for its conclusion, the Board relies upon testimony from Shannon & Wilson that Wetlands B and C are not hydraulically linked to Rock Creek because they are located at different elevations:

> "This one location extends across the elevation boundary for Rock Creek (about +150 feet msl) and has been identified as Wetland D. This one location represents the only identified wetland that is directly associated with the Rock Creek wetlands complex due to its matching elevation and association with the scour channel fill. Otherwise, in our opinion, no wetlands associated with Rock Creek or Coffee Lake Creek/Seely Ditch have a significant hydrogeologic relationship with, nor the potential for adverse impacts associated with the Tonquin Holdings LLC quarry proposal."

See Shannon & Wilson Revised Hydrogeologic Evaluation at 32 (Exhibit 92) and Shannon & Wilson Rebuttal Memorandum dated November 4, 2013 (Exhibit 118). The Board finds that although opponents reiterated their contention in later submittals, they

did not offer any meaningful rebuttal of the points made by Shannon & Wilson. Therefore, the Board denies the opponents' contentions on this issue.

WILDLIFE CORRIDOR

Although opponents contend that the Project will create a significant, unminimized conflict by disrupting a wildlife corridor, the Board denies this contention for three reasons. First, the Board finds that this subsection is concerned with conflicts with Goal 5 inventoried resources, and neither the County nor Washington County has designated an area-wide wildlife corridor as an inventoried resource. For this reason alone, the Board finds that there is no merit to the opponents' contention.

Second, the Board finds that the Project does not create a conflict with Washington County-designated habitat due to disruption of a wildlife corridor. As support for this conclusion, the Board relies upon the testimony of scientist Phil Scoles, who concluded that development of the quarry "would not create a constriction [in the wildlife corridor] that adversely affects wildlife." *See* TSI Letter dated October 29, 2013 (Exhibit 98). Mr. Scoles reached his conclusion after examining the entire context of the corridor, which begins well north of the Property near the Tualatin River and then continues south to the Willamette River. *See* map attached to TSI Letter dated October 29, 2013 (Exhibit 98). As the map depicts, the corridor varies in width from approximately 3100 feet in width to as few as 75 feet in width. *Id.* Mr. Scoles calculated that, even with development of the quarry, the corridor would be approximately 1600 feet wide, much larger than other areas of constriction, and still sufficient to allow animals to feed, pair, and nest, in part due to the additional buffers installed around the mining area. *Id.* The Board finds that Ms. Madden and Mr. Leyda did not present an alternative map depicting wildlife movement in the area that contradicted Mr. Scoles' testimony. For that matter, Mr. Leyda did not directly rebut Mr. Scoles' October 29, 2013 testimony regarding the wildlife corridor at all.

Third, and in the alternative, the Board finds that the Project will create a significant conflict with Washington County designated habitat resources, but the conflict is minimized for the reasons explained below under the heading "Measures to Minimize Conflicts."

NOISE IMPACTS TO WILDLIFE

Although opponents contend that noise generated by the Project will create a significant conflict with the Refuge and off-site habitat areas, the Board denies this contention for the reasons explained below.

First, although Mr. Leyda and Ms. Madden contend that Applicant erred in relying upon median noise levels and human-weighted units (dBA) rather than considering impacts from loud noises that are short in duration, the Board denies this contention for two reasons. First, the Board finds that the study relied upon by Mr. Leyda (Francis and Barber, 2013) gave very little information about the noise levels that were studied. See

DSA Memorandum dated November 8, 2013 (Exhibit 98). As such, the Board finds that this study is of little value for the assertion offered by Mr. Leyda. Second, the Board finds that the opponents' contention is misplaced because the types of noises typically generated by the Project will be more in the nature of steady sounds that last for a longer period of time rather than the short, sudden noises opponents are concerned about. *Id.* Therefore, the Board finds that there is little value in attempting to model such short, sudden noises and no identified basis to mitigate for same.

Additionally, although Mr. Leyda and Ms. Madden contend that a portion of the Refuge is located within the "noise compliance boundary" in DSA's report, indicating that noise levels within that boundary may exceed DEQ levels, the Board finds that this fact does not support the opponents' position for four reasons. First, the Board finds that, once the noise conflict minimization measures outlined in these Supplemental Findings in response to OAR 660-023-0180(5)(b)(A) are implemented, the noise compliance boundary extends only a few feet onto the Refuge. *See* Figure #8 of DSA Revised Noise Study (Exhibit 65c). As such, the vast majority of the Refuge is unaffected.

Second, the Board finds that no particular noise compliance standards are applicable to the Refuge or to wildlife in general because neither is a "noise sensitive use" under the DEQ standards or a "noise sensitive unit" under the County's noise ordinance (County Code 6.05.020). As support for this conclusion, the Board relies upon the analysis of the applicable DEQ and County definitions made by DSA. *See* DSA Memorandum dated November 8, 2013 (Exhibit 142). Opponents did not present evidence that either of these provisions would be applicable. Additionally, opponents did not identify any other authority that might establish noise standards that are applicable to the Refuge or to wildlife in general and yet would be violated by the Project.

Third, the Board finds that DSA drew the boundary in a very conservative location because it is the L50 standard, or the location where the noise level would be exceeded 50% of the time over the course of an hour. *Id.* In other words, the Board finds that Project noise will not typically reach these levels for this extended a period of time.

Finally, the Board finds that DSA's ambient noise measurements at the Refuge in existing conditions were as high as 52dBA, only 3 dBA below the DEQ standard, if it applied. *Id.* This measurement indicates that the Refuge is already experiencing quite noisy conditions. For these reasons, the Board denies the opponents' contention regarding the DEQ noise compliance boundary.

Further, although Mr. Leyda, Ms. Madden, and Ms. Holmes contend that even though the area is already noisy, development of the Project may nevertheless cause adverse effects to wildlife, including limiting foraging, pairing success, or number of offspring, the Board denies this contention because it is not supported by substantial evidence in the whole record. Instead, the Board adopts and relies upon the testimony of TSI, who concluded that the Project would have no such ill effects:

> "According to the project acoustical engineer (Daly-Standlee & Associates, April 2013), the proposed sound mitigations employed by the Tonquin quarry would not increase ambient noise. The wildlife utilizing the Tonquin quarry site and adjacent lands are defacto [sic] evidence that these species are acclimated to these regular and frequent noises. This is consistent with a Corps of Engineers study on an endangered woodpecker near Savannah, GA that found that nearby artillery blasts at a military installation did not affect the nesting success or productivity of that species. [Footnote omitted.] Similarly, a U.S. Forest Service technical paper in 1998 reported that logging truck noise did not evoke any response of northern goshawks. [Footnote omitted.] Based upon this research, quarry related noise would not significantly change existing conditions and associated effects on wildlife, nor their behavior that facilitates plant propagation."

TSI Letter dated October 29, 2013 at 5 (Exhibit 98). The Board finds this testimony compelling because it considers existing conditions, how those conditions will be affected by development of the Project, and then offers an expert prediction based upon case studies. Although opponents cite general studies to the contrary, the Board finds the opponents' testimony less reliable because it does not apply those studies in context the way TSI has. Therefore, the Board denies the opponents' contentions on this issue.

UNLAWFUL "TAKE" OF WILDLIFE

Although Ms. Madden and Mr. Leyda contend that development of the Project will result in an unlawful "take" of red-legged frog and Western pond turtles, the Board denies this contention for three reasons. First, the Board finds that OAR 635-044-0130(1)—which prohibits the "take" of any protected wildlife—is not an approval criterion applicable to the Applications because no provision of law (the "take" rule, the Goal 5 rule, statute, local code, or case law) states as much. Second, and likewise, the Board finds that the County lacks the authority to enforce "take" rules in this context because, again, no provision of law grants this authority. On these two points, the Board finds it notable that although a representative of the Oregon Department of Fish and Wildlife—the agency that adopted and administers the "take" rule—testified in opposition to the Applications, she did not assert that the Project would cause a "take" of any wildlife.

Third, the Board finds that, even if the "take" rule applied, a reasonable person would not conclude, based upon the evidence in the whole record, that development of the Project would actually result in a "take." In fact, as noted by TSI, the Property does not contain any habitat likely utilized by Western pond turtles. *See* TSI Letter dated November 4, 2013 (Exhibit 119). *See also* Letter from Oregon Department of Fish and Wildlife dated September 16, 2013 (Exhibit 32) (noting the existence of turtle habitat off-site but not noting any on-site). Although Mr. Leyda disputed this contention, the Board denies Mr. Leyda's contention because, unlike TSI, Mr. Leyda has not conducted an on-site survey of the Property. Further, although Mr. Leyda noted that other Western pond

turtles have been observed in the vicinity, none of the observations occurred on the Property, and at least one sighting was to the south of the Property, where TSI agreed that turtle habitat existed. *Id.*

Furthermore, although the Property contains assumed red-legged frog habitat, the Board finds that it is unlikely that clearing/mining will cause a "take" of any of these frogs for two reasons. *Id.* First, the Board finds that Applicant has agreed not to initiate wetland impacts when there is standing water in the wetlands, thus avoiding impacts to frogs in their most vulnerable egg and tadpole stages (when they are still in water). *Id.* Second, Applicant's proposed plan to clear in swaths that progressively approach the outer edge of wetlands will provide sufficient warning to frogs to allow them to relocate away from the Property. *Id.* Although Mr. Leyda submitted a supplemental response to this TSI letter, Mr. Leyda's response did not address TSI's contentions regarding the red-legged frog in any new or different way. *See* Leyda Letter dated November 8, 2013 (Exhibit 135). Therefore, the Board finds that opponents have not undermined TSI's testimony that the Project will not result in a "take" of any wildlife.

GEOLOGIC FEATURES

Although several opponents expressed concern about impacts to the Tonquin Scablands geologic features, the Board denies these contentions for two reasons. First, the County has not designated that portion of the Tonquin Scablands within the County as an inventoried Goal 5 resource. Therefore, impacts to these features are not relevant to the conflicts analysis under this subsection of the rule. Second, although Washington County has designated a portion of the Tonquin Scablands as an inventoried Goal 5 resource, the Board finds that the Project will not create a conflict with this resource because the Project will not remove or interfere with use of the Tonquin Scablands in Washington County. As support for this conclusion, the Board relies upon the expert testimony of TSI. *See* "Goal 5 Natural Resource Assessment Report for the Proposed Tonquin Quarry Project" prepared by TSI in Appendix E of the Applications. Opponents have not presented evidence to undermine this testimony. Therefore, the Board finds there is no basis to grant the opponents' contention on this issue.

INVENTORY OF THREATENED AND ENDANGERED SPECIES

Although the Oregon Department of Fish and Wildlife ("ODFW") contended that additional habitat analyses are necessary before the Project can be approved, the Board finds that there is no basis under the applicable approval criteria to require additional habitat analyses on lands that are not Goal 5 inventoried resources. Therefore, the Board denies ODFW's contention.

The Board further finds that, in conjunction with completing its Goal 5 resources analysis, TSI completed a comprehensive assessment of the Property for a variety of threatened and endangered species, including those listed by the County, state agencies, federal agencies, and the Refuge as occurring within two miles of the

Property. *Id.* As reported by TSI, the Property does not appear to support any of these species. *Id.* The Board finds the opponents' statements suggesting the possibility that other species could be present to be speculative. Further, the Board finds that TSI's sensitive species assessment methodology, which included review of literature, interviews with other biologists, and multiple site visits, was reasonable. *Id.* Although ODFW contends that TSI's species assessment methodology did not meet industry standards, ODFW did not explain this contention with any specificity. *See* ODFW Letter dated September 16, 2013 (Exhibit 32). As a result, the Board finds that this contention is inadequately developed to allow Applicant to respond in a more specific way than what is in the record, and thus, this contention does not provide a basis to deny or further condition the Applications.

HEAVY METALS AND ACID RUNOFF

Although Mr. Leyda contends that surface mining would expose rock having damaging quantities of acidity and metals, the Board finds that the chemistry of basalt rock does not result in acid runoff. As support for this conclusion, the Board relies upon TSI's testimony to this effect, including the scientific literature cited therein. *See* TSI Letter dated October 29, 2013 (Exhibit 98). The Board further finds that because basalt does not result in acid runoff, there is no basis to conclude that wetland replenishment water, which will come into contact with basalt, will release metals and lower the pH of offsite wetland waters or impact wetland wildlife. *Id.* Mr. Leyda did not dispute TSI's testimony on this issue. Therefore, the Board denies Mr. Leyda's contention on this issue.

CONFLICTS WITH OTHER AGGREGATE RESOURCE SITES

Additionally, the Board finds that there will be no significant conflicts between the Project and the three inventoried aggregate sites within the Impact Area. As support for this conclusion, the Board relies upon the analysis of Dorian Kuper of Kuper Consulting LLC, who concluded that there would be no such conflicts between these uses due to the similarity in their operations. *See* Kuper Letter dated June 3, 2013 set forth in Appendix M of the Applications. The Board finds that Ms. Kuper's analysis is particularly credible in light of her extensive experience as a geologist (over 30 years) and her knowledge of aggregate operations in the vicinity. *See* D. Kuper Resume set forth in Appendix N of the Applications. The Board finds persuasive that no one, including adjacent and nearby quarry operators, rebutted or called into question Ms. Kuper's testimony on this issue. Therefore, the Board finds that a reasonable person would rely upon Ms. Kuper's testimony to find no significant conflicts. *See Sanders v. Yamhill County*, 34 Or LUBA 69, 107 (1998) ("In the absence of any cited evidence to the contrary, we accept as reasonable the county's conclusion that mineral and aggregate uses and geothermal uses have similar impacts and conflicts.").

