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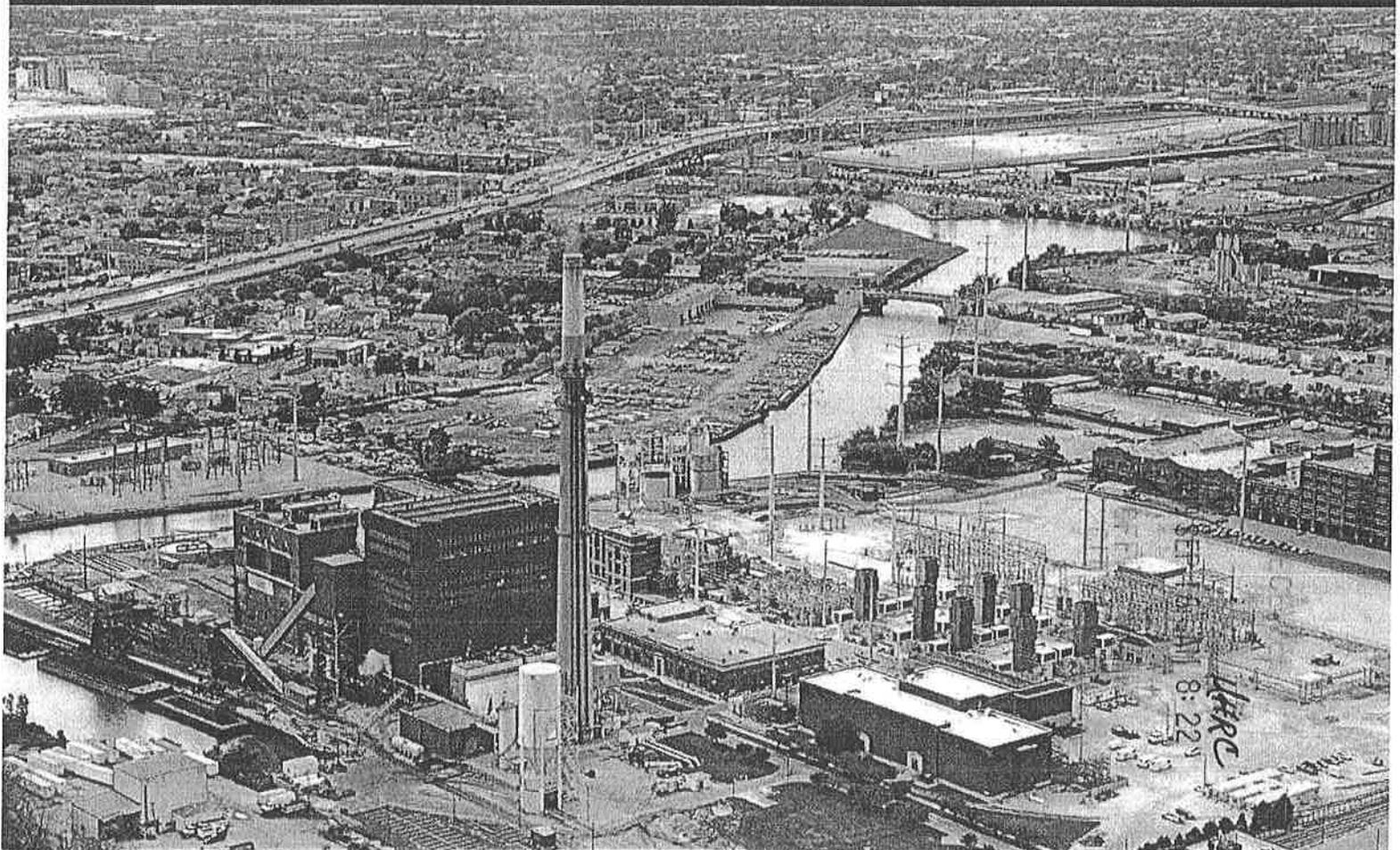
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CITY OF CHICAGO OFFICE OF INSPECTOR GENERAL

CHICAGO DEPARTMENT OF PUBLIC HEALTH AIR POLLUTION ENFORCEMENT AUDIT



REPORT OF THE OFFICE OF INSPECTOR GENERAL



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TO THE MAYOR, CITY COUNCIL, CITY CLERK, CITY TREASURER, AND RESIDENTS OF THE CITY OF CHICAGO:

The City of Chicago Office of Inspector General has completed an audit assessing how well the Chicago Department of Public Health (CDPH) monitors facilities that pollute the air. Air pollution in the form of soot, microscopic particles, and toxic airborne chemicals causes significant harm to the environment and human health. CDPH's inspection program plays a critical role in controlling the amount of pollution emitted by factories, dry cleaners, restaurants, and other facilities in Chicago.

We found that the Department is not meeting its internal air-quality inspection frequency goals, is not consistently categorizing facilities based on their potential to emit pollution, and is not ensuring that facilities annually renew their required Certificates of Operation. We also determined that the Department does not ensure that violations identified by inspectors are resolved. Taken together, these gaps increase the risk of excessive emissions that harm public health and the environment.

OIG also found that CDPH resolves 84% of air-quality complaints within 24 hours because it prioritizes responding quickly to complaints. While some of the information on the City's Data Portal is incomplete, CDPH has created a Lookup Table that is user-friendly and shows multiple environmental records related to a given address.

We make a number of recommendations to strengthen CDPH's air pollution permit and inspection program. Most urgently, CDPH should develop inspection priorities and goals based on factors such as the proximity of polluting facilities to overburdened communities, public health data, violation patterns, and inspection practices in peer jurisdictions. CDPH should continue working to fill vacant positions, then determine if additional inspectors would be needed to safeguard public health and the environment.

In response to our audit, CDPH stated that it largely agrees with our recommendations and has already begun implementing corrective actions.

We thank CDPH staff and management for their cooperation during the audit.

