

Westshore Regional Multimodal Center
 Noise Analysis Screening
 Technical Memorandum
WPI Segment No: 415348-1

Noise Assessment Methodology

The noise assessment procedures documented in *Transit Noise and Vibration Impact Assessment* (US Department of Transportation, Office of Planning and Environment, Federal Transit Administration, Washington, DC, May 2006) were applied to the proposed recommended site, Site C, for the Westshore Regional Multimodal Center (WRMC) (see **Figure 1**). The procedures identify land uses to be considered in a noise assessment, establish noise metrics to be used and provide a Noise Screening Procedure for evaluating potential noise impacts associated with a proposed transit facility.

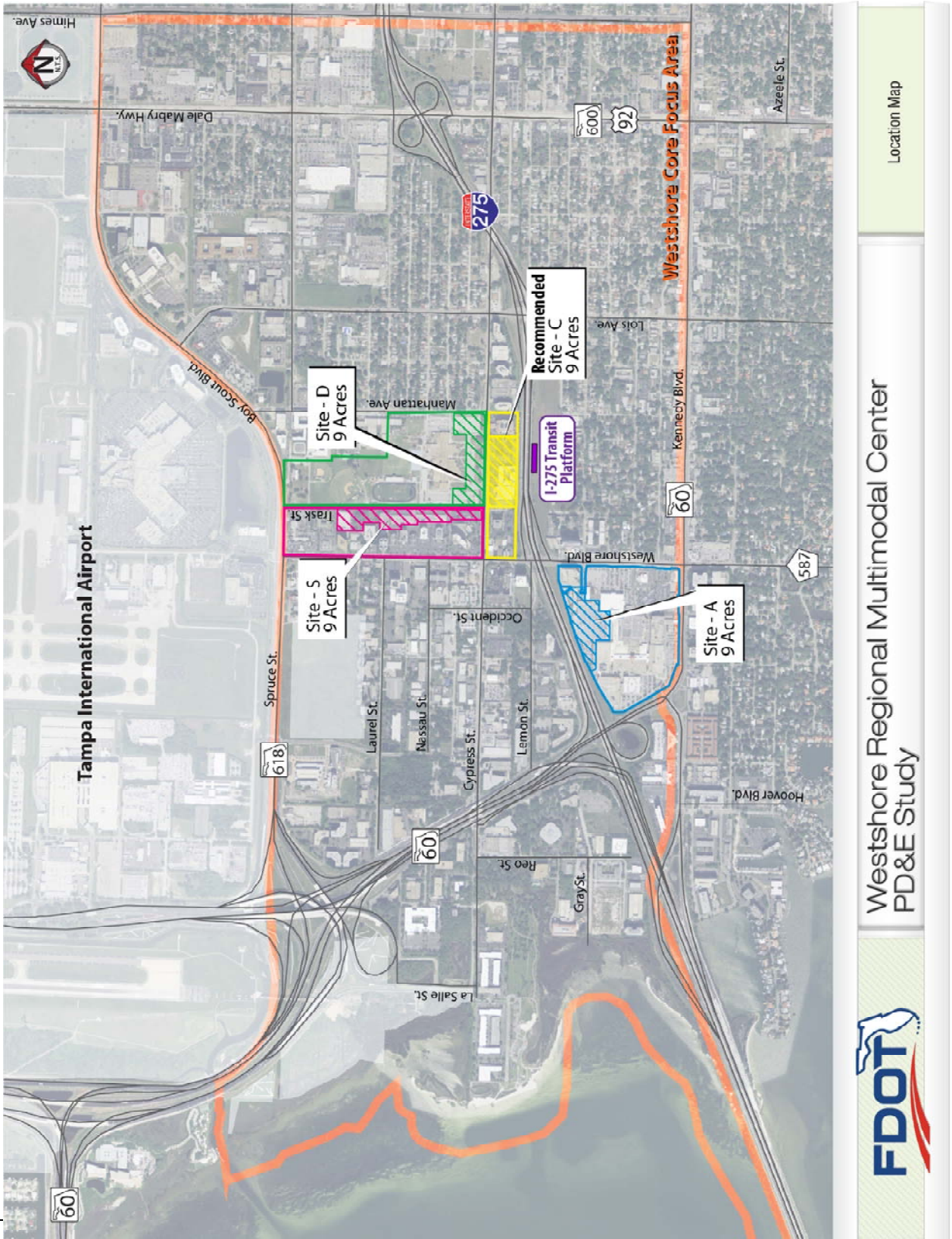
Noise levels are reported as decibels (dB) using an A-weighted scale (dBA). The A-weighted scale most closely approximates the range of frequencies a human can hear. The noise metric to be used is either the hourly equivalent noise level [Leq(h)] or day-night noise level (Ldn) depending on the land use category. Land uses to be considered are provided in **Table 1**.