OPPONENTS' ADDITIONAL CONTENTIONS

Although opponents raised concerns about other environmental impacts, including impacts to neotropical migrating birds and impacts to Metro-designated "habitat of

concern," the Board denies these contentions because the County is only permitted to consider "[c]onflicts with other Goal 5 resource sites within the impact area that are shown on an acknowledged list of significant resources and for which the requirements of Goal 5 have been completed at the time the PAPA is initiated." OAR 660-023-0180(5)(b)(D). Opponents have not established that the identified resources are inventoried Goal 5 resources, and the Board finds that they are not.

The Board finds that opponents raised a series of other contentions pertaining to Goal 5 resources. The Board finds that these contentions lack merit, are speculative, and fail to account for the considerable conflict minimization measures that the Project will include. Further, the Board finds that Applicant has adequately rebutted these contentions. In support of these findings, the Board adopts and incorporates by reference TSI's Goal 5 assessment set forth in Appendix E of the Applications and the findings and conclusions in TSI's letters dated September 24, 2013 (Exhibit 65e); October 29, 2013 (Exhibit 98); November 4, 2013 (Exhibit 119); and November 8, 2013 (Exhibit 141).

MEASURES TO MINIMIZE CONFLICTS:

For inventoried Metro Regional resources, riparian corridors, federal wild and scenic rivers, Oregon scenic waterways, Oregon recreation trails, natural areas, wilderness areas, open space, scenic views and sites, and aggregate sites, the Board finds, based upon the sources cited above, that no conflict exists. As a result, the Board finds that no measures are needed to minimize conflicts with these resources.

For the Washington County-inventoried wildlife habitat, the Board finds that the conflict is minimized to a level that is not significant through compliance with the following measures:

- 50-foot setbacks from the remainders of Wetlands B and C to preserve existing wetlands and uplands
- 100-foot minimum setback from Rock Creek and the land immediately east of the Kramer property to preserve existing upland
- 25-foot setback along the west by northwest and north by northeast Property lines to include fence and landscape screening
- 50-foot setback along the south Property line to include noise barrier and landscape screening
- 50-foot setback along the east Property line
- Implementation of erosion control methods where landscaping must be removed
- Irrigation of plantings to promote rapid growth and reduce summer drought stress

- Time-sensitive measures such as limitations on general hours of operation and blasting frequency

- Regular use of dust control sprayers on equipment and on-site roadways and use areas

As support for this conclusion, the Board relies upon TSI's testimony that these measures will minimize the identified conflict. *See* TSI's Goal 5 assessment set forth in Appendix E of the Applications. The Board finds that the Project operating plan, as conditioned, incorporates all such measures.

For the avoided wetlands, the Board finds that the conflict is minimized to a level that is not significant through compliance with the following measures, which the Board imposes as conditions of approval on the Project:

> "59. The applicant and/or operator shall not fill, excavate or otherwise disturb wetlands on the property until applicant first obtains appropriate permits from the Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (Corps) and implements any required pre-disturbance mitigation measures. The applicant shall provide County Planning and/or WES/SWMACC with copies of any annual monitoring reports required by DSL and/or Corps."
>
> "60. Within 90 days after commencement of site construction, the quarry operator shall provide the Tualatin River National Wildlife Refuge and Clackamas County with calculations showing planned reductions in contributing upland watershed that will result in measurable declines in surface water flowing towards the Refuge. In compliance with WES/SWMACC standards, the proposed operation shall provide replenishment water for wetlands to maintain the average rainfall contribution during the rainy season (November-May). Subject to participation by the Refuge, Department of State Lands and other applicable agencies, surface water flows to the Refuge may be enhanced (increased)."
>
> "61. The Quarry operator shall monitor annual water levels within the undisturbed buffer areas to the offsite portions of Wetlands B and C, and take appropriate actions to maintain pre-disturbance wetness in those wetlands. The operator may install distribution systems (infiltration trenches, drip lines, etc.) for the replenishment water in the undisturbed buffer where such installation results in removal of no more than 15% of the native trees and shrubs located in such buffers as of June 1, 2013."
>
> "62a. The applicant/operator shall install a clay barrier between the excavation area and buffer for the preserved portions of Wetlands B and

C. Said clay barrier shall be compacted to prohibit water intrusion from Wetlands B and C into the excavation boundary."

"62. The operator shall not excavate within the boundaries, as determined by DSL, of any onsite portion of Wetland B or C when there is surface water in the onsite portion of such wetland area."

"63. The operator shall install and maintain an elevated area (above existing grade) of approximately 20 feet in width between the excavation boundary and the south edge of the proposed 50 foot buffer to the offsite portion of Wetland B (found in the northwest corner of the subject property). This elevated area is to be located outside of the excavation boundary, but can be occupied by an access road, stormwater facilities, or other activities ancillary to those occurring within the excavation boundary."

"64. The operator shall maintain the approximate same condition of the undisturbed buffers as exist on the effective date of Clackamas County land use approval to facilitate wildlife movement and protect adjacent wetland functions. The undisturbed buffers are located immediately east and north of the Kramer parcel, adjacent to Rock Creek and the 50 foot buffer where Wetland B extends offsite to the north. Such maintenance shall include, but is not limited to, control of increased Himalayan blackberry and reed canarygrass growth, replacement of dead trees (>12 in. DBH) when more than 10 percent have died, and related vegetative management."

As support for this conclusion, the Board relies on TSI's testimony that these measures would minimize the identified conflict. *Id.* Although Ms. Holmes contends that Condition 61 does not capture the biological diversity and uniqueness of the area because it establishes a single date (June 1, 2013) for determining site conditions, rather than a range of dates, the Board denies this contention. The Board finds that the purpose of the condition is to establish a single baseline that is roughly the date Applicant filed the Applications with the County. Selecting a range of dates would be inconsistent with this purpose.

Although Ms. Madden, Mr. Leyda, Ms. Ruther, and Ms. Holmes contend that the proposed buffers around the retained wetlands should be 100 feet in width to provide adequate protection for these resources, the Board denies this contention for three reasons. First, the Board finds that, in several cases, the buffer provided is 100 feet. For example, the buffer for the retained portion of Wetland C is 100 feet (50 feet of wetland buffer, 50 feet of upland buffer), and the buffer for Wetland D, which is upland forest, is more than 100 feet. *See* TSI Letter dated October 29, 2013 (Exhibit 98). Second, the Board finds that although the buffer along the retained portion of Wetland B is only 50 feet, this width meets the standard required by the County for wetlands in urban and rural areas; e.g. SWMACC service area. *Id.* Third, the Board finds that

Applicant has agreed to carefully maintain the buffers to prevent encroachment into any buffers. *Id.* Finally, although Ms. Madden contends that the buffer along Wetland C should be wider because the area is steeply sloped, the Board finds that the area has slopes less than 25%; therefore, the buffer satisfies SWMACC standards. *See* Appendix B of the Applications.

For the 1.78 acres of wetlands that would be removed/filled, the Board finds that there are no measures to minimize the identified conflict with these resources. As support for this conclusion, the Board relies upon TSI's conclusion to this effect:

> "The quarry would remove and/or fill approximately 1.78 acres of on-site wetlands. Although the quarry would comply with all state and federal removal/fill permitting requirements, including implementing all required mitigation measures, the total loss of 1.78 acres of onsite wetlands would constitute a conflict that cannot be minimized for Goal 5 purposes. Thus, the applicant is submitting an analysis of the positive and negative ESEE consequences resulting from a decision to allow, limit, or prohibit the quarry under the circumstances."

Id. at iv. For the reasons set forth above and discussed in detail in TSI's Goal 5 Report and supplemental letters, the Board finds that, with the exception of the conflict with 1.78 acres of wetlands, there are measures that will minimize identified conflicts to a level that is not significant, and the Board has conditioned its approval to incorporate such measures. The Board's analysis of the positive and negative economic, social, environmental, and energy consequences resulting from a decision to allow, limit, or prohibit the Project is set forth below.

(E) Conflicts with agricultural practices; and

IDENTIFICATION OF CONFLICTS:

The Board finds that the Project will not generate any significant conflicts with agricultural practices on surrounding lands. As support for this conclusion, the Board relies upon the results of Applicant's agricultural survey. *See* Appendix J of the Applications. The Board finds that Applicant's survey identified 28 parcels (some under the same ownership or operation) with low-intensive, small-scale agricultural activities (limited to livestock grazing, raising chickens, and growing clover, fruit, and Christmas trees), within one mile of the Property. *Id.* As depicted on the map attached to the survey, the concentration of agricultural practices in the survey area is between 0.5 and 1.0 miles from the Property. *Id.* Moreover, the Board finds that the survey results reflect that agricultural practices are occurring on only one property that abuts the Property. *Id.* In short, the Board finds that only isolated, small-scale agricultural practices are occurring on surrounding lands.

Further, as explained above, the Board finds, based upon the testimony of various Project consultants, and subject to adoption and implementation of various minimization

measures, there will be no significant conflicts between the Project and allowable uses, including farm uses, within the Impact Area.

The Board finds that, due to the limited nature and small scale of existing agricultural practices, the relative lack of proximity to the mining operation, and the various measures that will minimize Project conflicts to a level that is insignificant, the Project will not force a significant change in or significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use. Therefore, there will be no conflicts between the Project and agricultural practices.

As additional support for its conclusion, the Board finds that County Planning staff concurred with Applicant's testimony on this issue. *See* Staff Report at 49-50.

Although Vicki Norris testified that she lives approximately one-half mile away and raises chickens, operates a mobile fruit stand, and a small orchard, and that she is concerned that the Project will degrade the groundwater, light, and air, the Board finds that Ms. Norris' testimony was vague, not supported by any specific evidence, and did not contend that the Project would force a significant change in or significantly increase the cost of accepted farm or forest practices on her property. For that matter, the Board finds that no opponents presented any meaningful rebuttal to the findings set forth in the agricultural survey. To the contrary, the Board finds that Narendra Varma testified that he operates a farm approximately one mile from the Project, which is in the vicinity of the existing active quarry operations, and he intends to expand his operations and hire 6-11 additional employees over the next three years. *See* Email from Narendra Varma dated November 8, 2013 (Exhibit 136).

Therefore, the Board finds that a reasonable person would rely upon the agricultural survey, the staff concurrence, and Mr. Varma's testimony to support the conclusion that the Project will not generate any significant conflicts with agricultural practices on surrounding lands.

MEASURES TO MINIMIZE CONFLICTS:

Because there are no identified conflicts with agricultural practices, the Board finds that it is not required to identify measures that would minimize such conflicts.

(F) Other conflicts for which consideration is necessary in order to carry out ordinances that supersede Oregon Department of Geology and Mineral Industries (DOGAMI) regulations pursuant to ORS 517.780;

The Board finds that there are no other conflicts for which consideration is necessary because the County does not have any ordinances that supersede DOGAMI regulations pursuant to ORS 517.780.

(d) The local government shall determine any significant conflicts identified under the requirements of subsection (c) of this section that cannot be minimized.

Based on these conflicts only, local governments shall determine the ESEE consequences of either allowing, limiting, or not allowing mining at the site. Local governments shall reach this decision by weighing these ESEE consequences, with consideration of the following:

(A) The degree of adverse effect on existing land uses within the impact area;

(B) Reasonable and practicable measures that could be taken to reduce the identified adverse effects; and

(C) The probable duration of the mining operation and the proposed post-mining use of the site.

For the reasons explained in response to subsections (3) and (4) above, the proposed conditions of approval will minimize all identified conflicts, with the exception of conflicts to 1.78 acres of significant acknowledged Goal 5 wetlands located on the site. Therefore, the Board finds that it is required to conduct an analysis of the ESEE consequences of the mine that is limited to assessing this significant conflict.

Based upon this conflict only, the Board finds that the ESEE consequences of allowing, not allowing, or limiting the mine are as follows:

Economic:

Allowing Mine: The Board finds that the economic consequences of allowing the mine are myriad and positive. For example, Project operations will provide direct economic impacts by creating jobs and generating ad valorem tax revenue. As support for this conclusion, the Board relies upon Applicant's testimony that the Project will employ 10-15 full-time employees with an average annual compensation of $60,000 (and total employee income between $600,000 and $900,000) and generate ad valorem tax revenue exceeding $140,000 (plus potential rollback taxes to remove the Property from deferral). *See* Applicant letter re: "Discussion of Economic Benefits" dated November 4, 2013 (Exhibit 113). Although Mr. Varma contends that the Property would generate more ad valorem tax revenue as a rural residential subdivision rather than as a mine, the Board denies this contention because Mr. Varma has not presented any evidence that it is feasible to develop the Property in this manner. Instead, the Board finds that the shallow rock bed and wetlands on the Property might preclude establishing septic systems for homes in this location. *Id.* Mr. Varma had the opportunity to rebut this contention but did not do so.