Respectfully,



Joseph M. Ferguson
Inspector General
City of Chicago

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ACRONYMS

APC	Air Pollution Control
CDPH	Chicago Department of Public Health
DOE	Department of Environment
IEPA	Illinois Environmental Protection Agency
OIG	Office of Inspector General
MCC	Municipal Code of Chicago
US EPA	United States Environmental Protection Agency

CHICAGO DEPARTMENT OF PUBLIC HEALTH AIR POLLUTION ENFORCEMENT AUDIT

From **2015 to 2017**, the Chicago Department of Public Health (CDPH) met its internal air-quality inspection goals **less than half the time**

In 2017, **only 48%** of open facilities had a valid Certificate of Operation

CDPH **did not categorize** potential air pollution levels for **359 facilities**

CDPH resolved **84%** of air-quality complaints **within 24 hours**



I. EXECUTIVE SUMMARY

The City of Chicago Office of Inspector General has completed an audit assessing how well the Chicago Department of Public Health (CDPH) monitors facilities that pollute the air. Air pollution in the form of soot, microscopic particles, and toxic airborne chemicals causes significant harm to the environment and human health. CDPH's inspection program plays a critical role in controlling the amount of pollution emitted by factories, dry cleaners, restaurants, and other facilities in Chicago.

The objectives of the audit were to determine if CDPH,

- meets its air-quality inspection frequency goals;
- ensures that applicable facilities maintain a valid Certificate of Operation;
- responds to air-quality complaints within 24 hours; and
- maintains complete and accurate records on the City's Data Portal.

A. CONCLUSION

OIG concluded that gaps in CDPH's air pollution permit and inspections program are increasing the risk that facilities emit more pollution than allowed by law. Infrequent inspections reduce incentives for permit holders to annually renew their Certificates of Operation or to request permits for new equipment, because violations are more likely to go undiscovered.

B. FINDINGS

1. CDPH did not meet its internal air-quality inspection frequency goals. For the purpose of fee assessment, City ordinance establishes categories based on volume of emissions, and CDPH sets internal inspection frequency goals ranging from every year to every three years depending on a facility's category and type of emissions.

Between 2015 and 2017, CDPH met its inspection frequency goal for only 17% of the facilities it intended to visit annually. Moreover, 19% of facilities that should have been inspected annually received no inspection at all over the three-year period. CDPH told OIG that its field staff of three engineers is not sufficient to meet its internal inspection frequency goals, but it also does not provide written guidance to inspectors on how to prioritize the highest-risk facilities for inspection.

2. CDPH did not ensure that facilities renewed annual Certificates of Operation. The Department told OIG that City Council created the Certificate of Operation

to compensate for the City's inability to inspect every facility each year. The Certificate of Operation process requires a facility owner to annually self-certify that their facility is operating safely and in compliance with regulatory requirements. Given the low inspection frequencies described in Finding 1, it is especially important that CDPH ensure facilities obtain annual Certificates of Operation. Without a Certificate of Operation or inspection, the Department will not know if a facility has made unauthorized changes to its operations that may negatively impact public health and the environment.

In 2017, only 48% of the facilities listed as "Open" in CDPH's inspection and permit system obtained the required Certificate of Operation. Furthermore, OIG determined that only 39% of the facilities that were required to obtain a Certificate of Operation every year between 2012 and 2017 fully complied. In fact, 8% never obtained a Certificate of Operation during that period.

CDPH stated that it does not proactively review its data to identify facilities lacking a current Certificate of Operation due to a lack of office staff. Instead, it relies on inspectors to take enforcement action if they find a non-compliant facility during an on-site inspection. Reliance on inspections is an ineffective enforcement strategy because most facilities are not inspected annually.

3. CDPH did not categorize potential air pollution emissions for 359 facilities. As of October 2018, CDPH had not categorized 26% of the facilities holding active air pollution control permits issued prior to 2015. Without a category assignment, the Department lacks a record of how much pollution these facilities may be emitting and may not be charging the correct Certification of Operation fee. CDPH does not categorize facilities during the permit review stage. Rather, the Department assigns the category during initial inspection, which may not occur for up to three years.
4. CDPH does not ensure that violations identified by inspectors are corrected, creating the risk of avoidable impact on public health and the environment. CDPH told OIG that its inspectors may exercise their discretion to issue warnings rather than citations for less serious violations of the City's Environmental Code. However, OIG found that CDPH did not ensure inspectors followed up on warnings to determine if the violations had been corrected.
5. CDPH resolves approximately 84% of air-quality complaints within 24 hours, but the Department should record complaint-based inspections more consistently. CDPH directs inspectors to conduct complaint-based inspections before periodic inspections because, while the latter are intended to prevent violations from occurring, complaints identify conditions that may constitute

immediate threats to public health and the environment. OIG found some incomplete record-keeping related to complaint inspections, which makes it harder for CDPH to measure its performance.

6. The information regarding air-quality permits, complaints, and inspections available on the City's Data Portal is incomplete. OIG compared the Data Portal to CDPH's internal database and found inaccuracies and missing data.
7. CDPH's environmental records Lookup Table is organized in a manner that is easy for the public to use and understand. CDPH created a Lookup Table on the City's Data Portal that allows users to search addresses and view environmental records related to the site, including complaint history, periodic inspections, enforcement actions, environmental permits, and the presence of under- or aboveground storage tanks. In OIG's assessment, the Lookup Table provides information in a user-friendly and readily understandable manner.

C. RECOMMENDATIONS

OIG recommends that CDPH strengthen its permit and inspection program to ensure that permitted facilities are operating in accordance with the Municipal Code of Chicago and minimizing air pollution. Achieving this may include developing inspection priorities and goals based on factors such as the proximity of polluting facilities to overburdened communities, public health data, violation patterns, and inspection practices in peer jurisdictions. CDPH should continue working to fill vacant positions, then determine if additional inspectors and permit reviewers would be needed to safeguard public health and the environment.

CDPH should develop, document, and implement a Certificate of Operation enforcement system that takes full advantage of currently available data to ensure facilities renew their Certificates on time, and pay the correct amount. For example, CDPH could run a monthly report identifying facilities that have not renewed their Certificate of Operation and recording the amount of time they have been operating with an expired Certificate.

To promote efficiency and consistency, CDPH should draft and adopt an inspection manual that includes guidance on prioritizing inspections, issuing warnings, recording complaint inspections, and following up on violations.

