CHAPTER 4. Mitigation and Conservation Measures

Chapter 4 identifies potential mitigation and conservation measures that could be implemented to avoid, minimize, or compensate for negative effects that would occur as a result of the Highway 199 Expressway Upgrade project. Mitigation for the project has been divided into two types: 1) measures to be included on construction plans and specifications, and 2) other general measures that could also be applied.

4.1 Air Quality

4.1.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on air quality:

- Water exposed soil surfaces to control the generation of particulate matter emissions that are expected during construction.

4.1.2 General Measures

No general mitigation measures for air quality have been identified.

4.2 Archaeology

4.2.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on archaeological resources:

- Should previously unidentified archaeological resources or human remains be encountered, work should immediately cease in the vicinity of the discovery to avoid further damages to the resource. ODOT, FHWA, SHPO, and the Oregon State Museum of Anthropology would be notified so the significance of the discovery can be evaluated and the appropriate course of action implemented.

4.2.2 General Measures

No general mitigation measures for archaeological resources have been identified.

4.3 Biology

4.3.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on biological resources:

- Prepare an ESCP prior to the start of construction and adhere to it throughout the construction process.
- Implement a pollution control plan to prevent the release of toxic substances during construction.
- Construct stormwater treatment facilities, including water quality swales and detention ponds.
- Remove trees outside bird nesting season (March 1 – September 1) to mitigate potential effects to nesting birds protected by the MBTA.
- Construct a pedestrian bridge for the shared use path on the north side of Highway 199 that fully spans the active channel width of Sand Creek and avoids in-water work during construction.
- Develop and implement a riparian planting plan.
- Perform construction monitoring to ensure compliance with environmental permits, and follow reporting guidelines in permits.

4.3.2 General Measures

Where appropriate and feasible, general mitigation measures such as the following would be employed to partially or fully mitigate effects on biological resources:

- Comply with all permit conditions of approval and/or mitigation measures.
- Follow the requirements of the applicable federal, state, and local regulations to ensure protection of resource lands and environmentally sensitive areas.
- Consider opportunities to enhance existing habitat and riparian areas.
- Consider using median barrier with cutouts along the bottom to allow small mammal passage.
- Provide provisions for the replacement of landscaping elements to the extent possible.

4.4 Hazardous Materials

4.4.1 Measures for Construction Plans and Specifications

No mitigation measures for construction plans and specifications concerning hazardous materials have been identified.

4.4.2 General Measures

Where appropriate and feasible, general mitigation measures such as the following would be employed to partially or fully mitigate effects on or from hazardous materials

- Prepare a Level 2 Preliminary Site Investigation (PSI) report.
- Conduct further investigations of the API to eliminate or minimize the effects that RPEC sites could have on project activities and vice versa. The investigations would occur once the design is finalized. They would include a subsurface investigation on or adjacent to each site of concern as well as subsurface sampling.
- Should previously unidentified contamination be encountered during construction, work should cease

immediately in the vicinity of the discovery and the engineer should be notified.

4.5 Historic and Cultural

4.5.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on historic resources:

- Mitigation/conservation measures could be necessary for construction contractor compliance if the project design plans change and project effects to the three NRHP-eligible canals would be greater than stated in the Final Historic Resources Technical Report. In this case, if effects to the canals occur—such as covering or re-aligning larger segments—then these new effects would need to be assessed and a revised Section 106 and Section 4(f) analysis prepared.

4.5.2 General Measures

No general mitigation measures for historic and cultural resources have been identified.

4.6 Land Use

4.6.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on land uses:

- Work with property and business owners in the API to minimize conflicts and inconveniences from construction-related activities.
- Provide property and business owners in the API with advanced notice of potential access or utility disruptions resulting from construction activities.
- Schedule the most disruptive construction activities during off-peak hours to minimize the effect to traffic.

4.6.2 General Measures

Where appropriate and feasible, general mitigation measures such as the following would be employed to partially or fully mitigate effects on land uses:

- Comply with all permit conditions of approval and/or mitigation measures.
- Follow the requirements of the applicable federal, state, and local land use and zoning regulations to ensure protection of land uses, resource lands, and environmentally sensitive areas.
- Provide provisions for the replacement of landscaping elements to the extent possible.

4.7 Noise

4.7.1 Measures for Construction Plans and Specifications

Several construction noise abatement methods can be implemented to limit temporary effects. The following list of Standard Noise Control Specifications may be incorporated to mitigate the effects of construction noise.