The Board further finds that preparation for Project operations will also provide significant economic benefits, such as payment of permitting fees, wetland mitigation credits, and consultant and material fees associated with the proposed local roadway improvements. As support for this conclusion, the Board relies upon Applicant's testimony that the Project will pay permit fees and system development charges in excess of $100,000; will pay wetland mitigation fees in excess of $127,000; and will

construct public improvements exceeding $250,000. *Id.* The Board finds that all of these economic impacts will, in turn, have a multiplier effect, as the revenue generated is passed on to third parties who then spend or invest it in the regional economy. *Id.* Although Mr. Varma contends that the Project will not have a multiplier effect because it will not attract any supporting businesses, the Board denies this contention because it takes too narrow a view of the economic impacts of the Project. As stated above, properly construed, the economic impacts of the Project are multi-faceted and not limited to whether additional businesses are generated.

Finally, the economic consequences of allowing a mine on the Property also provide cost-savings because the Property is proximate to the cities of Sherwood, Tualatin, Wilsonville, as well as to major transportation facilities, resulting in lower transportation and delivery costs, and in turn, lower costs for end users of the aggregate product. As support for this conclusion, the Board accepts Applicant's testimony that, compared to the Project, a proposed site in Molalla requiring 250 truck trips would generate an additional 3,750 miles in haul distance, add 83 hours of travel time, use an additional 469 gallons of fuel, and add approximately $15,000 to the project cost. *Id.* No one presented substantial evidence that undermined this testimony.

Although Mr. Varma, Mr. Jacobs, and Ms. Madden contend that there is no demonstrated public need for aggregate from the Project because a nearby quarry, Tigard Sand & Gravel, has sufficient unmined aggregate supply to serve the market for many years, the Board denies this contention for four reasons. First, the Board finds that the neither the Goal 5 rule nor any other standard affirmatively requires that Applicant demonstrate a public need for the Project.

Second, to the extent that public need is relevant to completing the ESEE, the Board finds that Applicant refuted the opponents' testimony on this issue by explaining significant factors that qualify predictions that TS&G can or will actually mine all of its aggregate supply. *See* Wellner Letter dated November 8, 2013 (Exhibit 139). Specifically, Applicant noted that the TS&G site is entirely in the Urban Growth Boundary and thus is subject to pressures to develop with urban uses, Washington County has approved and scheduled construction of 124th Avenue directly across the TS&G site, and both a high-voltage power line corridor and natural resources exist on the site. The Board finds that all of these factors likely limit the ultimate mining and marketing of TS&G's existing aggregate reserve and thus refute opponents' testimony on this issue.

Third, the Board finds that all of the opponents' testimony is grounded in the email testimony of Roger Metcalf, a Vice-President at Tigard Sand & Gravel. *See* Attachment 2 to Madden Letter dated November 4, 2013 (Exhibit 132). The Board finds that Mr. Metcalf's testimony is less credible on this issue because Applicant is a potential competitor to TS&G in the aggregate market. As such, it is in Mr. Metcalf's business interest for the Board to deny the Applications. The Board discounts the opponents' testimony accordingly.

Fourth, the Board finds in the alternative that the opponents' testimony does not warrant denying or further conditioning the Applications because the opponents' testimony is incomplete. The Board reaches this conclusion because if the market does not support development of the Project, it will not develop, and none of the Project consequences—positive or negative—will result. While opponents' testimony addresses the absence of positive consequences, it fails to account for the absence of negative consequences. As such, it is incomplete. Therefore, the Board denies the opponents' contentions regarding public need.

The Board finds that there are no negative economic consequences to removing the wetlands and allowing the Project. Although Mr. Varma contends that developing the Project will reduce economic productivity due to citizens being stuck in traffic behind Project trucks, the Board denies this contention for three reasons. First, it is not supported by any evidence, such as an economic study or expert testimony. Second, the TIA refutes the contention that there will be any adverse traffic impacts associated with the Project. Instead, all study intersections will meet applicable performance standards, and Applicant will complete safety and capacity improvements in the area. *See* TIA in Appendix G of Applications. Third, Mr. Varma's contention ignores the potential increases in economic productivity that will result from aggregate from the Project being used to complete area transportation projects.

Further, although Mr. Varma contends that development of the Project will deter other development in the area, the Board denies this contention because it is speculative and not supported by any evidence. It appears to the Board that Mr. Varma's subsequent testimony that he intends to hire 6-11 new employees over the next three years to work at his business that is located approximately one mile from the Property does not support the claim that the Project will deter other development. *See* Varma Email dated November 8, 2013 (Exhibit 136).

Not Allowing Mine: The Board finds that if the County does not allow the mine in order to preserve the wetlands, the County will not reap any of the economic benefits associated with the Project and described above.

The Board finds that there are no identifiable positive economic consequences to preserving the wetlands and not allowing the Project. Although Ms. Madden contends that there are "difficult to quantify" positive economic consequences associated with preserving wetlands, including limiting flooding and related economic losses, the Board denies this contention. The Board finds that Ms. Madden has not adequately explained how preservation of these particular wetlands would actually result in less flooding and economic loss, or for that matter, why the remaining offsite wetlands would not be able to adequately perform this function. As a result, the Board finds that the connection between preserving the wetland and the positive economic benefit is simply too speculative and remote to weigh heavily in this balance.

Likewise, although Ms. Madden contends that the loss of the wetlands could result in a loss of visitors to the Refuge and a loss of "associated revenue for surrounding

communities," the Board finds that Ms. Madden's contention is speculative and not supported by any evidence of the revenue impact of Refuge visitors or how that revenue impact is affected by the loss of wetlands that are not even located in the Refuge. The Board denies Ms. Madden's contention on this point.

Limiting Mine: The Board finds there are no identifiable positive economic consequences of preserving the wetlands and limiting the mine.

The Board finds that the negative economic consequences of limiting the mine are the loss of at least a portion of the positive economic consequences of allowing the mine. Further, in the event the County approves the mine but limits its extent by also requiring preservation of the conflicted wetlands, it will be tantamount to not allowing the mine at all because it would not be financially feasible to conduct mining operations on the Property in such a limited area. In that case, the Board finds that the negative economic consequences of limiting the mine are the loss of all of the positive economic consequences of allowing the mine.

As support for this conclusion, the Board relies upon Applicant's testimony to this effect. *See* Wellner Letter dated September 24, 2013 (Exhibit 65g). The Board also relies upon testimony from Westlake Engineering that a revised mining plan that preserved Wetlands A, B, and C would reduce the volume of potential basalt rock resources by 45-55%, and that this reduction in mine-able area would actually increase due to operational considerations, including staging, storage, and work areas. *See* Westlake Wetland Preservation Concept Mining Plan (Exhibit 114). The Board also finds that this evidence refutes Ms. Madden's contention that Applicant did not provide evidentiary support for its claim of lost volume associated with preserving the wetlands.

Social:

Allowing Mine: The Board finds that the positive social consequences of allowing the mine include: (1) the positive social esteem for the 10-15 workers employed at the mine; (2) the social benefits associated with utilizing aggregate from the mine to complete needed regional transportation improvements, including potentially some of the more than $3 billion in planned improvements identified by the County's Transportation System Plan; and (3) the social benefits of Applicant completing the off-site transportation improvements along SW Tonquin and Morgan Roads. As support for this conclusion, the Board relies upon the testimony of Applicant concerning Project impacts. *See* Wellner Letter dated September 24, 2013 (Exhibit 65g).

The Board finds that the negative social consequence of allowing the mine is the loss of wetland values; however, the Board finds that, on balance, this consequence is low because, as explained below, the value of the lost wetlands can be replaced by the new wetlands provided as mitigation.

Not Allowing Mine: The Board finds that the positive social consequence of not allowing the mine is the preservation of wetland values. Although Ms. Madden contends that

there is an "existence value" associated with the wetlands—"the value that many people place on the fact that an environmental amenity exists even if they do not derive specific utility from it (i.e. do not 'use' it in some way)"—the Board finds that, to the extent an existence value exists in this case at all, it is not substantiated and does not warrant further consideration in this analysis. The Board also denies this contention because Ms. Madden does not appear to consider that the "existence value" of the lost wetlands could be replaced by the new wetlands provided as mitigation.

The Board finds that the negative social consequences of not allowing the mine are that the 10-15 workers at the mine would not have the social esteem associated with employment, the region would not utilize its natural resources to serve the greater good, and Applicant would not complete the roadway improvements along SW Tonquin and SW Morgan Roads.

Limiting Mine: The Board finds that limiting the mine will limit the positive and negative social consequences described above. The Board finds that the degree to which these consequences are limited will be directly tied to the degree that the mine itself is limited. However, as stated above, in the event the County approves the mine but limits its extent by also requiring preservation of the conflicted wetlands, it will be tantamount to not allowing the mine at all because it would not be financially feasible to conduct mining operations on the Property in such a limited area. In that case, the negative social consequences of limiting the mine are the loss of all of the positive social consequences of allowing the mine.

As support for this conclusion, the Board relies upon Applicant's testimony to this effect. *See* Wellner Letter dated September 24, 2013 (Exhibit 65g). The Board also relies upon testimony from Westlake Engineering that a revised mining plan that preserved Wetlands A, B, and C would reduce the volume of potential basalt rock resources by 45-55%, and that this reduction in mine-able area would actually increase due to operational considerations, including staging, storage, and work areas. *See* Westlake Wetland Preservation Concept Mining Plan (Exhibit 114).

Environmental:

Allowing Mine: The Board finds that the environmental consequences of allowing the mine are neutral. Although development of the Project will result in the loss of wetland values, the Board finds that these wetlands are quite small (approximately 1.78 acres) and generally isolated in nature. Although Ms. Madden contends that the wetlands are not small and isolated but instead preserve broader functions such as enhancing water quality in Rock Creek, the Board finds that this contention lacks merit. Rather, the Board finds that, as Project hydrologist Shannon & Wilson and Erin Holmes from the Refuge testified, the wetlands are sustained by precipitation and are disconnected from groundwater flowing to Rock Creek. *See* Holmes Letter dated September 23, 2013 (Exhibit 54) and Final Hydrogeologic Evaluation dated October 29, 2013 (Exhibit 92).

Further, as required by Condition 59, Applicant will complete all removal and fill activities in compliance with state and federal permits, which will require implementation of off-site mitigation measures in order to achieve "no net loss" of wetland values. *See generally* 33 USC Sect. 1344, ORS 196.795 *et seq.* In this way, the Board finds that the wetland resource and its related values will be replicated in another location, unlike when many other Goal 5 resources are lost. Although Ms. Madden and ODFW contend that the wetland values cannot be replicated in another location, the Board denies this contention for four reasons. First, the Board finds that wetland mitigation banks construct and restore wetlands years in advance of wetland impacts to assure no loss of wetland acreage, no temporal loss, and to achieve self-sustaining conditions. *See* TSI Letter dated September 24, 2013 (Exhibit 65e). Second, the Board finds that both state and federal wetland permitting agencies recognize mitigation as an appropriate means to offset wetland impacts. *Id.* Third, the Board finds that, in the event that state and federal permitting agencies deny the applicable permits due to insufficient mitigation, Applicant will be unable to remove the on-site wetlands and will not be able to implement its proposed mining plan. In other words, failure to provide adequate wetland mitigation will prevent development of the Project and will avoid any related adverse impacts to the environment. Fourth, although ODFW contends that no mitigation bank can reproduce the unique nature of on-site wetlands, the Board finds that ODFW has not explained, based upon substantial evidence, why this is the case. *See* ODFW Letter dated September 16, 2013 (Exhibit 32) and ODFW Email dated September 25, 2013 (Exhibit 68).

Finally, and in the alternative, even if the opponents are correct and the environmental consequences of allowing the Project are negative because the wetland values cannot be fully replicated elsewhere, the Board finds, for the reasons explained in this ESEE that, on balance, the overall positive consequences of allowing the Project exceed these few negative consequences of allowing the Project. Therefore, the Board finds that the opponents' contention is not a basis to deny or further condition the Project.

Although Ms. Madden further contends that the ESEE is flawed because it fails to consider impacts to off-site resources, the Board denies this contention because it is simply an extension of the flawed contention that the Project has not minimized all other conflicts with Goal 5 resources. For the reasons explained in these Supplemental Findings in response to OAR 660-0230-0180(5)(b)(D), the Board has already found, based upon substantial evidence and subject to conditions, Applicant has identified measures that will minimize potential conflicts with other Goal 5 resources. For example, as to the remaining portions of Wetlands B and C, Applicant will be preserving buffers and providing replenishment water for wetlands to maintain the average rainfall contribution during the rainy season. The Board further denies this contention for the reasons explained under the heading below "(A) The degree of adverse effect on existing land uses within the impact area."

Finally, although Ms. Madden contends that the County must consider the functional values provided by the on-site wetlands in completing this analysis, the Board denies this contention because no such assessment is required at this stage. As support for

this conclusion, the Board relies upon the testimony of scientist Phil Scoles, CPSS, who explained that a functional values assessment (also known as an Oregon Rapid Wetland Assessment Protocol ("ORWAP")) will instead be required in order for Applicant to obtain cut and fill permits from the State. *See* TSI Letter dated November 8, 2013 (Exhibit 141). Mr. Scoles explained that the ORWAP assessment results will dictate the nature and extent of mitigation needed to ensure "no net loss" of wetland functions. *Id.* Further, the Board finds that the functional values assessment provided by Mr. Leyda is of limited value because it did not examine the on-site portion of the wetlands, which are the only wetlands subject to this ESEE.

