Montgomery College
Noise Fact Sheet

Montgomery College (MC) and Barton Malow Company (BMC) recognize noise is a top concern of the community—for our neighbors along with our faculty, staff, and students. While construction projects are noisy by nature, we will implement a significant and comprehensive plan to manage the noise levels and lessen these impacts whenever possible. This plan has evolved since last year with the input of our neighbors and City leadership. Details of the evolution of these plans are described below.

Barton Malow Company will notify neighbors about upcoming activities and their potential for significant noise-making activities through the email distribution list. You may sign up for email updates on the project website: montgomerycollege.edu/tpss-design. If you have any questions about noise or upcoming activities or want to share a concern, please email community@montgomerycollege.edu or call the project hotline number (1-800-879-9879).

Noise is also a safety issue. MC and BMC are committed to completing the Catherine and Isiah Leggett Math and Science Building with safety as our highest priority. We will follow all OSHA regulations to protect the workers on site, who are directly affected by construction noise at the source. Regulations also require certain noises to be generated on site for worker protection—for example, the regulatory requirement for back-up alarms on vehicles.

It is our continued goal to work together to complete the project efficiently while balancing the needs of students, the community, and fiscal prudence.

Noise Considerations

Recognizing that noise is one of the greatest impacts of construction on the surrounding community, MC worked with City leadership in the **fall of 2019** to consider and agree to the following protocols and guidelines related to noise, among others found on the project website:

- Equipment and personnel set-up can start at 7:00 a.m. in accordance with city noise ordinances. Efforts will be made to attenuate heavy noise in the early morning. This includes no overnight use of diesel generators.
- In the event of high noise activities, the project team will notify the community in advance when possible, and in advance or as soon as possible provide information to the community on the anticipated type and amount of noise and the duration of such activities.
- Efforts will be made to organize the site to limit the amount of noise from vehicles backing up in the early morning. The site will be open only to administrative/supervisor personnel prior to 7:00 a.m. The site will be open to construction workers and vehicles at 7:00 a.m. in accordance with city noise ordinances.
- Vehicle idling will follow state requirements and be kept to a minimum. Trucks and other heavy vehicles will not be staged on New York and Takoma Avenues.

- In the event weekend work is necessary, city noise ordinances will be followed. The project team will notify community members of any weekend activities with as much advance notice as possible. No Sunday work will take place on the site.

Noise Suppression Plan

Beyond those considerations listed above, to further respond to noise concerns, BMC investigated a Noise Suppression Plan with the City of Takoma Park and the County, and have moved forward with such a plan consistent with regulatory guidelines. Noise Suppression Plans outline the types of high noise activities that may be caused by construction and the mitigation measures that will be taken during these activities. Noise Suppression Plans are filed with the County and the City as a measure to demonstrate efforts to proactively manage and lessen noise impacts to the surrounding community and provide accountability to the City, the County, and neighbors for the project team.

Throughout our public meetings, we have heard from neighbors, students, and faculty the importance of mitigating, wherever possible, the impacts of noise from the project.

A County-approved noise suppression plan benefits the community by:

- *Acknowledging noise as a community impact*
- *Engaging the County and City regulators in dialogue proactively*
- *Providing proactive planning for intentional noise management and mitigation*
- *Identifying sources of loud noise and selecting less noisy alternatives*
- *Solidifying mitigation commitments with the County and the City*
- *Implementing a protocol to manage noise impacts*

The complete Noise Suppression Plan BMC filed with the County is located in the appendix of this document. Below is a summary of the planned mitigation efforts:

- ***Limit need for back up alarms with traffic pattern control****:* In an effort to reduce the frequency of construction vehicle back up alarms, site logistics have been configured to *maximize forward movement* and decrease preventable reverse driving.
- ***Reduced onsite vehicle noise****:* The *slamming of vehicle tailgates is prohibited*. All contractor truck drivers will be notified prior to the commencement of work, and it will be strictly enforced by BMC's onsite Foremen and/or Superintendent.
- ***Idling prohibited****:* All contractors will be notified that unnecessary *idling of construction vehicles and/or equipment is prohibited*. On-site foreman and superintendents will ensure that operators are only running machines when they are in use or for proper startup procedures.
- ***Maintenance checks****:* Contractors will perform maintenance checks daily, as required by our safety plan, on *all vehicles to make sure all parts are in good*

condition and properly lubricated, to reduce noise associated with improper equipment condition.

- ***Power sources**:* Contractors will seek to *maximize the use of utility electrical connections*, as opposed to temporary generators, which typically generate more noise. If a generator is required, *contractors will construct a barricade around it to mitigate noise.*
- ***Equipment selection**:* Contractors will utilize saw cutting, which generates less noise, as much as possible and *minimize the use of jackhammers*.

