July 18, 2025

VIA HAND DELIVERY:

Marion County Board of Commissioners
c/o Marion County Clerk
555 Court St NE, 2nd floor
Salem, OR 97301

RE: Board of Commissioner's Appeal Hearing (CU24-028)
Our File No: 44510-00001

Dear Honorable Commissioners:

My office represents Marin W. Klopfenstein, the property owner and applicant (the "***Applicant***") in the matter regarding Conditional Use 24-028 to operate a mulching service as a commercial activity in conjunction with farm use (the "***Application***") at 5711 Brooklake Rd NE, Salem (the "***Subject Property***"). Applicant's primary business is Mountain View Tree Service LLC, an Oregon limited liability company (herein "***MVTS***"). However, the proposed commercial activity on the Subject Property is the mulching operation. Applicant brings wood debris obtained from MVTS to the Subject Property to be turned into mulch. The mulch is then delivered to local farm operations free of charge. For the reasons set forth below, Applicant respectfully requests that the Marion County Board of Commissioners approve the Application.

The Hearings Officer found that the criteria under MCC 17.136.060(D)(4) was not satisfied because the mulch is not essential to the practice of agriculture, that MCC 17.136.060(D)(1) was not satisfied because Applicant is not primarily a supplier of farm uses, and that MCC 17.136.060(A)(4) was not satisfied because there was insufficient evidence to establish that the noise will not significantly impact surrounding properties. The Hearings Officer erred by denying the Application. Applicant has provided substantial

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evidence demonstrating that all applicable approval criteria have been satisfied or can be satisfied through reasonable conditions of approval. Below Applicant addresses both the criteria that the Hearings Officer found was not satisfied and also comments from opponents, which demonstrates the following: (1) the mulch produced on the Subject Property is essential to the practice of agriculture; (2) Applicant is primarily a supplier of farm uses; (3) the noise from the mulching operation will not significantly impact surrounding properties; (4) diseased trees will not impact surrounding properties; (5) traffic from the mulching operation will not significantly impact surrounding properties; (6) Marion County can approve the Application because approval would correct the violation of the Marion County Rural Zoning Code; and, (7) the proposed conditions of approval will adequately mitigate any potential impacts to surrounding properties.

1) The mulch produced on the Subject Property is essential to the practice of agriculture.

The mulch produced on the Subject Property, which Applicant provides to local farm operations free of charge, is essential to the practice of agriculture. The Hearings Officer found that the criteria under MCC 17.136.060(D)(2), that the commercial activity enhances local farming enterprises, was satisfied. However, the Hearings Officer erred in finding that the criteria under MCC 17.136.060(D)(4) was not satisfied and applied the incorrect standard. The Hearings Officer stated that the relevant question of law was "whether the commercial activity is something *particularly unique* to farm users and farm use practices." This standard is inconsistent with Oregon law and inconsistent with the Hearings Officer's own analysis. The *City of Sandy v. Clackamas County*, LUBA No. 94-10 (1994) cited several examples to show that there must be a close relationship to the proposed commercial activity with farm uses, one of which was *Earle v. McCarthy*, 28 Or App 541, 560 P2d 665 (1977). *City of Sandy* stated that the "Oregon Court of Appeals had little difficulty concluding a hop warehouse that would store hops grown by many hops growers, and sell string and burlap used in hop production, qualified as a commercial activity in conjunction with farm use...In *Earle*, it appears all of the warehouse's purchases and sales were to commercial hops growers." The Hearings Officer asserts that case law requires that an activity be "particularly unique" to farm users. However, the Hearings Officer also references *Earle* and attempts to differentiate it from the mulching operation by stating that while string and burlap are not exclusively used in hop production, all of the sales were to commercial hop growers. Similar to *Earle*, Applicant provides the mulch produced on the Subject Property exclusively to local farm operations. Applicant does not advertise or sell mulch to the general public. Applicant has proposed Condition of Approval 6 under Section 7 below to ensure that Applicant will continue to exclusively provide mulch produced on the Subject Property to local farm operations. Unlike *Friends of Marion County v. Marion County and Jones, Seasons at Red Oak Farm*, LUBA 2021-089 (2022) which involved a program aimed to inspire youth to pursue agricultural careers, the connection between the commercial activity and agricultural use is not "too remote and speculative" but rather the mulching operation directly benefits farm operations. Applicant previously provided affidavits from local farmers who receive mulch which all describe how the mulch is essential for their cattle operations, with benefits such as moisture retention, natural weed suppression, protection from soil erosion, and as testified by Applicant, clean mulch without metal or other inorganic material that could harm livestock.

City of Sandy did not create a bright line rule that an activity used in an industry other than farming cannot qualify as a commercial activity in conjunction with farm use as a matter of law. Applicant does not need to establish that farmers do not have any alternatives or that there are not any potential non-farm uses for the mulch. Applicant has control over the distribution of the mulch because it is delivered to local

farmers free of charge rather than sold to the general public. There is substantial evidence in this Application to support compliance with MCC 17.136.060(D)(4) and continued compliance can be ensured with proposed Condition of Approval 6 requiring that mulch exclusively be provided to local farm operations.

2) Applicant is primarily a supplier of farm uses.

The Hearings Officer found this criterion was not met because the mulching operation is not the true commercial activity and mulching "occur[s] only because of the Applicant's need to store and destroy debris related to Applicant's tree trimming business." The source of the wood byproducts and lack of consideration is irrelevant. The relevant question is to whom is the mulch being supplied. As described above, Applicant previously testified that the mulch is not supplied to nonfarm operations and Applicant has proposed Condition of Approval 6 which would require that mulch shall continue to be exclusively sold or delivered to local farm operations. Applicant could dispose of MVTS's wood debris in a landfill like most other tree trimming businesses in the area; however, because of Applicant's ingenuity and value of community service, Applicant uses the debris to create mulch which is essential to the practice of agriculture and then provides the mulch free of charge to local farm operations. As stated on page 5 of the Hearings Officer's Decision and as shown by Applicant's site plan, which is attached hereto as ***Exhibit 1***, 9% of the total area is used for storing logs, and the remaining 91% of the total area is used for the mulching operation. The Hearings Officer found that a significant area is used for the storage of vehicles for the tree trimming service. However, this is inconsistent with the evidence. Applicant previously provided a vehicle inventory, which can be found on page 47 of Applicant's First Open Record Response submitted to the Hearings Officer, identifying the vehicles and equipment stored on the Subject Property including the use of each. As shown by the vehicle inventory, the vast majority of vehicles and equipment stored on the Subject Property are necessary for the storage, production, or transportation of the wood debris and mulch. The vehicles and equipment related to the storage of logs on the Subject Property, such as the log loader, are incidental to the primary use of the property for the mulching operation. As Applicant previously testified, he desires to serve his community, be a good neighbor, and support local farm operations. Mulch is only produced four (4) times a year in order to minimize impacts to surrounding properties as much as possible; however, the mulching operation, meaning the storage of vehicles, equipment, and materials necessary for the mulching operation, the storage of debris to be mulched, and the storage of mulch, occurs on a year-round basis.

Chauncey v. Multnomah County, LUBA No. 91-212 (1992) did not hold that mulching operations as a matter of law cannot qualify as commercial activity in conjunction with farm use but rather held that the evidence in the record was insufficient to support approval in that instance. The court in *Chauncey* held that "the evidence in the record does not establish the quantity of wood by-products delivered, or dollar amount of sales, by petitioners' business to farm uses within [the local agricultural community]. We agree with respondent that in the absence of such evidence, petitioners cannot demonstrate as a matter of law that their proposed use of the subject site is a commercial activity in conjunction with farm use." The mulching operation is distinguishable from the uses denied in *City of Sandy* and *Chauncey* because there is substantial evidence in the record to support that Applicant is primarily a supplier of farm uses and the mulch is essential to the practice of agriculture. Unlike the applicants in other cases, Applicant does not advertise or sell to the general public so there is not a wide range of potential customers or nonfarm uses for the mulch. In addition, Applicant has provided evidence of the amount of mulch delivered to local farmers annually, which is approximately 50 to 70 truckloads or 2,400 to 3,200 cubic yards of mulch. The

previously submitted affidavits from local farmers who receive the mulch also included information about the quantity of mulch that is received. The mulching operation is the proposed commercial activity and the fact that Applicant receives the wood debris from another facet of his business, or that Applicant does not charge farmers for the mulch, is irrelevant to whether Applicant is primarily a supplier of farm uses. Applicant is primarily a supplier of farm uses consistent with Oregon case law and therefore satisfies the criterion under MCC 17.136.060(D)(1).

3) The noise from the mulching operation will not significantly impact surrounding properties.

Applicant has provided a noise study prepared by Lindsey King, CFM, of Pacific Northwest Planning, which is attached hereto as ***Exhibit 2***. The noise study supports that the noise generated from the mulching operation will not have a significant impact on surrounding properties. Opponents, including Adelman Peony Gardens and residents of the neighborhood located off Ramp St NE, previously submitted comments regarding the impacts of noise from the mulching operation. As described in the noise study, the noise level that Adelman Peony Gardens and the residents of the neighborhood located off Ramp St NE will experience during the periods of active mulching is less than the maximum noise level permitted by the Marion County Noise Ordinance. As shown in Exhibit C of the noise study, 60dBA is the noise level of a typical conversation and 70 dBA is the noise level of a typical group conversation. The noise level which Adelman Peony Gardens and the residents of the neighborhood located off Ramp St NE will experience during periods of active mulching is approximately 62.3 dBA to 62.9 dBA, which is comparable to a normal conversation. A jet engine at takeoff produces 120–140 dBA, roughly 30–45 decibels louder than the mulching operation. On the decibel scale, that difference equates to multiple times louder in perceived sound. As described in the noise study, the Inverse Square Law states that by doubling the distance from a sound source the noise level is decreased by 6 dB and that at 10 times the distance from a sound source the noise level is decreased by 20 dB. The noise level experienced by adjacent properties is already less than the maximum noise level permitted by the Marion County Noise Ordinance and the noise level is significantly reduced as distance from the mulching operation increases. In addition, the Subject Property is adjacent to several active farm operations and the noise level produced by active mulching is consistent with, and in many instances less intense, than farm uses. As shown by Exhibit C attached to the noise study, there are several farm uses which produce noise levels greater than the noise levels produced by active mulching, such as a chicken coop (70 dBA), tractor idling (80 dBA), or combine (90 dBA). Farm uses are permitted outright in the EFU zone and pursuant to MCC 8.15.080(E), are exempt from the restrictions set forth in the Marion County Noise Ordinance.

The grinder is sited in the central portion of the Subject Property and the Subject Property is also developed with a vegetative berm, which the noise study found effectively buffers the noise produced by the mulching operation. As a courtesy due to Applicant's desire to be a good neighbor, Applicant has proposed Condition of Approval 15 under Section 7 below which would prohibit Applicant from producing mulch during the period of May 1 through June 15 each year, when Adelman Peony Gardens is open to the public for events. Applicant has also proposed Condition of Approval 10 which states that "applicant shall establish and maintain a contiguous vegetative or man-made buffer which at the time of planting must be at least 4 feet in height, and then grow to at least 12 feet tall around the perimeter of the area proposed area for commercial use on the applicant's site plan" to ensure Applicant continues to comply with the Marion County Noise Ordinance and mitigate noise impacts on surrounding properties. The noise from the mulching operation will not significantly impact surrounding properties and therefore Applicant has satisfied MCC 17.136.060(A)(4).

4) Diseased Trees will not impact surrounding properties.

Trees affected by diseases such as Dutch Elm Disease or Sudden Oak Death or harmful pests such as Emerald Ash Borer that are regulated by the Oregon Department of Forestry ("***ODF***") and Oregon Department of Agriculture ("***ODA***") ("***Diseased Trees***"), are not taken to or stored on the Subject Property. In addition to regulation by the ODF and ODA, the proper removal and disposal of Diseased Trees is also mandated by certain local jurisdictions in order to obtain and maintain tree work permits. Applicant has provided a declaration, attached hereto as ***Exhibit 3***. As stated in the declaration, it is Applicant's professional opinion that the production of mulch will not impact nearby farming operations. Applicant is the owner and operator of MVTS and is also an International Society of Arboriculture ("***ISA***") certified arborist with 17 years of experience in the industry. MVTS employs additional ISA certified arborists. ISA certification requires rigorous training and testing, including expertise in pest and disease management for urban and rural forests as well as tree crops. The ISA certification also upholds a strict code of ethics that mandates the proper identification and management of infected trees and tree by-products. The mulch produced on the Subject Property consists entirely of wood debris obtained from MVTS. Employees of MVTS identify Diseased Trees while on a jobsite. The Diseased Trees are disposed of pursuant to applicable regulations, such as transporting the Diseased Trees directly to a designated disposal site. Opponents have expressed concerns about the potential for diseases or pests to spread to surrounding properties engaged in farm use. Out of respect for opponents' concerns and Applicant's desire to be a good neighbor, Applicant has proposed conditions of approvals which would require that Applicant continue to comply with all applicable rules and regulations of Marion County, ODF, and ODA, and would require Applicant to maintain a minimum 20-foot setback from neighboring parcels in agricultural use for any mulch and debris storage piles or areas. See Conditions of Approval 9 and 10 under Section 7 below. The proposed 20-foot setback would be in addition to the vegetative berm surrounding the Subject Property which provides an additional barrier to surrounding properties engaged in farm use. The location of the subject site also provides barriers to surrounding properties. As shown by the site plan, vehicles and equipment are stored on the west side of the approximately 1.5 acre area dedicated to the mulching operation and wood debris and mulch is stored on the east side. The approximately 1.5 acre area where the mulching operation is located on the Subject Property is bordered to the north and east by a grass field, which is also located on the Subject Property, by Brooklake Road Northeast to the south, and by 57th Avenue Northeast to the west, providing buffers between all nearby farming operations. The mulching operation will not cause a significant change in or significantly increase the cost of accepted farm practices on surrounding lands. Applicant has satisfied the criterion under MCC 17.136.060(A)(1).

5) Traffic from the mulching operation will not significantly impact surrounding properties and the infrastructure can safely accommodate the traffic from the mulching operation.

Applicant has provided a traffic memorandum prepared by Joe Bessman, PE of Transight Consulting, which is attached hereto as ***Exhibit 4***. As stated in the memorandum, the mulching operation is a low intensity use and the traffic generated will not significantly impact surrounding properties. The memorandum found that the number of trips which will be generated by the mulching operation, assuming the highest intensity use, does not meet the threshold for a formal traffic impact analysis and there are no current safety or operational issues. Opponent Adelman Peony Gardens, through its attorney Nicholas Rhoten, previously submitted comments asserting that Applicant uses oversized vehicles and included a photograph of a truck leaving the Subject Property. Mr. Rhoten's comments also asserted that Brooklake Road Northeast cannot safely accommodate said vehicles. Mr. Bessman addressed these claims and found

that the asserted oversized vehicle was not considered to be oversized and is consistent with the type of vehicles commonly found in rural areas. Mr. Bessman also found that Adelman Peony Gardens uses oversized vehicles and equipment as part of its operation, which is consistent with the type of vehicles and equipment employed by farm operations. Mr. Bessman concluded that Brooklake Road Northeast can safely accommodate the traffic generated from the mulching operation.

Mr. Bessman proposed certain minor improvements to 57th Avenue Northeast to address the tracking of gravel, which are consistent with the Marion County Public Works' previous comments. Applicant has proposed conditions of approval based on these recommendations, as shown under Section 7 below as Conditions 1 through 3. As stated in Mr. Bessman's memorandum, once the minor improvements are made to 57th Avenue Northeast to address the tracking of gravel, there will be no transportation related concerns. The mulching operation is a low intensity use and the infrastructure will be able to safely accommodate the traffic generated from it. The mulching operation will not cause a significant change in or significantly increase the cost of accepted farm practices on surrounding lands. Applicant has satisfied the criterion under MCC 17.136.060(A)(1).

6) Code Enforcement.

Applicant is currently in compliance with the Stipulated Judgment entered into with Marion County on November 12, 2024 (the "***Stipulated Judgment***") and has submitted this Application in good faith to correct any violations of the Marion County Zoning Code. Applicant was issued a citation for code violations under MCC 8.10.030 for allowing an accumulation of solid waste that is offensive or hazardous to the health and safety of the public on the Subject Property and for having a prohibited business on the Subject Property, which was the mulching operation. Applicant entered into the Stipulated Judgment regarding the code violations wherein Applicant agreed to: (1) pay a $3,000 fine and (2) erect sight obscuring structures or vegetation on the Subject Property. Applicant paid the applicable fine and installed the vegetative berm on the Subject Property. Applicant has cleaned up the Subject Property and organized the mulching operation to correct the violation, as shown on the site plan, so that the Subject Property complies with MCC 8.10.030. Applicant also filed this Application to bring the mulching operation into compliance with the Marion County Rural Zoning Code. The County has the discretionary authority under MCC 17.110.680 to approve the Application because approval of the Application would correct the violation of the Marion County Rural Zoning Code.

7) Proposed Conditions of Approval.

As stated above, Applicant has demonstrated that all applicable approval criteria and standards are satisfied or can be satisfied with reasonable conditions of approval. Applicant proposes the following Conditions of Approval to not only demonstrate compliance with the approval criteria but also to address concerns from opponents in an effort to be a good neighbor:

1. Within 30 calendar days from the date of full land use approval, obtain an Access Permit to permanently close the private driveway approach to Brooklake Road Northeast and in favor of moving all access to 57th Avenue NE.

2. The existing asphalt on 57th Avenue NE shall be extended from its current length of 50-feet to 100-feet to help prevent gravel from being brought down the grade. Gravel that is pulled onto

the driveway shall be regularly swept to help prevent rocks from being pulled onto Brooklake Road NE.

3. The width of 57th Avenue NE shall be widened with hot mix asphalt to a minimum of 22-feet with 2-foot gravel shoulders on both sides, including broadening the radius flares, to accommodate the turning radii of trucks into the site, reducing over-tracking onto the adjacent gravel shoulder.

4. Permit(s) are required to be obtained prior to any development of structures and/or utilities installation on private property, if applicable. The applicant shall obtain any required permits from the Marion County Building Inspection Division.

5. The Applicant shall comply with the applicable requirements of the Marion County No. 1 Fire District.

6. The sales and delivery of mulch produced and stored on the property shall be for agricultural use in the local area.

7. All activities and storage for the commercial mulching operation shall be contained within the approximately 1.5 acre area identified on the site plan submitted by the applicant and the storage of logs and debris for uses other than turning into mulch shall not take up more than 25% of the total area dedicated to commercial use.

8. The Applicant shall maintain a minimum 20-foot setback from neighboring parcels in agricultural use for any mulch and debris storage piles or areas. Vehicles and equipment are allowed to be parked within this setback.

9. The Applicant shall comply with all applicable rules, laws, ordinances, and regulations of Marion County, the Oregon Department of Forestry, and the Oregon Department of Agriculture.

10. The Applicant shall establish and maintain a contiguous vegetative or man-made wind buffer which at the time of planting must be at least 4 feet in height, and then grow to at least 12 feet tall around the perimeter of the area proposed area for commercial use on the applicant's site plan to mitigate airborne pests and diseases, dust, and noise impacts.

11. The Applicant shall employ water spraying to mitigate the impacts of dust and wood particles during periods of active mulching. The applicant shall periodically as needed employ water spraying on gravel areas located within the proposed area for commercial use depicted on applicant's site plan to mitigate the impacts of dust.

12. The storage of logs and debris for uses other than turning into mulch shall not be stored on the property for a period longer than 2 weeks from the date the logs or debris are brought to the property.

13. There shall be no parking or storage of any vehicles or equipment within the County right of way.

14. The hours of operation of the commercial activity on the property shall be restricted to between the hours of 8:00 a.m. and 5 p.m.

15. The Applicant shall not turn wood debris into mulch on the property during the period of May 1 through June 15 each year.

16. Any development shall significantly conform to the site plan submitted with the proposal. Minor variations are permitted upon review and approval of the Planning Director.

8) Conclusion

Applicant has complied with all the requirements of the Stipulated Judgment and will comply with all Conditions of Approval upon approval of the Application. Applicant has demonstrated that all applicable approval criteria are satisfied or can be satisfied through the proposed Conditions of Approval.

For the reasons set forth above, Applicant respectfully requests that the Board reverse the Hearing Officer's Decision and approve Conditional Use Permit CU 24-028.

