

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss:

To either of the constables of the Town of Pepperell, in said county,

GREETINGS:

In the name of the Commonwealth aforesaid, you are hereby required to notify and warn the inhabitants of said Town qualified according to law to vote in state, county, district and town affairs to assemble at the NISSITISSIT MIDDLE SCHOOL, in said Town, on Monday, the 21st of October A.D. 2019 at 7:30 PM to act on the following articles:

SPECIAL TOWN MEETING October 21, 2019

PRELIMINARY MOTION: Majority vote required for passage.

Motion by: William Greathead, Board of Selectmen

I move the Moderator allow non-voters or non-residents to speak on issues related to Town Meeting warrant articles where appropriate.

PRELIMINARY MOTION: Majority vote required for passage.

Motion by: William Greathead, Board of Selectmen

I move that for any matters on the warrant for this Town Meeting which, by statute, require a two-thirds majority vote, that the Moderator be authorized to take the votes in the same manner in which the Moderator takes a vote when a simple majority vote is required, without a count.

ARTICLE 1 - 2017 ANNUAL TOWN REPORT

To see if the Town will vote to accept the reports of the Town Officers and Committees for 2017 as printed, or take any other action relative thereto.

Explanation: *The 2017 Annual Report was not completed in time for adoption at the 2018 or 2019 Annual Town Meetings. The report has been reviewed and edited to completion since then and is presented for adoption to the Town Meeting at this time.*

Recommendation: *The Finance Committee did not take action.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

Majority vote required for passage.

ARTICLE 2 - RESCIND THE ADOPTION OF MGL 48 SEC 42A

To see if the Town will vote to rescind its acceptance of General Law Chapter 48, Section 42A, to be consistent with Section 5-3 of the Pepperell Charter governing the powers, duties, and responsibilities of the Fire Chief, or take any other action relative thereto.

Explanation: *This law was super-ceded by the acceptance of GL48 section 42, at the October 24, 2016 Special Town Meeting and changed our Fire Chief from a 'weak chief' to a 'strong chief.' This provision was mistakenly adopted at the same time and is contradictory to the intended purpose of the adoption.*

Recommendation: *The Finance Committee did not take action.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

Majority vote required for passage.

ARTICLE 3 - ADJUSTED ASSET LIMITS FOR CLAUSE 17D: SENIOR CITIZENS, SURVIVING SPOUSES AND SURVIVING MINORS

To see if the Town will vote to accept General Law Chapter 59, Section 5, Clause 17E, which authorizes an annual increase in the asset (whole estate) limit for real estate tax exemptions granted to senior citizens, surviving spouses and surviving minors under General Law Chapter 59, Section 5, Clause 17D, by the percentage increase in the U.S. Department of Labor's Bureau of Labor Statistics, Consumer Price Index for the previous year as determined by the Commissioner of Revenue, to be effective for exemptions granted for any fiscal year beginning on or after July 1, 2019, or take any other action relative thereto.

Explanation: *Clause 17E allows the Town to index to inflation the adjusted asset limit for Clause 17D qualifying individuals, specifically senior citizens, surviving spouses and surviving minors. The inflationary adjustment rate is set by the state.*

Recommendation: *The Finance Committee recommends the passage of this article by a vote of 4 to 0.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

Majority vote required for passage.

ARTICLE 4 - ADJUSTED INCOME AND ASSET LIMITS FOR CLAUSE 41C

To see if the Town will vote to accept General Law Chapter 59, Section 5, Clause 41D, which authorizes an annual increase in the income (gross receipts) and asset (whole estate) limits for real estate tax exemptions granted to senior citizens under General Law Chapter 59, Section 5, Clause 41C, by the percentage increase in the U.S. Department of Labor's Bureau of Labor Statistics, Consumer Price Index for the previous year as determined by the Commissioner of Revenue, to be effective for exemptions granted for any fiscal year beginning on or after July 1, 2019, or take any other action relative thereto.

Explanation: *Clause 41D allows the Town to index to inflation the income and asset limits for exemptions granted under Clause 41C to qualifying senior citizens. The inflationary adjustment is set by the state.*

Recommendation: *The Finance Committee recommends the passage of this article by a vote of 4 to 0.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

Majority vote required for passage.

ARTICLE 5 - PLASTIC BAG BAN BYLAW

To see if the Town will vote to amend the Town Bylaws by adding a Bylaw for the reduction of plastic bags, in the form on file in the office of the Town Clerk, or take any other action relative thereto.

Section 1. Purpose and Intent

The production and use of thin film, single-use plastic checkout bags have significant impacts on the environment, including but not limited to: contributing to the potential death of marine/aquatic animals through ingestion and entanglement; contributing to the pollution of the land environment; creating a burden to solid waste collection and recycling facilities (Pepperell does not currently recycle plastic bags); clogging storm drain systems; requiring the use of millions of gallons of crude oil nationally for their manufacture; and plastic bags are not biodegradable so they gradually disintegrate into minute particles which absorb toxins, contaminating the food chain including the food humans eat.

The goal of this bylaw is to reduce the common use of plastic checkout bags and to encourage the use of reusable bags by consumers, thereby reducing local land pollution, advancing solid waste reduction, protecting the Town's unique natural beauty and irreplaceable natural resources, and improving the quality of life for citizens in this Town.

2. Definitions

“Checkout Bag” means a bag with or without handles provided by a store/business to a customer at the checkout area, cash register, point of sale, or other point of departure from the store that is intended for the purpose of transporting food or merchandise out of the establishment.

“Recyclable Paper Bag” means a paper bag that is 100% recyclable and contains at least 40% post consumer recycled content, and displays in a visible manner on the outside of the bag (1) the word “recyclable” or a symbol identifying the bag as recyclable and (2) a label identifying the bag as being made from post-consumer recycled content in the bag.

“Reusable Bag” means a bag with stitched handles that is made solely of, or in a combination of, natural cloths, synthetic fibers, or other washable material other than any type of polyethylene or polyvinyl chloride, and is durable, non-toxic, and specifically designed for multiple reuse.

“Single-use Plastic Checkout Bag” means a Checkout Bag made of plastic, including plastic bags labeled biodegradable, compostable or photodegradable, provided to a customer by a store and intended for single-use transport of food or merchandise from the establishment.

