

**CITY OF NEWARK
DELAWARE**

COUNCIL MEETING MINUTES

August 31, 2015

Those present at 6:00 p.m.:

Presiding: Mayor Polly Sierer
District 1, Mark Morehead
District 2, Todd Ruckle
District 3, Rob Gifford
District 4, Margrit Hadden
District 5, Luke Chapman
District 6, A. Stuart Markham

Staff Members: City Manager Carol Houck
City Secretary Renee Bensley
Deputy City Manager Andrew Haines
NPD Chief Paul Tiernan
Community Affairs Officer Ricky Nietubicz

1. The Council meeting on proposed changes to the noise ordinance began at 6:00 p.m. in the Council chamber.

2. Ms. Sierer gave an overview of the format of the meeting for the evening and introduced Mr. Valentino P. De Rocili, Senior Principal Consultant with Compliance Environmental, Inc.

Ms. Houck gave a brief overview and reminded Council that in September 2014 they were present for an introductory discussion on noise. Compliance Environmental was then asked to review the current Ordinance to compare it to other jurisdictions, consider possible changes, consider possible unintended consequences of these changes and make recommendations based on the information acquired.

Mr. De Rocili reported past and current experiences with the noise ordinance were evaluated. Other noise ordinances were reviewed for comparison and opportunities were identified to strengthen the ordinance within the existing framework. When considering changes to a noise ordinance, it must be considered how the changes will affect its useful framework and how it will affect other noise regulations in the area (New Castle & State of Delaware). The framework of the noise ordinance has many moving parts and interrelationships between the different sections of the ordinance. All of the sections work together to provide protection for the City residential areas, communities, open spaces and business entities within the City. The noise ordinance also can be a good framework for reducing noise level in the City. Any provisions changed in the sections also will affect other provisions and ultimately will determine the effectiveness of the ordinance.

The ordinance referring to Chapter 20A works in tandem with New Castle County noise control ordinance Section 22 and also the Delaware regulations for governing in Title 7. The findings of the aforementioned research were as follows. The current noise ordinance is providing protected measures. To Mr. De Rocili's knowledge, there were no major issues known that by the application of the ordinance, it did not have its ability to protect. There was nothing outstanding that came to light. However, updating of the ordinance was needed to clarify requirements. Definitions needed to be added and change the acceptable noise levels in the ordinance.

Mr. De Rocili reviewed when Chapter 20A had been last updated, which was 1988 for some sections and 1991 for other sections. These sections and definitions played a key role in the ordinance. A flow chart was provided showing the breakdown of the ordinance. The top section was entitled, "Is there a potential noise issue?" There was an

exemption special waiver provision in the ordinance in Section 20A-5. If there was no exemption, then it moved into the remainder of Chapter 20A. In Chapter 20A, there was potential for some noise issues. One of the key definitions to the framework of the ordinance is the noise disturbance definition in Section 2, Definition 14. This was key because there are requirements throughout that a person cannot cause a noise disturbance. Some of it was a listing where individuals could not do things at certain times. Some of it was maximum sound levels, either continuous sound or peak sound.

There was a section titled allowable noise levels contained in section 6. This section provided numbers used for continuous noise. These were used for stationary sources. Also, there were listings in this section of noises that were prohibited. Following was section 4 which detailed a list of prohibited noises. Section 7 detailed motor vehicles and other noise levels.

Following was the enforcement and penalties section. If there were violations of any of the provisions, there were requirements or enforcement and a formula to follow.

This ordinance was used for three primary things: enforcement, a process for building applications and a framework for reducing sound levels in the city. There were some trends apparent with noise ordinances. There had been changes recently, even in Delaware, where ordinances leaned toward plainly audible standards. These were listed standards, things that someone could not do, and ways to determine if a person was in violation or breach of an ordinance without the use of a sound level meter.

The trend had been to move ordinances away from measuring sound. The reason for this was difficulty in how one actually measured sound. There were technical items that had to be met to obtain good data. The other reason for this trend was to make it clear for enforcement actions where the jurisdiction could enforce the ordinance without the use of a sound level meter. To use a sound level meter and to rely on it needed to be done in a very professional manner. There are many things that could change sound as demonstrated at last year's workshop.

When a sound level meter was used, the operator was looking at data. The data had to be interpreted, analyzed and measured over time. A snapshot was difficult to use because sound and sound levels tended to change through time, seasons and population changes. When UD was in session, there were more people, which had effects on sound.

Regarding general trends, federal standards for vehicles had gotten stricter over the years reducing noise emission from vehicles. Today, a lot of the noise from vehicles was tire friction on the road, which related to the paving and the speed of the road. Generally, vehicles had gotten quieter over time.

Construction materials were also better. Houses in the past had single-pane windows, however they now usually have double or triple pane. This helped with energy reduction, sound attenuation, sound absorption, and sound reflection. With efficiencies in HVAC and air conditioning units, HVAC units were quieter and more efficient. Building codes were more sensitive to noise ratings of construction materials. Currently, many materials used had a noise rating as part of their specifications or product data.

Some of the challenges faced when looking at noise ordinances and the idea of measuring sound included the following:

The first challenge was to determine a number that anticipated what the human ear perceived as loudness as the goal was to reduce loudness. However, people hear at different levels and perceived loudness also related on the frequency of the sound.

The other challenge was the differences in stationary and mobile sound situations. A vehicle could emit horrendous sound, and as the vehicle passed, a person may sometimes hear that sound change and get lower. A stationary source, which may generating sound continuously might also change. If it is a manufacturing facility, they may have things that are going on there that change their sound level over time. This included distance changes of sound that generated from stationary and mobile sources.

The other challenge was defining ambient or background noise as there were changing variables: differences in the number of people on a street, different seasons (cold versus warm), and how the ground absorbed or reflected sound. In this area of the country, there were seasons. In other places in the United States, the climate is pretty consistent in terms of temperature. He expected, in California for example, that their measurements would be a little better in terms of consistency due to weather constants.

Additional challenges included: what should the City do in terms of sound generation levels in residential versus business districts, and where was the line drawn. What were the numbers that work in terms of the standards? The City had to set reasonable maximum noise levels, and make sure that the numbers worked and that the City could measure them and use them to enforce the ordinance. If the sound was measured from the sound source, and the City's maximum noise level was set too low, there could be a problem with determining where the line was in terms of what was enforceable. For example, normal speech generally was at 60dB. That depended on distance, how far it was from the individual, and how loud the individual was. A window air conditioner was about 50dB, depending on distance, etc.

The ordinance said the City measured from the point beyond the boundary of the property on which the source was located. If the source was located in the middle of the property, the City would measure the closest point at the property line. This allowed measurement anywhere as long as it was beyond the property line. This requirement was in the New Castle County and Delaware requirements within the receiving property. In other words, measurements were collected on the receiving side.

Mr. De Rocili reviewed common sources of noise and the various dB levels associated. He felt that around 50dB was a good number and was used in a lot of ordinances for continuous sound. This seemed to be the trend with a comfortable range of continuous noise between 50 and 65. Peaks or instantaneous sound levels that were not consistent noise would be 80 to 100dB, which was taken into account by regulations and ordinances. He reviewed the dB scale and explained that it is nonlinear and on a logarithmic scale, which meant that smaller changes in dB level would be perceived as much larger, i.e. an increase from 50dB to 70dB was perceived as 400% louder. A 10dB increase was a number used in many ordinances to determine a maximum as ambient noise changes. As ambient noise changed, the 10dB increase was there to buffer the change. For example, if ambient noise went down to 30dB, then the ordinance permitted up to 40dB. If the ambient noise number went to 50dB the ordinance permitted to 60dB. The fluctuation of 10dB was included in the City noise ordinance. On the lower side, people may not hear a change at 1-2dB but generally can hear a change at 3.

Mr. De Rocili focused on the ordinance and its parts. On the flowchart there are different sections that connect in the framework of the ordinance. A noise disturbance was not permitted and had four characteristics. A noise disturbance endangered or injured the safety or health of a human being or animals; annoyed or disturbed a reasonable person; jeopardized the value of the property and eroded the integrity of the environment; and was in excess of the allowable noise levels established in Section 20A-6. There were many noise ordinances with this same definition. Mr. De Rocili recommended no changes to the general definition of noise disturbance.

