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Community perceptions and their role in noise control: a tale of one city

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ABSTRACT
Springfield is the third largest city in the northeastern state of Massachusetts, and has a sizable minority population. The city has lost much of its industrial base over the last 20 years; as a result of its declining economy, Springfield has seen an increase in crime and urban decay. In early 2006, city officials proposed a crackdown on loud car audio systems over the summer as part of a broader effort to revitalize the city and address quality-of-life issues. What should have been a straight-forward matter of enforcing an existing noise ordinance instead created a heated debate among the community. Specifically, some city leaders feared that police would unfairly target minority drivers, increasing the divide in an already polarized community. As acoustical engineers, we tend to see noise control as a matter of noise measurements and criteria. The reality is that perceptions are just as important as empirical data in shaping citizen’s attitudes toward noise control. This case study examines the city’s rationale in focusing on car audio noise to the exclusion of other sources, the community debate, the role of acousticians in the debate, and the degree of success that was ultimately reached.

1 INTRODUCTION
Situated along the Connecticut river valley in western Massachusetts, Springfield is the third most populous city in the state behind Boston and Worcester. The city is divided into the 17 neighborhoods shown in Figure 1, with regions bounded by major roadways or various geographic features. The neighborhood characteristics vary widely in type and include urban commercial areas (Downtown/Metro Center), poorer inner city neighborhoods (North End, South End, Bay, McKnight), working class communities (Liberty Heights, East Springfield, Forest Park, Indian Orchard), and middle class locations (East Forest Park and Sixteen Acres). The city also boasts a diverse population, with more than 40% of the population counted as African American, Hispanic or Asian ethnicity in the 2000 Census. Relevant demographic information for the city is given in Table 1.

Like many cities, Springfield residents have noticed the increase in community noise in day to day life. Residents and city officials have pushed for more enforcement and higher fines for excessive noise as a part of addressing general quality-of-life issues in the city. However, residents’ perceptions on the impact of enforcement on racial and ethnic minorities, as well as a lack of enforcement by police, have resulted in little action to date.

This paper will describe the debate that took place in the community concerning enforcement of noise regulations, and the role that community and official perceptions played in hampering effective noise control. The author participated in discussions with city and police officials over community noise issues, but did not work for the city or community in a paid capacity.

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Table 1. City of Springfield demographic information (2000 Census).

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>152,082</td>
</tr>
<tr>
<td>White</td>
<td>56.1%</td>
</tr>
<tr>
<td>Black</td>
<td>21.0%</td>
</tr>
<tr>
<td>Asian</td>
<td>1.9%</td>
</tr>
<tr>
<td>Hispanic (inc. Black &amp; White)</td>
<td>27.2%</td>
</tr>
<tr>
<td>Median income</td>
<td>$30,417 USD</td>
</tr>
<tr>
<td>Median income (Massachusetts)</td>
<td>$50,502 USD</td>
</tr>
<tr>
<td>Median income (United States)</td>
<td>$41,994 USD</td>
</tr>
</tbody>
</table>

Figure 1: Location of City of Springfield MA, with neighborhood boundaries (red).
1.1 Background

Once home to several major industrial and manufacturing businesses, Springfield has seen many local operations close because of increased regional and overseas competition. The loss of white collar and blue collar jobs has in turn contributed to an economic downturn which grips the region to this day. As a result of the economic decline, the city has seen an increase in crime and urban decay. Quality-of-life issues such as homelessness, litter, and noise have come front and center in the minds of many residents as the community struggles to increase tourism and investment in the city.

The rise of inner city gangs over the last fifteen years has resulted in an increased police presence in inner city and poorer neighborhoods to confront vandalism, illegal narcotics, and violent crime. There have been several accusations of police brutality directed at minority suspects [1] [2] and documented reports of racial profiling in traffic stops by Springfield police [3]. These accusations have strained relations between Springfield’s relatively large minority population and the police. These controversies have also had the effect of over-sensitizing some police officers to racial issues; as an example, it has been reported in recent years that many police officers will only issue citations in traffic stops if the accused driver is the same race or ethnicity as the arresting officer [4]. This has led some in the community to feel that police are not as aggressive in pursuing minor quality-of-life violations as they should be [5].

1.2 City Action

Upset with an increase in noticeable noise over the past several years, residents petitioned the Springfield City Council in late 2005 in the hopes that noise regulations could be more vigorously enforced. The concerns were brought on by the proliferation of loud car audio systems that are becoming more common in many cities. Effects from noise reported by residents include sleep awakenings, speech interference, and disturbance from rattles caused by air-borne vibration.

