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TECHNICAL MEMORANDUM

Date:	February 2, 2009
To:	Susan Graham
From:	David Sherrard, Senior Environmental Planner
Subject:	Black Diamond EIS Lawson Hills and Villages MPD Technical Peer Review EIS Element: Noise
cc:	Project File
Project Number:	217-3043-003
Project Name:	Lawson Hills and The Villages MPD EIS

EIS ELEMENT: **Built Environment – Noise**

Original Documentation Prepared by: Environ. on: October 31, 2008

PMX Peer Review Author: David Sherrard

PEER REVIEW SUMMARY

The methodology used for transportation noise – the lookup tables from the FHWA TNM model - is consistent with normal practices for analysis where detailed design information of roads is not available.

The qualitative analysis of construction noise is consistent with normal practices.

The qualitative analysis of operation al noise from use of the site is consistent with normal practices, except that an additional sensitive receptor should be identified and analyzed – wildlife using streams, wetlands and wildlife corridors

The analysis needs to be updated using current traffic projections. It is most effective to do so for the single cumulative impact case. The current transportation analysis covers a larger area and may warrant analysis of more than the locations where analysis is performed.

Analysis by the consultant who prepared the original analysis would be the most straightforward method of updating the analysis. Given the analysis tools, the results are predicated by the inputs. Because of the background the current consultant Environ has regarding local conditions and model setup, it would be more cost effective to have the existing consultant update the technical analysis. The Technical memo will not require updating.

PEER REVIEW COMMENTS

Does documentation sufficiently address impacts such that mitigation can be identified?

Existing Conditions:

The document provides sufficient information to define existing conditions in the project vicinity. Expansion of the area of analysis to areas where cumulative traffic increases are in the 50 to 100% range also should be evaluated for possible analysis.

Impacts:

Methodology: Transportation Related Impacts:

The same methodology was used for the Lawson Hills and Villages Master Plan Development (MPD) analysis.

In both cases, the Federal Highway Administration (FHWA) Traffic Noise Model Lookup too is used. This simple noise model was used to estimate existing and future traffic-related noise levels. The model is an operational methodology and is generally used for transportation projects where the details of traffic volumes, turning movements and Levels of Service (LOS) can be precisely projected. For a planning level analysis, the precision of the methodology is generally acceptable. It cannot, however, account for terrain or any intervening structures that may absorb or reflect sound.

Predicted noise levels were compared to the FHWA noise impact criteria to assess the potential for noise impacts. In addition, the analysis should include the relative increase in noise over existing levels and the goals for the type of use – which generally is 55 dBA for a residential setting.

In planning level studies, simpler models such as the lookup methodology are often used. These models are less accurate than the detailed computer modeling available and largely provide a perspective of the difference in volumes related to traffic volumes, holding other factors constant.

Methodology Non-Traffic Operational Impacts: The qualitative description of noise levels from heating, ventilation, and air conditioning (HVAC) units for commercial and residential units, from loading docks associated with the commercial and retail buildings, from maintenance activities, and other sources is consistent with normal practices.

The one potential additional source is sports fields.

An additional potential sensitive receptor is wildlife in sensitive areas and their buffers, such as streams, wetlands and wildlife corridors. If Environ does not have expertise in noise impacts on noise, this could be performed by Parametrix land use and wildlife specialists who are familiar with qualitative analysis of this topic.

Methodology Construction Impacts: The qualitative description of potential construction noise impacts is the standard approach and provides an appropriate level of detail for standard mitigation measures consisting of Best Management Practices (BMP).

Alternatives:

Four scenarios are analyzed for both the Lawson Hills and the Villages MPD

- *Existing Conditions*
- *No Action – future noise without the proposal*
- *Proposed action – this is modeled separately for Lawson Hills and the Villages MPDs*
- *Cumulative – this includes both the Lawson Hills and the Villages MPDs*

This results in reporting a total of six cases.

The locations modeled, however differ between the two sites as do the horizon years, and therefore the results are not comparable.

For the purposes of estimating worst case impacts, only the cumulative impact case is relevant, unless one assumes there is a realistic potential for only one of the proposed MPDs being approved.

No alternative land use scenarios are analyzed. This is unnecessary if the "worst case" cumulative analysis indicates no impact.

Specific Inputs and Results, Transportation Related Impacts:

Model results depend on inputs. For transportation related noise models, the inputs are traffic volumes toad configuration and terrain and other conditions. The third of these factors is not included in the lookup table methodology.

The results reported in the noise analysis are considered valid for the inputs used.

