

# **Laurelhurst Community Club**

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April 6, 2017

Seattle Department of Planning and Development  
Attention: Nathan Torgelson, John Shaw and James Dasher  
700 5th Avenue, Suite 2000  
P.O. Box 34019  
Seattle, WA 98124-4019

Re: Comments on Major Public Project Noise Variance request from WSDOT from the City  
of Seattle for Project # 3027364  
From: The Laurelhurst Community Club (LCC)

The Laurelhurst Community Club represents over 2800 household and borders the construction of the SR520 Replacement Bridge. Our community has been actively involved in the re-build process for over 25 years, and has commented extensively in the FEIS.

More recently, Laurelhurst has endured the sounds of the demolition and construction processes of the new for these past three years. The noisy sounds travel efficiently over the waters of Lake Washington and Union Bay, directly to the residences in our neighborhood, and to the public shoreline parks and access points. The noise variance study for project #3027364 did not measure the sound at any point to the north (in Laurelhurst), but because of the topography, and proximity to the water, the noise will be heard to some degree, throughout the "Rest of the West" demolition and construction processes.

LCC received a Land Use Information Bulletin from the Department of Construction & Inspections that Washington State Department of Transportation filed an application for a Major Public Project Construction Noise Variance (MPPCNV) for the next 7 years for the build out of the final phases of the "Rest of the West" for SR520 Bridge Replacement . It includes demolition and construction in Union Bay, in and across the Montlake Cut, and though Portage Bay with hauling through Lake Washington as well.

LCC asks that the request for 7-year term for the MPPCNV from the City of Seattle be DENIED as is, and changed to lower allowed decibels and for shorter terms for the following reasons:

1. The applicant does not meet the criteria for such an unbridled, long term, and unusually high level of noise variance. The negative health impacts to nearby residents do not outweigh the short term perceived cost savings for the contractor, especially since tolling fees will take nearly 40 years to generate enough funding for the bridge completion.
2. The applicant has not demonstrated their compliance with existing codes in prior phases, and actually has had engaged in both dangerous construction incidents, and built substandard quality.
3. Other SR520 re-build impacted cities, namely the City of Medina, have not granted long term noise variances for the project, and  
Shorter term noise variance (e.g. 6 months intervals for renewals) better serve to motivate the contractor to perform noisy tasks during daylight hours, and quieter activities at night.



## Background on why elevated noise levels matter:

Noise levels in the environment have become increasingly important as density of urban populations create, and are living closer, to hearing unwanted sounds, both by day and night. Scientific research for the EPA in the mid 1970's identified the harmful effects of excess noise to humans and wildlife, and developed the standards for governmental entities which remain intact.

More recently, in July 2010, the World Health Organization (WHO) set updated standards for limiting night noise to 40 decibels (dB) in Europe.

Their report states:

" A review of available scientific research led to the following conclusions:

- Sleep is a biological necessity and disturbed sleep is associated with poor health
- There is strong evidence that night noise causes increases in heart rate, changes in sleep stage, awakening and the use of sleep aid medicine.
- There is evidence that night noise is related to an increase in hypertension, heart attack, depression, hormonal changes , fatigue and accidents."

In its analysis, the WHO proposed the night noise guideline of 40 L<sub>night</sub>, and it concluded that "Above 55 dB cardiovascular effects become a major health concern ".

In their research, Lisa Goines RN and Louis Hagler, MD, wrote in the Southern Medical Journal (2007:100(3).287-294) about the adverse health effects of noise. Their report states, " A growing body of evidence confirms that noise pollution has both temporary and long term effects on humans and other mammals by way of the endocrine and autonomic nervous systems. " and, "Apart from various effects on sleep itself, noise during sleeping causes increased blood pressure, increased heart rate, vasoconstriction, changes in respiration, cardiac arrhythmias and increased body movement". and,

"Long term psychosocial effects have been related to nocturnal noise. Noise annoyance during the night increases total noise annoyance for the following 24 hours. Particularly sensitive groups include the elderly, ... and children." They go on to explain detailed effects from lack of concentration, and elevated blood pressure and cortisol levels.