Additional Mitigation Measures

Given the residential setting of the project, BMC completed a lessons learned analysis from other projects to curate an array of strategies to manage noise on this project. Barton Malow Company and MC have identified additional opportunities beyond those listed above to mitigate noise by modifying the methods for carrying out specific construction activities. These opportunities include:

Use mechanical construction equipment to deconstruct the buildings instead of wrecking balls or explosives to complete demolition: All along, the project team has committed to not using wrecking balls or high noise demolition tactics. Instead of using those construction techniques that cause high levels of noise, BMC will use construction equipment to push the buildings' exterior walls inwards towards the interior of the site. This reduces overall noise impacts from demolition, which is one of the highest noise-producing phases of the project.

Additionally, the equipment will generally push the building away from Takoma Avenue and locate dumpsters away from Takoma Avenue closer to Science North.

Use of drilling instead of pile driving: Pile driving is one of the highest noise activities associated with structural foundations on new buildings. Instead of driving piles, BMC will be drilling piles in place. This technique vastly reduces noise levels compared to pile driving.

Use of saw cutting instead of jackhammers: Many construction projects use jackhammering to remove pavement and existing surfaces. Instead of jackhammering for the majority of surface demolition, BMC will use saw cutting, reducing noise levels.

Cast in place pier and footing foundation instead of drilled caissons or piles – Site soils and building design do not require deep foundations that must be drilled into rock.

Maximize the Catherine F. Scott Commons Building as a noise barrier.

Erect an eight-foot high wooden fence along Takoma Avenue.

Limit construction traffic to Fenton Street only with no construction traffic on Takoma Avenue or New York Avenue.

Require construction vehicles to park and cue offsite until needed on the project site.

All of the measures outlined here taken together create a significant and comprehensive noise management effort. This plan recognizes the residential setting of the Campus and strives to be responsive to the concerns of our students, faculty, staff, and our neighbors—in addition to the safety of the workers on the job site.

As the project progresses, the team will continue to consider new approaches and techniques to reduce noise whenever possible and revise communication strategies as needed to provide timely project information.

Communications and engagement

Montgomery College recognizes noise is one of the top concerns among our community. BMC is taking proactive steps to manage and mitigate noise levels to protect the workers on site, our students and faculty, and the neighbors who are proximate to the site. If you have any questions about noise or upcoming activities or want to share a concern, please email community@montgomerycollege.edu or call the project hotline number (1-800-879-9879).

Appendix A

Barton Malow's Noise Mitigation Plan

Barton Malow has proposed the following approach to mitigating noise on the construction site:

Measures taken to reduce noise:

- *Traffic pattern control:* In an effort to reduce the frequency of construction vehicle backup alarms, site logistics have been configured to maximize forward movement and decrease preventable reverse driving.

Construction Traffic Diagram

- *Reduced onsite vehicle noise:* The slamming of vehicle tailgates is prohibited. All contractor truck drivers will be notified prior to the commencement of work, and it will be strictly enforced by Barton Malow's on-site Foremen and/or Superintendent.
- *Idling:* All contractors will be notified that unnecessary idling of construction vehicles and/or equipment is prohibited. On-site foreman and superintendents will ensure that operators are only running machines when they are in use or for proper startup procedures.
- *Maintenance Checks:* Contractors will perform maintenance checks daily, as required by our safety plan, on all vehicles to make sure all parts are in good condition and properly lubricated, to reduce noise associated with improper equipment condition.
- *Power Sources:* Contractors will seek to maximize the use of utility electrical connections, as opposed to temporary generators, which typically generate more noise.
- *Equipment:* Contractors will utilize saw cutting as much as possible to minimize jackhammering.

Below, we outline the types of activities that may cause noise associated with each phase of the project.

Phase 1: Demolition, Site Utilities, and Excavation (planned October 2020 – March 2021)

Demolition includes the removal of existing structures on site to create space for the new structures to be built.

- The removal of existing hardscape, such as parking lots, roadways, walkways, and the tennis courts. Some paved areas may remain for use during construction and be removed later in the construction process.
- Removal of below-grade utilities that will not be reused
- The Falcon Hall and Science South Buildings will be removed in their entirety, including their foundations.

Types of Noise to expect during Phase 1:

- Demolition activities will require the use of jackhammers.
- Other noises will be generated by debris being loaded into vehicles, and debris falling against the existing building components not yet removed.
- Shoring installation (i.e. support of excavation during earthwork/demolition) will involve drilling steel supports in to support the shoring.
- Excavator(s), loader(s) and other heavy truck(s) will be utilized to raze, dig, and haul building materials.

Excavator

Back Hoe

Demolition will be performed using small construction equipment,pushing the materials towards the interior of the site.