However, the transportation analysis has been updated with

- *New assumptions for the No Action as well as different future analysis years*
- *New projections of traffic generation of the proposed actions*
- *A larger analysis area*

It is possible that the existing analysis still could be valid if the volumes used and the LOS is equal or greater than the current updated transportation analysis. In this case, however, the projected future volumes indicate that worse conditions would result than analyzed.

The locations analyzed differ between Lawson Hills and the Villages.

Lawson Hills analysis, as indicated on Figure 1 from the report, includes::

- *One site to the north at a considerable distance from SR 160 at the rear of 25000 Franklin Drive, This site was chosen to represent impacts of the new connector arterial. It is not useful, however, in characterizing impacts from traffic volumes increases on SR 169 because of the distance.*
- *One site at the intersection of SR 169 and the new road proposed to connect to this highway as part of the proposal*
- *Two sites in the existing subdivision adjacent to the new road proposed to connect from Lawson Street to SR 160.*
- *Three sites adjacent to the site that would represent noise from internal roads.*

Village analysis, as indicated in Figure 1 from the report, includes:

- *The same site to the north as analyzed for Lawson Hills at the rear of 25000 Franklin Drive, This site was chosen to represent impacts of the new connector arterial. It is not useful, however, in characterizing impacts from traffic volumes increases on SR 169 because of the distance.*
- *One on Black Diamond Auburn Road west of the proposal*
- *One site on Black Diamond Auburn Road (Roberts Drive) west of Rock Creek at about the project entrance.*
- *One site on Roberts Road to the east of Rock Creek in the Morganville neighborhood.*
- *One site near Roberts Road to the east of Rock Creek in the Eagle Creek Subdivision. This parcel at 32222 Bruckner Way, however, is about 300 feet from the road. Other development on the north side of Roberts Drive, such as in the adjacent Sunny Lane subdivision is about 30 feet from the road.*
- *One site on SR 169 south of Lake on the east side of the highway reported at 34212 Enumclaw Black Diamond Road, which is either the wrong address or located incorrectly on the map. The addresses that conform to the map are either 34130 or 34130 SR Enumclaw Black Diamond Road. This location is 300 feet from the road.*
- *One site south of the project boundary at 34829 243rd Ave. SE. This address doesn't appear on the King Co. imap GIS system and may be numbered 34901 on the county system. This site is south of the site and is modeled at about 200 feet from the proposed new southern access road.*

Problems identified include the following:

- *Traffic volumes in the current cumulative analysis are higher than previously assumed. Analysis is needed of increases to the volumes on roads affected by the cumulative increase in traffic. Generally an increase in 3 dBA results from a doubling of volumes. The larger network currently analyzed should be checked for volumes approaching that magnitude of increase and additional sites for calculation of impacts added as well as evaluation of current sites with new volumes.*
- *The site to the north is too far from SR 169 to predict changes from increased volumes, an alternative site on lots adjacent to the highway should be selected.*
- *The site to the north at 25000 Franklin Drive was previously assumed to be close to the proposed connector. Present plans route the connector further to the west. This site should be evaluated for whether to retain.*

- *The site south of the project boundary at 34829/34901 243rd Ave. SE is modeled at about 200 feet from the proposed new southern access road. Current plans show the road tangent to the properly line. The distance to receptors should be re-evaluated.*
- *Current plans include the option of routing the southerly access to SE Green Valley Road. An additional analysis site should be added east and west of the proposed connection.*
- *There is no analysis of potential traffic impacts on residents within the project that may warrant noise barriers or other mitigation*
- *All analysis should occur at the "worst case" setback from roads based on the city or county zoning setbacks.*

Mitigation:

Mitigation, Transportation Related Impacts:

No mitigation was analyzed for traffic noise, which could include discussion of the effectiveness of barriers.

Qualitative mitigation is identified and is generally adequate. Additional coordination on transportation and design options is desirable for the EIS but aren't needed in the technical analysis

Mitigation, Construction:

Qualitative mitigation is identified and is generally adequate. Additional coordination on transportation and design options is desirable for the EIS but aren't needed in the technical analysis

Is additional work needed?

The analysis needs to be updated using current traffic and level of service projections.

Revisions should to include:

- *Review of the larger area analyzed in the current transportation analysis to determine whether additional locations should be analyzed*
- *Review of alternative access to the south and selection of additional analysis sites*
- *Recalculation of traffic noise based on the new volumes for receivers within the project site and outside the project subject to increases in cumulative volumes*
- *Evaluation of existing sites based on whether distances from roadways are representative of impacts generally experienced based on development patterns and setbacks required by zoning for future development*
- *Calculation of impacts based on setbacks from roadways contained in zoning codes rather than existing residence locations*
- *Qualitative discussion of potential noise impacts to wildlife.*

- *Evaluation of impacts based on the desired standard of 55 dBA for residential areas*
- *Additional discussion of mitigation for traffic related noise*

The results of reviews and decisions on locations to be analyzed should be reviewed and approved by Parametrix EIS technical staff prior to proceeding with analysis.