**"These effects begin to seen with long term daily exposure to noise activates the fight or flight response with noise levels above 65dB, or with acute noise exposure to levels of 80 dB or above". and "These responses suggest that one can never completely get used to night-time noise".**

In the April 3rd, 2017 New Yorker article by David Owen, he quotes David Corey MD, a neurobiology professor at Harvard Medical School, " Humans can detect a sound that vibrates our cilia by about the diameter of an atom, .. then Corey showed me an electron micrograph from the ear of a mouse that had been exposed for two hours to sounds as intense of operating a chainsaw. The cilia then looked like a tree trunk thrown around like a tornado." Exposure to very loud noise causes physiological damage to the hearing system.

Charles Liberman MD, Corey's colleague at Harvard Medical School notes, " A disturbing finding is that hearing can be damaged at decibel levels and exposure times that have traditionally been considered safe".

Thus, elevated noise levels result in damaging physiological effects and the City of Seattle should evaluate the request for a 7 year uninterrupted night (and day) noise variance with requests for 80 dB maximums in the light of the health effects to its constituents, and lower the maximum.



The detailed explanations for LCC's recommendation on the MPPCNV are as follows:

1. The applicant has not met the criteria for granting the variance

There is **no impending emergency** for the normal construction practices to be implemented which better balance the need for efficiencies from the builder with the negative health impacts on surrounding residents, being subjected to high noise levels.

In reviewing SMC 25.08.590.C, the criteria for granting a noise variance states:

C. "The Administrator may grant a variance if the Administrator finds that :

1. The noise occurring or proposed does not endanger public health or safety; and
2. The applicant demonstrates that the criteria required for the variance are met."

The applicant (WSDOT) requests that nighttime construction be allowed a 6-dBA increase over existing "hourly" noise levels.

In SMC 25.08.655.A The Criteria for an MPPCNV state:

" A. The Administrator may grant a major public project construction variance only to the extent the applicant demonstrates that compliance with (existing) levels would:

1. Be unreasonable in light of public or worker safety or cause the applicant to violate other applicable regulations, ...
2. Render the project economically or functionally unreasonable due to factors the financial cost of compliance, or the impact of complying for the duration of the project."

In their application for the MPPCNV, WSDOT recognizes that the only real benefit that they can argue is that 24/7 construction "will bring major transportation benefits and other benefits to all of the populations the completed facility would serve as quickly as possible".

WSDOT comments, "Allowing nighttime construction activities would not only allow for a more efficient and shorter construction period, it would also result in other public benefits and avoiding closures during peak travel periods" ... "The approved variance would allow for a condensed construction schedule , which would lessen the duration of construction impacts (traffic, dust, vibration and noise)".

This can be said for any public construction project, but the reality is that the funding stream has not been generated yet from tolling and bonds, which project the term over 40 years that it will take to pay for it. Even accelerated schedules would not allow the term to be much shorter for lack of funding, and the cost to the health for people does not justify excess night noise.

The Term of the requested variance is governed under SMC 25.08.655.B

B. "A major public project construction variance shall set forth the period during which the variance is effective, which period shall be the minimum necessary in the light of the standard set forth in subsection A, and the exterior sound level limits that will be in effect during the period of the variance."

WSDOT offers Exhibit 3 (in their application ), Baseline Noise Levels and Proposed Nighttime Noise Level Limits. It cites a variety of sound level assumptions and calculations to justify new allowances that range from, 78-80 dBA for the Level Hourly Limit.

The language explaining these measurements and calculations attempt to justify very loud night noise, but when you are a resident, laying in bed hearing the pounding, chopping and grinding noises, followed by loud engine noises from trucks hauling out debris, the result is interrupted sleep. Fresh air from leaving your window open on a hot night is out of the question with loud construction occurring near your residence.

Noises approaching 80 Decibels are completely intrusive, and will impair the ability to sleep (see research below)



LCC asks that the City of Seattle **deny these increases** in decibel limit because WSDOT does not meet the criteria for the variance. **Rather WSDOT only uses generalities, such as "cost saving and reduces traffic" to justify the night time noise over the 7 year period for the residents who live in very dense neighborhoods, and will hear up to 80 decibels of construction for 2,555 days from 7:00am-10:00pm before the variance and construction is completed.** The amount of day time noise that the City allows in residential locations now is **45 Decibels** . Since sound increases exponentially more than just straight percentage, and the increase in the noise variance is more than TWICE the current sound allowed in the receiving properties-unacceptable.