“Store” means any commercial enterprise selling goods, food or services directly to the public, whether for or not for profit, including but not limited to, convenience and grocery stores, markets, restaurants, pharmacies, liquor stores, take-out food purveyors, and merchandise retailers.

“Thin-film Product Bag” means (1) a bag into which loose produce, bulk items, unwrapped baked goods or prepared food, or other products are placed by the consumer to deliver such items to the point of sale or check out area of the store, or (2) a bag that contains or wraps food to retain moisture or to segregate foods (like meat and ice cream) or other items to prevent contamination or damage when the items are placed together in a Reusable Bag or Recyclable Paper Bag, (3) a bag without handles used to cover clothing such as a dry cleaning bag, or (4) bags used to contain phonebooks, newspapers, or magazines.

3. Use Regulations

3.1 No Store in the Town shall provide to any customer a Single-Use Plastic Checkout Bag. Stores shall phase out existing stock of Single-Use Plastic Checkout Bags by January 1, 2020 and any remaining stock shall be disposed of properly.

3.2 If a store provides Checkout Bags to customers, it may provide Reusable Bags or Recyclable Paper Bags.

3.3 Thin-film Product Bags used for dry cleaning, newspapers, meat, produce, bulk items, wet items are still permissible and will be exempt from the requirement in subsection 3.1.

4. Administration and Enforcement

4.1 The enforcement of this bylaw is the responsibility of the Town Administrator and the Board of Health, and the bylaw may be enforced by any Town police officer or agent of the Board of Health and any other individuals appointed by the Town Administrator for that purpose.

4.2 This bylaw may be enforced by the non-criminal disposition method pursuant to M.G.L. Chapter 40, Section 21 D and the Town's non-criminal disposition bylaw. The following penalties apply:

- * First Violation: a written warning

- * Second Violation: \$100 fine

- * Third Violation: \$200 fine

- * Fourth and Subsequent violations: \$300 fine

- * Each day the violation occurs constitutes a separate violation.

- * Any such fines shall be paid to the Town of Pepperell.

5. Effective Date

This Bylaw will take effect on January 1, 2020

6. Severability

If any section, paragraph, or part of this bylaw is for any reason declared invalid or unconstitutional by any court, every other section, paragraph, and part will continue in full force and effect.

Explanation: *The goal of this bylaw is to reduce the common use of plastic checkout bags and to encourage the use of reusable bags by consumers, thereby reducing local land pollution, advancing solid waste reduction, protecting the Town's unique natural beauty and irreplaceable natural resources, and improving the quality of life for citizens in this Town.*

Recommendation: *The Finance Committee did not take action.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

Majority vote required for passage.

ARTICLE 6 - ZONING BYLAW FOR SOLAR INSTALLATIONS

To see if the Town will vote to amend the Zoning Bylaw by adding new uses to the Table of Principal Uses (Appendix A) and adopting a new section that will encourage the use of solar energy systems and protect solar access consistent with General Law Chapter 25A Section 10, including regulation of the installation of solar energy systems in the Town by providing standards for the size, placement, design, construction, operation, maintenance, monitoring, modification and removal of such systems that address public safety and provide adequate financial assurance for the eventual decommissioning of such facilities, consistent with General Law Chapter 40A, Section 3, in the form on file in the office of the Town Clerk, or take any other action relative thereto.

Explanation: *In 2018 local citizens encouraged the Planning Board to develop zoning provisions for solar power installations. This zoning by-law addresses the impact that solar panels present to zones throughout the community and should facilitate the beneficial adoption of additional solar power generation while minimizing those impacts on our community. For full text of Bylaw, see Addendum A- Article 6.*

Recommendation: *The Planning Board recommends the passage of this article by a vote of 5 to 0.*

Recommendation: *The Finance Committee did not take action.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

2/3 Vote required

ARTICLE 7 - NOISE CONTROL BYLAW

To see if the Town will vote to adopt a Noise Control Bylaw, pursuant to the authority under General Law Chapter 111, Sections 142A-142M and General Law Chapter 40, Section 21, and 310 CMR 7.00, as reasonable and necessary for the protection of the health and welfare of the citizens of the Town of Pepperell, in the form on file in the office of the Town Clerk, or take any other action relative thereto. For full text of Bylaw, see Addendum B- Article 7.

Explanation: *Excessive noise is a nuisance and a potential health hazard. This Bylaw recognizes that people have a right to and should be ensured an environment free from excessive noise.*

Recommendation: *The Finance Committee did not take action.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

Majority vote required for passage.

ARTICLE 8 - HOME RULE PETITION RESTRICTING SOIL RECLAMATION PROJECTS

To see if the Town will vote to authorize the Board of Selectmen to petition the General Court for special legislation entitled "an Act relative to soil reclamation projects in the Town of Pepperell", in the form on file in the office of the Town Clerk; provided, that the General Court may make clerical or editorial amendments to the form of said proposed Special Act, and provided further that the Board of Selectmen shall have the authority to approve and accept any such amendments that shall be within the scope of the objectives of the petition, or take any other action relative thereto.

TITLE: An Act relative to soil reclamation projects in the town of Pepperell

SECTION 1. Notwithstanding any general or special law to the contrary, no filling operations associated with the reclamation of a quarry, gravel pit, or sand pit shall take place in the town of Pepperell that poses a substantial hazard to natural resources, or at a site that is; (1) within 750 feet of the high water mark of the Nashua River; (2) within 350 feet of ground water or aquifers that supply drinking water; (3) within 500 feet of a private well.

SECTION 2. The Pepperell conservation commission shall have the authority to review and approve, by the vote of a majority of its members, any proposed filling operation according to the standards described in this chapter, any bylaws adopted by the town of Pepperell, and any rules and regulations adopted by the Pepperell conservation commission. The Pepperell conservation commission may deny an application for a filling operation that poses a substantial hazard to natural resources, as determined by the Pepperell conservation commission. Any approval of an application for a filling operation by the Pepperell conservation commission shall contain conditions to ensure that the filling operation does not pose a substantial hazard to natural resources.

SECTION 2. As used in this chapter the following words shall, unless the context clearly requires otherwise, have the following meanings:-

“Filling operations,” the importation of soil for the purpose of the reclamation of a quarry, gravel pit, or sand pit.