Not Allowing Mine: For the reasons stated above, the Board finds that the environmental consequences of not allowing the mine are also neutral. The Board reaches this conclusion because, although not allowing the mine will preserve the wetlands, it will also preclude implementation of the "no net loss" mitigation measures.

Limiting Mine: Due to the "no net loss" rule, the Board finds that the environmental consequences of limiting the mine are also neutral. Specifically, limiting the mine in order to preserve some of the wetlands will result in a corresponding decline in the "no net loss" mitigation measures.

Energy:

Allowing Mine: The Board finds that the energy consequences of allowing the mine are positive and substantial for two reasons. First, as explained above, mining the aggregate resource will facilitate completion of many needed transportation improvements, which will, in turn, provide greater capacity and smoother surfaces. As a result, vehicles on roads throughout the region will be able to consume less fuel because they will spend less time idling in traffic and/or confronting substandard road conditions. Second, the energy consequences of allowing a mine are also positive because the Property is proximate to the cities of Sherwood, Tualatin, Wilsonville, all locations where there is a significant amount of growth and demand for aggregate. Locating a mine near these markets will reduce the distance the product must travel, resulting in lower fuel costs.

The Property's proximity to major transportation corridors, such as Interstate 5, also reduces fuel costs and energy impacts compared to more remote locations. As support for this conclusion, the Board accepts Applicant's testimony that, compared to the Project, a proposed site in Molalla requiring 250 truck trips would generate an additional 3,750 miles in haul distance, add 83 hours of travel time, use an additional 469 gallons of fuel, and add approximately $15,000 to the project cost. *Id.* No one presented substantial evidence that undermined this testimony.

The Board finds that the negative energy consequences of allowing the mine are that it will employ vehicles and machinery that will consume fuel in conjunction with completing extraction, processing, and distribution activities. However, the Board finds that the Project operator will have at least two incentives to utilize fuel-efficient

equipment. First, the Board finds that fuel is expensive and becoming moreso. Second, because Project operations will be subject to compliance with state and federal air quality standards, the Project operator will need to purchase and utilize late-model equipment which is designed to comply with U.S. Environmental Protection Agency Tier 2 standards. *See* Golder Report in Appendix I of the Applications. Thus, the Board finds that, on balance, the negative energy consequences are not likely to be significant.

Not Allowing Mine: The Board finds that the positive energy consequences of not allowing the mine are that there will be no utilization of mine-related equipment and trucks and thus no related consumption of fuel.

The Board finds that the negative energy consequences of not allowing the mine are that the region would not reap any of the positive energy consequences of allowing the mine. For example, if the mine is not allowed, the aggregate resource underneath the Property will not be used to facilitate completion of needed transportation improvements. As a result, vehicles will spend more time idling in traffic and thus consume more fuel.

Further, the region will need to locate a mine in another location, likely in a more remote location, which will generate additional vehicle miles traveled and a larger carbon footprint. As support for this conclusion, the Board accepts Applicant's testimony that, compared to the Project, a proposed site in Molalla requiring 250 truck trips would generate an additional 3,750 miles in haul distance, add 83 hours of travel time, use an additional 469 gallons of fuel, and add approximately $15,000 to the project cost. *Id.* No one presented substantial evidence that undermined this testimony.

Limiting Mine: The Board finds that limiting the mine will limit the positive and negative energy consequences described above. The Board finds that the degree to which these consequences are limited will be directly tied to the degree that the mine itself is limited.

Having identified these ESEE consequences, the Board must weigh them with the following considerations:

(A) The degree of adverse effect on existing land uses within the Impact Area;

In the event the mine is allowed and Applicant removes/fills 1.78 acres of inventoried wetlands on the Property, the Board finds that the only adverse effect on existing land uses within the Impact Area is the potential loss of surface water flow to interrelated Wetlands B and C. However, as explained and conditioned above, the Board finds that the degree of this adverse effect is greatly limited for two reasons. First, Applicant will provide replenishment water for the avoided wetlands to maintain the average rainfall contribution during the rainy season in order to ensure that these interrelated wetlands are preserved. Second, Applicant will not remove/fill the wetlands until it has obtained state and federal permits, which will require implementation of off-site mitigation measures in order to achieve "no net loss" of wetland values. Based upon the

foregoing, the Board finds that removing/filling the wetland and allowing the mine will not result in any adverse effect on land uses within the Impact Area.

(B) Reasonable and practical measures that could be taken to reduce the identified adverse effects; and

As explained above, Applicant has proposed reasonable and practical measures that will reduce the identified adverse effect in two ways. First, Applicant will provide replenishment water for the avoided wetlands to maintain the average rainfall contribution during the rainy season in order to ensure that the interrelated wetlands are preserved. Second, Applicant will not remove/fill the wetlands until it has obtained state and federal permits, which will require implementation of off-site mitigation measures in order to achieve "no net loss" of wetland values. Based upon the foregoing, the Board finds that Applicant will be required to complete reasonable and practical measures to reduce the identified adverse effect to the avoided wetlands.

(C) The probable duration of the mining operation and the proposed post-mining use of the site.

Applicant testified that the probable duration of the mining operation is 15-20 years, depending upon market demand. As explained in response to subsection (5)(f) below, the Board finds that the post-mining uses of the Property are those allowed as of right and conditionally under a current map designation or such other uses as may be allowed under future alternative designation, of allowed by law. Thus, the Board finds that the mining operation is of limited duration, and the proposed post-mining use of the Property will be consistent with the law and surrounding uses.

Based upon the foregoing analysis, the Board finds that, on balance, the positive economic, social, environmental, and energy consequences associated with allowing the mine outweigh the negative consequences both in number and degree. Further, the Board finds that the additional considerations favor allowing the mine because there is only one potential adverse effect to a single land use if the mine is allowed, Applicant will implement reasonable and practical measures to reduce that potential adverse effect, and the mine will have a limited lifespan followed by reclamation as a permitted use. For these reasons, the Board finds that the ESEE supports allowing mining on the Property.

(e) Where mining is allowed, the plan and implementing ordinances shall be amended to allow such mining. Any required measures to minimize conflicts, including special conditions and procedures regulating mining, shall be clear and objective. Additional land use review (e.g., site plan review) if required by the local government, shall not exceed the minimum review necessary to assure compliance with these requirements and shall not provide opportunities to deny mining for reasons unrelated to these requirements, or to attach additional approval requirements, except with regard to mining or processing activities:

(A) For which the PAPA application does not provide information sufficient to determine clear and objective measures to resolve identified conflicts;

(B) Not requested in the PAPA application; or

(C) For which a significant change to the type, location, or duration of the activity shown on the PAPA application is proposed by the operator.

The Board finds that its approval of the Project complies with this subsection. First, contemporaneous with its approval of these findings, the Board is adopting an ordinance to: (1) designate the Property as a significant Goal 5 resource in Chapter III, Table III-02 of the CCCP; and (2) apply the Mineral and Aggregate Overlay (MAO) designation to the Property. Second, the Board finds that its conditions of approval are clear and objective. As support for this conclusion, the Board finds that the Staff Report included 114 of the final conditions, and no party contended that these conditions were not clear and objective. Third, the Board finds that its decision also approves the Site Plan Review Application for the Project, which is consistent with the approvals for the PAPA Application and the Zone Change Application. Further, the Board finds that there are no additional land use reviews required for the Project.

(f) Where mining is allowed, the local government shall determine the post-mining use and provide for this use in the comprehensive plan and land use regulations. For significant aggregate sites on Class I, II and Unique farmland, local governments shall adopt plan and land use regulations to limit post-mining use to farm uses under ORS 215.203, uses listed in ORS 215.213(1) or 215.283(1), and fish and wildlife habitat uses, including wetland mitigation banking. Local governments shall coordinate with DOGAMI regarding the regulation and reclamation of mineral and aggregate sites, except where exempt under ORS 517.580.

The Board finds that the Project is not located on Class I, II, or Unique farmland. *See* Appendix A of the Applications. Therefore, the Board is not required to limit post-mining uses to farm uses under ORS 215.203, uses listed in ORS 215.213(1) or ORS 215.283(1), or fish and wildlife habitat uses.

Further, the Board finds that the Applicant has proposed, and the Board determines, that post-mining uses of the Property are those allowed as of right and conditionally under a current map designation or such uses as may be allowed under future alternative designation, if allowed by law.

Finally, the Board finds that the Applicant has included a proposed reclamation plan with the Applications. *See* Appendix B, Plate 4 of the Applications. The Applicant has testified that it has submitted this plan to DOGAMI for approval. The Board finds that it will have the opportunity to coordinate with DOGAMI during the DOGAMI review process in accordance with CCZDO 708.06.

The Board finds that the Applications satisfy the requirements of this subsection.

(g) Local governments shall allow a currently approved aggregate processing operation at an existing site to process material from a new or expansion site without requiring a reauthorization of the existing processing operation unless limits on such processing were established at the time it was approved by the local government.

The Board finds that this section is not applicable because the Project is not a currently approved aggregate processing operation at an existing site.

(7) Except for aggregate resource sites determined to be significant under section (4) of this rule, local governments shall follow the standard ESEE process in OAR 660-023-0040 and 660-023-0050 to determine whether to allow, limit, or prevent new conflicting uses within the impact area of a significant mineral and aggregate site. (This requirement does not apply if, under section (5) of this rule, the local government decides that mining will not be authorized at the site.)

The Board finds that this provision outlines the procedures for the County to follow if the County, in its discretion, intends to allow, limit, or prevent new conflicting uses within the Impact Area of the Project. In this case, neither the Applicant nor any other parties are requesting that the County engage in this discretionary determination at this time. Further, County staff have testified that reliance upon the provisions of CCZDO 708.08 ("Impact Area Uses and Development Standards") is sufficient to protect the Project from new conflicting uses. Therefore, the Board declines to conduct an ESEE to allow, limit, or prevent new conflicting uses within the Impact Area of the Project.

(8) In order to determine whether information in a PAPA submittal concerning an aggregate site is adequate, local government shall follow the requirements of this section rather than OAR 660-023-0030(3). An application for approval of an aggregate site following sections (4) and (6) of this rule shall be adequate if it provides sufficient information to determine whether the requirements in those sections are satisfied. An application for a PAPA concerning a significant aggregate site following sections (3) and (5) of this rule shall be adequate if it includes:

(a) Information regarding quantity, quality, and location sufficient to determine whether the standards and conditions in section (3) of this rule are satisfied;

For the reasons set forth at page 59 of the Staff Report, which reasons are incorporated herein by reference, the Board finds that the PAPA Application includes the information required by this subsection. Further, for the reasons set forth above in response to OAR 660-023-0180(3), the Board denies the contentions from Dr. Jenkins and Ms. Madden that the Applicant provided incomplete information regarding quantity, quality, and location of the aggregate material in the deposit.

(b) A conceptual site reclamation plan;

The PAPA Application includes a conceptual reclamation plan at Figure 6, Tab D. The Board finds that the PAPA Application includes the information required by this subsection.

(c) A traffic impact assessment within one mile of the entrance to the mining area pursuant to section (5)(b)(B) of this rule;

For the reasons set forth at pages 59-60 of the Staff Report, which reasons are incorporated herein by reference, the Board finds that the PAPA Application includes the information required by this subsection. Further, for the reasons set forth above in response to OAR 660-023-0180(5)(b)(B), the Board denies the contentions from the City of Wilsonville that the Applicant provided incomplete information regarding traffic impacts.

(d) Proposals to minimize any conflicts with existing uses preliminarily identified by the applicant within a 1,500 foot impact area; and

For the reasons set forth at page 60 of the Staff Report, which reasons are incorporated herein by reference, the Board finds that the PAPA Application includes the information required by this subsection. As additional findings in response to this subsection, the Board incorporates by reference the findings and conditions set forth above in response to OAR 660-023-0180(5)(c), which explain the Applicant's proposals to minimize conflicts with existing uses within the Impact Area.

(e) A site plan indicating the location, hours of operation and other pertinent information for all proposed mining and associated uses.

For the reasons set forth at page 60 of the Staff Report, which reasons are incorporated herein by reference, the Board finds that the Applications include the information required by this subsection.

(9) Local governments shall amend the comprehensive plan and land use regulations to include procedures and requirements consistent with this rule for the consideration of PAPAs concerning aggregate resources. Until such local regulations are adopted, the procedures and requirements of this rule shall be directly applied to local government consideration of a PAPA concerning mining authorization, unless the local plan contains specific criteria regarding the consideration of a PAPA proposing to add a site to the list of significant aggregate sites, provided:

(a) Such regulations were acknowledged subsequent to 1989; and

(b) Such regulations shall be amended to conform to the requirements of this rule at the next scheduled periodic review after September 1, 1996, except as provided under OAR 660-023-0250(7).

