
***ROADWAY NOISE STUDY
FOR THE
WESTWOOD STATION PROJECT***

Revised September 2007



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1.0 EXECUTIVE SUMMARY

A roadway noise study was performed for the Westwood Station Project. The goal was to compare the existing and future worst-case 1-hour equivalent (L_{eq}) sound levels at affected residences to the Federal Highway Administration (FHWA) Noise Abatement Criteria in 23 CFR 772 for residential areas. Those criteria define a “traffic noise impact” to occur when roadway L_{eq} sound levels approach or equal 67 A-weighted decibels (dBA) or when an action substantially exceeds the existing worst-case 1-hour L_{eq} level. The Massachusetts Highway Department (MHD) interprets “approach” to mean within 1 dBA and “substantially exceeds” to mean by 10 dBA or more. In addition, the Project has made a commitment to the Whitewood Area Neighborhood Association that any increase in worst-case sound levels will be less than 3.5 dBA. The results of this study confirm compliance with the commitment to Neighborhood Association and confirm that the project will not cause a traffic noise impact.

The study predicted sound levels using the FHWA TNM model Version 2.5. Receivers included all homes on Whitewood Road, Juniper Ridge Road and Blue Hill Drive within 500 feet of a new or relocated roadway associated with the Project, and in addition the closest homes to the Project along Peartree Drive and Partridge Drive. A total of 33 residential properties were examined and receivers were placed both at the property line and at the upper story windows of the house.

Under existing conditions, residential receivers experience worst-case 1-hour L_{eq} sound levels that vary from 40.2 to 60.9 dBA, depending on location. Levels for Partridge and Peartree Drive residences are lowest, in the range of 40.2 to 50.2 dBA. Homes on Whitewood and Juniper Ridge Road have higher existing levels, between 49.2 to 59.4 dBA, due to their closer proximity to Route 128. The highest existing levels occur along Blue Hill Drive, 59.5 to 60.9 dBA. All existing sound levels are below 66 dBA.

For the Phase 1 Build alternative in 2013, worst-case 1-hour L_{eq} sound levels would vary from 40.5 to 62.5 dBA, depending on location. All future Phase 1 sound levels are below 66 dBA and no residential receivers approach or exceed the traffic noise impact criteria. In general, there will be no perceptible change in worst-case sound levels at nearby residences under the Phase 1 Build alternative, as compared to existing conditions. There

will be a slight to moderate increase in worst-case sound levels (3 to 6 dBA) at four residences at 183, 197, 209 and 218 Whitewood Road.

For the Full Build alternative in 2023, worst-case 1-hour L_{eq} sound levels would vary from 39.9 to 63.6 dBA, depending on location. All future Full Build sound levels are below 66 dBA and no residential receivers approach or exceed the traffic noise impact criteria. In general, there will be no perceptible change in worst-case sound levels at nearby residences under the Full Build alternative, as compared to existing conditions. There will be a slight to moderate decrease in worst-case sound levels (-3 to -4 dBA) at four residences at 160, 170, 180 and 190 Partridge Drive. There will be a slight to moderate increase in worst-case sound levels (3 to 7 dBA) at five residences at 171, 183, 197, 209 and 218 Whitewood Road.

Although the study results did not identify any residential properties with a traffic noise impact as defined by the FHWA criteria, the project design includes extensive landscaping, earthen berms and noise barriers on and adjacent to the “White Parcel” to provide noise reduction for residences on Whitewood Road, Juniper Ridge Road, and Blue Hill Drive (see revised White Parcel Landscape Treatment Plan, Sheet L-1.1, at the end of this report). With this mitigation, there would be no perceptible increase in worst-case sound levels at all residential receivers, and any increase in worst-case sound levels will be less than 3.5 dBA.

Concerns have been raised about engine braking (Jake braking) on the I-95 southbound off ramp. Engine braking sometimes occurs on the existing off-ramp because of its very short length and the need for trucks to decelerate from highway speeds to a complete stop at the stop sign on Blue Hill Drive. The redesigned off ramp will eliminate this problem because vehicles exiting Route 128 southbound will have a longer distance over which to decelerate, without the need for engine braking.

2.0 STUDY APPROACH

2.1 Analysis Method

Noise impacts were assessed for the proposed Westwood Station Project using the Federal Highway Administration (FHWA) guidelines outlined in 23 CFR 772 and the Massachusetts Highway Department (MHD) "Procedures for the Abatement of Highway Traffic Noise and Construction Noise". A field survey was done to verify roadway speeds and truck percentages. Sound levels were measured at two residences on Whitewood Road to calibrate the acoustic model. The existing condition represents 2006. The future alternatives included the Phase 1 Build Alternative in 2013 and the Full Build Alternative in 2023. Three time periods were studied: Saturday peak hour (early afternoon) when project trip generation is highest; Weekday morning peak hour when truck deliveries peak; and Weekday evening peak hour when total traffic volumes are highest.

Project area sound levels associated with the peak 1-hour traffic volumes were calculated using the FHWA Traffic Noise Model (TNM), Version 2.5. Noise sensitive receivers were evaluated against the FHWA Noise Abatement Criteria (NAC). The MHD relative-increase criteria were employed to further determine the effects of the project on the existing acoustic environment and to identify whether a "traffic noise impact" condition would exist for each receiver. Using the acoustic model, noise mitigation design elements on the "White Parcel" near Whitewood and Juniper Ridge Roads (earthen berm and noise barriers) were evaluated.

Model receivers (see Figure 1) included all homes on Whitewood Road, Juniper Ridge Road and Blue Hill Drive within 500 feet of a new or relocated roadway associated with the Project, and in addition the closest homes to the Project along Peartree Drive and Partridge Drive. A total of 33 residential properties on Whitewood Road, Blue Hill Drive, Juniper Ridge Road, Peartree Drive and Partridge Drive were examined and

receivers were placed both at the property line and at the upper story windows of the house, for a total of 66 model receivers.

Traffic Solutions, Inc. supplied traffic volumes for all modeled roadways. Roadway speeds for the existing case were obtained from timed speed runs, and truck classification counts were made at the intersection of the I-95 southbound off ramp and Blue Hill Drive to estimate the heavy-truck component of traffic entering the Project site. For the future conditions, roadway speeds were assumed to be 30 mph for Westwood Station Boulevard and 25 mph for side streets on the Project site. The peak hour speed for Route 128 at the University Avenue interchange, 55 mph in the existing case, was left unchanged for the future alternatives even though higher traffic volumes on Route 128 were assumed in the future years. Actual terrain contours were obtained from Project CAD drawings and MassGIS and used in the TNM model.

The roadways included in the acoustic model were:

- Route 128 (I-95), one-half mile either side of the interchange
- I-95 off and on ramps at the University Avenue interchange
- Blue Hill Drive, from T garage to 1,000 feet west of Whitewood Road
- University Avenue
- Westwood Station Blvd. (future only)
- Rosemont Road, Maymount Road, NSTAR Way
- Harvard, Dartmouth and Yale Streets
- Common Street (future only)
- Market Street (future only)

The TNM model assumptions included:

- Standard day atmospheric conditions
- FHWA average pavement
- Ground type of "lawn" to represent suburban lots except for the roadways and identified parking areas and buildings input to the model.

Three features were common to all model runs for the existing and future cases: the T parking garage structure, the office building at 400 Blue Hill Drive, which faces Whitewood Road and Route 128, and the large parking lots for State Street Bank on Rosemont and Marymount Roads. The State Street Bank building was not included

because it provides no significant shielding of traffic sounds due to the building's elevation relative to the Peartree Drive residences. For the Phase 1 Build alternative, the new buildings east of Westwood Station Blvd. shown on the Project site plan were added to the model, and for the Full Build alternative, additional new Project buildings west of Westwood Station Blvd. were included in the model.

The model was validated with short-term sound level measurements made with a Type 1 sound analyzer (CEL Model 593) between 4 and 5 p.m. on Monday, March 19 in front of the residences at 209 and 218 Whitewood Road. At the time, the pavement was dry, skies were overcast, the temperature was 42 F, and the winds were measured to be 5 mph from the southwest. Existing roadway traffic on Route 128 and Blue Hill Drive was clearly audible. The measured L_{eq} level at 209 Whitewood of 50.6 dBA compares to 52.4 dBA predicted in the Existing PM Peak Hour model run for the property line at that house. The measured L_{eq} level at 218 Whitewood of 54.3 dBA compares to 55.5 dBA predicted in the Existing PM Peak Hour model run for the property line at that house. The measured levels are 1.1 to 1.8 dBA below the modeled levels, which is within the expected precision bounds for the TNM model. FHWA guidelines state that TNM performs satisfactorily for a site if differences between measured and predicted levels are within + or - 3 dBA. Since the model predictions are slightly higher than the field measurements, the model provides conservative estimates of future sound levels.

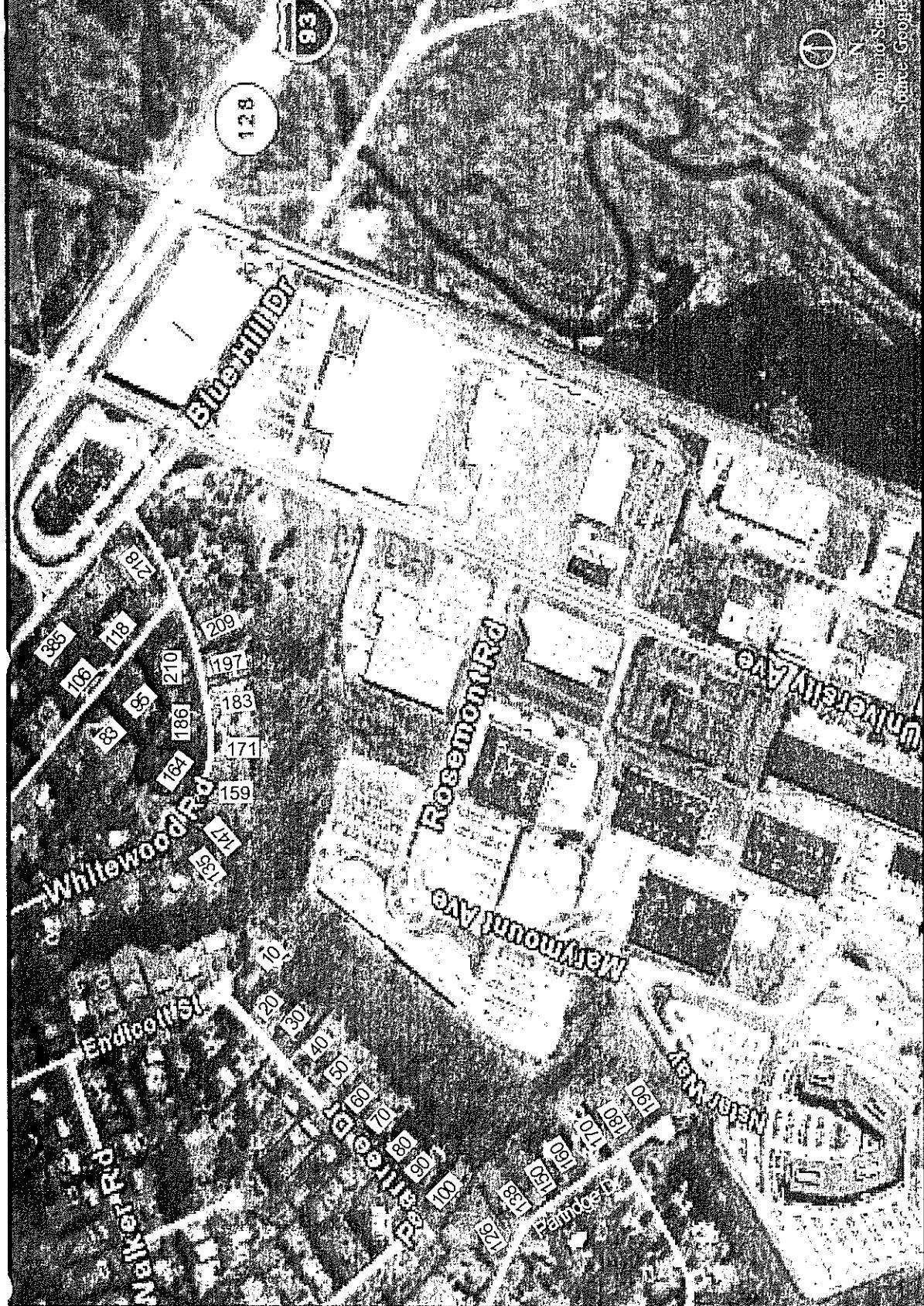


FIGURE 1.
Residential Receivers
for the TNM Analysis

2.2 Sound Metrics

Sound metrics are used to quantify sound pressure levels and to describe a sound's loudness, duration, and tonal character. A commonly used descriptor is the A-weighted decibel (dBA). The A-weighting scale approximates the human ear's sensitivity to certain frequencies by emphasizing the middle frequencies and de-emphasizing the lower and higher frequency sounds. The decibel is a logarithmic unit of measure of sound, meaning that a 10-decibel change in the sound level roughly corresponds to a doubling or halving of perceived loudness. A 3-dBA change in the noise level is generally defined as being just perceptible to the human ear in an outdoor environment. Table 1 provides the subjective effect of different changes in sound levels.

TABLE 1
SUBJECTIVE EFFECT OF CHANGES IN SOUND PRESSURE LEVELS

Change in Sound Level (Increase)	Apparent Change in Loudness
< 3 dBA	No Perceptible Change
3-4 dBA	Slight Change – Barely Perceptible
5-9 dBA	Moderate Change - Noticeable
≥ 10 dBA	Substantial Change – Doubling of Loudness

Roadway noise is typically measured and predicted in terms of an L_{eq} , or equivalent sound level, which is defined as the steady-state sound level during a given amount of time that has the same acoustic energy as the fluctuating noise levels during the averaging period. This metric is commonly referred to as the average sound level. The peak 1-hour $L_{eq(h)}$ is the metric used to describe the potential noise impacts under the FHWA criteria.

2.3 Noise Impact Criteria

The FHWA's Noise Abatement Criteria (NAC) are used determine the traffic noise impacts from a highway or traffic source. The decibel thresholds are defined in 23 CFR Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise", and in the MHD Type I Noise Abatement Guidelines. A noise impact occurs if the peak 1-hour Leq approaches (within 1 dBA) or exceeds the NAC (see Table 2), or if future peak 1-hour Leq sound levels exceed existing peak 1-hour Leq sound levels by 10 dBA or more (see Table 3).

The NAC set a limit on roadway-generated sound levels for a proposed project by the receiving land use category, which in this case is Category "B" for the residential areas near Westwood Station. Thus, a traffic noise impact occurs at residential receivers if peak 1-hour L_{eq} sound levels equal or exceed 66 dBA, or if future worst-case sound levels increase by 10 dBA or more over the existing worst-case sound levels.

TABLE 2
FHWA NOISE ABATEMENT CRITERIA

Land Use Category	Maximum Hourly Leq (dBA)	Land Use Category Descriptions
A	57	Pristine or specially designated areas of which serenity and quiet of extraordinary significance serve an important public purpose.
B	67	Residences, schools, hospitals, places of worship, recreational areas, playgrounds, active sport areas, motels, and libraries.
C	72	Commercial properties and developed lands, properties, or activities not included in A or B
D	---	Undeveloped lands

TABLE 3
MHD RELATIVE NOISE IMPACT CRITERIA

Incremental Increase in Comparison to Existing Conditions	Description
< 10 dBA	Slight Increase (No Impact)
≥ 10 dBA	Substantial Increase (Impact)

3.0 NOISE IMPACTS

Existing (2006) worst-case sound levels (L_{eq} 1-hour) are compared to future worst-case sound levels (L_{eq} 1-hour) for the Phase 1 (2013) and Full Build (2023) alternatives in Table 4. Future sound levels at noise sensitive locations (“receivers”) were evaluated using both the FHWA and MHD impact criteria described in Section 2.3.

3.1 Existing Conditions

Under existing conditions, residential receivers experience worst-case 1-hour L_{eq} sound levels that vary from 40.2 to 60.9 dBA, depending on location. All existing sound levels are below 66 dBA. The analysis also demonstrates that there will be no traffic noise impacts in the Westwood residential neighborhoods for either the Phase 1 or Full Build alternatives. Because no impacts were identified, a detailed noise impact mitigation analysis is not required for the Project. Regardless, the project design includes noise mitigation elements that are analyzed in Section 3.4 below.

