Corte Madera Town Hall Renovation Project

Noise and Vibration Study

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1 Project Description and Impact Analysis

1.1 Introduction

This study analyzes potential noise impacts from development of the proposed Corte Madera Town Hall Project (project) in the Town of Corte Madera, California. This study was prepared in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). This analysis considers both temporary impacts that would result from project construction and long-term impacts associated with operation of the project.

1.2 Project Summary

Project Location

The project site is located at 300 Tamalpais Drive within the Town of Corte Madera (Town) in Marin County (County), California. The project site is currently developed with the existing Corte Madera Town Hall (Town Hall) and encompasses a 15,700-square foot parcel at the corner of Tamalpais Drive and Willow Avenue. Surrounding development includes single family residences to the north, Corte Madera Fire Department Station 14 (Fire Station) to the east, residences to the south across Tamalpais Drive, and retail stores to the west across Willow Avenue. The Corte Madera Town Park is beyond the fire station to the east. The project site slopes west to east downward approximately 15 feet toward the adjacent Fire Station. The regional location of the project site is shown in Figure 1 and the project site location in its neighborhood context is shown in Figure 2.

The project site's land use designation is Public and Semi-Public Facilities (Town of Corte Madera 2009). This designation includes uses that service a public or semi-public function, including public and private schools, places of religious assembly, and public buildings. It also allows areas necessary for public service installations, including public and private drainage ways, retention ponds, and flood control facilities, such as pump stations, floodgates, and floodwalls, and other sites necessary for public facilities and services. Uses accessory to public facilities, including recreational pathways, are also allowed in this designation.

The project site is zoned Public and Semipublic Facilities District (P/SP) per the Corte Madera Municipal Code (CMMC) Chapter 18.16(IV). This designation applies to all public facilities, semipublic facilities, and public service installations not designated as flood control and drainage facilities, or parks, open space and natural habitat. This zoning district allows facilities, including buildings and grounds, owned, leased or operated by the town with an approved Conditional Use Permit (CUP).

Figure 1 Regional Location

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Project Location

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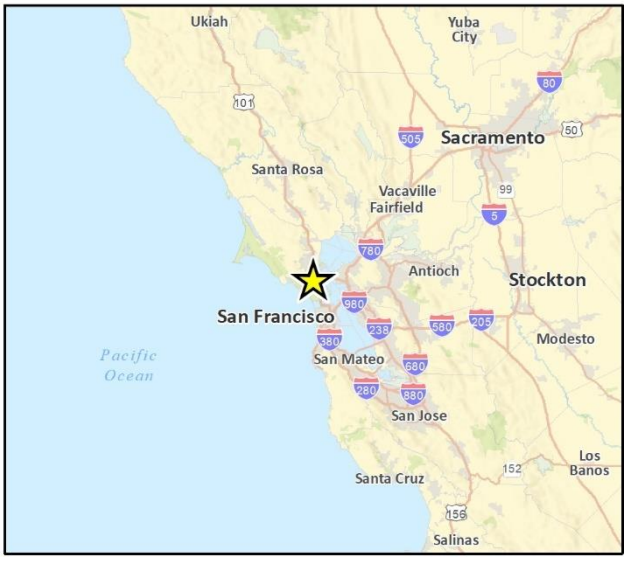

Figure 2 Project Site Location

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Project Description

The project includes a 5,674-square foot addition to the existing one-story Corte Madera Town Hall building. The original 4,826-square foot Town Hall building would remain in its current location and the addition would extend approximately 90 feet east into the adjacent public parking lot. The new fully ADA-compliant Town Hall structure would be 10,500 square feet (combined square footage with original Town Hall building) and include a 350 square-foot public service area, new council chamber/community room with seating for approximately 95 people, offices/workspaces to accommodate a small increase in staff from approximately 24 to 30 employees, and an outdoor plaza built around the existing redwood trees.[1] The new Town Hall would contain offices for the departments of Administration, Finance, Public Works and Building/Planning all in one building accessible from both Tamalpais Drive and the parking lot. The existing building and proposed addition would be connected by a central circulation corridor including an elevator, stairway, lobby and restrooms.

The project would add either a two- or three-story element to the existing one-story Town Hall building. Both potential building configurations would occupy the same location on the site and be approximately 10,500 square feet in area, with the main differences between the two designs being the maximum building height and the number of parking spaces.[1] The two-story option would have a height of 25 feet from Tamalpais Drive and result in a loss of two spaces, while the three-story option would have a height of 41 feet from Tamalpais Drive and add four parking spaces on the ground level below the offices and the council chambers/community room. As currently designed, the two-story option would also require one of the redwood trees adjacent to Tamalpais Drive to be removed while the three-story design would retain all three trees. Both options are intended to use space as efficiently as possible and minimize aesthetic impacts to the surrounding neighborhood.

Under both design options, the upper and lower levels of the current town hall would be remodeled and brought up to current building and accessible standards. The current council chambers would be converted into a public permitting center and offices, and the basement area would be remodeled to create a small conference room, storage, a server room and other flexible spaces.

Existing heating, ventilation, and air conditioning (HVAC) units would be replaced with new HVAC units, and a diesel emergency backup generator would be installed adjacent to the new Town Hall structure.

The parking lot would be reconfigured to maximize the number of standard, ADA, and electric vehicle charging spaces as well as improve vehicular and pedestrian circulation and safety. As stated above, the new building and site plan would result in a minor change in the total number of off-street parking spaces. Overall, the existing site layout would not significantly change. The project site would continue to be accessed via driveways on Tamalpais Drive and Willow Avenue.

Construction

Construction is anticipated to begin in the beginning of 2021 and would last approximately nine months. The existing Town Hall would be open during the duration of the construction period. The residential building adjacent to the north of the site is owned by the Town and houses Town employees. Employees would continue to live in the building throughout the duration of project construction. Construction staging and activities would occupy portions of the existing parking lots

[1] Please note that the project site plans have been revised to increase the Town Hall by 810 square feet for a total square footage of 11,310 square feet.

and, for limited times, portions of adjacent streets. The Town would offer temporary parking at the nearby Town Park and the public parking lot located at the intersection of Montecito Drive and Tamalpais Drive. Staging for construction and equipment would occur off-site.

2 Setting

2.1 Overview of Sound Measurement

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs (e.g., the human ear). Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Caltrans 2013a).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz (Hz) and less sensitive to frequencies around and below 100 Hz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as a doubling of traffic volume, would increase the noise level by 3 dB; similarly, dividing the energy in half would result in a decrease of 3 dB (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not "sound twice as loud" as one source. It is widely accepted that the average healthy ear can barely perceive an increase (or decrease) of up to 3 dBA in noise levels (i.e., twice [or half] the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (or half) as loud (10.5 times the sound energy) (Crocker 2007).

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in sound level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line), the path the sound will travel, site conditions, and obstructions. Noise levels from a point source (e.g., construction, industrial machinery, ventilation units) typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance. Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013a). The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site, such as a parking lot or smooth body of water, receives no additional ground attenuation and the changes in noise levels with distance (drop-off rate) result simply from the geometric spreading of the source. An additional ground attenuation value of 1.5 dBA per doubling of distance applies to a soft site (e.g., soft dirt, grass, or scattered bushes and trees) (Caltrans 2013a). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, and man-made features, such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce occupants' exposure to noise as well. The FHWA's guidelines

indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The impact of noise is not a function of sound level alone. The time of day when noise occurs and the duration of the noise are also important. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. One of the most frequently used noise metrics is the equivalent noise level (L_{eq}); it considers both duration and sound power level. L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time. Typically, L_{eq} is summed over a one-hour period. L_{max} is the highest root mean squared (RMS) sound pressure level within the sampling period, and L_{min} is the lowest RMS sound pressure level within the measuring period (Crocker 2007). Normal conversational levels are in the 60 to 65 dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (DNL), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.). Community noise can also be measured using Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013a). Noise levels described by DNL and CNEL usually differ by about 1 dBA. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 dBA, while areas near arterial streets are in the 50 to 60+ dBA CNEL range.

There is no precise way to convert a peak hour L_{eq} to DNL or CNEL – the relationship between the peak hour L_{eq} value and the DNL/CNEL value depends on the distribution of traffic volumes during the day, evening, and night. However, in urban areas near heavy traffic, the peak hour L_{eq} is typically 2 to 4 dBA lower than the daily DNL/CNEL. In less heavily developed areas, such as suburban areas, the peak hour L_{eq} is often roughly equal to the daily DNL/CNEL. For rural areas with little nighttime traffic, the peak hour L_{eq} will often be 3 to 4 dBA greater than the daily DNL/CNEL value (California State Water Resources Control Board [SWRCB] 1999). The project site is located in a suburban area; therefore, the DNL/CNEL in the area would be roughly equal to the peak hour L_{eq}.

2.2 Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of hertz (Hz). The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body is from a low of less than 1 Hz up to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise may result in adverse effects, such as building damage, when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz). Vibration may also damage infrastructure when foundations or utilities, such as

sewer and water pipes, physically connect the structure and the vibration source (FTA 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Descriptors

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. Particle velocity is the velocity at which the ground moves. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the greatest magnitude of particle velocity associated with a vibration event. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2013b).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2018). Vibration significance ranges from approximately 50 VdB (the typical background vibration-velocity level) to 100 VdB, the general threshold where minor damage can occur in fragile buildings (FTA 2018). The general human response to different levels of groundborne vibration velocity levels is described in **Error! Reference source not found.**.

Table 1 Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many people
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable
85 VdB	Vibration acceptable only if there are an infrequent number of events per day

Source: FTA 2018

Propagation

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. Variability in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2013b). When a building is impacted by vibration, a ground-to-foundation coupling loss (the loss that occurs when energy is transferred from one medium to another) will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-foundation coupling may actually amplify the vibration level due to structural resonances of the floors and walls.

2.3 Sensitive Receivers

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Noise-sensitive receivers generally include residences, schools, nursing homes, hospitals, and day care operations (Town of Corte Madera 2009).

Vibration-sensitive receivers, which are similar to noise-sensitive receivers, include residences and institutional uses, such as schools, churches, and hospitals. However, vibration-sensitive receivers

also include buildings where vibrations may interfere with vibration-sensitive equipment that is affected by vibration levels that may be well below those associated with human annoyance (e.g., recording studies or medical facilities with sensitive equipment).

2.4 Project Noise Setting

The most common source of noise in the project site vicinity is vehicular traffic on Tamalpais Drive, which borders the project site to the south, and Willow Avenue, which is west of the project site. Ambient noise levels are generally highest during the daytime and peak hour unless congestion substantially slows speeds.

The nearest sensitive receivers in the project vicinity are single-family dwellings located adjacent to the project site to the north and south across Tamalpais Drive. The nearest sensitive receivers to the north are Town employees that would remain in the building throughout project construction.

To characterize ambient sound levels at and near the project site, two 15-minute sound level measurements were conducted on Tuesday, February 4, 2020, between 11:07 a.m. and 11:45 a.m. An Extech, Model 407780A, ANSI Type 2 integrating sound level meter was used to conduct the measurements. The first noise measurement (NM 1) was taken at the project site adjacent to Tamalpais Drive, and the second noise measurement (NM 2) was taken at the project site adjacent to Willow Avenue. Figure 3 shows the noise measurement locations, and Table 2 summarizes the results of the noise measurements. Detailed sound level measurement data are included in Appendix A.

Table 2 Project Vicinity Sound Level Monitoring Results

#	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)
1	Tamalpais Drive	11:07 – 11:22 a.m.	25 feet to centerline of Tamalpais Drive	70.6	52.8	84.6
2	Willow Avenue	11:30 – 11:45 a.m.	75 feet to centerline of Tamalpais Drive, 20 feet to centerline of Willow Avenue	60.8	42.7	87.4

See Appendix A for noise monitoring data. See Figure 3 for noise measurement location.

Figure 3 Noise Measurement Location

2.5 Regulatory Setting

Town of Corte Madera General Plan Public Safety and Hazards Element

The goals, policies, and actions contained in the General Plan Public Safety and Hazards Element focus on establishing and applying criteria for acceptable noise levels for different land uses in order to minimize the negative impacts of noise, especially at sensitive receivers. The General Plan includes maximum noise levels for traffic noise and non-transportation noise, as shown in Table 3 and Table 4, respectively.

Table 3 Maximum Noise Levels for New Uses Affected by Traffic Noise

New Land Use	Outdoor Activity Areas (L_{dn})	Interior Spaces (L_{dn})/ Peak Hour (L_{eq})[1]
All Residential[2,3,4]	60-65	45
Transient Lodging[5]	65	45
Hospitals & Nursing Homes[6]	60	45
Theaters & Auditoriums	--	35
Churches, Meeting Halls, Schools, Libraries, etc.	60	40
Office Buildings[7]	65	45
Commercial Buildings[7]	65	50
Playgrounds, Parks, etc.	70	--
Light Industry[7]	65	50

Notes:

[1] For traffic noise within Corte Madera, L_{dn} and peak-hour L_{eq} values are estimated to be approximately similar. Interior noise level standards are applied within noisesensitive areas of the various land uses, with windows and doors in the closed positions.