The Board finds that the County has not yet amended its comprehensive plan and land use regulations to include procedures and requirements consistent with OAR 660-023-0180, including specific criteria regarding the consideration of a PAPA concerning mining authorization. Thus, in accordance with this subsection, the Board finds that the County is required to directly apply both the substantive requirements and procedures of OAR 660-023-0180 when evaluating a PAPA concerning mining authorization. *See also Morse Bros., Inc. v. Columbia County*, 37 Or LUBA 85 (1999), *aff'd* 165 Or App 512 (2000); Eugene Sand & Gravel, Inc. v. Lane County, 44 Or LUBA 50, 96 (2003), *aff'd* 189 Or App 21 (2003) ("The Goal 5 rule for aggregate establishes a comprehensive regulatory scheme that is intended to supersede local review standards for aggregate.")

The Board finds further finds that, in accordance with this subsection and the referenced case law, the provisions of the CCCP and the CCZDO are not applicable to the PAPA and Zone Change Applications. As a result, the Board does not adopt or incorporate the provisions of the Section 1, Part 2 ("Compliance with Clackamas County Comprehensive Plan Policies") or Section 2 ("Zoning Map Change Application (File No. Z0288-13-Z)") of the Staff Report in these findings.

The Board finds that, subject to these findings, the County has properly applied the provisions of OAR 660-023-0180 to the PAPA Application and the Zone Change Application.

SUPPLEMENTAL FINDINGS FOR THE SITE PLAN REVIEW APPLICATION

The Board finds that the Site Plan Review Application satisfies applicable approval criteria set forth in the CCZDO as follows:

708 MINERAL & AGGREGATE OVERLAY DISTRICT (MAO)

708.02 DEFINITIONS

Impact Area. **The area surrounding the Extraction Area where conflicting uses are regulated to ensure that the resource site is protected to some extent. The County determines the Impact Area for each resource site.**

The Board finds that the "impact area" for purposes of CCZDO 708 is limited to the Property and does not include any off-site properties. As a result, although Mr. Jacobs contends that approval of the mine will preclude him from developing certain uses on his property such as a bed and breakfast facility, the Board denies this contention. No aspect of the approval precludes the development of new uses on other properties. To the extent that Mr. Jacobs claims he is so limited, the Board finds that it a result of his voluntary decision. The Board finds that Mr. Jacobs and other owners of off-site

properties continue to be allowed to develop their properties in accordance with the CCCP and CCZDO and upon obtaining any applicable permits.

708.04 EXTRACTION AREA USES

A. The County may allow the following uses subject to standards of ZDO 708.05, and any requirements adopted as part of the Comprehensive Plan.

1. Mining;

Applicant has proposed mining within the Extraction Area. Subject to the conditions of this approval, the Board allows mining within the Extraction Area.

2. Processing, except the batching or blending of mineral and aggregate materials into asphalt concrete within two miles of a planted commercial vineyard existing on the date the application was received for the asphalt batch plant;

Applicant has proposed processing (not to include an asphalt batch plant) within the Extraction Areas. Subject to the conditions of this approval, the Board allows processing within the Extraction Area.

3. Stockpiling of mineral and aggregate materials extracted and processed onsite;

Applicant has proposed to stockpile mineral and aggregate materials extracted and processed onsite. *See* Plate 3 of the DOGAMI Mining and Operations Plan for specific locations. Subject to the conditions of this approval, the Board allows stockpiling within the Extraction Area.

4. Temporary offices, shops or other accessory structures used for the management and maintenance of onsite mining and processing equipment;

Applicant has proposed a temporary office, parking, and scale area within the Extraction Area. *See* Plates 3 and 3A of the DOGAMI Mining and Operations Plan for specific locations. Subject to the conditions of this approval, the Board allows the temporary office, parking, and scale area within the Extraction Area.

5. Sale of mining products extracted and processed onsite;

Applicant has proposed the sale of mining products extracted and processed onsite within the Extraction Area. Subject to the conditions of this approval, the Board allows the sale of mining products extracted and processed onsite within the Extraction Area.

6. Storage of transportation equipment or machinery used in conjunction with onsite mining or processing;

Applicant has proposed to store equipment used in conjunction with the onsite mining and processing, including but not limited to a dozer, trackhoe, front-end loader, other similar implements, and associated processing equipment. Subject to the conditions of this approval, the Board allows this storage within the Extraction Area.

7. Other activities including buildings and structures necessary and accessory to development or reclamation of the onsite mineral or aggregate resource.

The Board finds that all of Applicant's proposed uses [mining and processing (not to include an asphalt batch plant), a management and sales office, parking, an associated scale, temporary stockpiling of material, sale of mining products extracted and processed onsite, and the use and storage of equipment for the purpose of mining and processing] are allowed within the Extraction Area.

B. The County may permit other uses allowed by the underlying zone subject to requirements of the underlying zone and requirements of this section for protection of significant mineral and aggregate sites.

The Board finds that no other uses are proposed or permitted within the Extraction Area.

708.05 EXTRACTION AREA DEVELOPMENT STANDARDS

The following standards are the basis for regulating mining and processing activities in the Mineral and Aggregate Overlay District. Requirements adopted as part of the Comprehensive Plan also apply to mining and processing activities in the overlay. Before beginning any mining or processing activity, the applicant shall show compliance with these standards and requirements adopted as part of the Comprehensive Plan program.

A. Access. Onsite roads used in mining and processing, and access roads from the Extraction Area to a public road shall meet the following standards:

1. All access roads within 100 feet of a paved county road or state highway shall be paved, oiled or watered:

The Board finds that the Project includes a single access road from the Extraction Area to a public road (SW Morgan Road), approximately 415 feet south of the intersection with SW Tonquin Road. *See* Site Plan Review Application narrative at 3. As explained in the Supplemental Findings in response to OAR 660-023-0180(5)(b)(A), the Board finds it necessary to impose conditions of approval to minimize potential dust conflicts as follows:

- "70. The main facility access road shall include a gravel surface consisting of crushed rock with nominal sizing of at least one inch maximum dimension within 300 feet of any public road."

- "71. The main facility access road shall be watered to prevent the generation of dust within 300 feet of any public road."

- "72. The operator shall maintain a truck wheel wash system for product trucks exiting the access road to the public road to reduce soil track-out onto the public road."

- "73. Onsite surfaces travelled by off-road or on-road mobile sources shall be watered whenever significant visible dust emissions (opacity approaching 20%) are observed behind or beside a moving vehicle."

The Board finds that the requirements of these conditions pertaining to access roads exceed the requirements of this standard. Therefore, the Board finds that compliance with these conditions will ensure compliance with this standard.

2. All roads in the Extraction Area shall be constructed and maintained to ensure compliance with applicable state standards for noise control and ambient air quality.

For the reasons explained in these Supplemental Findings in response to OAR 660-023-0180(5)(b)(A), which reasons are incorporated herein by reference, the Board finds that all roads in the Extraction Area will be constructed and maintained to ensure compliance with applicable state standards for noise control and ambient air quality, subject to compliance with the following conditions:

- "52. The Quarry operator shall comply with the final noise study prepared by Daly-Standlee and Associates, Inc. (DSA) dated September 23, 2013 and the supplemental letter dated September 5, 2013 by DSA."

- "70. The main facility access road shall include a gravel surface consisting of crushed rock with nominal sizing of at least one inch maximum dimension within 300 feet of any public road."

- "71. The main facility access road shall be watered to prevent the generation of dust within 300 feet of any public road."

- "72. The operator shall maintain a truck wheel wash system for product trucks exiting the access road to the public road to reduce soil track-out onto the public road."

- "73. Onsite surfaces travelled by off-road or on-road mobile sources shall be watered whenever significant visible dust emissions (opacity approaching 20%) are observed behind or beside a moving vehicle."

3. All roads in the Extraction Area shall be paved at all points within 250 feet of a noise or dust sensitive use existing on February 22, 1996.

Applicant testified that noise or dust sensitive uses within 250 feet of the site boundary that existed on February 22, 1996 are limited to the homes located at 12535 SW Morgan Road (31W04A00104) and 12551 SW Morgan Road (31W04A00902). *See* Site Plan Review narrative at 5. County staff concurred with this testimony. *See* Staff Report at 69. No one challenged this testimony or contended that other noise- or dust-sensitive uses existed within this area on February 22, 1996. Accordingly, the Board finds that no specific road locations are proposed within the Extraction Area within 250 feet of affected uses. The Board further finds that this provision is a continuing obligation. Accordingly, if in the future, any roads internal to the Extraction Area are constructed within 250 feet of the affected uses, those roads will be paved.

B. Screening

1. The mining activities listed in Subsection (B)(2) of this Section shall be obscured from the view of screened uses, unless one of the exceptions in Subsection (B)(4) applies. Screening shall be accomplished in a manner consistent with Subsection (B)(3).

Applicant also submitted a landscape plan identifying existing vegetation and topographic features within the Extraction Area that will be preserved to provide adequate screening. *See* Appendix K to Applications. Additionally, in areas where existing vegetation and/or topographic features are not adequate to provide effective screening or cannot be preserved due to conflicts with mining activities, Applicant has proposed specific types and densities of plantings. *Id.* Applicant testified in detail as to the screening measures that would be implemented along each boundary of the Property. *See* Site Plan Review narrative at 6-8. No one contended that the Project would not comply with this standard.

Based upon the testimony presented, the Board finds that the Site Plan Review Application complies with this standard, subject to obtaining the exceptions identified below and subject to compliance with the following condition:

> "13. The applicant and/or operator of the quarry shall maintain the following screening measures for the property: 1) a cyclone fence with wood slats and/or vegetation, installed around the property; 2) noise mitigation barriers in accordance with the Tonquin Quarry Noise Study dated September 23, 2013; and 3) natural and supplied screening as outlined by the Murase and Associates landscape plan dated April 2013, or as otherwise required herein."

2. Mining activities to be screened:

a) All excavated areas, except: areas where reclamation activity is being performed, internal onsite roads existing on the date of county adoption, new roads approved as part of the Site Plan Review, material excavated to create berms, and material excavated to change the level of the mine site to an elevation that provides natural screening,

b) All processing equipment.

c) All equipment stored on the site.

The Board finds, for the reasons set forth in response to CCZDO 708.05.B.1, which reasons are incorporated herein by reference, the Site Plan Review Application satisfies this standard.

2. Types of screening

a) Natural screening is existing vegetation or other landscape features within the boundaries of the Extraction Area that obscure mining activities from screened uses. Natural screening shall be preserved and maintained except where removed according to a mining or reclamation plan approved by DOGAMI.

b) Supplied screening is either vegetative or earthen screening. Supplied vegetative screening is screening that does not exist at the time of the Site Plan Review. Plantings used in supplied vegetative screening shall be evergreen shrubs and trees, and shall not be required to exceed six feet in height when planted. Supplied earthen screening shall consist of berms covered with earth stabilized with ground cover.

The Board finds, for the reasons set forth in response to CCZDO 708.05.B.1, which reasons are incorporated herein by reference, the Site Plan Review Application satisfies this standard.

3. Exceptions. Supplied screening shall not be required if any of the following circumstances exist:

a) The natural topography of the site obscures mining and processing from screened uses.

b) Supplied screening cannot obscure mining and processing from screened uses because of local topography.

c) Supplied vegetative screening cannot reliably be established or cannot survive due to soil, water or climatic conditions.

Applicant testified that it utilized Google Earth and ArcGIS software to closely examine existing topography between the proposed mining area and screened uses within 1,500 feet of the Project. See Site Plan Review Application narrative at 9-10. From this review, Applicant determined that, in most instances, adequate screening was available or could be supplied. *Id.*

Applicant concluded that in four instances, it was possible that supplied screening would not be able to obscure mining and processing from screened uses because of local topography: 31W04A00200 (Prince), 31W04A00201 (Anderson), 31W04A00204 (Anderson), and 31W04A01700 (Grossarth). *Id.* All four uses are located at substantially higher elevations than those existing today within the Tonquin Quarry and they do not fully benefit from the preservation of the high point ridgeline found along the westerly edge of the subject property. *Id.*

Accordingly, the Board finds that supplied screening may not be able to obscure mining and processing from screened uses in these locations. Therefore, the Board finds that there are grounds to grant exceptions to the supplied screening requirement under subsection 3(b) in these locations.

C. Air and Water Quality. The discharge of contaminants and dust created by mining and processing shall comply with applicable state air quality and emissions standards and applicable state and federal water quality standards.

For the reasons explained in these Supplemental Findings in response to OAR 660-023-0180(5)(b)(A) and CCZDO 708.05.H, which reasons are incorporated herein by reference, the Project's discharge of contaminants and dust will comply with applicable state air quality and emission standards and applicable state and federal water quality standards, subject to relevant conditions imposed in this decision. Therefore, the Board finds that the Site Plan Review Application satisfies this section.

D. Streams and Drainage. Mining and processing shall not occur within 100 feet of mean high water of any lake, river, perennial water body or wetland not constructed as part of a reclamation plan approved by DOGAMI unless allowed by specific provisions adopted in the Comprehensive Plan.

The Board finds that Applicant's Site Plan Review Application does not propose any mining or processing activities within 100 feet of the mean high water of any lake, river, perennial water body or wetland not constructed as part of a reclamation plan, except as allowed by the site-specific mining program applicable to the Property. As explained in detail above, Applicant is proposing to remove/fill 1.78 acres of inventoried wetlands, subject to obtaining state and federal permits and to ensuring "no net loss" of wetland values. Additionally, Applicant has proposed 50-foot buffers from avoided wetlands in some locations. The Board finds that these site-specific determinations control over the 100-foot standard set forth in this subsection.