SECTION 3. This act shall take effect upon its passage.

Explanation: *A Home Rule Petition is a law that applies to a single municipal government. This petition seeks to restrict the creation of soil reclamation sites within close proximities to wells, aquifers, and the Nashua River. It further empowers the Pepperell Conservation Commission to deny an application for a soil reclamation project if the Conservation Commission believes the site poses a substantial hazard to natural resources or to promulgate conditions to ensure the project does not pose a substantial hazard to natural resources. If passed, this petition will be brought before the State Legislature for approval.*

Recommendation: *The Finance Committee did not take action.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

Majority vote required for passage.

ARTICLE 9 - FISCAL YEAR 2020 WATER ENTERPRISE FUND – AUTHORIZATION TO BORROW FOR TREATMENT PLANT UPGRADES

To see if the Town will vote to amend the vote taken under Article 9 of the warrant for the 2019 Annual Town Meeting, by increasing the loan authorization appropriation for the construction of a Water Treatment Facility, as required to comply with the Secondary Maximum Contaminant Levels (SMCL) promulgated by the Massachusetts Department of Environmental Protection (MassDEP) as part of its drinking water regulations, and any other costs incidental or related thereto, from Eight Million Dollars (\$8,000,000.00) to Eight Million, Five Hundred Thousand Dollars (\$8,500,000.00), and further, to authorize the Treasurer, with the approval of the Board of Selectmen, to borrow said sum under and pursuant to General Law Chapter 44, or any other enabling authority, and to issue bonds or notes of the Town therefor; and to authorize the Board of Public Works, with the approval of the Board of Selectmen, to apply for, accept, and expend any federal, state or other grants or gifts from any sources that may be available for the project, or take any other action relative thereto.

Explanation: *At the Annual Town meeting in May 2019, the Town voted to authorize the borrowing of a sum of \$8,000,000 to construct a water treatment plant at the Bemis well site in order to comply with the Massachusetts Department of Environmental Protection (MADEP) Secondary Maximum Contaminant Levels (SMCL) of Iron (Fe) and Manganese (Mn) for drinking water. The plans and specifications were at the 90% stage when the \$8M construction cost estimate was provided. The project has since gone to bid and bids were opened in August. The final bids came in higher than originally estimated. The additional \$500,000 is cover the cost of the actual bid. The project is eligible for a low-interest rate loan through the State Revolving Fund (SRF) program, and it has been included on the Drinking Water State Revolving Fund 2019 Intended Use Plan (IUP). Construction is expected to begin in the fall of 2019, and be completed by the end of 2021.*

Recommendation: *The Finance Committee recommends the passage of this article by a vote of 4 to 0.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

2/3 Vote Required.

ARTICLE 10 - LAND DONATION-148 LOWELL ROAD

To see if the Town will vote to transfer the custody and control of the following described land located off Lowell Road from the Board of Selectmen to the Board of Selectmen, for the purpose of conveyance, and authorize the Board of Selectmen, for and on behalf of the Town, to release and convey all of the Town's right, title and interest therein for the purpose of accomplishing the transfer of such land to the Commonwealth of Massachusetts as part of a conservation acquisition; and to authorize the Board of Selectmen to take any and all action and execute all documents necessary for the purpose of accomplishing such conveyance and transfer, including consent to a taking thereof by the Commonwealth, through its Department of Fish and Game, and a petition to the General Court for any legislation which may be necessary for such conveyance and transfer: Lot 3 as shown on a plan entitled "Plan of Land in Pepperell, MA, Lowell Road, Pepperell, MA prepared for Thelma Chambers," dated July 30, 1986 and recorded with the Middlesex South District Registry of Deeds as Plan No. 1092 of 1986 in Book 17299, Page END, or take any other action relative thereto.

Explanation: *For the purpose of permanently protecting the subject property from development in accordance with Article 97 of the Amendments of 1972, this article authorizes the Board of Selectmen to allow the Massachusetts Division of Fish and Game to acquire the property through a consensual order of taking.*

Recommendation: *The Finance Committee did not take any action.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

2/3 Vote required for passage.

ARTICLE 11 - PETER FITZPATRICK BUILDING HEATING SYSTEM REPAIR

To see if the Town will vote to appropriate and transfer the sum of One Hundred and Twenty-Five Thousand Dollars (\$125,000.00) from the General Stabilization Fund for the repair of the heating system at the Peter Fitzpatrick School property, or take any other action relative thereto.

Explanation: *In March 2019 the forced hot water heating distribution system at the Peter Fitzpatrick School began leaking. The pipes in this portion of the facility were installed in the 1960s. After extensive analysis, a plan to replace the pipes has been arranged. The cost is expected to be more than \$100,000.00 and is entirely unbudgeted. Without replacing the pipes, most of the campus cannot be heated and will be unusable for the winter months. This article requests the appropriation of General Stabilization funds of \$125,000.00. Any amount unused for this purpose will be returned to general stabilization at the culmination of the project. If approved the remaining General Stabilization Fund balance will be \$549,057.16. (Beginning balance as of June 30, 2019 \$674,057.16 - \$125,000.00 = \$549,057.16)*

Recommendation: *The Finance Committee recommends the passage of this article by a vote of 4 to 0.*

Recommendation: *The Board of Selectmen recommends the passage of this article by a vote of 2 - 0.*

2/3 Vote required for passage.

ZONING BYLAW FOR SOLAR INSTALLATIONS

The following shall be added to Appendix A, Table of Principal Uses.

Schedule of Use Regulations

	RR	TR	RCR	SR	UR	C	I
Roof Mounted Solar Energy System	Y	Y	Y	Y	Y	Y	Y
Ground-Mounted Solar Energy System, Small Scale	Y	Y	Y	Y	Y	Y	Y
Ground-Mounted Solar Energy System, Medium-Scale	PB	PB	PB	PB	PB	PB	PB
Ground-Mounted Solar Energy System, Large-Scale	PB	PB	PB	N	N	PB	PB

6500. Solar Energy Systems

6510. Purpose.

The purpose of this section is to encourage the use of solar energy systems and protect solar access consistent with M.G.L. 25A, Section 10. This section facilitates and regulates the installation of solar energy systems in the Town by providing standards for the size, placement, design, construction, operation, maintenance, monitoring, modification and removal of such systems to address public safety and provide adequate financial assurance for the eventual decommissioning of such facilities, consistent with M.G.L. Chapter 40A, Section 3.