**The EPA nighttime noise limit is currently 45 Decibels** which WSDOT states that existing conditions already exceed right now, primarily due proximity to the existing SR520 roadway. WSDOT is requesting a nighttime construction variance to be 80 Decibels, justifying the existing loud roadway noise as a basis.

LCC would ask that the City grant night time noise variance for a maximum of 55 dBs instead, a 20% increase, which approximates the current baseline noise levels in tested sites #3 and #6. This night noise level should not be exceeded, and allows for plenty of construction activity already. (See Exhibit 3).

**2. The builder/contractor has not demonstrated compliance with existing codes, requirements** best management practices , and not proven self policing techniques work on this project. Below are eight major incidents that occurred already on the new SR520 project:

- a. May 23rd, 2012, employees on the SR520 Bridge project were caught drinking beer while they worked. Workers routinely were drinking "on the job" at taxpayers' expense.
- b. February 2013 the lack of re-bar was found to be missing on the structure and the pontoons had to be re-worked (WSDOT design flaw)
- c. September 29, 2013, a crane broke away from the construction site , and landed next to a Laurelhurst home dock in the night.
- d. April- December 2016, slurry was spilled off barges that the contractor decided to use as a demolition site for old bridge parts, and waste was dumped illegally into Union Bay.
- e. March 1, 2017, a floating crane broke loose and ran aground next to Laurelhurst homes at 4:00am.
- f. April, 2016, Floating Bridge opened with 400 glaring lights shining directly into residences on the north side of the new bridge. Not at all what was approved for NEPA/SEPA requirements.
- g. April, 2016, Expansion Joints at high rise sections generate impulse noises to nearby residences on both sides of Lake Washington. Lowest quality of joint was used.
- h. February, 2017 report to the Federal Highway Dept revealed the original cables installed were faulty and that the new Floating Bridge was "structurally deficient" in 2016, according to the Washington State Department of Transportation, and they had to be re-done.

In their application for the MPPCNV, WSDOT notes that "Design-Builder will detail construction methods, schedule and mitigation measures in their NMMP" . In other words, nothing is yet specified that will require the contractor for the "Rest of the West" to provide exact noise mitigation. In reviewing these past 8 notable experiences, the City should be skeptical and require that the contractor apply for specific tasks only, and specific lengths of time to grant short term noise variances, not a blanket variance for 7 years without recourse.



3. Other cities did not grant long term loud noise variance for the same project, but rather granted shorter terms of six months, with renewability

WSDOT and its contractors, requested numerous noise variances as they built three parts of the SR520 project through their residential neighborhoods, Mayor Marcos and Robert Grumbach, the Director for Development Services, for the City of Medina established a protocol for handling them:

- a) None of the variances granted were "permanent"
- b) The variances specified the maximum decibels for each one granted
- c) WSDOT has to specify what was the absolute minimum amount of night work required
- d) All mitigation practices to capture the night noise from reaching residences had to be defined with each noise variance, and required use of appropriate mitigation techniques.
- e) Monitoring of the actual sound produced was crucial, and the monthly report was public
- f) Renewability was granted with compliance only, based upon monitoring

The City of Medina granted the noise variances for a 6 month maximum limit, which could be automatically renewed if the compliance requirement by official monitoring was met.

Grumbach stated, "The 6 month term resulted in less night noise as **the contractor had incentives built in.**" The short term variances enabled the residents to plan for and tolerate the construction for shorter periods, based upon projected activity, and the contractor was rewarded with renewals for compliance.

The City of Seattle can learn from the "best practices" from the other entities which had to "go first" in the bridge re-build process. Incentivize the builder and WSDOT, and keep tight control on noise variances.

**LCC recommends all of the above requirements (a-f) be implemented with its noise variances on the SR520 project. LCC requests that the City of Seattle set a night noise maximum limit of 55dB, and 6 month maximum terms for each noise variance, with the auto-renew policy if the conditions and compliance are met by WSDOT and its contractor.**

Thank you for considering the comments of the Laurelhurst Community Club, and we know that the City of Seattle will consider the health of all citizens in forming its policies,

Colleen McAleer  
Vice President and 520 Mediation Rep,  
Laurelhurst Community Club

Jeannie Hale  
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Laurelhurst Community Club