- Require that no construction shall be performed within 1,000 feet of an occupied dwelling unit on Sundays, legal holidays, and between the hours of 10:00 p.m. and 6:00 a.m. on other days without the appropriate approval.
- Use equipment that has sound control devices no less effective than those provided on the original equipment. No equipment shall have unmuffled exhaust.
- Use equipment that complies with the pertinent equipment noise standards of the U.S. EPA.
- Perform no pile driving or blasting operations within 3,000 feet of any occupied dwelling unit on Sundays, legal holidays, and between the hours of 8:00 p.m. and 8:00 a.m. on other days, without the appropriate approval.

Construction Noise Measurement

Should specific noise impact complaints occur during the construction of the project, one or more of the following noise

mitigations may be required at the construction contractor's expense, as directed by ODOT:

- Locate stationary construction equipment as far from the nearby noise-sensitive properties as possible
- Shut off idling equipment
- Reschedule construction operations to avoid periods of noise annoyance identified in the complaint
- Notify nearby residences whenever extremely noisy work will be occurring
- Install temporary or portable acoustic barriers around stationary construction noise sources
- Operate electric-powered equipment using line voltage power.

If local governments have noise ordinances which control construction noise, the construction activities shall be in compliance with all applicable local noise ordinances.

4.7.2 General Measures

No additional temporary mitigation measures were identified beyond those described in section 4.7.1 Measures for Construction Plans and Specifications.

Several long term traffic noise abatement measures were evaluated where noise impacts are predicted. For example, noise generated from long-term operation of the project can be reduced by implementing traffic management measures, acquiring land as buffer zones or for constructing noise barriers or berms, realigning the roadway, noise insulating public use or nonprofit institutional structures, and constructing noise barriers or berms. These measures were evaluated for their potential to reduce noise impacts from the project. Any specific mitigation measure recommended as part of the project must be feasible and reasonable. Only noise walls were found to be generally feasible in mitigating traffic noise impacts.

Seventeen noise walls were considered for Alternative A and 16 noise walls were considered for Alternative C. Areas where sites were predicted to approach or exceed the noise abatement criteria

and where mitigation was considered are identified on Exhibit 4-1 to Exhibit 4-4.

Based on the studies completed to date, and applying the ODOT Noise Manuals Noise Abatement Evaluation Criteria, the Project Management Team has recommended that noise walls would not be incorporated into the project design.

Specific criteria that the Project Management Team found would not support noise wall mitigation included:

Change in Noise Level (Existing noise levels compared to Future Build Noise Level) – When comparing the existing noise levels with the Alternative A and C future noise levels west of Dowell Road, the noise levels are predicted to increase zero to two decibels by the Year 2030. A one to two decibel increase is not perceptible to the average human ear. This applied to all sites approaching or exceeding the noise abatement criteria west of Dowell Road.

Existing noise levels east of Dowell Road are predicted to increase between one to two decibels by the Year 2030 for most noise impact locations under Alternative A and C, expect for sites 110 and 109. A one to three decibel increase or decrease is not perceptible to the average human ear.

Date of Development – Noise mitigation is not normally recommended for residences constructed after 1996 unless the project causes the noise levels to increase by 5 dBA or more.[1]

[1] FHWA's Highway Traffic Noise Analysis and Abatement Policy and Guidance, issued in June of 1995, recommends that local governments implement land use controls to eliminate or reduce new noise impacts. It is not considered reasonable for ODOT to provide noise mitigation when local governments have allowed new development to occur in areas where the new development will be subject to noise impacts. Therefore, noise mitigation will typically not be recommended for new developments occurring after June 1996, unless the project causes noise levels to increase by 5 dBA or more (ODOT Noise Manual, June 1996).

EXHIBIT 4-1. LOCATIONS WHERE PREDICTED NOISE LEVELS APPROACH OR EXCEED THE NOISE ABATEMENT CRITERIA – MIDWAY AVENUE TO DOWELL ROAD (ALTERNATIVES A AND C)