The next section was allowable noise levels. This was the section that talked about a noise at different times, continuous noise, peak noise, etc. It listed the levels in different districts through the city. There were five provisions in the section, starting with Paragraph A, "Unless granted by a special waiver, unlawful to create a noise disturbance for any one or the combination of the following." Mr. De Rocili did not see any change for this.

Number one was a noise which exceeded the ambient noise by 10dB, at a point beyond the boundary. This was number that as ambient noise levels changed throughout the day, evening and season, 10dB floated and could not be exceeded.

For a stationary source, stationary sources could generate what was called a pure tone, or cyclically variable sound, repetitive impulse noise. All these things could not exceed 5dB above the ambient. The reason for that being stricter was that these were

types of sounds that typically annoyed people. Mr. De Rocili agreed with the language and that 5dB was a very good place for the ordinance to be.

Number three talked about a source of sound. This could be any source of sound that emitted a peak level set forth into the property line, a point beyond the boundary of where the source was located. These were those peak numbers for residential districts between 9PM and 7AM, there could not be a peak of 80dB or above. In all other districts at any other times, that peak was 100dB. Mr. De Rocili did not see any change needed with this part of the ordinance.

Number four covered infrasound and ultrasound frequencies. Infrasound was lower frequencies. Ultrasound was higher frequencies. This section stated it shall not exceed 100dB measured at the point beyond the boundary of the property from which the source was located. Mr. De Rocili did not see any changes there. Many of the sounds made in this sound spectrum could not be heard. Some of them could be heard as they got closer to human hearing range and was where 100dB came into play.

Number five was operating or causing to operate any stationary source of sound. Here a 24-hour equivalent weighted sound was used. Over a 24-hour period, and equivalent meant one could take data in less than 24 hours and equate it to the equivalent. Basically, the City had limits that could not be exceeded. The language was okay, but the numbers in Section 6A-5 were permitted to be exceeded.

He detailed the current ordinance requirements. Sections were broken out into daytime hours and nighttime hours, 7AM to 9PM, 9PM to 8AM. The typo in the times needed to be corrected to span the 24 hours. Next followed the districts, residential, residence, university, business, industrial, etc. Next were the numbers: residential was 57/52 (dB). Mr. De Rocili recommended lowering those to 55 and 50. For university and businesses, the recommendation was 60 and 55, a drop from the current 63/59 (dB). The recommended change for the industrial, office, research, etc. was to lower the limit about five dB, down to 80. These would be averages over time. For all other districts there were no provisions, however he recommended mirroring the residential district which was the most stringent at 55 and 50dB.

Evening hours were 9PM to 7AM. It was important to remember that where you measure the sound mattered. If the industrial zoned property there was the recommended allowable level of 80dB and the residence at night was 50dB. For example, if a stationary source was generating sound, the sound level from where the sound was measured would determine if there was a problem with that source with this ordinance. If an individual was having a difficult time with the sound, the level may be 42dB right next to his/her ear as measured by a sound level meter. However, sound levels decrease with distance, so if the same meter was used at the end of the property line, this would be where the City would determine if the sound is 50dB. If it was greater than 50dB, then the requirement would not be met.

The reverse needed to be discussed as well. If an individual was generating a noise at 60dB and a complaint was received by a nearby industrial use, the allowable sound level would be 80dB as it is the receiving property or the point beyond the boundary from which the source was generated.

If a comparison was done using State requirements, they have a change in terms of how they define daytime (7AM-10PM). Additionally, the State has a 65dB limit for residential, while Newark has a 57dB limit and the recommended limit presented was 55dB. The university limit was 57dB to 55dB and could be 75dB or 65dB, depending on the type of use where that measurement was taken. The same could be applied to business and industrial/office/research. New Castle County does not use this type of framework in its ordinance.

The current city ordinance was much more stringent than State requirements. Comparing the nighttime numbers, Newark was still more stringent. Looking at industrial, office, and research at 85dB, Delaware would be as strict depending on where the measurement was taken. It was recommended to drop that to 80dB.

The Code section on allowable noises discussed enforcement, and referenced a noise level meter. Mr. De Rocili suggested changing the term to sound level meter. The only other notable change in the section was in reference to complaints in an apartment building and how the sound level meter is used.

Section 20A-4 detailed prohibited noise and listed things, situations, and times that created prohibited noises. It did not require the use of a sound level meter unless stated in the provision. Noises in this category constituted a violation of the noise ordinance. The list included horns and signaling devices, radios, television sets, phonographs and similar devices. These were standard prohibited noises in ordinances. Time restrictions were from 9PM to 7AM regarding sounds that were “plainly audible across property boundaries or partitions or 50 feet.” Exterior loudspeakers stated they could not be “plainly audible at or beyond property boundary of source or public way.”

Mr. De Rocili stated they did suggest a change under street sales. Currently, it prohibited selling by shouting or outcry in residential districts. They recommended changing residential district to any district.

Following was a section on animals, loading operations and construction noise. It was recommended, in addition to violation of EPA regulations, that federal and state DOT regulations be added in 7(b). There were also restrictions on firearms, explosives, powered model vehicles, different times and maximum levels, measured at a property line or 50 feet. No suggested changes were in this section.

Mr. De Rocili pointed out that refuse-compacting vehicles shall not exceed 94dB measured at 50 feet from any point of vehicle and reported newer trucks would meet that requirement. No changes were proposed to this section.

Section (11) discussed yelling, shouting, hooting, whistling, or generally creating a racket on public streets so as to annoy, disturb in business or residence. The suggested change was to any district. Power equipment fell in this section with no proposed change.

Section (13) covered stationary emergency signaling devices, times, and specifications. There were no proposed changes.

There were recommendations for Section (14), motor vehicles. The proposed recommendation was to prohibit the operation of any motor vehicle in a way contrary to the State of Delaware motor vehicle code, including noise related requirements.

There was an additional recommendation for Section (15) Exhausts: Discharge into open air of any exhaust, mobile or stationary, except through a muffler, or other device which will effectively prevent loud noises.

Mr. De Rocili noted there was a Section (16) recommendation to add unnecessary horn blowing. No person shall at any at any time sound a horn in such a way to cause a noise disturbance except when absolutely necessary as a warning.

In regards to Section 20A-2 (15) Plainly Audible, it was mentioned earlier that the ordinances and ordinance updates tended to move into using the plainly audible term. The City’s standard was as follows: Plainly audible means any noise for which the information content of the noise is unambiguously communicated to the listener, such as but not limited to, understandable speech or comprehensible musical rhythms, including bass tones with a repetitive and impulsive sound. This was referenced in the noise prohibited section, where radios and television sets and similar devices are mentioned. Through different times, there was a restriction, and distances, common areas, parking lots, at 50 feet from a device. It was also used in the section that relates to exterior loudspeakers, plainly audible.

The recommendation was to strengthen this section. The big change was for stationary sound sources at a property boundary at a residential district, or a distance of 50 feet in public places from the sound source. The rest remained the same. The thought process was that this set a quiet time for residential areas. It specifically was focused on

stationary sources at a property boundary and used the 50 foot criteria as the distance where a plainly audible standard would be applied.

The next section referred to ambient noise, which meant all-encompassing background noise associated with a given environment without contribution of the specific source of sound in question. The recommendation for the definition was to include how ambient sounds were measured (i.e. average dB, minimum time to measure, meter settings, distance from ground, environmental factors, etc.). There were many elements in determining the ambient noise. Additionally, sound cannot exceed 10dB over the ambient noise level at any time.

The recommendation to the allowable ambient noise level was that “the ambient noise level shall be determined with a sound level meter using appropriate settings by averaging an adequate number of measurements over time to represent ambient conditions after collecting measurements at a proper distance from ground elevation. Environmental factors including temperature, humidity, precipitation, wind conditions and any other contributing factors shall be documented.”

Additional definitions to add:

- Cyclically varying sound – any sound that varies in sound level so that the same level is obtained repetitively at a relatively uniform levels of time.
- Repetitive Impulsive Sound – a sound that consists of single bursts with a duration of less than one second with peak levels 15dB higher than background noise.
- Peak Level – the maximum value reached by the sound pressure without a time-constant applied.
- Sound Level Meter – used for purposes of this ordinance shall have a real-time data-logging function and meet the requirements of ANSI Type 1 and IEC Class I, calibrated and used in accordance with the manufacturers’ requirements.
- Equivalent sound level –a cumulative metric of noise in dB during periods less than a 24-hour duration.
- Districts – update list of districts in the City.