Table 1
Land Use Categories and Metrics for Transit Noise Impact Criteria

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor Leq(h)	Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor Ldn	Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor Leq(h)	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

Source: *Transit Noise and Vibration Impact Assessment* (May 2006)

Figure 1 – Location Map



Westshore Regional Multimodal Center
PD&E Study

Location Map

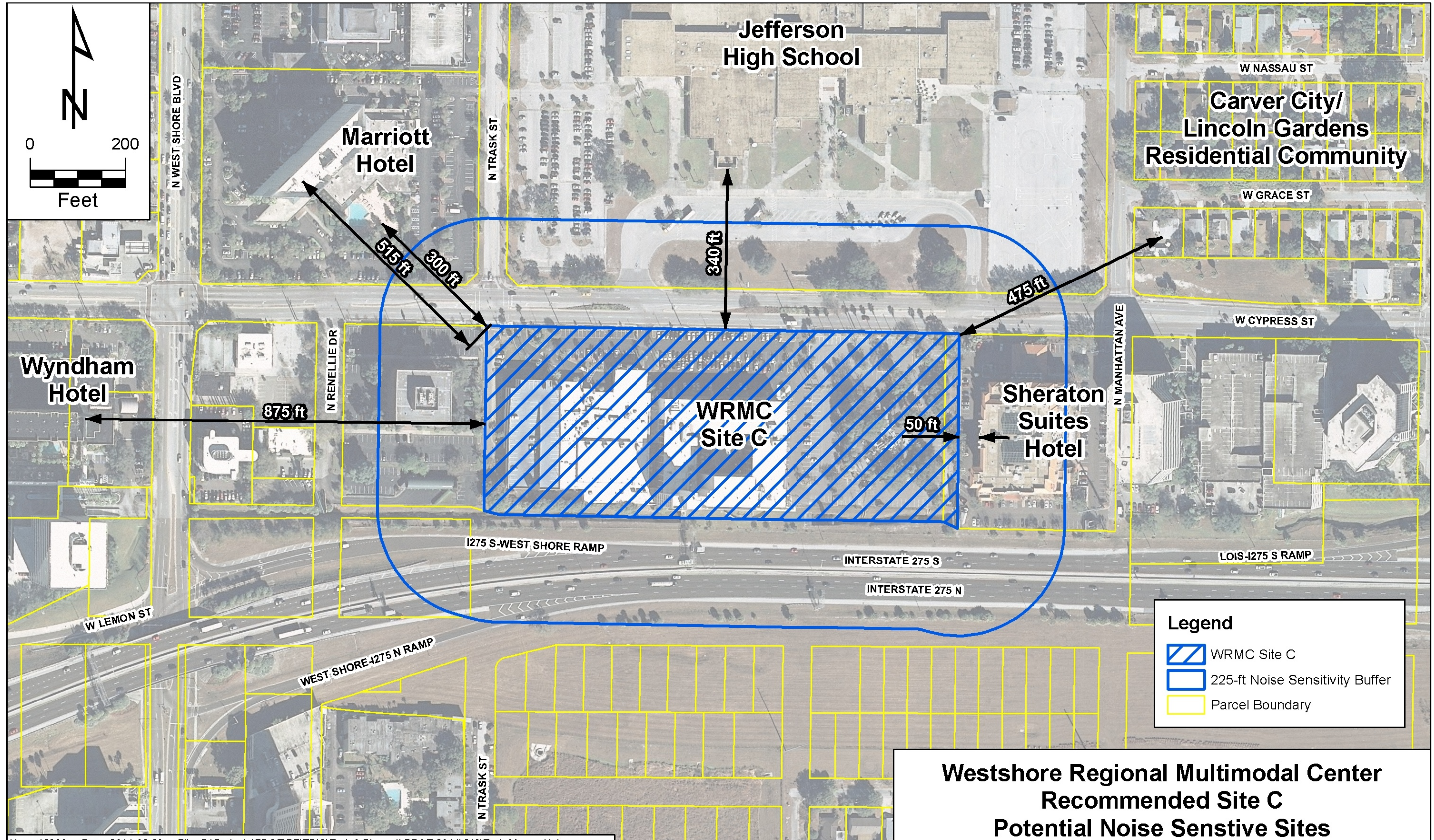
Noise Assessment Results

Noise sensitive land uses in closest proximity to the recommended WRMC Site C include guest rooms at the Wyndham Hotel to the west (Land Use Category 2), the swimming pool and guest rooms at the Marriott Hotel to the northwest (Land Use Categories 2 and 3), Jefferson High School to the north (Land Use Category 3), the Carver City/Lincoln Gardens residential community to the northeast (Land Use Category 2) and guests rooms at the Sheraton Suites Hotel to the east (Land Use Category 2). Interstate 275, which is not noise sensitive, borders the recommended WRMC Site C to the south.

The noise assessment procedures documented in *Transit Noise and Vibration Impact Assessment* (May 2006) include a Noise Screening Procedure. The screening procedure provides distances which were developed using relatively high-capacity scenarios for a given project type. Therefore, the screening distances are conservatively large. For a transit center, the screening distance is 225 feet (ft) if the noise path is unobstructed and 150 ft if the noise path is obstructed (e.g., intervening buildings). If a noise sensitive site is not within the screening distance, then no further noise analysis is needed for that particular sensitive site. Using an even more conservative approach the screening distance is measured from the boundary of the recommended WRMC Site C. All noise caused by operations at the transit center will actually occur somewhere within the boundaries of the proposed project site even further away from noise sensitive sites. The results for each of the noise sensitive land uses are as follows (See **Figure 2**):

- **Wyndham Hotel** – Guest rooms in the Wyndham Hotel are located approximately 875 ft or more from the western boundary of the recommended WRMC Site C. The distances between the recommended site and guest rooms at the Wyndham Hotel are greater than the screening distances. Therefore, no further noise analysis is needed.