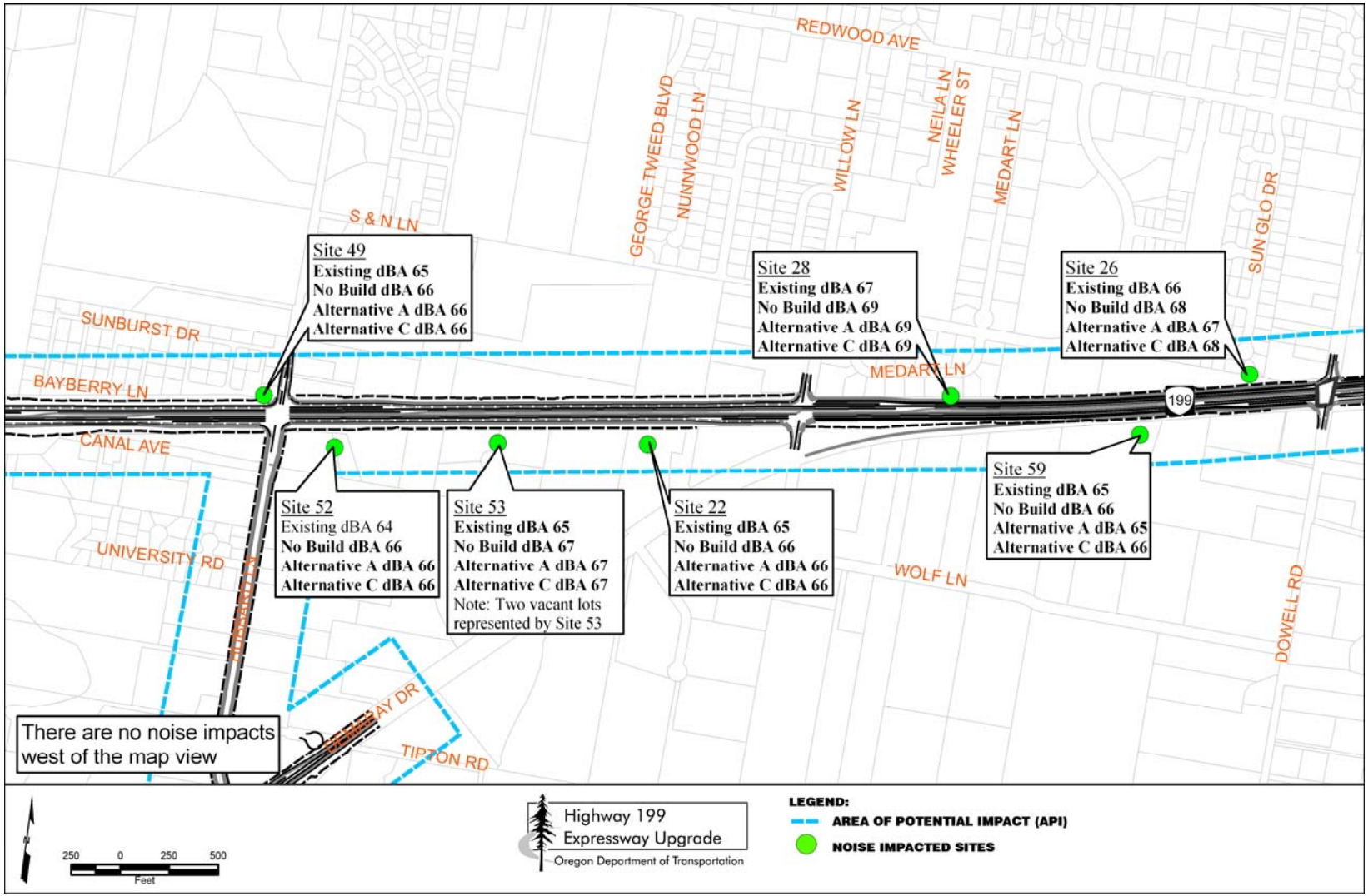


EXHIBIT 4-2. LOCATIONS WHERE PREDICTED NOISE LEVELS APPROACH OR EXCEED THE NOISE ABATEMENT CRITERIA –DOWELL ROAD TO FAIRGROUNDS ROAD (ALTERNATIVE A)