Sincerely,

MARK D. SHIPMAN
mshipman@sglaw.com
Voice Message #310

L.G. BILLY DALTO
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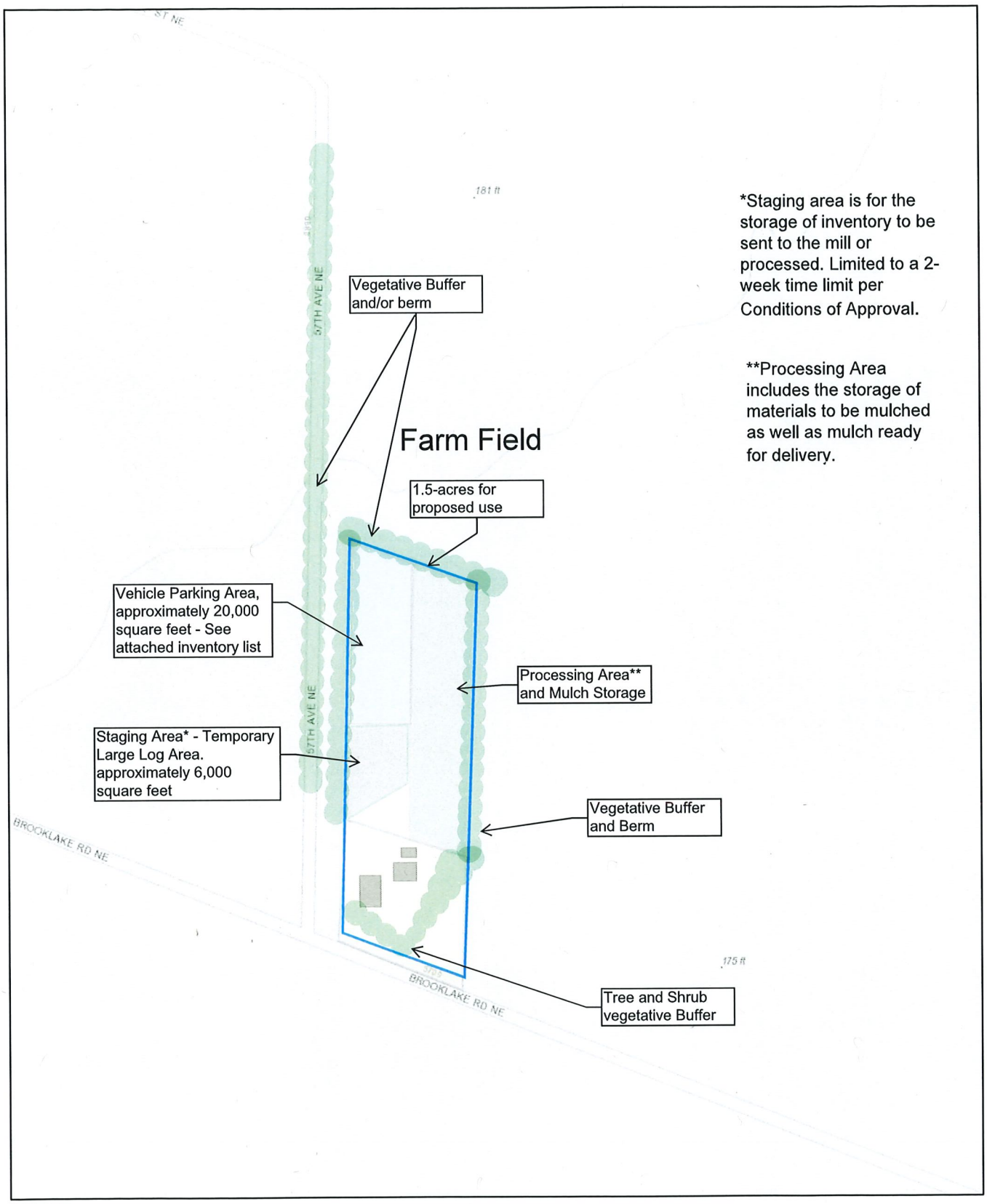
MDS/EAR:hst
cc: Client

Enclosures:
Exhibit 1 – Site Plan
Exhibit 2 – Noise Study
Exhibit 3 – Klopfenstein Declaration
Exhibit 4 – Traffic Memorandum

EXHIBIT 1

Site Plan
(attached)

Site Map



2/5/2025

Parcels

County Boundary

City Boundaries

1:2,257

0 100 200 400 ft

0 30 60 120 m

MC-ASR, MC-IT GIS, Oregon Metro, Bureau of Land Management, State of Oregon, State of Oregon DOT, State of Oregon GEO, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, MC IT-GIS, MC Planning

EXHIBIT 2

Noise Study
(attached)

Noise Study

Conditional Use Permit 24-028

Prepared by: Lindsey King, CFM

This report presents the results of a noise study conducted at 5711 Brooklake Rd. NE, also known as the Subject Site. This is a rural property located within an Exclusive Farm Use zoned area and surrounded by active farming operations as well as some rural residential uses, zoned Acreage Residential. The study specifically evaluates sound levels associated with periodic mulching activities conducted on-site. Concerns were raised regarding potential noise impacts on nearby farming operations and residences and the compatibility of the mulching activity with the surrounding area. The purpose of this report is to provide an objective, data-driven analysis of the sound generated by the mulching equipment, assess its potential impact in the context of the surrounding agricultural uses, and offer relevant findings.

Based on Applicant's submitted materials, including Applicant's Open Record Responses, operation of the grinder, or active mulching as referred to herein, will occur approximately four times a year, with each mulching process taking about one and a half days and occurring between the operating hours of 8 a.m. to 5 p.m. The findings support that the noise from the mulching operation compared to the ambient noise level is not significant. The findings also support that the noise level during active mulching is equal to or lesser than the noise level of agricultural uses which are permitted outright in the EFU zone.

Opponents including Adelman Peony Gardens and residents residing in the neighborhood located off Ramp St NE previously submitted comments regarding the impacts of noise from the mulching operation. As described in detail below, the study found that the noise level that Adelman Peony Gardens and the residents of the neighborhood located off Ramp St NE will experience during the periods of active mulching is less than the maximum noise level permitted by the Marion County Noise Ordinance (MCC 8.45.050). The noise level which Adelman Peony Gardens and the residents residing in the neighborhood located off Ramp St NE will experience during periods of active mulching is comparable to a normal conversation. The grinder is located in the center of the Subject Property and as described in detail below, the Subject Property is developed with an earthen berm with established vegetation, which acts as a natural sound barrier. The findings support that these mitigation measures are effective to adequately buffer the noise levels on surrounding properties during active mulching and that no additional mitigation measures are necessary.

In sum, the findings support that the noise from the mulching operation will not significantly impact surrounding land uses in compliance with MCC 17.136.060(A)(4).

1.0 - Introduction

Environmental noise studies aim to assess the levels, sources, and impacts of noise in specific areas. The scope of this study encompassed the decibel levels with ambient noise and the decibel levels when the Applicant's mulching machine was running. The primary objective was to determine the level of impact the operating machinery has on adjacent properties.

2.0 - Methodology

2.1 - Measurements

To ensure accuracy and reliability, the noise study employed a systematic and standardized approach. Sound level data was collected using a calibrated sound level meter, which was a TopTes TS-501B decibel meter, as depicted in ***Exhibit A***[1].Measurements were taken during active mulching operations which included operation of the grinder and ambient measurements were taken while the mulching operations were inactive. All decibel (dB) readings were recorded using dBC weighting, which is more suitable than dBA when evaluating equipment like a mulching grinder used for processing tree materials. These machines generate significant low-frequency noise that dBA readings tend to underestimate. dBC captures a broader frequency range, including those lower frequencies, providing a more accurate and realistic assessment of the actual sound levels and their potential impact on the surrounding area. While not an exact conversion, a rule of thumb for approximating the dBA based on dBC is to subtract 9-10 from the dBC value to get the dBA value. Given this, all dBA values referenced herein were approximated by using the more conservative method and subtracting 9 from the dBC measurement to get the approximate dBA measurement.

2.2 - Environmental Attributes

The natural environment at the time of the reporting:

A. Temperatures ranged from 58-60 degrees Fahrenheit during the testing with the machinery running and was approximately 66 degrees without.

[1] All the findings and information presented in Exhibit A are included in this written report. Exhibit A is intended to support this report by providing the photographs taken at the time the measurements were made.

B. Winds were consistently at 7 mph with occasional gusts up to 12 mph during testing with the machinery running and were directed south, away from the noise source.

C. Winds were consistently at 2-3 mph with occasional gusts up to 7 mph during testing without the machinery running and were directed north to northeast.

D. Any readings taken from a vehicle were taken when the vehicle was turned off.

2.3 - Zones

Data was gathered from multiple locations within the subject property, as well as from five additional off-site monitoring zones selected to represent varying proximities and land use contexts. Measurements were conducted during typical morning and mid-day operational periods to account for potential temporal variation in ambient and operational noise levels. A map showing the six zones is inserted below for reference, along with a description of each zone. When describing the significant external noise sources present when measurements were taken during active mulching operations, the noise sources described are the noise sources present in addition to the mulching operation.

A. Zone 1:

Zone 1 is the Subject Property. As used in this context, the Subject Property refers to the approximately 1.5 acre area dedicated to the proposed use, as shown by the updated site plan submitted by the Applicant as part of Applicant's First Open Record Response, which is attached hereto as ***Exhibit B***.

Measurements were taken in the approximate center of the Subject Property. There were no significant external noise sources present, such as vehicular traffic, when ambient measurements were taken at the center of the Subject Property. The measurements taken during active mulching operations were taken as the grinder was loading and mulching, with decibel levels taken at the center of the Subject Property varying based on the size and density of the material being mulched. There were no significant external noise sources present at the time measurements were taken during active mulching operations.

Measurements were taken at the southwestern corner of the Subject Property near the intersection of 57th Avenue NE and Brooklake Rd NE, which is shown on Exhibit B as Zone 1- A. The only significant external noise sources present when ambient noise levels were being taken were from vehicular traffic on Brooklake Rd NE. The only

significant external noise sources present when measurements were taken during active mulching operations were vehicular traffic.

Measurements were taken at the southeastern corner of the Subject Property, which is shown on Exhibit B as Zone 1-B. The only significant external noise sources present when ambient noise levels were being taken was from vehicular traffic on Brooklake Rd NE. The only significant external noise sources present when measurements were taken during active mulching operations was vehicular traffic and varying degrees of other noise sources.

The northwestern corner of the Subject Property is also developed with an earthen berm with established vegetation, which acts as a natural sound barrier. Measurements were taken at the northwestern corner of the Subject Property in the following locations: (1) inside of the berm, (2) on top of the berm, and (3) outside of the berm. This area is shown on Exhibit B as Zone 1-D. There were no significant external noise sources present when ambient measurements were taken. There were no significant external noise source present at the time measurements were taken during active mulching operations.

The northeastern corner of the Subject Property is also developed with an earthen berm with established vegetation, which acts as a natural sound barrier. Measurements were taken at the northeastern corner of the Subject Property in the following locations: (1) inside of the berm, (2) on top of the berm, and (3) outside of the berm. This area is shown on Exhibit B as Zone 1-E. There were no significant external noise sources present when ambient measurements were taken. There were no significant external noise source present at the time measurements were taken during active mulching operations.

In addition, as shown by the site plan attached hereto as Exhibit B, the berm is also developed on the southern portion of the Subject Property, running diagonally before turning a corner and running approximately along the southern property line. Ambient noise measurements were taken just outside the corner of the berm, which is shown on Exhibit B as Zone 1-C. Ambient noise measurements were taken both with and without the presence of vehicular traffic, but no other significant external noise sources were present. Measurements taken during active mulching operations were taken both outside of the berm and inside of the berm. Measurements could not be taken on top of the berm due to the vegetation. There were no significant external

noise source present at the time measurements were taken during active mulching operations.

The ranges and averages of the measurements discussed below under Section 3 reflect the ranges and averages across all measurements taken in Zone 1 in Zones 1-A through E, and not a specific location within Zone 1. For example, the lowest recorded measurement of the active noise level during mulching operations on the Subject Property was 67.9 dB, which was taken at the southeast corner of the Subject Property in Zone 1-B, and the highest recorded measurement of the ambient noise level was 94.2 dB, which was taken at the approximate center of the Subject Property closest to the machinery. This method is applied to the findings for all Zones.

B. Zone 2:

Zone 2 is the intersection of 59th Avenue NE and Brooklake Road NE. Ambient measurements were taken facing west towards the Subject Property. The only significant external noise sources present were agricultural sprinklers and vehicular traffic. Ambient measurements were taken both with and without the presence of vehicular traffic. Measurements taken during active mulching operations were taken facing west towards the Subject Property. The only significant external noise sources present were vehicular traffic, with vehicular traffic present for two of the three measurements taken during active mulching operations.

C. Zone 3:

Zone 3 is the intersection of Ramp St NE and 57th Avenue NE. Ambient measurements were taken in the northwestern corner of the Parcel, on the western property line approximately 320 feet north of the vegetation berm on the Subject Property. Parcel as used in this context refers to the entire property commonly known as 5711 Brooklake Rd NE, which is approximately 9.72 acres and contains the Subject Property. The only significant external noise sources present were chickens and children. Ambient measurements were also taken on the public right of way, approximately 5-feet from the western property line. No significant external noise sources were present. Measurements taken during active mulching operations were taken on the public right of way, approximately 5 feet from the western property line. Measurements taken during active mulching operations were also taken inside the Parcel, approximately 5 feet from the western property line and approximately 10-feet from where measurements were taken on the public right of way. There were no significant external noise source present at the time measurements were taken during active mulching operations. No significant external noise sources were

present. Measurements taken during active mulching operations were taken in the northwestern corner of the Parcel, approximately 5-feet inside the western property line and approximately 320 feet north of the vegetation berm on the Subject Property. The only significant external noise sources present were chickens, roosters, and crows.

D. Zone 4:

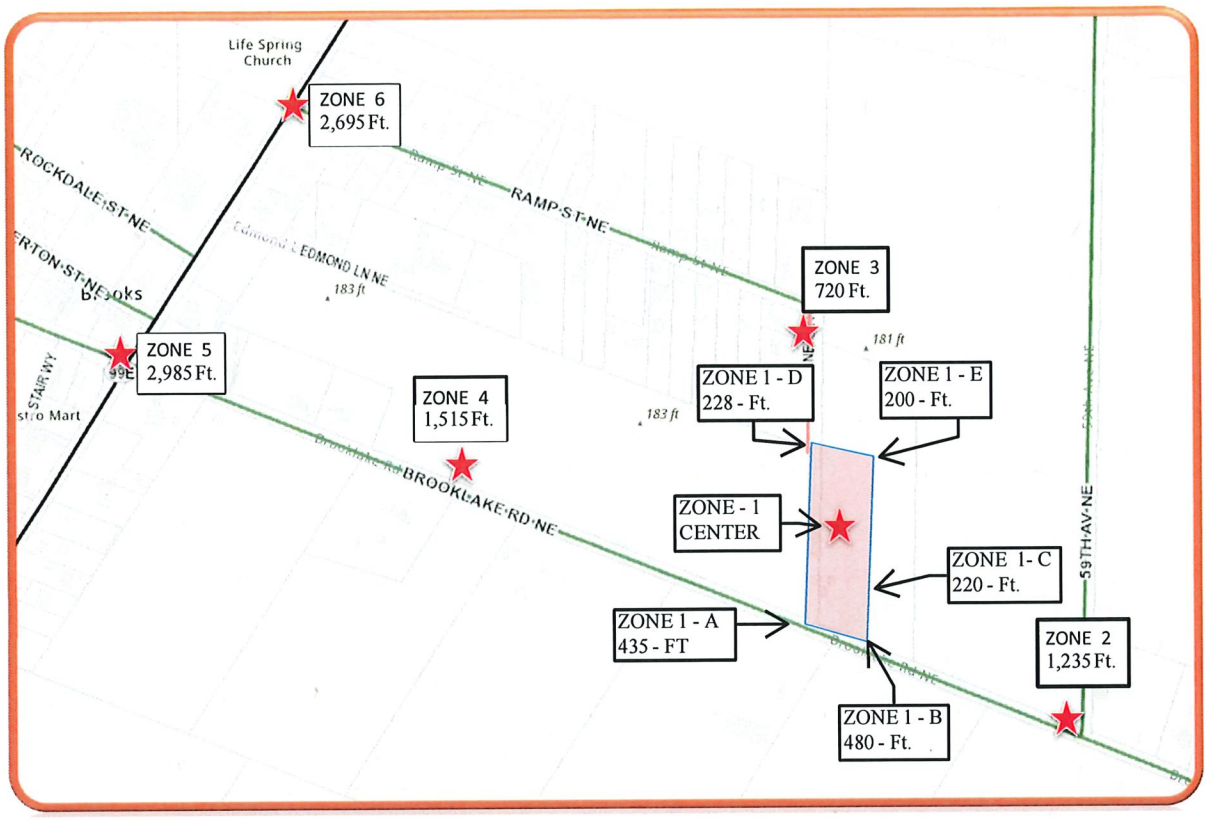
Zone 4 is on the north side of Brooklake Road on the public right of way, adjacent to 5370 Brooklake Rd NE. Ambient measurements were taken approximately 1,480 feet from the center of the Subject Property. The only significant external noise sources present were vehicular traffic. Ambient measurements were taken both with and without the presence of vehicular traffic. Measurements taken during active mulching operations were taken approximately 1,480 feet from the center of the Subject Property. The only significant external noise sources were vehicular traffic and other external noise.

E. Zone 5:

Zone 5 is the intersection of Brooklake Rd NE and Highway 99 E. Ambient measurements and measurements taken during active mulching operations were taken at Marion County Assessor's Office Map and Tax Lot No. 062W17DB03602, which is located at the southwest corner of the intersection as shown by the map below and Exhibit A. The only significant external noise sources present when ambient measurements were taken was vehicular traffic. The only significant external noise sources present when measurements were taken during active mulching operations was vehicular traffic.

F. Zone 6:

Zone 6 is the intersection of Ramp St NE and Highway 99 E. The only significant external noise sources present when ambient measurements were taken was vehicular traffic, with ambient measurements taken with and without the presence of vehicular traffic. The only significant external noise sources present when measurements were taken during active mulching was vehicular traffic.



3.0 - Key Findings

3.1 - Noise Levels Across Zones

The study revealed disparities in noise levels based on location:

A. Zone 1:

Noise levels ranged 67.9-94.2 dB during active mulching, where the highest dB recording was taken directly adjacent to the active mulching machine. Noise levels ranged 50.7-78.0 dB during times which no machinery was active, where the highest dB was taken directly adjacent to Brooklake Rd NE.

B. Zone 2:

Recorded levels ranged between 62.3-73.3 dB during active mulching, primarily due to vehicular traffic. Noise levels at the time of inactive mulching ranged from 56.3-85.2, with vehicular traffic a contributor to higher recorded levels. Zone 2 is the intersection of 59th Avenue NE and Brooklake Rd. Based on the Marion County GIS Maps and personal observation, Zone 2 is adjacent to several farm uses and a

residence. As shown by the findings, the highest recorded ambient noise level was 11.9 decibels higher than the highest recorded noise level during active mulching, which supports that the noise from the mulching operation will not significantly impact surrounding land uses.

C. Zone 3:

Recorded levels ranged between 64.8-71.3 dB during active mulching; levels maintained a similar range at all identified locations. Noise levels were measured at a range from 57.6-70.6 dB with no machinery active. Zone 3 is the intersection of Ramp St NE and 57th Avenue NE. Based on the Marion County GIS Maps and personal observation, Zone 3 is adjacent to several farm uses and is also located near the rural residential neighborhood zoned Acreage Residential to the west. The highest recorded noise level during active mulching was 0.7 decibels higher than the highest recorded ambient noise level, which is an insignificant difference. These findings support that the noise from the mulching operation will not significantly impact surrounding land uses.

D. Zone 4:

While significantly farther away from the subject site the noise levels were generally louder, caused by vehicular traffic. With the machinery running the levels were measured at 73.4-77.9 dB and with the machinery not running the levels measured at 61.2-85.9. Zone 4 is the northside of Brooklake Rd NE on the public right of way adjacent to 5370 Brooklake Rd NE. Based on the Marion County GIS Maps and personal observation, Zone 4 is adjacent to several farm uses and a residence. As shown by the findings, the highest recorded ambient noise level was 8.0 decibels higher than the highest recorded noise level during active mulching, which supports that the noise from the mulching operation will not significantly impact surrounding land uses.

E. Zone 5:

Noise levels were recorded to be consistently between 78.2-85.7 dB with and without machinery running. The location has heavy vehicular traffic at all hours of the day. Zone 5 is the intersection of Brooklake Rd NE and Highway 99 E. Based on the Marion County GIS Maps and personal observation, Zone 4 is adjacent to several different commercial uses, with farm uses located nearby off Brooklake Rd NE to the west of said intersection. This finding supports the idea that the noise from the mulching operation will not significantly impact surrounding land uses.