6520. Definitions.

As-of-Right: A development or installation that may proceed without the need for a special permit, variance, waiver, or other discretionary approval.

Photovoltaic System (also referred to as Photovoltaic Installation): An active solar energy system that converts solar energy directly into electricity.

Rated Nameplate Capacity: The maximum rated output of an electric power production of the photovoltaic system in watts of Direct Current (DC).

Solar Access: The access of a solar energy system to direct sunlight.

Solar Canopy– An active solar energy system that is raised above the ground on structures placed on land. For the purpose of this bylaw, solar canopies are considered ground mounted solar energy systems.

Solar Collector: A device, structure or a part of a device or structure for which the primary purpose is to transform solar radiant energy into thermal, mechanical, chemical or electrical energy.

Solar Energy: Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

Solar Energy System, Grid-Intertie: A photovoltaic system that is connected to an electric circuit served by an electric utility.

Solar Energy System, Ground-Mounted: An active Solar Energy System that is structurally mounted to the ground and is not roof-mounted. Such a system may be of any size (small-; medium-; or large-scale).

Solar Energy System, Large Scale: An Active Solar Energy System that occupies more than 40,000 square feet of surface area (equivalent to a rated nameplate capacity of at least 250 KW DC or greater).

Solar Energy System, Medium-Scale: An active Solar Energy System that occupies more than 1,750 square feet but less 40,000 square feet of surface area (equivalent to a rated nameplate capacity between 10 – 250 KW DC).

Solar Energy System, Off Grid: A photovoltaic solar energy system in which the circuits energized by the solar energy system are not electrically connected in any way to the electric circuits that are served by an electric utility.

Solar Energy System, Roof-Mounted: An active Solar Energy System that is structurally mounted on the roof of a building, residence, parking garage, or any other structure. Such a system may be of any size (small-; medium-; or large-scale).

Solar Energy System, Small-Scale: : An active Solar Energy System that occupies 1,750 square feet or less square feet of surface area (equivalent to a rated nameplate capacity of approximately 10 KW DC or less).

Solar Thermal System: An active Solar Energy System that uses collectors to convert the sun's rays into useful forms of energy for water heating, space heating, or space cooling.

6530. Applicability.

This section applies to solar photovoltaic installations proposed to be constructed after the effective date of this bylaw. This section also pertains to modifications that materially alter the type, configuration, or size of these installations or related equipment. This section does not apply to minor modification or routine maintenance of a solar energy system.

6540. Permitted Uses.

6540.1 Roof-mounted solar energy systems of any size are permitted as-of-right in all zoning districts, subject to receipt of a building permit. The Building Inspector may require a structural engineering report illustrating the structural integrity of the underlying structure and associated roof and its ability to support the proposed roof-mounted solar energy system.

6540.2 Small- scale ground-mounted solar energy systems are permitted as-of-right in all zoning districts, subject to receipt of a building permit. If the site contains a principal structure then the solar energy system will be deemed an accessory structure and must meet the setback requirements for an accessory structure.

6540.3 Medium-scale ground-mounted solar energy systems are permitted in all zoning districts as either a principal or accessory use subject to a Planning Board Special Permit.

6540.4 Large-scale ground mounted solar energy systems are permitted subject to receipt of a Planning Board Special Permit in the following zoning districts: Commercial (C), Industrial (I), Rural Residential (RR) and Suburban Residential (SR). They are not allowed in the following zoning districts: Urban Residential (UR), Town Residential (TR) and Recreational Residence Residential (RCR).

6540.5 The construction and operation of all solar energy systems shall be consistent with all applicable local, state and federal requirements, including but not limited to all applicable safety, construction, electric and communications requirements. All solar energy systems must comply with the Massachusetts Wetlands Protection Act and the Pepperell

Wetlands Protection Bylaw. The applicant for a building permit for a solar energy system shall be required to provide evidence of liability insurance to the Building Inspector in an amount sufficient to cover loss or damage to property and structures occasioned by the failure of the system. Construction or installation of all solar energy systems requires a building permit. All solar energy systems shall be constructed and installed in accordance with the State Building Code.

6540.6 No grid-intertied solar energy system shall be installed until the owner or operator has provided evidence of notification to the utility company of the customer's intent to install an interconnected customer-owned generator. Off-grid solar energy systems are exempt from this requirement.

6550. Design and Dimensional Standards.

6550.1 Roof-mounted solar energy systems are subject to the same height restrictions as other rooftop appurtenances. The panels, however, shall be excluded from any calculation of maximum roof coverage allowed for appurtenances. No roof-mounted solar energy system shall be located in a manner that would cause this shedding of ice or snow from the roof onto a porch, stairwell or pedestrian travel area.

6550.2 Roof-mounted solar energy systems shall be located in such a manner as to allow emergency access to the roof, allow for smoke ventilation, and provide emergency egress from the roof.

6550.3 Ground-mounted solar energy systems are subject to the same height restrictions as accessory buildings or principal buildings in each district, depending on whether the systems are permitted as accessory or principal uses.

6550.4 Small- and medium-scale ground-mounted solar energy systems accessory to a principal use shall comply with the setbacks for accessory structures in the relevant zoning district. All ground-mounted solar energy systems in Residential districts shall be installed either in the side yard or rear yard to the extent practicable.

6550.5 Ground-mounted solar energy systems accessory to a principal use will not be included in any lot-coverage calculations.

6550.6 Solar panels, to the maximum extent feasible, shall be positioned and landscaped so as to minimize glare on surrounding occupied structures.

6550.7 Medium-scale ground mounted solar energy systems that are principal uses must comply with all setback requirements for principal uses in the relevant zoning district.