E. Noise. Mining and processing shall comply with state noise control standards. Operators may show compliance with noise standards through the report of a certified engineer that identifies mitigation methods to control noise. Examples of noise mitigation measures are siting mining and processing using existing topography, using supplied berms, or modifying mining and processing equipment.

The Board finds that the Project will comply with state noise control standards, subject to incorporating identified mitigation measures, for the reasons set forth in response to OAR 660-023-0180(5)(b)(A) of these findings, and subject to imposing Conditions 52, 53, 54, 55, and 55a. The Board incorporates these reasons and conditions in response to this standard.

F. Hours of Operation.

1. Mining and processing is restricted to the hours of 7:00 AM to 6:00 PM Monday through Friday, and 8:00 AM to 5:00 PM Saturday. Hauling and other activities may operate without restriction provided that state noise control standards are met.

2. No operations shall take place on Sundays or the following legal holidays: New Year's Day, Memorial Day, the Fourth of July, Labor Day, Thanksgiving Day, and Christmas Day.

The Board finds that the Project satisfies this standard, subject to compliance with the following conditions of approval:

- "4. Mining (including but not limited to excavation and processing) is restricted to the hours of 7:00 AM to 6:00 PM Monday through Friday, and 8:00 AM to 5:00 PM Saturday. Drilling and blasting is restricted to the hours of 9:00 AM to 4:00 PM Monday through Friday."

- "5. No mining (including but not limited to excavation and processing), drilling, or blasting operations shall take place on Sundays or the following legal holidays: New Year's Day, Memorial Day, the Fourth of July, Labor Day, Thanksgiving Day, and Christmas Day. Further, no drilling or blasting operations shall take place on Saturdays."

G. Drilling and Blasting.

1. Drilling and blasting is restricted to the hours of 9:00 AM to 4:00 PM Monday through Friday. No drilling or blasting shall occur on Saturdays, Sundays, or the following legal holidays: New Year's Day, Memorial Day, the Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

Subject to compliance with Conditions 4 and 5 quoted above, the Board finds that the Project satisfies this standard.

2. Notice of blasting events shall be posted at the Extraction Area in a manner calculated to be seen by landowners, tenants and the public at least 48 hours prior to the blasting event. In the case of ongoing blasting activities, notice shall be provided once each month for the period of blasting activities, and specify the days and hours when the blasting event is expected to occur.

The Board finds that Wallace Technical Blasting, Inc. has provided a series of recommendations intended to establish an open line of communication between the proposed operation and its neighboring properties. *See* "A Site Specific Blasting Plan to Support the Application for a Permit to Engage in Mining Operations at the Tonquin Quarry in Clackamas County" from Wallace Technical Blasting, Inc. dated April 12, 2013 in Appendix F of the Applications. For example, neighbors can request that their names be added to a call/text list to be notified the morning of the event. *Id.* Consistent with neighboring quarries, a series of USBM mandated pre-blast signals will be made 5 minutes and 1 minute prior to initiation. *Id.* Several other recommendations are included in the Project blasting plan. *Id.* The Board finds, based upon the testimony in the record, and subject to compliance with the following conditions, the Project satisfies this standard:

> "56. The Quarry operator shall comply with the blasting plan prepared by Wallace Technical Blasting, Inc. dated April 13, 2013."
>
> "57. Notice of blasting events shall be posted at the Extraction Area in a manner calculated to be seen by landowners, tenants and the public at least 48 hours prior to the blasting event. In the case of ongoing blasting activities, notice shall be provided once each month for the period of blasting activities, and specify the days and hours when the blasting event is expected to occur."

H. Surface and Ground Water. Surface and ground water shall be managed in a manner that meets all applicable state water quality standards and DOGAMI requirements. The applicant shall demonstrate that all water necessary for the proposed operation has been appropriated to the site and is legally available.

SURFACE WATER

The Board finds that Project surface water will be managed in a manner that meets all applicable state water quality standards and DOGAMI requirements. As support for this conclusion, the Board relies upon testimony from the Project civil engineer, Westlake that the Project complies with stormwater management requirements of all applicable agencies, including DOGAMI (as to stormwater generated on-site) and WES (as to stormwater generated off-site). *See* Offsite Stormwater Analysis dated April 20, 2013 at Appendix D of the Applications. Further, Westlake explained that Applicant has

designed the Project such that there will be no offsite stormwater point discharge from the Project. *Id.*

GROUNDWATER

Additionally, the Board finds that the Project will maintain applicable state water quality standards and DOGAMI requirements pertaining to groundwater. As support for this conclusion, the Board relies upon the testimony of Project hydrogeologist Shannon & Wilson, which concludes that, although conflicts may occur between the Project and nearby residential properties, these conflicts can be minimized by implementing eight different monitoring and mitigation measures. *See* Shannon & Wilson Final Hydrogeologic Evaluation Report dated October 29, 2013 (Exhibit 92). The Board finds that this testimony is compelling in light of Shannon & Wilson's extensive experience and detailed analysis, which includes reviewing feedback from on-site monitoring wells for approximately five years. *See* G. Peterson and D. King resumes in Appendix N of Applications. Accordingly, the Board finds that the measures identified by Shannon & Wilson will ensure that the Project complies with applicable state standards regarding water quality and DOGAMI requirements pertaining to water quantity. Therefore, the Board imposes these measures in the following conditions of approval:

> "45. Additional monitoring wells and hydrogeologic testing, coupled with ongoing groundwater level monitoring, will establish baseline conditions and identify early groundwater level declines should they occur during mining operations. Onsite observation wells currently focus on water-bearing zone #3. Prior to excavation to -100 feet mean sea level (msl), three additional borings (core holes) shall be completed to directly identify and characterize water-bearing zone #4. Pressure transducers with dedicated dataloggers shall be installed to automate monitoring of groundwater levels. All three installations shall be located and protected to allow long-term use without disruption by mining. The existing observation wells shall be replaced if and when they are decommissioned due to the progression of mining activity."
>
> "46. Long-term groundwater level monitoring shall focus on water-bearing zones #3 and #4, and automated monitoring shall include existing and new observation wells. Monitoring data shall be reviewed and reported to DOGAMI at quarterly intervals for a minimum of two years, and shall continue per DOGAMI requirements until mining activities are complete."
>
> "47. Packer tests and slug tests shall be performed during drilling to estimate the water-bearing zone's hydraulic conductivity, which will facilitate mitigation and dewatering system design. The tests should focus at the design depths for the proposed infiltration benches and at water-bearing zones #3 and #4."

"48. Subject to documented access permission from private property owners, the monitoring of existing offsite wells associated with the properties listed below is required. The following property owners and properties have been identified as having a potentially high risk of conflict with groundwater quantity:

a. Fred Smith, 12551 SW Morgan Road, Sherwood;

b. Lee and Andrea Patrick, 12535 SW Morgan Road, Sherwood;

c. James B. and Marilyn Kramer, 12525 SW Morgan Road, Sherwood;

d. James P. Kramer, 12885 SW Morgan Road, Sherwood; and

e. Mark S. Platt, 12557 SW Morgan Road, Sherwood.

Subject to access authorization, monitoring protocols shall include the development of a baseline well status report for the five domestic wells within 90 days after commencement of site construction. If access is provided, the Site Operator will monitor water levels within 30 days of a request from a property owner to assess potential impacts.

In the event private well monitoring indicates a measured loss of 20 percent of greater daily in daily domestic water supply, the following shall occur:

i. Supplemental mitigation shall be provided including but not limited to deepening or replacement of private wells to tap deeper aquifers that are isolated from shallower mining impacts;

ii. Within 72 hours the applicant/operator shall provide not less than 400 gallons per 24 hour period of potable water for domestic use, by water tanker or other source to the above referenced affected owner. In the event that the provision of potable water becomes necessary, as requested by the affected property owner, a temporary above-ground potable water storage container shall be provided on the affected parcel. The container shall provide no less than 400 gallons of storage."

"49. Mitigation measures, including infiltration benches or injection wells along the south property boundary, shall be designed, built, and monitored to proactively avoid offsite impacts. Infiltration benches shall be constructed above water-bearing zone #3 (about 75 msl) in rock suitable to facilitate infiltration. Water applied to the infiltration bench provides a positive hydrostatic head in the rock mass that reduces groundwater declines adjacent to the quarry. The additional test borings,

instrumentation, and monitoring, as well observed seepage into the active quarry shall be utilized for development of final design and evaluation of mitigation measures. Should proactive infiltration fail or deemed inappropriate, well improvements such as resetting pumps at deeper depths, well deepening, or changes in well operation and storage capacity shall be considered as alternate mitigation options to alleviate water quality or quantity impacts.

"50. The quarry's excavation depth shall be maintained above water-bearing zone #4 identified in the Shannon & Wilson Final Hydrogeologic Evaluation Report dated October 29, 2013 (Exhibit 92)."

"51. Prior to mine operation, a final Spill Prevention Control and Countermeasure (SPCC) Plan shall be developed for the facility substantially consistent with the sample document provided by the U.S. Environmental Protection Agency and shown in Appendix M of the Application."

As additional support for its conclusion that the Project will satisfy groundwater standards, the Board relies upon testimony from an independent hydrogeologist that implementing the measures recommended by Shannon & Wilson will resolve potential conflicts with area groundwater users:

"Farallon concludes that the proactive groundwater monitoring proposed between the developing quarry and the potentially impacted residential water supply wells will provide the information necessary to implement mitigation measures as needed and before moderate or substantial impacts to those groundwater users can occur. Farallon concludes that, based on the information presented in the Hydrogeologic Report, there are sufficient mitigation options to alleviate the potential conflicts with identified groundwater users. Farallon also concludes that the proposed mitigation measures can also be used to recharge shallower Water-Bearing Zones 1 and 2 if recharge to those Water-Bearing Zones is necessary to mitigate for nearby shallow groundwater users or wetlands."

See Farallon Consulting Letter dated October 29, 2013 at 3 (Exhibit 91). Farallon reached this conclusion after independently evaluating Shannon & Wilson's hydrogeologic technical approach, conclusions, and recommendations set forth in the Final Hydrogeologic Evaluation Report dated October 29, 2013. *Id.*

The Board finds that opponents' contentions to the contrary do not undermine the well-reasoned conclusions of Shannon & Wilson and Farallon. For example, although Dr. Jenkins contends that there is insufficient evidence to support the conclusion that the proposed mitigation measures are feasible, the Board denies this contention. As support for its conclusion, the Board finds that Conditions 46-50 allow for various types of mitigation, as site conditions warrant (i.e., infiltration trenches, injection wells, well-

deepening). Therefore, even if one type of mitigation is not successful, Applicant has the flexibility to address it in other ways.

Further, the Board finds that the Project's proposed mining plan commences on the northern portion of the Property, which is the location farthest from the affected residential wells. The Board finds that this fact will allow Applicant ample time (i.e., years) to assess whether the Project is actually causing dewatering impacts before there is a substantive loss of use to the residential user. *See* Farallon Consulting Letter dated October 29, 2013 (Exhibit 91).

Finally, the Board relies upon testimony that the proposed mitigation measures are achievable (*See* Shannon & Wilson Memorandum dated November 4, 2013 (Exhibit 118)), and that, as a last resort, well deepening is both technically feasible and will serve to mitigate adverse effects to affected wells. *See* Shannon & Wilson Rebuttal Memorandum dated November 8, 2013 (Exhibit 140). Although Dr. Jenkins contends that well-deepening may not be feasible because increased demand on Water-Bearing Zone #4 may not be allowed, the Board denies this contention for two reasons. First, the Board finds that Dr. Jenkins' testimony is speculative because Dr. Jenkins did not present any testimony of a moratorium on well-drilling or deepening of existing, domestic, exempt water wells. By contrast, Shannon & Wilson testified that its scientists were not aware of any such moratorium. *See* Shannon & Wilson Rebuttal Memorandum (Exhibit 140). Further, the Board finds, for the reasons set forth below under the heading "Availability of Water," which reasons are incorporated herein by reference, Applicant has demonstrated that all water necessary for the Project has been appropriated to the Property and is legally available.

Although Dr. Jenkins contends that the Shannon & Wilson analysis is deficient because it did not include hydrologic field testing of specific water-bearing zones, the Board denies this contention because Conditions 46 and 47 require this testing. The Board finds that these tests will inform the timing and selection of mitigation measures, as needed.

Further, although Dr. Jenkins and Ms. Madden contend that the Property is located in a Groundwater Limited Area, the Board finds that opponents have not explained how this fact permits the County to deny or further condition the Applications. Therefore, the Board denies this contention.

Although Dr. Jenkins contends that potential contaminants from the Project may enter groundwater and potentially pollute offsite wells, the Board finds that Applicant has addressed this concern in two ways. First, as noted above, approval of the Applications is subject to Condition 51, which requires Applicant to prepare a Spill Prevention Control and Countermeasure (SPCC) Plan consistent with the EPA sample included in the Applications. *See* Appendix M of the Applications. The Board finds, based upon that model and the explanation set forth in the Final Hydrogeologic Evaluation dated October 29, 2013, that Applicant's SPCC will, at minimum, include:

- Facility diagram;
- Site security measures;
- Descriptions of proper petroleum product transfer procedures and other activities that might result in a release;
- Descriptions of all appropriate Best Management Practices (BMPs), including those associated with the containment and other countermeasures that would prevent oil spills from reaching navigable waters;
- A Spill Contingency Plan specifically designed for the proposed Tonquin Quarry;
- Personnel training practices and schedule;
- Descriptions of record-keeping practices; and
- Management approval.