F. Zone 6:

Recorded levels ranged consistently from 67.3-80.9 dB, with and without the machinery running. The location has heavy vehicular traffic at all hours of the day. Zone 6 is the intersection of Ramp St NE and Highway 99 E. Based on the Marion County GIS Maps; Zone 6 is adjacent to different commercial uses as well as the rural residential neighborhood zoned Acreage Residential to the east of said intersection. This finding supports the idea that the noise from the mulching operation will not significantly impact surrounding land uses.

As shown by the chart below, Zone 1, the Subject Property, increases by approximately 15 decibels during active mulching operations. However, the average decibel levels are comparable across Zones 2 through 6. As described above, Zones 5 and 6 have comparable decibel levels regardless of whether there are active mulching operations, as these locations experience heavy vehicular traffic. When considered together, the findings herein support that the noise from the mulching operation will not significantly impact surrounding land uses.

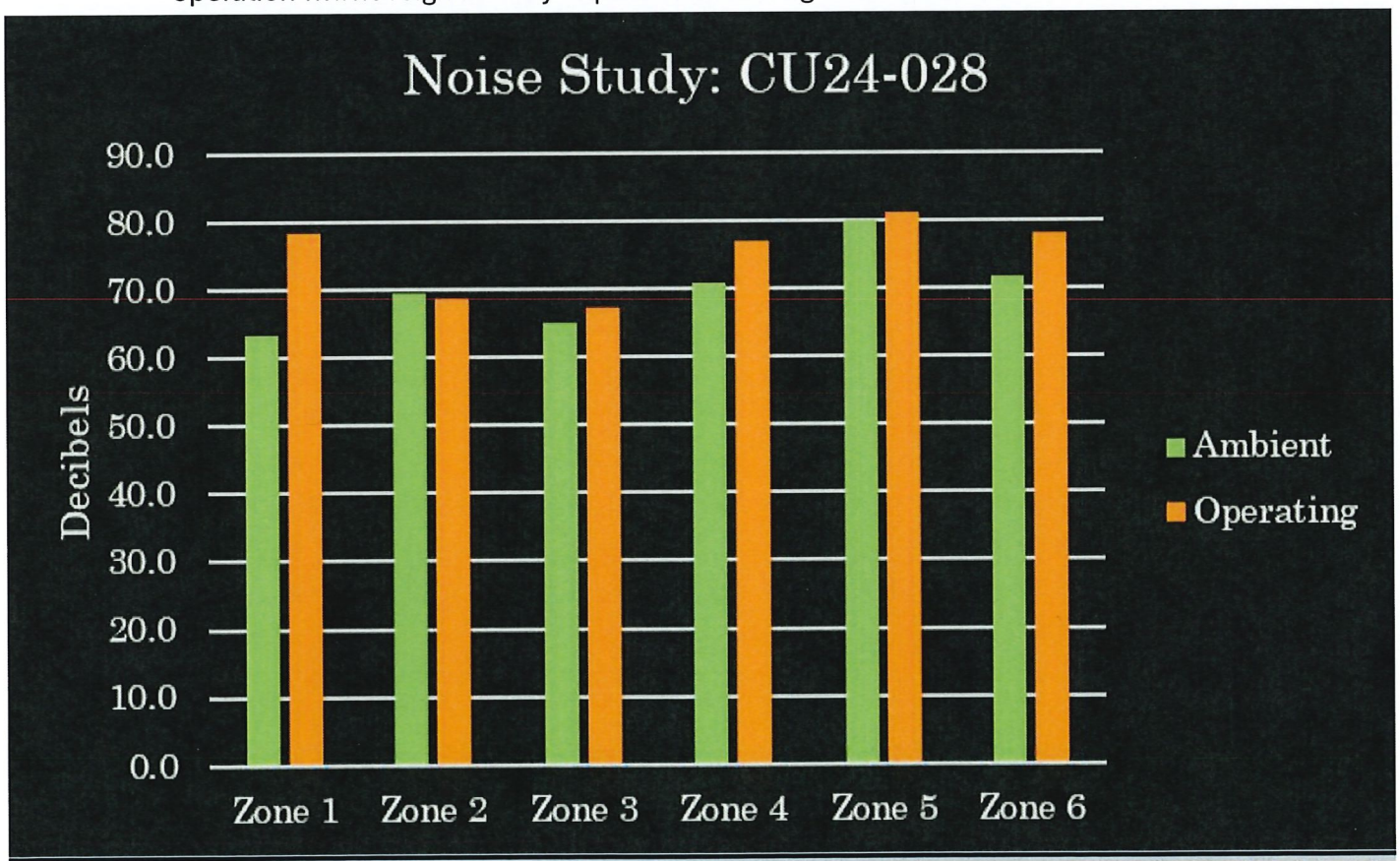


Chart 1: *Noise study comparing decibel levels of property with machine running (Operating), and not running (Ambient)*

3.2 – Potential Impacts

A. Auditory Awareness of Equipment Use

Residents or visitors on adjacent parcels, particularly those closest to the property (adjacent to Zone 1), may experience periodic awareness of the sound generated by active mulching equipment. However, these levels are consistent with typical agricultural equipment. For Zone 2 through Zone 6, excluding only Zone 1 which is the Subject Property, decibel levels recorded during active mulching ranged from 62.3 dB (Zone 2) to 85.7 dB (Zone 5). The highest recorded sound levels during active mulching operations reached 92.6 dB, 94.2 dB, and 91.6 dB, all measured within Zone 1, which encompasses the mulching activity and its immediate perimeter. These peak levels represent direct proximity to operating equipment and are not representative of conditions at neighboring properties or near the perimeter of the Subject Site. The next highest recorded sound levels during active mulching were recorded in Zone 5 and Zone 6, which are adjacent to Highway 99 E and areas of heavy vehicular traffic, and recorded sound levels comparable with and without the machinery running. Zone 2 is located at the intersection of Brooklake Rd NE and 59th Avenue NE, which is the furthest Zone from Highway 99 E. Zone 2 is adjacent to several farm uses. As described above, the highest recorded ambient noise level, 85.2 dB, was 11.9 decibels higher than the highest recorded noise level during active mulching, 73.3 dB.

Further, the decibel levels are significantly reduced by greater distances. More specifically, the Inverse Square Law states that the by doubling the distance from a sound source the dB level is reduced by 6 dB and that 10 times the distance drops the intensity by 20 dB. This method was mentioned and calculated in the most recent appeal to the Hearings Officer.

Zone	Distance – Feet	Distance – Miles
Zone 1	See Zone 1 (A-E)	
Zone 2	1,235	0.24
Zone 3	720	0.13
Zone 4	1,515	0.29
Zone 5	2,985	0.50
Zone 6	2,695	0.57

Zone 1 (A-E)	Distance – Feet	Distance – Miles
A	435	0.08
B	480	0.09
C	220	0.04
D	228	0.04
E	200	0.04

To place these values in context:

As stated above, For Zone 2 through Zone 6, excluding only Zone 1 which is the Subject Property, decibel levels recorded during active mulching ranged from 62.3 dB (Zone 2) to 85.7 dB (Zone 5). As shown by **Exhibit C**, which is attached hereto, these levels are consistent with various agricultural equipment and practices. 70 dB is equivalent to a chicken coop, 80 dB is equivalent to a tractor idling, barn cleaner, conveyors, and elevators, and 90dB, which no zone other than Zone 1 recorded levels of, is equivalent to a tractor at 50 percent load, a blower, compressor, or combine. As described above, the Subject Property is adjacent to and surrounded by several farm active farm operations. A jet engine at takeoff produces 120–140 dB, roughly 30–45 decibels louder than the mulching operation. On the decibel scale, that difference equates to multiple times louder in perceived sound. The findings support that the noise from the mulching operation will be consistent with the noise level produced from agricultural uses and will not significantly impact surrounding land uses.

B. Noise Regulations

The Marion County Noise Ordinance is Chapter 8.45 of the Marion County Code. For unincorporated areas outside the Salem-Keizer urban growth boundary, such as the Subject Property, MCC 8.45.050 prohibits noise levels that exceed "Sixty-five dBA at any time between 7:00 a.m. and 10:00 p.m. the same day" when measured on the complainant's property line nearest to the noise source. Opponents including Adelman Peony Gardens and residents residing in the neighborhood located off Ramp St NE previously submitted comments regarding the impacts of noise from the mulching operation. The measurements taken during active mulching in Zone 1-D and Zone 3 are adjacent to the neighborhood off Ramp St NE and the measurements taken during active mulching in Zone 1-B is adjacent to Adelman Peony Gardens. The study found that the dBA noise level during the periods of active mulching in Zone 3, Zone 1-B and Zone 1-D was between 62.3 and 62.9 dBA, which is less than the maximum noise level permitted by the Marion County Noise Ordinance (MCC 8.45.050) which is 65 dBA. As shown on Exhibit C, 60dBA is the noise level of a typical conversation and 70 dBA is the noise level of a typical group conversation. Therefore, the noise level which Adelman Peony Gardens and the residents residing in the neighborhood located off Ramp St NE will experience during periods of active mulching is comparable to a normal conversation.

The Occupational Safety and Health Administration (OSHA) allows occupational exposure up to 90 dB over an 8-hour shift without mandatory hearing protection.

While the highest readings slightly exceed this threshold, exposure duration is brief and non-continuous, consistent with periodic farm machinery use.

The EPA recommends 70 dB as a long-term ambient exposure guideline to prevent hearing loss over time. The levels observed here reflect short-term, equipment-based activity, not continuous environmental noise.

C. Temporary Interruption of Ambient Quiet

During the periods of active tree mulching, nearby properties may notice an increase in noise levels above baseline rural ambient sound excluding traffic and existing agricultural uses. However, this is comparable to other normal agricultural or forestry practices common to the area. During the data gathering is was noted that the traffic (both cars and semi-trucks) was consistent and occurred regularly through the mulching tests.

D. No Material Increase in Overall Noise Burden

Zones farther from the site (Zones 4–6) recorded higher or comparable sound levels from existing vehicular traffic, indicating that mulching does not materially add to the cumulative noise burden in those sections. The study does not suggest long-term or excessive increases in environmental noise levels for surrounding parcels, especially since the mulching itself only operates on a quarterly basis and not typically during prime agricultural operations.

E. Perceived vs. Measured Impact

While some neighboring property owners may perceive the noise as intrusive, the objective data shows that the sound diminishes rapidly with distance (see Inverse Square Law) and is within the range of common rural/agricultural sources. Perception of noise, particularly when associated with change or unfamiliar activity, may differ from actual measured impact.

Importantly, the Subject Site includes an earthen berm with established vegetation, which acts as a natural sound barrier. This feature effectively contains and absorbs a portion of the noise generated on-site. As a result, internal decibel levels are notably higher than those measured beyond the berm, demonstrating that sound dissipates significantly before reaching neighboring parcels.

Additionally, zones farther from the site—Zones 4, 5, and 6—recorded near equal noise levels due to persistent vehicular traffic, reinforcing that the broader environment already experiences elevated ambient sound unrelated to the mulching operation.

4.0 - Conclusion

The noise study found that average decibel levels in Zones 2 through 6 were relatively consistent, with variations primarily influenced by ambient vehicular traffic and surrounding rural activity. These off-site monitoring areas reflect typical baseline conditions for the region and did not show any significant increase attributable to operations on the subject property.

Zone 1, which includes both the location of the mulching operation and its immediate perimeter, demonstrated a notable increase in sound levels during active equipment use, with readings rising by approximately 15 decibels, with periodic spikes into the low 90dBs, compared to periods of inactivity. This elevation is expected due to the proximity to the operating machinery and aligns with standard sound behavior for short-term, on-site equipment activity.

Importantly, the study showed that while active mulching produces elevated sound levels in Zone 1, these impacts are highly localized and decrease substantially with distance. Notably, Zones 4, 5, and 6, located significantly farther from the Subject Site consistently recorded equal or higher decibel levels, largely due to steady vehicular traffic unrelated to the mulching activity. This emphasizes that the broader ambient noise environment, shaped by nearby roadways and working agricultural properties, plays a major role in the area's overall sound profile. In addition, Zone 2, which is the Zone located the furthest from Highway 99 E, recorded an ambient noise level of 85.2 dB, which was 11.9 decibels higher than the highest recorded noise level during active mulching, which was 73.3 dB.

Taken together, the findings support the conclusion that the mulching operation, while temporarily audible in its immediate vicinity, is consistent with the noise conditions typical of this rural, agriculturally active setting. The Subject Property is already developed with an earthen berm with established vegetation, which acts as a natural sound barrier, and the findings support that no additional mitigation measures are necessary. The noise level that will be experienced during active mulching by residents in the nearby neighborhood located off Ramp St NE and by Adelman Peony Gardens is less than the maximum noise level permitted by the Marion County Noise Ordinance. In sum, the findings support that the noise from the mulching operation will not significantly impact surrounding land uses in compliance with MCC 17.136.060(A)(4).

Noise Study

CU24-028

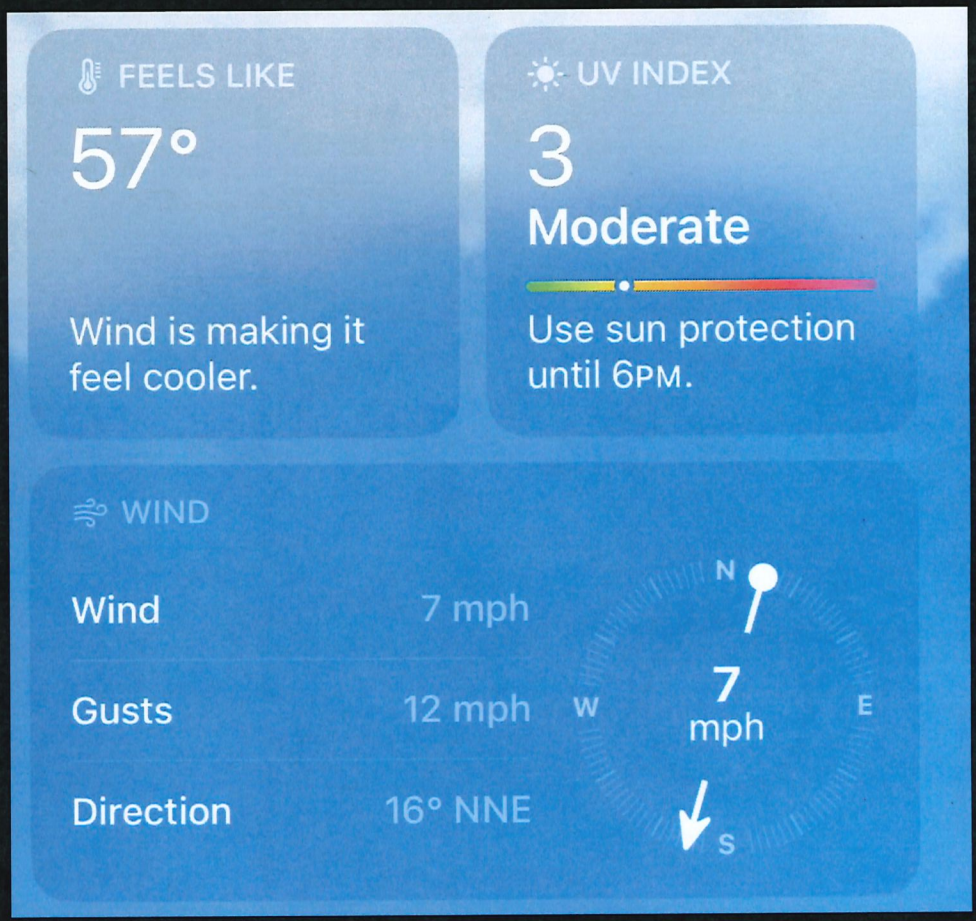
by Lindsey King, CFM

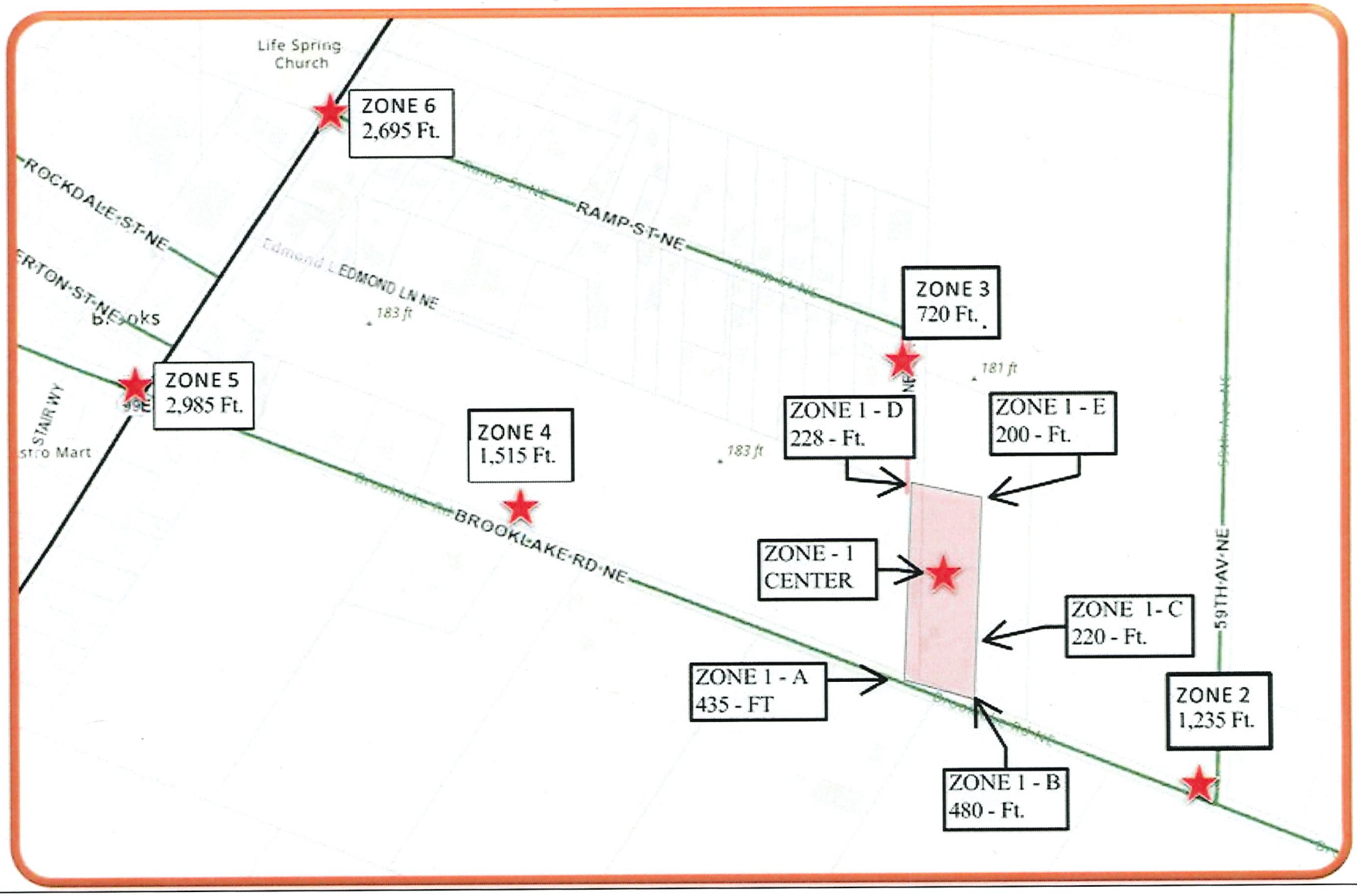
Weather at time of Ambient study

The winds consistently maintained this pattern throughout the entirety of the study.

Weather at time of Operating study

The winds consistently maintained this pattern throughout the entirety of the study.




Life Spring Church
ZONE 6
2,695 Ft.
ROCKDALE ST NE
RAMP ST NE
EDMOND LN NE
183 ft
ZONE 3
720 Ft.
181 ft
ZONE 5
2,985 Ft.
ZONE 4
1,515 Ft.
183 ft
ZONE 1 - D
228 - Ft.
ZONE 1 - E
200 - Ft.
ZONE - 1
CENTER
ZONE 1 - C
220 - Ft.
59TH AV NE
BROOKLAKE RD NE
ZONE 1 - A
435 - FT
ZONE 2
1,235 Ft.
ZONE 1 - B
480 - Ft.