[2] Outdoor activity areas for single-family residential uses are defined as backyards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.

[3] For multi-family residential uses, and for mixed-use projects that include residential units, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts.

[4] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

[5] Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas.

[6] Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.

[7] Only the exterior spaces of these uses designated for employee or customer relaxation have any degree of sensitivity to noise.

Source: Town of Corte Madera 2009

Table 4 Maximum Noise Levels for New Uses Affected by Non-Transportation Noise

	Outdoor Activity Area (L_{eq})		Interior (L_{eq})
New Land Use	**Daytime**	**Nighttime**	**Day & Night**
All Residential[1,2,7]	50	45	35
Transient Lodging[3]	55	--	40
Hospitals & Nursing Homes[4]	50	45	35
Theaters & Auditoriums	--	--	35
Churches, Meeting Halls, Schools, Libraries, etc.	55	--	40
Office Buildings[5,6]	55	--	45
Commercial Buildings[5,6]	55	--	45
Playgrounds, Parks, etc.[6]	65	--	--
Light Industry[5]	65	65	50

Notes:
[1] Outdoor activity areas for single-family residential uses are defined as backyards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.
[2] For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts. Where such areas are not provided, the standards shall be applied at individual patios and balconies of the development.
[3] Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas, and are not commonly used during nighttime hours.
[4] Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
[5] Only the exterior spaces of these uses designated for employee or customer relaxation have any degree of sensitivity to noise.
[6] The outdoor activity areas of office, commercial and park uses are not typically utilized during nighttime hours.
[7] It may not be possible to achieve compliance with this standard at residential uses located immediately adjacent to loading dock areas of commercial uses while trucks are unloading. The daytime and nighttime noise level standards applicable to loading docks shall be 55 and 50 dB L_{eq}, respectively.
Source: Town of Corte Madera 2009

The Corte Madera General Plan also includes the following policies and implementation programs related to the project:

- **Policy PSH – 5.5.** Emergency vehicle and similar noise sources shall be exempt from provisions of the General Plan noise standards.
  - **Implementation Program PSH–5.5.a: Emergency Exemptions.** Noise from emergency vehicles, generators used in emergency periods (such as power outages), and similar short-term noises are exempt from Town noise standards. Include provisions in updated Noise Ordinance.
- **Policy PSH – 5.7.** Reduce noise impacts from construction activities.
  - **Implementation Program PSH–5.7.a: Construction Time Restrictions.** Construction activities shall be limited to the hours between 7:00 a.m. and 5:00 p.m. on weekdays, and 10:00 a.m. and 5:00 p.m. on weekends, unless an exemption is first obtained from the Town in response to special circumstances. Include provisions in the Noise Ordinance.

Corte Madera Municipal Code

The Town implements and enforces construction and operational noise regulations through Chapter 9.36 of the CMMC. CMMC Section 9.36.030 limits noise from mechanical devices (including pumps, fans, air conditioning units, or other devices) from emitting noise 25 dBA above the ambient noise level for more than 10 minutes per hour, 30 dBA above the ambient noise level for more than 3 minutes per hour, and 40 dBA above the ambient noise level for any amount of time in residential zoning districts. These standards are not applicable to construction and demolition activities performed on weekdays between 7:00 a.m. and 5:00 p.m. and weekends 10:00 a.m. and 5:00 p.m., provided all powered construction equipment is equipped with intake and exhaust mufflers. The CMMC also requires pavement breakers and jackhammers to be equipped with acoustical attenuating shields or shrouds.

CMMC Section 9.36.040 restricts leaf blower usage on nonresidential properties to the hours between 7:00 a.m. and 5:00 p.m. on weekdays and between 10:00 a.m. and 4:00 p.m. on Saturdays, with no usage allowed on Sundays and holidays.

Nighttime noise is limited by Section 9.36.050 of the CMMC. Between 10:00 p.m. and 6:00 a.m., excessive or offensive noise that disturbs the peace or quiet of any neighborhood or is unreasonably disturbing to a person of ordinary sensitivities residing in the area is unlawful. This includes mechanical noises that do not exceed the levels set forth in Section 9.36.030.

3 Impact Analysis

3.1 Significance Thresholds

To determine whether a project would have a significant noise impact, Appendix G of the *CEQA Guidelines* requires consideration of whether a project would result in:

1. A substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
2. Excessive groundborne vibration or groundborne noise levels;
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels.

Construction Noise

Because the Town does not maintain a numeric construction noise threshold, construction noise would be considered significant if it exceeds construction noise standards provided by the FTA. A significant impact would occur if the two noisiest pieces of construction equipment for each phase of construction exceed 90 dBA L_{eq} at residences, or 100 dBA L_{eq} at commercial or industrial buildings during daytime hours, and 80 dBA L_{eq} at residences or 100 dBA L_{eq} at commercial or industrial buildings during nighttime hours (FTA 2018).

On-site Operational Noise

On-site operational noise would include noise from mechanical equipment, including HVAC units and the emergency generator, parking lot noise, and people conversing on the site.

A significant impact from mechanical equipment (such as the HVAC units) would occur if noise emitted would exceed 25 dBA above the ambient noise level for more than 10 minutes per hour, 30 dBA above the ambient noise level for more than 3 minutes per hour, and 40 dBA above the ambient noise level for any amount of time at the adjacent residences. A significant leaf blower noise impact would occur if leaf blowers are used on the project site outside of the hours of 7:00 a.m. and 5:00 p.m. on weekdays, and 10:00 a.m. and 4:00 p.m. on Saturdays, or used at all on Sundays and holidays (CMMC Section 9.36.040[b]). A significant nighttime noise impact would occur if excessive and offensive noise occurs during the hours of 10:00 p.m. and 6:00 a.m. (CMMC Section 9.36.050).

Vibration

The Town of Corte Madera has not adopted a significance threshold to assess vibration impacts during construction and operation. Therefore, the FTA guidelines set forth in the FTA Transit Noise and Vibration Impact Assessment Manual (2018) are used to evaluate potential construction vibration impacts related to both potential building damage and human annoyance. Based on the FTA criteria, construction vibration impacts would be significant if construction vibration levels exceed 100 VdB, which is the general threshold at which damage can occur to fragile buildings, or 72 VdB at residences during nighttime hours (FTA 2018).

3.2 Methodology

Construction Noise

Construction noise was estimated using the FHWA Roadway Construction Noise Model (RCNM) (2006). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at noise-sensitive receivers near the project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation of 6 dBA per doubling of distance for stationary equipment.

For construction noise assessment, construction equipment can be considered to operate in two modes: stationary and mobile. As a rule, stationary equipment operates in a single location for one or more days at a time, with either fixed-power operation (e.g., pumps, generators, and compressors) or variable-power operation (e.g., pile drivers, rock drills, and pavement breakers). Mobile equipment moves around the construction site with power applied in cyclic fashion, such as bulldozers, graders, and loaders (FTA 2018). Noise impacts from stationary equipment are assessed from the center of the equipment, while noise impacts from mobile construction equipment are assessed from the center of the equipment activity area (e.g., construction site).

Variation in power imposes additional complexity in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle, or percent of operational time, of the activity to determine the L_{eq} of the operation (FTA 2018).

Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some will have higher continuous noise levels than others, and some may have high-impact noise levels. The maximum hourly L_{eq} of each phase is determined by combining the L_{eq} contributions from each piece of equipment used in that phase (FTA 2018). In typical construction projects, grading activities generate the highest noise levels because grading involves the largest equipment and covers the greatest area.

Project construction is estimated to occur over nine months. Construction phases would include demolition, site preparation, grading, building construction, architectural coating, and paving of the project site. Construction would not require any blasting or pile driving. It is assumed that diesel engines would power all construction equipment. For assessment purposes, and to be conservative, the loudest hour has been used for assessment. Noise levels are based on a potential construction scenario of one bulldozer and one concrete saw operating simultaneously during the grading phase. At a distance of 50 feet one bulldozer and one concrete saw would generate a noise level of approximately 83.8 dBA L_{eq} (RCNM Calculations are included in Appendix B). The grading phase was the only phase modeled in RCNM because it would be the loudest construction phase.

On-site Operational Noise

Noise levels from on-site operational noise sources were estimated at the nearest noise sensitive receptors using noise levels from equipment, obtained either from manufacturer specifications, reference noise levels, and the distance to receptors.

Off-site Traffic Noise

The project would generate vehicle trips, thereby increasing traffic on area roadways. The project is estimated to generate 12 new average daily trips (ADT) on completion, which represents trips generated by the 6 new employees (2 daily trips per employee).[2]

Roadway noise impacts were assessed on Willow Avenue because it has a lower average daily traffic (ADT) rate than Tamalpais Drive, and would provide a conservative estimate of potential roadway noise impacts to adjacent residential uses. Existing daily traffic on Willow Avenue was estimated based on the assumption that peak hour traffic volumes are equal to ten percent of the roadway ADT (Precision Traffic & Safety Systems 2018). Therefore, the 15-minute traffic count taken during the noise measurement[3] was multiplied by four to obtain hourly traffic, and then multiplied by 10 to obtain an estimate of daily traffic. The approximate traffic volume estimate for the 15-minute count period was 5 total vehicles; therefore, existing traffic levels along Willow Avenue adjacent to the project site equate to 20 hourly trips and 200 ADT.

Groundborne Vibration

The proposed project does not include any substantial vibration sources associated with operation. Thus, construction activities have the greatest potential to generate groundborne vibration affecting nearby receivers, especially during grading of the project site. The greatest vibratory sources during construction would be bulldozers and loaded trucks. Neither blasting nor pile driving would be required for construction of the proposed project. Construction vibration estimates are based on vibration levels reported by Caltrans and the FTA (Caltrans 2013b, FTA 2018).

A quantitative assessment of potential vibration impacts from construction activities, such as demolition or excavation, may be conducted using the equations developed by Caltrans and the FTA (Caltrans 2013b, FTA 2018). Table 5 shows typical vibration levels for various pieces of construction equipment used in the assessment of construction vibration (FTA 2018).

Table 5 Estimated Vibration Levels during Construction Activities

Equipment	PPV at 25 ft. (in/sec)	Approximate L_v VdB at 25 feet
Large bulldozer	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Source: FTA 2018

[2] Please note that a traffic analysis was completed for the project following the date of this study and the project would generate 45 daily trips.

[3] Because the noise measurement was not taken during the peak hour, this assumption underestimates the existing ADT on local roadways. This provides a conservative analysis as the increase in trips is comparatively greater with this assumption than if the full ADT, which would include more vehicles.

3.3 Impact Analysis

Threshold 1	Would the proposed project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Temporary Construction Noise Impacts

Town employees would continue to live on Town property adjacent to the site during construction. These Town employees are considered to be the nearest noise sensitive receiver to the project site, with the employee residence located approximately 50 feet from the center of the project construction area. The distance to the center of the construction area was used to determine construction noise levels, as throughout a typical construction day, equipment would operate in various locations on the site, averaging approximately 50 feet from the nearest residential property lines.

Construction activity would result in temporary increases in ambient noise levels in the project area on an intermittent basis and, as such, would expose surrounding sensitive receivers to increased noise levels. Increase in noise levels at off-site receivers during construction of the proposed project would be temporary in nature and would not generate continuously high noise levels, although occasional single-event disturbances from construction would be possible. Noise levels would fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers.

As described in Section 3.2, at a distance of 50 feet, one dozer and one concrete saw would generate a noise level of approximately 83.8 dBA L_{eq}. Additional factors to consider are that the estimated construction noise level does not take into account that equipment would be dispersed in various areas of the site in both time and space. Due to spatial and equipment limitations, only a certain amount of equipment can operate near a given location at a particular time. Therefore, the noise levels of 83.8 dBA L_{eq} at 50 feet represents a conservative estimate of construction noise.

The nearest sensitive land use to the project site are residences located approximately 50 feet from the center of the project site. Construction noise levels of 83.8 dBA L_{eq} would not exceed the FTA threshold of 90 dBA L_{eq} at residences during daytime hours, but would exceed the FTA threshold of 80 dBA L_{eq} at residences during nighttime hours. There are no commercial or industrial land uses within 50 feet of the project site. Therefore, construction noise would not exceed the 100 dBA daytime and nighttime threshold for commercial and industrial land uses.

N-1 Construction Hours

Construction shall be limited to daytime hours between 7:00 a.m. and 5:00 p.m. on weekdays and 10:00 a.m. and 5:00 p.m. on weekends, per CMMC Section 9.36.030(b).

Significance After Mitigation

The limitation of construction hours to the daytime hours established in the CMMC would ensure construction noise would occur during the nighttime, and the FTA's nighttime construction noise threshold would not be exceeded. Therefore, implementation of Mitigation Measure N-1 would reduce noise impacts from temporary construction activities.