- a. Reasonable efforts shall be made to minimize visual impacts by preservation of natural vegetation and screening between abutting properties. Screening shall consist of existing and /or proposed new vegetation, fences, walls, and grassed earthen berms or a combination thereof. In cases where screening cannot be provided onsite, the Planning Board may consider existing and/or proposed off-site screening if the property owner obtains permission to screen on an abutter's property. If utilizing a natural buffer, it shall be maintained above the highest level of the solar panels. When a screen consists of plant materials, said materials shall provide screening at the time of planting and be of a type that shall be expected to form a year-round dense screen.
- b. Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of ground-mounted solar energy systems.
- c. Lighting of large-scale ground mounted solar energy systems shall be consistent with local, state and federal law. Lighting of other parts of the system, such as appurtenant structures, shall be limited to that required for safety and operational purposes, and shall be reasonably shielded from abutting properties. Where feasible, lighting of the solar energy system shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution.

6550.8 Large-scale ground-mounted solar energy facilities must meet the following design and dimensional standards:

- a. The parcel must contain a minimum of 3 contiguous acres of upland areas.
- b. Front side and rear setbacks shall be as follows:
 1. Front Yard: The front yard shall have a depth of at least fifty (50 feet);
 2. Side Yard: Each side yard shall have a depth of at least fifty (50 feet);
 3. Rear Yard: The rear yard depth shall be at least thirty (30) feet.
- c. Reasonable efforts shall be made to minimize visual impacts by preservation of natural vegetation and screening between abutting properties. Screening shall consist of existing and /or proposed new vegetation, fences, walls, and grassed earthen berms or a combination thereof. In cases where screening cannot be provided onsite, the Planning Board may consider existing and/or proposed off-site screening if the property owner obtains permission to screen on an abutter's property. If utilizing a natural buffer, it shall be maintained above the highest level of the solar panels. When a screen consists of plant materials, said materials shall provide screening at the time of planting and be of a type that shall be expected to form a year-round dense screen.
- d. Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of ground-mounted solar energy systems.
- e. Lighting of large-scale ground mounted solar energy systems shall be consistent with local, state and federal law. Lighting of other parts of the system, such as appurtenant structures, shall be limited to that required for safety and operational purposes, and shall be reasonably shielded from abutting properties. Where feasible, lighting of the solar energy system shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution.
- f. Signage on large-scale ground-mounted solar energy systems shall comply with the sign provisions of the Zoning Bylaw and shall identify the owner, manufacturer, and operator and provide a 24-hour emergency contact phone number. A solar energy system shall not be used to display any advertising.

6550.9 For medium- and large-scale ground-mounted solar energy systems, reasonable efforts shall be made to place all utility connections from the solar energy system underground depending on appropriate soil conditions, shape and topography of the site, and any requirements of the utility provider. Electrical transformers for utility interconnections may be above ground if required by the utility provider.

6560. Standards for Site Plan Review and Special Permits.

6560.1 For medium and large-scale ground mounted solar energy systems that require a special permit, the Planning Board shall serve as the Special Permit Granting Authority (SPGA). The SPGA shall include as part of its review and proceedings all of the provisions and requirements of the Site Plan review standards applicable to medium and large-scale ground-mounted solar energy systems set forth in this bylaw.

6560.2 Solar Energy Systems that require a Special Permit must comply with Sections 3.0 and 4.0 of the Planning Board Rules and Regulations for Special Permits and Site Plan Reviews dated March 1, 2010. Special permit review shall be conducted in accordance with the notice, hearing and filing procedures set forth in M.G.L. Chapter 40A.

6560.3 Upon receipt of an application for a special permit and site plan review, the Planning Board may engage at the applicant's cost professional and technical consultants including legal counsel to assist with its review of the application in accordance with the requirements of Section 53G of Chapter 44 of M.G.L. The Planning Board may direct the applicant to deposit funds with the Planning Board for such review at the time the application is accepted and to add additional funds as needed upon notice. Failure to comply with this section shall be grounds for denying the application. Any

excess amount in the account attributable to the application, including any interest accrued, shall be returned to the applicant upon granting of the permit or formal withdrawal of the permit application.

6560.4 For solar energy systems which require a special permit, the Planning Board may approve, approve with modifications, disapprove or grant leave to withdraw. Approval may be subject to any conditions, modifications and/or restrictions that the Planning Board may deem necessary. Leave to withdraw or disapproval by the Planning Board must be supported by written findings. The Planning Board may waive strict compliance with the requirements of this Section, when in its judgement such action is in the public interest and consistent with the overall intent and purpose of this Section.

6560.5 In addition to the application requirements set forth in the Planning Board Rules and Regulations for Special Permits and Site Plan Reviews dated March 1, 2010, the applicant shall provide a site plan showing:

- a. Property lines and physical features, including roads for the project site;
- b. Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation and/or structures;
- c. Blueprints or drawings of the solar energy system signed by a professional engineer licensed to practice in the Commonwealth of Massachusetts showing the proposed layout of the system, any potential shading from nearby structures, the distance between the system components, including the solar collector and all property lines and existing on-site buildings and structures, and the tallest finished height of the system;
- d. One or three line electrical diagram details of the photovoltaic system, associated components, and electric interconnection methods, with all Massachusetts Electrical Code (527 CMR 12.00) compliant disconnects and overcurrent devices;
- e. Documentation of the major system components to be used, including the panels, mounting systems, and inverter;
- f. Name, address, and contact information for the proposed system installer;
- g. Name, address, phone number and signature of the applicant, as well as any co-applicants, and property owners;
- h. The name contact information and signature of any agents representing the applicant; and
- i. Zoning district designation for the parcel(s) of land comprising the project site.

6560.6 The applicant shall submit documentation of actual or prospective access to and control of the project site sufficient to allow for the construction and operation of the proposed solar energy system.

6560.7 The applicant shall submit a plan for the operation and maintenance of the ground-mounted solar energy system, which shall include measures for maintaining safe access to the installation, stormwater controls, as well as general procedures for the operational maintenance of the solar energy system.

6570. Financial Surety.

The owner or operator of a large-scale ground mounted solar energy system shall provide a form of surety, either through escrow account, bond or other form of surety approved by the Planning Board to cover the estimated cost of removal in the event the Town must remove the installation and remediate the landscape, in an amount and form determined to be reasonable by the Planning Board, but in no event to exceed more than 125 percent of the cost of removal and compliance with the additional requirements set forth herein, as determined by the project proponent and the Planning Board. Such surety will not be required for municipal or state-owned facilities. The project proponent shall submit a fully inclusive detailed itemized cost estimate of the Town's estimated cost (including "prevailing wages") associated with removal and full decommissioning of the facility and the site, prepared by a qualified engineer. The amount shall include a mechanism for calculating increased removal cost due to inflation at the end of the facility's useful life. Said estimated cost shall not include or deduct the value of material recycling. Said surety in its full amount

shall be presented to the Planning Board prior to the project proponent applying for a Building Permit or the commencement of construction.

