

**Platinum Land, LLC Development
146th Avenue NW and Nowthen Blvd.
Ramsey, MN
Noise Study
July, 2020**

I. Project Description

Platinum Land, LLC is proposing a residential development in Ramsey, Minnesota. The proposed project location includes multifamily residences on lot locations adjacent to Nowthen Boulevard NW near its intersection with 146th Avenue. The proposed project location and layout is shown in Figure 1.

The areas for outdoor use for this proposed development are on the south side of the proposed buildings. As such the proposed buildings act as barriers and mitigate noise impacts to these areas.

Because of the potential noise impacts from Nowthen Boulevard NW traffic, the City of Ramsey has requested a noise study to evaluate the proposed project relative to Minnesota Noise Standards.

II. Minnesota Noise Standards

Minnesota Rules Chapter 7030 provide the Minnesota standards for noise. These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of health and welfare. These standards are designed to be consistent with sleep, speech, annoyance, and hearing conservation requirements for receivers within areas grouped according to land use activities. The Minnesota standards are as follows:

	<u>7:00 AM to 10:00 PM</u>		<u>10:00 PM to 7:00 AM</u>	
	L ₁₀	L ₅₀	L ₁₀	L ₅₀
NAC-1 (Residential)	65	60	55	50
NAC-2 (Commercial)	70	65	70	65
NAC-3 (Industrial)	80	75	80	75

L₁₀ means the sound level which is exceeded for 10 percent of the time for a one-hour period. L₅₀ means the sound level which is exceeded 50 percent of the time for a one-hour period. Sound levels are expressed in dBA. A dBA is a unit of sound level expressed in decibels and weighted for the purpose of determining the human response to sound.

The nighttime NAC-1 standards are designed to prevent sleep interference for people sleeping in bedrooms with partially open windows. NAC-2 nighttime standards apply to NAC-1 locations if the building is constructed in such a way that the exterior to interior sound level attenuation is at least 30 dBA and the building has year-round climate control. Buildings meeting the State building code requirements typically meet the 30 dBA exterior to interior sound level attenuation requirement.

The NAC-1 daytime standards are designed to prevent speech interference in areas for outdoor activities. Areas for outdoor activities are not allowed if these noise levels are exceeded.

III. Noise Monitoring

SBP conducted noise monitoring in order to assist in the determination of existing noise levels and to confirm the accuracy of the noise modeling. SBP conducted monitoring on July 22, 2020 at two locations near Nowthen Boulevard NW. The monitoring locations are shown in Figure 1. SBP conducted traffic counts during the monitoring.

Monitoring was conducted with a Sinus Apollo sound analyzer. The analyzer was periodically field calibrated during the testing. Monitoring was conducted consistent with MPCA procedures. Monitoring was conducted for periods of 30 minutes in length.

The following table presents the results of the noise monitoring.

Table 1
Noise Monitoring Results – July 2, 2020
Rum River Prairie Development, Ramsey, MN

Location	Time	Measured Noise Levels (dBA)		Modeled Noise Levels (dBA)		Measured vs. Modeled Noise Levels (dBA)	
		L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
M1	3:00pm to 3:30pm	62.9	56.7	63.4	55.5	0.5	-1.2
M1	3:40pm to 4:10pm	63.6	57.7	64.3	56.8	0.7	-0.9
M2	3:00pm to 3:30pm	59.5	53.0	59.9	52.7	0.4	-0.3
M2	3:40pm to 4:10pm	60.5	55.0	60.8	54.0	0.3	-1.0

The modeling results show good agreement with the monitoring results.

The monitoring data shows the site noise levels to be below the State daytime standards for each of the monitoring periods at each location.

IV. Noise Impacts - Noise Modeling Results

In order to determine the post-development noise impacts from Nowthen Boulevard, SBP used the MINNOISEV31 traffic noise model to determine daytime and nighttime peak noise hour noise levels at selected residential locations in the proposed development. MINNOISEV31 is a modified version of the FHWA noise prediction model STAMINA 2.0.