On-Site Operational Noise

The project would include conversational noise, parking lot noise, and leaf blower noise. The project would continue to operate as the Town Hall following project completion, with six new employees. Operational on-site noise from conversations, leaf blowers, and the parking lot would incrementally increase due to the increase in employees; however, it would remain similar to existing conditions. There would be no substantial noise increase from these on-site sources.

Heating, Ventilation, and Air Conditioning Noise

The project would include the addition of new rooftop HVAC equipment. There are existing HVAC systems operating on Town Hall building and their noise was captured in the noise measurements taken at the site on February 4, 2020. The existing HVAC units would be replaced by new HVAC units, which would likely be quieter than the existing HVAC units due to technological advances. Noise from existing HVAC systems were conservatively not considered in the HVAC analysis for the building expansion.

HVAC equipment is a continuous noise source, and noise levels can reach up to 70 dBA L_{eq} at a distance of 15 feet from the source (Illingworth & Rodkin 2009). Rooftop equipment would be located as close as 55 feet from the project site's northwestern property line.[4] Assuming approximately one ton of HVAC systems would be required for every 600 square feet of floor space, the project would require approximately 17.5 tons of HVAC systems, or approximately 4 total new HVAC units.[5] Assuming maximum exposure of noise from all four HVAC units at any point on the adjacent property, noise levels generated by HVAC equipment would be approximately 64.7 dBA L_{eq} at 55 feet. This analysis conservatively did not account for shielding of the new HVAC units. As a result, HVAC equipment noise would increase the existing ambient noise level of 60.8 dBA L_{eq} (NM 2, see Table 2) on the adjacent property to approximately 66.2 dBA L_{eq}, which would be an increase of approximately 5.4 dBA above ambient noise levels (see Appendix C for summed noise calculations). An increase in ambient noise levels of approximately 5 dBA is less than the permitted 25-dBA increase in ambient noise from operation of mechanical equipment for more than 10 minutes per hour. Therefore, impacts related to HVAC equipment noise would be less than significant.

Emergency Generator Noise

The project would include one backup generator on the project site. For the purposes of this analysis the generator was conservatively assumed to be an MTU 16V4000 DS2250 diesel generator or similar model. The generator would emit a noise level of 98.7 dBA at 23 feet (MTU Onsite Energy 2017). The location of the emergency generator has not been determined. For the purposes of this analysis, it was conservatively assumed to be located adjacent to the Town Hall structure along the northern-facing edge of the building, approximately 35 feet from the nearest residence. Generator operation would be approximately 95 dBA at the nearest residence 35 feet away.

The proposed generator would be used only during an emergency when electricity cannot be supplied by Pacific Gas and Electric Company. Per Section 9.36.050(b) of the CMMC emergency generator noise is exempt from the Town's Noise Ordinance standards. However, periodic testing and maintenance for the generator would occur several times a year to ensure the generator is in

[4] Diagonal distance between rooftop HVAC units and the property line, conservatively assuming a two-story building height of 42 feet and a setback of 35 feet.

[5] 10,500 net square feet divided by 600 square feet per ton of HVAC system, and one HVAC unit per 5 tons.

proper working order. Testing of the generators would occur no more than 50 hours annually, per the Bay Area Air Quality Management District's Authority to Construct.

Generator noise of approximately 95 dBA at the nearest noise sensitive receivers would exceed ambient noise levels of 61 dBA (NM 2, see Table 2) by approximately 34 dBA. Therefore, the Town's noise threshold of 25 dBA above the ambient noise level for more than 10 minutes per hour would be exceeded (CMMC Section 9.36.030) and emergency generator noise would result in a potentially significant impact. Mitigation Measure N-2 is therefore required to ensure a noise reduction of at least 10 dBA from the generator is achieved to ensure that noise levels at the nearest receivers do not exceed the threshold of 25 dBA above ambient noise.

N-2 Generator Noise Reduction

The diesel generator shall be installed with implementation of one or more of the following options to reduce noise during maintenance and testing:

- Install a sound attenuation enclosure around the generator. Depending on the design and materials used, sound attenuation enclosures can reduce the generator noise from 10 dBA to 40 dBA (Worldwide Power Products 2020). The sound attenuation enclosure shall provide at minimum a 10 dBA noise reduction; or
- Include an exhaust silencer on the emergency generator. Depending on the design, silencers can reduce generator noise from 10 dBA to 40 dBA (MTU 2017). The silencer shall provide at minimum a 10 dBA noise reduction; or
- The generator shall be positioned on the project site at least 105 feet from nearby noise sensitive receivers.

Significance After Mitigation

The installation of a sound enclosure and/or exhaust silencer would adequately reduce the generator noise by a minimum of 10 dBA, which would reduce generator noise to 85 dBA at the nearest noise sensitive receiver. A noise level of 85 dBA would be approximately 24 dBA above the ambient noise level of 61 dBA (see Table 2). Therefore, implementation of a sound enclosure or exhaust silencer would ensure generator noise does not exceed the threshold of 25 dBA above the ambient noise level for more than 10 minutes per hour at the nearest receivers.

Placement of the generator at least 105 feet from the nearest sensitive receivers would reduce generator noise to 85.5 dBA at 105 feet. The relocated generator noise would be reduced to 85.5 dBA at 105 feet, which is 24.5 dBA above the ambient noise level of approximately 61 dBA (see Table 2). Therefore, relocation of the generator would ensure generator noise does not exceed the threshold of 25 dBA above the ambient noise level.

Implementation of Mitigation Measure N-2 would therefore reduce noise impacts from the proposed emergency generator.

Off-Site Traffic Noise

The proposed project would generate new vehicle trips and increase traffic on area roadways. The project would add approximately 12 ADT to nearby roadways. While there are two entrances to the project site, Willow Avenue currently experiences fewer daily trips; therefore, all of these new trips were added to Willow Avenue to provide a conservative analysis. As described in Section 3.2, the daily traffic volume along Willow Avenue was estimated at approximately 200 ADT.

The project's contribution to roadway noise was evaluated through a calculation by comparing existing traffic noise levels to traffic noise levels with operation of the project. Generally, a doubling of traffic (i.e., 100 percent traffic increase) would increase noise levels by approximately 3 dBA, which is the human level of perception for an increase in noise (FTA 2018). Therefore, a 10 percent increase in the number of vehicles on a roadway would result in a noise increase of approximately 0.4 dBA. The 12 daily trips added by the project would constitute an approximately 6 percent increase in traffic volume along Willow Avenue, resulting in a noise increase of less than 0.4 dBA. Such an increase would be imperceptible and would not result in a substantial permanent increase in ambient noise levels.[6]

Nighttime Noise

The project would not increase the nighttime usage of the project site, as the Town Hall generally operates during daytime hours. Nighttime meetings in the Town Hall for Town Council, special events, Planning Commission, and other meetings would continue to occur, with no increase in frequency of nighttime use anticipated as a part of the project. Therefore, the project would not increase nighttime noise above existing conditions.

Threshold 2	Would the proposed project generate excessive groundborne vibration or groundborne noise levels?

The project does not include substantial vibration sources associated with operation. Thus, construction activities have the greatest potential to generate ground-borne vibration affecting nearby receivers, especially during grading of the project site.

Certain types of construction equipment can generate high levels of groundborne vibration. The FTA recommends vibration impact thresholds to determine whether groundborne vibration would be "excessive." According to the FTA, groundborne vibration criteria for residential receptors are 72 VdB for frequent events, 75 VdB for occasional events, and 80 VdB for infrequent events (FTA 2018). In the absence of locally-established thresholds, these thresholds were used for this analysis. As construction activities would constitute a frequent event, the 72 VdB threshold is the applicable standard used to assess groundborne vibration impacts to nearby residential receptors. Per the Historic Resources Evaluation Report (Rincon Consultants 2020), the existing Town Hall is not considered a historic structure. Therefore, the threshold for historic structures was not applied to the project.

Construction of the proposed project would potentially utilize vibratory equipment including loaders, bulldozers, and concrete saws throughout the duration of project construction. The nearest structure to the project site is a residence located approximately 40 feet to the northwest from project construction. As shown in Table 6, groundborne vibration from construction equipment would not exceed the 100 VdB threshold for fragile buildings. As stated previously, CMMC Section 9.36.030(b) limits construction to daytime hours; therefore, construction would not exceed the 72 VdB threshold for vibration during nighttime hours. Construction-related vibration impacts would be less than significant.

[6] A total of 45 daily trips, as determined by the project traffic study completed after this report, would increase traffic on Willow Avenue by approximately 23 percent resulting in an increase in traffic noise of less than 3 dBA, which would not be perceptible.

Table 6 Vibration Levels at Sensitive Receptors

Equipment	Estimated VdB at 40 feet[1]
Large bulldozer	81
Loaded trucks	80
Jackhammer	73
Small bulldozer	52

[1]Calculated using the formula: $VdB_{(40\ feet)} = VdB_{(25\ feet)} - 30 * \log (40 / 25)$ (FTA 2018).
Source: FTA 2018

Threshold 3	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the proposed project expose people residing or working in the project area to excessive noise levels?

The nearest airport to the project site is the San Rafael Airport, located approximately six miles the north. The project site is not located within two miles of a public airport or public use airport, or within the vicinity of a private airstrip or airport land use plan. Therefore, the project would not expose people residing or working in the project area to excessive noise levels. No impact would occur.

4 Conclusions

As detailed in the analysis above, the project would result in a potentially significant impact related to generator noise. However, implementation of Mitigation Measures N-1 and N-2 would reduce this impact to a less than significant level by requiring implementation of noise reduction measures and/or relocation of the generator as far as feasible from sensitive receivers. In addition, the project would have less than significant or no impacts related to construction noise, off-site traffic noise, vibration, and airport operations.

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Appendix A

Noise Measurement Data

Noise Measurement 1

Data Logger 2		
Duration (seconds)		3
Weighting	A	
Response	SLOW	
Range	40-100	
L05		75.0
L10		74.0
L50		68.8
L90		62.5
L95		60.3
Lmax		84.6
Time	2/4/2020	11:13
SEL		99.5
Leq		70.0

Leq (Manual) **70.6**

No.s	Date Time	dB	Sound Energy
1	2/4/2020 11:07	71.4	41411527.94
2	2/4/2020 11:07	68.9	23287413.5
3	2/4/2020 11:07	66.3	12797385.56
4	2/4/2020 11:07	66.1	12221408.33
5	2/4/2020 11:07	65.5	10644401.68
6	2/4/2020 11:07	66.1	12221408.33
7	2/4/2020 11:07	66.7	14032054.24
8	2/4/2020 11:07	66.2	12506081.5
9	2/4/2020 11:07	67.3	16110953.89
10	2/4/2020 11:07	72.3	50947309.57
11	2/4/2020 11:07	74.9	92708862.98
12	2/4/2020 11:07	72.5	53348382.3
13	2/4/2020 11:07	70.7	35246926.65
14	2/4/2020 11:07	68.2	19820803.44
15	2/4/2020 11:07	67.4	16486226.22
16	2/4/2020 11:07	68.7	22239307.24
17	2/4/2020 11:07	70.9	36908063.12
18	2/4/2020 11:07	71.1	38647486.55
19	2/4/2020 11:07	70.3	32145579.16
20	2/4/2020 11:07	70.7	35246926.65
21	2/4/2020 11:07	72.9	58495337.99
22	2/4/2020 11:07	74.4	82626861.1
23	2/4/2020 11:07	72.7	55862614.1
24	2/4/2020 11:07	70.2	31413856.44
25	2/4/2020 11:07	70.2	31413856.44
26	2/4/2020 11:07	72.2	49787607.22
27	2/4/2020 11:07	74.6	86520945.09
28	2/4/2020 11:07	73.2	62678883.93
29	2/4/2020 11:07	70.1	30698789.77
30	2/4/2020 11:07	66.9	14693364.58
31	2/4/2020 11:07	65.6	10892341.64
32	2/4/2020 11:07	65.6	10892341.64
33	2/4/2020 11:07	65.2	9933933.644
34	2/4/2020 11:07	64.9	9270886.298
35	2/4/2020 11:07	63.6	6872602.958
36	2/4/2020 11:07	64.2	7890803.976
37	2/4/2020 11:07	61.3	4046888.648
38	2/4/2020 11:07	59.6	2736032.518
39	2/4/2020 11:07	62.7	5586261.41
40	2/4/2020 11:07	61.8	4540683.745