3.2 Phase 1-Build Alternative – No Mitigation

Residential receivers in the study area would experience worst-case sound levels of approximately 40.5 to 62.5 dBA under the Phase 1 Build alternative (2013). Table 5 shows how sound levels within the project area would change relative to existing conditions. No residential receivers have a traffic noise impact under this alternative and thus no mitigation is required under the FHWA criteria. In general, there will be no perceptible change in worst-case sound levels at nearby residences under the Phase 1 Build alternative as compared to existing conditions (no perceptible change at 61 of 66 receivers). At five receivers representing 183, 197, 209 and 218 Whitewood Road, there will be a slight to moderate increase in worst-case sound levels, with the increase ranging from 3.1 dBA at 218 Whitewood Road to 5.7 dBA at 209 Whitewood Road.

TABLE 4
WORST-CASE 1-HOUR L_{eq} SOUND LEVELS – NO MITIGATION (dBA)

Receiver	Existing	Phase 1 Build	Increase Over Existing	Full Build	Increase Over Existing
190 Partridge Dr "House"	47.3	49.4	+2.1	44.8	-2.5
190 Partridge Dr "PL"	46.1	47.4	+1.3	43.1	-3.0
180 Partridge Dr "House"	48.1	50.0	+1.9	46.1	-2.0
180 Partridge Dr "PL"	46.1	47.5	+1.4	42.5	-3.6
170 Partridge Dr "House"	47.5	49.3	+1.8	45.6	-1.9
170 Partridge Dr "PL"	47.8	49.7	+1.9	44.3	-3.5
160 Partridge Dr "House"	47.1	48.9	+1.8	45.6	-1.5
160 Partridge Dr "PL"	47.4	49.0	+1.6	44.1	-3.3
150 Partridge Dr "House"	46.6	48.2	+1.6	45.1	-1.5
150 Partridge Dr "PL"	46.8	48.6	+1.8	44.3	-2.5
138 Partridge Dr "House"	45.7	47.4	+1.7	45.3	-0.4
138 Partridge Dr "PL"	44.4	45.2	+0.8	43.5	-0.9
126 Partridge Dr "House"	44.2	45.4	+1.2	44.5	+0.3
126 Partridge Dr "PL"	40.2	40.5	+0.3	39.0	-1.2
100 Peartree Dr "House"	45.7	47.2	+2.2	45.7	0
100 Peartree Dr "PL"	46.1	47.8	+1.7	45.6	-0.5
90 Peartree Dr "House"	46.2	47.5	+1.3	46.2	0
90 Peartree Dr "PL"	47.0	48.6	+1.6	46.4	-0.6
80 Peartree Dr "House"	46.9	48.1	+1.2	46.8	-0.1
80 Peartree Dr "PL"	47.7	49.0	+1.3	47.0	-0.7
70 Peartree Dr "House"	47.6	48.7	+1.1	47.9	+0.3
70 Peartree Dr "PL"	48.2	49.4	+1.2	47.6	-0.6
60 Peartree Dr "House"	47.7	48.8	+1.1	48.2	+0.5
60 Peartree Dr "PL"	48.8	49.8	+1.0	48.8	0
50 Peartree Dr "House"	48.2	49.4	+1.2	49.0	+0.8
50 Peartree Dr "PL"	49.2	49.8	+0.6	49.2	0
40 Peartree Dr "House"	48.5	49.7	+1.2	49.3	+0.8
40 Peartree Dr "PL"	49.4	50.3	+0.9	49.7	+0.3
30 Peartree Dr "House"	49.3	50.5	+1.2	50.2	+0.9
30 Peartree Dr "PL"	49.6	50.7	+1.1	50.3	+0.7
20 Peartree Dr "House"	48.8	50.3	+1.5	50.0	+1.2
20 Peartree Dr "PL"	48.9	50.2	+1.3	49.9	+1.0
10 Peartree Dr "House"	50.2	51.6	+1.4	51.3	+1.1
10 Peartree Dr "PL"	48.9	50.0	+1.1	49.4	+0.5

Receiver	Existing	Phase 1 Build	Increase Over Existing	Full Build	Increase Over Existing
209 Whitewood Rd "House"	56.1	58.9	+2.8	59.5	+3.4
209 Whitewood Rd "PL"	52.9	58.6	+5.7	59.4	+6.5
197 Whitewood Rd "House"	55.5	57.4	+1.9	58.0	+2.5
197 Whitewood Rd "PL"	52.0	57.0	+5.0	57.7	+5.7
183 Whitewood Rd "House"	53.6	56.2	+2.6	56.7	+3.1
183 Whitewood Rd "PL"	50.9	54.6	+3.7	55.3	+4.4
171 Whitewood Rd "House"	52.8	55.3	+2.5	55.6	+2.8
171 Whitewood Rd "PL"	50.7	53.6	+2.9	53.8	+3.1
159 Whitewood Rd "House"	51.7	53.9	+2.2	53.9	+2.2
159 Whitewood Rd "PL"	50.3	52.8	+2.5	52.7	+2.4
147 Whitewood Rd "House"	51.3	52.9	+1.6	52.8	+1.5
147 Whitewood Rd "PL"	49.2	51.1	+1.9	50.7	+1.5
135 Whitewood Rd "House"	51.4	52.6	+1.2	52.6	+1.2
135 Whitewood Rd "PL"	49.4	50.9	+1.5	50.6	+1.2
210 Whitewood Rd "House"	56.0	57.6	+1.6	58.2	+2.2
210 Whitewood Rd "PL"	53.1	55.2	+2.1	55.8	+2.7
186 Whitewood Rd "House"	54.6	56.0	+1.4	56.4	+1.8
186 Whitewood Rd "PL"	50.7	52.8	+2.1	53.0	+2.3
164 Whitewood Rd "House"	54.3	55.4	+1.1	55.7	+1.4
164 Whitewood Rd "PL"	52.1	53.4	+1.3	53.6	+1.5
118 Juniper Ridge Rd "House"	56.0	57.1	+1.1	57.6	+1.6
118 Juniper Ridge Rd "PL"	54.4	55.6	+1.2	56.1	+1.7
106 Juniper Ridge Rd "House"	56.9	57.4	+0.5	57.8	+0.9
106 Juniper Ridge Rd "PL"	54.0	54.5	+0.5	54.9	+0.9
95 Juniper Ridge Rd "House"	57.8	59.3	+1.5	60.2	+2.4
95 Juniper Ridge Rd "PL"	56.5	58.1	+1.6	59.0	+2.5
83 Juniper Ridge Rd "House"	59.2	59.7	+0.5	60.2	+1.0
83 Juniper Ridge Rd "PL"	56.9	57.6	+0.7	58.3	+1.4
385 Blue Hill Dr "House"	60.9	61.7	+0.8	62.4	+1.5
385 Blue Hill Dr "PL"	59.5	60.1	+0.6	61.1	+1.6
218 Whitewood Rd "House"	59.4	62.5	+3.1	63.6	+4.2
218 Whitewood Rd "PL"	55.6	58.9	+3.3	59.8	+4.2

TABLE 5
**CHANGES IN PEAK HOUR SOUND LEVELS FOR THE 2013 PHASE 1 BUILD
 ALTERNATIVE RELATIVE TO EXISTING CONDITIONS**

Residential Receivers	
No Perceptible Change	61
Slight to Moderate Increase	5
Slight to Moderate Decrease	0
Substantial Increase (Impact)	0
Substantial Decrease	0

3.3 Full Build Alternative – No Mitigation

Residential receivers in the study area would experience worst-case 1-hour L_{eq} sound levels of 39.9 to 63.6 dBA under the Full Build alternative (2023). No residential receivers have a traffic noise impact under this alternative and thus no mitigation is required under the FHWA criteria. Table 6 shows how sound levels within the project area would change relative to existing conditions. In general, there will be no perceptible change in worst-case sound levels under the Full Build alternative as compared to existing conditions (no perceptible change at 54 of 66 receivers). At four receivers representing 160, 170, 180 and 190 Partridge Drive, there would be a slight to moderate decrease in worst-case sound levels, with the decrease ranging from -3.0 dBA at 190 Partridge Drive to -3.6 dBA at 180 Partridge Drive. The new buildings west of Westwood Station Blvd. in the Full Build alternative shield the Partridge Drive residents from most noise on Westwood Station Blvd. At eight receivers representing 171, 183, 197, 209 and 218 Whitewood Road, there will be a slight to moderate increase in worst-case sound levels, with the increase ranging from 3.1 dBA at 171 Whitewood Road to 6.5 dBA at 209 Whitewood Road.

TABLE 6
**CHANGES IN PEAK HOUR SOUND LEVELS FOR THE
 2023 FULL BUILD ALTERNATIVE RELATIVE TO EXISTING CONDITIONS**

Residential Receptors	
No Perceptible Change	54
Slight to Moderate Increase	8
Slight to Moderate Decrease	4
Substantial Increase (Impact)	0
Substantial Decrease	0

3.4 Mitigation Analysis

Although the study results did not identify any residential properties with a traffic noise impact as defined by the FHWA criteria, the project design includes extensive landscaping, earthen berms and noise barriers on and adjacent to the “White Parcel” to provide noise reduction for residences on Whitewood Road, Juniper Ridge Road, and Blue Hill Drive. Existing (2006) worst-case sound levels (L_{eq} 1-hour) are compared to future worst-case sound levels (L_{eq} 1-hour) for the Phase 1 (2013) and Full Build (2023) alternatives with mitigation in Table 7. The mitigation case modeling was performed for the periods with the future worst-case sound levels. Table 8 summarizes how sound levels within the nearby residential areas would change relative to the existing condition. At all residential receivers, there will be no perceptible increase in worst-case sound levels for either the Phase 1 Build or Full Build conditions, with the proposed mitigation. Any increase in worst-case sound levels will be less than 3.5 dBA, the threshold agreed to with the Whitewood Area Neighborhood Association.

3.5 Jake Braking

Concerns have been raised about engine braking (Jake braking) on the I-95 southbound off ramp, a condition that produces an audible low-frequency noise. Engine braking sometimes occurs on the existing off-ramp because of its very short length and the need for trucks to decelerate from highway speeds to a complete stop at the stop sign on Blue Hill Drive. The redesigned off ramp will eliminate this problem as vehicles exiting Route 128 southbound will have a longer distance over which to decelerate, without the need for engine braking.

2645/Westwood Special Permit Application/Roadway Noise Report With Mitigation Sept07.doc

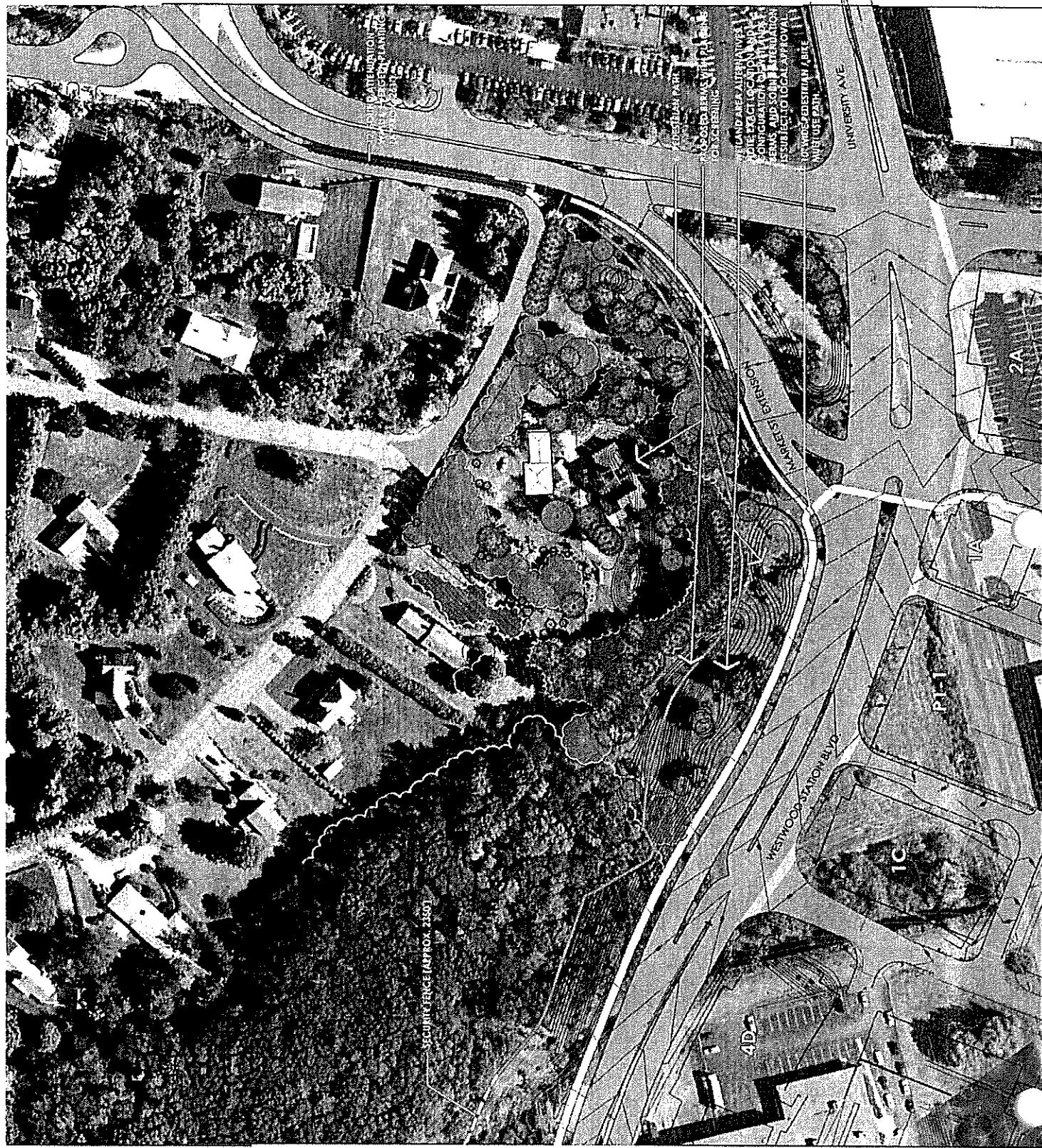
TABLE 7
WORST-CASE 1-HOUR L_{eq} SOUND LEVELS WITH MITIGATION (dBA)

Receiver	Existing	Phase 1 Build with Mitigation	Increase Over Existing	Full Build with Mitigation	Increase Over Existing
190 Partridge Dr "House"	47.3	49.3	+2.0	44.8	-2.5
190 Partridge Dr "PL"	46.1	47.4	+1.3	43.1	-3.0
180 Partridge Dr "House"	48.1	50.0	+1.9	46.1	-2.0
180 Partridge Dr "PL"	46.1	47.5	+1.4	42.5	-3.6
170 Partridge Dr "House"	47.5	49.3	+1.8	45.6	-1.9
170 Partridge Dr "PL"	47.8	49.6	+1.8	44.2	-3.6
160 Partridge Dr "House"	47.1	48.9	+1.7	45.6	-1.5
160 Partridge Dr "PL"	47.4	49.0	+1.6	44.1	-3.3
150 Partridge Dr "House"	46.6	48.2	+1.6	45.0	-1.6
150 Partridge Dr "PL"	46.8	48.6	+1.8	44.3	-2.5
138 Partridge Dr "House"	45.7	47.3	+1.6	45.3	-0.4
138 Partridge Dr "PL"	44.4	45.2	+0.8	43.4	-1.0
126 Partridge Dr "House"	44.2	45.4	+1.2	44.5	+0.3
126 Partridge Dr "PL"	40.2	40.5	+0.3	39.9	-0.3
100 Peartree Dr "House"	45.7	47.2	+1.5	45.6	-0.1
100 Peartree Dr "PL"	46.1	47.8	+1.7	45.6	-0.5
90 Peartree Dr "House"	46.2	47.5	+1.3	46.1	-0.1
90 Peartree Dr "PL"	47.0	48.6	+1.6	46.3	-0.7
80 Peartree Dr "House"	46.9	48.1	+1.2	46.8	-0.1
80 Peartree Dr "PL"	47.7	49.0	+1.3	47.0	-0.7
70 Peartree Dr "House"	47.6	48.6	+1.0	47.8	+0.2
70 Peartree Dr "PL"	48.2	49.3	+1.1	47.6	+0.6
60 Peartree Dr "House"	47.7	48.7	+1.0	48.2	+0.5
60 Peartree Dr "PL"	48.8	49.7	+0.9	48.7	-0.1
50 Peartree Dr "House"	48.2	49.4	+1.2	49.0	+0.8
50 Peartree Dr "PL"	49.2	49.8	+0.6	49.2	0
40 Peartree Dr "House"	48.5	49.7	+1.2	49.3	+0.8
40 Peartree Dr "PL"	49.4	50.2	+0.8	49.7	+0.3
30 Peartree Dr "House"	49.3	50.4	+1.1	50.1	+0.8
30 Peartree Dr "PL"	49.6	50.7	+1.1	50.2	+0.6
20 Peartree Dr "House"	48.8	50.2	+1.4	49.9	+1.1
20 Peartree Dr "PL"	48.9	50.1	+1.2	49.8	+0.9
10 Peartree Dr "House"	50.2	51.5	+1.3	51.2	+1.0