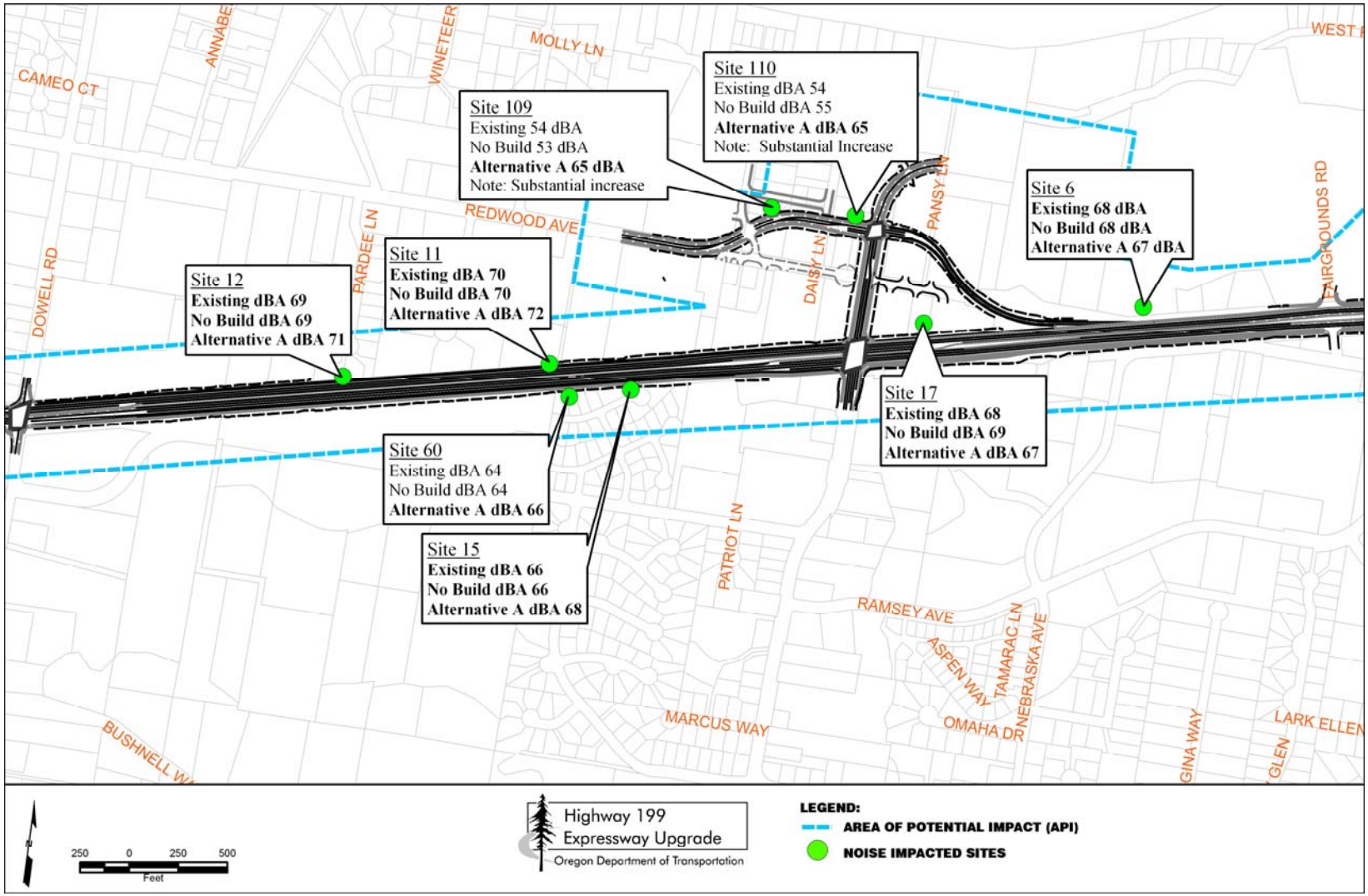


EXHIBIT 4-3. LOCATIONS WHERE PREDICTED NOISE LEVELS APPROACH OR EXCEED THE NOISE ABATEMENT CRITERIA –DOWELL ROAD TO FAIRGROUNDS ROAD (ALTERNATIVE C)