Noise Measurement 1

41	2/4/2020 11:07	59.7	2799762.902
42	2/4/2020 11:07	60.4	3289434.588
43	2/4/2020 11:07	59.4	2612890.77
44	2/4/2020 11:07	60.9	3690806.312
45	2/4/2020 11:07	61	3776776.235
46	2/4/2020 11:07	63.9	7364126.747
47	2/4/2020 11:07	68.9	23287413.5
48	2/4/2020 11:07	71.9	46464498.57
49	2/4/2020 11:08	72.1	48654302.92
50	2/4/2020 11:08	68.4	20754929.13
51	2/4/2020 11:08	65.4	10402105.51
52	2/4/2020 11:08	61.8	4540683.745
53	2/4/2020 11:08	58.9	2328741.35
54	2/4/2020 11:08	55.2	993393.3644
55	2/4/2020 11:08	58.7	2223930.724
56	2/4/2020 11:08	60.8	3606793.304
57	2/4/2020 11:08	59.6	2736032.518
58	2/4/2020 11:08	59.7	2799762.902
59	2/4/2020 11:08	59.8	2864977.758
60	2/4/2020 11:08	61	3776776.235
61	2/4/2020 11:08	61.2	3954770.216
62	2/4/2020 11:08	61.4	4141152.794
63	2/4/2020 11:08	64	7535659.295
64	2/4/2020 11:08	67.4	16486226.22
65	2/4/2020 11:08	68.7	22239307.24
66	2/4/2020 11:08	67.4	16486226.22
67	2/4/2020 11:08	67.8	18076787.58
68	2/4/2020 11:08	69.2	24952913.13
69	2/4/2020 11:08	68	18928720.33
70	2/4/2020 11:08	68	18928720.33
71	2/4/2020 11:08	66.2	12506081.5
72	2/4/2020 11:08	65	9486832.981
73	2/4/2020 11:08	66.3	12797385.56
74	2/4/2020 11:08	69.2	24952913.13
75	2/4/2020 11:08	71.3	40468886.48
76	2/4/2020 11:08	75.2	99339336.44
77	2/4/2020 11:08	79.1	243849154.8
78	2/4/2020 11:08	77.5	168702397.6
79	2/4/2020 11:08	72.1	48654302.92
80	2/4/2020 11:08	66.9	14693364.58
81	2/4/2020 11:08	62.5	5334838.23
82	2/4/2020 11:08	62.9	5849533.799
83	2/4/2020 11:08	62.7	5586261.41
84	2/4/2020 11:08	62.8	5716382.154
85	2/4/2020 11:08	63.5	6716163.416
86	2/4/2020 11:08	63.7	7032686.446
87	2/4/2020 11:08	65.7	11146056.87
88	2/4/2020 11:08	68.1	19369626.87
89	2/4/2020 11:08	71.5	42376126.34
90	2/4/2020 11:08	73.6	68726029.58
91	2/4/2020 11:08	75.8	114056818.9
92	2/4/2020 11:08	73.6	68726029.58
93	2/4/2020 11:08	72.8	57163821.54
94	2/4/2020 11:08	72.5	53348382.3
95	2/4/2020 11:08	75.4	104021055.1
96	2/4/2020 11:08	73.1	61252138.34
97	2/4/2020 11:08	71.8	45406837.45
98	2/4/2020 11:08	72.3	50947309.57

Noise Measurement 1

99	2/4/2020 11:08	73.2	62678883.93
100	2/4/2020 11:08	72.9	58495337.99
101	2/4/2020 11:08	69.6	27360325.18
102	2/4/2020 11:08	69.8	28649777.58
103	2/4/2020 11:08	71.2	39547702.16
104	2/4/2020 11:08	73	59857869.45
105	2/4/2020 11:08	75	94868329.81
106	2/4/2020 11:08	74.5	84551487.94
107	2/4/2020 11:08	75	94868329.81
108	2/4/2020 11:08	70.4	32894345.88
109	2/4/2020 11:09	67.2	15744223.81
110	2/4/2020 11:09	64.3	8074604.412
111	2/4/2020 11:09	63.4	6563284.872
112	2/4/2020 11:09	61.7	4437325.165
113	2/4/2020 11:09	61.3	4046888.648
114	2/4/2020 11:09	61.4	4141152.794
115	2/4/2020 11:09	61.5	4237612.634
116	2/4/2020 11:09	62.6	5459102.576
117	2/4/2020 11:09	65	9486832.981
118	2/4/2020 11:09	67.3	16110953.89
119	2/4/2020 11:09	70.8	36067933.04
120	2/4/2020 11:09	71.4	41411527.94
121	2/4/2020 11:09	69.6	27360325.18
122	2/4/2020 11:09	66.6	13712645.69
123	2/4/2020 11:09	65.4	10402105.51
124	2/4/2020 11:09	64.5	8455148.794
125	2/4/2020 11:09	64	7535659.295
126	2/4/2020 11:09	63.5	6716163.416
127	2/4/2020 11:09	63.6	6872602.958
128	2/4/2020 11:09	63.5	6716163.416
129	2/4/2020 11:09	63.4	6563284.872
130	2/4/2020 11:09	63.9	7364126.747
131	2/4/2020 11:09	64.9	9270886.298
132	2/4/2020 11:09	66.2	12506081.5
133	2/4/2020 11:09	68.7	22239307.24
134	2/4/2020 11:09	70.5	33660553.63
135	2/4/2020 11:09	71.8	45406837.45
136	2/4/2020 11:09	74.3	80746044.12
137	2/4/2020 11:09	73.8	71964987.57
138	2/4/2020 11:09	71.8	45406837.45
139	2/4/2020 11:09	71.6	43363193.12
140	2/4/2020 11:09	70.2	31413856.44
141	2/4/2020 11:09	72.1	48654302.92
142	2/4/2020 11:09	75.1	97078097.08
143	2/4/2020 11:09	70.8	36067933.04
144	2/4/2020 11:09	70.1	30698789.77
145	2/4/2020 11:09	70.6	34444608.64
146	2/4/2020 11:09	74.3	80746044.12
147	2/4/2020 11:09	73.9	73641267.47
148	2/4/2020 11:09	74	75356592.95
149	2/4/2020 11:09	72.3	50947309.57
150	2/4/2020 11:09	72.7	55862614.1
151	2/4/2020 11:09	74.8	90598551.61
152	2/4/2020 11:09	70.7	35246926.65
153	2/4/2020 11:09	70	30000000
154	2/4/2020 11:09	66.9	14693364.58
155	2/4/2020 11:09	68	18928720.33
156	2/4/2020 11:09	71.7	44373251.65

Noise Measurement 1

157	2/4/2020 11:09	71.5	42376126.34
158	2/4/2020 11:09	65.8	11405681.89
159	2/4/2020 11:09	65.8	11405681.89
160	2/4/2020 11:09	68.5	21238373.53
161	2/4/2020 11:09	69.4	26128907.7
162	2/4/2020 11:09	68.1	19369626.87
163	2/4/2020 11:09	65.9	11671354.35
164	2/4/2020 11:09	64.2	7890803.976
165	2/4/2020 11:09	65.1	9707809.708
166	2/4/2020 11:09	65.2	9933933.644
167	2/4/2020 11:09	67.2	15744223.81
168	2/4/2020 11:09	69.8	28649777.58
169	2/4/2020 11:10	68.8	22757327.25
170	2/4/2020 11:10	67.3	16110953.89
171	2/4/2020 11:10	65.7	11146056.87
172	2/4/2020 11:10	63.4	6563284.872
173	2/4/2020 11:10	64.4	8262686.11
174	2/4/2020 11:10	65.4	10402105.51
175	2/4/2020 11:10	66.5	13400507.76
176	2/4/2020 11:10	69.3	25534141.15
177	2/4/2020 11:10	74.1	77111873.48
178	2/4/2020 11:10	72.1	48654302.92
179	2/4/2020 11:10	71.4	41411527.94
180	2/4/2020 11:10	72	47546795.77
181	2/4/2020 11:10	68.3	20282489.26
182	2/4/2020 11:10	64.5	8455148.794
183	2/4/2020 11:10	62.7	5586261.41
184	2/4/2020 11:10	61.4	4141152.794
185	2/4/2020 11:10	63.5	6716163.416
186	2/4/2020 11:10	66.5	13400507.76
187	2/4/2020 11:10	69.6	27360325.18
188	2/4/2020 11:10	71.3	40468886.48
189	2/4/2020 11:10	69.9	29317116.63
190	2/4/2020 11:10	69.5	26737528.14
191	2/4/2020 11:10	72.2	49787607.22
192	2/4/2020 11:10	72.3	50947309.57
193	2/4/2020 11:10	73.3	64138862.69
194	2/4/2020 11:10	73.9	73641267.47
195	2/4/2020 11:10	70.1	30698789.77
196	2/4/2020 11:10	71.5	42376126.34
197	2/4/2020 11:10	74.6	86520945.09
198	2/4/2020 11:10	74.2	78908039.76
199	2/4/2020 11:10	72.9	58495337.99
200	2/4/2020 11:10	73.8	71964987.57
201	2/4/2020 11:10	74.7	88536276.8
202	2/4/2020 11:10	74.8	90598551.61
203	2/4/2020 11:10	71.3	40468886.48
204	2/4/2020 11:10	69.5	26737528.14
205	2/4/2020 11:10	68.4	20754929.13
206	2/4/2020 11:10	68.4	20754929.13
207	2/4/2020 11:10	67.1	15385841.52
208	2/4/2020 11:10	66	11943215.12
209	2/4/2020 11:10	67.7	17665309.66
210	2/4/2020 11:10	70	30000000
211	2/4/2020 11:10	68.6	21733078.8
212	2/4/2020 11:10	65.9	11671354.35
213	2/4/2020 11:10	65	9486832.981
214	2/4/2020 11:10	63.4	6563284.872

Noise Measurement 1

215	2/4/2020 11:10	64.8	9059855.161
216	2/4/2020 11:10	64.5	8455148.794
217	2/4/2020 11:10	64.9	9270886.298
218	2/4/2020 11:10	69.2	24952913.13
219	2/4/2020 11:10	71.6	43363193.12
220	2/4/2020 11:10	70.4	32894345.88
221	2/4/2020 11:10	68.5	21238373.53
222	2/4/2020 11:10	67.7	17665309.66
223	2/4/2020 11:10	68.7	22239307.24
224	2/4/2020 11:10	73.5	67161634.16
225	2/4/2020 11:10	74.1	77111873.48
226	2/4/2020 11:10	70.5	33660553.63
227	2/4/2020 11:10	69.3	25534141.15
228	2/4/2020 11:10	73	59857869.45
229	2/4/2020 11:11	75.2	99339336.44
230	2/4/2020 11:11	74.4	82626861.1
231	2/4/2020 11:11	71.3	40468886.48
232	2/4/2020 11:11	69	23829847.04
233	2/4/2020 11:11	70.1	30698789.77
234	2/4/2020 11:11	73.3	64138862.69
235	2/4/2020 11:11	70.6	34444608.64
236	2/4/2020 11:11	67.7	17665309.66
237	2/4/2020 11:11	67	15035617.01
238	2/4/2020 11:11	69.6	27360325.18
239	2/4/2020 11:11	72.4	52134024.86
240	2/4/2020 11:11	73.7	70326864.46
241	2/4/2020 11:11	75	94868329.81
242	2/4/2020 11:11	77.8	180767875.8
243	2/4/2020 11:11	73.3	64138862.69
244	2/4/2020 11:11	76.5	134005077.6
245	2/4/2020 11:11	74.1	77111873.48
246	2/4/2020 11:11	69.8	28649777.58
247	2/4/2020 11:11	67.1	15385841.52
248	2/4/2020 11:11	69	23829847.04
249	2/4/2020 11:11	72.5	53348382.3
250	2/4/2020 11:11	72.8	57163821.54
251	2/4/2020 11:11	71.4	41411527.94
252	2/4/2020 11:11	71.1	38647486.55
253	2/4/2020 11:11	69.6	27360325.18
254	2/4/2020 11:11	69.7	27997629.02
255	2/4/2020 11:11	69.2	24952913.13
256	2/4/2020 11:11	67.7	17665309.66
257	2/4/2020 11:11	68	18928720.33
258	2/4/2020 11:11	67.3	16110953.89
259	2/4/2020 11:11	68.7	22239307.24
260	2/4/2020 11:11	70.8	36067933.04
261	2/4/2020 11:11	70.7	35246926.65
262	2/4/2020 11:11	68.9	23287413.5
263	2/4/2020 11:11	67.1	15385841.52
264	2/4/2020 11:11	67.4	16486226.22
265	2/4/2020 11:11	65.3	10165324.68
266	2/4/2020 11:11	66.1	12221408.33
267	2/4/2020 11:11	66.1	12221408.33
268	2/4/2020 11:11	66.2	12506081.5
269	2/4/2020 11:11	67	15035617.01
270	2/4/2020 11:11	67.2	15744223.81
271	2/4/2020 11:11	68.5	21238373.53
272	2/4/2020 11:11	68.5	21238373.53