The city ultimately decided to place an emphasis on noise enforcement by proposing to increase noise violation fines and by encouraging the police department to aggressively pursue noise complaints. However, two unexpected problems arose:

1. Opposition emerged from the minority community over perceptions that the police would unfairly target minorities for noise infractions; and
2. Despite the encouragement of city officials, there has been a lack of enforcement from police officers because of limited resources and the perception that noise is not a priority matter.

2 Noise Environment

The noise environment in Springfield is characteristic of many larger New England cities. The environment ranges from low-density suburban areas to higher density inner-city neighborhoods. Average daytime $L_{eq}$’s range from 40 dBA in the outer suburbs to 60-70 dBA in the downtown area. Local traffic and community activities are the major noise sources. Springfield is located near three major airports (Bradley International Airport in Windsor Locks Connecticut, to the south; Westover Air Reserve Base in Chicopee Massachusetts, to the north; and Barnes Air National Guard Base in Westfield Massachusetts, to the west), but under most normal circumstances, noise from aircraft is minimal. Similarly, noise from Amtrak and CSX lines along the north and west borders of the city are insignificant in most parts of the city. Most noise complaints arise from community
sources such as loud car audio systems, motorcycle exhaust, barking dogs, or loud music in household stereo systems.

3 EXISTING NOISE REGULATIONS AND ENFORCEMENT

There are currently three regulations that govern noise limits in Springfield. Code of Massachusetts Regulations (CMR) Section 7.10 gives language prohibiting “unnecessary” noise from a variety of sources. The Massachusetts Department of Environmental Protection has interpreted this to mean that noise sources should not exceed 10 dB above the background (L90) level or create a “pure tone” [6]. Massachusetts General Laws (MGL) Chapter 90 Sections 7 and 16 prohibit excessive levels from motorcycles and automobiles, respectively. Finally, Chapter 7.20.020 of the Revised Ordinances of the City of Springfield implement a city-wide noise ordinance specifying absolute daytime and nighttime sound limits, as well as prohibiting sounds that are “plainly audible” at specified distances.

Discussions with city residents, business owners and city officials have revealed that most residents are unaware of these noise regulations. Of those who were aware of the regulations, most do not have a qualitative understanding of the absolute noise levels, nor did they have an understanding of the technical aspects of the limits (for example, the difference between A-weighted measurements and unweighted measurements).

While police officers are aware of the “plainly audible” language in the Springfield ordinance, some officers feel that noise citations issued without the use of a sound level meter are more likely to be dismissed in hearings. As a result, many officers tend to issue warnings for noise violations in all but the most extreme cases. The police department is equipped with sound level meters, but they are rarely used because of calibration and maintenance requirements [4].

4 SPRING 2006 DISCUSSIONS

As mentioned above, residents pushed for enforcement of existing noise regulations and increased fines for citations. City councilors agreed to consider noise issues as part of a greater focus on quality-of-life issues in the city. Public discussion began in February 2006 [7] and initial meetings focused on loud car audio systems. City councilors proposed working with the Massachusetts Registry of Motor Vehicles to tie noise fines with automobile registrations and license renewals. The councilors scheduled additional public meetings to solicit more input.

Noise engineers and noise control advocacy organizations were not involved in any of the discussions. Many involved in these discussions were unaware of organizations or consultants that focused on community noise issues [8]. This became clear whenever public discussions turned to technical aspects of noise and enforcement. At public meetings, city officials were not comfortable with the acoustical terminology used in the existing Springfield noise ordinance. For example, a city attorney read the Springfield noise ordinance aloud during a March meeting. When asked about the specific meaning of the city’s absolute noise level criteria during the question-and-answer session, the city attorney responded by re-reading the text of the ordinance.

4.1 Community Concerns

Subsequent public meetings were held at various neighborhoods around the city. City councilors found that many citizens were opposed to the focus on noise as proposed. Three major concerns were made clear at these meetings:

First, there was opposition in the minority community because of the belief that enforcement
would unfairly target minority drivers [9]. The widespread perception was that most loud car audio systems were owned or operated by black or Hispanic drivers and therefore this initiative would focus on minority drivers. There was also the perception that police would unfairly target minority drivers for traffic stops and use loud car audio systems as a convenient excuse. In addition, residents in several neighborhoods expressed their belief that white drivers who were pulled over would be more likely to receive warnings compared with minority drivers. Minority residents were not opposed to the principle of noise enforcement; in fact, several minority residents voiced concern about excessive noise at a public meeting in the predominantly African-American McKnight neighborhood [10]. Instead, the objections centered on doubts about the fairness of the enforcement.