General recommendations

In the enforcement section, Mr. De Rocili advised adding:

- Language to include penalties for violation of any chapter, not just Section 4 (Noises Prohibited).
- Stricter penalties such as possibly of revoking building permits or occupancy permits where an owner fails to demonstrate compliance with the ordinance.
- Additional “Best Practical Noise Control Measures.” Consider requiring any building permit applicant include best practical noise control measures in their design taking into consideration the process employed, capital expenditures, maintenance costs, technical feasibility, and engineering aspects relating to the control of noise to the environment. This translates to denying a building permit to any applicant that fails to comply with the noise ordinance.

Finally, prior to completing any changes to the current noise ordinance, a qualified attorney should be engaged to recommend specific language for the document.

3. Ms. Sierer thanked Mr. De Rocili for his presentation and opened the floor to questions from Council.

Mr. Gifford asked about the difference between measuring at the boundary and within the property. He asked if there was anything being changed regarding the strictness of the existing noise ordinance in the recommendation. Mr. De Rocili responded no as the ordinance already said a point beyond the boundary of the property in which the source of the sound was located. The State of Delaware and New Castle County used the “within the receiving property” definition. Mr. De Rocili recommended leaving the ordinance the way it was and stated the slide was just to demonstrate that where

information was collected mattered in terms of where the numbers were going to be. Mr. De Rocili preferred "beyond the property boundary" because it would encompass common space. The City's ordinance already covered that. Mr. Gifford agreed and wanted to make sure the City was not considering changing that as he liked the original wording.

Mr. Gifford asked what specific resources were used to compare Newark to get to the recommended sound levels and why 50dB was a good number, or some of the other numbers that you suggested for business districts or other peak noise levels. Mr. De Rocili had a table of comparison copies, which were distributed to Council at this time. He stated the question was why there were recommendations to change and reduce the allowable sound levels. The handout showed the current residential noise level, the recommended changes, and the allowable noise level in other jurisdictions such as the State of Delaware, Dover, Rehoboth Beach, as well as areas in several other states.

Mr. Gifford noted San Diego had a three-tiered level. He stated that over last few years, someone with credentials did measure sound levels in Newark. Mr. Gifford would like to try to maintain some of the quieter levels that the City had in the middle of the night. He felt it was hard to do that with a two-tiered noise ordinance. He asked Mr. De Rocili's opinion on a three-tiered ordinance with time periods comparable to San Diego, as he felt that the time period between midnight and 6AM or 7AM was very quiet around town and some of the noise measurements supported that in residential neighborhoods.

Mr. De Rocili replied that was typical. At nighttime, at least a 10dB drop was usually seen. He stated it really depended on the time of the night as the early morning hours, 2-4AM, were going to be a lot lower. It also depended on temperatures and other elements. The current ordinance had any sound over 10dB, regardless of the background, triggering a violation of the noise ordinance. If the sound was 60dB at midnight, there was a 70dB criteria or above. If at 3AM, it dropped to 40dB, there would now be a 50dB criteria.

In the existing ordinance, there were a couple of mechanisms in the framework. One mechanism was the provision prohibiting sounds that were 10dB above the ambient noise. In addition, the ordinance had protective numbers that stationary sources were prohibited from exceeding during certain times. However, the ordinance said "any one or a combination thereof" and was the strictest.

In the case of an industrial site emitting noise, 80dB was the limit on that property. If the site was located next to a residential area, 55dB was the requirement from where the sound was measured on the residential property. However, if it was 2AM or 3AM, and the ambient noise level was 30dB, the site was bound by the 10dB above requirement. The City had something to address the changes in ambient, and had a peak number that could not be exceeded, since the definition said, "any one or the combination thereof."

Mr. Gifford replied he did not think about it that way. If the neighborhood was a 35dB, then 45dB would be the limit for the background noise.

Mr. Morehead stated if you read the ordinance, it says, "which exceeds the ambient noise level by 10dB at the point beyond the boundary of the property on which the source of the noise is located, except as otherwise regulated herein." He felt that last phrase neutered that 10dB completely and reverted to the district limits. Mr. Morehead noted that was in located in section 20A-6.

Mr. De Rocili stated he interpreted that to mean was "except as otherwise regulated herein." There were requirements in terms of times and prohibited noise as part of this regulation. He did not interpret that as meaning that it trumped or reduced the requirements, because some other things were listed further down where it talked about dB numbers and equivalents. Just because anything was stated in this regulation did not mean that it trumped that, because there were a lot of things stated here. If it meant everything, then it would just trump basically the entire regulation. He stated he was not a lawyer and legal counsel could review this.

Mr. Morehead stated these were the types of things that came to the Board of Adjustment to be decided and felt it was unfortunate the City Solicitor was not at the meeting. He stated that what the City knew was that when there was a large potential development, their lawyers came in and stated, "What applies are these numbers at nighttime." They did not care and never mentioned it once. Mr. De Rocili stated he believed it needed to apply. Mr. Morehead agreed. Mr. De Rocili stated that was something for counsel to review. He thought the intention of that section was to have a mechanism in the framework that floated with the ambient. This was how it was done through a lot of different ordinances, and it made sense to have that. Mr. Morehead stated he agreed and it was his opinion the protection was clearly stated.

Mr. Gifford felt it needed to be clarified. He thought what was intended as the "except as otherwise regulated herein" was for if the noises being dealt with were higher than the limit in the neighborhood. If the 10dB was lower, how did that work? He thought Mr. De Rocili's comment needed to be clarified in the Code that it was the most restrictive controls and not the opposite way around. If the sound was 60dB, and the sound at that site could not go above 70dB, the sound would have to default to the 55dB. If it was 40dB and 50dB was the number with 10dB, the sound would have to go to the 50dB. He felt it could be clearer.

Mr. Morehead stated he was concerned that the City was being told that the ordinance was okay as is and he did not agree.

Mr. De Rocili replied to clarify his interpretation is that it is part of the ordinance, because if it was not, it would not be required, because there were a lot of other things that required in there. He interpreted that to mean "except as otherwise regulated herein" not to trump anything else that was in there. It was a good point that the recommendation was to have counsel look at that and ensure the language was cleaned up if needed.

Mr. Chapman stated that in this hypothetical situation where there was an industrial commercial property directly abutting a residential property, each property has its own regulatory levels of 80dB and 55dB. If the commercial property emitted a standard 55 or 60dB at 3AM, up to the property line of the residential district, then they were within the Code, whether the City was reading it as the 10dB or the 55dB. It did not matter what property on the other side or further deeper into the residential zone. That property might be an average of 30dB at 3:00AM, but the property directly next to the commercial was going to have an average of 50 or 55dB. Mr. Chapman wanted to mention this and asked if he understood this correctly inside of the City's existing ordinance.

Mr. Gifford noted the definition of background noise and how it was measured became really important in that situation.

Mr. De Rocili replied it was how a background was measured, because ambient noise had to be established ambient or background noise. Following how it is measured, the numbers that were being referred to kick in. The receiving property was the measuring standard. If an industrial site had an 80dB sound level, the sound level on the residential site would have to be met. The standard was from the source to the receiver. If the measurement was on a residential property, that lower number was used to determine a noise complaint.

Mr. Gifford stated somewhere in the old ordinance it stated with regard to background noise, the standard was to walk away from the source so the offending source of noise could not be heard and it was at that distance where that would be the normal background for that area. Mr. De Rocili stated this issue was covered in the section where talks about using a sound noise level meter (Section 6b). Mr. Gifford replied one could be well within the property to get that background noise reading. Mr. De Rocili stated if that was used as a criteria, that was the ambient level as sound decreased with distance. Mr. Gifford replied that it was of a similar use, as one would not want to go to a different use. Mr. De Rocili stated that was correct. The real property boundary was from the source specific noise.

Mr. Chapman asked how the City could phrase ordinances so that they could then be enforced. With an average 9,000 square foot lot in the city, from front to back of that lot was not very much distance. In this scenario the edge of residential property would be next to commercial property. Then, not very far away was the end of that particular residential parcel. Was the enforcement the average ambient noise and could that exceed that complainant's residential property. Mr. De Rocili replied that it could not exceed that because the City had these allowable noise levels. Mr. Chapman stated it was the average ambient noise on that one parcel and not the neighbor on the deepest end in the residential space. Mr. De Rocili interpreted it as it was the receiving property, "beyond the boundary of the property from where the source is generated," which did not say receiving property but it was beyond the source, which was probably better language. It did not have to be one property, it could be several places. Mr. Gifford stated one could go to the neighboring lot to get that background noise reading.