Receiver	Existing	Phase 1 Build with Mitigation	Increase Over Existing	Full Build with Mitigation	Increase Over Existing
10 Peartree Dr "PL"	48.9	49.9	+1.0	49.3	+0.4
209 Whitewood Rd "House"	56.1	57.4	+1.3	57.8	+1.7
209 Whitewood Rd "PL"	52.9	54.2	+1.3	54.7	+1.8
197 Whitewood Rd "House"	55.5	56.6	+1.1	57.1	+1.6
197 Whitewood Rd "PL"	52.0	54.1	+2.1	54.7	+2.7
183 Whitewood Rd "House"	53.6	55.4	+1.8	55.8	+2.2
183 Whitewood Rd "PL"	50.9	52.4	+1.5	53.0	+2.1
171 Whitewood Rd "House"	52.8	55.0	+2.2	55.2	+2.4
171 Whitewood Rd "PL"	50.7	51.6	+0.9	51.8	+1.1
159 Whitewood Rd "House"	51.7	53.6	+1.9	53.6	+1.9
159 Whitewood Rd "PL"	50.3	52.4	+2.1	52.2	+1.9
147 Whitewood Rd "House"	51.3	52.7	+1.4	52.6	+1.3
147 Whitewood Rd "PL"	49.2	50.9	+1.7	50.5	+1.3
135 Whitewood Rd "House"	51.4	52.5	+1.1	52.4	+1.0
135 Whitewood Rd "PL"	49.4	50.8	+1.4	50.3	+0.9
210 Whitewood Rd "House"	56.0	57.0	+1.0	57.5	+1.5
210 Whitewood Rd "PL"	53.1	54.2	+1.1	54.7	+1.6
186 Whitewood Rd "House"	54.6	55.5	+0.9	55.8	+1.2
186 Whitewood Rd "PL"	50.7	51.8	+1.1	52.1	+1.4
164 Whitewood Rd "House"	54.3	55.1	+0.8	55.3	+1.0
164 Whitewood Rd "PL"	52.1	53.0	+0.9	53.0	+0.9
118 Juniper Ridge Rd "House"	56.0	56.7	+0.7	57.1	+1.1
118 Juniper Ridge Rd "PL"	54.4	55.1	+0.7	55.5	+1.1
106 Juniper Ridge Rd "House"	56.9	57.2	+0.3	57.5	+0.6
106 Juniper Ridge Rd "PL"	54.0	54.3	+0.3	54.6	+0.6
95 Juniper Ridge Rd "House"	57.8	58.5	+0.7	59.3	+1.5
95 Juniper Ridge Rd "PL"	56.5	57.1	+0.6	57.7	+1.2
83 Juniper Ridge Rd "House"	59.2	59.4	+0.2	59.9	+0.7
83 Juniper Ridge Rd "PL"	56.9	57.2	+0.3	57.8	+0.9
385 Blue Hill Dr "House"	60.9	61.2	+0.3	61.8	+0.9
385 Blue Hill Dr "PL"	59.5	59.3	-0.2	60.2	+0.7
218 Whitewood Rd "House"	59.4	60.1	+0.7	61.1	+1.7
218 Whitewood Rd "PL"	55.6	57.2	+1.6	57.9	+2.3

TABLE 8
CHANGES IN PEAK HOUR SOUND LEVELS AT RESIDENTIAL RECEIVERS
RELATIVE TO EXISTING CONDITIONS

	Phase 1 Build With Mitigation	Full Build With Mitigation
No Perceptible Change	66	62
Slight to Moderate Increase	0	0
Slight to Moderate Decrease	0	4
Substantial Increase (Impact)	0	0
Substantial Decrease	0	0



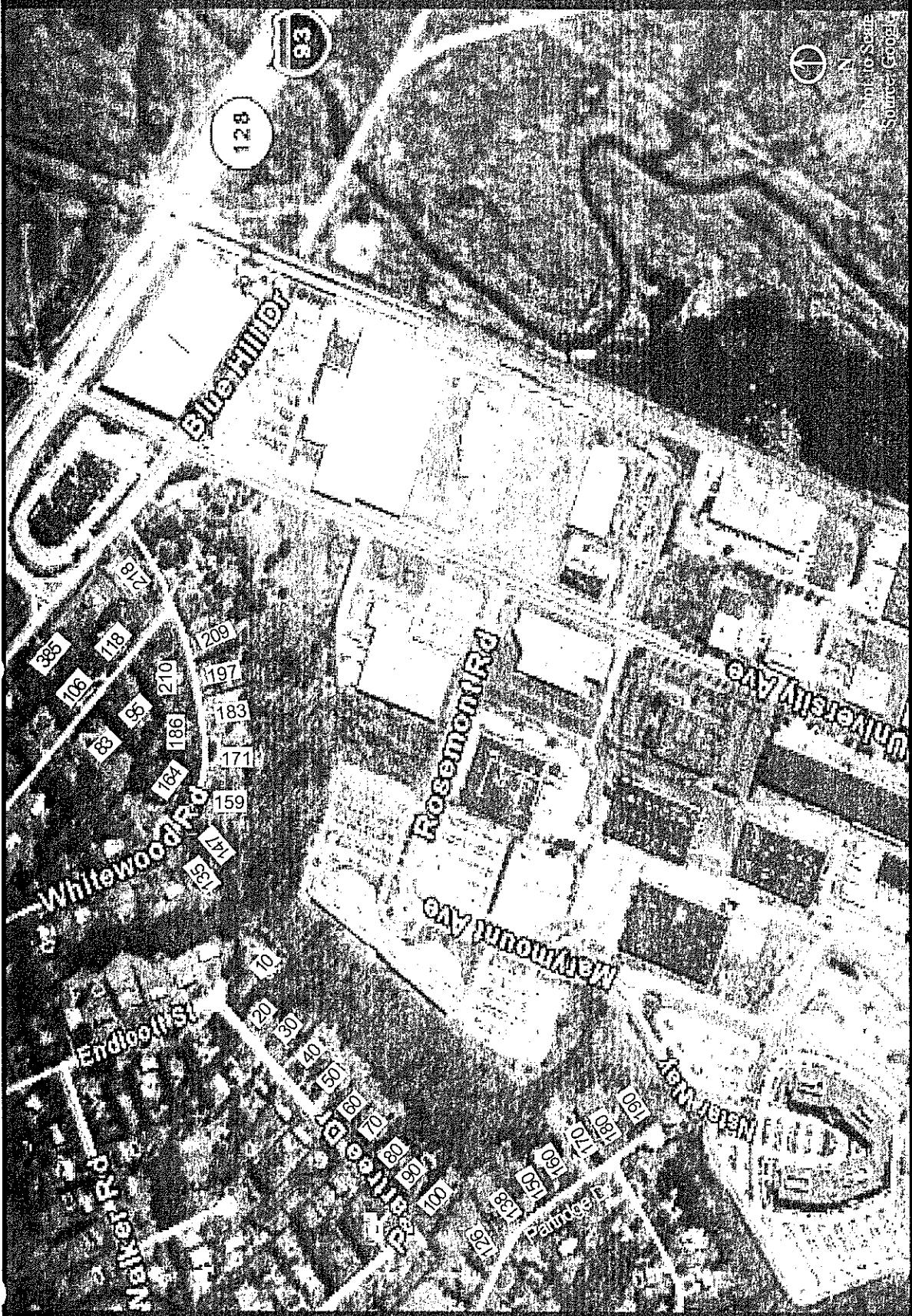


FIGURE 1. Residential Receivers for the TNM Analysis

TECH ENVIRONMENTAL
Air Quality, Odor Control, and Noise Solutions

APPENDIX A

TNM MODEL OUTPUT

RESULTS: SOUND LEVELS

Tech Environmental
RTC

RESULTS: SOUND LEVELS
PROJECT/CONTRACT:
RUN:
BARRIER DESIGN:

Westwood Station
Existing - AM - 3
INPUT HEIGHTS

ATMOSPHERICS:

68 deg F, 50% RH

Westwood Station

16 March 2007
TNM 2.5
Calculated with TNM 2.5

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier			With Barrier			
				Calculated	Crit'n	LAeq1h	Increase over existing			
							Sub'll	Inc	Type	
			dBA	dBA	dBA	dBA	dBA	dBA	dB	dB
190 Partridge Dr "House"	5	1	0.0	47.3	66	47.3	10	—	47.3	0.0
190 Partridge Dr "PL"	7	1	0.0	46.1	66	46.1	10	—	46.1	0.0
180 Partridge Dr "House"	9	1	0.0	48.1	66	48.1	10	—	48.1	0.0
180 Partridge Dr "PL"	10	1	0.0	46.1	66	46.1	10	—	46.1	0.0
170 Partridge Dr "House"	12	1	0.0	47.5	66	47.5	10	—	47.5	0.0
170 Partridge Dr "PL"	15	1	0.0	47.8	66	47.8	10	—	47.8	0.0
160 Partridge Dr "House"	16	1	0.0	47.1	66	47.1	10	—	47.1	0.0
160 Partridge Dr "PL"	17	1	0.0	47.4	66	47.4	10	—	47.4	0.0
150 Partridge Dr "House"	18	1	0.0	46.6	68	46.6	10	—	46.6	0.0
150 Partridge Dr "PL"	19	1	0.0	46.8	66	46.8	10	—	46.8	0.0
138 Partridge Dr "House"	21	1	0.0	45.7	66	45.7	10	—	45.7	0.0
138 Partridge Dr "PL"	22	1	0.0	44.4	66	44.4	10	—	44.4	0.0
126 Partridge Dr "House"	23	1	0.0	44.2	66	44.2	10	—	44.2	0.0
126 Partridge Dr "PL"	24	1	0.0	40.2	66	40.2	10	—	40.2	0.0
100 Pearmtree Dr "House"	27	1	0.0	45.7	66	45.7	10	—	45.7	0.0
100 Pearmtree Dr "PL"	28	1	0.0	46.1	66	46.1	10	—	46.1	0.0
90 Pearmtree Dr "House"	29	1	0.0	46.2	66	46.2	10	—	46.2	0.0
90 Pearmtree Dr "PL"	30	1	0.0	47.0	66	47.0	10	—	47.0	0.0
80 Pearmtree Dr "House"	31	1	0.0	46.9	66	46.9	10	—	46.9	0.0
80 Pearmtree Dr "PL"	32	1	0.0	47.7	66	47.7	10	—	47.7	0.0
70 Pearmtree Dr "House"	33	1	0.0	47.6	66	47.6	10	—	47.6	0.0
70 Pearmtree Dr "PL"	34	1	0.0	48.2	66	48.2	10	—	48.2	0.0
60 Pearmtree Dr "House"	35	1	0.0	47.7	66	47.7	10	—	47.7	0.0

W:Work Data\2645\TNM Modeling\Existing - AM - Run-3

RESULTS: SOUND LEVELS
Westwood Station

		36	1	0.0	48.8	66	48.8	10	---	48.8	0.0	8	-8.0
60 Peartree Dr "PL"		37	1	0.0	48.2	66	48.2	10	---	48.2	0.0	8	-8.0
50 Peartree Dr "House"		38	1	0.0	49.2	66	49.2	10	---	49.2	0.0	8	-8.0
50 Peartree Dr "PL"		39	1	0.0	48.5	66	48.5	10	---	48.5	0.0	8	-8.0
40 Peartree Dr "House"		40	1	0.0	49.4	66	49.4	10	---	49.4	0.0	8	-8.0
40 Peartree Dr "PL"		41	1	0.0	49.3	66	49.3	10	---	49.3	0.0	8	-8.0
30 Peartree Dr "House"		42	1	0.0	49.6	66	49.6	10	---	49.6	0.0	8	-8.0
30 Peartree Dr "PL"		43	1	0.0	48.8	66	48.8	10	---	48.8	0.0	8	-8.0
20 Peartree Dr "House"		44	1	0.0	48.9	66	48.9	10	---	48.9	0.0	8	-8.0
20 Peartree Dr "PL"		45	1	0.0	50.2	66	50.2	10	---	50.2	0.0	8	-8.0
10 Peartree Dr "House"		46	1	0.0	48.9	66	48.9	10	---	48.9	0.0	8	-8.0
10 Peartree Dr "PL"		48	1	0.0	56.1	66	56.1	10	---	56.1	0.0	8	-8.0
209 Whitewood Rd "House"		49	1	0.0	52.9	66	52.9	10	---	52.9	0.0	8	-8.0
209 Whitewood Rd "PL"		50	1	0.0	55.0	66	55.0	10	---	55.0	0.0	8	-8.0
197 Whitewood Rd "House"		51	1	0.0	52.2	66	52.2	10	---	52.2	0.0	8	-8.0
197 Whitewood Rd "PL"		52	1	0.0	53.6	66	53.6	10	---	53.6	0.0	8	-8.0
183 Whitewood Rd "House"		53	1	0.0	50.9	66	50.9	10	---	50.9	0.0	8	-8.0
171 Whitewood Rd "House"		54	1	0.0	52.8	66	52.8	10	---	52.8	0.0	8	-8.0
171 Whitewood Rd "PL"		55	1	0.0	50.7	66	50.7	10	---	50.7	0.0	8	-8.0
159 Whitewood Rd "House"		56	1	0.0	51.7	66	51.7	10	---	51.7	0.0	8	-8.0
159 Whitewood Rd "PL"		57	1	0.0	50.3	66	50.3	10	---	50.3	0.0	8	-8.0
147 Whitewood Rd "House"		58	1	0.0	51.3	66	51.3	10	---	51.3	0.0	8	-8.0
147 Whitewood Rd "PL"		59	1	0.0	49.2	66	49.2	10	---	49.2	0.0	8	-8.0
135 Whitewood Rd "House"		60	1	0.0	51.4	66	51.4	10	---	51.4	0.0	8	-8.0
135 Whitewood Rd "PL"		61	1	0.0	49.4	66	49.4	10	---	49.4	0.0	8	-8.0
210 Whitewood Rd "House"		63	1	0.0	56.0	66	56.0	10	---	56.0	0.0	8	-8.0
210 Whitewood Rd "PL"		64	1	0.0	53.1	66	53.1	10	---	53.1	0.0	8	-8.0
186 Whitewood Rd "House"		65	1	0.0	54.6	66	54.6	10	---	54.6	0.0	8	-8.0
186 Whitewood Rd "PL"		66	1	0.0	50.7	66	50.7	10	---	50.7	0.0	8	-8.0
164 Whitewood Rd "House"		67	1	0.0	54.3	66	54.3	10	---	54.3	0.0	8	-8.0
164 Whitewood Rd "PL"		68	1	0.0	52.1	66	52.1	10	---	52.1	0.0	8	-8.0
118 Juniper Ridge Rd "House"		71	1	0.0	56.0	66	56.0	10	---	56.0	0.0	8	-8.0
118 Juniper Ridge Rd "PL"		72	1	0.0	54.4	66	54.4	10	---	54.4	0.0	8	-8.0
106 Juniper Ridge Rd "House"		73	1	0.0	56.9	66	56.9	10	---	56.9	0.0	8	-8.0
106 Juniper Ridge Rd "PL"		74	1	0.0	54.0	66	54.0	10	---	54.0	0.0	8	-8.0
95 Juniper Ridge Rd "House"		75	1	0.0	57.8	66	57.8	10	---	57.8	0.0	8	-8.0
95 Juniper Ridge Rd "PL"		76	1	0.0	56.5	66	56.5	10	---	56.5	0.0	8	-8.0
83 Juniper Ridge Rd "House"		77	1	0.0	59.2	66	59.2	10	---	59.2	0.0	8	-8.0
83 Juniper Ridge Rd "PL"		78	1	0.0	56.9	66	56.9	10	---	56.9	0.0	8	-8.0
385 Blue Hill Dr "House"		81	1	0.0	60.9	66	60.9	10	---	60.9	0.0	8	-8.0
385 Blue Hill Dr "PL"		82	1	0.0	59.5	66	59.5	10	---	59.5	0.0	8	-8.0