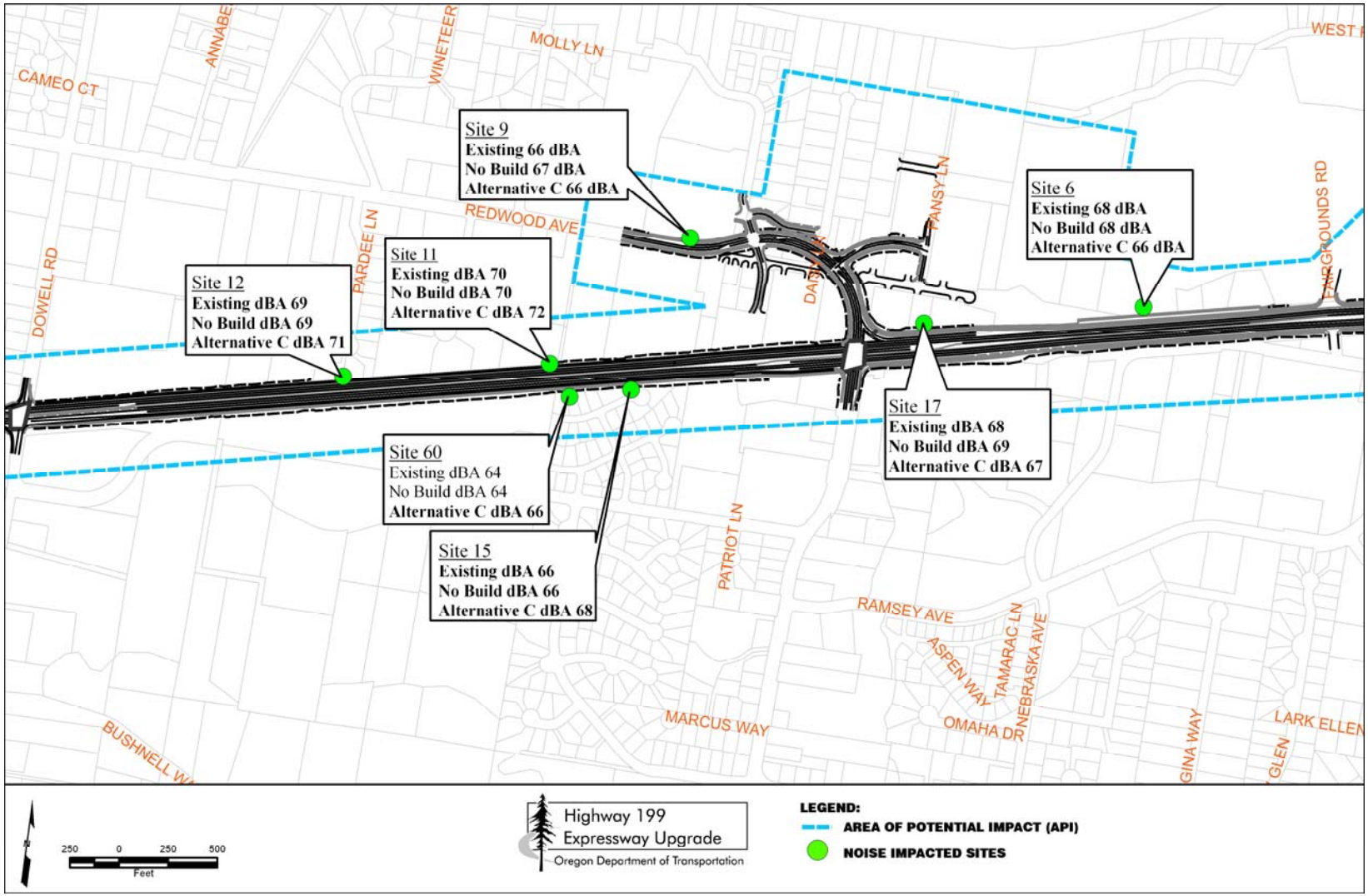
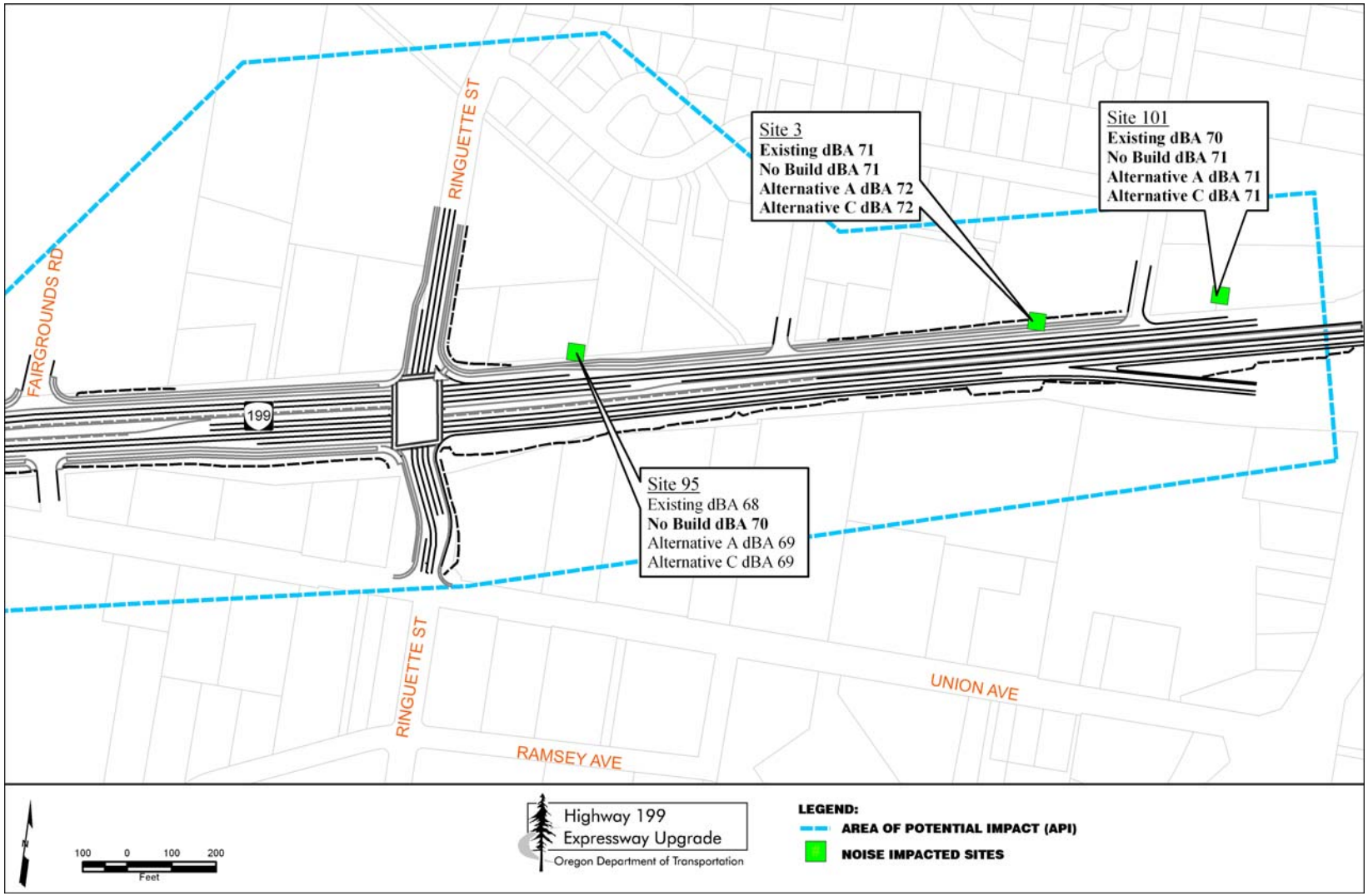