Recommendations for additional scope items (include field work if needed)

None

Estimated budget to complete additional scope

If completed by Environ, the applicant's consultant, considerable savings would be realized because of their familiarity with the area and the fact that they have already set the models up and done model runs. Because the results of the traffic noise analysis are almost entirely driven by the transportation inputs, there is little risk of actual or perceived partiality on the part of the technical consultant.

The estimated cost if additional analysis were performed by Environ would range from $12,000 to $18,000, depending on whether additional sound level measurements are needed and the number of additional traffic locations analyzed. Analysis needs are limited to technical analysis and explanation of technical inputs. A revised report is not needed.

The estimated cost if the analysis were performed by Parametrix or a new subconsultant who would need to become familiar with the area and set up the models would be $20,000 to $30,000, depending on the number of locations analyzed.

An additional potential sensitive receptor is wildlife in sensitive areas and their buffers, such as streams, wetlands and wildlife corridors. If Environ does not have expertise in noise impacts on noise, this could be performed by Parametrix land use and wildlife specialists who are familiar with qualitative analysis of this topic.

Figure 1 – Analysis receivers – Lawson Hills

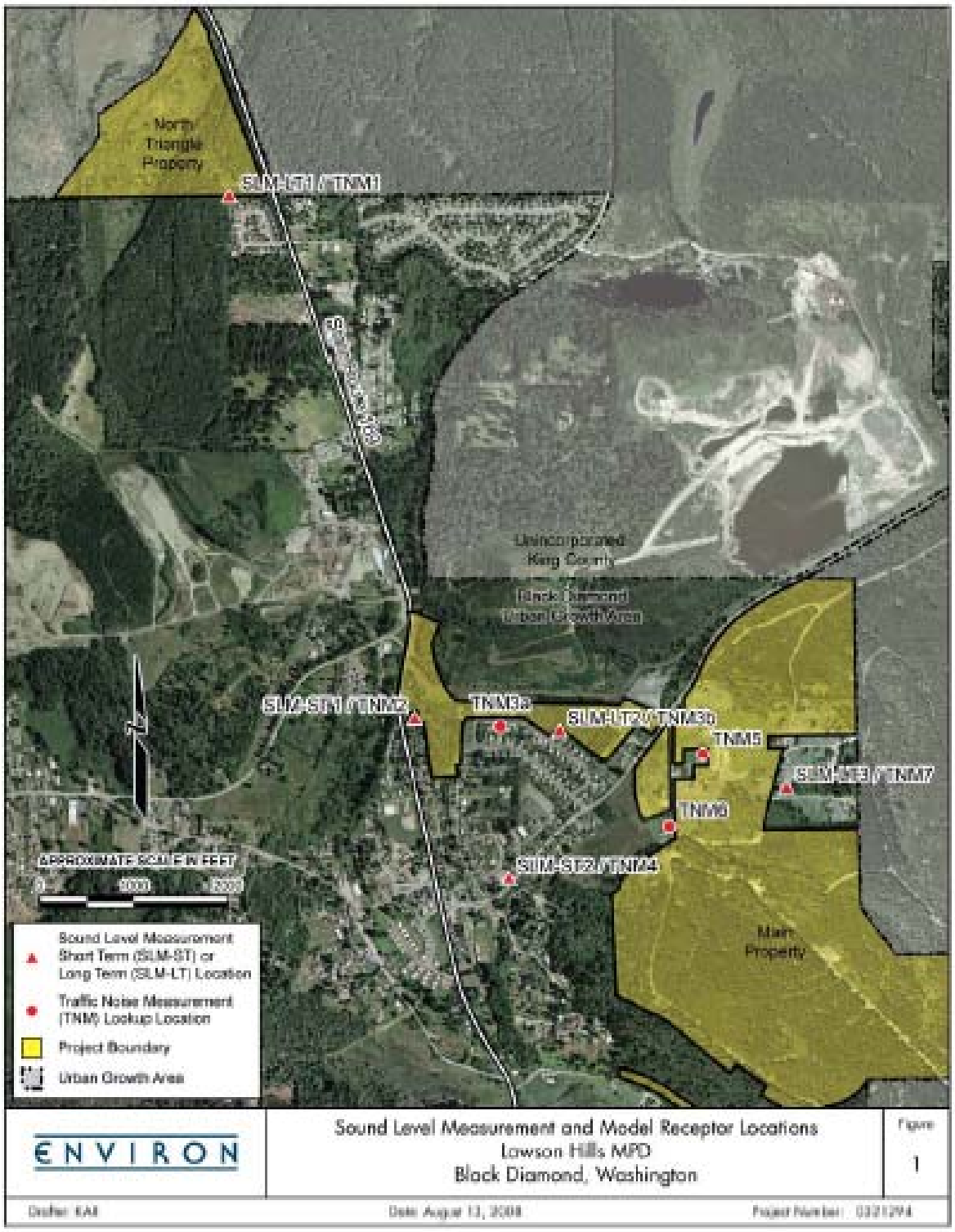
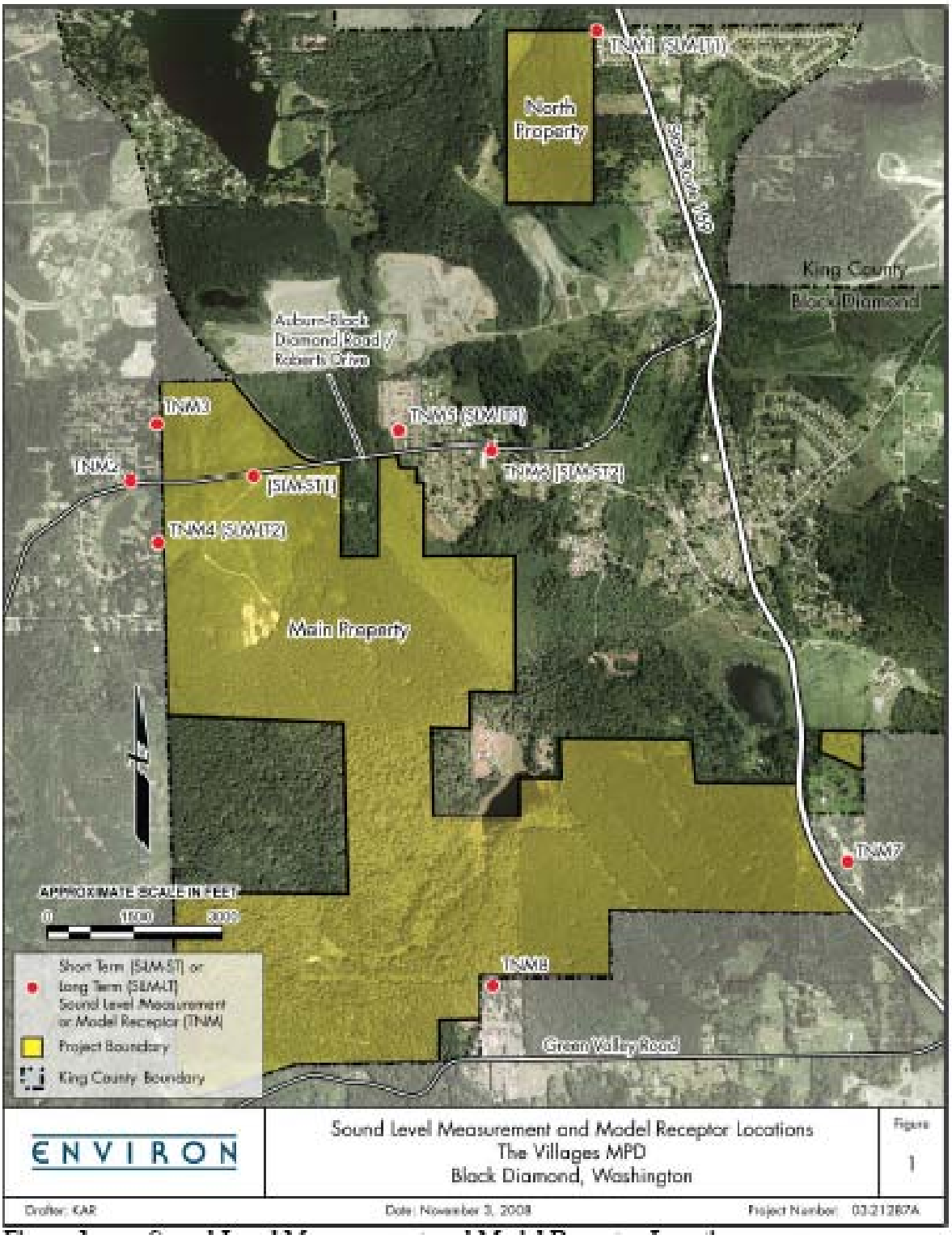
Figure 2 – Analysis receivers – Villages