RESULTS: SOUND LEVELS

		Westwood Station			
		86	87	88	89
2118 Whitewood Rd "House"		1	1	1	1
2118 Whitewood Rd "PL"		0.0	0.0	59.4	59.4
Dwelling Units	# DUS	Noise Reduction	Min	Avg	Max
			dB	dB	dB
All Selected			66	0.0	0.0
All Impacted			0	0.0	0.0
All that meet NR Goal			0	0.0	0.0

RESULTS: SOUND LEVELS

Tech Environmental
RTC

PROJECT/CONTRACT:
RUN:
BARRIER DESIGN:
Westwood Station
Existing - PM - 3
INPUT HEIGHTS
ATMOSPHERICS:

68 deg F, 50% RH

Westwood Station

16 March 2007

TNM 2.5

Calculated with TNM 2.5

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing Type			With Barrier		
					Calculated Crit'n	Calculated LAeq1h	Sub'l Inc	Calculated	Calculated LAeq1h	Calculated Sub'l Inc
190 Partridge Dr "House"	5	1	0.0	46.5	66	46.5	10	46.5	0.0	8
190 Partridge Dr "PL"	7	1	0.0	45.3	66	45.3	10	45.3	0.0	8
180 Partridge Dr "House"	9	1	0.0	47.1	66	47.1	10	47.1	0.0	8
180 Partridge Dr "PL"	10	1	0.0	45.4	66	45.4	10	45.4	0.0	8
170 Partridge Dr "House"	12	1	0.0	46.5	66	46.5	10	46.5	0.0	8
170 Partridge Dr "PL"	15	1	0.0	46.8	66	46.8	10	46.8	0.0	8
160 Partridge Dr "House"	16	1	0.0	46.2	66	46.2	10	46.2	0.0	8
160 Partridge Dr "PL"	17	1	0.0	46.3	66	46.3	10	46.3	0.0	8
150 Partridge Dr "House"	18	1	0.0	45.6	66	45.6	10	45.6	0.0	8
150 Partridge Dr "PL"	19	1	0.0	45.8	66	45.8	10	45.8	0.0	8
138 Partridge Dr "House"	21	1	0.0	44.7	66	44.7	10	44.7	0.0	8
138 Partridge Dr "PL"	22	1	0.0	43.8	66	43.8	10	43.8	0.0	8
126 Partridge Dr "House"	23	1	0.0	43.5	66	43.5	10	43.5	0.0	8
126 Partridge Dr "PL"	24	1	0.0	39.6	66	39.6	10	39.6	0.0	8
100 Pearmtree Dr "House"	27	1	0.0	44.7	66	44.7	10	44.7	0.0	8
100 Pearmtree Dr "PL"	28	1	0.0	45.1	66	45.1	10	45.1	0.0	8
90 Pearmtree Dr "House"	29	1	0.0	45.0	66	45.0	10	45.0	0.0	8
90 Pearmtree Dr "PL"	30	1	0.0	45.9	66	45.9	10	45.9	0.0	8
80 Pearmtree Dr "House"	31	1	0.0	45.7	66	45.7	10	45.7	0.0	8
80 Pearmtree Dr "PL"	32	1	0.0	46.4	66	46.4	10	46.4	0.0	8
70 Pearmtree Dr "House"	33	1	0.0	46.4	66	46.4	10	46.4	0.0	8
70 Pearmtree Dr "PL"	34	1	0.0	46.8	66	46.8	10	46.8	0.0	8
60 Pearmtree Dr "House"	35	1	0.0	46.3	66	46.3	10	46.3	0.0	8

RESULTS: SOUND LEVELS

Westwood Station

RESULTS: SOUND LEVELS

Westwood Station			
218 Whitewood Rd "House"	86	1	0.0
218 Whitewood Rd "PL"	87	1	0.0
Dwelling Units	# DUs	Noise Reduction	
		Min	Avg
		dB	dB
All Selected		66	0.0
All Impacted		0	0.0
All that meet NR Goal		0	0.0

RESULTS: SOUND LEVELS

Tech Environmental
RTC

RESULTS: SOUND LEVELS

PROJECT/CONTRACT:

RUN:

BARRIER DESIGN:

ATMOSPHERICS:

Receiver

Name

17 March 2007

TNM 2.5

Calculated with TNM 2.5

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with approval of FHWA.

Westwood Station

Existing - SAT - 3

INPUT HEIGHTS

68 deg F, 50% RH

No.	#DUs	Existing	No Barrier	L _{Aeq1h} Calculated	Crit'n Subj Inc	With Barrier		Without Barrier		Calculated L _{Aeq1h}	Noise Reduction Calculated	Goal	Calculated minus Goal
						dB(A)	dB(A)	dB(A)	dB(A)				
5	1	0.0	43.5	66	43.5	10	—	43.5	0.0	8	—	-8.0	
7	1	0.0	41.9	66	41.9	10	—	41.9	0.0	8	—	-8.0	
9	1	0.0	43.7	66	43.7	10	—	43.7	0.0	8	—	-8.0	
10	1	0.0	42.9	66	42.9	10	—	42.9	0.0	8	—	-8.0	
12	1	0.0	43.4	66	43.4	10	—	43.4	0.0	8	—	-8.0	
15	1	0.0	43.1	66	43.1	10	—	43.1	0.0	8	—	-8.0	
16	1	0.0	43.1	66	43.1	10	—	43.1	0.0	8	—	-8.0	
17	1	0.0	42.9	66	42.9	10	—	42.9	0.0	8	—	-8.0	
18	1	0.0	42.6	66	42.6	10	—	42.6	0.0	8	—	-8.0	
19	1	0.0	42.6	66	42.6	10	—	42.6	0.0	8	—	-8.0	
21	1	0.0	42.1	66	42.1	10	—	42.1	0.0	8	—	-8.0	
22	1	0.0	41.9	66	41.9	10	—	41.9	0.0	8	—	-8.0	
23	1	0.0	41.4	66	41.4	10	—	41.4	0.0	8	—	-8.0	
24	1	0.0	38.5	66	38.5	10	—	38.5	0.0	8	—	-8.0	
27	1	0.0	42.1	66	42.1	10	—	42.1	0.0	8	—	-8.0	
28	1	0.0	42.3	66	42.3	10	—	42.3	0.0	8	—	-8.0	
29	1	0.0	42.3	66	42.3	10	—	42.3	0.0	8	—	-8.0	
30	1	0.0	42.6	66	42.6	10	—	42.6	0.0	8	—	-8.0	
31	1	0.0	42.7	66	42.7	10	—	42.7	0.0	8	—	-8.0	
32	1	0.0	42.7	66	42.7	10	—	42.7	0.0	8	—	-8.0	
33	1	0.0	43.4	66	43.4	10	—	43.4	0.0	8	—	-8.0	
34	1	0.0	42.7	66	42.7	10	—	42.7	0.0	8	—	-8.0	
35	1	0.0	43.3	66	43.3	10	—	43.3	0.0	8	—	-8.0	

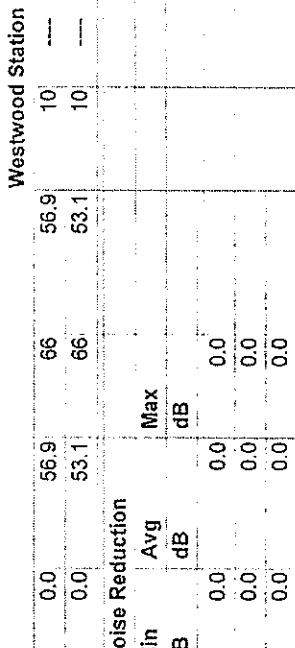
RESULTS: SOUND LEVELS

RESULTS: SOUND LEVELS		Westwood Station									
		42.7	66	42.7	10	42.7	10	42.7	10	42.7	10
60 Peartree Dr "PL"	36	1	0.0	42.7	66	44.0	10	44.0	10	44.0	10
50 Peartree Dr "House"	37	1	0.0	44.0	66	42.9	10	42.9	10	44.0	10
50 Peartree Dr "PL"	38	1	0.0	42.9	66	44.3	10	44.3	10	42.9	10
40 Peartree Dr "House"	39	1	0.0	44.3	66	43.8	10	43.8	10	44.3	10
40 Peartree Dr "PL"	40	1	0.0	43.8	66	45.3	10	45.3	10	43.8	10
30 Peartree Dr "House"	41	1	0.0	45.3	66	45.3	10	45.3	10	45.3	10
30 Peartree Dr "PL"	42	1	0.0	44.5	66	44.5	10	44.5	10	44.5	10
20 Peartree Dr "House"	43	1	0.0	45.2	66	45.2	10	45.2	10	45.2	10
20 Peartree Dr "PL"	44	1	0.0	43.9	66	43.9	10	43.9	10	43.9	10
10 Peartree Dr "House"	45	1	0.0	46.3	66	46.3	10	46.3	10	46.3	10
10 Peartree Dr "PL"	46	1	0.0	42.9	66	42.9	10	42.9	10	42.9	10
209 Whitewood Rd "House"	48	1	0.0	53.4	66	53.4	10	53.4	10	53.4	10
209 Whitewood Rd "PL"	49	1	0.0	49.3	66	49.3	10	49.3	10	49.3	10
197 Whitewood Rd "House"	50	1	0.0	52.5	66	52.5	10	52.5	10	52.5	10
197 Whitewood Rd "PL"	51	1	0.0	48.8	66	48.8	10	48.8	10	48.8	10
183 Whitewood Rd "House"	52	1	0.0	50.9	66	50.9	10	50.9	10	50.9	10
183 Whitewood Rd "PL"	53	1	0.0	47.1	66	47.1	10	47.1	10	47.1	10
171 Whitewood Rd "House"	54	1	0.0	49.8	66	49.8	10	49.8	10	49.8	10
171 Whitewood Rd "PL"	55	1	0.0	46.5	66	46.5	10	46.5	10	46.5	10
159 Whitewood Rd "House"	56	1	0.0	48.5	66	48.5	10	48.5	10	48.5	10
159 Whitewood Rd "PL"	57	1	0.0	45.8	66	45.8	10	45.8	10	45.8	10
147 Whitewood Rd "House"	58	1	0.0	48.4	66	48.4	10	48.4	10	48.4	10
147 Whitewood Rd "PL"	59	1	0.0	44.7	66	44.7	10	44.7	10	44.7	10
135 Whitewood Rd "House"	60	1	0.0	48.7	66	48.7	10	48.7	10	48.7	10
135 Whitewood Rd "PL"	61	1	0.0	45.5	66	45.5	10	45.5	10	45.5	10
210 Whitewood Rd "House"	63	1	0.0	54.1	66	54.1	10	54.1	10	54.1	10
210 Whitewood Rd "PL"	64	1	0.0	50.9	66	50.9	10	50.9	10	50.9	10
186 Whitewood Rd "House"	65	1	0.0	52.6	66	52.6	10	52.6	10	52.6	10
186 Whitewood Rd "PL"	66	1	0.0	48.1	66	48.1	10	48.1	10	48.1	10
164 Whitewood Rd "House"	67	1	0.0	52.3	66	52.3	10	52.3	10	52.3	10
164 Whitewood Rd "PL"	68	1	0.0	49.8	66	49.8	10	49.8	10	49.8	10
118 Juniper Ridge Rd "House"	71	1	0.0	54.3	66	54.3	10	54.3	10	54.3	10
118 Juniper Ridge Rd "PL"	72	1	0.0	52.6	66	52.6	10	52.6	10	52.6	10
106 Juniper Ridge Rd "House"	73	1	0.0	55.3	66	55.3	10	55.3	10	55.3	10
106 Juniper Ridge Rd "PL"	74	1	0.0	52.5	66	52.5	10	52.5	10	52.5	10
95 Juniper Ridge Rd "House"	75	1	0.0	56.1	66	56.1	10	56.1	10	56.1	10
95 Juniper Ridge Rd "PL"	76	1	0.0	54.7	66	54.7	10	54.7	10	54.7	10
83 Juniper Ridge Rd "House"	77	1	0.0	57.8	66	57.8	10	57.8	10	57.8	10
83 Juniper Ridge Rd "PL"	78	1	0.0	55.4	66	55.4	10	55.4	10	55.4	10
385 Blue Hill Dr "House"	81	1	0.0	59.1	66	59.1	10	59.1	10	59.1	10
385 Blue Hill Dr "PL"	82	1	0.0	57.9	66	57.9	10	57.9	10	57.9	10

W:\Work Data\2645\TNM Modeling\Existing - Saturday - Run-3

RESULTS: SOUND LEVELS

	218 Whitewood Rd "House"	86	1	0.0	56.9	66	56.9	10	8	-8.0
	218 Whitewood Rd "PL"	87	1	0.0	53.1	66	53.1	10	8	-8.0
Dwelling Units	# DUs	Noise Reduction	Min	Avg	Max	Min	Avg	Max	Min	Avg
All Selected			66	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All Impacted			0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All that meet NR Goal			0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



RESULTS: SOUND LEVELS

Westwood Station

60 Peartree Dr "PL"	0.0	48.5	66	48.5	10	48.5	0.0
50 Peartree Dr "House"	0.0	48.3	66	48.3	10	48.3	0.0
50 Peartree Dr "PL"	1.0	48.6	66	48.6	10	48.6	0.0
40 Peartree Dr "House"	1.0	48.6	66	48.6	10	48.6	0.0
40 Peartree Dr "PL"	1.0	48.9	66	48.9	10	48.9	0.0
30 Peartree Dr "House"	1.0	49.3	66	49.3	10	49.3	0.0
30 Peartree Dr "PL"	1.0	49.3	66	49.3	10	49.3	0.0
20 Peartree Dr "House"	1.0	49.1	66	49.1	10	49.1	0.0
20 Peartree Dr "PL"	1.0	48.5	66	48.5	10	48.5	0.0
10 Peartree Dr "House"	1.0	50.4	66	50.4	10	50.4	0.0
10 Peartree Dr "PL"	1.0	48.4	66	48.4	10	48.4	0.0
209 Whitewood Rd "House"	1.0	57.1	66	57.1	10	57.1	0.0
209 Whitewood Rd "PL"	1.0	56.5	66	56.5	10	56.5	0.0
50 Whitewood Rd "House"	1.0	55.9	66	55.9	10	55.9	0.0
197 Whitewood Rd "PL"	1.0	55.0	66	55.0	10	55.0	0.0
197 Whitewood Rd "PL"	1.0	54.7	66	54.7	10	54.7	0.0
183 Whitewood Rd "House"	1.0	52.7	66	52.7	10	52.7	0.0
183 Whitewood Rd "PL"	1.0	53.8	66	53.8	10	53.8	0.0
54 Whitewood Rd "PL"	1.0	51.7	66	51.7	10	51.7	0.0
55 Whitewood Rd "PL"	1.0	51.7	66	51.7	10	51.7	0.0
56 Whitewood Rd "PL"	1.0	52.5	66	52.5	10	52.5	0.0
57 Whitewood Rd "PL"	1.0	51.0	66	51.0	10	51.0	0.0
58 Whitewood Rd "House"	1.0	51.7	66	51.7	10	51.7	0.0
59 Whitewood Rd "PL"	1.0	49.6	66	49.6	10	49.6	0.0
60 Whitewood Rd "House"	1.0	51.7	66	51.7	10	51.7	0.0
61 Whitewood Rd "PL"	1.0	49.7	66	49.7	10	49.7	0.0
63 Whitewood Rd "House"	1.0	56.5	66	56.5	10	56.5	0.0
64 Whitewood Rd "PL"	1.0	53.8	66	53.8	10	53.8	0.0
65 Whitewood Rd "House"	1.0	55.1	66	55.1	10	55.1	0.0
66 Whitewood Rd "PL"	1.0	51.5	66	51.5	10	51.5	0.0
67 Whitewood Rd "House"	1.0	54.7	66	54.7	10	54.7	0.0
68 Whitewood Rd "PL"	1.0	52.4	66	52.4	10	52.4	0.0
118 Juniper Ridge Rd "House"	1.0	56.4	66	56.4	10	56.4	0.0
118 Juniper Ridge Rd "PL"	1.0	54.8	66	54.8	10	54.8	0.0
106 Juniper Ridge Rd "House"	1.0	57.1	66	57.1	10	57.1	0.0
106 Juniper Ridge Rd "PL"	1.0	54.1	66	54.1	10	54.1	0.0
95 Juniper Ridge Rd "House"	1.0	58.1	66	58.1	10	58.1	0.0
95 Juniper Ridge Rd "PL"	1.0	56.6	66	56.6	10	56.6	0.0
83 Juniper Ridge Rd "House"	1.0	59.3	66	59.3	10	59.3	0.0
83 Juniper Ridge Rd "PL"	1.0	57.0	66	57.0	10	57.0	0.0
385 Blue Hill Dr "House"	1.0	61.1	66	61.1	10	61.1	0.0
385 Blue Hill Dr "PL"	1.0	59.0	66	59.0	10	59.0	0.0