This method will concentrate noise and debris towards the interior of the site and further from the neighborhood

Phase 2: Foundation and Structure (planned March 2021 – November 2021)
This phase involves installation of the concrete building foundations, structural steel columns and beams, metal decking to support the concrete floor slabs above grade, and pouring of the slabs.

Types of noise anticipated in Phase 2:

- Foundation concrete and concrete for floor slabs will be delivered and placed via concrete mixing trucks and concrete pump trucks.
- Concrete trowel machines and/or other gas powered equipment will be used to finish concrete slab on-grade and above-grade slabs on metal deck.
- Structural steel delivery and installation will produce noise from lifting and moving of large heavy metal components
- A crane will be utilized for erecting structural steel.
- Impact drivers will be used for various fastening applications.

`Phase 3: Building Envelope (planned November 2021 – July 2022)

The building envelope is the exterior enclosure of the building, including brick and concrete block masonry, glass curtain wall, and metal panels.

Types of noise anticipated in Phase 3:

- Masonry, curtain wall, and window installation will require hammer drills, impact guns, and the operation of vertical lifts on the interior and exterior of the building.

Phase 4: Interior Fit Out (planned December 2021 – April 2023)

At this point, the building exterior will be enclosed and the primary work will take place inside the building shell.

Types of noise anticipated in Phase 4:

- Lift(s) and other equipment, such as hammer drills and pneumatic equipment, will be utilized to install various building materials, both inside and on the building exterior.

Phase 5: Hardscape and Landscape (planned July 2022 – October 2022)

Exterior work to complete paving and landscape planting.

Types of noise anticipated in Phase 5:

- Concrete work will utilize trucks, tools, and compacting equipment.
- Grading and landscaping will utilize trucks, tools, and earthmoving equipment.

**Please note that the construction schedule is still in development, and the above dates are subject to change.*

Appendix B

Regulatory Process Relating to Noise Mitigation

Montgomery County Department of Environmental Protection regulates noise for construction activities under the Montgomery County Noise Control Law.

The Noise Control Law contains certain standards specific to construction noise.

Montgomery College worked in direct coordination with Montgomery County, per the City of Takoma Park's request in early 2020 to develop this plan.

The following are excerpts from the Montgomery County Department of Environmental Protection website.

Construction Noise Exemptions and Standards

The Montgomery County Noise Control Law defines construction as temporary activities directly associated with site preparation, assembly, erection, repair, alteration, or demolition of structures or roadways.

Noise Control

Virtually all potential noise sources that operate permanently or semi permanently can be designed or controlled to meet the receiving property line standard. Likewise, potential sources under human control, such as electronically amplified sound, can be designed to meet the law requirements.

Noise from some construction activities, however, is difficult, if not impossible, to control to the receiving property line. This is because the engineering design and technical controls that are effective on stationary sources aren't practical or reasonable for a temporary, often mobile, noise source.

The Noise Control Law, therefore, contains certain standards specific to construction noise. Department of Environmental Protection (DEP) has several tools available to help mitigate and regulate this potential source of disturbance.

Procedures Governing the Measurement of Noise Levels by Montgomery County

During business hours, Code Enforcement personnel from the Department of Environmental Protection investigate complaints by using sound level meters to measure dBA levels at property lines. After regular business hours, the Noise Law allows police officers to issue citations for noise disturbances on their own judgment and with the testimony of witnesses.

- Regulations in Chapter 31B of Code of Montgomery County Regulations (COMCOR). Download the **Montgomery County Noise Law** (56KB, PDF).
- Noise measurements are taken with a sound level meter meeting Type II specifications. The meter shall be certified annually with equipment

Typical Decibel Levels of Common Situations

*** Note:** The Noise Law uses an A-weighted scale, measured in A-weighted decibels (dBA). A-weighting is an electronic approximation.

Situation	Level of Intensity (dBA*)
Whispering in an indoor location	20 dBA
Average office environment	50 dBA
Typical conversation speech	50-70 dBA
Car horn (at 10 feet)	100 dBA
Hard rock band (indoors)	120 dBA
Physical pain threshold	130 dBA
Jet engine	140 dBA

traceable to NIST and ANSI specification S1.4 (American National Standard Specification for Sound Level Meters)

- Measurements are taken at the property line of the alleged violator as to determine the maximum A-weighted (dBA) sound level, which can include upper floors of nearby habited structures. (One exception is where the law specifies otherwise – e.g., at least 50 feet from construction equipment.)
- Measurements shall not be conducted in the presence of wind speeds greater than 12 miles per hour, nor in the presence of precipitation or fog. No measurement shall be made closer than 3 feet to any large reflecting surface.
- Before citing a violation of a noise limit the regulation allows a 2.5 dBA
- Grace to account for all possible inaccuracies
- The measurement of noise produced by motor vehicles in transit is prescribed by State and Federal Laws. Enforcement by police officers is provided for by State Law.