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273	2/4/2020 11:11	66.6	13712645.69
274	2/4/2020 11:11	67	15035617.01
275	2/4/2020 11:11	69.2	24952913.13
276	2/4/2020 11:11	69.2	24952913.13
277	2/4/2020 11:11	70.1	30698789.77
278	2/4/2020 11:11	73.2	62678883.93
279	2/4/2020 11:11	71.9	46464498.57
280	2/4/2020 11:11	71.2	39547702.16
281	2/4/2020 11:11	71.8	45406837.45
282	2/4/2020 11:11	69.9	29317116.63
283	2/4/2020 11:11	69.7	27997629.02
284	2/4/2020 11:11	69.8	28649777.58
285	2/4/2020 11:11	74.4	82626861.1
286	2/4/2020 11:11	71.4	41411527.94
287	2/4/2020 11:11	66.6	13712645.69
288	2/4/2020 11:11	64.6	8652094.509
289	2/4/2020 11:12	65.7	11146056.87
290	2/4/2020 11:12	65.4	10402105.51
291	2/4/2020 11:12	68.7	22239307.24
292	2/4/2020 11:12	71.6	43363193.12
293	2/4/2020 11:12	71.1	38647486.55
294	2/4/2020 11:12	68.8	22757327.25
295	2/4/2020 11:12	68.5	21238373.53
296	2/4/2020 11:12	69.9	29317116.63
297	2/4/2020 11:12	68.5	21238373.53
298	2/4/2020 11:12	66.2	12506081.5
299	2/4/2020 11:12	65.1	9707809.708
300	2/4/2020 11:12	64.2	7890803.976
301	2/4/2020 11:12	63.9	7364126.747
302	2/4/2020 11:12	63.1	6125213.834
303	2/4/2020 11:12	65.7	11146056.87
304	2/4/2020 11:12	69.3	25534141.15
305	2/4/2020 11:12	66.3	12797385.56
306	2/4/2020 11:12	62.9	5849533.799
307	2/4/2020 11:12	63.9	7364126.747
308	2/4/2020 11:12	67.1	15385841.52
309	2/4/2020 11:12	66.7	14032054.24
310	2/4/2020 11:12	70.6	34444608.64
311	2/4/2020 11:12	75	94868329.81
312	2/4/2020 11:12	72.1	48654302.92
313	2/4/2020 11:12	68.1	19369626.87
314	2/4/2020 11:12	64.2	7890803.976
315	2/4/2020 11:12	65.5	10644401.68
316	2/4/2020 11:12	66.8	14358902.77
317	2/4/2020 11:12	69.6	27360325.18
318	2/4/2020 11:12	66.9	14693364.58
319	2/4/2020 11:12	62	4754679.577
320	2/4/2020 11:12	59.5	2673752.814
321	2/4/2020 11:12	58.5	2123837.353
322	2/4/2020 11:12	58.9	2328741.35
323	2/4/2020 11:12	59.6	2736032.518
324	2/4/2020 11:12	62.1	4865430.292
325	2/4/2020 11:12	64	7535659.295
326	2/4/2020 11:12	65	9486832.981
327	2/4/2020 11:12	68.9	23287413.5
328	2/4/2020 11:12	72.4	52134024.86
329	2/4/2020 11:12	72.6	54591025.76
330	2/4/2020 11:12	70.1	30698789.77

Noise Measurement 1

331	2/4/2020 11:12	66.5	13400507.76
332	2/4/2020 11:12	65.4	10402105.51
333	2/4/2020 11:12	64.5	8455148.794
334	2/4/2020 11:12	65.2	9933933.644
335	2/4/2020 11:12	64.9	9270886.298
336	2/4/2020 11:12	62.9	5849533.799
337	2/4/2020 11:12	62.7	5586261.41
338	2/4/2020 11:12	62.7	5586261.41
339	2/4/2020 11:12	62.3	5094730.957
340	2/4/2020 11:12	64.1	7711187.348
341	2/4/2020 11:12	65.4	10402105.51
342	2/4/2020 11:12	67.9	18497850.06
343	2/4/2020 11:12	70	30000000
344	2/4/2020 11:12	74	75356592.95
345	2/4/2020 11:12	71.2	39547702.16
346	2/4/2020 11:12	68.5	21238373.53
347	2/4/2020 11:12	68.4	20754929.13
348	2/4/2020 11:12	69.5	26737528.14
349	2/4/2020 11:13	74.1	77111873.48
350	2/4/2020 11:13	71.7	44373251.65
351	2/4/2020 11:13	68.7	22239307.24
352	2/4/2020 11:13	67.6	17263198.12
353	2/4/2020 11:13	70.3	32145579.16
354	2/4/2020 11:13	73.7	70326864.46
355	2/4/2020 11:13	73.9	73641267.47
356	2/4/2020 11:13	75.3	101653246.8
357	2/4/2020 11:13	73.8	71964987.57
358	2/4/2020 11:13	76	119432151.2
359	2/4/2020 11:13	76.3	127973855.6
360	2/4/2020 11:13	75.6	108923416.4
361	2/4/2020 11:13	75.1	97078097.08
362	2/4/2020 11:13	76.9	146933645.8
363	2/4/2020 11:13	74	75356592.95
364	2/4/2020 11:13	75.2	99339336.44
365	2/4/2020 11:13	78.8	227573272.5
366	2/4/2020 11:13	73.6	68726029.58
367	2/4/2020 11:13	71.3	40468886.48
368	2/4/2020 11:13	72.5	53348382.3
369	2/4/2020 11:13	73.4	65632848.72
370	2/4/2020 11:13	70.5	33660553.63
371	2/4/2020 11:13	70.1	30698789.77
372	2/4/2020 11:13	70.8	36067933.04
373	2/4/2020 11:13	70.6	34444608.64
374	2/4/2020 11:13	70.4	32894345.88
375	2/4/2020 11:13	72.4	52134024.86
376	2/4/2020 11:13	74.7	88536276.8
377	2/4/2020 11:13	79.3	255341411.5
378	2/4/2020 11:13	84.5	845514879.4
379	2/4/2020 11:13	78.8	227573272.5
380	2/4/2020 11:13	73.2	62678883.93
381	2/4/2020 11:13	68	18928720.33
382	2/4/2020 11:13	66.1	12221408.33
383	2/4/2020 11:13	63.7	7032686.446
384	2/4/2020 11:13	63.3	6413886.269
385	2/4/2020 11:13	62.6	5459102.576
386	2/4/2020 11:13	60.6	3444460.864
387	2/4/2020 11:13	59.3	2553414.115
388	2/4/2020 11:13	59.7	2799762.902

Noise Measurement 1

389	2/4/2020 11:13	61.3	4046888.648
390	2/4/2020 11:13	63.2	6267888.393
391	2/4/2020 11:13	63.9	7364126.747
392	2/4/2020 11:13	67.1	15385841.52
393	2/4/2020 11:13	69.2	24952913.13
394	2/4/2020 11:13	70.8	36067933.04
395	2/4/2020 11:13	74.3	80746044.12
396	2/4/2020 11:13	74	75356592.95
397	2/4/2020 11:13	69.3	25534141.15
398	2/4/2020 11:13	67.4	16486226.22
399	2/4/2020 11:13	65.8	11405681.89
400	2/4/2020 11:13	65.7	11146056.87
401	2/4/2020 11:13	67.9	18497850.06
402	2/4/2020 11:13	71.9	46464498.57
403	2/4/2020 11:13	71.1	38647486.55
404	2/4/2020 11:13	67.7	17665309.66
405	2/4/2020 11:13	70.4	32894345.88
406	2/4/2020 11:13	72.6	54591025.76
407	2/4/2020 11:13	68.4	20754929.13
408	2/4/2020 11:13	66.1	12221408.33
409	2/4/2020 11:14	64.6	8652094.509
410	2/4/2020 11:14	64.5	8455148.794
411	2/4/2020 11:14	63.4	6563284.872
412	2/4/2020 11:14	64.4	8262686.11
413	2/4/2020 11:14	65.9	11671354.35
414	2/4/2020 11:14	68.2	19820803.44
415	2/4/2020 11:14	70.9	36908063.12
416	2/4/2020 11:14	72.4	52134024.86
417	2/4/2020 11:14	68.3	20282489.26
418	2/4/2020 11:14	66.7	14032054.24
419	2/4/2020 11:14	65.7	11146056.87
420	2/4/2020 11:14	65.9	11671354.35
421	2/4/2020 11:14	67	15035617.01
422	2/4/2020 11:14	70.5	33660553.63
423	2/4/2020 11:14	71.4	41411527.94
424	2/4/2020 11:14	71.7	44373251.65
425	2/4/2020 11:14	74.8	90598551.61
426	2/4/2020 11:14	71.1	38647486.55
427	2/4/2020 11:14	66.5	13400507.76
428	2/4/2020 11:14	64.1	7711187.348
429	2/4/2020 11:14	66.5	13400507.76
430	2/4/2020 11:14	68.1	19369626.87
431	2/4/2020 11:14	70.3	32145579.16
432	2/4/2020 11:14	72.3	50947309.57
433	2/4/2020 11:14	72.8	57163821.54
434	2/4/2020 11:14	73.5	67161634.16
435	2/4/2020 11:14	76.3	127973855.6
436	2/4/2020 11:14	74.5	84551487.94
437	2/4/2020 11:14	71.5	42376126.34
438	2/4/2020 11:14	69.1	24384915.48
439	2/4/2020 11:14	66.8	14358902.77
440	2/4/2020 11:14	65.5	10644401.68
441	2/4/2020 11:14	65.8	11405681.89
442	2/4/2020 11:14	64.5	8455148.794
443	2/4/2020 11:14	66.3	12797385.56
444	2/4/2020 11:14	69	23829847.04
445	2/4/2020 11:14	69	23829847.04
446	2/4/2020 11:14	70.3	32145579.16

Noise Measurement 1

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448	2/4/2020 11:14	67.9	18497850.06
449	2/4/2020 11:14	66.5	13400507.76
450	2/4/2020 11:14	65.7	11146056.87
451	2/4/2020 11:14	65.1	9707809.708
452	2/4/2020 11:14	64.5	8455148.794
453	2/4/2020 11:14	64.2	7890803.976
454	2/4/2020 11:14	64.5	8455148.794
455	2/4/2020 11:14	63.2	6267888.393
456	2/4/2020 11:14	62.9	5849533.799
457	2/4/2020 11:14	62.3	5094730.957
458	2/4/2020 11:14	64.6	8652094.509
459	2/4/2020 11:14	67.7	17665309.66
460	2/4/2020 11:14	71.6	43363193.12
461	2/4/2020 11:14	72.1	48654302.92
462	2/4/2020 11:14	71.7	44373251.65
463	2/4/2020 11:14	72.4	52134024.86
464	2/4/2020 11:14	69.1	24384915.48
465	2/4/2020 11:14	67.3	16110953.89
466	2/4/2020 11:14	68.9	23287413.5
467	2/4/2020 11:14	71.5	42376126.34
468	2/4/2020 11:14	70.5	33660553.63
469	2/4/2020 11:15	70.8	36067933.04
470	2/4/2020 11:15	73.2	62678883.93
471	2/4/2020 11:15	77.5	168702397.6
472	2/4/2020 11:15	75.2	99339336.44
473	2/4/2020 11:15	75.2	99339336.44
474	2/4/2020 11:15	75	94868329.81
475	2/4/2020 11:15	71.4	41411527.94
476	2/4/2020 11:15	70	30000000
477	2/4/2020 11:15	72.1	48654302.92
478	2/4/2020 11:15	75.2	99339336.44
479	2/4/2020 11:15	75.6	108923416.4
480	2/4/2020 11:15	75.1	97078097.08
481	2/4/2020 11:15	76.5	134005077.6
482	2/4/2020 11:15	75.4	104021055.1
483	2/4/2020 11:15	71.5	42376126.34
484	2/4/2020 11:15	70.8	36067933.04
485	2/4/2020 11:15	74	75356592.95
486	2/4/2020 11:15	72.4	52134024.86
487	2/4/2020 11:15	70.8	36067933.04
488	2/4/2020 11:15	70.9	36908063.12
489	2/4/2020 11:15	68.1	19369626.87
490	2/4/2020 11:15	66.5	13400507.76
491	2/4/2020 11:15	67.2	15744223.81
492	2/4/2020 11:15	68.6	21733078.8
493	2/4/2020 11:15	69.9	29317116.63
494	2/4/2020 11:15	73.1	61252138.34
495	2/4/2020 11:15	74.4	82626861.1
496	2/4/2020 11:15	70.1	30698789.77
497	2/4/2020 11:15	68.3	20282489.26
498	2/4/2020 11:15	69.5	26737528.14
499	2/4/2020 11:15	72.8	57163821.54
500	2/4/2020 11:15	74.9	92708862.98
501	2/4/2020 11:15	69.8	28649777.58
502	2/4/2020 11:15	69.6	27360325.18
503	2/4/2020 11:15	69	23829847.04
504	2/4/2020 11:15	67.9	18497850.06

