COFA
City Council Office of Financial Analysis

Ordinance Analysis:

Vehicle Noise Reduction Pilot Program

Overview

The Vehicle Noise Reduction Pilot Program ordinance (O2023-0004202) was introduced to the City Council in September 2023 and referred to the Committee on Public Safety. The proposal amends Municipal Code Title 9 by establishing a pilot program to install "automated compliance enforcement systems," or noise-detecting cameras, to monitor and enforce loud vehicle noise. The proposal is intended to reduce negative health implications and disruptions to daily life associated with loud noises. While the ordinance does not specify the associated fee, it notes violators are subject to existing noise ordinances; the current ordinance to penalize loud and modified exhaust systems levies an associated fine of $750 for violations.

Implementation

The pilot area is focused on downtown Chicago, where the highest concentration of traffic congestion, public transit service, pedestrian activity, and commercial activity occurs within the City.[1] The noise-detecting cameras would be installed on light poles, like red-light or speed cameras, or at other locations deemed necessary by the Chicago Department of Transportation (CDOT). Locations of cameras would be determined in coordination with the respective Alderman. Identifying, negotiating, and executing the necessary agreements or contracts for the noise cameras is a collaborative effort between the Mayor's Office, CDOT, the Comptroller, and the Chief Financial Officer.

The cameras are designed to detect vehicle exhaust system volume and can distinguish between mufflers and other noises. The decibel level for violations would be determined by CDOT and the traffic compliance administrator, in consultation with the Office of Emergency Management and Communications and the Chicago Police Department. While the cameras will collect data on potential violations, the decision to issue a noise violation will be made by a City-employed technician. The Department of Finance will send a notice to the owner via mail if the technician determines the incident constitutes a violation. A warning, rather than a fee, will be issued if the violation is in an area where a camera was installed in the past 30 days or if it is a first-time violation for the vehicle owner.

As introduced, the pilot program would expire January 1, 2028, with a report on the program by the Departments of Transportation and Finance submitted to City Council no later than September 3, 2027. If reconsidered in 2025, the timeline may be amended.

[1] The proposed pilot area is bound by North Avenue on the north, Ashland Avenue on the west, the Stevenson Expressway / I-55 on the south, and Lake Michigan on the east.

Cost implications

Cities within the U.S. and abroad have implemented noise camera initiatives. Cost per camera typically range from around $27,000 to $35,000.[2] In addition to the hardware for the noise camera system, service charges for data storage, associated software licensing fees as well as annual calibration and maintenance needs will add to total camera-related charges.

Intelligent Instruments provided COFA with cost information associated with their noise-detecting cameras. While other companies may provide services at different costs, COFA uses the data provided by Intelligent Instruments to provide a full account of a potential pilot. Similarly, this estimate includes personnel and installation costs, though these may be covered in-house with existing CDOT appropriations.

Table 1. *Year One, Annual Cost & Revenue Estimate for Noise Camera Pilot (1 Camera)* *

Cost		*Revenue*	
Camera (1)	$36,000	Penalty	$750
Annual calibration	$1,250		
Installation	$8,000**		
Personnel	$197,100[3]	# of Violations	102[4]
Total	**$242,350**	**Total**	**$76,500**

**Taxes and tariffs not included*

*** Installation uses existing light poles and requires a bucket truck. Intelligent Instruments estimates two hours of work, with a range of $8,000 - $12,000 associated costs. With existing equipment and City-led installation, this estimate uses the lower end of the cost range provided.*

Table 2. *Year Two, Annual Cost & Revenue Estimate for Noise Camera Pilot (9 Cameras)*

Cost		*Revenue*	
Camera (8 new)	$288,000	Penalty	$750
Licensing costs*	$400		
Annual calibration	$11,250		
Installation	$62,000		
Personnel	$496,300	# of Violations	849
Total	**$857,950**	**Total**	**$636,750**

***For Intelligent Instruments, licensing for cloud storage, tech support, and firmware/software updates are included in the first year of services; annual licensing costs are payable beginning in year two. Per camera license is $400 per year.*

[2] Cheaper options may be available, depending on City preferences. In the case of London, England, sourcing a camera in prototype phase cost £4,800 - £8,400; New York City initially rented a camera for $9,940, later opting to purchase the system for $20,000.

[3] NYC paid $193,610 for personnel for one camera; this includes three employees, a senior employee and two part-time (50%) inspectors to manage cameras and fines. With nine cameras, NYC added four part-time employees and administrative manager. Chicago's personnel costs will differ. For the purposes of the estimate, maintenance supervisor roles with CDOT can range from $92,000-115,000; this estimate uses the average salary for this role. Hourly labor support ranges. This estimate uses $45/hourly rate; at 20 hours/week, annual pay would be approximately $46,800 per person. Administrative roles range widely; this estimate uses $85,000 as a mid-range salary.