RESULTS: SOUND LEVELS

218 Whitewood Rd "House"

218 Whitewood Rd "PL"

Dwelling Units

	Westwood Station		
	10	59.8	59.8
	56.5	56.5	0.0
# DUs			
Min			
Avg			
Max			
dB			
dB			
dB			
All Selected	81	1	0.0
All Impacted	82	1	0.0
All that meet NR Goal			

RESULTS: SOUND LEVELS

Tech Environmental
RTC

RESULTS: SOUND LEVELS
PROJECT/CONTRACT:

RUN:

BARRIER DESIGN:

Westwood Station

2013 - PM - Run-1

INPUT HEIGHTS

ATMOSPHERICS:

68 deg F, 50% RH

Westwood Station

5 April 2007

TNM 2.5

Calculated with TNM 2.5

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with approval of FHWA.

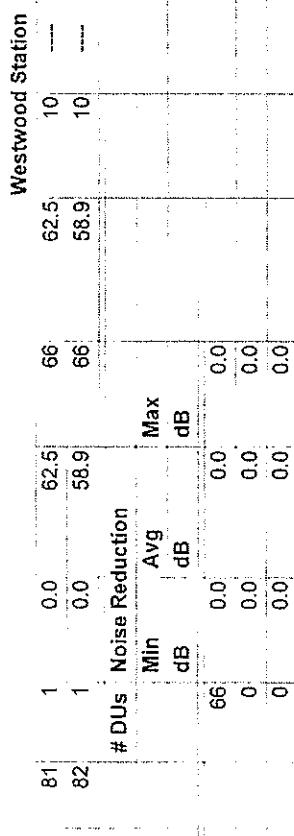
Receiver Name	No.	#DUs	No Barrier			With Barrier			Calculated minus Goal dB
			dBA L _{Aeq1h}	dBA L _{Aeq1h} Calculated	dBA Crit'n Sub'l Inc	dBA L _{Aeq1h} Calculated	dBA L _{Aeq1h} Impact	dBA L _{Aeq1h} Noise Reduction	
190 Partridge Dr "House"	5	1	0.0	49.4	66	49.4	10	49.4	0.0
190 Partridge Dr "PL"	7	1	0.0	47.4	66	47.4	10	47.4	0.0
180 Partridge Dr "House"	9	1	0.0	50.0	66	50.0	10	50.0	0.0
180 Partridge Dr "PL"	10	1	0.0	47.5	66	47.5	10	47.5	0.0
170 Partridge Dr "House"	12	1	0.0	49.3	66	49.3	10	49.3	0.0
170 Partridge Dr "PL"	15	1	0.0	49.7	66	49.7	10	49.7	0.0
160 Partridge Dr "House"	16	1	0.0	48.9	66	48.9	10	48.9	0.0
160 Partridge Dr "PL"	17	1	0.0	49.0	66	49.0	10	49.0	0.0
150 Partridge Dr "House"	18	1	0.0	48.2	66	48.2	10	48.2	0.0
150 Partridge Dr "PL"	19	1	0.0	48.6	66	48.6	10	48.6	0.0
138 Partridge Dr "House"	21	1	0.0	47.4	66	47.4	10	47.4	0.0
138 Partridge Dr "PL"	22	1	0.0	45.2	66	45.2	10	45.2	0.0
126 Partridge Dr "House"	23	1	0.0	45.4	66	45.4	10	45.4	0.0
126 Partridge Dr "PL"	24	1	0.0	40.5	66	40.5	10	40.5	0.0
10 Peartree Dr "House"	27	1	0.0	47.2	66	47.2	10	47.2	0.0
10 Peartree Dr "PL"	28	1	0.0	47.8	66	47.8	10	47.8	0.0
90 Peartree Dr "House"	29	1	0.0	47.5	66	47.5	10	47.5	0.0
90 Peartree Dr "PL"	30	1	0.0	48.6	66	48.6	10	48.6	0.0
80 Peartree Dr "House"	31	1	0.0	48.1	66	48.1	10	48.1	0.0
80 Peartree Dr "PL"	32	1	0.0	49.0	66	49.0	10	49.0	0.0
70 Peartree Dr "House"	33	1	0.0	48.7	66	48.7	10	48.7	0.0
70 Peartree Dr "PL"	34	1	0.0	49.4	66	49.4	10	49.4	0.0
60 Peartree Dr "House"	35	1	0.0	48.8	66	48.8	10	48.8	0.0

RESULTS: SOUND LEVELS

RESULTS: SOUND LEVELS		Westwood Station									
		49.8	10	—	49.8	10	—	49.8	10	—	49.8
60 Peartree Dr "PL"	1	0.0	49.8	66	49.4	66	49.4	66	49.4	66	49.4
50 Peartree Dr "House"	1	0.0	49.4	66	49.8	66	49.8	66	49.8	66	49.8
50 Peartree Dr "PL"	1	0.0	49.8	66	49.7	66	49.7	66	49.7	66	49.7
40 Peartree Dr "House"	1	0.0	49.7	66	50.3	66	50.3	66	50.3	66	50.3
40 Peartree Dr "PL"	1	0.0	50.3	66	50.2	66	50.2	66	50.2	66	50.2
30 Peartree Dr "House"	1	0.0	50.5	66	50.5	66	50.5	66	50.5	66	50.5
30 Peartree Dr "PL"	1	0.0	50.7	66	50.7	66	50.7	66	50.7	66	50.7
20 Peartree Dr "House"	1	0.0	50.3	66	50.3	66	50.3	66	50.3	66	50.3
20 Peartree Dr "PL"	1	0.0	50.2	66	50.2	66	50.2	66	50.2	66	50.2
10 Peartree Dr "House"	1	0.0	51.6	66	51.6	66	51.6	66	51.6	66	51.6
10 Peartree Dr "PL"	1	0.0	50.0	66	50.0	66	50.0	66	50.0	66	50.0
209 Whitewood Rd "House"	1	0.0	58.9	66	58.9	66	58.9	66	58.9	66	58.9
209 Whitewood Rd "PL"	1	0.0	58.6	66	58.6	66	58.6	66	58.6	66	58.6
197 Whitewood Rd "House"	1	0.0	57.4	66	57.4	66	57.4	66	57.4	66	57.4
197 Whitewood Rd "PL"	1	0.0	57.0	66	57.0	66	57.0	66	57.0	66	57.0
183 Whitewood Rd "House"	1	0.0	56.2	66	56.2	66	56.2	66	56.2	66	56.2
183 Whitewood Rd "PL"	1	0.0	54.6	66	54.6	66	54.6	66	54.6	66	54.6
171 Whitewood Rd "House"	1	0.0	55.3	66	55.3	66	55.3	66	55.3	66	55.3
171 Whitewood Rd "PL"	1	0.0	53.6	66	53.6	66	53.6	66	53.6	66	53.6
159 Whitewood Rd "House"	1	0.0	53.9	66	53.9	66	53.9	66	53.9	66	53.9
159 Whitewood Rd "PL"	1	0.0	52.8	66	52.8	66	52.8	66	52.8	66	52.8
147 Whitewood Rd "House"	1	0.0	52.9	66	52.9	66	52.9	66	52.9	66	52.9
147 Whitewood Rd "PL"	1	0.0	51.1	66	51.1	66	51.1	66	51.1	66	51.1
135 Whitewood Rd "House"	1	0.0	52.6	66	52.6	66	52.6	66	52.6	66	52.6
135 Whitewood Rd "PL"	1	0.0	50.9	66	50.9	66	50.9	66	50.9	66	50.9
210 Whitewood Rd "House"	1	0.0	57.6	66	57.6	66	57.6	66	57.6	66	57.6
210 Whitewood Rd "PL"	1	0.0	55.2	66	55.2	66	55.2	66	55.2	66	55.2
186 Whitewood Rd "House"	1	0.0	56.0	66	56.0	66	56.0	66	56.0	66	56.0
186 Whitewood Rd "PL"	1	0.0	52.8	66	52.8	66	52.8	66	52.8	66	52.8
164 Whitewood Rd "House"	1	0.0	55.4	66	55.4	66	55.4	66	55.4	66	55.4
164 Whitewood Rd "PL"	1	0.0	53.4	66	53.4	66	53.4	66	53.4	66	53.4
118 Juniper Ridge Rd "House"	1	0.0	57.1	66	57.1	66	57.1	66	57.1	66	57.1
106 Juniper Ridge Rd "PL"	1	0.0	57.4	66	57.4	66	57.4	66	57.4	66	57.4
95 Juniper Ridge Rd "House"	1	0.0	54.5	66	54.5	66	54.5	66	54.5	66	54.5
95 Juniper Ridge Rd "PL"	1	0.0	59.3	66	59.3	66	59.3	66	59.3	66	59.3
79 Juniper Ridge Rd "House"	1	0.0	58.1	66	58.1	66	58.1	66	58.1	66	58.1
79 Juniper Ridge Rd "PL"	1	0.0	57.6	66	57.6	66	57.6	66	57.6	66	57.6
385 Blue Hill Dr "House"	1	0.0	61.7	66	61.7	66	61.7	66	61.7	66	61.7
385 Blue Hill Dr "PL"	1	0.0	60.0	66	60.0	66	60.0	66	60.0	66	60.0

RESULTS: SOUND LEVELS

218 Whitewood Rd "House"	81	1	0.0	62.5	66	62.5	62.5	0.0	0.0	8	-8.0
218 Whitewood Rd "PL"	82	1	0.0	58.9	66	58.9	58.9	0.0	0.0	8	-8.0
Dwelling Units											
# DUs	Noise Reduction	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
All Selected		66	0.0	0.0	66	0.0	0.0	66	0.0	0.0	66
All Impacted		0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
All that meet NR Goal		0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0



RESULTS: SOUND LEVELS

Tech Environmental
RTC

PROJECT/CONTRACT:
RUN:

BARRIER DESIGN:

ATMOSPHERICS:

Westwood Station
2013 - SAT - Run-1
INPUT HEIGHTS

68 deg F, 50% RH

Westwood Station

5 April 2007
TNM 2.5

Calculated with TNM 2.5

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing L _{Aeq1h}	No Barrier		Type Impact	Sub'l Inc	With Barrier		Calculated Noise Reduction	Calculated Goal	Calculated minus Goal
				L _{Aeq1h} Calculated	Crit'n			Increase over existing L _{Aeq1h}	Calculated	Crit'h	dB	dB
190 Partridge Dr "House"	5	1	0.0	47.7	66	47.7	10	0.0	47.7	0.0	8	-8.0
190 Partridge Dr "PL"	7	1	0.0	44.9	66	44.9	10	0.0	44.9	0.0	8	-8.0
180 Partridge Dr "House"	9	1	0.0	48.6	66	48.6	10	0.0	48.6	0.0	8	-8.0
180 Partridge Dr "PL"	10	1	0.0	46.0	66	46.0	10	0.0	46.0	0.0	8	-8.0
170 Partridge Dr "House"	12	1	0.0	48.1	66	48.1	10	0.0	48.1	0.0	8	-8.0
170 Partridge Dr "PL"	15	1	0.0	48.4	66	48.4	10	0.0	48.4	0.0	8	-8.0
160 Partridge Dr "House"	16	1	0.0	47.8	66	47.8	10	0.0	47.8	0.0	8	-8.0
160 Partridge Dr "PL"	17	1	0.0	48.0	66	48.0	10	0.0	48.0	0.0	8	-8.0
150 Partridge Dr "House"	18	1	0.0	47.2	66	47.2	10	0.0	47.2	0.0	8	-8.0
150 Partridge Dr "PL"	19	1	0.0	47.7	66	47.7	10	0.0	47.7	0.0	8	-8.0
138 Partridge Dr "House"	21	1	0.0	46.6	66	46.6	10	0.0	46.6	0.0	8	-8.0
138 Partridge Dr "PL"	22	1	0.0	44.4	66	44.4	10	0.0	44.4	0.0	8	-8.0
126 Partridge Dr "House"	23	1	0.0	44.8	66	44.8	10	0.0	44.8	0.0	8	-8.0
126 Partridge Dr "PL"	24	1	0.0	39.8	66	39.8	10	0.0	39.8	0.0	8	-8.0
100 Peartree Dr "House"	27	1	0.0	46.5	66	46.5	10	0.0	46.5	0.0	8	-8.0
100 Peartree Dr "PL"	28	1	0.0	47.1	66	47.1	10	0.0	47.1	0.0	8	-8.0
90 Peartree Dr "House"	29	1	0.0	46.7	66	46.7	10	0.0	46.7	0.0	8	-8.0
90 Peartree Dr "PL"	30	1	0.0	47.7	66	47.7	10	0.0	47.7	0.0	8	-8.0
80 Peartree Dr "House"	31	1	0.0	47.2	66	47.2	10	0.0	47.2	0.0	8	-8.0
80 Peartree Dr "PL"	32	1	0.0	48.0	66	48.0	10	0.0	48.0	0.0	8	-8.0
70 Peartree Dr "House"	33	1	0.0	47.8	66	47.8	10	0.0	47.8	0.0	8	-8.0
70 Peartree Dr "PL"	34	1	0.0	48.3	66	48.3	10	0.0	48.3	0.0	8	-8.0
60 Peartree Dr "House"	35	1	0.0	47.8	66	47.8	10	0.0	47.8	0.0	8	-8.0