D. CDPH RESPONSE

In response to our audit findings and recommendations, CDPH stated that it will develop inspection frequency goals, continue filling vacant inspection positions,

engage a consultant to help determine appropriate staffing levels to achieve internal goals, and finalize an inspection manual for distribution to inspectors.

The Department also stated that it would develop and implement an enforcement mechanism to identify facilities that have not renewed their annual Certificate of Operations and ensure they come into compliance.

CDPH reported that it obtained annual emissions reports from the Illinois Environmental Protection Agency and has already begun using this information to update permitted facilities' emission potential categories. The Department has also begun making changes to the annual Certificate of Operations payment process to reduce overpayments and is exploring options for issuing refunds.

CDPH intends to continue allowing inspectors to issue warnings to facilities. However, the Department stated that it will adjust its process to ensure that these are resolved in a timely manner.

Finally, the Department stated that it will review missing records on the Data Portal and address any potential system failures that prevent valid records from appearing on the Data Portal.

The specific recommendations related to each finding, and CDPH's response, are described in the "Findings and Recommendations" section of this report.

II. BACKGROUND

A. THE IMPACT OF AIR POLLUTION ON THE ENVIRONMENT AND HUMAN HEALTH

Airborne pollutants seriously damage the environment and human health. To combat this problem, the federal Clean Air Act requires the US Environmental Protection Agency (US EPA) to set air-quality standards for six common air pollutants: ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, lead, and particulate matter (a mixture of tiny airborne particles and liquid droplets).¹ These common pollutants—which come from many sources, including power plants, industrial facilities, and fossil fuel-powered vehicles²—can cause or worsen medical conditions such as asthma, lung disease, cancer, stroke, neurological impairment, and heart disease, especially after prolonged exposure. These pollutants also harm the environment by contributing to acid rain, depleting soil nutrients, and otherwise harming ecosystems.³

The Clean Air Act identifies 187 additional air pollutants (termed “hazardous pollutants”) that, while less common than the six pollutants discussed above, are very toxic and known to cause cancer, birth defects, and environmental harm.⁴ Hazardous pollutants include methylene chloride (a paint stripper used in auto body repair), perchloroethylene (a solvent used by some dry cleaners), and ethylene oxide (a disinfectant used to sterilize medical equipment).⁵

In recent decades, social movements have raised awareness of the disparate impact of pollution and other environmental hazards on minority and low-income populations. US EPA created the Office of Environmental Justice in 1992 to “address adverse human health and environmental impacts in overburdened communities”⁶ and promote the “fair treatment and meaningful involvement of all people regardless

¹ United States Environmental Protection Agency, “Clean Air Act Requirements and History,” accessed August 9, 2019, <https://www.epa.gov/clean-air-act-overview/clean-air-act-requirements-and-history>.

² United States Environmental Protection Agency, “Particulate Matter Basics,” accessed August 9, 2019, <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>.

³ United States Environmental Protection Agency, “Health and Environmental Effects of Particulate Matter (PM),” accessed May 30, 2019, <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>.

⁴ United States Environmental Protection Agency, “America’s Children and the Environment,” accessed August 9, 2019, 50-51, https://www.epa.gov/sites/production/files/2015-06/documents/ace3_2013.pdf.

⁵ United States Environmental Protection Agency, “What Are Hazardous Air Pollutants?” accessed May 30, 2019, <https://www.epa.gov/haps/what-are-hazardous-air-pollutants>.

⁶ United States Environmental Protection Agency, “Office of Environmental Justice in Action,” accessed May 30, 2019, https://www.epa.gov/sites/production/files/2017-09/documents/epa_office_of_environmental_justice_factsheet.pdf.

of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”⁷ In 2015, US EPA created the Environmental Justice Screening and Mapping Tool (EJSCREEN) to assist the Office in focusing its efforts. EJSCREEN combines pollution data with demographic data, such as age, race, and income.⁸ US EPA uses the tool to implement enforcement programs and target its outreach.⁹

The Clean Air Act mandates state-level enforcement of the air-quality standards set by US EPA. The Illinois Environmental Protection Agency (IEPA) requires facilities that could potentially pollute the air to secure operating permits, and to submit annual emissions reports. IEPA also inspects regulated facilities to ensure they follow state permit requirements.

At the local level, the City of Chicago seeks to limit air pollution through enforcement of its Environmental Protection and Control Ordinance. The Ordinance requires certain types of facilities to secure permits and submit to inspections. Some facilities are subject to both the Ordinance and state law.¹⁰ A City-IEPA intergovernmental agreement delegates to CDPH the role of inspecting motor vehicle repair shops, dry cleaners, chrome platers, and other facilities holding state permits to engage in activities that may emit hazardous pollutants.

B. CDPH ENVIRONMENTAL PERMITTING AND INSPECTIONS SECTION

CDPH’s Environmental Permitting and Inspections section has enforced the Chicago Environmental Protection and Control Ordinance, MCC Chapter 11-4, from 2012 to date. Before that, the City’s Department of Environment (DOE) handled enforcement. The City dissolved DOE in 2011, assigning its responsibilities to other departments, including CDPH. Appendix A describes the reassignment of DOE’s functions.

The mission of the Environmental Permitting and Inspections section is to “protect public health and the environment by reducing environmental risks throughout the

⁷ United States Environmental Protection Agency, “Learn About Environmental Justice,” accessed May 30, 2019, <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice>.

⁸ To view maps of environmental indicators and demographic indicators see, United States Environmental Protection Agency, “EJSCREEN: Environmental Justice Screening and Mapping Tool,” accessed May 30, 2019, <https://www.epa.gov/ejscreen>.

⁹ United States Environmental Protection Agency, “How Does EPA use EJSCREEN?” accessed May 30, 2019, <https://www.epa.gov/ejscreen/how-does-epa-use-ejscreen>.

¹⁰ In general, facilities that require a City permit but not a state permit emit less pollution. Examples include small metal machining shops and grocery stores with cardboard balers.