EXHIBIT 4-4. LOCATIONS WHERE PREDICTED NOISE LEVELS APPROACH OR EXCEED THE NOISE ABATEMENT CRITERIA –FAIRGROUNDS ROAD TO TUSSEY LANE (ALTERNATIVES A AND C



Zoning – Noise mitigation in the form of noise barriers is typically not recommended for commercial or industrial areas. Commercial enterprises often rely on visual exposure to the roadway to attract customers and to provide convenient access to their facility. Providing noise mitigation for such areas would provide minimal benefits, could become unwanted now or in the future, and is not considered to be a prudent expenditure of public funds. Therefore, noise mitigation is not recommended for these areas. Areas zoned for commercial or industrial but have an existing residence needs to be evaluated for its future use/activities. This can be done by weighing the chances that the site would be re-developed.

Total Cost – For a noise barrier to be cost effective, it typically requires a minimum of three or more residences grouped closely together. Alternative A has five sites and Alternative C has four sites that have two or fewer residences in areas considered for noise wall mitigation. The length of noise barrier necessary to prevent flanking noise from coming around the end of the barrier takes a noise barrier out of cost effectiveness and prevents a barrier from being recommended to mitigate noise for these sites.

Cost per Residence – ODOT applies a reasonable maximum dollar amount per benefited residence toward the construction of a noise wall. A benefited residence is any residence that gets a 5 dBA or more noise reduction as a result of the noise mitigation applied. If the dollar amount is exceeded then the noise wall would be considered not reasonable to construct based on the cost and number of residences benefited.

Exhibit 4-5 identifies one or more of the noise abatement evaluation criteria that were considered important factors that would not support recommending mitigation for those sites identified as approaching or exceeding the noise abatement criteria.

EXHIBIT 4-5. SUMMARY OF EVALUATION CRITERIA

● = Does not support mitigation	Sites that Approach or Exceed the Noise Abatement Criteria																	
Evaluation Criteria	**49**	**52**	**53**	**22**	**28**	**59**	**26**	**12**	**11**	**60 and 15**	**9[1]**	**109[2]**	**110[2]**	**17**	**6**	**95**	**3**	**101**
Change in noise levels, Existing to Future	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●
Date of Development (Post 1996)	●		●				●	●[3]		●	●							
Zoning (Commercial)		●[4]		●					●		●	●		●	●	●	●	●
Cost per Residence				●														
Total Cost		●				●			●			●	●	●				

1. *Site 9 is only an impact under Alternative C*
2. *Site 109 and 110 are an impact under Alternative A*
3. *Site 12 has a mix of development from Post and Pre 1996*
4. *Site 52 represents two residences. One residence is located on a parcel zoned commercial.*

Additional considerations that would not support noise wall mitigation are summarized below.