Further, the Board finds that compliance with the SPCC Plan, together with implementation of the stormwater management system, will prevent and mitigate impacts from spills and will ensure that the mechanical aspects of the mining operation (drilling, blasting, crushing, hauling) will not be a possible groundwater contamination source. As support for this conclusion, the Board relies upon the expert opinion to this effect from Shannon & Wilson. *See* Final Hydrogeologic Report dated October 29, 2013 (Exhibit 92). The Board finds that no one rebutted or challenged this testimony with specificity.

Second, the Board finds that, in the event Applicant implements infiltration benches or injection wells in order to offset groundwater dewatering, there are measures that can ensure that groundwater will comply with federal standards pertaining to quality. In support of this conclusion, the Board relies upon testimony from Shannon & Wilson that baseline testing for volatile organic compounds, synthetic organic compounds, bacteriological analyses, major ions, and 17 metals, followed by periodic monitoring of same, Applicant will ensure groundwater compliance with the Safe Drinking Water Act of 1974 and subsequent amendments. *Id.* at 35-36 and Table 6. In order to ensure that the Project follows the recommended water quality testing, the Board imposes the following condition of approval:

> "49a. In the event the applicant/operator implements injection wells or infiltration trenches as a groundwater quantity mitigation measure, applicant/operator will implement the groundwater quality baseline testing and periodic monitoring program outlined in the Shannon & Wilson Final Hydrogeologic Evaluation Report dated October 29, 2013 (Exhibit 92) to ensure that the injection/infiltration water complies with the Safe Drinking Water Act of 1974 and subsequent amendments."

No one contended that Shannon & Wilson's program would fail to maintain water quality standards.

Although multiple opponents contend that the Project will cause dewatering of groundwater that will adversely affect wetlands and Rock Creek, the Board denies these

contentions for the reasons set forth in response to OAR 660-023-0180(5)(b)(D), which reasons are incorporated herein by reference.

Finally, as additional findings in support of its conclusion that the Site Plan Review Application satisfies this standard, the Board accepts, adopts, and incorporates by reference, the explanations set forth in Shannon & Wilson's submittals into the record dated September 30, 2013 (Exhibit 66c); November 4, 2013 (Exhibit 118); and November 8, 2013 (Exhibit 140).

AVAILABILITY OF WATER

Finally, the Board finds that Applicant has demonstrated that all water necessary for the proposed operation has been appropriated to the Property and is legally available. As support for this conclusion, the Board relies upon two sources. First, the Board relies upon the fact that, as an industrial operation, the Project is an "exempt use" under state law and thus has a water right not to exceed 5,000 gallons per day. ORS 537.545. Further, the Board finds that, pursuant to this statute, no registration, certificate, or permit is required for such use of groundwater. *Id.* Further, based upon testimony from Applicant, the Board finds that Project operations are not anticipated to exceed the "exempt use" allocation of 5,000 gallons per day because the Project will require minimal use of on-site water (typically just the amount necessary to comply with Conditions 72 (truck wheel wash system), 73 (requirement to water surfaces), and 74 (requiring water sprayers for crushers and screens). *See* Site Plan Review Application narrative at 14-15. The Board finds that this testimony was not rebutted or challenged.

Second, the Board relies upon testimony from the Project hydrogeologist that, factoring in the Project's exempt use allocation as well as rights for current and future users in the vicinity, the aquifer will not be overdrawn:

> "The scenario evaluated by our model suggests that if all current and reasonably anticipated future users maximized their allotted use, including the proposed exempt well supplying Tonquin Holdings LLC quarry operations, that approximately 85% of the groundwater recharge is allocated. Hence overdrafting of the aquifer is not predicted."

See Shannon & Wilson Final Hydrogeologic Evaluation dated October 29, 2013 at 23 (Exhibit 92). The Board finds that, as explained in its report, Shannon & Wilson reached this conclusion after conducting a comprehensive analysis of all 50 tax lots located within a quarter-mile of the Property, and then making appropriate adjustments based upon existing well locations, County records regarding lots of record, and anticipated uses. *Id.* at 20-23 and Table 4. Further, the Board finds that this testimony was not rebutted or challenged. Therefore, the Board finds that a reasonable person would rely upon the testimony from Applicant and Shannon & Wilson to conclude that all water necessary for the proposed operation has been appropriated to the site and is legally available.

I. Compliance with Special Conditions. The County may impose additional, special conditions to resolve issues specific to an individual site. The conditions shall be specified in the site-specific program to achieve the Goal adopted as part of the Comprehensive Plan.

The Board finds that, in order to ensure compliance with applicable approval criteria and to resolve issues specific to the Property, it is necessary to impose special conditions on the approval of the Project. The conditions are numbered 1-114 and will be specified in the site-specific program to achieve Goal 5 that is adopted as part of the CCCP. The Board supplements these general findings in support of the conditions with the more specific findings tailored to specific conditions of approval that are set forth throughout these findings.

J. Security. The permittee shall fence the Extraction Area boundary between the mining site and any parcel where dwellings are a principal use. Fencing shall be a cyclone type fence a minimum of six feet high.

Applicant testified that it will install a minimum 6 foot tall cyclone fence with site obscuring wood slats around the perimeter of the Project. *See* Site Plan Review Application narrative at 6-8. In most locations, Applicant will place this fence at or near the Property boundary. *Id.* However, Applicant stated that there are a couple of sections where sight distance restrictions, wetland setbacks, and existing topography will require field verification to identify the most appropriate location for the fence. *Id.* However, the Board finds that, other than at the site access on SW Morgan Road, all mining activities will occur on the interior of the perimeter fence. *Id.* Based upon this testimony, the Board finds that the Project satisfies this standard.

K. Performance requirements.

1. The mining operator shall maintain DOGAMI and other state agency permits.

2. The mining operator shall carry a comprehensive general liability policy covering mining, and incidental activities during the term of operation and reclamation, with an occurrence limit of at least $500,000. A certificate of insurance for a term of one year shall be deposited with the County prior to the commencement of mining and a current certificate of insurance shall be kept on file with the County during the term of operation and reclamation.

Applicant has testified that it intends to comply with these requirements and has proposed conditions of approval to ensure the same. *See* Site Plan Review Application narrative at 16-17. Further, the Board finds that compliance with these conditions is feasible because obtaining the state agency permits and insurance policy is not precluded as a matter of law. Based upon this testimony and subject to imposing the following conditions of approval, the Board finds that the Project satisfies this standard:

- "6. The applicant and/or operator shall not initiate mining and activities on the Quarry until the State Department of Geology and Mineral Industries approves the reclamation plan and operating permit for the Quarry."

- "8. The applicant and/or operator shall obtain Oregon DEQ approval of a Spill Prevention Controls and Countermeasures Plan for the Quarry and shall comply with same."

- "9. Copies of all permits issued for the Quarry shall be provided to the County including, but not limited to, any permits issued by DOGAMI, DSL, DEQ, the Oregon Water Resources Department, the Oregon Fire Marshall's Office, and the U.S. Army Corps of Engineers."

- "59. The applicant and/or operator shall not fill, excavate or otherwise disturb wetlands on the property until first obtaining appropriate permits from the Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (Corps) and implements any required pre-disturbance mitigation measures. The applicant and/or operator shall provide County Planning and/or WES/SWMACC with copies of any annual monitoring reports required by DSL and/or Corps."

- "68. The Quarry Operator shall comply with OAR 340-200 through 340-246 requirements."

- "69. The Quarry Operator shall comply with 40 CFR Part 60 Subpart OOOO requirements."

- "10. The Quarry operator shall carry a comprehensive liability policy covering mining and incidental activities during the term of the operation and reclamation, with an occurrence limit of at least $500,000. A certificate of insurance for a term of one (1) year shall be deposited with the County prior to the commencement of mining, and a current certificate of insurance shall be kept on file with the County during the term of operation and reclamation."

708.06 RECLAMATION

A. No mining shall begin until the permittee provides the county with a copy of a DOGAMI Operating Permit or exemption in accordance with ORS 517.750 through 517.900 and the rules adopted thereunder.

The Board finds that the following conditions will ensure compliance with this section:

- "6. The applicant and/or operator shall not initiate mining and activities on the Quarry until the State Department of Geology and Mineral

Industries approves the reclamation plan and operating permit for the Quarry."

- "7. Applicant shall obtain approval from the State Department of Geology and Mineral Industries of a reclamation plan for the property and shall implement the same."

Therefore, the Board finds it necessary to impose these conditions on the approval of the Project.

B. The County's jurisdiction over mined land reclamation is limited to determining the subsequent beneficial use of mined areas, ensuring that the subsequent beneficial use is compatible with the Comprehensive Plan and Zoning and Development Ordinance, and ensuring that mine operations and reclamation activities are consistent with the program to achieve the Goal adopted as part of the Comprehensive Plan.

The mining plan proposes to reclaim the property to elevations suitable to development consistent with County requirements in place at that time. The subject site is not designated as an Urban Reserve. Therefore, based upon what we understand today our expectation is that the intensity of development will be similar to that allowed under the current zoning.

C. The County shall coordinate with DOGAMI to ensure compatibility between DOGAMI and the County in the following manner.

1. When notified by DOGAMI that an operator has applied for reclamation plan and an Operating Permit, the County shall inform DOGAMI whether Site Plan Review approval by the County is required.

a) If Site Plan Review approval is required, the County shall request that DOGAMI delay final action on the application for approval of the reclamation plan and issuance of the Operating Permit until after Site Plan Review approval has been granted.

b) If Site Plan Review approval is not required, the County shall so notify DOGAMI and the County shall review the proposed reclamation plan and Operating Permit during DOGAMI's notice and comment period.

2. When reviewing a proposed reclamation plan and Operating Permit application circulated by DOGAMI, the County shall review the plan against the following criteria:

a) The plan provides for rehabilitation of mined land for a use specified in the Comprehensive Plan, including subsequent beneficial uses identified through the Goal 5 planning process.

b) The reclamation plan and surface mining and reclamation techniques employed to carry out the plan comply with the standards of Section 708.05.

c) Measures are included which will ensure that other significant Goal 5 resources determined to conflict with mining will be protected in a manner consistent with the Comprehensive Plan.

Applicant has provided its DOGAMI Mining and Reclamation Plan Application and Preliminary Conditions of Approval. *See* Appendix B of the Applications. For the reasons set forth in response to OAR 660-023-0180(5)(f), the Board finds that these materials are consistent with the Site Plan Review Application and the above criteria. The Board finds that County staff will further coordinate with DOGAMI during the DOGAMI permit process to ensure that the final DOGAMI operating permit and reclamation plan satisfy the above criteria. Finally, the County finds that the requirement in Conditions 6 and 7 to obtain DOGAMI approvals before commencing Project activities ensures that the County will have the coordination opportunity required by these sections.

708.07 SITE PLAN REVIEW

A. Site Plan Review under the Mineral and Aggregate Overlay District is a Planning Director administrative action. An application for a permit shall be processed pursuant to Subsections 1305.02(A), (E) and (G) through (I) to the extent these Subsections are consistent with the requirements of ORS 215.425 and 197.195.

The Board finds that although Site Plan Review under the Mineral and Aggregate Overlay District is typically a Planning Director administrative action under the terms of this subsection, the Planning Commission has jurisdiction to hear applications filed concurrently with a comprehensive plan amendment application under CCZDO 1301.01.B.2. Applicant has filed the Site Plan Review Application concurrently with the PAPA Application and the Zone Change Application. Therefore, the Planning Commission properly had jurisdiction to hear the Site Plan Review Application, with the Board making the final decision for the County.

B. The County shall approve, approve with conditions, or deny the application for the permit based on the conformance of the site plan with the standards of ZDO Sections 708, 1006, 1010, and the requirements of the site-specific program to achieve Goal 5 adopted as part of the Comprehensive Plan.

1006 – Water Supply, Sanitary Sewer, Surface Water, and Utilities Concurrency

The Board finds that the Project satisfies the applicable requirements of CCZDO 1006 based upon the following, all of which are incorporated herein by reference:

- The reasons at pages 84-85 of the Staff Report;
- The reasons at pages 19-20 of the Site Plan Review Application narrative; and
- The reasons set forth in response to CCZDO 708.05.H above.

1010 - Signs

The Applications do not request any identification signs on the exterior of the Property in conjunction with the Applications. *See* Site Plan Review Application narrative at 21. In order to comply with Condition 77b. and c. concerning the Tonquin Ice Age Trail crossing, Applicant is required to install safety signage that will face the interior of the Property. Based upon the testimony presented, the Board finds that the signage for the Property is consistent with CCZDO 1010.

Site-Specific Program to Achieve Goal 5 Adopted as part of the CCCP

The Board finds that the Site Plan Review Application conforms with the site-specific program to achieve Goal 5 adopted as part of the CCCP because the Board has reviewed the Applications together and is issuing a single decision approving all of the Applications with a common set of conditions. Accordingly, the Site Plan Review Application necessarily conforms with the PAPA Application and the Zone Change Application.