Noise Measurement 1

505	2/4/2020 11:15	66.2	12506081.5
506	2/4/2020 11:15	65.4	10402105.51
507	2/4/2020 11:15	64.8	9059855.161
508	2/4/2020 11:15	67.6	17263198.12
509	2/4/2020 11:15	70.8	36067933.04
510	2/4/2020 11:15	72.1	48654302.92
511	2/4/2020 11:15	71.7	44373251.65
512	2/4/2020 11:15	74.2	78908039.76
513	2/4/2020 11:15	74.2	78908039.76
514	2/4/2020 11:15	75.2	99339336.44
515	2/4/2020 11:15	76.3	127973855.6
516	2/4/2020 11:15	75.9	116713543.5
517	2/4/2020 11:15	75.7	111460568.7
518	2/4/2020 11:15	77.8	180767875.8
519	2/4/2020 11:15	75.3	101653246.8
520	2/4/2020 11:15	75.2	99339336.44
521	2/4/2020 11:15	73.6	68726029.58
522	2/4/2020 11:15	70.5	33660553.63
523	2/4/2020 11:15	67.5	16870239.76
524	2/4/2020 11:15	65.7	11146056.87
525	2/4/2020 11:15	65.8	11405681.89
526	2/4/2020 11:15	65.7	11146056.87
527	2/4/2020 11:15	64.4	8262686.11
528	2/4/2020 11:15	63.4	6563284.872
529	2/4/2020 11:16	66.1	12221408.33
530	2/4/2020 11:16	69.8	28649777.58
531	2/4/2020 11:16	71.9	46464498.57
532	2/4/2020 11:16	71.5	42376126.34
533	2/4/2020 11:16	71.8	45406837.45
534	2/4/2020 11:16	69.5	26737528.14
535	2/4/2020 11:16	66.8	14358902.77
536	2/4/2020 11:16	65.6	10892341.64
537	2/4/2020 11:16	65.3	10165324.68
538	2/4/2020 11:16	65.5	10644401.68
539	2/4/2020 11:16	68.5	21238373.53
540	2/4/2020 11:16	71.9	46464498.57
541	2/4/2020 11:16	70.7	35246926.65
542	2/4/2020 11:16	68.8	22757327.25
543	2/4/2020 11:16	69.4	26128907.7
544	2/4/2020 11:16	69.2	24952913.13
545	2/4/2020 11:16	70.5	33660553.63
546	2/4/2020 11:16	70.3	32145579.16
547	2/4/2020 11:16	68.9	23287413.5
548	2/4/2020 11:16	67.7	17665309.66
549	2/4/2020 11:16	65.5	10644401.68
550	2/4/2020 11:16	63.9	7364126.747
551	2/4/2020 11:16	63.9	7364126.747
552	2/4/2020 11:16	66.7	14032054.24
553	2/4/2020 11:16	67.1	15385841.52
554	2/4/2020 11:16	70.3	32145579.16
555	2/4/2020 11:16	70.5	33660553.63
556	2/4/2020 11:16	69.3	25534141.15
557	2/4/2020 11:16	66.7	14032054.24
558	2/4/2020 11:16	68.5	21238373.53
559	2/4/2020 11:16	72.5	53348382.3
560	2/4/2020 11:16	69.6	27360325.18
561	2/4/2020 11:16	68.1	19369626.87
562	2/4/2020 11:16	64.1	7711187.348

Noise Measurement 1

563	2/4/2020 11:16	64.9	9270886.298
564	2/4/2020 11:16	64.3	8074604.412
565	2/4/2020 11:16	63.2	6267888.393
566	2/4/2020 11:16	64.4	8262686.11
567	2/4/2020 11:16	65.3	10165324.68
568	2/4/2020 11:16	66.4	13095474.97
569	2/4/2020 11:16	69.2	24952913.13
570	2/4/2020 11:16	71.3	40468886.48
571	2/4/2020 11:16	69.2	24952913.13
572	2/4/2020 11:16	65.5	10644401.68
573	2/4/2020 11:16	64.1	7711187.348
574	2/4/2020 11:16	62.2	4978760.722
575	2/4/2020 11:16	61.6	4336319.312
576	2/4/2020 11:16	63.4	6563284.872
577	2/4/2020 11:16	65.9	11671354.35
578	2/4/2020 11:16	68.9	23287413.5
579	2/4/2020 11:16	69.5	26737528.14
580	2/4/2020 11:16	67.9	18497850.06
581	2/4/2020 11:16	67	15035617.01
582	2/4/2020 11:16	67.8	18076787.58
583	2/4/2020 11:16	69.4	26128907.7
584	2/4/2020 11:16	70.3	32145579.16
585	2/4/2020 11:16	68.5	21238373.53
586	2/4/2020 11:16	68.7	22239307.24
587	2/4/2020 11:16	68.3	20282489.26
588	2/4/2020 11:16	74.1	77111873.48
589	2/4/2020 11:17	71.3	40468886.48
590	2/4/2020 11:17	68.1	19369626.87
591	2/4/2020 11:17	67.5	16870239.76
592	2/4/2020 11:17	71.2	39547702.16
593	2/4/2020 11:17	73.3	64138862.69
594	2/4/2020 11:17	74.3	80746044.12
595	2/4/2020 11:17	72.6	54591025.76
596	2/4/2020 11:17	71.4	41411527.94
597	2/4/2020 11:17	71.7	44373251.65
598	2/4/2020 11:17	68	18928720.33
599	2/4/2020 11:17	66.1	12221408.33
600	2/4/2020 11:17	64.9	9270886.298
601	2/4/2020 11:17	63.9	7364126.747
602	2/4/2020 11:17	64	7535659.295
603	2/4/2020 11:17	66.6	13712645.69
604	2/4/2020 11:17	69.5	26737528.14
605	2/4/2020 11:17	70.1	30698789.77
606	2/4/2020 11:17	67.9	18497850.06
607	2/4/2020 11:17	67.5	16870239.76
608	2/4/2020 11:17	67.2	15744223.81
609	2/4/2020 11:17	67.8	18076787.58
610	2/4/2020 11:17	69.6	27360325.18
611	2/4/2020 11:17	68	18928720.33
612	2/4/2020 11:17	72.3	50947309.57
613	2/4/2020 11:17	70.7	35246926.65
614	2/4/2020 11:17	70	30000000
615	2/4/2020 11:17	70.4	32894345.88
616	2/4/2020 11:17	69.5	26737528.14
617	2/4/2020 11:17	69.7	27997629.02
618	2/4/2020 11:17	69.9	29317116.63
619	2/4/2020 11:17	70.9	36908063.12
620	2/4/2020 11:17	70.7	35246926.65

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621	2/4/2020 11:17	70.3	32145579.16
622	2/4/2020 11:17	73.8	71964987.57
623	2/4/2020 11:17	73.4	65632848.72
624	2/4/2020 11:17	68.7	22239307.24
625	2/4/2020 11:17	67.5	16870239.76
626	2/4/2020 11:17	67.2	15744223.81
627	2/4/2020 11:17	68.8	22757327.25
628	2/4/2020 11:17	70.2	31413856.44
629	2/4/2020 11:17	70.5	33660553.63
630	2/4/2020 11:17	70.4	32894345.88
631	2/4/2020 11:17	70.8	36067933.04
632	2/4/2020 11:17	73.8	71964987.57
633	2/4/2020 11:17	73.1	61252138.34
634	2/4/2020 11:17	74.2	78908039.76
635	2/4/2020 11:17	73.2	62678883.93
636	2/4/2020 11:17	70.8	36067933.04
637	2/4/2020 11:17	72.3	50947309.57
638	2/4/2020 11:17	70.3	32145579.16
639	2/4/2020 11:17	67.3	16110953.89
640	2/4/2020 11:17	65	9486832.981
641	2/4/2020 11:17	64.2	7890803.976
642	2/4/2020 11:17	63.2	6267888.393
643	2/4/2020 11:17	62.7	5586261.41
644	2/4/2020 11:17	62.9	5849533.799
645	2/4/2020 11:17	60.8	3606793.304
646	2/4/2020 11:17	62	4754679.577
647	2/4/2020 11:17	65.6	10892341.64
648	2/4/2020 11:17	66.7	14032054.24
649	2/4/2020 11:18	66.2	12506081.5
650	2/4/2020 11:18	63.6	6872602.958
651	2/4/2020 11:18	62.4	5213402.486
652	2/4/2020 11:18	62.1	4865430.292
653	2/4/2020 11:18	63.5	6716163.416
654	2/4/2020 11:18	66.8	14358902.77
655	2/4/2020 11:18	69.8	28649777.58
656	2/4/2020 11:18	73.8	71964987.57
657	2/4/2020 11:18	76	119432151.2
658	2/4/2020 11:18	72.4	52134024.86
659	2/4/2020 11:18	68.8	22757327.25
660	2/4/2020 11:18	65.1	9707809.708
661	2/4/2020 11:18	62.1	4865430.292
662	2/4/2020 11:18	62.7	5586261.41
663	2/4/2020 11:18	63	5985786.945
664	2/4/2020 11:18	61.6	4336319.312
665	2/4/2020 11:18	62.2	4978760.722
666	2/4/2020 11:18	62.6	5459102.576
667	2/4/2020 11:18	64.4	8262686.11
668	2/4/2020 11:18	65.8	11405681.89
669	2/4/2020 11:18	66.5	13400507.76
670	2/4/2020 11:18	68.9	23287413.5
671	2/4/2020 11:18	73.3	64138862.69
672	2/4/2020 11:18	75.6	108923416.4
673	2/4/2020 11:18	75.1	97078097.08
674	2/4/2020 11:18	74.7	88536276.8
675	2/4/2020 11:18	74.7	88536276.8
676	2/4/2020 11:18	77.9	184978500.6
677	2/4/2020 11:18	74.9	92708862.98
678	2/4/2020 11:18	74.4	82626861.1

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679	2/4/2020 11:18	71.1	38647486.55
680	2/4/2020 11:18	69.1	24384915.48
681	2/4/2020 11:18	69.6	27360325.18
682	2/4/2020 11:18	70.6	34444608.64
683	2/4/2020 11:18	68.6	21733078.8
684	2/4/2020 11:18	69.6	27360325.18
685	2/4/2020 11:18	67.6	17263198.12
686	2/4/2020 11:18	67.2	15744223.81
687	2/4/2020 11:18	69	23829847.04
688	2/4/2020 11:18	70.8	36067933.04
689	2/4/2020 11:18	70.7	35246926.65
690	2/4/2020 11:18	70.9	36908063.12
691	2/4/2020 11:18	70.6	34444608.64
692	2/4/2020 11:18	71	37767762.35
693	2/4/2020 11:18	70.8	36067933.04
694	2/4/2020 11:18	71.2	39547702.16
695	2/4/2020 11:18	70.2	31413856.44
696	2/4/2020 11:18	69.6	27360325.18
697	2/4/2020 11:18	68.6	21733078.8
698	2/4/2020 11:18	69.6	27360325.18
699	2/4/2020 11:18	71.6	43363193.12
700	2/4/2020 11:18	75.3	101653246.8
701	2/4/2020 11:18	73.2	62678883.93
702	2/4/2020 11:18	72	47546795.77
703	2/4/2020 11:18	68.4	20754929.13
704	2/4/2020 11:18	66.6	13712645.69
705	2/4/2020 11:18	64.1	7711187.348
706	2/4/2020 11:18	62.5	5334838.23
707	2/4/2020 11:18	60.5	3366055.363
708	2/4/2020 11:18	60.3	3214557.916
709	2/4/2020 11:19	58.8	2275732.725
710	2/4/2020 11:19	59	2382984.704
711	2/4/2020 11:19	57.8	1807678.758
712	2/4/2020 11:19	57	1503561.701
713	2/4/2020 11:19	55.9	1167135.435
714	2/4/2020 11:19	61	3776776.235
715	2/4/2020 11:19	61.8	4540683.745
716	2/4/2020 11:19	60.6	3444460.864
717	2/4/2020 11:19	55.9	1167135.435
718	2/4/2020 11:19	56.2	1250608.15
719	2/4/2020 11:19	58.4	2075492.913
720	2/4/2020 11:19	63.1	6125213.834
721	2/4/2020 11:19	63.9	7364126.747
722	2/4/2020 11:19	62.6	5459102.576
723	2/4/2020 11:19	63.7	7032686.446
724	2/4/2020 11:19	67.2	15744223.81
725	2/4/2020 11:19	68.9	23287413.5
726	2/4/2020 11:19	71.5	42376126.34
727	2/4/2020 11:19	74.8	90598551.61
728	2/4/2020 11:19	70.8	36067933.04
729	2/4/2020 11:19	72.2	49787607.22
730	2/4/2020 11:19	75.3	101653246.8
731	2/4/2020 11:19	74.9	92708862.98
732	2/4/2020 11:19	73.3	64138862.69
733	2/4/2020 11:19	75.1	97078097.08
734	2/4/2020 11:19	74.2	78908039.76
735	2/4/2020 11:19	73.8	71964987.57
736	2/4/2020 11:19	73.6	68726029.58