Mr. Chapman felt that his question had been answered in two different ways. The second of which was maybe more preferable to what Council was trying to accomplish.

Mr. Gifford replied it was his understanding it was at the property border line, if one was next to a residential property one had to abide by those rules at that border. Then, the background noise limit could come into effect or the straight number limits, depending on the situation. Mr. Chapman replied the background noise limit could be gathered past the parcel that was directly next to the commercial space. Mr. Gifford asked if there was an industrial property, a small lot and then similar lots stacked behind it, would the City be able to go to the similar lots stacked behind it for the background noise reading. Mr. De Rocili replied that was the accurate. Mr. Gifford noted that way would satisfy the 10dB requirement, say that the background noise was very quiet, and one would have to abide by that requirement. If the background noise was not low enough one would just go by the standard 50 or 55dB limit in a residential zone.

Mr. De Rocili replied that was easy and it was clear but there was another part of this with other sources of noise, so the City had to be careful because noise could be additive, if there were several sources. There could be other noise sources that changed the meter to for higher numbers. Mr. Gifford stated other properties could not have another source of noise or be in a different district or have a different use. Mr. De Rocili replied that was just an example. If there was one source and one property on a desert island, okay, but there was not, so other noise sources are present. Mr. Gifford said it made the 10dB rule a bit more difficult to enforce than a straight number at a property line. Mr. De Rocili said the straight number at a property line also had to be measured with a sound meter, which was also difficult. Nothing was easy about doing the sound meter work, but it was necessary that it be in the ordinance, because for a building permit process the City would want a builder or the permit entity to demonstrate that they were going to meet the requirement. It needed to be included. Mr. Gifford stated he realized it was important because when he visited a large generator just over the border in Maryland, the residents negotiated with that large generator. They essentially were on a desert island because they were in the middle of the countryside and it was 55dB at the property border. They negotiated that down from another number. So, these regulations are important, especially for those cases where there was a continuous source of noise.

Mr. De Rocili reported his company did an asphalt plant two or three years ago and it was determined the best place to put that asphalt plant was near a major roadway. It was good for the permit entity because they got trucks in and out easier. It was good for the noise situation, as where it was placed was thousands of feet away from the residential area. The site setting really mattered.

The other thing his company did on that project was there were some components of that operation that generated more noise than others. When looking at the plan, the louder units were placed at positions that lowered the amount of noise at boundaries. In other words, if one was 200 feet from the boundary on the edge of the plan and that piece could be moved 1,000 feet away (which they could because it was a large piece of property), they did. Sound diminishes with distance, so there were a lot of things one could do depending on the site setting.

Mr. Markham wanted to follow up on a couple things like the ambient noise. Initially when first presenting Mr. Markham thought Mr. De Rocili's company was going to go out to the neighborhoods for a baseline ambient noise. He asked if that happened and if that was what was originally proposed. Mr. De Rocili stated he did not see the value of that in the framework of the ordinance.

Mr. Markham wanted to know if whoever was enforcing had to carry a sound meter to figure out the ambient noise or measure at the property line. Mr. De Rocili stated if the City was going to enforce it beyond what was already listed in the ordinance, a sound level meter was not needed. In other words, individuals were prohibited from doing certain things at certain times; so therefore a sound level meter would not be needed. If it was a complaint regarding a stationary source (industrial or residential), the City would rely upon what was ambient and how that sound played out with these numbers and a person who knew how to use the meter.

Mr. Markham noted the original question was that when measuring sound at the property line it got a little more complicated i.e., where is the property line. He suggested using some offset from the property line to give that balance. Mr. De Rocili replied it was a valid question. The property line may not be visible. The ordinance said measure at the point beyond the boundary of the property for which the source of noise was located. It did not have to be exactly at the property line, but a point in the receiving property because it was not part of the City's ordinance. It was a point beyond the boundary. If one was on a residential property next to somebody's pool and that person knew that that pool was definitely on that person's property. That would be a pretty good indicator that the person was on the property. It did not have to be the boundary. It could be at the boundary. If a person had a noise complaint, they were hearing it in their house so the City may want to take a measurement outside a window or something outside the house which is on the receiving property.

Mr. Markham was trying to clarify the fine points (i.e. addressing potential complaints that the City did not measure at the right place) and it may be a borderline infraction. Mr. Gifford stated he thought there was flexibility with the property line because while one could not get any closer than the offending person's property line but it could be measured anywhere else so there was that flexibility. Mr. Markham stated he was trying to think of the neighbor versus neighbor issues.

Mr. Ruckle stated on the list of provided cities, he could see Newark, Dover and Rehoboth. Dover and Rehoboth were the same as the state. In comparing Wilmington, Middletown and other Delaware municipalities, did anyone else have stricter guidelines than the state. He felt what was being recommended was stricter than what the state already required and wanted to see if any other jurisdictions had made that step. Mr. De Rocili stated he did not do an analysis of all the municipalities.

Mr. Ruckle asked if there was a recommendation for a period of time to measure sound to come up with the ambient noise number to measure against. Mr. De Rocili reported there was a calculation for equivalent noise in less than 24 hours.

Mr. Ruckle asked how long a police officer would have to measure a noise with a sound level meter before determining if there was a violation. Mr. De Rocili stated the types of meters that could be purchased would give that equivalent sound and could give that value. Mr. Ruckle used an example of a neighbor complaint regarding a loud radio and wanted to know the time it would take an officer to measure the noise. Mr. De Rocili noted it varied depending on the sound, but the meters would give the officer that value and it was a calculation based on how much information was coming in. Typically it was less than an hour and maybe at a higher noise it could be 30 to 45 minutes. Mr. Gifford added that was why the City had specific prohibitions in the noise ordinance. There were simple things like playing audible music or things like that would be taken care of and asked Mr. De Rocili to confirm the intent of the section. Mr. De Rocili stated that was true and that enforcement used those requirements to determine a violation. Mr. Gifford stated that he did not see officers traveling around with a sound level meter. If there was a situation where a sound level meter was necessary that would be more of a short study

that would be done with someone hired and trained. For times when there was loud music there were specific prohibitions.

Mr. Ruckle discussed an example within his district regarding a reported noise from Dow Chemical that has been measured and was not over the dB limit. He wanted to know what was needed to protect the City in these types of complaints. He also expressed concern about what would be done regarding businesses currently over the proposed limits and how they would be affected by the new standards. Mr. De Rocili felt that 2 dB was not a major change and that if someone was at risk of exceeding the recommended levels, they were likely already exceeding the existing limits. Mr. Ruckle felt that would need to be reviewed on a case by case basis.

Ms. Hadden asked for clarification on the quiet range on slide 17 regarding noise source and perceived hearing. Mr. De Rocili noted that the range from 40 to about 55dB was what people perceived as quiet and the notes referencing various items were examples of what quiet would be in terms of noise sources, such as a quiet office or a refrigerator humming. Ms. Hadden read the chart as 5 to 15dB is audible, 15 to 30dB is very quiet, 30 to 45dB is quiet, and 45 to 60dB is comfortable. Mr. De Rocili stated he interpreted it as the 35 to 55dB range was quiet and was perceived hearing as people had differing views on what was considered quiet. The chart only served to illustrate some noise sources and what the perceived noise sources would be.

Ms. Hadden asked if the slide referencing dB increases and approximate percentages would also apply in the reverse for decreases in noise or if there was a different calculation. Mr. De Rocili replied there was a difference. A 20dB decrease would be about one-quarter of the sound. A 10dB decrease would be half the noise. As the numbers were also used on the minus or decrease side, 10 for example where it was twice as loud of an increase would be half that volume as perceived by people.

Ms. Hadden said on recommended allowable noise levels (slide 29), the 2dB recommended decrease from the current ordinance for residential districts was not going to be a significant difference, which Mr. De Rocili confirmed. Ms. Hadden stated she had taken readings in the area and had expected the residential recommendation to be in the 40s range and was surprised to see it at 50dB. She felt the analysis was good and produced a lot of recommendations, but wanted to hear other council members' opinions on that particular issue.