OTHER ISSUES RAISED DURING THE LOCAL PROCEEDINGS

Impacts to Property Values

Further, although several area residents expressed concern that development of the Project would adversely affect their property values, the Board denies this contention for two reasons. First, the testimony from area residents was speculative and not supported by any analysis or expert testimony. Second, although the Board appreciates the residents' concerns, this issue is not directed at an applicable approval criterion. Accordingly, the Board cannot make a decision to deny or condition the Project based upon potential impacts to property values. *See Buel-McIntire v. City of Yachats*, 63 Or LUBA 452 (2011) (error to deny application based upon factor that was not applicable approval criterion).

Impacts Caused by Existing Mines

Although several residents testified to adverse impacts caused by existing mines in the vicinity of the Project, the Board finds that this testimony alone does not constitute grounds to deny or further condition the Applications. Although the Board finds the testimony of these residents to be credible, the Board also finds that several of these mines were approved many years ago, under separate criteria, subject to less restrictive conditions, and by a different jurisdiction (Washington County). *See* testimony of Steve

Pfeiffer at Board public hearing. Further, the Board finds that it is possible that one or more of these mines is not in compliance with conditions that were imposed. As such, the Board finds that these mines are not comparable to the Project and are not a reliable indicator of the impacts of the Project. Further, the Board finds that, in any event, the Project is heavily conditioned to ensure that it satisfies all applicable criteria and minimizes any potential significant conflicts. Therefore, the Board denies the residents' contentions on this issue.

Blasting Impacts (Other than Noise)

Although several area residents expressed concern about blasting at the Project causing vibration, startling of people or animals, or private property damage, the Board denies these contentions as speculative. Further, to the extent that opponents' testimony is based upon their experience with other mines in the area, the Board denies these contentions for the reasons explained above regarding impacts associated with other mines.

Further, the Board finds that Mr. Wallace has opined that, subject to compliance with the Project blasting plan and providing notice of blasting events, blasting-induced impacts will not exceed applicable federal and state standards and will operate with minimal impact on neighbors. *See* Letter from Jerry Wallace, undated (Exhibit 88). Mr. Wallace has outlined detailed procedures and limitations on blasting at the Project, including a requirement that blasting only occur on weekdays between 9am and 4pm, providing contact numbers to neighbors, and establishing protocol for drilling, loading, and delaying. *See* "A Site Specific Blasting Plan to Support the Application for a Permit to Engage in Mining Operations at the Tonquin Quarry in Clackamas County" from Wallace Technical Blasting, Inc. dated April 12, 2013 in Appendix F of the Applications. Mr. Wallace also testified that blasting at the Project would be subject to compliance with the vibration limits shown on a graph known as the Z-curve or Siskind curve, which would be below the threshold for inflicting damage on even the most fragile of civil residential construction. *See* Wallace letter dated November 4, 2013 (Exhibit 111).

The Board finds Mr. Wallace to be particularly credible to develop the plan and provide opinions about compliance with applicable standards because Mr. Wallace has nearly 40 years of experience as a blaster, including working as a blasting superintendent for a contractor that performed drilling and blasting services in quarries near the Property. *See* undated Wallace letter (Exhibit 88).

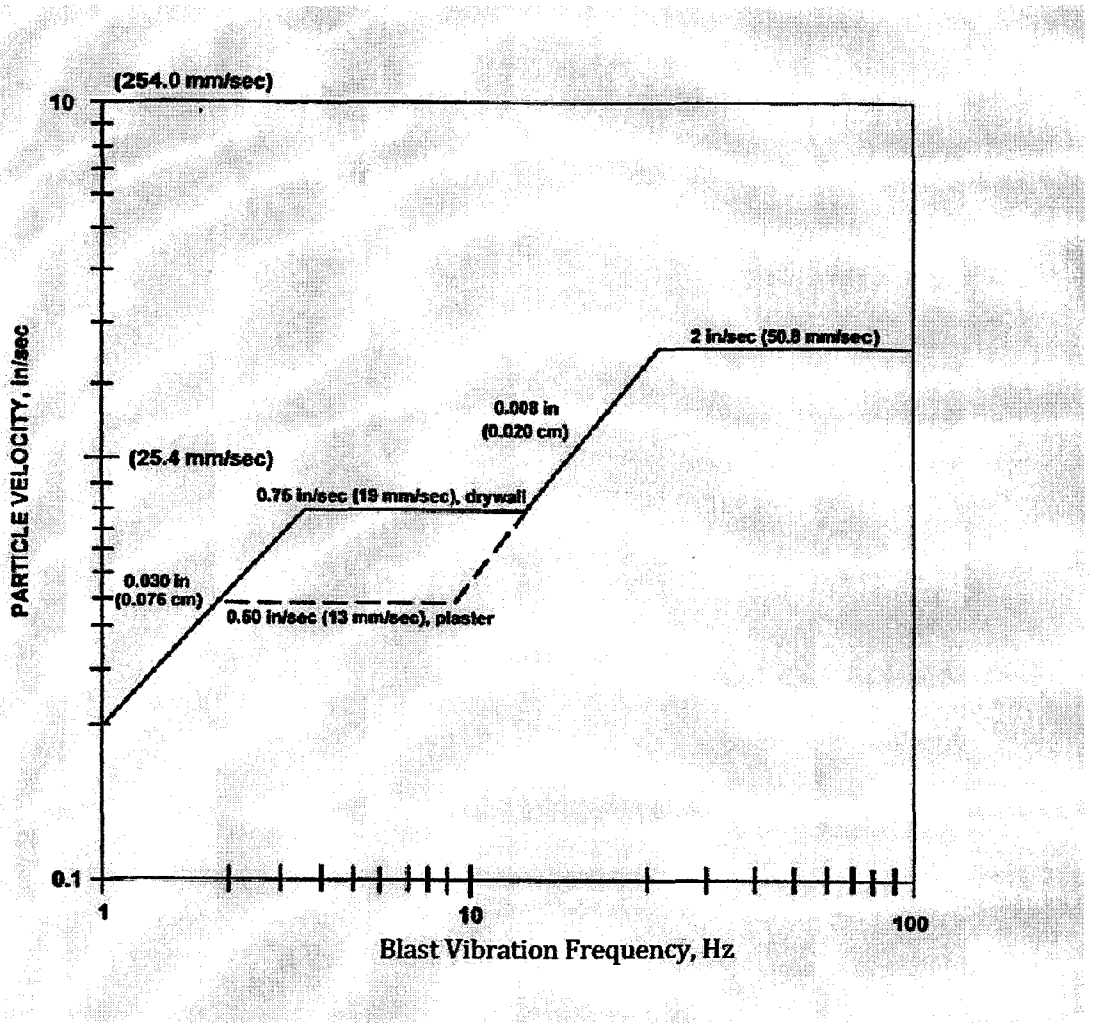
The Board finds that no credible evidence was presented to rebut Mr. Wallace's testimony or to call into question any specific aspects of the blasting plan. Therefore, the Board finds that, based upon the evidence in the whole record, a reasonable person would conclude that blasting in compliance with the blasting plan and subject to adequate advance notice will protect the public from vibration, startling of people or animals, and private property damage.

In order to ensure compliance with these requirements, the Board imposes the following three conditions of approval:

"56. The Quarry operator shall comply with the blasting plan prepared by Wallace Technical Blasting, Inc. dated April 13, 2013."

"57. Notice of blasting events shall be posted at the Extraction Area in a manner calculated to be seen by landowners, tenants and the public at least 48 hours prior to the blasting event. In the case of ongoing blasting activities, notice shall be provided once each month for the period of blasting activities, and specify the days and hours when the blasting event is expected to occur."

"57a. Blasting activities shall comply with the Z-curve vibration limits adopted by reference by the Oregon State Fire Marshal, as depicted in the following figure:



Additionally, although some opponents expressed concern that blasting could cause damage to the Kinder-Morgan pipeline that traverses the Property, the Board denies this contention as speculative. Instead, the Board finds that blasting can safely be conducted within 300 feet of the pipeline, subject to complying with specific guidelines, including providing adequate advance notice to Kinder Morgan of each blast and locating blasts outside of the pipeline right-of-way. As support for this conclusion, the Board relies upon testimony from Don Quinn, Kinder Morgan Manager for Pipeline Relocations outlining "reasonable precautionary measures for the protection of the health and safety of the Public, the environment, and our pipelines." *See* October 7, 2010 Letter from Don Quinn and attachment set forth at Divider C of the Applications. The Board finds that no credible evidence was presented to rebut Kinder Morgan's testimony. Therefore, the Board finds that, based upon the evidence in the whole record, a reasonable person would conclude that blasting in compliance with the Kinder Morgan guidelines would provide reasonable precautions against damage to the pipeline and related concerns for public safety.

In order to ensure compliance with Kinder Morgan's requirements, the Board imposes the following condition of approval:

> "12. Unless otherwise agreed to by Kinder Morgan, the quarry operator shall comply with the recommended guidelines dated October 7, 2010 (including attachment) provided by Kinder Morgan for blasting within 300 feet of their pipeline."

As conditioned, the Board finds that the Project addresses the residents' concerns about blasting impacts (other than noise).

Conditional Use Permit Proceedings

The opponents contend that the County Hearings Officer's findings concerning impacts to wetlands and wildlife from the previous conditional use proceedings for an aggregate mine on the Property are persuasive authority for how issues should be addressed in these proceedings. The Board denies these contentions. The Board finds that the earlier conditional use proceeding was a separate proceeding, subject to a different set of approval criteria, a different local decision-making process, and a different record. Accordingly, the Board finds that, in general, how specific issues were decided in the conditional use proceedings is not relevant to the instant Applications. For the reasons set forth in these findings, the Board finds that the Applications, as conditioned, satisfy all applicable approval criteria related to these proceedings.

Use of Clean Fill Material During Reclamation

Although the Planning Commission debated whether the Applicant could ensure that only clean fill material would be imported to the Property during the reclamation process, the Board finds that it is feasible for the Applicant to comply with applicable

DEQ and DOGAMI standards regarding importation of clean fill, subject to imposing the following condition:

> "7. The applicant and/or operator shall obtain approval from DOGAMI of a reclamation plan for the subject property and shall implement same."

As support for its conclusion, the Board relies upon the testimony of the Applicant, which explained the applicable DEQ standard, the State's role in enforcing that standard, and practices that would be implemented at the Project to monitor and manage fill importation, including procedures for addressing fill material that does not qualify as clean. *See* Letter from Matt Wellner dated October 21, 2013 (Exhibit 89). The Board finds that no opponents presented testimony that undermined this testimony. Therefore, the Board finds that, based upon the evidence in the whole record, a reasonable person would conclude that it is feasible for the Applicant to comply with applicable DEQ standards regarding importation of clean fill to the Project.

Easement for Portion of Wetland C on Kramer Property

Although Jim Kramer contends that because he was required to dedicate a portion of Wetland C to the public for conservation purposes, the Applicant should be required to do the same as to the portion of Wetland C on the Property, the Board denies this contention for two reasons. First, the Board finds that Mr. Kramer's dedication occurred in a separate proceeding (a land division), which was subject to different approval criteria and review procedures. Second, since the time of Mr. Kramer's dedication, the Board finds that LUBA has held that the County cannot require the dedication of a conservation easement on private property to the public without compensation unless there are findings demonstrating that the exaction of the easement is roughly proportional to the projected impact of the Project. *Tonquin Holdings, LLC v. Clackamas County*, 64 Or LUBA 68 (2011). The record does not include any evidence that would support such findings in this case. Therefore, the Board denies Mr. Kramer's contentions on this issue.

Further, although Ms. Madden contends that the County's approval of the Applications could cause the County to be liable if the Kramer wetland easement is violated, the Board denies this contention for two reasons. First, Ms. Madden's contention is speculative and refuted by the evidence in the record, which, as explained above, demonstrates that development of the Project consistent with the conditions of approval will minimize any significant conflicts with off-site natural resources. Second, any action concerning the easement is outside the scope of this proceeding. Therefore, the Board denies Ms. Madden's contentions on this issue.

Street Sweeping

The Board finds that there is a reasonable risk that trucks and other vehicles leaving the Project will track dirt onto area roadways. Although the Applicant has already proposed, and the Board has required, a number of dust control measures, such as watering the

main facility access road (Condition 71), maintaining a truck wheel wash system for exiting trucks (Condition 72), requiring watering of on-site surfaces whenever visible dust emissions are observed (Condition 73), and requiring use of water sprayers to control dust emissions from crushers and screens (Condition 74), the Board finds that an additional condition of approval is warranted to protect public road surfaces:

> "74a. Upon commencement of quarry operations, Morgan Road shall be cleaned with a street sweeper, not less than twice a month within the improved right-of-way between the site entrance and the Morgan Road/Tonquin Road intersection. Upon commencement of reclamation activities, street sweeping shall occur in this same area once a week."

SUMMARY AND CONCLUSION

Based upon the cited and incorporated evidence and argument and the findings of fact and conclusions of law stated above, the Board finds that the Applications, as conditioned, satisfy all applicable approval criteria. Therefore, the Board approves the Applications, subject to the conditions set forth in Exhibit A of the adopting order of the Board of County Commissioners.