Receptor Locations

Noise impacts were modeled at 14 receptors. Seven receptors (RN1-RN7) represent the north side of each of the seven proposed residential buildings facing Nowthen Boulevard, and seven receptors (RS1-RS7) represent the outdoor use areas on the south side of the buildings. The receptor locations are shown in Figure 1.

Traffic and Peak Hour Determination

Generally, the highest hours for traffic noise impacts are when heavy truck volumes are high and there is free flowing traffic. In order to determine reasonable worst-case noise impacts on the project, SBP used the 2018 published AADT escalated to 2020 assuming a five percent annual growth rate. Heavy truck percentages were determined from the highest of the two counts conducted during the noise monitoring.

The peak hour volume for the daytime (7:00 am to 10:00 pm) noise modeling was assumed to be 8 percent of the calculated 2020 AADT. The peak-hour nighttime (10:00 pm to 7:00 am) volume (typically 6:00am to 7:00am) was assumed to be 6 percent of the calculated 2020 AADT.

Modeled Highway Noise Impacts

Tables 2 and 3 present the modeled daytime and nighttime peak hour noise level impacts at each of the 9 receptor locations.

Table 2
Daytime Peak-Hour Highway Noise Modeling Noise Impact Results¹
Platinum Land LLC Development, Ramsey, MN

Receptor	L₁₀ (dBA)	L₅₀ (dBA)
R1S	51.0	43.7
R2S	49.1	42.5
R3S	49.0	42.4
R4S	48.3	41.8
R5S	47.5	41.0
R6S	47.9	41.4
R7S	47.4	40.9

¹ Outdoor use areas are on the south side of the proposed multi-family buildings. These areas are shielded from Nowthen Boulevard traffic noise by the proposed buildings. Receptors R1S – R7S represent these outdoor use areas for each of the 7 proposed buildings. The Minnesota NAC-1 daytime noise standards are based on preventing speech interference in areas for outdoor use,

Table 3
Nighttime Peak-Hour Highway Noise Modeling Noise Impact Results
Platinum Land LLC Development, Ramsey, MN¹

Receptor	L₁₀ (dBA)²	L₅₀ (dBA)²
R1N	63.6	55.6
R2N	63.6	55.6
R3N	63.6	55.7
R4N	63.6	55.7
R5N	63.6	55.6
R6N	63.6	55.6
R7N	63.4	55.3

¹Receptors R1N – R7N represent the areas near the north edge of each the 7 proposed buildings. The Minnesota NAC-1 nighttime noise standards are based on preventing sleep interference in bedrooms with partially open windows. ²Bolded numbers exceed Minnesota NAC-1 standards for nighttime hours.

All modeled noise levels are within the Minnesota NAC-1 standard for the peak daytime hour. The modeled noise levels exceed the Minnesota NAC-1 standard for the peak nighttime hour.

The nighttime NAC-1 standards are designed to prevent sleep interference for people sleeping in bedrooms with partially open windows. NAC-2 nighttime standards apply to NAC-1 locations if the building is constructed in such a way that the exterior to interior sound level attenuation is at least 30 dBA and the building has year-round climate control. Buildings meeting the State building code requirements typically meet the 30 dBA exterior to interior sound level attenuation requirement.

All modeled nighttime impacts are within the NAC-2 standards. Therefore, assuming the proposed residences will have year-round climate control, the modeled impacts at the proposed development are within the State noise standards and no additional mitigation is required.

VI. Summary and Conclusions

Platinum Land, LLC is proposing a residential development in Ramsey, Minnesota. The proposed project location includes multifamily residences on lot locations adjacent to Nowthen Boulevard NW southeast of its intersection with 146th Avenue. The proposed project location and layout is shown in Figure 1.

The areas for outdoor use for this proposed development are on the south side of the proposed buildings. As such the proposed buildings act as barriers and mitigate noise impacts to these areas.

Because of the potential noise impacts from Nowthen Boulevard NW traffic, the City of Ramsey has requested a noise study to evaluate the proposed project relative to Minnesota Noise Standards.

This analysis demonstrates that, with the areas for outdoor use being on the south side of the proposed residential buildings, and assuming the buildings have year-round climate control, the projected noise levels are within the State standards, and no additional mitigation is required.