6580. Monitoring and Maintenance.

The owner or operator of a medium - or large-scale ground-mounted solar energy system shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, and preserving the integrity of security measures. Site access shall be maintained at a level acceptable to the Building Inspector. The owner or operator shall be responsible for the cost of maintaining the solar energy system and any road(s) providing access to the system, unless accepted as a public way. For medium and large-scale ground mounted solar energy systems, the owner or operator shall provide a copy of the operation and maintenance plan, electrical schematic, and site plan to the Town's fire chief. Upon request, the owner and operator shall cooperate with local emergency services in development of an emergency response plan. All means of shutting down the solar energy system shall be clearly marked. The owner and/or operator shall identify a responsible person for public inquiries throughout the life of the solar energy system.

6590. Abandonment or Decommissioning.

6590.1 Removal Requirements. Any medium- or large-scale ground-mounted solar energy systems which has reached the end of its useful life or has been abandoned shall be removed. The owner or operator shall physically remove the system no more than one hundred fifty (150) days after the date of discontinued operations. The owner or operator shall notify the Planning Board by certified mail of the proposed date of discontinued operations and plans for removal. Decommissioning shall consist of: physical removal of all structures, equipment, security barriers and transmission lines from the site; disposal of all solid and hazardous waste in accordance with local, state and federal waste disposal regulations; stabilization or re-vegetation of the site as necessary to minimize erosion and disruption to vegetation.

6590.2. Abandonment. Absent notice to the Planning Board from the owner or operator of a proposed date of decommissioning or written notice of extenuating circumstances, a medium- or large-scale ground-mounted solar energy system shall be considered abandoned after it has failed to operate for more than one year without the written consent of the Planning Board. Upon receipt of notice of extenuating circumstances, the Planning Board may hold a public hearing to determine whether the circumstances are sufficient to rebut the presumption of abandonment. If the owner or operator of the solar energy system fails to remove the installation in accordance with the requirements of this Section within 150 days of abandonment or the proposed date of decommissioning the Town retains the right, after the receipt of an appropriate court order, to enter and remove any abandoned, hazardous or decommissioned solar energy system. To the extent permitted by law, the Town's cost for the removal will be charged to the property owner in accordance with the provisions of M.G.L. Chapter 139, Section 3A as a lien on the property.

ADDENDUM B – ARTICLE 7

NOISE CONTROL BYLAW

1. Authority

This Bylaw is issued by the Town of Pepperell pursuant to its authority under M.G.L. Chapter 40, Section 21 and Chapter 111, Sections 142A-142M, and 310 CMR 7.00, as reasonable and necessary for the protection of the health and welfare of the citizens of the Town of Pepperell.

2. Purpose

The Town of Pepperell hereby finds that excessive or unwarranted noise is a nuisance and a potential health hazard. Recognizing that people have a right to—and should be ensured—an environment free from excessive and unwarranted noise, the Town of Pepperell establishes this Bylaw to protect, preserve, and promote the health, safety, welfare, and quality of life for its citizens.

The intention is not to restrict people’s enjoyment of their home, property, or business but to ensure that the Town and its citizens are protected from intrusion of excessive noise generation by:

- i. Providing a mechanism for control, prevention, mitigation, and arbitration of noise through the establishment of maximum noise levels for lawful uses and activities,
- ii. Providing a venue for adjudication, arbitration, and if necessary, the definition of offenses and power to impose penalties by the Town of Pepperell Board of Health to preserve the rural character of our town.

Noise is hereby declared a nuisance if it:

- i. is excessive, unnecessary, prolonged, unusually loud, or unnatural in its time, place, and use, and constitutes an annoyance to a person of ordinary sensibility to sound;
- ii. materially and substantially interferes with the ordinary comfort of life, and the reasonable use and enjoyment of property.

Therefore,

- i. No person owning, leasing, or controlling a source of sound shall willingly, negligently, or through failure to provide necessary equipment, service, or maintenance and/or failure to take necessary precautions, cause, allow, or permit excessive or unwarranted noise as described in Section 5.
- ii. This Bylaw shall apply to all sound originating within the limits of the Town of Pepperell and is intended to be consistent in scope and application with relevant state and federal statutes and Town Bylaws.
- iii. All Town of Pepperell departments and agencies shall, to the fullest extent consistent with federal and state laws and Town Bylaws, carry out their programs in such a manner as to comply with this Bylaw.
- iv. Provisions in this Bylaw shall not apply to any activity to the extent that the Bylaw has been preempted by state or federal law.

3. Prohibitions on Excessive or Unwarranted Noise

Generation of excessive or unwarranted noise is prohibited, except in the following cases:

- A. **Construction/maintenance power equipment.** Motorized devices and equipment engaged in home construction (including site preparation and restoration), roof installation, building restoration, and like activities and/or demolition shall be permitted for use between the hours of 7:00 a.m. and 7:00 p.m., or as otherwise allowed by a Town of Pepperell permit issued for such activity.

EXCEPTIONS:

- i. Construction-related activity as specified in Section 3A, on days for which “Danger” or “Extreme Danger” heat conditions are forecast by the National Weather Service, may begin before 7:00 a.m., but not before 5:30 a.m.

B. Commercial trash collection. Vehicles used for the collection of trash, rubbish, refuse, or debris, such as but not limited to commercial compactors, are permitted to operate on any point of public or common right-of-way for vehicular traffic between the hours of 6:00 a.m. and 8:00 p.m.

EXCEPTIONS:

- i. Commercial trash collection may take place at any time within any area of the Town of Pepperell zoned Industrial Zone (I) or Commercial Zone (C) under the Zoning Bylaw.

C. Commercial deliveries or pickups. Deliveries or pickups for commercial or business purposes are permitted between 6:00 a.m. and 8:00 p.m., unless the noise level of such deliveries or pickups is excessive or unwarranted.

