



P O L Y S O N I C S

Acoustics & Technology Consulting

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To: Susi Cora
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RE SQ 75 GWU Noise impact of moving alley

Polysonics has conducted sound measurements of the alley and street activity at Sq 75 on September 5 and 6 along with site observations and vehicle counts. These measurements were made in order to analyze the noise impacts on the President Condominium associated with the proposed relocation of the north-south alley and its use for loading operations of the square and vehicular access to/from the proposed new development on Site 75A. Our preliminary results are as follows:

OBSERVATIONS AND MEASUREMENTS

- 1) The 2100 block of I Street NW is an urban environment with traffic flow averaging approximately 200 cars and 10 medium trucks per hour during business daytime hours. The traffic speed is low at about 25mph or less. Ambient traffic noise, generated from activity on 21st, 22nd and I Streets, creates a continuous back ground noise level of about 60-63 decibels "A" (60-63 dBA; dBA is the standard for environmental noise). Nearby delivery trucks passing on I Street result in noise levels up to 65 to 70dBA. This is typical for an urban environment. Sounds associated with emergency vehicles passing by the site reach levels of 80 dBA or greater and are likely associated with the Ambulatory Care Center immediately adjacent to the site or the GW Hospital, located approximately two blocks west of the site.
- 2) The existing 133' alley is on the east side of #2129 I Street (a two story town house used for offices) and to the west of #2121 I Street (Rice Hall, an 8 story office building) . Vehicular traffic in the alley is intermittent: the alley currently has about 10 cars and 5 medium trucks per hour during the day and very little traffic in the evening and night. Pedestrian traffic in the alley is considerably more frequent. The alley comes to a T behind 2121 I and 2129 I Street and then the alley continues west behind #2141 I Street (The President Condominium, an 8-story residential building).
- 3) The sound level in the alley between 2129 and 2121 is approximately 61dBA generated mostly from traffic on the public streets and other ambient city noises. The loudest noise in the alley is generated by garbage truck activity associated with dumping the dumpsters located in the alley behind 2121, 2129 and 2141, with sound levels measured at 70dBA and higher. There is also back ground noise in



the back alley associated with the air conditioning equipment of the various buildings. This level is approximately 62dBA.

- 4) Trucks pass through the alley at approximately 5 mph. The townhouse offices in 2129 I Street with windows fronting on the existing alley report that they hear truck noise at a low level from their offices. Other than this low level truck noise there appears to be no impact from noise to office workers in 2129 I Street and there are no known reported noise complaints in the present situation.
- 5) The University proposes to demolish 2129 I Street and relocate the north-south alley approximately 55' feet to the west, adjacent to the President. With this demolition, the front 1/3 portion of the east side of the President to the alley will be adjacent to the alley; the first three levels of this portion of the east façade have no windows. The back 2/3 portion of 2141's east wall is set back 8' to the west of the property line and currently has windows looking into the well between the buildings. These east facing windows and the north facing windows on the back of The President are currently exposed to existing back alley traffic and air conditioning equipment noise.
- 6) The traffic changes in the new alley are projected at: One more truck per hour and approximately 120 more cars per hour (2 cars per minute) during the rush hours and about 40 more cars per hour (2 cars every three minutes) during the rest of the day during daytime hours. Evening and nighttime traffic is low and is not anticipated to change.
- 7) The traffic noise of the alley at night is minimal since alley activity associated with the buildings in the square is not normally conducted during off-hours. The existing air conditioning and the associated noise continues through the night. Ambient street noise continues to influence general alley noise levels.
- 8) Photos are attached showing:
 - Buildings along I Street (Sq 75, 2129 the townhouses) in the center, 2141 I Street (The President) on the left, the existing alley on the right
 - The back of The President showing the back alley
 - The roof of 2129 I Street and the President just beyond
 - The space between 2129 I Street and The President up to where the buildings meet.
- 9) A sound graph of sound level vs. time is provided for the two measurement locations, M1 – On the roof at the very back of 2129 near The President facing the rear alley and M2 - outside the 2nd level window of 2129 I Street.



ANALYSIS

Our analysis, based on the noise measurements recorded during our 24-hour study period, suggests the following:

- 1) The existing traffic noise on the street near Square 75 and the alley behind 2121, 2129 and 2141 currently exceeds the noise level in the alley between 2121 and 2129 and generally masks the noise of the existing alley; traffic noise on the surrounding streets and back alley will continue to mask the noise of traffic in the alley at its new location.
- 2) The ambient noise in the back alley, including the noise generated by air conditioning units located within the alley and adjacent buildings, will continue to mask traffic noise generated in the new alley.
- 3) The volume of truck traffic in the alley will be similar to the existing condition and the level of noise generated by such truck traffic is expected to remain similar to existing conditions (that is, a level of noise that is exceeded and masked by the noise generated by street traffic).
- 4) The volume of car traffic will increase but noise associated with the increased car traffic will not generate a perceptible noise difference. Such cars are expected to travel at approximately 5mph, which generates very low level of noise (well below surrounding levels). Car traffic travelling the alley should not be perceptible from inside The President and will have no impact on existing alley noise levels.
- 5) The demolition of 2129 I Street and the relocation of the north-south alley approximately 55' to the west will not have measurable impact on sound levels within The President condominium units above what is experienced today. This is a result of existing levels of street noise (that will not change), existing ambient noise within the alley, minimal changes in truck traffic entering and servicing the alley, and low level of noise generated by vehicular traffic traversing the alley. The first three levels on the southern 1/3 of the eastern façade will have no windows facing the alley and the rear 2/3 will have a buffer of 8' to the new alley location. These factors will further assist in maintaining the same sound levels that residents experience today.

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