- Alternatives A and C would not significantly change the horizontal or vertical alignment or increase the number of through traffic lanes on Highway 199 between Midway Avenue and Dowell Road. This applied to all sites approaching or exceeding the noise abatement criteria west of Dowell Road.
- Predicted future (Year 2030) traffic noise levels that approach or exceed the noise abatement criteria west of Dowell for Alternative C are the same, no increase, when compared to the Year 2030 No Build. Alternative A noise levels that approach or exceed the noise abatement criteria are the same, no increase, except in two cases where there is a one decibel decrease, when compared to the Year 2030 No Build.
- Noise reverberation or reecho could potentially occur at sites 9, 12, 15, 28, 49 and 60 (sites that would approach or exceed the noise abatement criteria) due to the close proximity, 10 feet or less, of several residences or apartments to the evaluated noise wall located on the right of way line. The

reverberation, or reecho, can occur when noise that deflects off the residences gets caught between the residence and noise wall and bounces back and forth making a reverberation effect. Reverberation would potentially reduce the effectiveness of the noise level reduction such that the noise wall would be of minimal or no benefit to the residence.

4.8 Right of Way Acquisition and Relocation

4.8.1 Measures for Construction Plans and Specifications

No mitigation measures for construction plans and specifications concerning right of way acquisition and relocation have been identified.

4.8.2 General Measures

Where appropriate and feasible, general mitigation measures such as the following would be employed to partially or fully mitigate effects on right of way acquisitions and relocations:

- Implement provisions as required under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, for all residential and commercial displacements and real property acquisitions. All property owners would be compensated at fair market value and relocation assistance would be provided in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

4.9 Section 4(f) and 6(f)

4.9.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on Section 4(f) resources:

- Provide advanced public notice of planned temporary road closures and detours, and changes in access routes that would affect Section 4(f) resources and the River City Trail.

- Implement dust and noise mitigation during work hours as indicated in the air quality and noise sections of this chapter.

4.9.2 General Measures

Where appropriate and feasible, general mitigation measures such as the following would be employed to partially or fully mitigate effects on Section 4(f) resources:

- Plan construction activities to minimize changes to recreational facilities and to minimize effects to recreational events in the API.
- Conduct joint planning between ODOT and the City of Grants Pass for the final alignment of the segment of the River City Trail that is within the API, primarily considering pedestrian safety and maintaining trail connectivity. If feasible, the final alignment should be within the area proposed for right of way acquisition or on existing public right of way.
- Refine, to the extent practicable, the final design to minimize alterations to all canals affected.

4.10 Socioeconomics and Environmental Justice

4.10.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on socioeconomics and environmental justice resources:

- Provide notices of planned construction activities, planned temporary road closures and detours, and changes in other access routes. The schedule for these activities could be mailed periodically to all emergency service providers, public facilities and social services operating in the API, and the school districts for potential effects to school bus routes and stops.
- Provide advance notice for major utility shut-offs and schedule during low use times.

- Distribute periodic press releases, newsletters, or notices to residents in the API to advise them of changes in pedestrian, bicycle, or transit routes during construction. These should be prepared in English and for languages that meet or exceed the U.S. Department of Justice's 5 percent threshold.
- Implement dust and noise mitigation during work hours as indicated in the air quality and noise sections of this chapter.

4.10.2 General Measures

Where appropriate and feasible, general mitigation measures such as the following would be employed to partially or fully mitigate effects on socioeconomic and environmental justice resources:

- Plan construction activities to allow reasonable access to private residential and commercial properties, and community and social services.
- Time temporary road closures and utility shut-offs to minimize negative effects to area activities.
- Implement provisions as required under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, for all businesses, and residents that are displaced and real property acquisitions. All affected property owners would be compensated at fair market value and relocation assistance would be provided for those who would be relocated in accordance with the Uniform Relocation Act.
- Provide housing of last resort if replacement housing within the resident's financial means is not available.
- Work collaboratively with Josephine County and the fairgrounds to minimize the effect of right of way acquisitions on the current fairgrounds operations.
- Ensure reasonable access is provided to businesses in the API that are not relocated.

Housing of Last Resort

A term from the Uniform Relocation Assistance and Real Property Acquisition Policies Act for when, to provide comparable decent, safe, and sanitary housing within a person's financial means. Replacement housing payments may exceed the maximum amount typically allowed.

4.11 Traffic and Transportation

4.11.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on traffic and transportation:

- Implement a Mobility Plan and Traffic Control Plan.
- Implement a Transportation Management Plan, which will include communication plan to notify the media, motor carriers and other stakeholders about phases of work.

4.11.2 General Measures

No general measures of mitigation concerning traffic and transportation have been identified.