RESULTS: SOUND LEVELS

RESULTS: SOUND LEVELS		Westwood Station									
60	Peartree Dr "PL"	0.0	48.6	0.0	48.6	0.0	48.6	0.0	48.6	0.0	-8.0
50	Peartree Dr "House"	0.0	48.6	0.0	48.6	0.0	48.6	0.0	48.6	0.0	-8.0
50	Peartree Dr "PL"	0.0	48.6	0.0	48.6	0.0	48.6	0.0	48.6	0.0	-8.0
40	Peartree Dr "House"	0.0	48.7	0.0	48.7	0.0	48.7	0.0	48.7	0.0	-8.0
40	Peartree Dr "PL"	0.0	48.9	0.0	48.9	0.0	48.9	0.0	48.9	0.0	-8.0
30	Peartree Dr "House"	0.0	49.3	0.0	49.3	0.0	49.3	0.0	49.3	0.0	-8.0
30	Peartree Dr "PL"	0.0	49.7	0.0	49.7	0.0	49.7	0.0	49.7	0.0	-8.0
41	Peartree Dr "House"	0.0	49.8	0.0	49.8	0.0	49.8	0.0	49.8	0.0	-8.0
42	Peartree Dr "PL"	0.0	49.8	0.0	49.8	0.0	49.8	0.0	49.8	0.0	-8.0
43	Peartree Dr "House"	0.0	49.5	0.0	49.5	0.0	49.5	0.0	49.5	0.0	-8.0
44	Peartree Dr "PL"	0.0	49.5	0.0	49.5	0.0	49.5	0.0	49.5	0.0	-8.0
45	Peartree Dr "House"	0.0	50.8	0.0	50.8	0.0	50.8	0.0	50.8	0.0	-8.0
46	Peartree Dr "PL"	0.0	49.1	0.0	49.1	0.0	49.1	0.0	49.1	0.0	-8.0
48	Peartree Dr "House"	0.0	58.2	0.0	58.2	0.0	58.2	0.0	58.2	0.0	-8.0
49	Peartree Dr "PL"	0.0	57.5	0.0	57.5	0.0	57.5	0.0	57.5	0.0	-8.0
50	Peartree Dr "House"	0.0	56.8	0.0	56.8	0.0	56.8	0.0	56.8	0.0	-8.0
51	Peartree Dr "PL"	0.0	56.1	0.0	56.1	0.0	56.1	0.0	56.1	0.0	-8.0
52	Peartree Dr "House"	0.0	55.6	0.0	55.6	0.0	55.6	0.0	55.6	0.0	-8.0
53	Peartree Dr "PL"	0.0	53.9	0.0	53.9	0.0	53.9	0.0	53.9	0.0	-8.0
54	Peartree Dr "House"	0.0	54.7	0.0	54.7	0.0	54.7	0.0	54.7	0.0	-8.0
55	Peartree Dr "PL"	0.0	52.9	0.0	52.9	0.0	52.9	0.0	52.9	0.0	-8.0
56	Peartree Dr "House"	0.0	53.2	0.0	53.2	0.0	53.2	0.0	53.2	0.0	-8.0
57	Peartree Dr "PL"	0.0	52.1	0.0	52.1	0.0	52.1	0.0	52.1	0.0	-8.0
58	Peartree Dr "House"	0.0	52.2	0.0	52.2	0.0	52.2	0.0	52.2	0.0	-8.0
59	Peartree Dr "PL"	0.0	50.4	0.0	50.4	0.0	50.4	0.0	50.4	0.0	-8.0
60	Peartree Dr "House"	0.0	51.9	0.0	51.9	0.0	51.9	0.0	51.9	0.0	-8.0
61	Peartree Dr "PL"	0.0	50.2	0.0	50.2	0.0	50.2	0.0	50.2	0.0	-8.0
62	Peartree Dr "House"	0.0	57.2	0.0	57.2	0.0	57.2	0.0	57.2	0.0	-8.0
63	Peartree Dr "PL"	0.0	54.9	0.0	54.9	0.0	54.9	0.0	54.9	0.0	-8.0
64	Peartree Dr "House"	0.0	54.7	0.0	54.7	0.0	54.7	0.0	54.7	0.0	-8.0
65	Peartree Dr "PL"	0.0	55.5	0.0	55.5	0.0	55.5	0.0	55.5	0.0	-8.0
66	Peartree Dr "House"	0.0	52.2	0.0	52.2	0.0	52.2	0.0	52.2	0.0	-8.0
67	Peartree Dr "PL"	0.0	54.9	0.0	54.9	0.0	54.9	0.0	54.9	0.0	-8.0
68	Peartree Dr "House"	0.0	52.8	0.0	52.8	0.0	52.8	0.0	52.8	0.0	-8.0
69	Peartree Dr "PL"	0.0	56.7	0.0	56.7	0.0	56.7	0.0	56.7	0.0	-8.0
70	Peartree Dr "House"	0.0	55.2	0.0	55.2	0.0	55.2	0.0	55.2	0.0	-8.0
71	Peartree Dr "PL"	0.0	56.9	0.0	56.9	0.0	56.9	0.0	56.9	0.0	-8.0
72	Peartree Dr "House"	0.0	54.1	0.0	54.1	0.0	54.1	0.0	54.1	0.0	-8.0
73	Peartree Dr "PL"	0.0	59.2	0.0	59.2	0.0	59.2	0.0	59.2	0.0	-8.0
74	Peartree Dr "House"	0.0	57.9	0.0	57.9	0.0	57.9	0.0	57.9	0.0	-8.0
75	Peartree Dr "PL"	0.0	59.3	0.0	59.3	0.0	59.3	0.0	59.3	0.0	-8.0
76	Peartree Dr "House"	0.0	57.3	0.0	57.3	0.0	57.3	0.0	57.3	0.0	-8.0
77	Peartree Dr "PL"	0.0	61.5	0.0	61.5	0.0	61.5	0.0	61.5	0.0	-8.0
78	Peartree Dr "House"	0.0	60.1	0.0	60.1	0.0	60.1	0.0	60.1	0.0	-8.0
79	Peartree Dr "PL"	0.0	60.1	0.0	60.1	0.0	60.1	0.0	60.1	0.0	-8.0

WORK DATA\2645\TNM Modeling\Phase 1 - New Ramp SAT

RESULTS: SOUND LEVELS

218 Whitewood Rd "House"
218 Whitewood Rd "PL"

Dwelling Units

Dwelling Units	Westwood Station		
	81	82	83
# DUs	Noise Reduction	Min	Avg
All Selected	0.0	66	66
All Impacted	0.0	0.0	0.0
All that meet NRG Goal	0.0	0.0	0.0

RESULTS: SOUND LEVELS

Tech Environmental
RTC

RESULTS: SOUND LEVELS
PROJECT/CONTRACT:
RUN:
BARRIER DESIGN:

5 April 2007

TNM 2.5

Calculated with TNM 2.5

Westwood Station
2023 - AM - Run-1
INPUT HEIGHTS
ATMOSPHERICS:

68 deg F, 50% RH

Receiver
Name

	No.	#DUs	Existing L _{Aeq1h}	No Barrier		Increase over existing Critical Sub' Inc	Type Impact	Noise Reduction Calculated L _{Aeq1h}	Calculated Goal	Calculated minus Goal
				L _{Aeq1h} Calculated	Crit'n					
				dB	dB	dB	dB	dB	dB	dB
209 Whitewood Rd "House"	5	1	0.0	58.4	66	58.4	10	58.4	0.0	8
209 Whitewood Rd "PL"	7	1	0.0	58.3	66	58.3	10	58.3	0.0	8
218 Whitewood Rd "House"	9	1	0.0	60.7	66	60.7	10	60.7	0.0	8
218 Whitewood Rd "PL"	10	1	0.0	57.5	66	57.5	10	57.5	0.0	8
190 Partridge Dr "House"	96	1	0.0	44.5	66	44.5	10	44.5	0.0	8
190 Partridge Dr "PL"	97	1	0.0	42.8	66	42.8	10	42.8	0.0	8
180 Partridge Dr "House"	98	1	0.0	46.1	66	46.1	10	46.1	0.0	8
180 Partridge Dr "PL"	99	1	0.0	42.1	66	42.1	10	42.1	0.0	8
170 Partridge Dr "House"	100	1	0.0	45.6	66	45.6	10	45.6	0.0	8
170 Partridge Dr "PL"	101	1	0.0	44.1	66	44.1	10	44.1	0.0	8
160 Partridge Dr "House"	102	1	0.0	45.5	66	45.5	10	45.5	0.0	8
160 Partridge Dr "PL"	103	1	0.0	44.2	66	44.2	10	44.2	0.0	8
150 Partridge Dr "House"	104	1	0.0	44.9	66	44.9	10	44.9	0.0	8
150 Partridge Dr "PL"	105	1	0.0	44.0	66	44.0	10	44.0	0.0	8
138 Partridge Dr "House"	106	1	0.0	44.8	66	44.8	10	44.8	0.0	8
138 Partridge Dr "PL"	107	1	0.0	42.9	66	42.9	10	42.9	0.0	8
126 Partridge Dr "House"	108	1	0.0	44.0	66	44.0	10	44.0	0.0	8
126 Partridge Dr "PL"	109	1	0.0	39.5	66	39.5	10	39.5	0.0	8
100 Peartree Dr "House"	110	1	0.0	45.2	66	45.2	10	45.2	0.0	8
100 Peartree Dr "PL"	111	1	0.0	45.0	66	45.0	10	45.0	0.0	8
90 Peartree Dr "House"	112	1	0.0	45.7	66	45.7	10	45.7	0.0	8
90 Peartree Dr "PL"	113	1	0.0	45.9	66	45.9	10	45.9	0.0	8
80 Peartree Dr "House"	114	1	0.0	46.4	66	46.4	10	46.4	0.0	8

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with approval of FHWA.

RESULTS: SOUND LEVELS

Westwood Station

80 Peartree Dr "PL"	115	1	0.0	46.7	66	46.7	10	---	46.7	0.0	3	-8.0
70 Peartree Dr "House"	116	1	0.0	47.3	66	47.3	10	---	47.3	0.0	3	-8.0
70 Peartree Dr "PL"	117	1	0.0	47.1	66	47.1	10	---	47.1	0.0	3	-8.0
60 Peartree Dr "House"	118	1	0.0	47.4	66	47.4	10	---	47.4	0.0	3	-8.0
60 Peartree Dr "PL"	119	1	0.0	48.0	66	48.0	10	---	48.0	0.0	3	-8.0
50 Peartree Dr "House"	120	1	0.0	48.1	66	48.1	10	---	48.1	0.0	3	-8.0
50 Peartree Dr "PL"	121	1	0.0	48.2	66	48.2	10	---	48.2	0.0	3	-8.0
40 Peartree Dr "House"	122	1	0.0	48.4	66	48.4	10	---	48.4	0.0	3	-8.0
40 Peartree Dr "PL"	123	1	0.0	48.5	66	48.5	10	---	48.5	0.0	3	-8.0
30 Peartree Dr "House"	124	1	0.0	49.2	66	49.2	10	---	49.2	0.0	3	-8.0
30 Peartree Dr "PL"	125	1	0.0	49.0	66	49.0	10	---	49.0	0.0	3	-8.0
20 Peartree Dr "House"	126	1	0.0	48.9	66	48.9	10	---	48.9	0.0	3	-8.0
20 Peartree Dr "PL"	127	1	0.0	48.4	66	48.4	10	---	48.4	0.0	3	-8.0
10 Peartree Dr "House"	128	1	0.0	50.4	66	50.4	10	---	50.4	0.0	3	-8.0
10 Peartree Dr "PL"	129	1	0.0	48.1	66	48.1	10	---	48.1	0.0	3	-8.0
19 Whitewood Rd "House"	132	1	0.0	57.0	66	57.0	10	---	57.0	0.0	3	-8.0
19 Whitewood Rd "PL"	133	1	0.0	56.7	66	56.7	10	---	56.7	0.0	3	-8.0
183 Whitewood Rd "House"	134	1	0.0	55.6	66	55.6	10	---	55.6	0.0	3	-8.0
183 Whitewood Rd "PL"	135	1	0.0	54.2	66	54.2	10	---	54.2	0.0	3	-8.0
171 Whitewood Rd "House"	136	1	0.0	54.5	66	54.5	10	---	54.5	0.0	3	-8.0
171 Whitewood Rd "PL"	137	1	0.0	52.5	66	52.5	10	---	52.5	0.0	3	-8.0
159 Whitewood Rd "House"	138	1	0.0	52.9	66	52.9	10	---	52.9	0.0	3	-8.0
159 Whitewood Rd "PL"	139	1	0.0	51.3	66	51.3	10	---	51.3	0.0	3	-8.0
147 Whitewood Rd "House"	140	1	0.0	51.9	66	51.9	10	---	51.9	0.0	3	-8.0
147 Whitewood Rd "PL"	141	1	0.0	49.5	66	49.5	10	---	49.5	0.0	3	-8.0
135 Whitewood Rd "House"	142	1	0.0	51.7	66	51.7	10	---	51.7	0.0	3	-8.0
135 Whitewood Rd "PL"	143	1	0.0	49.5	66	49.5	10	---	49.5	0.0	3	-8.0
210 Whitewood Rd "House"	144	1	0.0	57.1	66	57.1	10	---	57.1	0.0	3	-8.0
210 Whitewood Rd "PL"	145	1	0.0	54.5	66	54.5	10	---	54.5	0.0	3	-8.0
186 Whitewood Rd "House"	146	1	0.0	55.5	66	55.5	10	---	55.5	0.0	3	-8.0
186 Whitewood Rd "PL"	147	1	0.0	52.0	66	52.0	10	---	52.0	0.0	3	-8.0
164 Whitewood Rd "House"	148	1	0.0	54.9	66	54.9	10	---	54.9	0.0	3	-8.0
164 Whitewood Rd "PL"	149	1	0.0	52.7	66	52.7	10	---	52.7	0.0	3	-8.0
118 Juniper Ridge Rd "House"	150	1	0.0	56.7	66	56.7	10	---	56.7	0.0	3	-8.0
118 Juniper Ridge Rd "PL"	151	1	0.0	55.1	66	55.1	10	---	55.1	0.0	3	-8.0
106 Juniper Ridge Rd "House"	152	1	0.0	57.2	66	57.2	10	---	57.2	0.0	3	-8.0
106 Juniper Ridge Rd "PL"	153	1	0.0	54.1	66	54.1	10	---	54.1	0.0	3	-8.0
95 Juniper Ridge Rd "House"	154	1	0.0	58.4	66	58.4	10	---	58.4	0.0	3	-8.0
95 Juniper Ridge Rd "PL"	155	1	0.0	57.2	66	57.2	10	---	57.2	0.0	3	-8.0
83 Juniper Ridge Rd "House"	156	1	0.0	58.3	66	59.3	10	---	59.3	0.0	3	-8.0

RESULTS: SOUND LEVELS

Dwelling Units	# DUs	Noise Reduction		
		Min dB	Avg dB	Max dB
83 Juniper Ridge Rd "PL"	157	1	0.0	57.1
385 Blue Hill Dr "House"	158	1	0.0	61.2
385 Blue Hill Dr "PL"	159	1	0.0	59.2
All Selected	66	0	0.0	0.0
All Impacted	0	0	0.0	0.0
All that meet NR Goal	0	0	0.0	0.0

Westwood Station

Dwelling Units	# DUs	Noise Reduction		
		Min dB	Avg dB	Max dB
83 Juniper Ridge Rd "PL"	157	1	0.0	57.1
385 Blue Hill Dr "House"	158	1	0.0	61.2
385 Blue Hill Dr "PL"	159	1	0.0	59.2
All Selected	66	0	0.0	0.0
All Impacted	0	0	0.0	0.0
All that meet NR Goal	0	0	0.0	0.0

RESULTS: SOUND LEVELS

Tech Environmental
RTC

PROJECT/CONTRACT:
RUN:
BARRIER DESIGN:

Westwood Station
2023 - PM - Run-1
INPUT HEIGHTS

ATMOSPHERICS:

