

**TO:** Interested Persons  
**FROM:** David Sweet, Chair, Noise Review Board  
**SUBJECT:** Proposed changes to Title 18, The Noise Code  
**DATE:** April 7, 2015

The Pearl District is beset by construction noise. After the quiet of the recession, when little building occurred, Portland is experiencing a construction boom. The Pearl is already densely populated with apartment dwellers, and the multiple construction sites create an ongoing noise disturbance for myriad residents. When the City Noise Code, Title 18, was adopted in 1976, the Council recognized that construction was essential to the economic health of the City, and that it is necessarily loud. For this reason, the Code establishes fairly permissive limits on the daytime noise from construction equipment—no more than 85 decibels (dBA) at 50 feet. Equipment that cannot meet this permissive standard (pile drivers, pavement breakers, scrapers, concrete saws and rock drills) is exempt. Council chose to limit construction noise by limiting the hours it is allowed—Monday through Saturday, 7 a.m. to 6 p.m. Outside of those hours construction activities must meet the same property line noise standards as any other noise source.

### **Pile Driving**

Pile driving produces a particularly disturbing type of noise, and due to soil conditions, builders have found it necessary for most Pearl District construction. On May 14, 2014, a score of residents of the Pearl District testified to the Noise Review Board about the severe impact that noise from pile driving was having on their lives. At that time the Board committed to study the subject and to recommend to the City Council any needed Code changes. For the past six months, the Board and the staff of the Noise Control Office have conducted this study. We have reviewed codes related to pile driving from around the country and reached out to enforcement agencies in other cities. We have heard testimony from developers, geotechnical engineers, construction contractors, pile driving contractors, construction workers, and many affected residents. We have considered a variety of approaches to reducing the impact of pile driving on people in their homes. In this report I will review our proposed changes to Title 18, and comment on why we chose this approach and not others.

The loudest and most disturbing aspect of pile driving is the impact sound of a heavy weight (the “hammer”) striking a pile—a metal rod or pipe being driven into the ground. After review, the Board is persuaded that there is no effective technology for mitigating this impact noise at the source. Some have experimented with hoisting a sound barrier to the point of impact (up to 120 feet high) and then lowering it as the pile is driven to deflect the sound from residents. The Board heard testimony that this technique compromises the safety of the operation and we do not recommend requiring such mitigation. It would be possible to mitigate the noise at the receiver by, for example, covering all facing windows with one-inch plywood. We did not see this as a viable approach.

## Report on Proposed Changes to Title 18

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April 7, 2015

We learned of an alternative method of placing piles known as continuous flight augering (CFA). This technique uses an auger to drill a hole which is then filled with concrete as the auger is withdrawn. This method has been used on some projects in the Pearl District. Project engineers have told us that CFA is not appropriate for every site and that the engineer needs to make the professional judgment as to whether it can and should be used. An additional consideration is that the Pearl District is being built on a landfill where unknown organic material has been deposited. The “spoils” brought up by the CFA process must be treated as hazardous waste, increasing both the risk and the cost of using this method. For these reasons, the Board did not choose to require CFA for placing piles.

We researched other less noisy methods of setting piles including vibrating them into place and pressing them in hydraulically. While we believe that such techniques show promise, we have heard that they do not meet the needs of Pearl builders at this time, and we are not comfortable mandating such a limit against the professional judgment of geotechnical engineers. The Board expects to revisit this question as the technology advances.

For the reasons enumerated above, the Board does not recommend requiring noise mitigation for pile driving or banning it outright. How then to bring relief to Pearl residents who are impacted by multiple current and future construction sites? Our recommendation follows the precedent established by the Council in 1976—limiting the hours of operation. We recommend that pile driving be allowed only Monday through Friday, from 8 a.m. to 6 p.m.. This reduces the allowed time by one hour per day and one day per week. (The City of Seattle allows pile driving from 8 a.m. to 5 p.m. on weekdays.) This proposal will give nearby residents more restful weekends, an extra quiet hour in the morning. As proposed, the hour limitations apply to “pile driving” rather than “pile drivers.” The Board wishes to be clear that the new limitations apply to the act of driving piles, and not to the setup of pile driving equipment.

We have heard from contractors and developers that such reduced hours will make it difficult for them to keep a project on schedule. We acknowledge that this will add challenges to their work. We believe, however, that just as the industry has adjusted to the hour and day limits of the existing Code, it can adjust to these new limits. As pile driving contractors bid on future contracts, they will structure their bids to accommodate to the new restrictions. For this reason, we recommend that the restricted hours not be imposed immediately, but apply to projects for which construction permits are issued after July 1, 2015.

We are also recommending that nearby residents be given advance notice that pile driving will take place, and the anticipated dates for the work. Research has shown that noise is less disturbing when people know in advance that it is coming and when it is likely to end. We acknowledge that this notice requirement creates an additional burden and expense for developers. We believe that the public benefit from such notice justifies this expense. It is similar to the notifications the Board requires of applicants for noise variances.

April 7, 2015

## **Zoning**

The Board is also recommending a change in the way one land use zone is classified in Title 18 for establishment of allowable noise levels. The Central Employment (EX) Zone has always been classed as “Industrial” for purposes of noise enforcement. Because industrial uses tend to be noisier than others, allowable noise levels are higher in industrial zones than in commercial or residential zones. However, while certain low-impact manufacturing uses are allowed in EX zones, for the most part these zones are being used for mixed use development and are predominantly residential in character along with some retail. Much of the new development on North Williams Avenue is taking place in EX zones, and the Pearl District is almost exclusively zoned EX.

With the current Mixed Use Zones Project, the Bureau of Planning and Sustainability anticipates changing all EX zoned property to one of the new CM—Mixed Use Commercial zones. Such a change would require a change in Title 18, as these properties would be considered Commercial rather than Industrial. In anticipation of that change, which might be two years away, the Board recommends that EX zones be considered Commercial for purposes of noise enforcement. This change would reduce the allowable noise levels by as much as 10 dBA. A reduction of 10 dBA is perceived as a halving of loudness. The sound levels allowed in commercial zones are more appropriate for the uses we find in EX zones. This change will allow the Noise Control Office to offer greater protection to Pearl residents and others, from various noise sources, including construction activities outside of the permitted construction times.

## **Appeals of Variances**

The Noise Review Board recommends that appeals of noise variances be heard by the Code Hearings Officer rather than the City Council. When Title 18 was adopted nearly 40 years ago, the Code Hearings Office did not yet exist. It was standard practice for the Council to hear all manner of appeals, including those for nuisance abatement charges. Since that time, bureaus have shifted most administrative appeals to the Code Hearings Officer. If we are late in proposing this change, it is because there have been so few appeals of noise variances. The Board believes that this change will promote speedier and more efficient adjudication of appeals.