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737	2/4/2020 11:19	70.6	34444608.64
738	2/4/2020 11:19	68.2	19820803.44
739	2/4/2020 11:19	67.4	16486226.22
740	2/4/2020 11:19	69.5	26737528.14
741	2/4/2020 11:19	67.1	15385841.52
742	2/4/2020 11:19	63.8	7196498.757
743	2/4/2020 11:19	63.2	6267888.393
744	2/4/2020 11:19	62.2	4978760.722
745	2/4/2020 11:19	64.1	7711187.348
746	2/4/2020 11:19	65.8	11405681.89
747	2/4/2020 11:19	67.5	16870239.76
748	2/4/2020 11:19	70.6	34444608.64
749	2/4/2020 11:19	73.1	61252138.34
750	2/4/2020 11:19	73.2	62678883.93
751	2/4/2020 11:19	73.6	68726029.58
752	2/4/2020 11:19	71.1	38647486.55
753	2/4/2020 11:19	68.5	21238373.53
754	2/4/2020 11:19	67	15035617.01
755	2/4/2020 11:19	68.8	22757327.25
756	2/4/2020 11:19	69.3	25534141.15
757	2/4/2020 11:19	68.9	23287413.5
758	2/4/2020 11:19	67.8	18076787.58
759	2/4/2020 11:19	69.5	26737528.14
760	2/4/2020 11:19	73.4	65632848.72
761	2/4/2020 11:19	73.2	62678883.93
762	2/4/2020 11:19	69.5	26737528.14
763	2/4/2020 11:19	71.3	40468886.48
764	2/4/2020 11:19	70.8	36067933.04
765	2/4/2020 11:19	67.3	16110953.89
766	2/4/2020 11:19	65.7	11146056.87
767	2/4/2020 11:19	65	9486832.981
768	2/4/2020 11:19	66.6	13712645.69
769	2/4/2020 11:20	67.7	17665309.66
770	2/4/2020 11:20	70.5	33660553.63
771	2/4/2020 11:20	75	94868329.81
772	2/4/2020 11:20	74.7	88536276.8
773	2/4/2020 11:20	70.4	32894345.88
774	2/4/2020 11:20	67.8	18076787.58
775	2/4/2020 11:20	63.7	7032686.446
776	2/4/2020 11:20	62.7	5586261.41
777	2/4/2020 11:20	63.5	6716163.416
778	2/4/2020 11:20	64.7	8853627.68
779	2/4/2020 11:20	66.5	13400507.76
780	2/4/2020 11:20	69.8	28649777.58
781	2/4/2020 11:20	73.6	68726029.58
782	2/4/2020 11:20	73.8	71964987.57
783	2/4/2020 11:20	70.3	32145579.16
784	2/4/2020 11:20	73.2	62678883.93
785	2/4/2020 11:20	73.1	61252138.34
786	2/4/2020 11:20	72.4	52134024.86
787	2/4/2020 11:20	73.2	62678883.93
788	2/4/2020 11:20	74.1	77111873.48
789	2/4/2020 11:20	73	59857869.45
790	2/4/2020 11:20	71.1	38647486.55
791	2/4/2020 11:20	71.5	42376126.34
792	2/4/2020 11:20	69.2	24952913.13
793	2/4/2020 11:20	69	23829847.04
794	2/4/2020 11:20	69.6	27360325.18

Noise Measurement 1

795	2/4/2020 11:20	70.3	32145579.16
796	2/4/2020 11:20	72.7	55862614.1
797	2/4/2020 11:20	72.3	50947309.57
798	2/4/2020 11:20	70.9	36908063.12
799	2/4/2020 11:20	67	15035617.01
800	2/4/2020 11:20	64.5	8455148.794
801	2/4/2020 11:20	61.4	4141152.794
802	2/4/2020 11:20	60.2	3141385.644
803	2/4/2020 11:20	59.8	2864977.758
804	2/4/2020 11:20	59.5	2673752.814
805	2/4/2020 11:20	59.5	2673752.814
806	2/4/2020 11:20	59.2	2495291.313
807	2/4/2020 11:20	59.5	2673752.814
808	2/4/2020 11:20	54.9	927088.6298
809	2/4/2020 11:20	53.1	612521.3834
810	2/4/2020 11:20	53.4	656328.4872
811	2/4/2020 11:20	56.6	1371264.569
812	2/4/2020 11:20	59	2382984.704
813	2/4/2020 11:20	62.3	5094730.957
814	2/4/2020 11:20	62.2	4978760.722
815	2/4/2020 11:20	60.2	3141385.644
816	2/4/2020 11:20	60.2	3141385.644
817	2/4/2020 11:20	61.1	3864748.655
818	2/4/2020 11:20	62	4754679.577
819	2/4/2020 11:20	66.9	14693364.58
820	2/4/2020 11:20	69.1	24384915.48
821	2/4/2020 11:20	72.4	52134024.86
822	2/4/2020 11:20	70.8	36067933.04
823	2/4/2020 11:20	68.1	19369626.87
824	2/4/2020 11:20	67	15035617.01
825	2/4/2020 11:20	65.8	11405681.89
826	2/4/2020 11:20	63.9	7364126.747
827	2/4/2020 11:20	62.6	5459102.576
828	2/4/2020 11:20	64.6	8652094.509
829	2/4/2020 11:21	64.2	7890803.976
830	2/4/2020 11:21	63.2	6267888.393
831	2/4/2020 11:21	65.8	11405681.89
832	2/4/2020 11:21	66.4	13095474.97
833	2/4/2020 11:21	67.9	18497850.06
834	2/4/2020 11:21	68.3	20282489.26
835	2/4/2020 11:21	72.9	58495337.99
836	2/4/2020 11:21	77.3	161109538.9
837	2/4/2020 11:21	75.3	101653246.8
838	2/4/2020 11:21	75.4	104021055.1
839	2/4/2020 11:21	74.4	82626861.1
840	2/4/2020 11:21	72.7	55862614.1
841	2/4/2020 11:21	74.4	82626861.1
842	2/4/2020 11:21	72.1	48654302.92
843	2/4/2020 11:21	69.8	28649777.58
844	2/4/2020 11:21	68	18928720.33
845	2/4/2020 11:21	68.1	19369626.87
846	2/4/2020 11:21	69.4	26128907.7
847	2/4/2020 11:21	72.9	58495337.99
848	2/4/2020 11:21	75.8	114056818.9
849	2/4/2020 11:21	73.7	70326864.46
850	2/4/2020 11:21	72.9	58495337.99
851	2/4/2020 11:21	71.3	40468886.48
852	2/4/2020 11:21	71.7	44373251.65

Noise Measurement 1

853	2/4/2020 11:21	75.5	106444016.8
854	2/4/2020 11:21	72.7	55862614.1
855	2/4/2020 11:21	67.6	17263198.12
856	2/4/2020 11:21	63.4	6563284.872
857	2/4/2020 11:21	63.8	7196498.757
858	2/4/2020 11:21	63.4	6563284.872
859	2/4/2020 11:21	64.2	7890803.976
860	2/4/2020 11:21	65.7	11146056.87
861	2/4/2020 11:21	65.4	10402105.51
862	2/4/2020 11:21	70.1	30698789.77
863	2/4/2020 11:21	72.5	53348382.3
864	2/4/2020 11:21	71.5	42376126.34
865	2/4/2020 11:21	71.2	39547702.16
866	2/4/2020 11:21	71.9	46464498.57
867	2/4/2020 11:21	71	37767762.35
868	2/4/2020 11:21	67.6	17263198.12
869	2/4/2020 11:21	66.1	12221408.33
870	2/4/2020 11:21	66.4	13095474.97
871	2/4/2020 11:21	66.3	12797385.56
872	2/4/2020 11:21	67.4	16486226.22
873	2/4/2020 11:21	69.7	27997629.02
874	2/4/2020 11:21	74.1	77111873.48
875	2/4/2020 11:21	72	47546795.77
876	2/4/2020 11:21	67.6	17263198.12
877	2/4/2020 11:21	64.1	7711187.348
878	2/4/2020 11:21	63.8	7196498.757
879	2/4/2020 11:21	63.6	6872602.958
880	2/4/2020 11:21	65.1	9707809.708
881	2/4/2020 11:21	68.8	22757327.25
882	2/4/2020 11:21	73.2	62678883.93
883	2/4/2020 11:21	76.5	134005077.6
884	2/4/2020 11:21	76.2	125060815
885	2/4/2020 11:21	71.1	38647486.55
886	2/4/2020 11:21	67.6	17263198.12
887	2/4/2020 11:21	65.9	11671354.35
888	2/4/2020 11:21	63.7	7032686.446
889	2/4/2020 11:22	61.9	4646449.857
890	2/4/2020 11:22	62.4	5213402.486
891	2/4/2020 11:22	60.6	3444460.864
892	2/4/2020 11:22	61.1	3864748.655
893	2/4/2020 11:22	64.5	8455148.794
894	2/4/2020 11:22	67.8	18076787.58
895	2/4/2020 11:22	71.2	39547702.16
896	2/4/2020 11:22	72.6	54591025.76
897	2/4/2020 11:22	70.8	36067933.04
898	2/4/2020 11:22	73.9	73641267.47
899	2/4/2020 11:22	73.2	62678883.93
900	2/4/2020 11:22	70.7	35246926.65

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100 Noise Measurement 2
- Max dB : 87.4 - 2020/02/04 11:36:24
- Level Range : 40-100
- SEL : 90.3
- Leq : 60.8
-