Decibel Meter, TopTes TS-501B

- A-weighting and C-weighting facilities that measure noise levels from 30 to 130 dB with an accuracy of 1.5 dB, Frequency from 30 to 8000Hz.
- TopTes TS-501B decibel meter uses a precise condenser microphone to capture sound.

Dangerous and Safe Noise Levels

The noise chart below lists average decibel levels for everyday sounds around you.

Painful impulse noise—Not safe for any period of time

- 150 dBP = fireworks at 3 feet, firecracker, shotgun
- 140 dBP = firearms

Painful steady noise—Not safe for any period of time

- 130 dBA = jackhammer
- 120 dBA = jet plane takeoff, siren, pneumatic drill

Extremely loud—Dangerous to hearing; wear earplugs or earmuffs

- 112 dBA = maximum output of some MP3 players, rock concert, chainsaw
- 106 dBA = gas leaf blower, snow blower
- 100 dBA = tractor, listening with earphones
- 94 dBA = hair dryer, kitchen blender, food processor

Very loud—Dangerous to hearing; wear earplugs or earmuffs

- 91 dBA = subway, passing motorcycle, gas mower

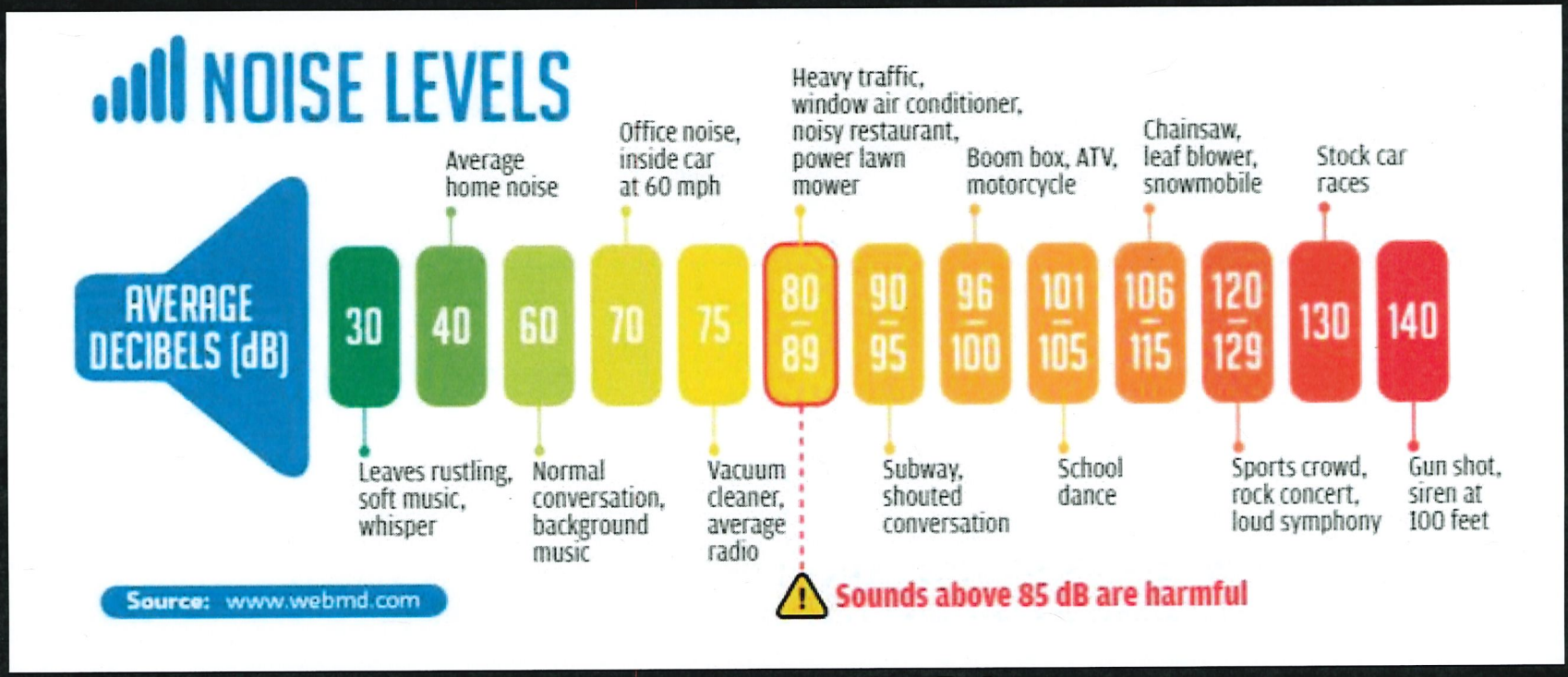
Moderate—Safe listening for any time period

- 70 dBA = group conversation, vacuum cleaner, alarm clock
- 60 dBA = typical conversation, dishwasher, clothes dryer
- 50 dBA = moderate rainfall
- 40 dBA = quiet room

Faint—Safe listening for any time period

- 30 dBA = whisper, quiet library

*Source: **American Speech-Language-Hearing Association***



Noise Level Chart

Site-specific noise sources, are typically taken at a consistent reference distance,
often 1 to 3 meters (approximately 3 to 10 feet) from the source,
to reflect the sound exposure experienced by a person standing near the operational equipment.

Ambient Noise Study

Decibel levels taken while mulching machine was inactive

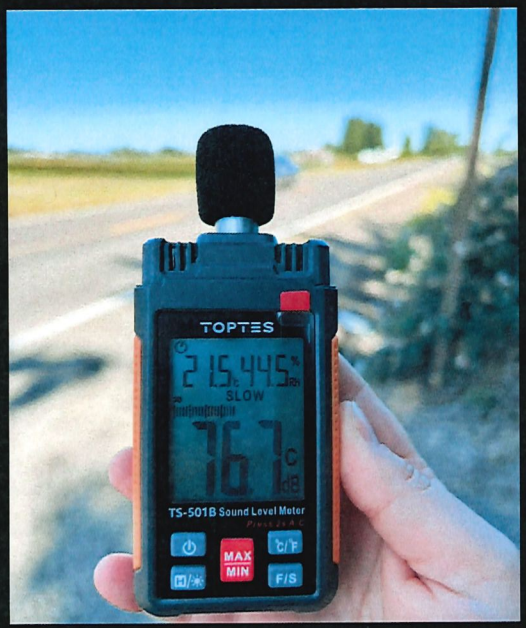
ZONE 1

Subject Parcel

Center of the Subject Site

- Noise levels taken with no other external noise present

Intersection of 57th and Brooklake rd.



- Zone 1 – A
- 435 Ft. from center
- Vehicles present on roadway
- No other external noise was noted

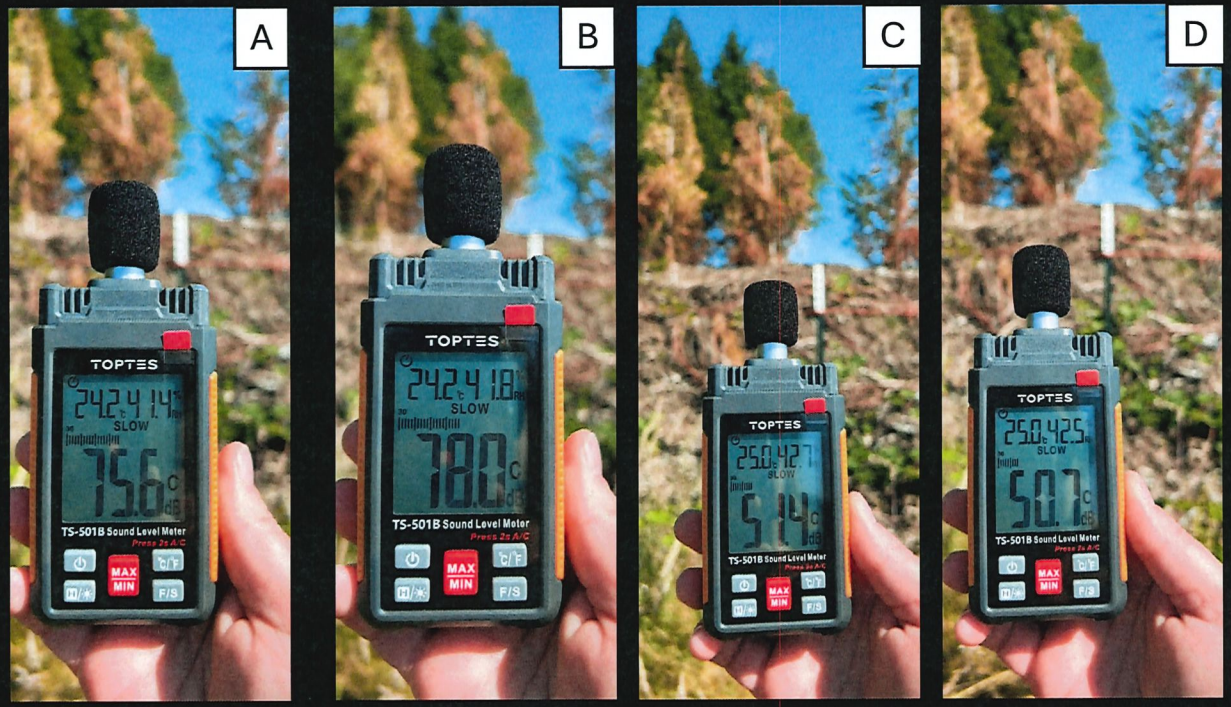
Southeast Corner of Parcel

- Zone 1 – B
- 480 Ft. from center
- Vehicular traffic on Brooklake Rd. was present
- No other significant noise was present

Northwest Corner of Property

- A – Inside of berm
- B – On top of berm
- C – Outside of berm
- Zone 1 – D
- 228 Ft. from center

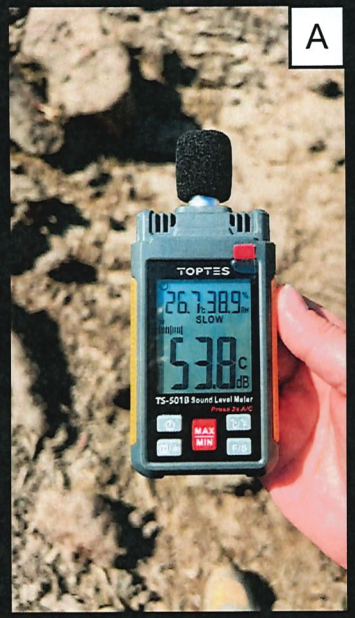
Southeast Corner of Subject Site



- Zone 1 – C
- 220 Ft. from center
- Taken outside of berm
- A & B with vehicular traffic
- C & D without vehicular traffic

Northeast Corner of Subject Site

- Zone 1 – E
- 200 Ft. from center
- A – Inside of berm
- B – On top of berm
- C – Outside of berm



ZONE 2

59th & Brooklake Rd NE

59th & Brooklake Rd.

- Taken facing west towards the subject site. No cars present during this reading.
- Some agricultural sprinklers present.

59th & Brooklake Rd.

- Taken facing west towards the subject site. Multiple cars present during this reading.
- Some agricultural sprinklers present.

ZONE 3

Ramp St. NE & North Side of 57th Ave NE

Intersection of Ramp St. NE & North 57th Ave NE

- Measurements taken approximately +/-5 *(five) feet from westerly property line.

North on 57th Ave

- Measurement taken Measurements taken +/-5 *(five) feet from westerly property line, approximately 320 feet north of subject site buffer.
- Various external noise was present (chickens, children)

ZONE 4

Northside of Brooklake Rd. NE on Public ROW;
adjacent to 5370 Brooklake Rd NE

Taken on Brooklake Rd.

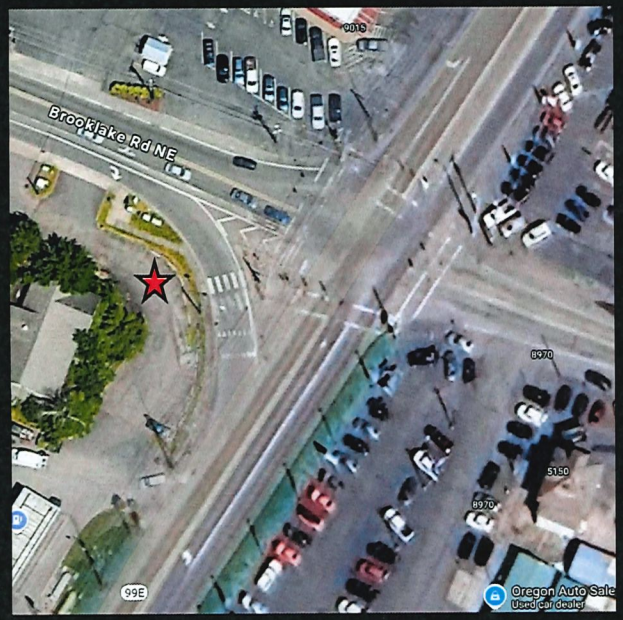
- Measured approximately 1,480 feet from center of subject site.
- Vehicular traffic present.

Taken on Brooklake Rd.

- Measured approximately 1,480 feet from center of subject site.
- No vehicular traffic present.

ZONE 5

Intersection of Brooklake Rd. NE & Highway 99E

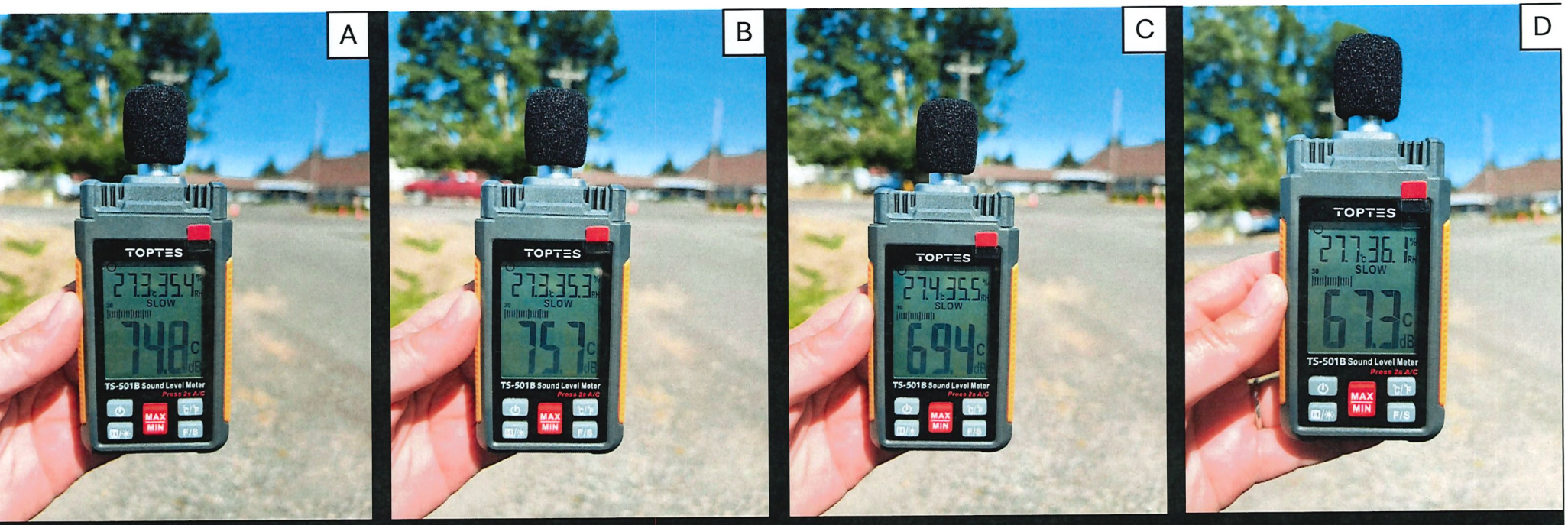


Hwy 99E & Brooklake Rd.

- Taken in the SW corner as depicted.
- Vehicular traffic present.

ZONE 6

Intersection of Ramp St. NE & Highway 99E



Intersection of Ramp St. NE & Hwy 99E

- A & B with vehicular traffic present
- C & D without vehicular traffic present

Operational Noise Study

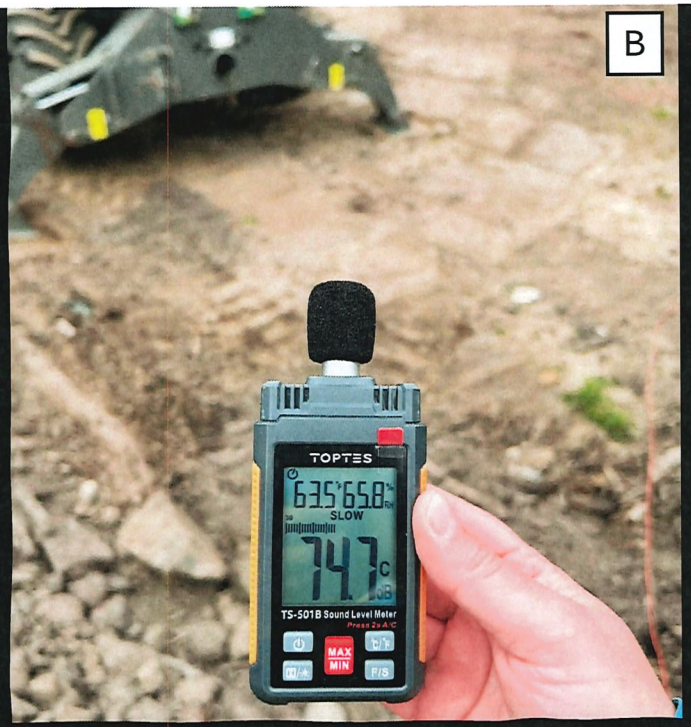
Decibel levels taken while mulching machine was in active operation

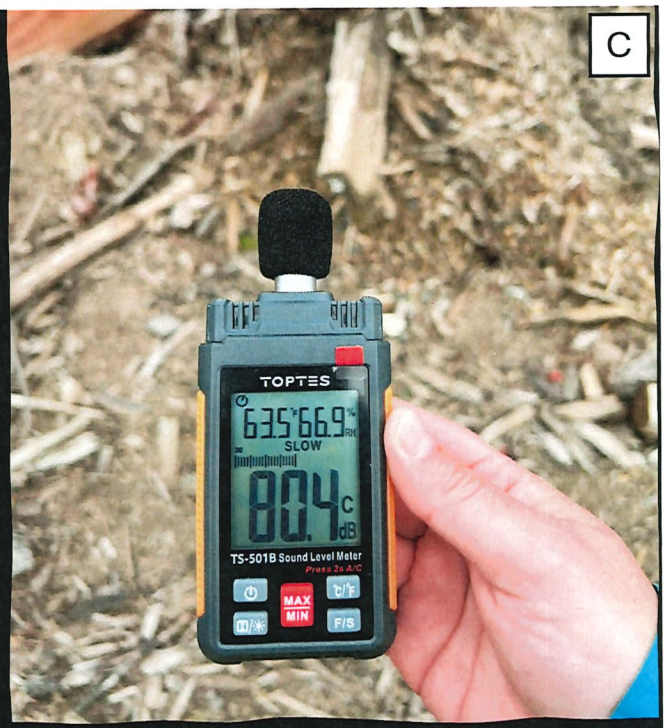
ZONE 1

Subject Parcel

Center of the Subject Site

- Measurements taken as machine was loading and mulching.
- Decibel levels varied with the size and density of material.