Mr. Chapman said Ms. Hadden asked about the recommendation to reduce from 57 to 55dB and 52 to 50dB. Based on the chart which noted that a change of one to two dB was relatively difficult to detect, Mr. Chapman asked what the reasoning was for those recommendations. Mr. De Rocili replied that these were continuous noise thresholds so basically the City would be lowering the threshold by 2dB for continuous noise, not a peak, so it would be a 24 hour reduction which was the reason for the recommendation. Mr. Chapman replied that Mr. De Rocili's response did not make it clear to him.

Mr. Chapman asked Chief Tiernan if in regard to loud mufflers or exhaust systems, the police department has a hard time enforcing restrictions because the equipment was not in the right location, there was not enough equipment and the equipment was not properly calibrated. Enforcement was also an issue because cases were often being dropped or dismissed due to technicalities. Chief Tiernan replied that in regards to the point regarding the meters and police enforcement, meters were not used. Complaints usually received were loud radios, parties, etc. There had been some discussion about the meters and that it would be very difficult. Chief Tiernan referenced the earlier comments of Messrs. Markham and Ruckle regarding taking measurements. The police did not recommend doing that as a department as individual officers did not have the training and could not testify in court about the various elements affecting the noise. In instances where an actual reading was needed, a consultant could be hired as Mr. Gifford previously suggested. Mr. Gifford noted that Code Enforcement may have that training.

Mr. Chapman asked if a person lived on a residential street in a relatively quiet neighborhood and the exhaust from certain vehicles was designed to be obnoxiously loud and annoying, especially at 3 AM, how could the City enforce in that scenario. Chief

Tiernan stated that was what the consultant mentioned the motor code to mufflers. There were specific sections regarding not being able to take off factory issued mufflers and replace them. There were some problems with that with motorcycles because he believed the City had to give them a chance to go back to inspection and get them to get re-inspected before a summons could be issued. That was something that had been discussed with the consultant, and it was a recommendation in his presentation.

Mr. Chapman asked if this was covered in State Code. Chief Tiernan replied it was and Mr. Gifford noted City Code deferred to State Code.

Mr. Chapman asked if there was an understanding that the current code realistically was sufficient for proper enforcement of the allowed exhaust scenario. While the City might not generate ticket revenue from it, the City could probably prevent it from continuing. Either the violator was not going to come back through the area or they would have to have to go modify the exhaust system to bring it back into compliance with state Code and then prove to the City that that has occurred in order to not get pay the fine. He noted that it might be something else that the City Solicitor needed to review. He thought there were concerns about continuing industrial, commercial use noises affecting residential areas, student-generated noise from late night parties, and very quick, abrupt and violent noises. Council was looking for all of those things to be addressed and Mr. Chapman wanted to summarize those conversations Council had at the first workshop.

Mr. Chris Jones, Newark PD stated the issue of the mufflers was that individuals got them checked at the DMV and the mufflers were changed out from the time a ticket was written. After inspection, they changed the muffler back, so when they show up to court, the ticket gets dismissed, because neither the officers nor DMV were following them from the time the ticket was written until the time they were standing before the judge. The same issue occurs with window tint as they have the opportunity to remedy it and have the ticket signed off by DMV. The judge then dismisses the ticket and then they place the offending muffler back on the vehicle. Mr. Chapman felt Council needed to task the solicitor to find something new and different from what the City has been doing to address that specifically, such as ticketing on sight and making that ticket stand.

Mr. Jones stated another issue from the enforcement perspective was that when the police arrive on scene after a 3AM call because a driver may be hitting on that throttle and taking off because the engine is cold and wants to get going, warm the engine up, but when the police are there, the driver is not hitting that throttle. The question is at what point are the police taking that measurement. There were so many variables that made that measurement a problem for the police in addition to the DMV issue. Mr. Gifford stated there was an addition recommended by CEI for adding exhaust noise to the City code, but the problem was enforcing it.

Mr. Ruckle asked Chief Tiernan for his official position on this issue. Chief Tiernan replied in the eight years he had been in Newark, he did not think a summons had been issued using a meter. The majority of complaints the police received were loud parties, TVs and stereos. Plainly audible worked fine. From the police department's perspective, the part of the ordinances that they enforced work perfectly. Mr. Ruckle asked Chief Tiernan if the PD believed the way the code was written was satisfactory to them. Chief Tiernan stated yes.

Ms. Sierer stated it appears the biggest impact was with the businesses and industrial and office as far as dB changes. Mr. De Rocili replied yes and they were recommending to reduce daytime and nighttime in those districts. Ms. Sierer asked if it was much of an impact. Mr. De Rocili stated when looking at just 2 or 3dB, it was not for an immediate sound because it was hard to hear. However, he noted Council should remember those are 24-hour continuous sound levels and those were levels that typically, someone would have to demonstrate that they were below those numbers. In a permitting process, it could matter in terms of achieving that lower number.

Ms. Sierer asked if it was 4 or 5dB at night that was the change. Mr. De Rocili replied for businesses and industrial office research that was correct.

Mr. Gifford asked Chief Tiernan if there was any other area besides exhaust and loud noises from parties, etc. where the PD was having difficulty. Chief Tiernan stated that was it.

Mr. Chapman asked why plainly audible did not apply to exhaust. Someone could report it to the police after hearing the exhaust in the street, the officer arrived and heard the offender come down the street. Now the officer was there to experience plainly audible. If it happened regularly then it would not be difficult to have an officer present, hear the noise and write the violation. Chief Tiernan confirmed this would be the case.

Mr. Morehead felt there were a number of issues with this ordinance as written. Looking at 20A-3 (enforcement and penalties), he noted the range of fine and imprisonment options and questioned who made the penalty determination as it was not in the Code.

He was also concerned about portions of Section 20A-4 referencing noises prohibited. On item 10, regarding refuse compacting vehicles, Mr. Morehead was concerned about the effect of refuse vehicle noise on residential areas adjacent to commercial zoning districts as they were not currently protected and wanted the opinion of the City Solicitor on the issue. He felt it was unclear whether the measurement referenced in the section was supposed to be taken at the residence, at the source of the noise or within 50 feet of the noise.

Regarding number 11 in Section 20A-4 (yelling, shouting, hooting, whistling generally creating a racket on public streets), Mr. Morehead was concerned about the qualifier "on public streets", because he felt it limited the ability of neighbors to complain if somebody did that in their own yard and that it may need to be changed. He felt it may also need to be amended to be just plainly audible speech, but also felt the issue of public streets could be difficult.

Mr. Morehead expressed concern regarding how Section 20A-5(a)(3) regarding the exemption of noises resulting from the provision of municipal services and how that may be affected if refuse collection was outsourced. He did not want trash collection to become a 24/7 activity, which it potentially could under the existing exemption.

Mr. Morehead continued with Section 20A-6(a)(1). He felt the 10dB noise limit was basically neutered. He noted (a)(2) talked about a stationary source of sound, but did not mention where it would be measured. (a)(5) stated "no person shall operate or cause to be operated any stationary sources sound in such a manner as to create a 24-hour equivalent A weighted sound level which exceeds the leq limits set forth for the receiving land use category below." He believed the definition of leq units was very difficult to understand and felt it was necessary to be trained to make the law. The section then continued to discuss the residence districts, the university districts, business districts and industrial manufacturing. He felt it was necessary to decide whether the BLR zoning category would be classified as a residence or as a business.

Mr. Morehead noted that in Slide 11, it indicated that frequencies are perceived differently at different loudness, but in the thermometer example used, there was no reference to what frequencies were being discussed. He felt Council needed to look at the Code and make it very clear what it wanted to do.

Mr. Morehead continued with the distance slides. He felt the slide was interesting because the discussion was around the sound level at the property boundary of the receiving property or the property boundary of the source property. In the example of 9,000 square foot lots, a person may not be able to get far enough away from that property boundary to have quiet. Whereas in something like a half acre lot, a person likely would be able to get far enough away. He felt clarity was needed with town houses, etc. where the lot was 16 feet wide that everyone was protected equally. On slide 18, he noted the frequency being discussed would make a difference.

He believed this was important and that solid legal advice as far as what was enforceable was needed. He felt the loud pipes would not be enforceable with the plainly

audible standard because it was neither speech nor music. He suggested using different wording such as “disturbing the peace”.