EXCEPTIONS:

- i. Commercial deliveries or pickups may take place at any time within any area of the Town of Pepperell zoned Industrial Zone (I) or Commercial Zone (C) under the Zoning Bylaw.

D. Domestic mechanical equipment. The outdoor use of domestic mechanical equipment such as, but not limited to, lawn mowers, leaf blowers, and power saws is permitted between the hours of 7:00 a.m. and 9:00 p.m.

E. Fixed plant equipment. Excessive or unwarranted noise caused by fixed plant equipment such as but not limited to air conditioners, pumps, fans, furnaces, compressors, engines, ventilation equipment, fuel/pipeline vents or blowdowns, and similar equipment is prohibited. As used herein, fixed shall mean any equipment mounted, secured, or fastened to the ground or to any building or structure, as well as any equipment that requires the assistance of motorized equipment to move or transport.

Any exceptions listed in Section 3 shall not apply if the noise is determined to exist as the result of negligent conduct or actions.

4. Exemptions

The provisions of this Bylaw shall not apply to sounds emitted during or associated with any of the following:

- A. Police, fire, and civil and national defense activities, or training exercises by public safety personnel related to emergency activities
- B. Any bell or chime from any school, church, or government building
- C. Any events that are permitted by the Town, such as parades, public gatherings, or sporting events for which permits have been issued
- D. Noncommercial public speaking and public assembly activities, as guaranteed by state and federal constitutions
- E. Operation of any activity that is an ordinary or ancillary aspect of farming
- F. Emergency work including but not limited to the operation of any mechanical device, apparatus, vehicle, or equipment used in connection with that emergency
- G. Snow removal
- H. Normal motor vehicle traffic that does not persistently or repetitively reach the excessive or unwarranted noise level as defined in Section 5.A. Persistent, repetitive commercial motor vehicle traffic, in excess of twice per hour, that exceeds the excessive noise level standard defined in Section 5.A., is explicitly prohibited under this Bylaw
- I. Any activity to the extent that this Bylaw has been preempted by state or federal laws.

These exemptions shall not apply if the noise is determined to exist as the result of negligent conduct or actions.

5. Measurement of Excessive or Unwarranted Noise

It shall be unlawful for any person to make or produce excessive or unwarranted noise. A determination that excessive or unwarranted noise is caused by a given noise source will be made in accordance with the following standards using the "Definitions" set forth in the Appendix to the Bylaw.

- A. Excessive or unwarranted noise, as used in this Bylaw, shall mean any of the following:

- Any condition in which a broadband impulsive or continuous sound source raises the noise level by 10 or more dBA above the ambient noise level
 - Any condition in which a tonal sound source raises its third-octave band level by 3 dB or more above the adjacent third-octave-band levels
- B. Under no condition will a persistent noise source be permitted that exceeds an absolute sound pressure level of 65 dBA, in accordance with the measurement conditions outlined below.

These standards are based on widely accepted national and state standards for community noise control bylaws and ordinances, including those identified in the References contained in the Appendix at the end of this Bylaw.

- C. Determination of excessive or unwarranted noise originating from private property of any type (i.e., any form of residential, commercial, or industrial property) shall be made at any point of the property boundary.
- D. Determination of excessive or unwarranted noise originating from public property shall be made at any location a passerby might lawfully occupy.
- E. Measurement of the noise source level shall be made over a time interval approximately equal to, but not to exceed, the duration of the noise source or noise event in question. For example, in the case of a continuous persistent stimulus, such as an air conditioning unit or machinery noise, an appropriate measurement duration should be at least 5 minutes. In the case of a transient, impulsive stimulus, such as a gas or steam blow-off or pile driver, the measurement interval needs to be shorter, matched to the duration of the noise stimulus.
- F. Noise level measurements made for the purpose of establishing compliance, or lack thereof, with this Bylaw may be submitted by a resident or business owner to any enforcing person, as specified in Section 6, as long as they can be demonstrated to be in compliance with the conditions outlined in this section. The Town of Pepperell Board of Health may, at its discretion, consult qualified experts for the purpose of validating a complaint.
- Any resident or business owner within the Town of Pepperell may submit a complaint that another person or business is violating the provisions of this Bylaw.
- G. Ambient baseline noise levels in the Town of Pepperell may be measured by a qualified expert appointed by the Board of Health. If no such ambient baseline noise levels exist at the time a complaint is brought, or a site review is conducted, any person seeking relief under this Bylaw may submit ambient baseline measurements made in compliance with the conditions set forth in this section. The Town of Pepperell Board of Health may, at its discretion, consult qualified experts for the purpose of validating a complaint.
- H. In no instance should any part of this Bylaw be interpreted so as to abrogate the power of the Board of Health pursuant to M.G.L. Chapter 111, Sections 142A-142M, and 310 CMR 7.00.

6. Enforcement and Penalties

The principal enforcement agency for this Bylaw is the Town of Pepperell Board of Health or its designated agent. The Town of Pepperell police will be the designated first responder to situational or incidental noise complaints, which they may choose to refer to the Board of Health.

- A. Upon receipt of a complaint brought under the terms and conditions of this Bylaw, the Board of Health or its designated agent may, at its discretion, convene an arbitration hearing to try to resolve the matter. This arbitration hearing must be called within 30 days of the complaint being filed. If the arbitration does not result in resolution, either through inability to reach agreement or failure to participate by the party/parties involved, the Board of Health may take any and all actions as appropriate to enforce this Bylaw.
- B. Any person who violates any provision of this Bylaw shall be subject to a fine of \$100 per violation. The imposition of a penalty for any violation shall not excuse the violation or permit it to continue. Each day that such violation continues shall be considered a separate offense, and subject to a fine of \$100.
- C. The Board of Health, upon finding that a persistent and habitual excessive noise violation has occurred, may impose a requirement that acceptable abatement measures be enacted by the offending party within 30 days of issuance of a decision stating the finding. Noise abatement measures shall be deemed as acceptable at the sole discretion of the Board of Health.
- D. If the offending party is unable or unwilling to moderate the subject activity in a manner that achieves compliance with this Bylaw, or is unable or unwilling to enact abatement measures, the Board of Health shall issue a cease and desist order against the activity or use that fails to comply with the stated requirements or provisions of this Bylaw.