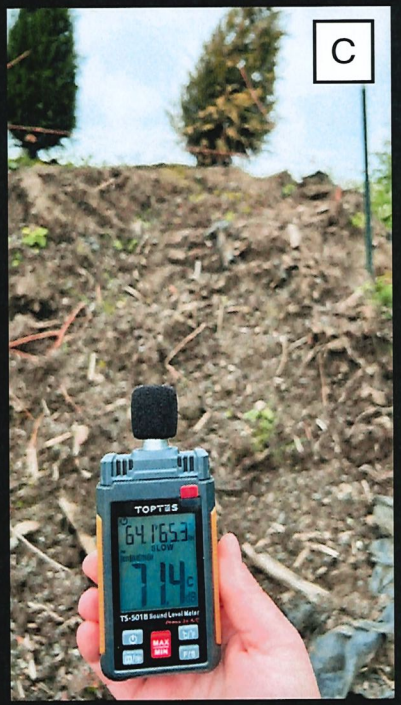




Northeast Corner of Property

- Zone 1 – E
- 200 Ft. from center
- A – Inside of berm
- B – On top of berm
- C – Outside of berm

Northwest Corner of Property



- Zone 1 – D
- 228 Ft. from center
- A – Inside of berm
- B – On top of berm
- C – Outside of berm

Southeast Corner of Subject Site

- Zone 1 – C
- 220 Ft. from center
- A – Taken on the outside of berm
- B – Taken on inside of berm
- Unable to get top of berm due to vegetation (blackberries & trees)

- Zone 1 – A
- 435 Ft. from center
- Taken at the intersection of 57th and Brooklake Rd.
- Vehicle and landscaping noise present

Southeast corner of parcel

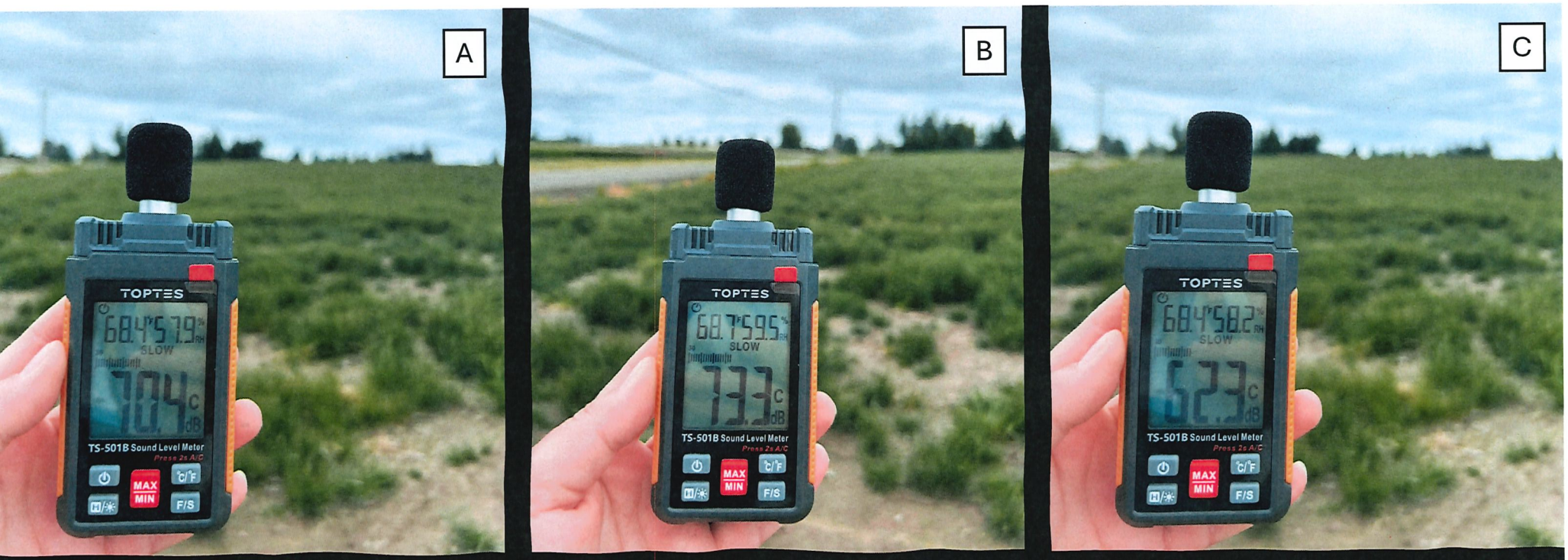
- Zone 1 – B
- 480 Ft. from center
- Vehicular traffic on Brooklake Rd. was present
- Varying degrees of other noise sources present

Southwest Corner of Subject Site

- No berm on this section of the parcel
- Vehicular traffic on Brooklake was present
- Approximately 235 feet north of southern property line

ZONE 2

59th & Brooklake Rd NE



59th & Brooklake Rd.

- Taken facing west towards the subject site while machine is running. There was vehicular traffic for A & B.

ZONE 3

Ramp St. NE & North Side of 57th Ave NE

Intersection of Ramp St. NE & North 57th Ave NE

- Measurements taken approximately +/-5 *(five) feet from westerly property line.

Intersection of Ramp St. NE & North 57th Ave NE

- Measurements taken approximately +/-5 *(five) feet from westerly property line.

57th Ave NE

- Measurements taken approximately +/-5 *(five) feet from westerly property line, 320 feet north of subject site buffer.
- Various animal noise was present (chickens, roosters, crows)

ZONE 4

Northside of Brooklake Rd. NE on Public ROW;
adjacent to 5370 Brooklake Rd NE

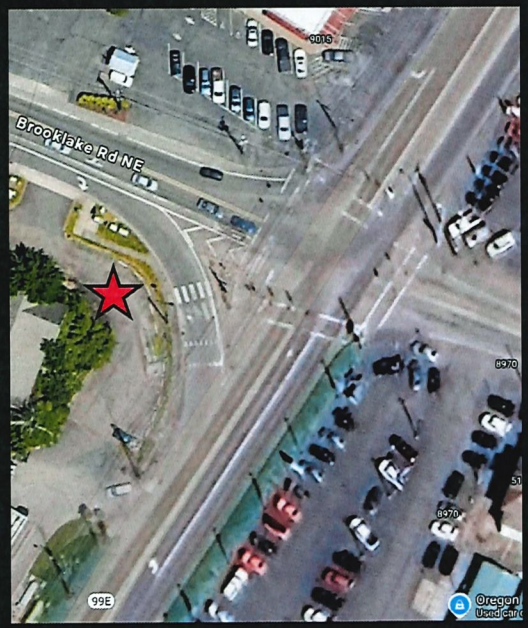
Taken on Brooklake Rd. g

- Measured approximately 1,480 feet from mulching machine.
- Vehicular traffic and other external noise.

ZONE 5

Intersection of Brooklake Rd. NE & Highway 99E

Hwy 99E & Brooklake Rd.



- Taken in the SW corner as depicted.
- Vehicular traffic present.
- Driver vehicle turned off.

ZONE 6

Intersection of Ramp St. NE & Highway 99E

Intersection of Ramp St. NE & Hwy 99E

- Driver vehicle was turned off
- Highway vehicle traffic present

Analysis

Results of Noise Study for CU24-028

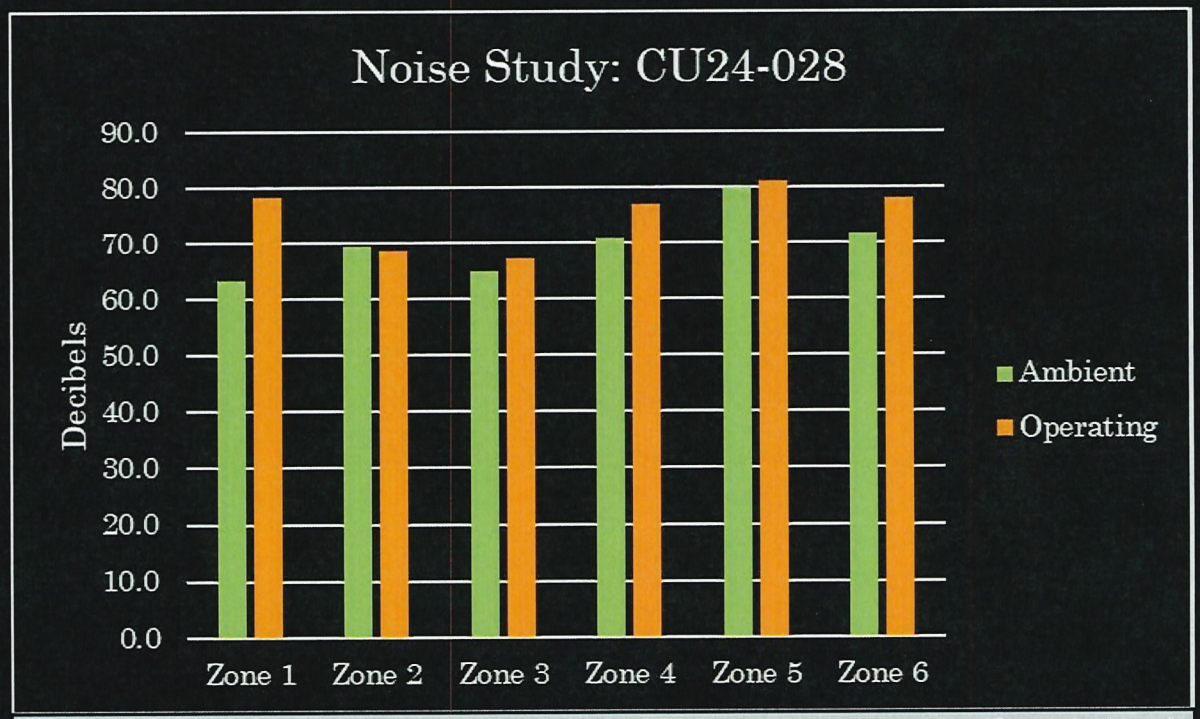


Chart 1: *Noise study comparing decibel levels of property with machine running (Operating), and not running (Ambient)*

Average Decibel Levels are comparable across Zones 2-6.
Zone 1 (subject site) increases by approximately 15± decibels when machine is operating.

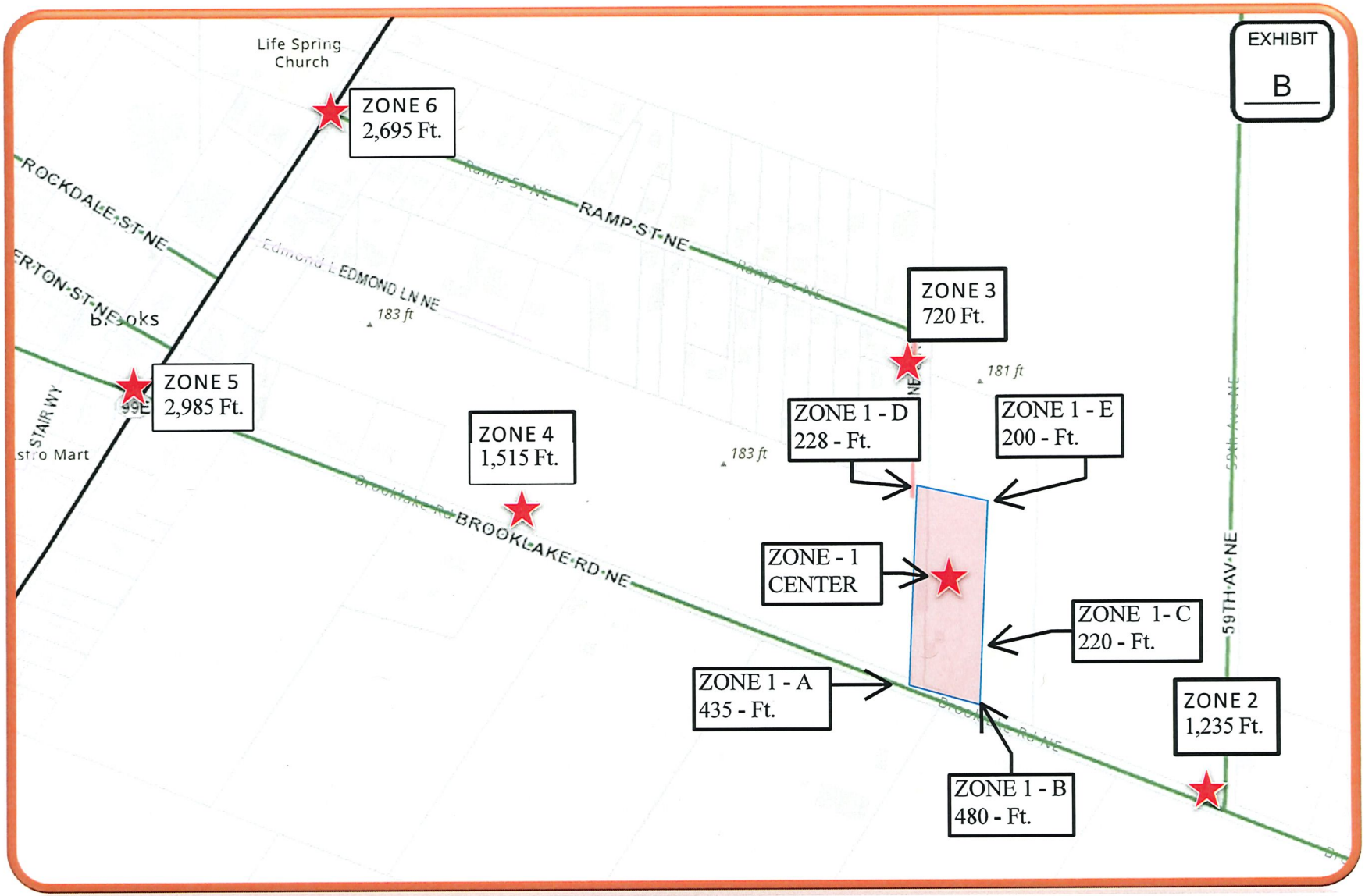
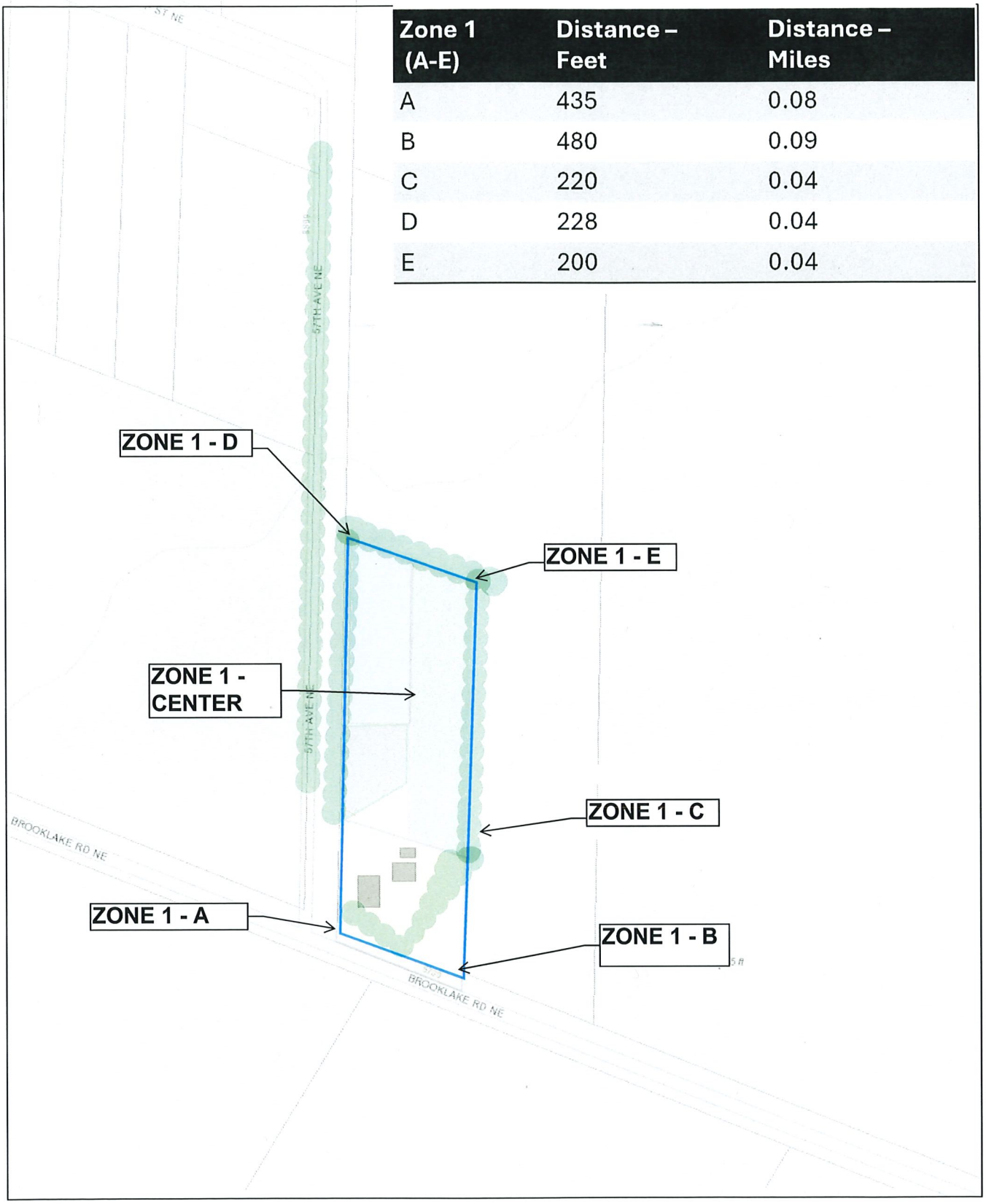


EXHIBIT
B
Life Spring Church
ZONE 6
2,695 Ft.
ROCKDALE ST NE
RAMP ST NE
EDMOND LN NE
183 ft
ZONE 3
720 Ft.
181 ft
ZONE 5
2,985 Ft.
ZONE 4
1,515 Ft.
183 ft
ZONE 1 - D
228 - Ft.
ZONE 1 - E
200 - Ft.
BROOKLAKE RD NE
ZONE - 1
CENTER
ZONE 1- C
220 - Ft.
59TH AV NE
ZONE 1 - A
435 - Ft.
ZONE 2
1,235 Ft.
ZONE 1 - B
480 - Ft.

Zone 1 - Site Map

Zone 1 (A-E)	Distance – Feet	Distance – Miles
A	435	0.08
B	480	0.09
C	220	0.04
D	228	0.04
E	200	0.04



7/2/2025

Parcels
County Boundary
City Boundaries

1:2,257

0 100 200 400 ft
0 30 60 120 m

EXHIBIT

C

AgriLIFE EXTENSION

Texas A&M System

HEARING LOSS PROTECTION FOR AGRICULTURAL WORKERS

David W. Smith, Extension Safety Program

Farm environments and farm equipment can be quite noisy. Tractors, machinery, and animal confinement areas are common sources of loud noise. An agriculture worker exposed to this noise over an extended period of time is more likely to develop serious hearing loss. Knowing the typical sound levels of various sources of sounds will help you to recognize hazardous situations and take precautions to prevent hearing damage.

TYPICAL NOISE LEVELS

Sound is measured in decibels, designated as dB(A), using a tool called a decibel meter. The decibel meter can be used to identify those noise sources that exceed a safe level. The decibel level chart illustrates the typical noise levels from various sources. For example, while a tractor at idle speed produces about 85 decibels, a tractor at work will produce up to 100 decibels. According to the Occupational Safety and Health Administration, sounds of 85 decibels or higher can damage hearing.

As a general rule, the permissible safe noise exposure decreases as sound levels increase. For example, without adequate hearing protection, a farmer operating a tractor at work (typically generating 100 decibels), may begin to experience hearing loss after only two hours. With each 5-decibel increase, the "safe" exposure time is cut in half.

DECIBEL LEVEL CHART

Decibel	Sound
0	Lowest sound audible to the human ear
30	Crickets, distant frogs, whisper
40	Kitten meowing, songbirds, distant dog bark
50	Refrigerator running, babbling stream, quiet empty barn
60	Average conversation level
70	Chicken coop, busy restaurant. At this level, noise may begin to affect your hearing if exposed over a long period of time.
80	Tractor idling, barn cleaner, conveyors, elevators. These noises can damage hearing if exposed for more than eight continuous hours.
90	Tractor at 50 percent load, blower, compressor, combine. As noise levels increase, the "safe" exposure time decreases; damage can occur in less than eight hours.
100	Tractor at 80 percent load, pig squeal, power tools. Even two hours of exposure can be dangerous. With each 5-decibel increase, the "safe time" is cut in half.
120	Tractor at full load, bad muffler, old chain saw. The danger is immediate.
140	Gunshot, backfire, dynamite blast. Any length of exposure time is dangerous. At this level, the noise may actually cause pain in the ear.

DID YOU KNOW?

It is common for a farmer to lose hearing in one ear faster than the other. Typically, one ear is facing the tractor exhaust or loud towed machinery more than the other as he or she frequently looks back toward the working equipment.

SAFETY ISSUES

Agricultural workers rely greatly on their ability to hear in order to detect machinery operation problems. For example, experienced mechanics can detect *missing* or misfiring in engines. Tractor operators operating hay balers rely upon sound pitch and sound variations in drive chains as a signal that it's time to oil or lubricate mechanical parts.

The ability to hear is essential for agricultural workers who rely upon verbal communication to avoid placing themselves or coworkers in danger. This is especially important when coworkers share hazardous tasks such as harvesting, loading, and conveying field crops.

Brief periods of excess noise have only minor effects, such as tinnitus (ringing or buzzing in your ears) or muffled hearing for a few hours after leaving work. Repeated exposure to loud noise may cause permanent hearing loss. First, you may have trouble hearing high-frequency sounds like phones ringing or high pitched voices. Next, you may lose speech frequencies, consonants, and then vowels. Finally, all verbal communication, including television, radios, and phone conversations may be difficult to hear.