City.”¹¹ Four units within the section review permit applications, inspect facilities and worksites, and respond to complaints related to a range of environmental hazards. Our audit focused on the Air Pollution Prevention and Field Operations units’ activities circled in Figure 1—i.e., those, related to air pollution control (APC) permits, periodic facility inspections, and complaint-based inspections.

FIGURE 1: CDPH'S ENVIRONMENTAL PERMITTING AND INSPECTIONS SECTION HAS A VARIETY OF RESPONSIBILITIES



Source: OIG summary of operations as described by CDPH.

C. CDPH AIR POLLUTION CONTROL PERMITS AND CERTIFICATES OF OPERATION

CDPH issues APC permits for equipment and processes that pollute the air, including equipment used in dry cleaning, motor vehicle repair, chrome plating, and industrial processes requiring combustion or chemical treatment.¹² Permit-seekers either apply directly on the City’s Inspections, Permitting, and Licensing Portal, or obtain a permit through the general building permit process. An APC permit is valid for the life of the equipment; it need not be renewed unless the equipment is modified or replaced.

¹¹ City of Chicago, Department of Public Health, “Mission,” accessed May 30, 2019, https://www.chicago.gov/city/en/depts/cdph/provdrs/healthy_communities/svcs/environmental-permits--regulation.html.

¹² MCC § 11-4-620 provides exceptions for certain equipment, such as air conditioners, residential heating plants, and gas-fired cooking equipment.

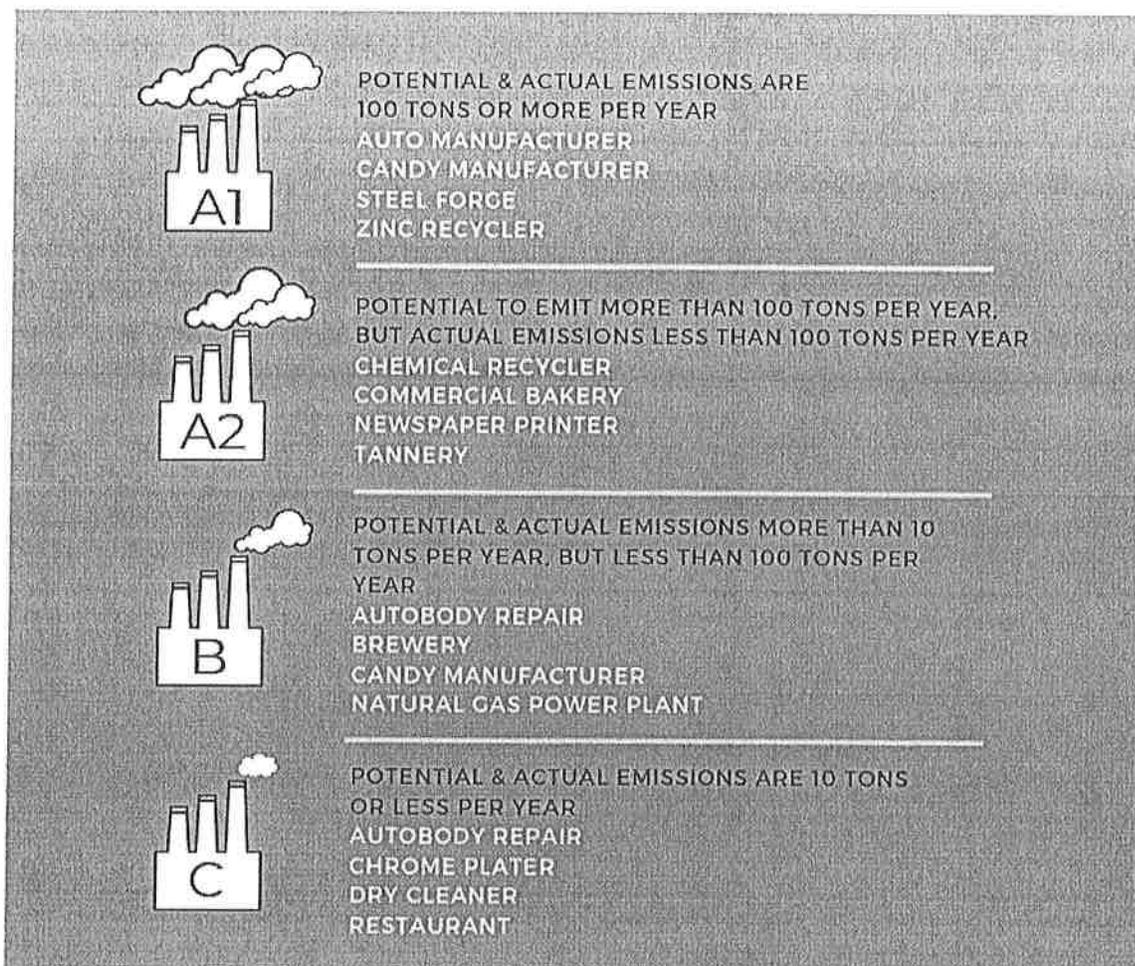
In addition to an APC permit, most facilities that use regulated equipment or processes are required to obtain a Certificate of Operation.¹³ Unlike a permit, a Certificate of Operation must be renewed each year for as long as the facility is operational. CDPH explained to OIG that the purpose of a Certificate of Operation is to require a facility to certify on an annual basis whether it has changed its equipment or operations, while an APC permit simply registers a piece of equipment or process with the City.

The City bases its Certificate of Operation fee on the amount of air pollution a facility emits, or potentially emits, based on the equipment and processes it uses.¹⁴ The Ordinance establishes four classes of facilities, with annual emissions ranging from 10 tons or less to 100 tons or more. Figure 2 identifies the classes and provides examples of facilities that would typically emit various volumes of pollution. Facilities in the same industry, such as candy manufacturing, may be in different categories based on the size of their operation. Fees range from \$50 per year for category C facilities to \$1,250 per year for category A1 facilities.

¹³ MCC § 11-4-660 provides Certificate of Operation exemptions for facilities that *only* operate boilers, furnaces, or emergency generators.