- **Marriott Hotel** – The outdoor swimming pool deck at the Marriott Hotel is located approximately 300 ft from the northwest corner of the recommended WRMC Site C. The distances to guest rooms are even further at 515 ft or more. The distances between the recommended site and noise sensitive guest facilities at the Marriott Hotel are greater than the screening distances. Therefore, no further noise analysis is needed.
- **Jefferson High School** – The school building is located 340 ft or more from the northern boundary of the recommended WRMC Site C. School sports fields are located even further north behind the school building. The distances between the recommended site and Jefferson High School are greater than the screening distances. Therefore, no further noise analysis is needed.
- **Carver City/Lincoln Gardens Residential Community** – The nearest residence is located approximately 475 ft from the northeast corner of the recommended WRMC Site C. The distance between the recommended site and nearest residence is greater than the screening distances. Therefore, no further noise analysis is needed.

Figure 1 – Noise Sensitive Sites



- **Sheraton Suites Hotel** – Guest rooms in the Sheraton Suites Hotel are located approximately 50 ft from the eastern boundary of the recommended WRMC Site C. The distances between the recommended site and guest rooms at the Sheraton Suites Hotel are less than the screening distances. Consequently, the Sheraton Suites Hotel will need to be evaluated further for potential noise impacts.

Conclusions

Applying analysis procedures documented in *Transit Noise and Vibration Impact Assessment* (May 2006), noise sensitive sites are located to the west, northwest, north, northeast and east of the recommended WRMC Site C. For noise sensitive land uses located west, northwest, north and northeast of the WRMC Site C, the distance between any noise sensitive site and nearest boundary of the recommended site is greater than the conservative screening distances for a transit center. Therefore, no further analysis of noise that would be generated during operation of the WRMC Site C is needed for noise sensitive sites located to the west, northwest, north or northeast.

The distance between guest rooms at the Sheraton Suites Hotel and recommended WRMC Site C is less than the conservative screening distances for a transit center. Therefore, a commitment is made to further evaluate potential noise impacts at the Sheraton Suites Hotel once a more detailed site plan for the recommended WRMC Site C is developed in the design phase. If needed, the noise analysis for the guest rooms at the Sheraton Suites Hotel will be refined using the General Noise Assessment procedure documented in *Transit Noise and Vibration Impact Assessment* (May 2006).