Exposure to elevated noise is known to cause other health problems. It can cause fatigue, tension, and nervousness. It can also increase pulse rate, increase blood pressure, and narrow blood vessels. Over time, these conditions can stress the heart.

HEARING PROTECTION

Hearing protection is designed to reduce noise exposure to a safe level. Two types of protection, acoustical muffs and ear plugs, are most common. Acoustical muffs are placed over the ear to provide a sound barrier to the entire ear. Because they do not block out all sound, conversation for instruction or safety purposes can still be heard. Ear muffs will generally reduce decibel levels by 20 to 30 decibels.

Ear plugs are made to fit inside the ear canal, and come in formable or preformed designs. Formable plugs are compressed and placed inside the ear canal where they expand to fit. Preformed plugs come in many sizes and must be selected to fit the individual's ear. Ear plugs typically reduce decibel levels by 26 to 33 decibels. Ear muffs and ear plugs worn together can add another 3 to 5 decibels of protection.

NOISE REDUCTION TIPS

To reduce noise exposure levels on the farm:

- Keep machinery and equipment well lubricated
- Replace defective mufflers and exhaust parts
- Don't use "straight pipe" exhausts for tractors or any other engines
- Enclose noisy machine components
- Build acoustic barriers to loud machines
- Limit the duration of elevated noise exposure
- Stay away from noise when you don't need to control or tend the equipment
- Purchase power tools and equipment such as chain saws and lawnmowers that have built-in noise reduction systems.

Anyone experiencing hearing difficulty should get a hearing test so existing problems can be identified and monitored.

OSHA HEARING CONSERVATION STANDARD

Employers are required by law to implement a "Hearing Conservation Program" if the noise exposure meets or exceeds an eight-hour time-weighted average of 85 decibels [29 CFR 1910.95(c)].

ASHA

American Speech-Language-Hearing Association

Making effective communication, a human right, accessible and achievable for all.

Search □

Loud Noise Dangers

Loud noise can cause permanent hearing loss. There are ways to protect your hearing. Audiologists can help.

On this page:

About Noise-Induced Hearing Loss

Noise-Induced Hearing Loss, or NIHL, happens when you listen to loud sounds. These sounds can last a long time, like listening to a concert, or they can be short, like from gunfire. Three factors put you at risk for NIHL:

- How loud the noise is
- How close you are to the noise
- How long you hear the noise

Sound-level meters measure noise levels. We record noise levels in decibels, or dBA. The higher the noise level, the louder the noise. You can listen to sounds at 70 dBA or lower for as long as you want. Sounds at 85 dBA can lead to hearing loss if you listen to them for more than 8 hours at a time.

Sounds over 85 dBa can damage your hearing faster. The safe listening time is cut in half for every 3-dB rise in noise levels over 85 dBA. For example, you can listen to sounds at 85 dBA for up to 8 hours. If the sound goes up to 88 dBA, it is safe to listen to those same sounds for 4 hours. And if the sound goes up to 91 dBA, your safe listening time is down to 2 hours.

The World Health Organization and International Telecommunication Union 2019 document, WHO-ITU Global Standard on Safe Listening Devices and Systems [PDF], recommends that manufacturers equip devices like smartphones and personal audio players with information that explains safe listening (for adults, a total of 40 hours of weekly exposure to volume levels no higher than 80 dB is recommended; for children, the level is 75 dB); usage warnings and tracking information; cues for taking safe listening actions; options for limiting volume levels; and volume limiters expressly for parents to use. The recommendations would also have safe listening information appear on external product packaging and advertising, as well as on manufacturers' websites.

Citations

- World Health Organization, WHO-ITU global standard for safe listening devices and systems, 2019. Retrieved from https://www.who.int/deafness/make-listening-safe/standard-for-safe-listening/en/.
- U.S. Environmental Protection Agency, Office of Noise Abatement and Control. (1974, March). *Information on levels of environmental noise requisite to protect public health and welfare with an adequate margin of safety* Retrieved from https://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.PDF [PDF].

Impulse Noise

A single loud blast or explosion that lasts for less than 1 second can cause permanent hearing loss right away. This noise, called impulse noise or impact noise, may come from gunfire or fireworks. We measure impulse noise in dB peak pressure, or dBP. Impulse noise greater than 140 dBP will hurt your hearing right away.

Dangerous and Safe Noise Levels

The noise chart below lists average decibel levels for everyday sounds around you.

Painful impulse noise—Not safe for any period of time

150 dBP = fireworks at 3 feet, firecracker, shotgun

140 dBP = firearms

Painful steady noise—Not safe for any period of time

130 dBA = jackhammer

120 dBA = jet plane takeoff, siren, pneumatic drill

Extremely loud—Dangerous to hearing; wear earplugs or earmuffs

112 dBA = maximum output of some MP3 players, rock concert, chainsaw

106 dBA = gas leaf blower, snow blower

100 dBA = tractor, listening with earphones

94 dBA = hair dryer, kitchen blender, food processor

Very loud—Dangerous to hearing; wear earplugs or earmuffs

91 dBA = subway, passing motorcycle, gas mower

Moderate—Safe listening for any time period

70 dBA = group conversation, vacuum cleaner, alarm clock

60 dBA = typical conversation, dishwasher, clothes dryer

50 dBA = moderate rainfall

40 dBA = quiet room

Faint—Safe listening for any time period

30 dBA = whisper, quiet library

The noise chart was developed using the following two websites:

- Noise Navigator
- Dangerous Decibels

Signs That Noise Is Too Loud

You probably don't always carry a sound level meter with you. So how can you know if noises are too loud? Here are some signs:

- You must raise your voice to be heard.
- You can't hear or understand someone 3 feet away from you.
- Speech around you sounds muffled or dull after you leave the noisy area.
- You have pain or ringing in your ears after you hear the noise, called tinnitus. It can last for a few minutes or a few days.

Noise and Hearing Loss

How do loud noises hurt your hearing? It may help to first understand how you hear:

- Sound goes into your ear as sound waves. The louder the sound, the bigger the sound wave.
- The outer ear, which is what you see on the side of your head, collects the sound wave. The sound wave travels down the ear canal toward your eardrum. This makes your eardrum vibrate.
- The sound vibration makes the three middle ear bones move. The movement makes the sound vibrations bigger.
- The last of the three middle ear bones moves the sound vibrations into the inner ear, or cochlea. The cochlea is filled with fluid and has tiny hair cells along the inside. The vibrations make the fluid in the inner ear move. The fluid makes the hair cells move, too. The hair cells change the vibrations into electrical signals that travel to your brain through your hearing nerve.
- Only healthy hair cells can send electrical signals to your brain. We recognize sounds in our brains and use that information to figure out how to respond.

You may lose some of your hearing if the hair cells get damaged. How does this happen?

- Hair cells are sensitive to big movements. If sounds are loud, they move the fluid in the inner ear more, and that can damage the hair cells.
- Hair cells that are damaged by loud sounds do not send signals to the brain as well as they should. The first hair cells that are hurt are those that send high-pitched sounds to the brain. This can make sounds like /t/ in "tin", /f/ in "sin", or /k/ in "kin" harder to hear.
- Short, loud noises—like a firecracker or an explosion—can damage hair cells. Listening to loud sounds for a long time, like when you are at a rock concert, also damages hair cells.

Ringing in your ears, or tinnitus, is an early sign of noise-induced hearing loss. There is no way to fix damaged hair cells. Hearing aids or other devices can help you hear better, but your hearing will not come back on its own.

Noise and Your Health

Loud noise does not just hurt your hearing. It can cause other problems that you may not think of as being noise related.

Noise can make you more tired and cranky. Loud noise can cause other health problems, like:

- high blood pressure
- faster heart rate
- upset stomach
- problems sleeping, even after the noise stops
- problems with how babies develop before birth

Noise can make it harder to pay attention. You may be less safe at work because you may not hear warning signals or equipment problems. Noise can also cause you to get less work done.

Noisy classrooms can make it harder for children to learn. To learn more about noise in schools, read the Classroom Acoustics page.

It is harder to understand what others say when it is noisy. You may need to concentrate more and use more energy to hear. And the person speaking needs to talk louder or yell. This can make conversations hard. You may give up trying to talk or listen.

So, you can see that noise does more than cause hearing loss. It can impact your health, work, learning, and social life. It is important to cut down on the noise in your life for all of these reasons.

Protecting Your Hearing

Knowing how noise impacts you is the key to protecting your hearing. You've taken that first step by reading this information.

The next step is to avoid loud noise whenever possible. Remember, if you have to shout to be heard, it is too loud. You should get away from the noise or find a way to protect your ears.

Here are some things you can do:

1. **Wear hearing protection.** Cotton in the ears will not work. You can buy things that protect your hearing, like earplugs or earmuffs, at the store or online.
    - **Earplugs** go **into** your ear so that they totally block the canal. They come in different shapes and sizes. An audiologist can make some just for your ears. Earplugs can cut noise down by 15 to 30 decibels.
    - **Earmuffs** fit completely **over** both ears. They must fit tightly to block sound from going into your ears. Like earplugs, earmuffs can reduce noise by 15 to 30 dB, depending on how they are made and how they fit.
    - **Earplugs and earmuffs** can be used together to cut noise down even more. You should use both when noise levels are above 105 dB for 8 hours or more. You should also use both if you might hear impulse sounds that are more than 140 dBP.
2. **Do not listen to loud sounds for too long.** Move away from the loud sound if you don't have hearing protection. Give your ears a break. Plug your ears with your fingers as emergency vehicles pass on the road.
3. **Lower the volume.** Keep personal listening devices set to no more than half volume. The World Health Organization recommends a total of 40 hours of weekly exposure to volume levels no higher than 80 dB for adults and 75 dB for children on personal listening devices. Don't be afraid to ask others to turn down the volume of their devices if you can hear them. Ask the movie theater manager to turn down the sound if the movie is too loud.

4. **Be a good consumer.** Look for noise ratings on appliances, sporting equipment, power tools, and hair dryers. Buy quieter products. This is especially important when buying toys for children.

5. **Be a local advocate.** Some movie theaters, health clubs, dance clubs, bars, and amusement centers are very noisy. Speak to managers about the loud noise and how it may hurt hearing. Ask that they turn the volume down.

Don't be fooled by thinking your ears are "tough" or that you can "tune it out"! Noise-induced hearing loss is usually slow and painless. But, it is permanent. The hair cells and hearing nerve cannot be fixed. If loud sounds don't bother you, you may already have some hearing damage.

You can avoid noise-induced hearing. Protect your hearing for life.

More information on this topic can be found in our Audiology Information Series [PDF].

To find an audiologist near you, visit ProFind.

EXHIBIT 3

Klopfenstein Declaration (attached)

MARION COUNTY BOARD OF COMMISSIONERS

MARVIN W. KLOPFENSTEIN, Applicant.	CONDITIONAL USE CASE NO. 24-028 DECLARATION OF MARVIN W. KLOPFENSTEIN IN SUPPORT OF APPLICATION FOR COMMERCIAL ACTIVITY IN CONJUNCTION WITH FARM USE

I, **Marvin W. Klopfenstein**, own and operate the mulching operation (herein, "***Mulch Chips***" or "***Mulch***") located at 5711 Brooklake Road NE, Salem, Oregon, (herein "***Subject Property" or "Property"***), and hereby declare the following statements to be accurate and true:

1) I am the owner and operator of Mountain View Tree Service, LLC, an Oregon limited liability company, (herein "***MVTS***"), which provides tree removal and tree trimming services.
2) I am also an ISA (International Society of Arboriculture) Certified Arborist who has worked in the industry for 17 years.
3) The Mulch produced on the Subject Property consists entirely of wood debris and wood byproducts obtained from MVTS.
4) Employees of MVTS deliver the wood debris and wood byproducts to the Subject Property, which are stored on the Property until it is turned into Mulch.
5) In addition to employing knowledgeable crew members with experience in the industry, MVTS employs ISA Certified Arborists.
6) Trees affected by diseases such as Dutch Elm Disease or Sudden Oak Death or containing harmful pests such as Emerald Ash Borer that are regulated by the Oregon Department of Forestry and Oregon Department of Agriculture are identified and removed from jobsites and disposed of pursuant to the applicable regulations, such as transporting such trees directly to designated disposal sites.
7) The proper removal and disposal of trees affected by diseases such as Dutch Elm Disease or Sudden Oak Death or containing harmful pests such as Emerald Ash Borer that are regulated by the Oregon Department of Forestry and Oregon Department of Agriculture is also mandated by certain local jurisdictions in order to obtain and maintain tree work permits.
8) Since the wood debris and wood byproducts delivered to the Subject Property are

SAALFELD GRIGGS
LAWYERS
PO BOX 470 SALEM OR 97308-0470 TEL: 503-399-1070

not from trees affected by diseases such as Dutch Elm Disease or Sudden Oak Death or harmful pests such as Emerald Ash Borer that are regulated by the Oregon Department of Forestry and Oregon Department of Agriculture, it is my professional opinion that the production of Mulch on the Property will not impact nearby farming operations.

9) The statements contained in the Board of Commissioners Hearing Statement Letter by my attorneys are accurate and true.

Dated this 17 day of July, 2025.

BY: _____
Marvin W. Klopfenstein, Applicant

SAALFELD GRIGGS PC
LAWYERS
PO BOX 470 SALEM OR 97308-0470 TEL: 503-399-1070

EXHIBIT 4

Traffic Memorandum
(attached)

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

REGISTERED PROFESSIONAL ENGINEER
70661PE
OREGON
JOSEPH W. BESSMAN
EXPIRES: 12/31/2025

Date:	July 10, 2025
To:	Mark Shipman, Saalfeld Griggs PC
From:	Joe Bessman, PE
Project Reference No.:	2075
Project Name:	5711 Brooklake Road NE

This memorandum provides a transportation report to document compliance with Marion County requirements for the commercial mulching operations that are occurring at 5711 Brooklake Road NE. The property is 9.72 acres and is currently zoned Exclusive Farm Use (EFU). The site has a single-family residence, with the area north of the residence dedicated to material storage and staging, with grass fields on the remainder of the property and a hazelnut orchard and rural residence to the west. Figure 1 provides a site vicinity map that shows the location of the property and surrounding area, showing the predominantly agricultural uses that surround this property.

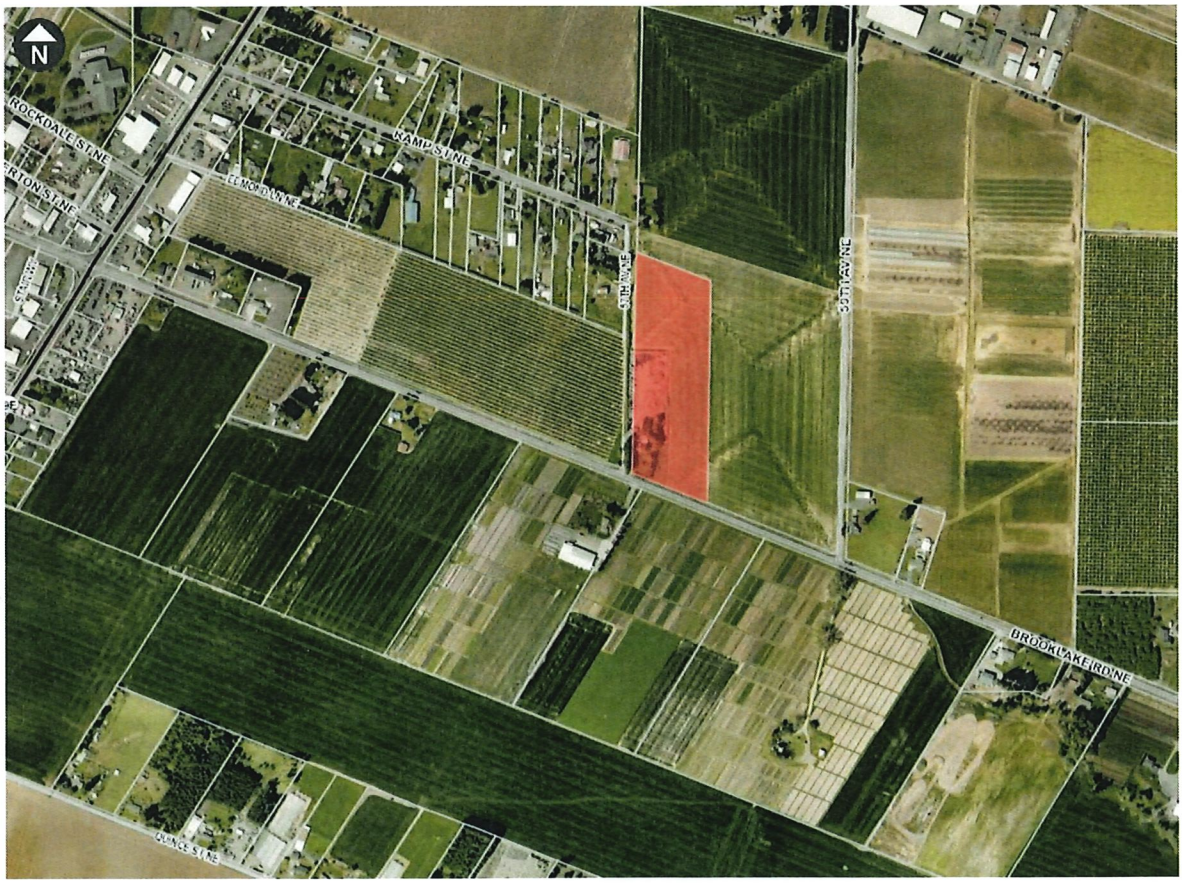


Figure 1. Site Vicinity Map

PROJECT LOCATION AND TRANSPORTATION INFRASTRUCTURE

The subject property is located east of Brooks, Oregon, about a half mile east of the Highway 99E corridor and 1.5 miles east of I-5. The site is surrounded by other agricultural uses, with the Adelman Peony Gardens located immediately south of the property (which provides public access/sales from May 1st through June 15th each year as an area tourist attraction).

Figure 2. View of 57th Street NE facing south toward Brooklake Road.
Photo date: June 2025.

The subject property is located north of the paved two-lane Brooklake Road NE alignment and west of the unimproved 57th Avenue NE right-of-way, which currently serves narrow (13-foot) paved section with 8-foot eastern and 16-foot western gravel shoulders to accommodate trucks turning to and from Brooklake Road. The pavement section extends 60-feet north of the shoulder stripe with three-foot gravel shoulders. This roadway section transitions into a fully gravel road for 120-feet beyond the end of the asphalt pavement, providing access into the northern portion of the subject property where the equipment, material, and mulching operations occur. At the connection of 57th Street NE and Brooklake Road NE the truck turning radii show that turning maneuvers by these larger vehicles extend off the asphalt pavement surface onto the adjacent gravel shoulder. Figure 2 illustrates the view along 57th Street NE facing south toward Brooklake Road NE. This road section includes a downhill grade as it extends south, and as noted by the hearings examiner this grade allows gravel to be pulled onto the asphalt and into Brooklake Road NE.

Brooklake Road NE is a rural, two-lane road with no posted speed (statutory speed of 55 miles per hour), though a reduced speed of 45 miles per hour was observed west of Highway 99E. Within the vicinity of the subject property the road contains 10-foot travel lanes, a limited paved shoulder (0 to 8" in width), and limited gravel shoulder (0 to 6" in width). There are fairly steep drainage ditches along the road with a slope of about 1.5:1, and utility poles beyond the edge of the pavement offset from the road by about 10-feet. Figure 3 provides a photo showing the cross-section of Brooklake Road NE.

Figure 3. Brooklake Road NE facing west across the subject property toward 57th Street NE.
Photo date: June 2025.

A separate driveway is also available to access the residence. This driveway is situated about 45 feet east of 57th Street NE (as measured from driveway centerline), separated from the public right-of-way by a row of evergreen trees and a drainage ditch. The private driveway also connects into the 57th Street NE right-of-way just north of the residence where the garage is located.

Description of Site Operations

The subject property provides a residence, with the northern portion of the property in use as a mulching operation, as well as material storage and equipment storage. The property is owned by Marvin Klopfenstein who operates Mountain View Tree Service. As part of the tree service, [clean] materials that are removed from various projects across the region are transported back to the property and stored on-site. When an adequate amount of material is on the property the materials are chipped and turned into mulch (this occurs about four times per year with the operation extending one to two days), producing about 4,000 to 6,000 cubic yards (50 to 70 truckloads) of mulch annually. This mulch which is then transported off-site to farms using specialized high-capacity chip trailers and a dump truck that minimize the amount of haul trips from the site. There are no retail mulch sales provided from the property to the public. Logs that are brought to the property are instead transported via log trucks to a mill, with logs remaining on the property up to two weeks.