¹⁴ A facility's potential emission figure is what it is capable of emitting, assuming constant operation with the permitted equipment on-site, while the actual emission figure accounts for its operating hours and any emission-reduction measures.

FIGURE 2: THE ORDINANCE CATEGORIZES FACILITIES BY VOLUME OF POTENTIAL AND ACTUAL EMISSIONS



Source: OIG illustration based on MCC § 11-4-680 and CDPH permit data.

The following four maps illustrate the location and emissions category of facilities across the City according to CDPH data as of October 3, 2018. Figure 3 shows Chicago's 77 community areas and the locations of the 1,640 facilities as of that date.¹⁵ The majority of facilities are in the north and central parts of the city. However, most of the facilities in these areas are in the lowest emission category (C), represented by light blue dots. The south side has relatively more facilities in the highest emission categories (A1 and A2), represented by dark blue dots. Of the 1,640 facilities, 86 are in category A1 or A2, 472 are in category B, and 1,082 are in category C.

¹⁵ There were 1,648 facilities in the dataset as of October 3, 2018, but 8 had insufficient address information to be mapped so we excluded them.

FIGURE 3: THERE ARE MORE THAN 1,500 REGULATED FACILITIES EMITTING AIR POLLUTION IN THE CITY OF CHICAGO

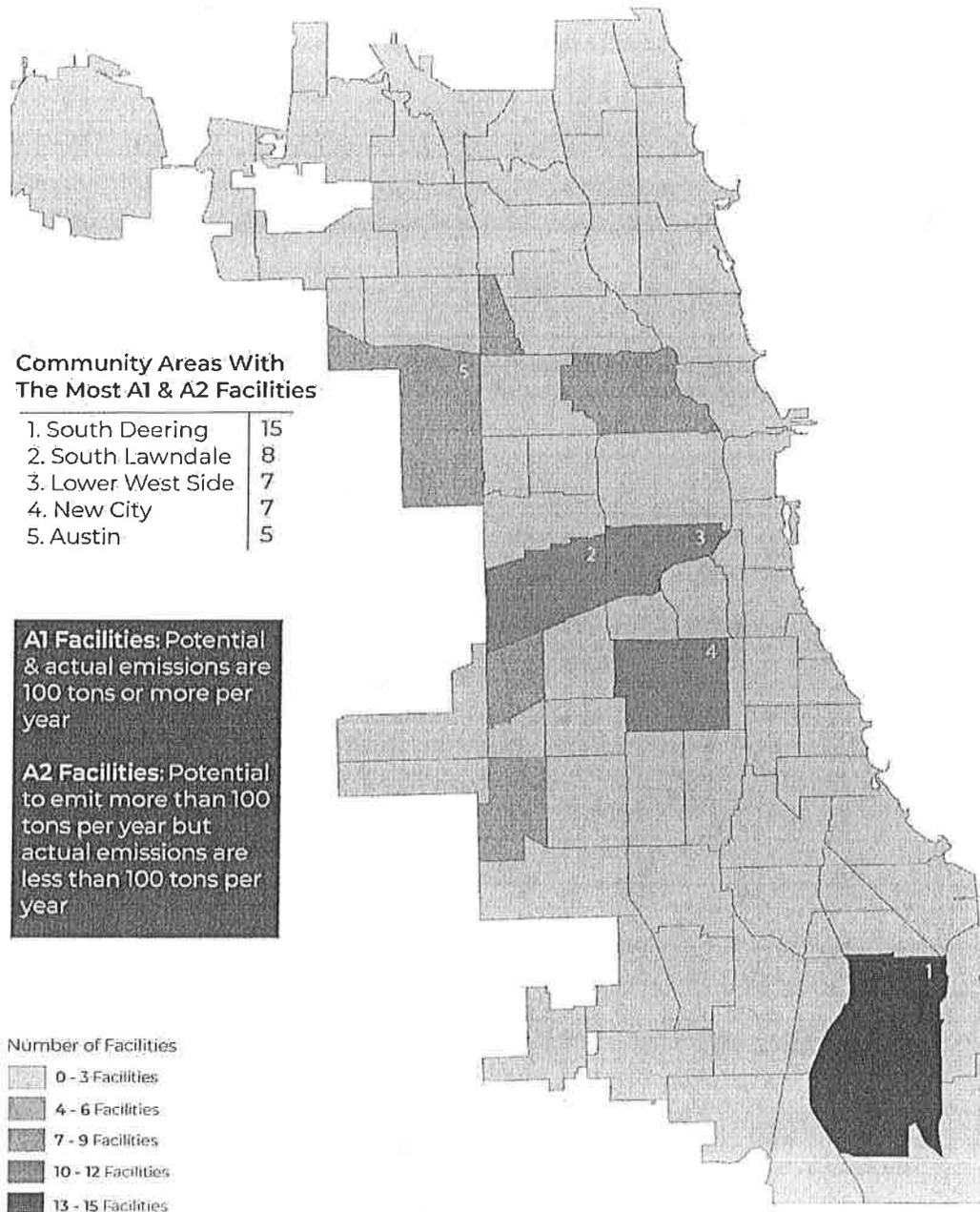


Source: OIG illustration based on CDPH permit data.

Figure 4 is a heat map of the facilities in the highest emission category (A1 and A2). The community area with the highest relative concentration of these facilities is South Deering, which includes the industrial operations around Lake Calumet. The other

four community areas with the most A1 and A2 facilities are South Lawndale, Lower West Side, New City, and Austin.