No.s	Date Time	(dB)				
1	2020/02/04 11:30:41	50.9	64.2	53.7	54.0	55.1
6	2020/02/04 11:30:46	61.1	64.7	63.6	61.7	60.9
11	2020/02/04 11:30:51	63.8	60.3	61.3	60.8	60.3
16	2020/02/04 11:30:56	63.2	59.3	57.5	55.2	54.6
21	2020/02/04 11:31:01	54.4	54.0	56.1	57.5	54.8
26	2020/02/04 11:31:06	54.0	59.1	58.8	56.3	58.9
31	2020/02/04 11:31:11	58.3	59.2	54.8	54.1	54.8
36	2020/02/04 11:31:16	54.8	56.2	59.0	58.5	60.7
41	2020/02/04 11:31:21	58.9	51.1	50.9	53.3	54.2
46	2020/02/04 11:31:26	54.7	54.7	57.9	61.0	60.3
51	2020/02/04 11:31:31	60.4	60.7	62.1	60.7	56.9
56	2020/02/04 11:31:36	62.7	67.8	65.9	59.9	59.8
61	2020/02/04 11:31:41	61.0	63.5	58.7	63.7	59.8
66	2020/02/04 11:31:46	59.8	62.0	62.8	61.1	56.0
71	2020/02/04 11:31:51	56.9	59.9	61.3	59.9	58.1
76	2020/02/04 11:31:56	54.0	53.8	52.7	51.3	51.8
81	2020/02/04 11:32:01	51.2	51.0	52.0	51.9	52.0
86	2020/02/04 11:32:06	51.8	53.2	57.8	55.9	57.4
91	2020/02/04 11:32:11	65.2	66.3	56.4	58.5	61.5
96	2020/02/04 11:32:16	62.3	57.5	58.3	59.1	59.9
101	2020/02/04 11:32:21	62.2	61.0	60.7	56.7	54.1
106	2020/02/04 11:32:26	53.0	52.5	53.7	54.1	53.4
111	2020/02/04 11:32:31	53.5	63.4	70.4	61.3	58.1
116	2020/02/04 11:32:36	56.2	52.8	51.9	52.5	52.3
121	2020/02/04 11:32:41	53.0	52.0	51.9	51.1	50.5
126	2020/02/04 11:32:46	46.5	47.5	51.1	54.2	56.8
131	2020/02/04 11:32:51	58.2	60.9	60.8	60.3	59.9
136	2020/02/04 11:32:56	63.9	60.1	60.3	55.2	53.1
141	2020/02/04 11:33:01	52.9	52.8	53.0	52.9	53.1
146	2020/02/04 11:33:06	50.3	58.2	62.8	54.2	55.1
151	2020/02/04 11:33:11	53.8	51.3	47.4	51.3	62.4
156	2020/02/04 11:33:16	60.4	54.0	54.5	52.5	47.5
161	2020/02/04 11:33:21	48.1	50.6	56.9	56.1	51.9
166	2020/02/04 11:33:26	52.8	56.7	61.1	59.6	59.9
171	2020/02/04 11:33:31	59.2	56.8	64.4	63.3	58.1
176	2020/02/04 11:33:36	59.4	59.3	59.6	60.3	58.3
181	2020/02/04 11:33:41	59.7	61.1	60.8	61.3	62.3
186	2020/02/04 11:33:46	64.4	65.2	62.4	61.6	59.9
191	2020/02/04 11:33:51	58.4	60.4	61.0	60.5	61.7
196	2020/02/04 11:33:56	63.0	60.0	57.0	63.6	63.0
201	2020/02/04 11:34:01	57.8	57.2	62.9	64.4	58.9
206	2020/02/04 11:34:06	60.3	61.8	60.0	55.8	56.0
211	2020/02/04 11:34:11	54.8	56.3	56.5	54.4	52.8
216	2020/02/04 11:34:16	55.3	59.9	59.6	55.2	61.3
221	2020/02/04 11:34:21	61.5	53.9	54.0	54.6	53.9
226	2020/02/04 11:34:26	54.1	52.9	52.1	51.7	51.8
231	2020/02/04 11:34:31	48.0	47.0	46.6	47.4	47.3
236	2020/02/04 11:34:36	49.0	48.0	47.1	47.2	48.4
241	2020/02/04 11:34:41	52.8	55.0	55.0	55.0	52.1
246	2020/02/04 11:34:46	50.4	50.4	50.1	53.7	60.8
251	2020/02/04 11:34:51	60.7	58.6	61.0	64.1	62.2
256	2020/02/04 11:34:56	58.3	62.4	66.5	64.6	63.1
261	2020/02/04 11:35:01	59.4	59.7	60.2	62.8	60.6
266	2020/02/04 11:35:06	59.6	63.9	62.9	58.3	59.6
271	2020/02/04 11:35:11	58.3	57.7	59.5	61.4	58.4
276	2020/02/04 11:35:16	56.7	57.0	59.6	60.9	59.5
281	2020/02/04 11:35:21	60.4	58.9	59.7	59.8	58.9
286	2020/02/04 11:35:26	59.5	59.3	57.4	56.6	56.4
291	2020/02/04 11:35:31	55.6	55.2	58.6	63.0	62.7
296	2020/02/04 11:35:36	60.1	56.9	56.9	56.6	56.6
301	2020/02/04 11:35:41	60.5	57.8	57.1	54.4	54.2
306	2020/02/04 11:35:46	61.0	63.0	59.1	54.8	53.8
311	2020/02/04 11:35:51	50.2	48.4	48.0	46.5	45.6
316	2020/02/04 11:35:56	48.1	50.0	50.5	50.3	51.0
321	2020/02/04 11:36:01	46.5	45.6	47.3	51.4	54.0
326	2020/02/04 11:36:06	53.1	54.3	55.3	56.6	58.4
331	2020/02/04 11:36:11	58.4	59.9	62.5	63.9	64.3
336	2020/02/04 11:36:16	63.2	64.6	66.6	75.7	68.3
341	2020/02/04 11:36:21	61.4	60.9	85.7	67.7	62.2
346	2020/02/04 11:36:26	62.5	64.1	64.0	62.4	62.4
351	2020/02/04 11:36:31	65.3	64.1	63.8	62.7	65.4
356	2020/02/04 11:36:36	62.4	61.7	63.4	65.3	62.7
361	2020/02/04 11:36:41	63.0	64.5	63.0	69.8	70.5
366	2020/02/04 11:36:46	69.6	70.5	66.7	67.5	61.5
371	2020/02/04 11:36:51	59.9	56.6	54.2	55.7	54.2
376	2020/02/04 11:36:56	55.4	56.2	59.4	59.1	54.4
381	2020/02/04 11:37:01	50.9	56.2	58.1	54.3	51.9
386	2020/02/04 11:37:06	51.8	50.3	53.5	53.0	55.0
391	2020/02/04 11:37:11	59.4	56.9	51.5	52.2	52.2
396	2020/02/04 11:37:16	55.3	60.8	58.4	54.2	58.1
401	2020/02/04 11:37:21	57.7	56.8	52.7	50.6	53.6
406	2020/02/04 11:37:26	53.4	61.0	60.3	54.7	53.9
411	2020/02/04 11:37:31	54.2	53.0	50.8	54.4	62.3
416	2020/02/04 11:37:36	60.3	57.4	57.4	58.7	57.1
421	2020/02/04 11:37:41	55.0	56.8	56.2	53.4	52.2

426	2020/02/04	11:37:46	50.3	50.0	50.8	54.3	55.6
431	2020/02/04	11:37:51	54.4	60.2	63.3	59.8	60.1
436	2020/02/04	11:37:56	59.9	55.9	55.8	62.2	60.9
441	2020/02/04	11:38:01	58.8	58.9	54.3	50.6	52.9
446	2020/02/04	11:38:06	49.8	52.8	53.2	53.3	52.9
451	2020/02/04	11:38:11	53.7	53.1	53.4	56.7	62.5
456	2020/02/04	11:38:16	61.0	59.1	60.0	59.7	59.0
461	2020/02/04	11:38:21	59.7	60.2	57.9	61.6	61.2
466	2020/02/04	11:38:26	61.9	63.0	63.0	62.6	62.0
471	2020/02/04	11:38:31	60.4	55.8	54.7	54.8	54.0
476	2020/02/04	11:38:36	53.5	60.4	57.4	51.1	48.3
481	2020/02/04	11:38:41	46.7	51.1	57.2	63.4	56.3
486	2020/02/04	11:38:46	52.4	52.5	51.2	52.4	50.8
491	2020/02/04	11:38:51	55.0	57.0	54.9	57.2	58.9
496	2020/02/04	11:38:56	57.1	58.9	61.4	61.0	59.2
501	2020/02/04	11:39:01	60.5	57.2	56.1	54.1	59.0
506	2020/02/04	11:39:06	61.1	54.0	49.2	46.7	47.0
511	2020/02/04	11:39:11	46.8	45.9	44.9	44.5	44.3
516	2020/02/04	11:39:16	46.0	45.9	47.9	49.7	49.2
521	2020/02/04	11:39:21	48.8	52.6	55.0	52.6	49.5
526	2020/02/04	11:39:26	52.2	52.4	52.3	58.8	61.1
531	2020/02/04	11:39:31	58.3	51.2	46.9	46.9	48.3
536	2020/02/04	11:39:36	51.7	49.1	47.7	48.5	49.2
541	2020/02/04	11:39:41	52.1	58.8	58.1	55.4	62.5
546	2020/02/04	11:39:46	60.1	57.2	56.7	55.2	61.3
551	2020/02/04	11:39:51	58.9	53.3	54.6	61.9	59.5
556	2020/02/04	11:39:56	61.4	63.0	64.4	62.5	57.1
561	2020/02/04	11:40:01	55.3	54.3	53.5	58.2	60.0
566	2020/02/04	11:40:06	64.0	61.4	56.4	55.9	53.2
571	2020/02/04	11:40:11	54.8	64.0	64.5	63.2	59.7
576	2020/02/04	11:40:16	58.6	54.1	51.5	53.4	56.8
581	2020/02/04	11:40:21	66.6	64.4	60.9	63.1	62.0
586	2020/02/04	11:40:26	55.7	56.8	62.5	58.2	60.1
591	2020/02/04	11:40:31	62.2	54.9	55.5	52.8	50.3
596	2020/02/04	11:40:36	49.7	50.3	54.7	60.8	60.5
601	2020/02/04	11:40:41	53.8	54.4	53.4	51.5	51.6
606	2020/02/04	11:40:46	55.5	62.7	61.1	58.6	59.8
611	2020/02/04	11:40:51	61.0	61.1	62.7	61.0	61.9
616	2020/02/04	11:40:56	63.7	62.0	61.0	59.6	57.2
621	2020/02/04	11:41:01	58.3	55.9	56.5	59.8	61.2
626	2020/02/04	11:41:06	61.1	60.6	58.0	59.9	60.6
631	2020/02/04	11:41:11	59.5	62.0	61.1	59.4	58.5
636	2020/02/04	11:41:16	58.9	55.7	56.2	59.7	59.5
641	2020/02/04	11:41:21	60.6	62.2	61.2	54.6	55.1
646	2020/02/04	11:41:26	56.6	58.7	57.0	56.8	62.5
651	2020/02/04	11:41:31	61.9	60.1	63.7	56.3	56.2
656	2020/02/04	11:41:36	57.4	56.1	57.8	58.7	55.7
661	2020/02/04	11:41:41	55.8	53.2	52.4	53.7	55.1
666	2020/02/04	11:41:46	56.7	58.3	61.2	62.2	60.2
671	2020/02/04	11:41:51	59.7	58.5	57.8	58.4	59.0
676	2020/02/04	11:41:56	58.7	59.5	63.1	60.2	56.7
681	2020/02/04	11:42:01	54.0	51.5	50.7	51.4	55.9
686	2020/02/04	11:42:06	57.9	62.8	58.8	58.9	63.4
691	2020/02/04	11:42:11	67.2	60.5	60.7	60.8	60.2
696	2020/02/04	11:42:16	61.1	60.5	61.8	60.0	59.5
701	2020/02/04	11:42:21	59.3	61.8	59.6	59.0	59.4
706	2020/02/04	11:42:26	60.1	60.5	60.7	61.2	61.6
711	2020/02/04	11:42:31	62.2	59.5	56.9	55.6	54.8
716	2020/02/04	11:42:36	59.3	66.7	67.2	61.7	59.9
721	2020/02/04	11:42:41	58.8	63.9	63.8	57.5	58.0
726	2020/02/04	11:42:46	57.8	58.1	58.3	62.3	60.8
731	2020/02/04	11:42:51	59.5	58.1	54.1	62.7	62.3
736	2020/02/04	11:42:56	54.5	54.8	53.0	54.1	61.9
741	2020/02/04	11:43:01	59.7	54.0	54.8	54.7	53.3
746	2020/02/04	11:43:06	51.6	57.9	60.0	56.1	50.6
751	2020/02/04	11:43:11	49.0	47.5	48.1	48.3	46.8
756	2020/02/04	11:43:16	46.3	46.6	46.4	46.6	46.3
761	2020/02/04	11:43:21	46.5	47.1	48.9	51.5	56.4
766	2020/02/04	11:43:26	56.7	55.4	58.3	62.1	61.6
771	2020/02/04	11:43:31	61.9	55.6	55.5	54.1	52.7
776	2020/02/04	11:43:36	55.2	57.5	63.7	61.8	56.1
781	2020/02/04	11:43:41	56.1	54.2	55.2	58.9	58.7
786	2020/02/04	11:43:46	57.6	59.7	62.9	65.0	61.2
791	2020/02/04	11:43:51	57.7	55.2	52.2	53.5	63.4
796	2020/02/04	11:43:56	63.2	60.2	60.6	63.9	63.1
801	2020/02/04	11:44:01	63.4	62.6	56.2	58.2	66.2
806	2020/02/04	11:44:06	64.5	56.6	61.6	64.3	56.6
811	2020/02/04	11:44:11	57.2	55.0	49.0	49.1	53.1
816	2020/02/04	11:44:16	55.1	53.5	56.3	61.4	60.8
821	2020/02/04	11:44:21	53.7	54.1	51.7	48.6	50.3
826	2020/02/04	11:44:26	61.7	62.8	54.6	55.9	62.7
831	2020/02/04	11:44:31	58.9	57.8	56.4	60.0	60.2
836	2020/02/04	11:44:36	58.1	60.6	64.3	60.7	62.7
841	2020/02/04	11:44:41	63.8	62.0	63.6	57.0	63.8
846	2020/02/04	11:44:46	63.2	58.9	59.0	55.9	50.0
851	2020/02/04	11:44:51	49.5	48.7	47.7	48.5	53.6
856	2020/02/04	11:44:56	60.9	57.6	54.5	53.3	48.2
861	2020/02/04	11:45:01	45.5	45.5	44.4	43.8	43.9
866	2020/02/04	11:45:06	44.1	44.2	44.2	44.3	44.7
871	2020/02/04	11:45:11	44.3	44.4	43.9	44.5	44.5
876	2020/02/04	11:45:16	44.2	44.4	45.0	44.3	44.2
881	2020/02/04	11:45:21	44.2	44.2	44.4	44.6	44.9
886	2020/02/04	11:45:26	44.2	44.9	45.3	45.5	45.3
891	2020/02/04	11:45:31	44.7	51.2	44.6	43.1	43.0
896	2020/02/04	11:45:36	43.4	44.3	44.3	45.8	45.8

Appendix B

Roadway Construction Noise Model Output

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/18/2020
Case Description: Corte Madera Town Hall - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence - Willow Avenue	Residential	60.8	60.8	60.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	50	0
Concrete Saw	No	20		89.6	50	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw		89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	89.6	83.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence - Tamalpais Drive	Residential	70.6	70.6	70.6

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	100	0
Concrete Saw	No	20		89.6	100	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		75.6	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw		83.6	76.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	83.6	77.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Appendix C

Heating, Ventilation, and Air Conditioning Equipment Noise Calculations

HVAC Equipment - Unmitigated

Addition														
	dBA_1	dBA_2	dBA_3	dBA_4	dBA_5	dBA_6	dBA_7	dBA_8	dBA_9	dBA_{10}	dBA_{11}	Total Summed Noise Level (dBA)	Sum of Summed Noise Levels (dBA)	Increase in Noise Levels (dBA)
Ambient Noise Level	60.8											60.8		
HVAC Equipment	58.7	58.7	58.7	58.7								64.7	66.2	5.4