Commercial vehicles for the tree service and other agricultural equipment are also stored onsite. Specific commercial vehicles that are stored on-site are detailed within the Open Record response, and include typical logging vehicles, trailers, chippers/grinders, and a bulldozer/excavator to assist in loading and storage of materials.

During typical periods there are no more than two employees on-site, with this number maintained during mulching operations. Some employees are required to visit the site to access the trucks or equipment as necessary for the tree service operations.

EXISTING TRAFFIC VOLUMES AND CONDITIONS

Similar to most forestry and agricultural operations, trip rates vary seasonally based on the types of projects that are being supported. While there are various activities that occur at the site temporarily, the majority of site activity is low-frequency storage of forestry products and equipment. To quantify this "typical" impact, a traffic count was obtained at the Brooklake Road NE/57th Street NE intersection on June 17, 2025 between 4:00 and 6:00 p.m., which coincides with the peak hour assessment within the Marion County Transportation System Plan. The timing of this traffic count was not coordinated with the property owner in advance of its collection to ensure that it capture unbiased "typical" site conditions.

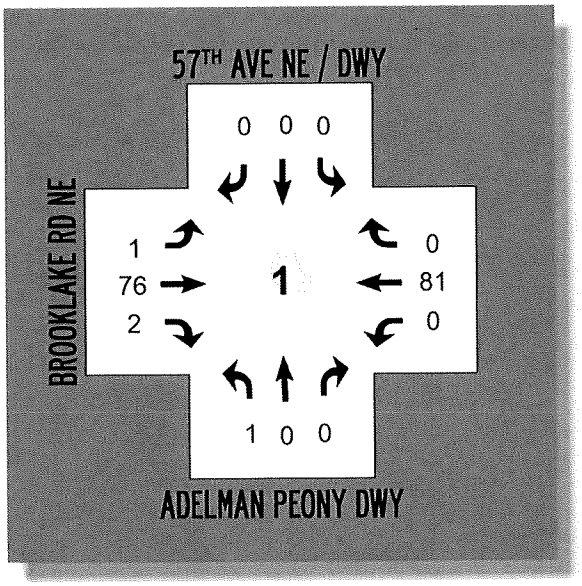


Figure 4. June 2025 Existing Traffic Conditions, Weekday PM Peak Hour (4:00 to 5:00 p.m.)

This traffic count identified only a single (passenger vehicle) entering the subject property in the 4:00 to 5:00 p.m. peak hour of Brooklake Road NE (more trips at the access occurred later in the evening period). Through traffic on Brooklake Road NE included about 80 vehicles in each direction, or a total Average Daily Traffic (ADT) volume of about 1,600 to 1,800 daily vehicles. Heavy vehicles (trucks) comprise about five to six percent of the overall traffic volume. Figure 4 illustrates the peak hour turning volume into the 57th Avenue NE connection and residential driveway (and the adjacent Peony Farm access on the opposite side of Brooklake Road NE).

There was no queuing or delays observed from the counts (or field review) during this assessment, with vehicles generally traveling through the area unimpeded. An operational analysis of the current conditions identifies intersection performance of Level of Service "A" with less than 10 seconds of delay per side-street vehicle accessing Brooklake Road NE, indicating performance that is well within Marion County standards for these "typical" conditions.

Peak Operations Trip Generation Estimates

The existing traffic counts reflect typical "non-mulching" conditions that occur throughout the majority of the year, with exception of the approximately four periods annually when materials are being processed and later hauled off-site. As shown in the traffic counts, the scale of normal site activity shows fewer than five peak hour trips (only one trip was observed during the peak hour), which is a level of activity that is consistent with other outright allowable uses within the EFU zoning designation.

Based on information provided from the project team, peak trip generation estimates were prepared as the summation of on-site activities:

- **Employee Vehicles.** Mulching operations occur on an approximately quarterly basis, with each of these operations producing 1,000 to 1,500 cubic yards of material that is then hauled off-site. This type of operation occurs with the two on-site staff operating the loading, chipping, and stockpiling operations while the mulching occurs. This reflects no change from the existing 'typical' on-site employment conditions captured in the traffic counts.
- **Mulch Trucks.** With the time required to load an 80-yard chip truck with a loader and leave the site to the mulch distributor, unload the trailer, and return to the site, it is unlikely that more than one truckload of mulch could make a roundtrip in a single hour. Conservatively, it was assumed that a loaded mulch truck could depart the site at the start of the peak hour and return back into the site during the end of that same hour (1 truck out, 1 truck in). The site also has a dump truck that could haul mulch, so if the second mulch truck were used this could create up to 2 inbound and 2 outbound truck trips.
- **Log Trucks.** If on-site logs needed to simultaneously be transported to the mill during the same peak hour, it is again possible (but unlikely) that that same log truck could also depart the property and return in the same hour (1 truck out, 1 truck in).
- **Residence Trips.** Trips associated with the on-site residence were captured within the existing employee trips observed during the traffic count, since there are no changes to the residence there was not considered to be an additive impact of these trips.
- **Miscellaneous/Other.** During typical equipment operations there are equipment servicing and maintenance needs. Assuming that a piece of equipment needed some type of parts or repair (or fuel), this could generate an additional inbound and outbound peak hour trip.

As noted above, there are several on-site uses that will add sporadic trips throughout the day, and there is a very narrow possibility that all of these trips could align and occur in any single hour. However, in a very conservative assessment assuming that all of these uses did occur simultaneously, this would only equate to the trip generation rate shown in Table 1, with about 6 total inbound and 7 total outbound trips.

Table 1. Estimated Trip Generation (Peak Operations/Conservative Scenario)

Site Use	Passenger Cars	Trucks	Notes
Residence and Existing Employees	1 Inbound 2 Outbound	1 Inbound 1 Outbound	2 Employees is Typical
Off-site Mulch Hauling		+2 Inbound +2 Outbound	Would require two haul trailers
Off-site Log Hauling		+1 Inbound +1 Outbound	Unlikely that logs are being processed during mulching operations
Miscellaneous/Other		+1 Inbound +1 Outbound	Support trips could occur with passenger vehicles or trucks
Total	**1 Inbound 2 Outbound**	**5 Inbound 5 Outbound**	**This assumes that all uses occur simultaneously**

As shown in Table 1, this estimated peak level of trip generation reflects up to 13 peak hour trips. This level of continuous peak operation over the course of the day would likely be in the range of 60 to 100 weekday daily trips, though employees would not leave hourly in their passenger vehicles as is reflected in this dataset.

Traffic operations were again prepared to assess the operational impact of these additional vehicles on the transportation system with these increased activity levels. This analysis shows that the site driveway would operate with about +0.2 seconds per vehicle on the critical southbound approach, reaching LOS "B" with 10.0 seconds of delay per vehicle. This is well within Marion County operational standards and indicates that there are no capacity constraints even applying this conservative assessment of peak site impacts.

SAFETY REVIEW

Intersection and corridor safety were reviewed within the surrounding area. This assessment was conducted based on two steps: 1) review of historical crash data as contained within the ODOT crash database and the ODOT Safety Priority Index System; and 2) field review of the street connection and residential driveway, review of available sight line, and review of the surrounding corridor segment.

Historical crashes were reviewed using the records within the ODOT crash database. The database summarizes all crashes reported through the DMV, which is required for any incident involving at least one motor vehicle that results in at least $2,500 in property damage or any level of personal injury. The crash database provides complete information for the five-year period from January 2019 through December 2023. Review of this database showed no reported incidents at the subject property entrance or the adjacent 57th Avenue NE intersection with Brooklake Road NE. There were no reported incidents along Brooklake Road NE east or west of the property corners within 1,000 feet. Based on the review of historical information, there were no deficiencies identified. The adjacent streets are not included within the ODOT SPIS list.

Field review was conducted in late June 2025 to observe the current characteristics of the area. The field review identified the following:

- The truck tracking from 57th Avenue NE onto Brooklake Road NE extends beyond the asphalt section and into the gravel shoulder.
- The downhill grade of 57th Avenue NE results in gravel being pulled downhill onto the asphalt, with gravel also observed on the edge of NE Brooklake Road NE.
- The adjacent residential driveway is located along about 45-feet from 57th Street NE, and provides redundant access into the parking area within the property.
- The ditch section along NE Brooklake Road NE contains vegetation and appears to be in need of maintenance.

Figures 5 and 6 illustrate these field observations.

Figure 5. Gravel being pulled from 57th Avenue NE onto Brooklake Road NE. *Photo date: June 2025.*

Figure 6. Overgrown vegetation east of the 57th Avenue NE access. *Photo date: June 2025.*

As part of the field review, intersection sight distance was also reviewed at the 57th Avenue NE connection to NE Brooklake Road. For minor-street stop-control intersections, intersection sight triangles are based on guidance cited within Conditions B1 (left-turn from minor road) and B2 (right-turn from minor road) of the *AASHTO Green Book*. All intersection sight distance dimensions are measured from a vertex point located 14.5 feet from the major-road travel way along the center of the approaching travel lane, accounting for comfortable positioning distance from the travel way (6.5 feet) and the distance from the front of the vehicle to the driver eye (8.0 feet). The assumed eye height is 3.5 feet above the departing road for passenger vehicles and 7.6 feet for trucks. The object height is also 3.5 feet above the major road, providing enough space on the approaching vehicle to recognize it. Passenger vehicle sight distance dimensions are shown in Figure 7 and truck sight distance dimensions are shown in Figure 8 based on a statutory rural speed of 55 miles per hour.

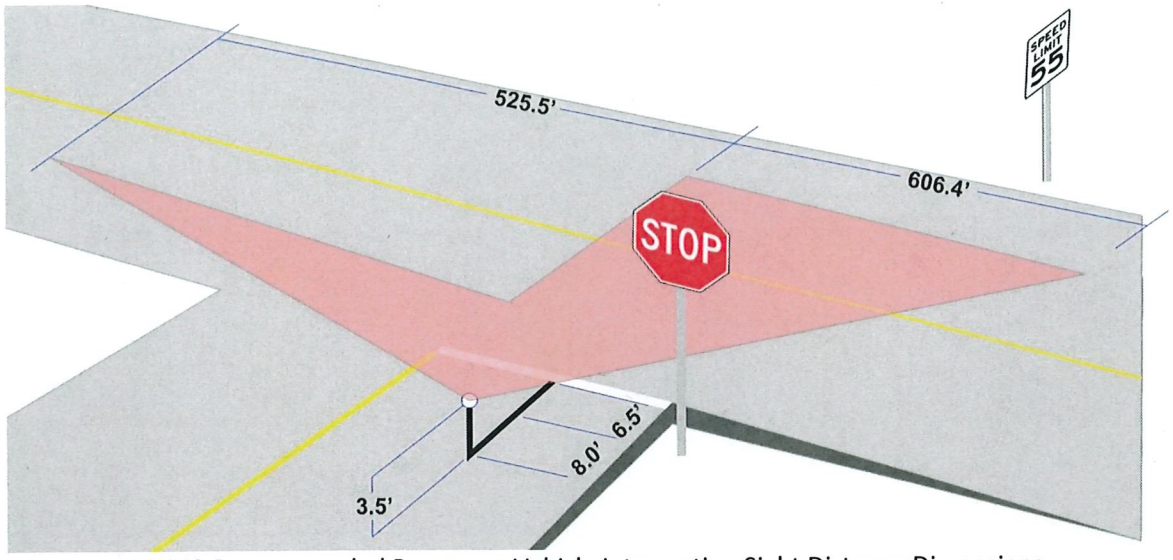


Figure 7. AASHTO Recommended Passenger Vehicle Intersection Sight Distance Dimensions.

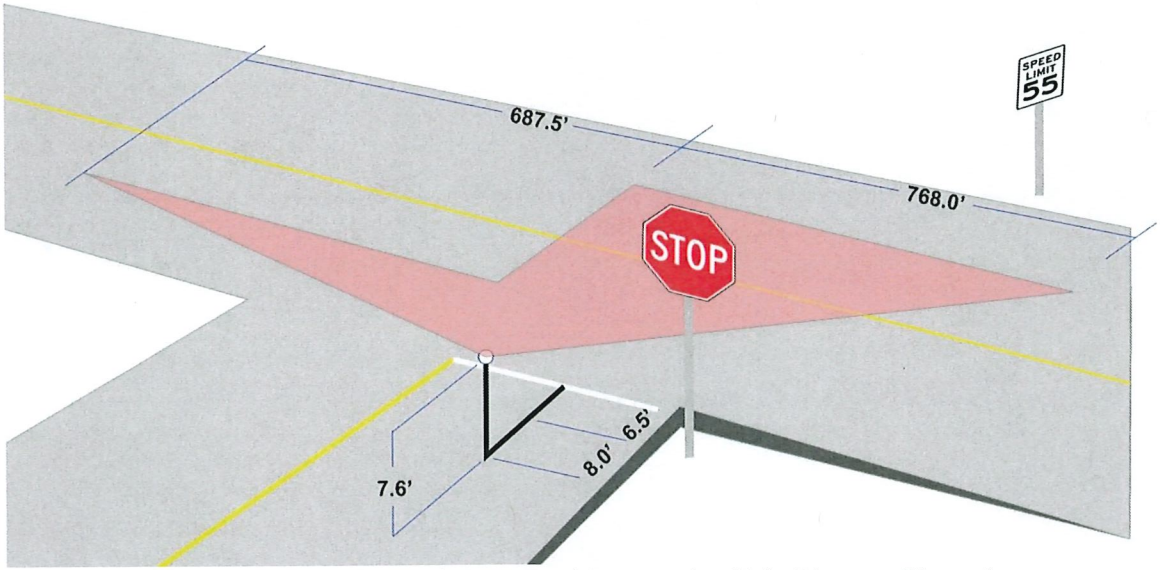


Figure 8. AASHTO Recommended Single-Unit Truck Intersection Sight Distance Dimensions.

The access location was visited in June 2025 to ensure that no sight distance obstructions are present that would prevent these recommended sight distances from being achieved. Figures 9 and 10 illustrate the current views to provide an assessment of roadway characteristics.

Figure 9. View from 57th Avenue NE facing west. *Photo date: June 2025*

Figure 10. View from 57th Avenue NE facing east. *Photo date: June 2025*

As shown in Figures 9 and 10, adjacent vegetation restricts the current sight lines facing in either direction. Field observation identified that with minor vegetation limbing and trimming at and adjacent to the street connection these recommended AASHTO sight distances could be achieved. While review of Marion County Code does not specifically cite the AASHTO materials, Marion County Code 17.110.770(E) does reference applying "recognized traffic engineering standards" for vision clearance, and the AASHTO Green Book is the recognized traffic engineering standard. It was also noted that 2024 materials related to Marion County standard drawings updates do recommend directly incorporating the AASHTO guidance. Marion County's standard drawings include clear vision provisions that should also be provided at the access driveway (see attachments).

VEHICLE ACCOMMODATIONS

Figure 11. Observed vehicle exiting the site.
Source: Rhoten testimony.

While outside the typical scope of a traffic study, concerns were raised about the size and scale of larger equipment on Brooklake Road NE due to its narrow rural design and lack of shoulders. Testimony submitted by Nicholas Rhoten indicates that vehicles that are "larger than typical full-sized trucks", and his testimony includes what appears to be a single-unit tanker truck (likely a fuel truck) departing the site. Based on review of the imagery, it appears that the truck is a Kenworth dump truck chassis that was converted into a fuel truck. These types of trucks are about 25 feet long and contain a width of about 8 to 8.5 feet, and a height of about 12-feet. This would not be considered an oversized truck and is fairly common in rural areas, serving construction sites, quarry operations, hauling debris or trash. This type of truck is often observed towing a pup trailer or other construction equipment.

In addition, other equipment observed by the opposition includes other types of common agricultural and forestry equipment, including excavators, equipment trailers, dump trucks, log trailers, and excavators with grapples. A more detailed equipment listing was submitted into the open record listing the specific equipment, none of which would be considered "oversized" or that would require special permits to operate within a public right-of-way.

In review of Google Maps Streetview imagery (see Figure 12) it was observed that the photos dated July 2023 captured agricultural operations at the adjacent Alderman Peony Gardens. This Streetview photo shows trucks that are larger than the Kenworth truck cited by their attorney and nearly identical to the mulch trucks used on the proposed project site are present. This photo also includes a large harvester that would be considered an oversized load given its width, and unless it is stored on the property would require being loaded on a lowboy trailer and hauled to the site with over-dimensional signs or other measures depending on its specific size. This is not to imply a safety or operational issue with the Peony Gardens, but a typical activity within agricultural and farming areas. This photo highlights that the scale and types of vehicles used on the Brooklake property are similar in type and scale to those used on other adjacent properties within the EFU zoning, including the property of the opposition.

Additionally, during our site visit on June 28, 2025, two large farming tractors were observed traveling on Brooklake Road NE at separate times, presumably traveling between fields. Each tractor, including the tires, was about 10-feet wide and used the entire travel lane. Following vehicle traffic slowed to approximately 10 mph until motorists were able to identify a safe location to pass the slow-moving farm equipment. These types of farm vehicles (with placard display) are permitted; these types of trips are not generated by the subject property, but this again highlights the permitted movement of larger equipment to support farming operations within the rural area.

Figure 12. Google Streetview imagery of the Alderman Peony Gardens property showing that the types of trucks used are typical within this agricultural area. The figure also shows a harvester, which is wider than the equipment used on-site and would require some type of over-dimensional placard for transport.

MARION COUNTY TRAFFIC STUDY REQUIREMENTS

Traffic study requirements in Marion County are managed by its Department of Public Works. The following is considered the thresholds for when a TIA is required:

- Any project that can reasonably be expected to generate more than 600 vehicle trip ends during a single day and/or more than 100 vehicle trip ends during a single hour.
- Any proposed zone change that can reasonably be expected to generate more than 300 vehicle trips more than the previous zoning during a single day.
- Any project within the Urban Growth Boundary of a city if the development would meet that city's criteria for requiring a TIA.

As discussed within this report, the site will generate far less than 100 peak hour trips or 600 weekday daily trips. The expected trip generation of the site during the limited peak mulching operations, assuming that all the vehicles travel in and out of the site during the same hour (and the employees all leave during that same hour) is up to 13 peak hour trips (6 in and 7 out). During typical daily operations the site generates up to five weekday p.m. peak hour trips.

The project is not a rezone, as the uses proposed are consistent with the underlying EFU zoning. The intensity of the operation are also similar in scale to other outright allowable EFU uses. The site is not located within a City's UGB so the final provisions do not apply.

In addition to these requirements, there are lower thresholds for when a traffic study may be required. This includes:

- Any proposed development that can be reasonably expected to generate more than 200 vehicle trip ends during a single day, or more than 40 vehicle trip ends during a single hour.

- Any case in which, based on the engineering judgement of the Public Works Director, the proposed development or land use action would significantly affect the adjacent transportation system.

Again, the trip generation is less than 200 weekday daily trips and 40 weekday p.m. peak hour trips. While the public works director has discretion to elevate this to a formal TIA, this report demonstrates that there are no current safety or operational issues, and with geometric improvements to accommodate truck trailer tracking and access consolidation there will be no remaining transportation issues associated with this site.

Based on this review, we trust that elevation of this review to a more formal analysis will not be required, though elements of the TIA have been incorporated to help identify the scale and operational conditions of the current system.

FINDINGS AND RECOMMENDATIONS

This review highlights the low relative impacts of the proposed mulching operations at 5711 Brooklake Road, and provides a more detailed review of current safety and operational characteristics. Based on this review, the following is recommended to ensure that the site operations occur in compliance with Marion County policies:

- With the existing convergence of access, it is recommended that the separate residential access to Brooklake Road NE be closed and all property access occur from 57th Avenue NE. This is consistent with Marion County Public Works findings.
- The existing asphalt on 57th Avenue NE should be extended from its current length of 50-feet to 100-feet to help prevent gravel from being brought down the grade. Gravel that is pulled onto the driveway should be regularly swept to help prevent rocks from being pulled onto Brooklake Road NE. Marion County's Standard Engineering Detail "Sloping Driveway Provisions" includes a crowned pavement section to help drain water (and rock) away from the edge of pavement.
- The width of 57th Avenue NE should be increased to accommodate the turning radii of trucks into the site, reducing over-tracking onto the adjacent gravel shoulder. Marion County Public Works provides a minimum pavement width on local streets of 22-feet with 2-foot gravel shoulders on both sides (see Marion County "Typical Cross Section for Paving Gravel Roads"). As indicated by Marion County Public Works comments, a flared radius would further assist truck trailer tracking at the intersection.
- Vegetation surrounding the 57th Avenue NE intersection with Brooklake Road NE should be trimmed, removed, or limbed to meet the minimum recommended AASHTO distances (or minimally meet Marion County Public Works standards within "Vision Clearance Rural."
- Recognizing the increased public activity at the adjacent Alderman Peony Gardens between May 1st and June 15th each year, it may be possible to voluntarily limit site activity during this period by scheduling mulching operations before and after this period. However, as the site is within an EFU-zoned area farming, forestry, and agricultural uses are expected to take priority over public events, and farming demands may require continued operations.