4.12 Visual

4.12.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on visual resources:

- Restore construction staging areas that are not needed once the project is completed to pre-project existing conditions to the extent practicable.
- Minimize to the extent practicable the amount of vegetation removal in clear and grub areas.
- Shield and/or focus construction lighting on work areas to minimize ambient spillover of light into adjacent areas
- Implement an urban design treatment (landscaping, decorative lighting, etc.) along Highway 199 between Allen Creek Road and Tussey Lane to improve visual quality.
- Use colored concrete and/or stamped patterns for barrier and median areas to blend into the natural environment.

4.12.2 General Measures

Where appropriate and feasible, general mitigation measures such as the following would be employed to partially or fully mitigate effects on visual resources:

- Plant trees and other vegetation in areas where it has been removed to soften and reconnect visual gaps and/or to buffer undesirable views.
- Re-vegetate slopes with appropriate (typically native) grasses, shrubs, and/or trees.
- Utilize directional street lights with beam cut-off and shading devices to minimize light pollution/light trespass.
- Construct median barrier or raised curb median designs that employ simple clean lines, neutral colors, and/or other techniques that are not distracting to drivers and that blend into the environment.
- Use bold pavement striping clearly delineating travel lanes, bike facilities, and pedestrian crossings.
- Implement design detail such as landscaping, paving, and furnishings in areas where pedestrian use is expected (such as intersections, street crossings, and residential areas).
- Use treated (painted, stained, pigmented, or chemical-pressured) materials with low color contrast (to blend into the predominant surrounding environment).
- Use surface textures or other architectural techniques to minimize the appearance of bulkiness or mass.

4.13 Water

4.13.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on surface water bodies:

- Prepare an ESCP prior to the start of construction and adhere to throughout the process.

- Meet or exceed ODOT's Erosion Control Manual practices during the construction of the project, and all erosion and stormwater control measures should be used along with other required erosion management techniques established for road construction in the ESCP.
- Implement the requirements of ODOT's NPDES 1200-CA permit, including the preparation of an ESPC, to take all reasonable steps to minimize or prevent any discharge or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
- Perform the maintenance and monitoring of the erosion and sediment control facilities, perform turbidity monitoring, maintain written records of visual monitoring, and follow the reporting requirements of noncompliance incidents as outlined in the NPDES 1200-CA permit.
- Prepare a SPCC plan to control pollutants throughout the project work areas. These areas can include but are not limited to staging, storage, maintenance, refueling areas, and waste sites.

4.13.2 General Measures

Where appropriate and feasible, general mitigation measures such as the following would be employed to partially or fully mitigate effects on surface water bodies:

- Perform contract management activities, including environmental compliance oversight of construction contractors, to ensure that the conditions and requirements of the ESPC and SPCC are in compliance.
- Perform contract management activities, including environmental compliance oversight of construction contractors, to ensure that the conditions and requirements of environmental permits are in compliance.
- Structure operations in a manner that reduces the risk of releases of suspended sediment into waterbodies that would increase turbidity to above background levels.

- Structure operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to waterbodies or wetlands.
- Structure operations in a manner that provides for the prompt and effective cleanup of spills of fuel and other hazardous materials.
- Treat increased stormwater runoff from new impervious surfaces with the stormwater treatment facilities. These facilities are part of the proposed action, and thus no further mitigation would be necessary.
- Design the facilities in such a way that the water quality (treatment) and the water quantity (detention) requirements presented in the Stormwater Technical Report are met.
- Design all stormwater facilities so that required routine inspection and maintenance could be easily conducted. Special attention should be placed upon access needs, specifically for detention ponds and manhole structures.

4.14 Wetlands

4.14.1 Measures for Construction Plans and Specifications

Where appropriate and feasible, mitigation measures such as the following would be implemented to minimize construction effects on wetlands and water resources:

- Identify wetlands and waters as “no work zones” or “restricted work zones” on plans and in the field.
- Implement best management practices.
- Prepare an ESCP and a pollution control plan.
- Develop and implement a wetland restoration plan and site restoration plans.
- Add guardrail to the design where appropriate to avoid effects to wetlands by increasing roadway fill slope steepness.
- Construct the pedestrian bridge over Sand Creek to fully span the OHWM.

- Develop stormwater management plans to avoid direct effects to wetlands to the extent practicable.
- Develop a compensatory wetland mitigation plan to replace functions lost as a result of permanent effects to wetlands.

4.14.2 General Measures

Where appropriate and feasible, general mitigation measures such as the following would be employed to partially or fully mitigate effects on wetlands and water resources:

- Maintain wetland buffers by adhering to local setback requirements for wetlands and riparian zones.
- Consider opportunities to enhance existing wetlands and riparian areas.