Second, residents were concerned that the initiative targeted car audio noise and not other objectionable noise sources such as loud parties or motorcycles with aftermarket exhaust pipes. When asked, city councilors agreed with the need to police other noise sources, but they wanted the immediate focus to be on car audio systems. These concerns also played into the opposition from minority residents who pointed out that the emphasis seemed focused at noise sources associated with minority owners, rather than sources such as loud motorcycles that are stereotypically associated with white males.

Finally there was some opposition from citizens and police officials who felt that noise was not a high priority and increased enforcement was not a good use of limited city resources [10]. This also fed into the perception of many residents that the police did not take noise complaints seriously and did not follow up on noise violations.

4.2 Resolution

After reviewing community objections, city councilors began to consider general noise issues rather than focusing only on car audio systems [5]. This more general focus, along with public discussion of bias issues, appeared to placate most opponents. On 19 June 2006, with the backing of Police Commissioner Edward A. Flynn [11], the Springfield City Council increased fines for noise violations.

5 ENFORCEMENT

Because noise limits were not enforced in the past, proponents hoped that the city council’s support of enforcement would spur the police to action. Statistics on the number of noise complaints or noise citations issued by police are not available at this time. However, discussions with residents and business owners in several neighborhoods indicate no notable reduction in noise levels or number of events. One resident observed that noise had been reduced in the short term at one location, but she believes it is due to the publicity generated over the debate rather than police enforcement. A police official confirmed that most patrol officers are not following up on noise complaints unless the complaint appears to be part of a more significant offense such as a narcotics violation. Two possible reasons have been suggested for the lack of police attention to noise thus far:

1. The police patrolmen’s union has been without a contract since 2003, and police officers (along with other city employees) have been under a wage freeze in that period. A police official has speculated that patrol officers will not bother pursuing minor offenses until the contract is settled [4].
2. There is also a widespread belief that many police officers may not appreciate the nuisance effects of noise because they live in the quieter surrounding suburbs. Residency information for police officers is not publicly available, so it is not possible to verify this claim.

Police officers have publicly expressed a desire to enforce quality-of-life regulations, including noise limits. However, officers claim finite resources limit the ability of officers to respond to noise complaints. Thomas M. Scanlon, president of the patrol union, has stated that officers may be too busy with more serious crimes to enforce the noise ordinance. Despite support from most neighborhoods, the police must also contend with the perception that noise enforcement may unfairly target minorities. Therefore, police are left with the notion that inflaming tensions with the minority community would outweigh any benefit in reducing noise.

The net effect in the eyes of many residents is that the noise control policy is not being enforced, which underlines perceptions of police not taking noise complaints seriously. As a result, some residents who pushed for stricter noise enforcement have moved, or are preparing to move, out of the city.

6 DISCUSSION

At first glance this case would appear to be a straightforward matter of using an existing ordinance to enforce noise limits. Most noise control projects look at the specific effects of undesirable noise, and then try to apply cost-effective measures to document and mitigate noise exceedances. Many large public projects have economic justice or socioeconomic components that must be accounted for. In these circumstances, there is an incentive to be as equitable as possible to reduce the possibility of legal action that may cause delays. This in turn helps foster public recognition of fairness in the project. On the other hand, the experience in Springfield started as a grass-roots effort that did not have a perception of fairness. Hence, it became clear that neighborhood attitudes and the commitment to enforcement are as important, if not more so, than engineering principles when implementing community noise control.

Although noise control is generally seen as a positive strategy to manage urban quality of life, Springfield residents had a difficult time getting noise enforcement accepted as a priority by the city at large. This was because each neighborhood had specific considerations that were not adequately addressed from the beginning.

When residents first made a push for noise enforcement, the focus was almost exclusively on noise from car audio systems. The most vocal residents in the early debate were from Springfield’s Forest Park neighborhood, in the south west portion of the city. Forest Park is the location of the “X,” a major intersection that links traffic from all parts if the city to the major north/south interstate highway. Because of the heavy traffic, car audio systems are more noticeable in Forest Park than many other neighborhoods. Car audio noise is also associated with increased narcotics activity in the neighborhood (“the call of the drug dealers” as one resident put it).
In contrast, other neighborhoods had different concerns when it came to noise. Residents in Indian Orchard frequently complain about loud motorcycles. Neighborhood groups in the East Springfield and Pine Point sections have expressed concerns about noise from local bars and clubs. In the McKnight neighborhood there is a sense that loud music is often a problem, but sometimes the annoyance is caused by the content or genre of the music (rap music versus rock and roll for example) rather than excessively high sound levels.