Mr. Morehead agreed with Ms. Hadden that 50dB was too loud for residential areas. He noted that there had been studies done privately and by Ms. Hadden, which found numbers well into the mid 40dB areas. He felt there was no reason why the Code could not come down to those numbers other than someone wanted to build something very loud and make the residences have to live with more sound. He believed Council should strongly consider the 40dB San Diego had for nighttime.

Ms. Hadden stated she was fine with the other recommendations, but felt bringing the limit down to the 40dB area at night in residential areas, would not have unintended consequences, because residents were already living with that now. She believed that had been proven with the studies. Nothing would change except the ordinance would be in line with what was in those districts and maintain the current quality of life.

Mr. Morehead agreed, felt that was the job of Council and strongly urged Council to do that and direct that the City come down much further from this number. He felt it was not a huge numerical change but a huge change for quality of life at 5dB. He believed a number in the low 40s was where the City should be to protect the current quality of life.

Ms. Hadden preferred 40dB, but would agree to 42dB. She felt the City should be at 40dB. She read in a University of Pennsylvania article, that the human ear could not hear audible differences unless they were in 10dB jumps anyway. Mr. Morehead disagreed with that number and thought most people could hear 2dB-3dB.

Mr. Gifford supported Ms. Hadden’s comments regarding a lower level and that on the list provided, Los Angeles had a 45dB limit. He thought it might be hard to be at 40dB at 9PM and that a 3 tiered system might be needed. He wanted to ensure that during the quality hours of sleep at night, those levels were down in the 40s somewhere.

Mr. Ruckle noted that he did not see 40dB on the list provided. The lowest was Los Angeles at 45dB, so he felt Council needed to see additional cities. He also wanted to see the requirements for other cities in Delaware and the state requirements, which Mr. De Rocili stated he would supply.

Mr. Gifford noted there were two other Delaware cities on the list provided and Ms. Bensley previously had looked at other college towns that were in the 40s as well, so there were examples in the 40s.

Ms. Houck stated the City could engage Mr. De Rocili and his firm and the solicitor to go down the list of the items that we have heard to fine tune them and make some additional adjustments.

Mr. Ruckle was concerned that lowering the limit would cause legal issues with companies that had received certificates of occupancy while the previous limits were in effect and would like the City Solicitor to follow up on that concern. Ms. Hadden stated the City should check on the grandfathering issue because the Amtrak stations would always be at their existing noise level. Mr. Gifford noted there was a separate section for the rails. Ms. Hadden stated that Council was not considering lowering industrial extremely. Mr. Ruckle responded that residential properties that back up to industrial would be at the 40-45dB. He felt there may need to be another higher tier for residential areas adjacent to industrial areas, because those residents knew they bought in that area.

Ms. Houck stated the Dow noise was tested years ago. She could not say if it was done professionally and may have been done using the City’s equipment. She thought since the City was getting complaints again, it probably needed to be professionally checked to see exactly what the City was dealing with. In the past, Dow made some changes and maybe there were some additional changes needed. That issue could be addressed separately from the current discussion. Mr. Gifford noted it may have gotten worse overtime. Ms. Sierer asked Mr. Ruckle to work with city staff on Ms. Houck’s suggestion moving forward and to work with his constituent on the situation at Dow

Ms. Sierer noted that Council needed to give staff direction based on the presentation. She asked if there was a consensus that Council would have staff go back to the table, have Mr. De Rocili do some additional research, and sum up the recommendations presented. She suggested that the group could discuss it again at another Council meeting or set up another meeting directly related to the topic.

4. The Chair opened the floor to public comment.

John Morgan, District 1, endorsed the comments made by Ms. Hadden and Mr. Morehead. He believed that assuming that Ms. Hadden's noise meter was at least accurate within a couple of dB, that the measurements that were made with extraordinary efforts established in almost all these areas typical ambient noise levels are 40dB or less. The only two exceptions were two places in District 2. These were zoned RD, which was single family semi-detached, and some sort of apartment complex. He urged serious consideration of an upper limit of 40dB between midnight and 6:00 AM, in single family detached residential districts. He believed the City had zoning codes RS, RT and RH that would be quite easy. He liked the idea of the three different time intervals. He also stated he thought anything the City did should be driven by local data and asked Mr. De Rocili if he attempted to verify any of Ms. Hadden's noise measurements. Mr. De Rocili stated Ms. Hadden took measurements on a certain day at a certain time and verifying those exact measurements was not possible since they occurred in the past and noise levels changed. Mr. Morgan felt there could still be value in measuring the sound levels in those locations to see if there were significantly different numbers. Mr. De Rocili stated that he was not assigned to go and verify her measurements to agree or disagree in what the City asked him to do. Mr. Morgan thought that it was a good thing to do to really be sure.

Mr. Morgan did not see the need to lower the noise measurements in business districts unless people in those districts thought the existing limits were too high.

Mr. Morgan noted a previously proposed project which he stated would have involved running combustion turbines 24 hours a day, 7 days a week. He expressed concern that the sound from the combustion turbines in adjacent neighborhoods would define the ambient sound level, making the noise ordinance vacuous in terms of the 10dB increase limit. He felt that could not be permitted in residential areas and thought cities in California, particularly San Diego, had good models to review.

Helga Huntley, District 1, noted that the consultant mentioned that there was difficulty in determining ambient noise level because it depended on the weather and asked what that variability would be and how it would affect the measurement. Mr. De Rocili stated if one was using an instrument, there were criteria regarding humidity levels. Generally, instruments would be used between 10 and 95% relative humidity. A rain event would have nearly 100% humidity, which changed the response of the meter. It depended upon the meter as they were each calibrated and could be determined by a response curve. Ms. Huntley asked if she could have some idea of the order of magnitude. Mr. De Rocili stated that he did not know how to determine exactly what the variance would be in the reading if the manufacturers said do not use it in a situation. Ms. Huntley stated that in other words, if she used that kind of instrument at any point in time to measure a particular noise source, its dB level was uniquely identified, and did not vary with weather conditions under which she was able to use the noise meter. Ms. Huntley stated she was not trying to pin Mr. De Rocili to specifics, but she would like to know whether the variability due to weather was small or large relative to the absolute noise levels. Mr. De Rocili stated it depended on the conditions and the meter.

Ms. Huntley stated there was a regulation for infrasound and ultrasound that was said was not perceptible to humans. She wanted to know if it impacted animals or why would the City regulate it at all. Mr. De Rocili stated he did not say it did not affect humans, but that sounds in those ranges typically could not be heard with human hearing range. However, when someone was at a points threshold, the ear may be able to hear parts of that sound range. It did affect animals as some animals could hear higher ranges than human beings. Typically human beings could hear lower ranges than some animals. Ultrasound, which is the higher band, probably could affect animals differently than humans in terms of perception and what was heard, in terms of frequency. Ms. Huntley

asked if that ever entered into consideration in any noise ordinances. Mr. De Rocili stated the noise ordinance said that 100dBA could not be emitted in those ranges. Ms. Huntley asked if when municipalities or other jurisdictions wrote their noise ordinances, did they consider impact on animals or was that just a side effect. Mr. De Rocili stated the numbers in criteria in the ordinance dictate the measure, the matrix of how to measure the requirements. There was not anything specific that said for animals or types of animals. The criteria did take into account animals, because they were part of the environment and did hear noise, sometimes at different frequencies. Ms. Huntley asked Mr. De Rocili if he thought the 100dB level that was currently in the ordinance was appropriate for protecting humans as well as other animals. Mr. De Rocili replied it did.

Ms. Huntley questioned the comparison of the City's current ordinance with the State of Delaware's noise regulations. She noted that while the presentation stated that the City was consistently more stringent than the State, the numbers listed for industrial office research (City – 85dB; State – 75/85dB) did not seem to support that. She was unsure what those two numbers meant and why the City was always in compliance with state law. Mr. De Rocili replied the numbers in Delaware have different criteria as they used a three tiered approach. Delaware broke up the sound generator into classes (A, B, C). The receiver was someone who received the sound as also A, B, C. State regulations said if one was a class emitter A by definition and was emitting to a class C receiver, there were the numbers. The reason for the 75, 85 depended on the receiver or the class. Delaware used a three tier system, while Newark had strictly a residential versus business districts, etc., given two time frames, day time and night time.