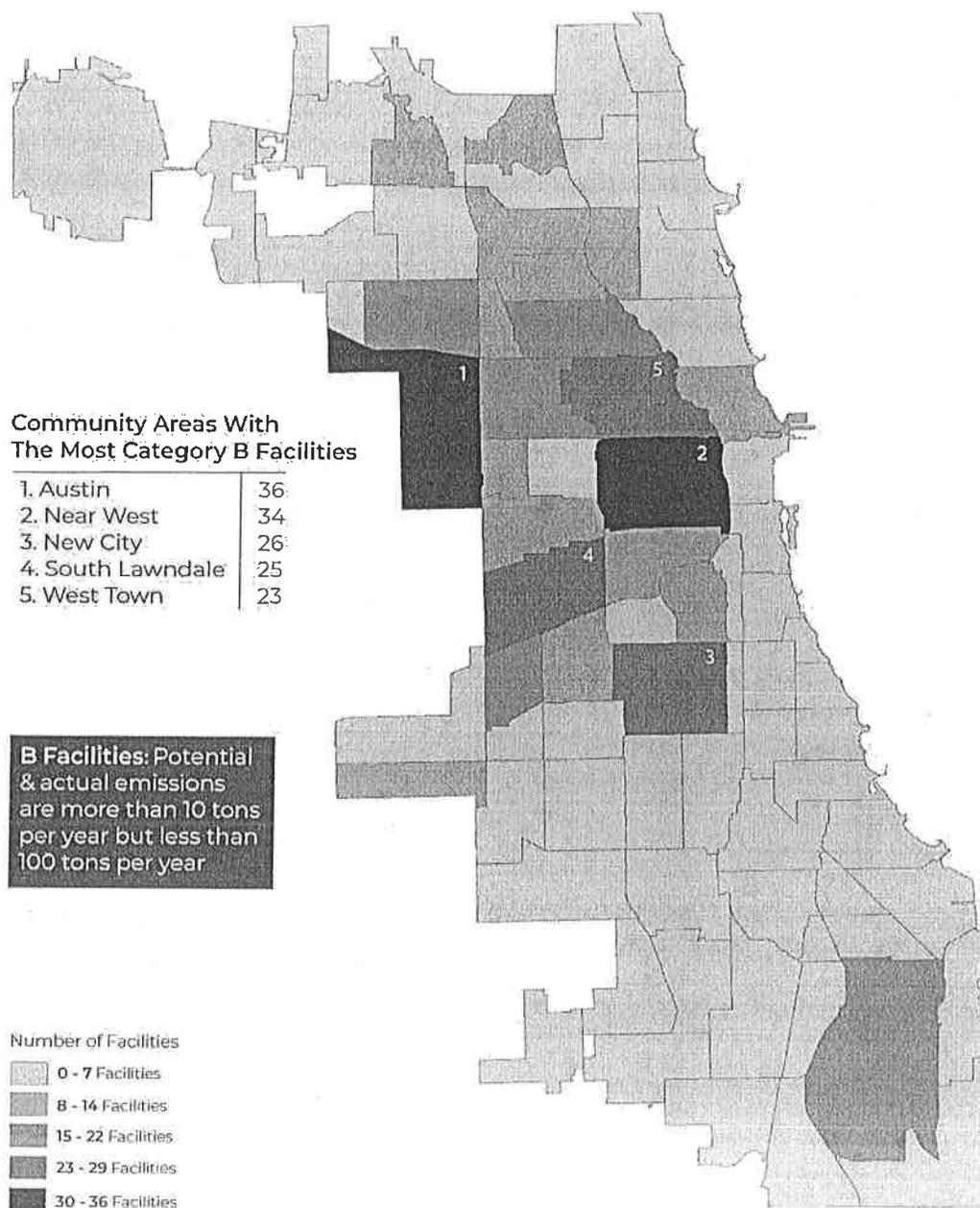
FIGURE 4: APPROXIMATELY 1/6 OF CATEGORY A1 AND A2 FACILITIES ARE IN SOUTH DEERING



Source: OIG illustration based on CDPH permit data.

Figure 5 is a heat map of the facilities in the category B. Austin and Near West have the greatest number of these facilities, followed by South Lawndale, New City, and West Town.

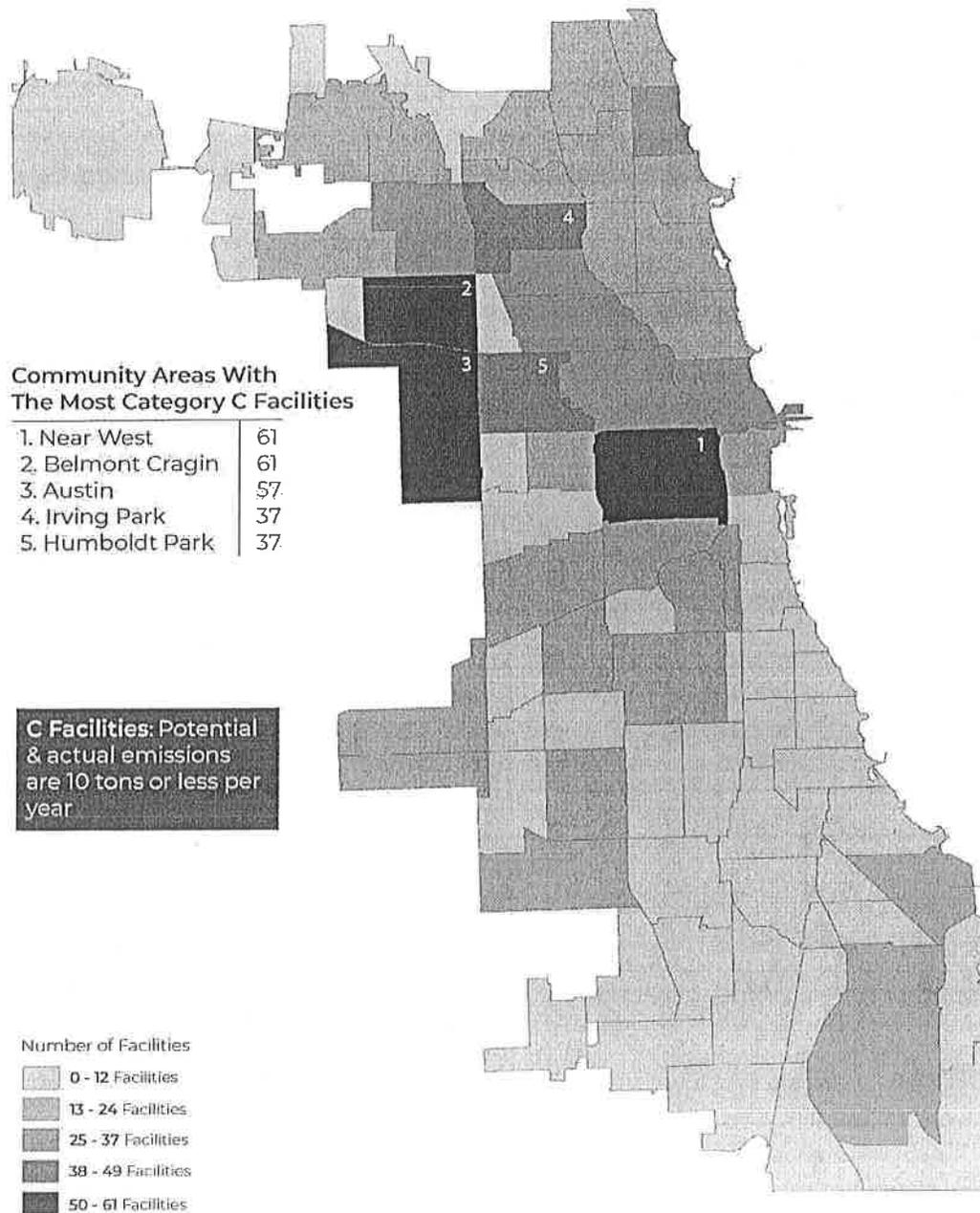
FIGURE 5: APPROXIMATELY 1/7 OF CATEGORY B FACILITIES ARE IN AUSTIN AND NEAR WEST