68 deg F, 50% RH

Receiver
Name

No.	#DUs	Existing L _{Aeq1h}	No Barrier L _{Aeq1h} Calculated	Increase over existing Calculated	Type Crit'n Sub'l Inc	With Barrier dB	Calculated L _{Aeq1h} dB	Noise Reduction Calculated dB	Calculated minus Goal dB
209 Whitewood Rd "House"	48	1 0.0	69.5 66	59.5 59.4	10 10	59.5 59.4	0.0 0.0	0.0 0.0	8 8
209 Whitewood Rd "PL"	49	1 0.0	59.4 66	59.4 66	10 10	59.4 63.6	0.0 0.0	0.0 0.0	8 8
218 Whitewood Rd "House"	81	1 0.0	63.6 66	63.6 59.8	10 10	63.6 59.8	0.0 0.0	0.0 0.0	8 8
218 Whitewood Rd "PL"	82	1 0.0	59.8 66	59.8 44.8	10 10	59.8 44.8	0.0 0.0	0.0 0.0	8 8
190 Partridge Dr "House"	91	1 0.0	44.8 66	44.8 43.1	10 10	44.8 43.1	0.0 0.0	0.0 0.0	8 8
190 Partridge Dr "PL"	92	1 0.0	43.1 66	43.1 46.1	10 10	43.1 46.1	0.0 0.0	0.0 0.0	8 8
180 Partridge Dr "House"	93	1 0.0	46.1 66	46.1 66	10 10	46.1 42.5	0.0 0.0	0.0 42.5	8 8
180 Partridge Dr "PL"	94	1 0.0	42.5 66	42.5 66	10 10	42.5 45.6	0.0 0.0	0.0 45.6	8 8
170 Partridge Dr "House"	95	1 0.0	45.6 66	45.6 44.3	10 10	45.6 44.3	0.0 0.0	0.0 44.3	8 8
170 Partridge Dr "PL"	96	1 0.0	44.3 66	44.3 45.6	10 10	44.3 45.6	0.0 0.0	0.0 45.6	8 8
160 Partridge Dr "House"	97	1 0.0	45.6 66	45.6 44.1	10 10	45.6 44.1	0.0 0.0	0.0 44.1	8 8
160 Partridge Dr "PL"	98	1 0.0	44.1 66	44.1 45.1	10 10	44.1 45.1	0.0 0.0	0.0 45.1	8 8
150 Partridge Dr "House"	99	1 0.0	45.1 66	45.1 44.3	10 10	45.1 44.3	0.0 0.0	0.0 44.3	8 8
150 Partridge Dr "PL"	100	1 0.0	44.3 66	44.3 45.3	10 10	44.3 46.3	0.0 0.0	0.0 45.3	8 8
138 Partridge Dr "House"	101	1 0.0	45.3 66	45.3 43.5	10 10	45.3 43.5	0.0 0.0	0.0 43.5	8 8
138 Partridge Dr "PL"	102	1 0.0	43.5 66	43.5 44.5	10 10	43.5 44.5	0.0 0.0	0.0 44.5	8 8
126 Partridge Dr "House"	103	1 0.0	44.5 66	44.5 39.9	10 10	44.5 39.9	0.0 0.0	0.0 39.9	8 8
126 Partridge Dr "PL"	104	1 0.0	39.9 66	39.9 45.7	10 10	39.9 45.7	0.0 0.0	0.0 45.7	8 8
100 Peartree Dr "House"	105	1 0.0	45.7 66	45.7 45.6	10 10	45.7 45.6	0.0 0.0	0.0 45.6	8 8
100 Peartree Dr "PL"	106	1 0.0	45.6 66	45.6 46.2	10 10	45.6 46.2	0.0 0.0	0.0 46.2	8 8
90 Peartree Dr "House"	107	1 0.0	46.2 66	46.2 46.4	10 10	46.2 46.4	0.0 0.0	0.0 46.4	8 8
90 Peartree Dr "PL"	108	1 0.0	46.4 66	46.4 46.8	10 10	46.4 46.8	0.0 0.0	0.0 46.8	8 8
80 Peartree Dr "House"	109	1 0.0	46.8 66	46.8 46.8	10 10	46.8 46.8	0.0 0.0	0.0 46.8	8 8

RESULTS: SOUND LEVELS

Westwood Station

80 Peartree Dr "PL"	110	1	0.0	47.0	66	47.0	10	—	47.0	0.0	0.0	8
70 Peartree Dr "House"	111	1	0.0	47.9	66	47.9	10	—	47.9	0.0	0.0	8
70 Peartree Dr "PL"	112	1	0.0	47.6	66	47.6	10	—	47.6	0.0	0.0	8
60 Peartree Dr "House"	113	1	0.0	48.2	66	48.2	10	—	48.2	0.0	0.0	8
60 Peartree Dr "PL"	114	1	0.0	48.8	66	48.8	10	—	48.8	0.0	0.0	8
50 Peartree Dr "House"	115	1	0.0	49.0	66	49.0	10	—	49.0	0.0	0.0	8
50 Peartree Dr "PL"	116	1	0.0	49.2	66	49.2	10	—	49.2	0.0	0.0	8
40 Peartree Dr "House"	117	1	0.0	49.3	66	49.3	10	—	49.3	0.0	0.0	8
40 Peartree Dr "PL"	118	1	0.0	49.7	66	49.7	10	—	49.7	0.0	0.0	8
30 Peartree Dr "House"	119	1	0.0	50.2	66	50.2	10	—	50.2	0.0	0.0	8
30 Peartree Dr "PL"	120	1	0.0	50.3	66	50.3	10	—	50.3	0.0	0.0	8
20 Peartree Dr "House"	121	1	0.0	50.0	66	50.0	10	—	50.0	0.0	0.0	8
20 Peartree Dr "PL"	122	1	0.0	49.9	66	49.9	10	—	49.9	0.0	0.0	8
10 Peartree Dr "House"	123	1	0.0	51.3	66	51.3	10	—	51.3	0.0	0.0	8
10 Peartree Dr "PL"	124	1	0.0	49.4	66	49.4	10	—	49.4	0.0	0.0	8
197 Whitewood Rd "House"	125	1	0.0	58.0	66	58.0	10	—	58.0	0.0	0.0	8
197 Whitewood Rd "PL"	126	1	0.0	57.7	66	57.7	10	—	57.7	0.0	0.0	8
183 Whitewood Rd "House"	127	1	0.0	56.7	66	56.7	10	—	56.7	0.0	0.0	8
183 Whitewood Rd "PL"	128	1	0.0	55.3	66	55.3	10	—	55.3	0.0	0.0	8
171 Whitewood Rd "House"	129	1	0.0	55.6	66	55.6	10	—	55.6	0.0	0.0	8
171 Whitewood Rd "PL"	130	1	0.0	53.8	66	53.8	10	—	53.8	0.0	0.0	8
159 Whitewood Rd "House"	131	1	0.0	53.9	66	53.9	10	—	53.9	0.0	0.0	8
159 Whitewood Rd "PL"	132	1	0.0	52.7	66	52.7	10	—	52.7	0.0	0.0	8
147 Whitewood Rd "House"	133	1	0.0	52.8	66	52.8	10	—	52.8	0.0	0.0	8
147 Whitewood Rd "PL"	134	1	0.0	50.7	66	50.7	10	—	50.7	0.0	0.0	8
135 Whitewood Rd "House"	135	1	0.0	52.6	66	52.6	10	—	52.6	0.0	0.0	8
135 Whitewood Rd "PL"	136	1	0.0	50.6	66	50.6	10	—	50.6	0.0	0.0	8
210 Whitewood Rd "House"	137	1	0.0	58.2	66	58.2	10	—	58.2	0.0	0.0	8
210 Whitewood Rd "PL"	138	1	0.0	55.8	66	55.8	10	—	55.8	0.0	0.0	8
186 Whitewood Rd "House"	139	1	0.0	56.4	66	56.4	10	—	56.4	0.0	0.0	8
186 Whitewood Rd "PL"	140	1	0.0	53.0	66	53.0	10	—	53.0	0.0	0.0	8
164 Whitewood Rd "House"	141	1	0.0	55.7	66	55.7	10	—	55.7	0.0	0.0	8
164 Whitewood Rd "PL"	142	1	0.0	53.6	66	53.6	10	—	53.6	0.0	0.0	8
118 Juniper Ridge Rd "House"	143	1	0.0	57.6	66	57.6	10	—	57.6	0.0	0.0	8
118 Juniper Ridge Rd "PL"	144	1	0.0	56.1	66	56.1	10	—	56.1	0.0	0.0	8
106 Juniper Ridge Rd "House"	145	1	0.0	57.8	66	57.8	10	—	57.8	0.0	0.0	8
106 Juniper Ridge Rd "PL"	146	1	0.0	54.9	66	54.9	10	—	54.9	0.0	0.0	8
95 Juniper Ridge Rd "House"	147	1	0.0	60.2	66	60.2	10	—	60.2	0.0	0.0	8
95 Juniper Ridge Rd "PL"	148	1	0.0	59.0	66	59.0	10	—	59.0	0.0	0.0	8
83 Juniper Ridge Rd "House"	149	1	0.0	60.2	66	60.2	10	—	60.2	0.0	0.0	8

RESULTS: SOUND LEVELS**Westwood Station**

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	151	66	66	66
All Impacted	152	61.1	66	66
All that meet NR Goal	150	0.0	58.3	66
385 Blue Hill Dr "House"	151	0.0	62.4	66
385 Blue Hill Dr "PL"	152	0.0	61.1	66
83 Juniper Ridge Rd "PL"	150	0.0	58.3	66

RESULTS: SOUND LEVELS

Tech Environmental
RTC

PROJECT/CONTRACT:
RUN:
BARRIER DESIGN:

Westwood Station
2023 - SAT - Run-1
INPUT HEIGHTS

ATMOSPHERICS:

68 deg F, 50% RH

Westwood Station

5 April 2007

TNM 2.5

Calculated with TNM 2.5

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing L _{Aeq1h}	No Barrier L _{Aeq1h} Calculated	Increase over existing L _{Aeq1h} Calculated	Type Crit'n Sub'l Inc	With Barrier		Noise Reduction		Calculated minus Goal
							dB	dB	dB	dB	
209 Whitewood Rd "House"	48	1	0.0	58.9	66	58.9	10	.....	58.9	0.0	8
209 Whitewood Rd "PL"	49	1	0.0	58.9	66	58.9	10	.....	58.9	0.0	8
218 Whitewood Rd "House"	81	1	0.0	62.8	66	62.8	10	.....	62.8	0.0	8
218 Whitewood Rd "PL"	82	1	0.0	59.2	66	59.2	10	.....	59.2	0.0	8
190 Partridge Dr "House"	91	1	0.0	41.6	66	41.6	10	.....	41.6	0.0	8
190 Partridge Dr "PL"	92	1	0.0	37.1	66	37.1	10	.....	37.1	0.0	8
180 Partridge Dr "House"	93	1	0.0	43.6	66	43.6	10	.....	43.6	0.0	8
180 Partridge Dr "PL"	94	1	0.0	39.6	66	39.6	10	.....	39.6	0.0	8
170 Partridge Dr "House"	95	1	0.0	43.5	66	43.5	10	.....	43.5	0.0	8
170 Partridge Dr "PL"	96	1	0.0	41.0	66	41.0	10	.....	41.0	0.0	8
160 Partridge Dr "House"	97	1	0.0	43.8	66	43.8	10	.....	43.8	0.0	8
160 Partridge Dr "PL"	98	1	0.0	41.6	66	41.6	10	.....	41.6	0.0	8
150 Partridge Dr "House"	99	1	0.0	43.5	66	43.5	10	.....	43.5	0.0	8
150 Partridge Dr "PL"	100	1	0.0	42.3	66	42.3	10	.....	42.3	0.0	8
138 Partridge Dr "House"	101	1	0.0	44.2	66	44.2	10	.....	44.2	0.0	8
138 Partridge Dr "PL"	102	1	0.0	42.5	66	42.5	10	.....	42.5	0.0	8
126 Partridge Dr "House"	103	1	0.0	43.7	66	43.7	10	.....	43.7	0.0	8
126 Partridge Dr "PL"	104	1	0.0	39.0	66	39.0	10	.....	39.0	0.0	8
100 Peartree Dr "House"	105	1	0.0	44.7	66	44.7	10	.....	44.7	0.0	8
100 Peartree Dr "PL"	106	1	0.0	44.5	66	44.5	10	.....	44.5	0.0	8
90 Peartree Dr "House"	107	1	0.0	46.1	66	45.1	10	.....	45.1	0.0	8
90 Peartree Dr "PL"	108	1	0.0	45.0	66	45.0	10	.....	45.0	0.0	8
80 Peartree Dr "House"	109	1	0.0	45.6	66	45.6	10	.....	45.6	0.0	8

W:Work Data\2645\TNM Modeling\F - Sat - NEW RAMP

RESULTS: SOUND LEVELS

Westwood Station

		110	1	0.0	46.5	66	46.5	10	---	46.5	0.0	0.0	8	-8.0
80 Peartree Dr "PL"		111	1	0.0	46.6	66	46.6	10	---	46.6	0.0	0.0	8	-8.0
70 Peartree Dr "House"		112	1	0.0	46.0	66	46.0	10	---	46.0	0.0	0.0	8	-8.0
70 Peartree Dr "PL"		113	1	0.0	47.0	66	47.0	10	---	47.0	0.0	0.0	8	-8.0
60 Peartree Dr "House"		114	1	0.0	47.0	66	47.0	10	---	47.0	0.0	0.0	8	-8.0
60 Peartree Dr "PL"		115	1	0.0	47.8	66	47.8	10	---	47.8	0.0	0.0	8	-8.0
50 Peartree Dr "House"		116	1	0.0	47.7	66	47.7	10	---	47.7	0.0	0.0	8	-8.0
50 Peartree Dr "PL"		117	1	0.0	48.2	66	48.2	10	---	48.2	0.0	0.0	8	-8.0
40 Peartree Dr "House"		118	1	0.0	48.3	66	48.3	10	---	48.3	0.0	0.0	8	-8.0
40 Peartree Dr "PL"		119	1	0.0	49.1	66	49.1	10	---	49.1	0.0	0.0	8	-8.0
30 Peartree Dr "House"		120	1	0.0	49.0	66	49.0	10	---	49.0	0.0	0.0	8	-8.0
30 Peartree Dr "PL"		121	1	0.0	49.0	66	49.0	10	---	49.0	0.0	0.0	8	-8.0
20 Peartree Dr "House"		122	1	0.0	48.8	66	48.8	10	---	48.8	0.0	0.0	8	-8.0
20 Peartree Dr "PL"		123	1	0.0	50.3	66	50.3	10	---	50.3	0.0	0.0	8	-8.0
10 Peartree Dr "House"		124	1	0.0	48.2	66	48.2	10	---	48.2	0.0	0.0	8	-8.0
10 Peartree Dr "PL"		126	1	0.0	57.4	66	57.4	10	---	57.4	0.0	0.0	8	-8.0
197 Whitewood Rd "House"		127	1	0.0	57.2	66	57.2	10	---	57.2	0.0	0.0	8	-8.0
197 Whitewood Rd "PL"		128	1	0.0	56.0	66	56.0	10	---	56.0	0.0	0.0	8	-8.0
183 Whitewood Rd "House"		129	1	0.0	54.7	66	54.7	10	---	54.7	0.0	0.0	8	-8.0
183 Whitewood Rd "PL"		130	1	0.0	54.9	66	54.9	10	---	54.9	0.0	0.0	8	-8.0
171 Whitewood Rd "House"		131	1	0.0	53.1	66	53.1	10	---	53.1	0.0	0.0	8	-8.0
171 Whitewood Rd "PL"		132	1	0.0	53.2	66	53.2	10	---	53.2	0.0	0.0	8	-8.0
159 Whitewood Rd "House"		133	1	0.0	51.8	66	51.8	10	---	51.8	0.0	0.0	8	-8.0
159 Whitewood Rd "PL"		134	1	0.0	52.0	66	52.0	10	---	52.0	0.0	0.0	8	-8.0
147 Whitewood Rd "House"		136	1	0.0	49.8	66	49.8	10	---	49.8	0.0	0.0	8	-8.0
147 Whitewood Rd "PL"		137	1	0.0	51.7	66	51.7	10	---	51.7	0.0	0.0	8	-8.0
135 Whitewood Rd "House"		138	1	0.0	49.6	66	49.6	10	---	49.6	0.0	0.0	8	-8.0
135 Whitewood Rd "PL"		139	1	0.0	57.5	66	57.5	10	---	57.5	0.0	0.0	8	-8.0
210 Whitewood Rd "House"		140	1	0.0	55.1	66	55.1	10	---	55.1	0.0	0.0	8	-8.0
210 Whitewood Rd "PL"		141	1	0.0	55.7	66	55.7	10	---	55.7	0.0	0.0	8	-8.0
186 Whitewood Rd "PL"		142	1	0.0	52.4	66	52.4	10	---	52.4	0.0	0.0	8	-8.0
164 Whitewood Rd "House"		143	1	0.0	55.0	66	55.0	10	---	55.0	0.0	0.0	8	-8.0
164 Whitewood Rd "PL"		144	1	0.0	52.9	66	52.9	10	---	52.9	0.0	0.0	8	-8.0
118 Juniper Ridge Rd "House"		145	1	0.0	56.9	66	56.9	10	---	56.9	0.0	0.0	8	-8.0
118 Juniper Ridge Rd "PL"		146	1	0.0	55.4	66	55.4	10	---	55.4	0.0	0.0	8	-8.0
106 Juniper Ridge Rd "House"		147	1	0.0	57.1	66	57.1	10	---	57.1	0.0	0.0	8	-8.0
106 Juniper Ridge Rd "PL"		148	1	0.0	54.2	66	54.2	10	---	54.2	0.0	0.0	8	-8.0
95 Juniper Ridge Rd "House"		149	1	0.0	59.4	66	59.4	10	---	59.4	0.0	0.0	8	-8.0
95 Juniper Ridge Rd "PL"		150	1	0.0	58.2	66	58.2	10	---	58.2	0.0	0.0	8	-8.0
83 Juniper Ridge Rd "House"		151	1	0.0	59.5	66	59.5	10	---	59.5	0.0	0.0	8	-8.0

RESULTS: SOUND LEVELS

		Westwood Station			
		10	10	57.5	57.5
Dwelling Units	# DUs	Min	Avg	Max	Max
83 Juniper Ridge Rd "PL"	152	1	0.0	67.5	66
385 Blue Hill Dr "House"	153	1	0.0	61.6	61.6
385 Blue Hill Dr "PL"	154	1	0.0	60.3	60.3
All Selected		66	0.0	0.0	0.0
All Impacted		0	0.0	0.0	0.0
All that meet NR Goal		0	0.0	0.0	0.0

RESULTS: SOUND LEVELS

Tech Environmental
RTC

RESULTS: SOUND LEVELS
PROJECT/CONTRACT:
RUN:
BARRIER DESIGN:
ATMOSPHERICS:
68 deg F, 50% RH

Westwood Station

10 September 2007
TNM 2.5
Calculated with TNM 2.5

Westwood Station
2013 - PM - Run-1

INPUT HEIGHTS

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with approval of FHWA.