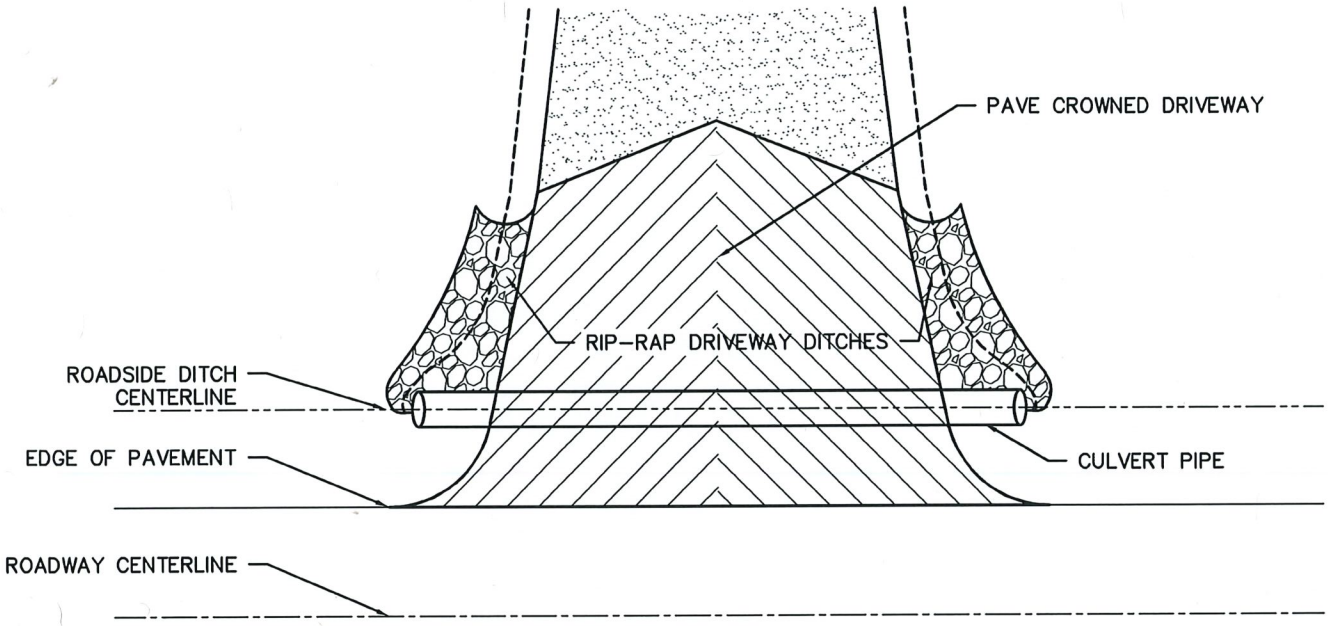
The current operations of the site are low-intensity, with only five inbound or outbound vehicle trips observed between 4:50 and 5:50 p.m. During mulching operations this could increase as high as 13 trips assuming all site uses occur simultaneously. The operations of this site are much less intense than those on surrounding EFU properties, and the types of vehicles utilized are consistent with the Collector designation of Brooklake Road NE.

I trust that this review addresses the needed information for the mulching operations at 5711 Brooklake Road NE. Thank you for the opportunity to provide these transportation materials, if you have any questions I can be reached at (503) 997-4473 or via email at joe@transightconsulting.com.

Attachments:

- Marion County Public Works Standards "Sloping Driveway Provisions"
- Marion County Public Works Standard "Typical Cross Section for Paving Gravel Roads"
- Marion County Public Works Standard "Vision Clearance Rural"
- June 2025 Brooklake Road NE/57th Avenue NE Traffic Count
- Existing Conditions Operational Worksheets, Weekday PM Peak Hour
- Peak Mulching Conditions Operational Worksheets, Weekday PM Peak Hour

DRIVEWAY SLOPING UP FROM ROAD



NOTES:

1. THE SURFACE ELEVATION ON THE ACCESS OVER THE CULVERT PIPE SHALL BE 2 1/2" LOWER THAN THE EDGE OF THE ROAD PAVEMENT. SEE MARION COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING STANDARDS FOR MORE DETAILS.
2. IF THE DIFFERENCE IN ELEVATION BETWEEN THE DRIVEWAY ELEVATION AT THE CULVERT AND A POINT 20' BACK FROM THE CULVERT IS:
   - 2.1. 1' OR LESS, THE DRIVEWAY SHALL HAVE DITCHES ON EACH SIDE TO DRAIN INTO THE ROADSIDE DITCH AND SHALL BE CROWNED TO SHED THE DRAINAGE TO THE DITCHES.
   - 2.2. 1' TO 2', THE DRIVEWAY SHALL BE PAVED FROM THE ROAD TO 10' BEYOND THE CULVERT. THE DRIVEWAY SHALL BE CROWNED AND THE DRIVEWAY DITCHES SHALL BE RIP–RAPPED ALONG THE PAVED DRIVEWAY.
   - 2.3. 2' OR MORE, THE DRIVEWAY SHALL BE PAVED FROM THE ROAD TO 15' BEYOND THE CULVERT. THE DRIVEWAY SHALL BE CROWNED WITH THE DRIVEWAY DITCHES PAVED ALONG THE PAVED DRIVEWAY. THERE SHALL ALSO BE A SLOTTED DRAIN OR WATER BAR ANGLED ACROSS THE PAVED DRIVEWAY. SEE MARION COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING STANDARD DETAIL 'SLOTTED DRAIN DETAIL' FOR MORE DETAILS.
3. RIP–RAP 4" TO 6" PIT RUN X MIN. 8" THICK OR OREGON DEPARTMENT OF TRANSPORTATION CLASS 50.

REVISIONS		
DATE:	DESCRIPTION OF CHANGES:	BY:
	NONE	

MARION COUNTY DEPARTMENT OF PUBLIC WORKS

SLOPING DRIVEWAY PROVISIONS

CREATION DATE:	REVISION DATE:	SCALE:	SHEET:
06/21/2005	01/27/2023	N.T.S	1 OF 1

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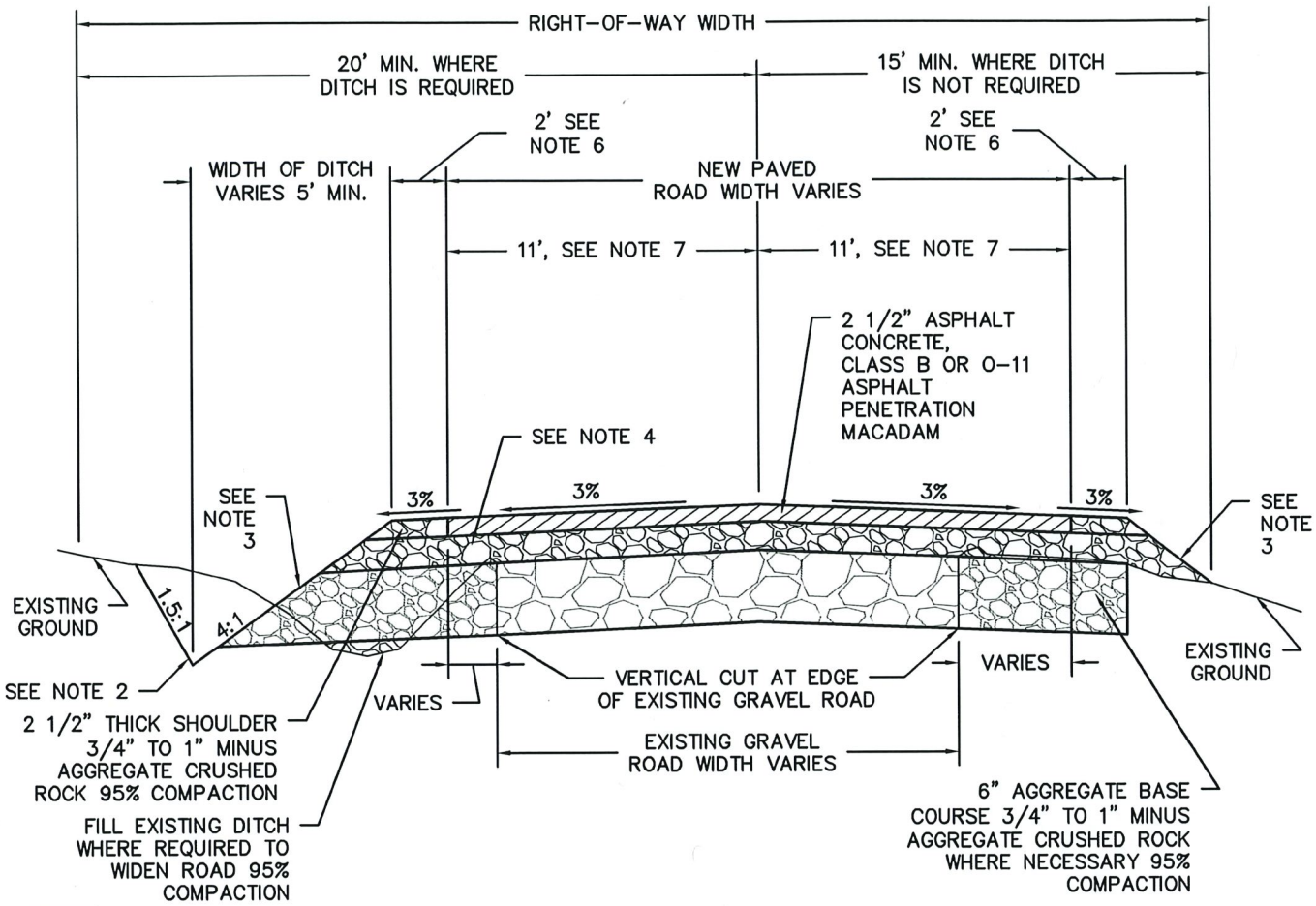

NOTES:
1. DISPOSE OF EXCAVATED MATERIAL OFF-SITE.
2. EXCAVATE DITCH WHERE REQUIRED TO PROVIDE DRAINAGE, SHALL BE SHOWN ON PROJECT PLANS.
3. TAPER SHOULDER TO MATCH EXISTING GROUND WHERE NO DITCH IS REQUIRED, SHALL BE SHOWN ON PROJECT PLANS.
4. 3" MINIMUM LEVELING COURSE 3/4" TO 1" MINUS AGGREGATE CRUSHED ROCK 95% COMPACTION. AGGREGATE LEVELING COURSE PLUS EXISTING GRAVEL SHALL EQUAL A THICKNESS OF 9".
5. 3:1 WHERE RIGHT-OF-WAY WIDTH IS LESS THAN 50'.
6. 1' WHERE RIGHT-OF-WAY WIDTH IS LESS THAN 40'.
7. 10' WHERE RIGHT-OF-WAY WIDTH IS LESS THAN 50'.

REVISIONS		
DATE:	DESCRIPTION OF CHANGES:	BY:
	NONE	

MARION COUNTY DEPARTMENT OF PUBLIC WORKS

TYPICAL CROSS SECTION FOR PAVING GRAVEL ROADS

CREATION DATE:	REVISION DATE:	SCALE:	SHEET:
01/31/1989	01/23/2023	N.T.S	1 OF 1

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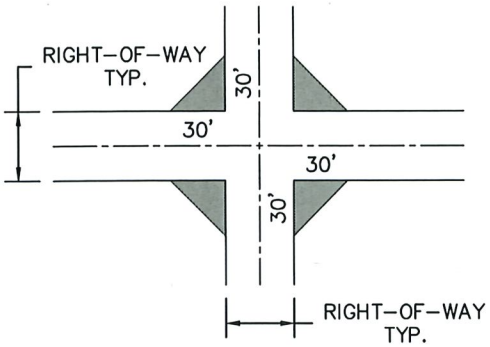

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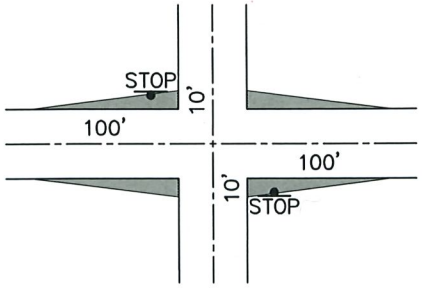

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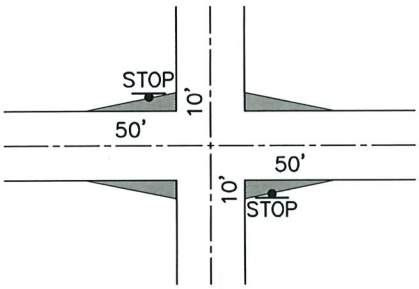
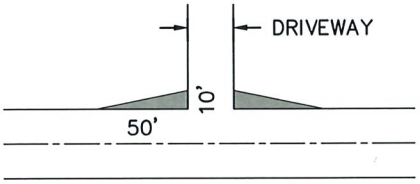
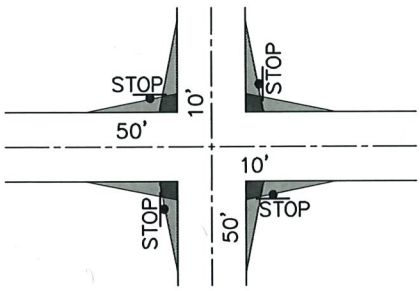


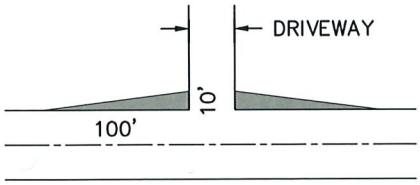
DRIVEWAY/LOCAL



LOCAL/LOCAL (FOUR-WAY STOP)



DRIVEWAY/COLLECTOR OR ARTERIAL



NOTES:

1. DIMENSIONS ARE TYPICAL, AND APPLY TO EACH TRIANGLE IN A GIVEN SCENARIO.
2. REFER TO MARION COUNTY CODE 17.110.770.

MARION COUNTY DEPARTMENT OF PUBLIC WORKS

VISION CLEARANCE RURAL

REVISIONS		
DATE:	DESCRIPTION OF CHANGES:	BY:
	NONE	

CREATION DATE:	REVISION DATE:	SCALE:	SHEET:
07/30/2004	09/23/2022	N.T.S	1 OF 2

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RallyTraffic

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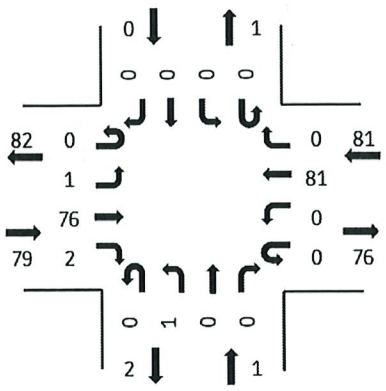
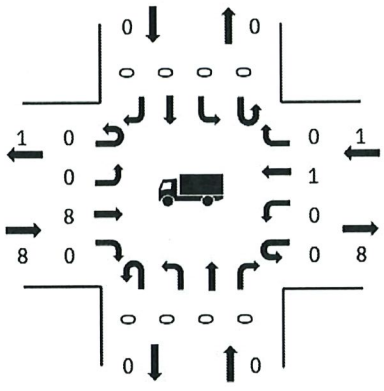
Date: 2025-06-17
Peak Hour Start: 04:00 PM
Peak 15 Minute Start: 04:05 PM
Peak Hour Factor: 0.76

Motorized Vehicles

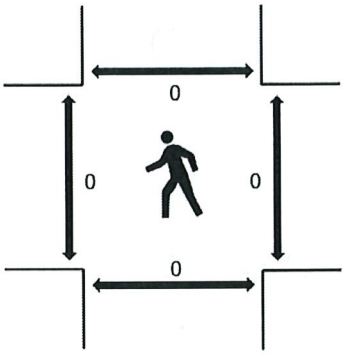


Heavy Vehicles



(peak hour)

Pedestrians



All Vehicle Volumes

Time	NB (57th Ave)					SB (57th Ave)					EB (Brooklake Rd NE)					WB (Brooklake Rd NE)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	7	0	0	0		
04:05:00 PM	1	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	11	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	15	0	0	0	51	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	8	0	0	0	53	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	8	0	0	0	49	
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Car Volumes

Time	NB (57th Ave)					SB (57th Ave)					EB (Brooklake Rd NE)					WB (Brooklake Rd NE)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
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04:05:00 PM	1	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	11	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	14	0	0	0	48	
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04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	8	0	0	0	47	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	4	0	0	0	38	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	5	0	0	0	36	
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04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	2	0	0	0	19	
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05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	4	0	0	0	32	131
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05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	6	0	0	0	35	142
05:45:00 PM	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	4	0	0	0	27	143
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	8	0	0	0	35	136
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	2	0	0	0	32	132

Truck Volumes

Time	NB (57th Ave)					SB (57th Ave)					EB (Brooklake Rd NE)					WB (Brooklake Rd NE)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	9
05:10:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	9
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	9
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	9
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	4	11
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	9
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	8

Bike Volumes

Time	NB (57th Ave)					SB (57th Ave)					EB (Brooklake Rd NE)					WB (Brooklake Rd NE)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2

Pedestrian Volumes

Time	Pedestrians				Totals	
Time	North	South	East	West	15min	1hr
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0
05:15:00 PM	1	0	0	0	1	1
05:20:00 PM	0	0	0	0	1	1
05:25:00 PM	0	0	0	0	1	1
05:30:00 PM	0	0	0	0	0	1
05:35:00 PM	0	0	0	0	0	1
05:40:00 PM	0	0	0	0	0	1
05:45:00 PM	0	0	0	0	0	1
05:50:00 PM	0	0	0	0	0	1
05:55:00 PM	0	0	0	0	0	1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	76	2	0	81	0	1	0	0	0	0	0
Future Vol, veh/h	1	76	2	0	81	0	1	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	11	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	1	100	3	0	107	0	1	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	107	0	0	103	0	0	211	211	102	211	212	107
Stage 1	-	-	-	-	-	-	104	104	-	107	107	-
Stage 2	-	-	-	-	-	-	107	107	-	104	105	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1497	-	-	1502	-	-	750	690	959	750	689	953
Stage 1	-	-	-	-	-	-	907	813	-	903	811	-
Stage 2	-	-	-	-	-	-	903	811	-	907	812	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1497	-	-	1502	-	-	749	689	959	749	688	953
Mov Cap-2 Maneuver	-	-	-	-	-	-	749	689	-	749	688	-
Stage 1	-	-	-	-	-	-	906	812	-	902	811	-
Stage 2	-	-	-	-	-	-	903	811	-	906	811	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	9.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	749	1497	-	-	1502	-	-	-
HCM Lane V/C Ratio	0.002	0.001	-	-	-	-	-	-
HCM Control Delay (s)	9.8	7.4	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	76	2	0	81	0	1	0	0	0	0	7
Future Vol, veh/h	6	76	2	0	81	0	1	0	0	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	83	11	0	0	1	0	0	0	0	0	0	71
Mvmt Flow	8	100	3	0	107	0	1	0	0	0	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	107	0	0	103	0	0	230	225	102	225	226	107
Stage 1	-	-	-	-	-	-	118	118	-	107	107	-
Stage 2	-	-	-	-	-	-	112	107	-	118	119	-
Critical Hdwy	4.93	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.91
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.947	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.939
Pot Cap-1 Maneuver	1102	-	-	1502	-	-	729	678	959	735	677	789
Stage 1	-	-	-	-	-	-	891	802	-	903	811	-
Stage 2	-	-	-	-	-	-	898	811	-	891	801	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1102	-	-	1502	-	-	716	673	959	731	672	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	716	673	-	731	672	-
Stage 1	-	-	-	-	-	-	884	796	-	896	811	-
Stage 2	-	-	-	-	-	-	888	811	-	884	795	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	10	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	716	1102	-	-	1502	-	-	789
HCM Lane V/C Ratio	0.002	0.007	-	-	-	-	-	0.012
HCM Control Delay (s)	10	8.3	0	-	0	-	-	9.6
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0