Source: OIG illustration based on CDPH permit data.

Figure 6 is a heat map of the facilities in the lowest emission category (C). Near West, Belmont Cragin, and Austin have the greatest number of these facilities, followed by Irving Park and Humboldt Park.

FIGURE 6: APPROXIMATELY 1/6 OF CATEGORY C FACILITIES ARE IN NEAR WEST, BELMONT CRAGIN, AND AUSTIN



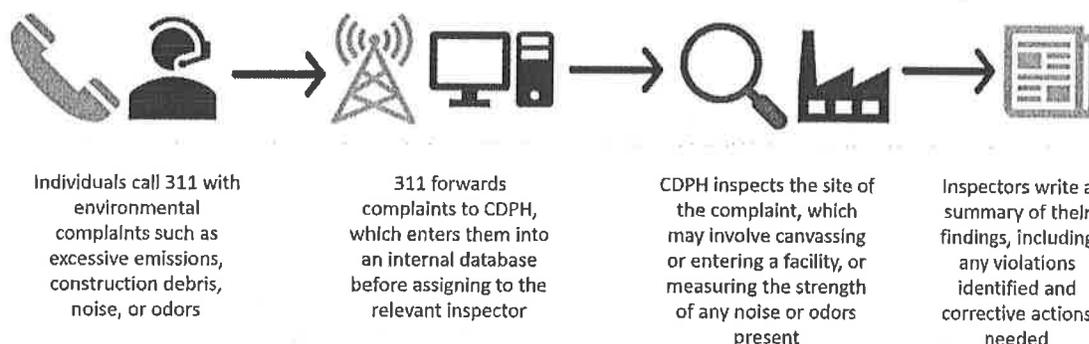
Source: OIG illustration based on CDPH permit data.

D. CDPH AIR POLLUTION INSPECTIONS

CDPH periodically inspects facilities that have Certificates of Operation. Frequency of inspection depends on the facility's category and whether it is "delegated"—i.e., covered by CDPH's intergovernmental agreement with IEPA. The Department has an internal goal of inspecting all delegated facilities every year, regardless of category, because these facilities have the potential to release particularly hazardous air pollutants. While CDPH aims to perform annual inspections of all delegated facilities, the 2017 delegation agreement with IEPA only required CDPH to inspect 24 dry cleaners, 16 chrome platers, and 60 motor vehicle repair shops each year.¹⁶ For non-delegated facilities, CDPH has an internal goal of inspecting all category A1, A2, and B facilities every two years and all category C facilities every three years.

In addition to periodic inspections, CDPH responds to a variety of air-quality complaints, including emissions, odors, and fugitive dust. Complaints are routed from 311 to CDPH, which enters them into an internal database and assigns an inspector, as illustrated in Figure 7.

FIGURE 7: CDPH RECEIVES AND RESPONDS TO COMPLAINTS



Source: OIG summary of complaint response as described by CDPH.

Upon identifying a violation, an inspector may either issue a warning or a citation. CDPH does not provide inspectors specific criteria for deciding which option to choose. The Department told OIG that in situations involving less serious offenses, inspectors generally exercise their discretion to issue warnings rather than citations. If a facility that received a warning does not cure the violation within 30 days, the follow-up inspector is expected to issue a citation. Each citation provides a date for the Department of Administrative Hearings to determine whether the facility owner is liable, and if so, to set the fine.

¹⁶ The agreement further requires CDPH to conduct asbestos inspections, to respond to all citizen complaints within five days, and to inspect certain other facilities upon request of IEPA.

III. FINDINGS AND RECOMMENDATIONS

FINDING 1: CDPH DID NOT MEET ITS INTERNAL AIR-QUALITY INSPECTION FREQUENCY GOALS, THEREBY INCREASING THE RISK OF NOT DETECTING VIOLATIONS THAT MAY HARM PUBLIC HEALTH AND THE ENVIRONMENT.

Between 2015 and 2017, CDPH did not meet its internal air-quality inspection frequency goals for any category of facility. Its inspection performance varied across categories, ranging from 17% to 51% of the Department's goal, as shown in Figure 8.¹⁷ Moreover, during that same period, 19% of delegated facilities and 36% of category A1 and A2 facilities received no inspection at all.

FIGURE 8: CDPH DID NOT MEET ITS INSPECTION FREQUENCY GOALS FROM 2015-2017

Facility Category	Number of Facilities ¹⁸	Internal Inspection Frequency Goal	Met Internal Inspection Goal ¹⁹	Facilities Receiving No Inspections
Delegated by IEPA ²⁰	502	Annually ²¹	17%	19%
A1 and A2	88	Every 2 years	44%	36%
B	442	Every 2 years	38%	33%
C	517	Every 3 years	51%	49%

Source: OIG analysis of CDPH inspection data.