Ms. Huntley asked if it was correct that for certain combinations of receiver and emitter, City law was not as stringent as Delaware law. Mr. De Rocili stated it would be if the City followed the recommendation to reduce industrial office research down to 80dB, because it would be lower than any Delaware requirement except for a situation where they were in the three tier system. There could be a 75dB in there depending on how that worked out. However, Mr. De Rocili felt that they were comparing apples and oranges. When he referred to more stringent, he looked at the residential number of 57 versus 55dB recommended versus the 65dB with the State. If the University of Delaware was viewed as a business, one could see how the other numbers fell out.

Ms. Huntley stated that even if City law was less stringent than the state law, people here would still have to obey the state law. Mr. De Rocili stated he was not sure how that would apply. It had been his experience that the municipal requirement was typically what was complied with. He was not sure how the Delaware requirement would pan out with the City ordinance. Ms. Huntley stated that Council may want to consider including a clause in their noise regulation that any noise emitted within city limits also had to meet Delaware standards. Ms. Sierer replied she thought it would be something for the City Solicitor to review.

Ms. Huntley asked why the recommendation was to restrict the definition for plainly audible to only stationary sound sources and not to mobile sound sources. Mr. De Rocili replied that in Section 20A-4(b)(2)b, a provision existed giving a time frame between the hours of 9:00 PM and 7:00 AM, for playing audible across the real property boundaries. Then for common areas, parking lots and so forth, the definition applies to 50 feet from the device. Ms. Huntley stated it was suggested that the City change its definition of what plainly audible meant. The new definition said, "Plainly audible meant any sound that could be detected by a person for stationary sound sources." She noted there was no such thing as a mobile plainly audible sound according to the proposed definition. Mr. De Rocili replied that yes. Stationary sound source at a property boundary in a residential district or at a distance of 50 feet in public places from that sound source. This recommendation was directed to stationary sounds sources. Mr. Chapman confirmed Ms. Huntley was right.

Ms. Huntley had additional comments on the suggestions to change the definition for ambient noise level. She understood it was not very precise the way it was currently stated. She felt the suggested changes did not really add anything because it just said "using appropriate settings" and "taking an adequate number of measurements" and did not define those terms, making it no more specific than what currently was in City code.

She asked if there were specific settings with specific numbers of measurements, what would be the finest, the proper distance and was the recommendation to place those words in the ordinance or was the recommendation to add the broad general statement into the ordinance. Mr. De Rocili stated it was meant to be broad because of varying situations that might occur, such as different sized lots. To say that the measurements were going to be taken at so many feet from so much of a location, was going to be tough to prescribe an exact location due to the varying sizes of lots and the locations where it would be used. The reason for the wording, an adequate number of measurements overtime, at proper distance from ground elevation, was that one could have sound generated at one story or up five stories depending on what was reviewed. This suggested language provided a prescription where somebody has to demonstrate they met the criteria for how they collected readings and measurements to determine the ambient noise. It was not meant to be very specific because of the variances in the things that one may be measuring. Ms. Huntley stated it would be her suggestion that might be worthwhile to define those terms so people who try to prove or disprove that an adequate number of measurements were taken, knew what they were supposed to be doing.

Ms. Huntley noted that one of the difficult issues she thought everybody had been struggling with was how to define and measure ambient noise. In that sense, she thought it was easier to enforce a numeric limit rather than a margin as she felt 10dB above the ambient noise level will be much harder to enforce than saying no more than 40dB. The City would only have to take one measurement as the ambient noise measurement would not be needed. Then the City would not have to define the ambient noise. That went back to a point that Dr. Morgan made that ambient noise changed. Once the new sound source was there, was that now part of the ambient noise or which part of that new sound source became ambient versus something else. Her final point was that some of the discussion at the table was focused on whether it was enforceable by the police and whether the City could expect the police to stand there for half an hour measuring sound levels. She suggested that even if that was unrealistic, having an ordinance that applied sound levels did make sense as it was part of the permitting process and not just police enforcement.

Sherry Hoffman, District 4, supported the Council members pushing for a level of 40dB, especially if it was a multiple tier program, at least in the sleeping hours. She believed it had become clear that the 10dB over the ambient level was a hard thing to enforce. She also suggested looking at the definition of model vehicles and including drones considering that they were going to be bringing packages from Amazon.

Sheila Lynch, District 3, stated that the World Health Organization had definitions for adverse health effects at different average night noise levels. She read from an article, which stated that below 30dB, there may be very few people who have individual sensitivities to noise. No substantial biological effects were observed at this level. At the 30 to 40dB level, there were a number of effects on sleep observed in this range, body movements, awakening, self-reported sleep disturbance and arousals. The intensity of the effect depended on the nature of the source and the number of events. Vulnerable groups such as children, chronically ill and elderly people were more susceptible. However, even in the worst case, the effects seemed modest. At 30 to 40dB, there were modest adverse effects directed at vulnerable groups. At the 40 to 55dB level, there were adverse health effects observed across the exposed population and many people had to adapt their lives to cope with the noise at night. Vulnerable groups were more severely affected. Anything above 55dB was increasingly dangerous for public health, not only for sleep disturbances, but there was evidence that cardiovascular disease risk increased.

Ms. Lynch felt this had not been taken seriously. She referenced a few big studies in the 1970's and 80's on noise effects on human health, but noted there was not a lot of material out there. There was starting to be more and more people were recognizing it. She compared it to the time it took to figure out that tobacco was not good for people, even though the evidence was there. She felt the City should err on the side of being more conservative and careful with the health of citizens and animals since anything that affected them, affected people eventually. She wanted to be on the cutting edge of this kind of thinking and be more protective of human health. She encouraged looking to cities in California because they were usually on the cutting edge of things. She felt Newark could be out at the forefront on this. Mr. Gifford asked for a copy of Ms. Lynch's article.

Mr. De Rocili replied that the studies that he had seen were on interior noise. Drops in interior noise from exterior noise started at 15dB and could go up to almost 30dB depending on the type of construction and types of windows, doors, etc. A lot of sleep studies were done indoors. He noted that the discussion this evening dealt with environmental noise, which was mostly exterior.

Ms. Anne Mehring, District 1, thanked everyone for bringing up very good points. She noted her family tried to conserve energy in our house and opened their windows. The interior thing did not do justice for her, because she liked to save energy and did not necessarily have to have the air conditioner on all the time. She also felt that her children needed their sleep. When they needed to go to school, they were going to bed by 8:30-9:00 PM. She understood the world could not stop for them to sleep, but felt midnight was not a satisfactory time and needed to be earlier than that. Mr. Gifford stated he thought it depended on the level too. If Council was going to go really low, a third tier might be needed. If not, then the two might be enough.

Ms. Mehring stated the ambient noise thing made her nervous, because there were too many variations that could affect it. She felt the City really needed to know what that baseline was and what residents experienced today in order to protect quality of life.

5. Seeing no other speakers, the Chair returned the discussion to the table.

Mr. Morehead stated regarding ambient noise, it was really easy to define once someone got good at it and could define the sources. They could be defined by frequency, so if there was road noise, for example, it could be defined for a very specific spot, show it averaged a certain number and have that as part of the ambient. The various sources that had been identified would be added together. One could arrive at numbers based on frequency, so it would have a bit of high noise, some of medium range, and a bunch of low noise. This was entirely possible to do. The interpretation of the plus 10dB for a new source might add a different frequency and the ambient should be relative to the prior ambient of that frequency. If there was a high pitched noise and another one for example, it was not a big deal. If there was a low pitched noise on top of what was a high pitched noise one would have to understand which was loud relative to what the human ear hears, because people heard different frequencies at different volumes. It was more complicated than was being thought right now, so he wanted to raise the point. He felt it was easily understood and easily explained once one looked into it.

Mr. Morehead's second point was that Dr. Rocili asserted the various equipment and environmental factors affected the readings. Mr. Morehead felt that if the City was going to have a good law, the equipment needed to be identified, which he recommended the City do. Also, all the factors such as higher temperatures and higher humidity needed to be considered to determine what the City wanted its limits to be at those extremes. If the City was going to be good with this law, it meant taking it to a level further, identifying those things, and understanding the effects before moving forward. He felt there were other issues in this Code and noted his previous concern regarding notification of landlords for noise issues at rental properties by physical postings.