By putting forth a proposal that would seemingly benefit only one neighborhood and possibly cause negative results in other areas (through racial profiling, or ignoring noise concerns that were relevant to other neighborhoods) the proponents had difficulty obtaining political support for their objectives. These considerations, when added to lack of information regarding the health effects of noise and skepticism about the initiative, hampered the ability for advocates to get their message accepted by the city at large. The effects of these concerns were significant: the results demonstrated that residents might agree with the need for enforcement on the merits, but would not support the action if it was perceived to unfairly single out a particular group. These objections are similar to those voiced by motorcycle enthusiasts in other cities who perceive hypocrisy when motorcycle noise limits are enforced while other noise sources are ignored [13].

Ultimately it became necessary for residents to agree on a common goal, to manage expectations, and to address the perceptions that helped shape the opposition. Indeed, the public meetings held in April and May in various neighborhoods helped city officials sort out the various criticisms which led to the City Council formally supporting noise enforcement in June. However, greater
coordination between the various neighborhood groups at the start would have helped the process go more smoothly.

As discussed previously, most residents involved in the appeal for noise enforcement were not aware that acoustical engineers or non-profit organizations were available to assist communities with noise control efforts. When informed of the expertise that these specialists can bring to bear, many believed that the inclusion of experts in the debate would have been helpful provided that the services were affordable. Even if these experts could not recommend specific noise enforcement measures, many believed that the involvement of experts would help skeptics understand that the adverse effects from noise are real and can be objectively quantified.

The lack of police enforcement to date has also impeded the city’s noise control efforts. The police are either unable or unwilling to pursue noise complaints. Again, this may point to perceptions on the part of police that noise is not a priority compared with other crimes, or that noise enforcement may contribute to deteriorating relations with the minority community. If the police are unwilling to enforce noise regulations, residents and city officials need to address the underlying reasons. If the police are unable to enforce noise limits, this reality needs to be addressed through allocation of sufficient resources or cooperation with neighborhood watch groups to help ease the burden of enforcement.

7 FUTURE CONSIDERATIONS

Springfield’s recent community noise control endeavor has provided a valuable lesson for similar communities that are attempting to manage noise problems: public perceptions play a dominant role in acceptance of community noise control. Noise control initiatives will meet opposition if the community believes that enforcement will unfairly target one group. Similarly, if the community perceives that enforcement will not be taken seriously by authorities, residents will lose confidence in the process.

In the short term, community noise control requires collaboration between city officials, community groups, and enforcement officers. The problems facing each part of the community need to be understood and addressed so that noise control can be perceived as being effective. Authorities need to be able and willing to enforce regulations.

In conversations with Springfield residents, it has become clear that long-term approaches are needed by the acoustics community to help foster effective community noise control. To an extent, there are long term approaches that are currently underway, such as the work by ANSI Working Group S12/WG 41 to develop the American National Standard “Guidelines for Developing a Community Noise Ordinance or Regulation.” Other long-term approaches that should be considered include:

- Education: more education is required to inform citizens about the adverse health effects, such as long-term hearing damage, that can result from exposure to high sound levels. Education can also help demonstrate that annoyance from noise can cause quantifiable effects, like sleep awakening or learning difficulties, to help fight the perception that annoyance from noise is purely subjective.

- Awareness of expertise: communities need to be better informed about experts and organizations, like the National Council of Acoustical Consultants, the Institute of Noise Control Engineering and the Noise Pollution Clearinghouse, that can work with communities to implement policies or help solve specific technical problems.
• Better enforcement technologies and methods: Sound level meters, when used by trained personnel, are excellent tools to quantify and document sound levels. However, precision sound meters are expensive and require training for proper operation. Therefore, police and noise enforcement officers often rely on “plainly audible” standards to determine noise exceedances. Because of the perception that “plainly audible” standards are subjective, there is a belief that citations issued using this method may not withstand scrutiny. There is also a perception that “plainly audible” is subject to abuse, particularly in locations where tensions between the community and the police run high. For the public to have confidence in the fairness of enforcement, simpler objective methods are needed to document noise violations with empirical data.

Unfortunately, none of these long-term approaches have easy solutions, so the problems that communities are facing today will continue to exist for the foreseeable future.

8 CONCLUSION

This narrative demonstrated that a variety of impediments has substantially weakened an otherwise straightforward policy of enforcing community noise limits. Public and official perceptions about noise limits and enforcement techniques have shaped attitudes in the community that resulted in significant opposition. Acousticians can help communities cope with the technical aspects of noise control, but we all need to be aware of underlying societal issues that can slow or block progress.

9 ACKNOWLEDGMENTS

The author acknowledges the numerous citizens and business owners in the Forest Park, East Springfield, Hungary Hill and McKnight sections of Springfield, as well as members of the Springfield police department, whose perspectives provided valuable insights into this case study.

10 REFERENCES