[4] Number of violations is a rough estimate. The estimate is informed by NYC's annual report on its noise camera enforcement program. Based on noise thresholds determined by the City, Chicago's number of violations may be higher or lower than NYC.

Table 3. *Year Three, Annual Cost & Revenue Estimate for Noise Camera Pilot (9 Cameras)*

Cost		***Revenue***	
Camera (0 new)	$0	Penalty	$750
Licensing costs	$3,600		
Annual calibration	$11,250		
Installation	$0		
Personnel	$496,300	# of Violations	849
Total	**$511,150**	**Total**	**$636,750**

Revenue estimates are likely much higher than actual collections***. Not all summonses result in payments to the City; vehicle owners can contest the penalty, and certain penalties are simply never paid***. For example, in New York City, total penalties during the pilot period were $62,000, while the amount paid was $25,000. Further, processing fees may be an additional revenue source for Chicago to consider when implementing the pilot. London, England estimates a processing charge and enforcement costs to be £40-£50 per violation; Connecticut allows for municipalities to charge $15 for processing fees associated with noise camera violations. Certain other cities do not include processing fees in revenue plans.

While this estimate focuses on City revenue, there are additional non-revenue benefits that may result from installing noise cameras. As discussed below, if the program is successful and reduces instances of loud vehicle noise emissions, improved quality of life and decline in negative health effects from loud sounds will provide additional public benefit.

C*ost* presented in the estimate is likely conservative. Personnel cost is difficult to estimate based on available personnel data for similar roles. This estimate follows New York City's staffing model, beginning with three staff for one camera (one supervisor, two part-time roles) to eight staff for nine cameras (one supervisor, six part-time, one administrative role). As noted, the personnel costs may be able to be absorbed into existing staffing arrangements at CDOT within the existing appropriations and may not be necessary to include as additional costs.

Further, Departmental costs associated with enforcement are worth noting. While potential processing fees contribute to City revenue, there may be other costs associated with processing and enforcement not encompassed in this estimate. New York City moved from one camera to nine cameras following year one of the pilot; this estimate follows this camera implementation due to New York City's available data on violations. Chicago's decision on pilot expansion will impact costs – each new camera and associated installation fee, the licensing fees that begin in year two of the camera's service, and necessary personnel costs to monitor and manage the cameras will need to be adjusted based on specifics of Chicago's pilot.

As seen in the simplified estimate above, costs will decrease once the City purchases and installs all new cameras, and each camera will not require the City to hire new personnel. As such, lower long-term costs with additional cameras may generate enough revenue to result in more balanced cost-revenue considerations than presented above. London, England, for example, in a report commissioned following its pilot program, determined two noise camera activations per day would result in a cost neutral system (though costs associated with London's pilot were slightly lower due to use of a prototype camera system).

Discussion

Proponents of noise monitoring enforcement cameras argue that chronic exposure to excessive noise poses serious public health risks. Research, including findings from the World Health Organization, links sustained traffic noise above 53 decibels to increased risks of high blood pressure, depression, cardiovascular disease, and other stress-related conditions. Advocates emphasize that noise pollution is not just a nuisance but a public health concern that contributes to long-term medical conditions like atherosclerosis and inflammation. Enforcement cameras are viewed as a practical tool to reduce harmful noise levels, particularly in dense urban areas where traffic noise regularly exceeds safe thresholds.

Opponents of noise enforcement cameras raise concerns about equity, privacy, and community consent. They argue that the system may disproportionately penalize low-income drivers who are unable to afford timely vehicle repairs, as well as motorcyclists who are more likely to trigger noise thresholds. Further, City official will need to determine how the cameras will be equitably distributed and how violations will be handled for loud noises unrelated to cars, such as loud music. Additionally, there are concerns about potential infringements on privacy and the broader implications of increasing surveillance in public spaces. Critics also note the implementation of noise cameras without community consultation is overly paternalistic and that such policies should be guided by neighborhood-level input – though Chicago's proposed ordinance requires CDOT consultation with the affected Ward's Alderman, reducing the applicability of this point of concern.

Table 4. *Noise camera programs in other municipalities*[5]

Existing programs	*Forthcoming programs*
• New York City, New York • Knoxville, Tennessee • Miami, Florida • Newport, Rhode Island • Montgomery County, Maryland • California (six city pilot and evaluation) • Connecticut (authorizes municipalities) • London, England • Paris, France	• Albuquerque, New Mexico • Hawaii • Philadelphia, Pennsylvania (proposed) • Washington, D.C. (proposed)

[5] This list provides a snapshot of certain municipal and statewide programs and may not be inclusive of all proposed initiatives across the U.S. or in other countries.