Mr. Chapman stated, in terms of enforcement, he thought that the purpose behind the physical posting was if no one answered the door (i.e. a house party complaint) and the police still wanted to serve them with a violation, they did not have to answer the door to receive a violation. If Council were to remove that, obviously that was a last resort. Mr. Morehead stated that City Code defined the person responsible as the owner or agent. The tenant or resident could have any party they wanted. The owner or the agent of the property was responsible party, which he believed was problematic. Mr. Ruckle agreed.

Mr. Morehead also wanted Council to consider the fundamental concept of fines and deterrents. He thought Mr. Chapman was correct that the City was concerned about parties, new stationary sources of sound, and loud vehicles typically on Main Street and neighborhoods. He wanted to know what Council wanted in the Code as deterrents and if members wished to address that.

Mr. Markham appreciated Ms. Hadden's work on the measurements, but suggested that before setting the final number it be done professionally. Ms. Hadden had taken measurements in the vicinity of Mr. Markham's house and he had done so as well. Some of the environmental factors, bugs and other things like that, drove these numbers up. The ambient would have been well above these numbers. Ms. Hadden reported she did expect to see some numbers not matching up 100%. She did take averages and took many readings, at least 3 at every location (3 times then averaged the numbers 3 times). Mr. Markham thought the City would want to have it done professionally.

Ms. Sierer asked Mr. De Rocili if he felt professional measurements were necessary. Mr. De Rocili replied if Council needed to know what the ambient could be to make decisions and move forward then it needed to be measured. More data was needed to make the decision that Council wanted to make.

Ms. Houck said she believed she had heard before that doing that which could be a costly thing, to get the ambient number was only as good as the day it was provided. She was not sure about the usefulness. Mr. De Rocili stated he had been asked early on to do a sound study. He had questioned the benefit of it because the sound study was a snapshot of a certain time, at a certain location. It did give information, but the ordinance was all inclusive of the entire city of Newark. He was not sure how that data could be used to set standards or levels. To depend on just a noise study did not seem the right approach in his opinion.

Ms. Hadden replied it was her understanding there was another study in Newark (by Swarthmore College) and the numbers were consistent. Mr. Gifford replied the study was done. The difficulty was one day there was some rain or mist so the equipment was out in the rain. That particular meter could handle the weather whether the readings were proper or not. There was the risk of trying to find the right day. Winter is generally quieter than summer. If there were some key areas the City wanted to look at just to get an idea that would be fine. He did not think a comprehensive study would be something that would be helpful for the one time of the year it was done. The study in question was done by someone who is certified and had a meter that was calibrated.

Mr. De Rocili stated to do a study that was comprehensive and very useful, a lot of data would be needed with data points at different times and during different seasons to assess and determine what it really meant. If the City chose to do the study, would it be limited to just the districts as it may be found that certain parts of the district are louder than others. Then would the districts be sub-sectioned to accommodate the data. It could be cumbersome in terms of finding the right number. Realizing that, that number also would be the number selected based on past data, which does not say what the future would hold. Council could come back to that in the future.

Mr. Gifford stated the focus was on night time levels as it seemed that day time levels had not been an issue. The City could focus on that time frame. Mr. De Rocili noted an important issue was determining the cut off. It appeared the City was leaning toward a three tiered system where there would be a third night time category. That time period was unclear at this point. The data could help determine when the sound substantially dropped in areas to determine the best time frame. Mr. Gifford replied based on that data was why he suggested if it was decided to go to the lower numbers, a three tiered system would be needed. He felt 40dB was fairly low, but 45dB was manageable.

Ms. Sierer asked what the ballpark cost was for this type of study with a night time study and the time frame for completion. Mr. De Rocili responded that he would have to calculate the information and report back. Typically studies for night time were between \$30,000 and \$50,000, for presentation and data.

Mr. Morehead asked would this be over a year time frame. Mr. De Rocili noted that he would want to look at various issues, such as the seasons and the population swell in Newark through UD student numbers, etc. It would be wise to do it over the four seasons.

Mr. Morehead stated the City could offer direction on where the busiest spots and times are. Mr. De Rocili that would probably be very useful to know where what those

numbers were, because those numbers were unknown at this point. Particularly if the City wanted to go to three tiers and decide what cut off times should be used, this would help.

Mr. Gifford asked why it appeared that 50dB is the number that all were satisfied with without following up with real measurements. Mr. De Rocili said they looked at San Diego, which had been mentioned, and they used 50dB during the day time for single family. There were 50dB at night for other residential areas, meaning not multifamily or single. However, Los Angeles County for example, was 50dB during the day time, 45dB at night. He believed that 50dB related to what humans perceive as quiet. That seemed to be the number that a lot of ordinances researched focused around.

Mr. Gifford asked if there was any data available on how San Diego came up with those numbers and how it was supported. Mr. De Rocili stated he could do additional research. He looked at their ordinances and their public information. He looked at the material they thought was pertinent. San Diego had a population over 3 million. There was a military base, they had water. Their ordinance and regulations related to California. The other thing to remember was the climate. San Diego had a different climate than that of Newark, Delaware which did not have the seasonal swings. With more consistent weather, there was probably less interference with their data. Mr. Morehead stated what needed to be included, according to Mr. De Rocili, was a component of what time of the year the measurements were taken with different limits in the law for different seasons.

Ms. Hadden stated she was very reluctant to spend any more taxpayer money on studying this any further. She felt Council had more than enough information to make a change. The change for night time was just a single number. She wanted to change it to 40dB and see how it worked out. Council could always go back and implement the tier system if it seemed to be causing a problem. She thought simple was better than complicated and was concerned that Council would get bogged down in little things that could be worked out as the City went along.

Mr. Morgan, District 1, stated he thought the focus should be on single family detached housing in three zoning districts. Residents expected the apartments where students were living to be noisy. The students are not coming to the City complaining about it, so until they did, he thought Council should not worry about it. Mr. Morgan did not want to worry about the business districts or industrial district on the STAR campus and wanted the focus on single family residential housing.

Chief Tiernan stated he wanted to clarify that besides the noise ordinance, there were other tools in a toolbox. A car idling in the driveway would not be covered in the noise ordinance, but could be cited under the anti-idling ordinance. Yelling and shouting on the street would not cover something like a backyard party, but there were disorderly conduct and disorderly premises ordinances. There were other tools besides the noise ordinance.

Ms. Sierer asked what Council would like to do. They had a lot of recommendations from the consultant, the discussion at the table and the citizens in attendance. She suggested having City staff come back to Council with a recommendation based on all of the discussion this evening. Mr. Gifford felt there has to be more feedback. Ms. Houck stated there would be additional meetings with Mr. De Rocili and the City Solicitor and then a report would come to Council with the findings. She summarized the items discussed this evening as follows:

- Look at and consider any possible improvements for how the City could approach muffler enforcement.
- Develop a list of noise limits for other cities in the state.
- Review the classification of BLR zoning.
- Determination and recommendations for how the City wanted to proceed.
- Explore the impact of and make a recommendation regarding reducing nighttime to less than 50dB with a range of 40-42dB and justification for this.
- Consider if there is a need and the justification to reduce industrial.
- Specific attention to 20A-3.
- Determine who makes the decision on penalties.

- Review 20A-4(b)(10) and (11) (page 4).
- 20A-6(a)(1) interpretation of impact of the wording except as otherwise regulated herein.
- Appropriateness of where state law is more restrictive and is it applicable.
- Sections 20A-4(b) and 20A-2(b) and 20A-2 regarding plainly audible and ambient noise levels -- recommend options/reasons with improved criteria definition of terms (further defined).
- Penalty considerations measured against what other municipalities are doing.
- Consider professional testing.
- Consideration of the worst case areas.
- Primary focus on single family residential area (3 zoning districts).
- 20A-3(b)(5) reviewing landlord responsibility

Mr. Gifford added the extra focus for the real problem was the residential district and that was the most important thing. Council could always do this in parts if there was something that was complicated and took a long time. If there was something else that needed more work, Council could deal with that later. He did not want to hold everything up. Mr. Gifford concurred with Ms. Hadden's earlier opinion of keeping it simple.

Ms. Sierer stated the meeting is concluded

6. Meeting adjourned at 8:44 p.m.

Renee K. Bensley
 Director of Legislative Services
 City Secretary