

University of Washington / Sound Transit Seattle, WA

Light rail vibration vibration impact

Client

University of Washington

Construction Value

Est. \$1.6B for segment

Completion

2016

Work Scopes

Campus-Wide Vibration Testing
Researcher / User Interviews
Determination of Criteria
Representation of University
Review of EIS Methodologies

Stakeholder Departments

College of Arts and Sciences
College of Engineering
College of Ocean/Fishery Sciences

Number of Buildings

65 bldgs. in initial survey
24 bldgs. in intensive studies

As Seattle has grown, so have regional transportation needs. Sound Transit (ST), the local public transportation operator, desired to extend the existing light rail system to the northern portions of the city. This North Link light rail extension would run through the University of Washington campus.

Earlier attempts to design the North Link foundered when it became clear that vibration and electromagnetic interference from the rail system would compromise campus research environments.

We were involved in consulting with UW on all aspects of the vibration impact to the campus environment. Initially, we characterized the ambient vibration environment in many buildings. Through this extensive measurement effort, we were able to establish a baseline for comparison with predictions based on activities forecast by ST.

We helped develop the University position that the current vibration environment on campus should be regarded as a **natural resource**. Vibration added to the environment should be seen as a **pollutant** that creates costs to researchers, limits research activities, and drives away talented professors.

As the project has progressed, we supported the University in establishing not only the baseline vibration environment, but also in providing guidance on the vibration requirements of current and future research. We provided input to University decision makers by reviewing vibration predictions developed by ST and identifying alignments that balanced research and transit needs.

We continued to be deeply involved in design reviews as well as the review of updated vibration impact prediction data and methodologies. Our input addressed both the short-term construction-phase impact and the long-term operational impact.

