



AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS
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4 April 2019

Mr. Dexter Legg, Chair
City of Portsmouth Planning Board
1 Junkins Avenue
Portsmouth, NH 03801

**RE: Portsmouth Maple Masjid, 686 Maplewood Avenue
Highway Noise Overlay District (HNOD), Conditional Use Permit Application**

Chairman Legg and Planning Board Members;

On behalf of Portsmouth Maple Masjid, we hereby submit our Highway Noise Overlay District Application narrative for a conditional use permit application to the Planning Board.

Accompanying the Narrative is the "Environmental Traffic Noise Impact Assessment" report provided by Acoustonica LCC, dated February 11, 2019.

Project Criteria:

The City Portsmouth, New Hampshire Zoning Ordinance (Section 10.670, Highway Noise Overlay District) requires that the indoor noise level during the loudest traffic hour sound level shall not exceed 55 dBA for places of assembly and that outdoor activity areas shall not exceed 65 dBA at the edge of the activity area.

Highway Noise Overlay District Conditional Use Permit Narrative:

Acoustonica, LLC, performed an acoustical evaluation for the proposed Portsmouth Maple Masjid in Portsmouth, NH. The project is to be located at 686 Maplewood Avenue, a site that is within the Highway Noise Overlay District.

The purpose of the attached report is to assess the noise impact on the proposed property, determine the noise environment at the proposed site, compare the noise environment with applicable standards, and propose mitigation measures as necessary.

CONCLUSION:

Based on the Acoustonica LLC report recommendations, which the applicant will follow, the interior noise level is expected to be below the 55 dBA with the installation of glazing on the Southwest and Northwest facing windows with a sound transmission class range of STC 28-30. The exterior noise level at the edge of the activity is expected to be 65 dBA or below with the planting of trees at the property line.

Sincerely,

A handwritten signature in black ink, appearing to read 'Douglas J. LaRosa', with a long horizontal stroke extending to the right.

Douglas J. LaRosa, Project Manager,
Ambit Engineering

CC: Issa, Bosen and Associates, Living Spaces LLC , File

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ENVIROMENTAL TRAFFIC NOISE IMPACT ASSESMENT

FOR

**MAPLE MASJID OF PORTSMOUTH
686 MAPLEWOOD AVENUE
PORTSMOUTH, NEW HAMPSHIRE**

February 11, 2019



Prepared by: Walid Tikriti, INCE Board Certified

NOISE MEASUREMENTS AND RECOMMENDATIONS FOR THE MAPLE MASJID OF PORTSMOUTH PROJECT

Acoustonica, LLC performed acoustical evaluation for the proposed Portsmouth Maple Masjid in Portsmouth, NH. The project is to be located on 686 Maplewood Avenue.

The purpose of this report is to assess the noise impact, on the proposed property, determine the noise environment at the proposed site, compare the noise environment with applicable standards, and propose mitigation measures as necessary. This report summarizes the results of our study.

PROJECT CRITERIA

The City Portsmouth, New Hampshire zoning ordinance (Section 10.670, Highway noise overlay district) requires that the indoor noise level during the loudest traffic hour sound level shall not exceed 55 dBA.

The City of Portsmouth noise "Land Use Noise Compatibility" standards section 10.673 Table lists the required interior noise level.

The proposed use of this property is a place of worship which falls under places of assembly. Under definitions of Noise sensitive land use for places of assembly the City of Portsmouth requires that worship spaces shall have 55 dBA indoor noise level or less.

The following 10.673 standard lists the noise levels based on the property use.

10.673 Standards

Noise sensitive land uses within the Highway Noise Overlay District shall be planned, designed and constructed to comply with the following standards:

Structures and Uses	Loudest Traffic Hour Sound Level
Interior of dwelling , institutional residence or residential care facility , hospital or lodging establishment	45 dBA
Interior of other noise sensitive use	55 dBA
Uses with outdoor activity areas , measured at edge of the active use area closest to the highway	65 dBA

ONSITE NOISE MEASUREMENTS

On February 6, 2019, Acoustonica conducted onsite noise measurements at the project site. Sound readings were taken along the property line facing I-95 and around other locations at the property.

In order to capture different noise levels from different activities, measurements were taken during different periods of the day at several locations. The sound readings took place during the morning and afternoon hours.

The acquired sound data was used to evaluate the noise reduction required for the outdoor to indoor noise from the freeway traffic noise to meet the 55 dBA interior noise level criterion.

All measurements were made with a B&K 2250 Type 1 Sound Level Meter. The Serial Number of the meter is 2600505.

The exterior noise levels at the property line averaged between 64-67 dBA. The time average for each sound measurement averaged 5 minutes. The weather conditions were partly cloudy skies, temperature averaged 34 Fahrenheit wind speed averaged 3-5 MPH.

The measured noise levels at the project site were as follow:

Table 1 – Measured Noise Exposure at the project site

Location	Noise Level, Leq dBA	Noise Source Notes
686 Maplewood Ave. SW property line	67	Noise from Semi passing on I-95
686 Maplewood Ave. center of property	66	Traffic noise from I-95
686 Maplewood Ave. NW property line	64	Average traffic noise from I-95
686 Maplewood Ave.	54	Traffic along Maplewood Ave
686 Maplewood Ave.	48	Background noise level with no traffic

SITE OBSERVATIONS

- The major noise source at the property is from vehicular traffic on I-95.
- The site is shielded by several trees separating the project site and the freeway.
- Traffic along Maplewood Avenue is categorized as quiet.

RECOMMENDATIONS

The outdoor to indoor noise reduction analysis utilized the measured outdoor noise levels and the proposed building façade materials which included glass. The southwest and northwest sides of the building is considered the most noise impacted. The combined Shell Isolation Rating SIR for the building is SIR 30. This means that the building façade is able to reduce the noise by 30 dB points.

Based on our on-site measurements, the following is recommended in order to meet the 55dBA interior noise level standard required under section 10.673 by the City of Portsmouth, New Hampshire:

SOUTHWEST AND NORTHWEST ELEVATIONS

Glazing - It is recommended that the Southwest and Northwest facing windows to be sound-rated with a minimum recommended sound transmission class range STC 28-30. For building elevation, refer to architectural sheet 1 by Living Spaces, Inc. dated 1-18 -19.

EXTERIOR NOISE EXPOSURE

Based on the City of Portsmouth standard 10.673, the exterior sound level standard for outdoor activity areas, measured at the edge of the active use closest to the highway is 65 dBA. It is recommended to plant trees at the property line, this would be in addition to the existing trees, refer to photo 1 & 3. Additional planted trees would help reduce the noise level at the property and should help diffuse and reduce the overall noise exposure at the property by 3 dBA points to an average noise level of 64-65 dBA.

CONCLUSION

Based on the above recommended items, the interior noise level is expected to be below the 55 dBA. The interior noise levels following the recommendations above would comply with the limits required by the city's zoning ordinance and considered acceptable.

This concludes our report. Feel free to contact us should you have any questions or need additional information.



Photo 1 – Middle of parcel facing I-95 freeway



Photo 2 – Middle of parcel looking south towards I-95 freeway



Photo 3 – Building site facing highway



Photo 4 – Middle of parcel facing opposite to freeway.



Proposed Site Plan – Portsmouth Maple Masjid – 686 Maplewood Avenue



City of Portsmouth – Proposed Highway Noise Overlay District



Southwest Elevation – Recommended Treated Glass