7. Permitting of New Uses and Structures in Commercial and Industrial Zoning Districts

- A. No resident, property owner, or business owner or operator of any land or use in a Town of Pepperell Commercial or Industrial Zoning District shall commence or cause to be commenced the construction of any structure or introduction of any land use unless it is first determined by the Board of Health to be in conformance with the terms and conditions established under this Bylaw.
- B. Any application for a permit to the Town of Pepperell for improvement to land in the Commercial or Industrial Zoning District, including but not limited to a building permit, occupancy permit, business permit, or special permit issued by Planning Board, Zoning Board of Appeals, or Board of Selectmen shall require a review by the Board of Health to determine compliance with this Bylaw.
 - i. This application must be made in writing, and shall include any and all information and data supporting the claim that the terms of this Bylaw will be met and maintained, as well as any other information which the Board of Health may reasonably require for this purpose.
- C. The Board of Health may conduct such inspections and measurements as are necessary to ensure the accuracy of any report submitted to ascertain compliance with this Bylaw. These may include on-site inspections by a noise or sound expert during specified periods of construction.
- D. The Board of Health may, at its discretion, impose any mandatory noise abatement or mitigation measures it believes to be necessary for the proposed building or use to meet with the terms and conditions of this Bylaw.
- E. No new or substantially modified structure as determined by the Building Inspector on land used or zoned as commercial or industrial shall be approved for construction unless the owner or developer of such land has demonstrated, in accordance with the terms and conditions delineated herein, that the completed structure and the activities associated with and on the same property as the structure, will comply with the provisions of this Bylaw when operation commences and will continue to comply.

8. Relationship to Other Laws

Nothing in this Bylaw shall be construed to restrict, amend, repeal, or otherwise limit the application or enforcement of existing federal, state, or Town of Pepperell laws.

9. Rules and Regulations

The Board of Health may promulgate, after public notice and hearing, rules and regulations to effectuate the purposes and intent of this Bylaw. However, failure by the Board of Health to promulgate such rules and regulations shall not act to suspend or invalidate the effect of this Bylaw.

10. Severability

If any section, paragraph or part of this Bylaw is for any reason declared invalid or unconstitutional by any court, every other section, paragraph, and part shall continue in full force.

APPENDIX

Definitions

A-weighted decibel (dBA)—refers to the nationally recognized standard for measured sound pressure level, normalized for the frequency-dependent relative loudness perceived by the human ear, and expressed in decibels relative to a reference pressure of 20 micropascals.

Absolute—a direct measurement in calibrated sound pressure level: Not comparative or relative in any way.

Ambient noise level (Leq)—the background noise level, or equivalent continuous noise level, measured in

A-weighted decibels that is used as the reference level against which a new intrusive sound source may be compared. The Board of Health may, at its discretion, impose specific requirements as to the conditions under which the ambient noise level is to be established so as to insure its relevance and fairness to the quantification of the subject noise stimulus, including time duration and time of day.

Decibel (dB)—a logarithmic unit used in measuring the sound pressure level relative to a reference pressure of 20 micropascals.

Excessive—more than is necessary, normal, or desirable; immoderate

Noise—a sound.

Noise level—the property of broadband sound (that is, sound with multiple tones/frequencies, or a continuous band of frequencies) as measured in A-weighted decibels (dBA) with a sound level meter that meets or exceeds the requirement for a Type I or Type II sound-level meter as specified under American National Standards Institute (ANSI) Specification S1.4-1974 or its successor (ANSI, 1974/1983, S1.4), which is capable of making absolute measurements). For the purposes of characterizing the relative increase in sound pressure level caused by a noise under review, at its discretion the Board of Health may allow the presentation of measurements made by a more readily available instrument, such as a smartphone or tablet with a sound-pressure-meter application.

Octave band—a portion of the sound spectrum with the upper limit twice the frequency of the lower limit. Octave bands are named for their center frequency (geometric mean) of the band. Standard octave bands for sound level meters are defined by the American National Standards Institute (ANSI, 2009, S1.11).

Relative—a term used to describe any measurement of a noise stimulus made with respect to a contemporaneous measurement of the ambient noise level, as defined below. A relative measurement is understood to be self-normalizing in that it quantifies the intrusive nature of a noise source in terms of a known, ordinary acceptable noise background level. Further, a relative measurement inherently compensates for measurement error or bias associated with a particular measurement device by automatically cancelling any such errors as they are common to measurement of noise stimulus and background. As such, it is imperative that any relative measurement be performed using measurements of noise stimulus and background by the same exact device, made within a reasonable time interval.

Tonal—a sharply narrowband, continuous-wave (CW) signal or acoustic stimulus, like a long whistle or whirring sound. Due to its very concentrated nature in frequency, a tonal acoustic disturbance tends to possess a much greater annoyance factor, or even cause physical discomfort, at much lower relative sound pressure levels than a broadband noise source.

REFERENCES

- American National Standards Institute (ANSI). (1974/1983). American National Standard Specification for Sound Level Meters: ANSI S1.4A-1985 Amendment to ANSI S1.4-1983. Melville, NY: Acoustical Society of America.
- American National Standards Institute (ANSI). (2009). *Specification for octave-band and fractional-octaveband analog and digital filters*. Melville, NH: Secretariat, Acoustical Society of America.
- Berglund, B., Lindvall, T., & Schewela, D. (2000). *Guidelines for community noise*. Geneva, Switzerland: World Health Organization (WHO).
- Massachusetts Department of Environmental Protection Noise Pollution Policy Interpretation (2017). See the related law, regulations, and policy: M.G.L. Chapter 111, Sections 142A-142M, and 310 CMR 7.00: Air Pollution Control. <https://www.mass.gov/files/documents/2018/01/31/noise-interpretation.pdf>
- World Health Organization (WHO) Guidelines for Community Noise (1999). <https://www.who.int/docstore/peh/noise/guidelines2.html>
- World Health Organization Guidelines for Community Noise (1999), Chapter: Adverse Health Effects of Noise. <https://www.who.int/docstore/peh/noise/Comnoise-3.pdf>
- World Health Organization Training Package for the Health Sector: Children and Noise, Children's Health and the Environment <https://www.who.int/ceh/capacity/noise.pdf>