Receiver Name
No. #**DLs** Existing **No Barrier**
LAEQ1h **dB(A)** **dB(A)** **dB(A)** **dB(A)**
Calculated **CritIn** **Calculated** **CritIn**
Increase over existing Type
dB(A) **dB(A)** **dB(A)** **dB(A)**
Calculated **CritIn** **Calculated** **CritIn**
With Barrier
dB(A) **dB(A)** **dB(A)** **dB(A)**
Calculated **CritIn** **Calculated** **CritIn**
Noise Reduction
dB **dB** **dB** **dB**
Calculated **Goal** **Calculated** **Goal**
Minus
dB **dB** **dB** **dB**
Goal
dB

209 Whitewood Rd "House"	5	1	0.0	57.4	66	57.4	10	57.4	0.0	8	-8.0
209 Whitewood Rd "PL"	7	1	0.0	54.2	66	54.2	10	54.2	0.0	8	-8.0
218 Whitewood Rd "House"	9	1	0.0	60.1	66	60.1	10	60.1	0.0	8	-8.0
218 Whitewood Rd "PL"	10	1	0.0	57.2	66	57.2	10	57.2	0.0	8	-8.0
190 Partridge Dr "House"	12	1	0.0	49.3	66	49.3	10	49.3	0.0	8	-8.0
190 Partridge Dr "PL"	15	1	0.0	47.4	66	47.4	10	47.4	0.0	8	-8.0
180 Partridge Dr "House"	16	1	0.0	50.0	66	50.0	10	50.0	0.0	8	-8.0
180 Partridge Dr "PL"	17	1	0.0	47.5	66	47.5	10	47.5	0.0	8	-8.0
170 Partridge Dr "House"	18	1	0.0	49.3	66	49.3	10	49.3	0.0	8	-8.0
170 Partridge Dr "PL"	19	1	0.0	49.6	66	49.6	10	49.6	0.0	8	-8.0
160 Partridge Dr "House"	21	1	0.0	48.9	66	48.9	10	48.9	0.0	8	-8.0
160 Partridge Dr "PL"	22	1	0.0	49.0	66	49.0	10	49.0	0.0	8	-8.0
150 Partridge Dr "House"	23	1	0.0	48.2	66	48.2	10	48.2	0.0	8	-8.0
150 Partridge Dr "PL"	24	1	0.0	48.6	66	48.6	10	48.6	0.0	8	-8.0
138 Partridge Dr "House"	27	1	0.0	47.3	66	47.3	10	47.3	0.0	8	-8.0
138 Partridge Dr "PL"	28	1	0.0	45.2	66	45.2	10	45.2	0.0	8	-8.0
126 Partridge Dr "House"	29	1	0.0	45.4	66	45.4	10	45.4	0.0	8	-8.0
126 Partridge Dr "PL"	30	1	0.0	40.5	66	40.5	10	40.5	0.0	8	-8.0
100 Peartree Dr "House"	31	1	0.0	47.2	66	47.2	10	47.2	0.0	8	-8.0
100 Peartree Dr "PL"	32	1	0.0	47.8	66	47.8	10	47.8	0.0	8	-8.0
90 Peartree Dr "House"	33	1	0.0	47.5	66	47.5	10	47.5	0.0	8	-8.0
90 Peartree Dr "PL"	34	1	0.0	48.6	66	48.6	10	48.6	0.0	8	-8.0
80 Peartree Dr "House"	35	1	0.0	48.1	66	48.1	10	48.1	0.0	8	-8.0

RESULTS: SOUND LEVELS

RESULTS: SOUND LEVELS		Westwood Station									
		49.0	66	49.0	66	49.0	66	49.0	66	49.0	66
80 Peartree Dr "PL"	36	1	0.0	49.0	66	49.0	66	49.0	66	49.0	66
70 Peartree Dr "House"	37	1	0.0	48.6	66	48.6	66	48.6	66	48.6	66
70 Peartree Dr "PL"	38	1	0.0	49.3	66	49.3	66	49.3	66	49.3	66
60 Peartree Dr "House"	39	1	0.0	48.7	66	48.7	66	48.7	66	48.7	66
60 Peartree Dr "PL"	40	1	0.0	49.7	66	49.7	66	49.7	66	49.7	66
50 Peartree Dr "House"	41	1	0.0	49.4	66	49.4	66	49.4	66	49.4	66
50 Peartree Dr "PL"	42	1	0.0	49.8	66	49.8	66	49.8	66	49.8	66
40 Peartree Dr "House"	43	1	0.0	49.7	66	49.7	66	49.7	66	49.7	66
40 Peartree Dr "PL"	44	1	0.0	50.2	66	50.2	66	50.2	66	50.2	66
30 Peartree Dr "House"	45	1	0.0	50.4	66	50.4	66	50.4	66	50.4	66
30 Peartree Dr "PL"	46	1	0.0	50.7	66	50.7	66	50.7	66	50.7	66
20 Peartree Dr "House"	48	1	0.0	50.2	66	50.2	66	50.2	66	50.2	66
20 Peartree Dr "PL"	49	1	0.0	50.1	66	50.1	66	50.1	66	50.1	66
10 Peartree Dr "House"	50	1	0.0	51.5	66	51.5	66	51.5	66	51.5	66
10 Peartree Dr "PL"	51	1	0.0	49.9	66	49.9	66	49.9	66	49.9	66
197 Whitewood Rd "House"	52	1	0.0	56.6	66	56.6	66	56.6	66	56.6	66
197 Whitewood Rd "PL"	53	1	0.0	54.1	66	54.1	66	54.1	66	54.1	66
183 Whitewood Rd "House"	54	1	0.0	55.4	66	55.4	66	55.4	66	55.4	66
183 Whitewood Rd "PL"	55	1	0.0	52.4	66	52.4	66	52.4	66	52.4	66
171 Whitewood Rd "House"	56	1	0.0	55.0	66	55.0	66	55.0	66	55.0	66
171 Whitewood Rd "PL"	57	1	0.0	51.6	66	51.6	66	51.6	66	51.6	66
159 Whitewood Rd "House"	58	1	0.0	53.6	66	53.6	66	53.6	66	53.6	66
159 Whitewood Rd "PL"	59	1	0.0	52.4	66	52.4	66	52.4	66	52.4	66
147 Whitewood Rd "House"	60	1	0.0	52.7	66	52.7	66	52.7	66	52.7	66
147 Whitewood Rd "PL"	61	1	0.0	50.9	66	50.9	66	50.9	66	50.9	66
135 Whitewood Rd "House"	63	1	0.0	52.5	66	52.5	66	52.5	66	52.5	66
135 Whitewood Rd "PL"	64	1	0.0	50.8	66	50.8	66	50.8	66	50.8	66
210 Whitewood Rd "House"	65	1	0.0	57.0	66	57.0	66	57.0	66	57.0	66
210 Whitewood Rd "PL"	66	1	0.0	54.2	66	54.2	66	54.2	66	54.2	66
186 Whitewood Rd "House"	67	1	0.0	55.5	66	55.5	66	55.5	66	55.5	66
186 Whitewood Rd "PL"	68	1	0.0	51.8	66	51.8	66	51.8	66	51.8	66
164 Whitewood Rd "House"	69	1	0.0	55.1	66	55.1	66	55.1	66	55.1	66
164 Whitewood Rd "PL"	70	1	0.0	53.0	66	53.0	66	53.0	66	53.0	66
118 Juniper Ridge Rd "House"	71	1	0.0	56.7	66	56.7	66	56.7	66	56.7	66
118 Juniper Ridge Rd "PL"	72	1	0.0	55.1	66	55.1	66	55.1	66	55.1	66
106 Juniper Ridge Rd "House"	73	1	0.0	57.2	66	57.2	66	57.2	66	57.2	66
106 Juniper Ridge Rd "PL"	74	1	0.0	54.3	66	54.3	66	54.3	66	54.3	66
95 Juniper Ridge Rd "House"	75	1	0.0	57.1	66	57.1	66	57.1	66	57.1	66
95 Juniper Ridge Rd "PL"	76	1	0.0	59.4	66	59.4	66	59.4	66	59.4	66
83 Juniper Ridge Rd "House"	77	1	0.0	58.5	66	58.5	66	58.5	66	58.5	66
83 Juniper Ridge Rd "PL"	78	1	0.0	57.2	66	57.2	66	57.2	66	57.2	66

RESULTS: SOUND LEVELS

RESULTS: SOUND LEVELS		Westwood Station					
Dwelling Units	# DUS	Noise Reduction	Max dB	61.2	61.2	61.2	-8.0
			dB	10	10	10	-8.0
385 Blue Hill Dr "House"	81	1	0.0	61.2	61.2	61.2	-8.0
385 Blue Hill Dr "PL"	82	1	0.0	59.3	59.3	59.3	-8.0
All Selected				0.0	0.0	0.0	0.0
All Impacted				0.0	0.0	0.0	0.0
All that meet NR Goal				0.0	0.0	0.0	0.0

W:\Work Data\2000 - 2800 Projects\2645\TNM Modeling\Phase 1 090707

RESULTS: SOUND LEVELS

	Westwood Station									
	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
80 Peartree Dr "PL"	110	1	0.0	47.0	66	47.8	10	47.8	0.0	8
70 Peartree Dr "House"	111	1	0.0	47.8	66	47.8	10	47.8	0.0	-8.0
70 Peartree Dr "PL"	112	1	0.0	47.6	66	47.6	10	47.6	0.0	8
60 Peartree Dr "House"	113	1	0.0	48.2	66	48.2	10	48.2	0.0	-8.0
60 Peartree Dr "PL"	114	1	0.0	48.7	66	48.7	10	48.7	0.0	-8.0
50 Peartree Dr "House"	115	1	0.0	49.0	66	49.0	10	49.0	0.0	-8.0
50 Peartree Dr "PL"	116	1	0.0	49.2	66	49.2	10	49.2	0.0	-8.0
40 Peartree Dr "House"	117	1	0.0	49.3	66	49.3	10	49.3	0.0	-8.0
40 Peartree Dr "PL"	118	1	0.0	49.7	66	49.7	10	49.7	0.0	-8.0
30 Peartree Dr "House"	119	1	0.0	50.1	66	50.1	10	50.1	0.0	-8.0
30 Peartree Dr "PL"	120	1	0.0	50.2	66	50.2	10	50.2	0.0	-8.0
20 Peartree Dr "House"	121	1	0.0	49.9	66	49.9	10	49.9	0.0	-8.0
20 Peartree Dr "PL"	122	1	0.0	49.8	66	49.8	10	49.8	0.0	-8.0
10 Peartree Dr "House"	123	1	0.0	51.2	66	51.2	10	51.2	0.0	-8.0
10 Peartree Dr "PL"	124	1	0.0	49.3	66	49.3	10	49.3	0.0	-8.0
197 Whitewood Rd "House"	125	1	0.0	57.1	66	57.1	10	57.1	0.0	-8.0
197 Whitewood Rd "PL"	126	1	0.0	54.7	66	54.7	10	54.7	0.0	-8.0
183 Whitewood Rd "House"	127	1	0.0	55.8	66	55.8	10	55.8	0.0	-8.0
183 Whitewood Rd "PL"	128	1	0.0	53.0	66	53.0	10	53.0	0.0	-8.0
171 Whitewood Rd "House"	129	1	0.0	55.2	66	55.2	10	55.2	0.0	-8.0
171 Whitewood Rd "PL"	130	1	0.0	51.8	66	51.8	10	51.8	0.0	-8.0
159 Whitewood Rd "House"	131	1	0.0	53.6	66	53.6	10	53.6	0.0	-8.0
159 Whitewood Rd "PL"	132	1	0.0	52.2	66	52.2	10	52.2	0.0	-8.0
147 Whitewood Rd "House"	133	1	0.0	52.6	66	52.6	10	52.6	0.0	-8.0
147 Whitewood Rd "PL"	134	1	0.0	50.5	66	50.5	10	50.5	0.0	-8.0
135 Whitewood Rd "House"	135	1	0.0	52.4	66	52.4	10	52.4	0.0	-8.0
135 Whitewood Rd "PL"	136	1	0.0	50.3	66	50.3	10	50.3	0.0	-8.0
210 Whitewood Rd "House"	137	1	0.0	57.5	66	57.5	10	57.5	0.0	-8.0
210 Whitewood Rd "PL"	138	1	0.0	54.7	66	54.7	10	54.7	0.0	-8.0
186 Whitewood Rd "House"	139	1	0.0	55.8	66	55.8	10	55.8	0.0	-8.0
186 Whitewood Rd "PL"	140	1	0.0	52.1	66	52.1	10	52.1	0.0	-8.0
164 Whitewood Rd "House"	141	1	0.0	55.3	66	55.3	10	55.3	0.0	-8.0
164 Whitewood Rd "PL"	142	1	0.0	53.0	66	53.0	10	53.0	0.0	-8.0
118 Juniper Ridge Rd "House"	143	1	0.0	57.1	66	57.1	10	57.1	0.0	-8.0
118 Juniper Ridge Rd "PL"	144	1	0.0	55.5	66	55.5	10	55.5	0.0	-8.0
106 Juniper Ridge Rd "House"	145	1	0.0	57.5	66	57.5	10	57.5	0.0	-8.0
106 Juniper Ridge Rd "PL"	146	1	0.0	54.6	66	54.6	10	54.6	0.0	-8.0
95 Juniper Ridge Rd "House"	147	1	0.0	59.3	66	59.3	10	59.3	0.0	-8.0
95 Juniper Ridge Rd "PL"	148	1	0.0	57.7	66	57.7	10	57.7	0.0	-8.0
83 Juniper Ridge Rd "House"	149	1	0.0	59.9	66	59.9	10	59.9	0.0	-8.0
83 Juniper Ridge Rd "PL"	150	1	0.0	57.8	66	57.8	10	57.8	0.0	-8.0

RESULTS: SOUND LEVELS

385 Blue Hill Dr "House"		151	1	0.0	61.8	66	61.8	0.0	60.2	10	Westwood Station
Dwelling Units	# DUs	Noise Reduction									
		Min	Avg		Max						
		dB	dB		dB						
All Selected	152	66	0.0		0.0						
All Impacted		0	0.0		0.0						
All that meet NR Goal		0	0.0		0.0						

RESULTS: NOISE REDUCTION

385 Blue Hill Dr "House"		151	1	0.0	61.8	66	61.8	0.0	60.2	10	Westwood Station
Dwelling Units	# DUs	Noise Reduction									
		Min	Avg		Max						
		dB	dB		dB						
All Selected	152	66	0.0		0.0						
All Impacted		0	0.0		0.0						
All that meet NR Goal		0	0.0		0.0						

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