¹⁷ The Methodology section of this report describes our samples for this finding.

¹⁸ The true number of facilities in each category may differ from the numbers in this column because we identified some potentially duplicate facility records in CDPH's data. Specifically, we found 1 potential duplicate delegated record, 21 potential duplicate category B records, and 23 potential duplicate category C records. Further research by CDPH, possibly requiring on-site inspections, would be needed to determine if the potential duplicates are actual duplicates, or distinct facilities at the same address. Our samples did not include any potentially duplicate records.

¹⁹ Except for category A1 and A2 facilities, these figures are estimates based on random, representative samples. The confidence interval for each estimate is provided in the Methodology section.

²⁰ CDPH classifies delegated facilities as A1, A2, B, or C. But because the Department intends to inspect all delegated facilities every year, regardless of class type, we separated them from the population of non-delegated A1, A2, B, and C facilities in this Finding.

²¹ IEPA did not require annual inspection of delegated facilities. CDPH set a more ambitious internal goal of inspecting all delegated facilities annually. See page 17 for more details on delegated facilities.

Without conducting regular inspections, CDPH cannot discover violations or otherwise address problems before they impact public health and the environment. Moreover, uninspected facilities may have acquired additional equipment or implemented operational practices which could cause them to emit more pollutants than the City is aware of. Infrequent inspections also reduce incentives for facilities to renew their Certificates of Operation or to request permits for new equipment, because violations are more likely to go undiscovered.

CDPH told OIG that it does not have enough staff to meet its inspection frequency goals. During the time period covered by the audit, there were three staff and one supervisor responsible for inspections.²² CDPH acknowledged that its inspection frequency goals were not based on an analysis of public health risks, best practices, or detailed evaluation of violation patterns across facilities. Accordingly, CDPH's inspection goals may not be optimized to limit the impact of air pollution on public health and the environment.

Furthermore, CDPH did not provide a manual or other written guidance to inspectors on how to prioritize inspections.²³ Instead, the Department allowed each inspector to decide which facilities to visit. Without carefully developed prioritization criteria to guide the process, CDPH may expend its limited resources inspecting facilities that present lower risks or have already been inspected by IEPA.

Finally, OIG found inaccuracies in CDPH's permit data that hinder the Department's ability to plan and prioritize inspections. In each category, we found at least one instance where inspectors had flagged a facility for supervisory review because they suspected it had ceased operation. OIG found no evidence that supervisors reviewed the inspection notes to determine whether the facility remained open. This practice creates the risk that CDPH may waste resources attempting to visit closed facilities. In total, 20 of the 346 facilities we reviewed may no longer be in operation.

RECOMMENDATIONS

CDPH should review its data to ensure that facilities are correctly designated as open or closed. After correcting the data, the Department should develop inspection frequency goals and priorities informed by factors such as:

²² Five more positions were added in 2018 but as of June 18, 2019, three were still vacant and the supervisor position had been vacated (i.e., there were five staff and no supervisor).

²³ The environmental unit (first at DOE and then at CDPH) created a manual in 2011 and began updating it in 2014 but did not complete or implement it.

- the proximity of polluting facilities to overburdened communities, perhaps using a tool such as US EPA's EJSCREEN;²⁴
- public health data provided by other sections of CDPH;
- patterns indicating a higher likelihood of violations at certain facilities; and
- review of inspection practices in peer jurisdictions.

Regarding staffing levels, CDPH should continue working to fill the positions added in the 2018 budget. After filling open positions, CDPH should assess inspection rates to determine how many additional inspectors it needs to safeguard public health and the environment, and then seek funding for those positions. If no funds are made available, CDPH should develop realistic inspection goals in line with its resources and regularly evaluate whether it is meeting those goals.

Additionally, to promote efficiency and consistency, CDPH should draft and adopt an inspection manual that includes guidance on prioritizing inspections. The Department should also provide guidance to supervisors regarding the review of facilities flagged by inspectors as potentially closed.

MANAGEMENT RESPONSE

"CDPH wishes to clarify that to promote continuous quality improvement, CDPH intentionally sets aspirational performance metrics that are not met 100% of the time.

"CDPH has started to review its data to ensure that facilities are correctly designated as open or closed, and has already removed inactive records. To ensure the database remains accurate, CDPH will implement technical solutions in Hansen, the City's electronic database, and will conduct an annual audit of the air permitting database to remove duplicative and abandoned records.

"The above activities will require technical system changes in Hansen to fully realize results, which is why an extended implementation date is indicated.

"CDPH will utilize geographic information system (GIS) data and existing public health and inspection data to develop inspection frequency goals and prioritize inspections based on OIG-recommended factors and other criteria.

"CDPH will use the task order request (TOR) process to identify a consultant to investigate best practices in other jurisdictions and to help develop achievable

²⁴ United States Environmental Protection Agency, "EJSCREEN: Environmental Justice Screening and Mapping Tool," accessed May 30, 2019, <https://www.epa.gov/ejscreen>.

inspection frequency goals and priorities, based on current and anticipated work force levels.

"CDPH will continue to work on filling the positions that were added to the 2018 Corporate budget. Of the four new air inspectors earmarked in that budget, three have already been hired.

"In addition to field staff, administrative staff assist in the review of permits and Certificates of Operation (COOs), maintain the inspection database, and oversee and support field staff. CDPH will continue to work to fill open administrative positions and assess the need for additional staff, as the budget allows.

"CDPH will use the TOR process to identify a consultant to help determine staffing levels necessary to accomplish realistic inspection goals and frequencies and identify achievable goals based on current and anticipated work force levels.

"CDPH will take advantage of existing technology to better monitor and evaluate inspector performance and use that data to determine how many additional inspectors it needs to safeguard public health and the environment and then explore opportunities to add more staff, as indicated.

"CDPH will also explore the option of requesting increased funding under its delegation agreement with the Illinois Environmental Protection Agency (IEPA).

"CDPH already has a comprehensive inspection manual for inspectors and is in the process of updating it. As above, CDPH will use the TOR process to identify a consultant to assist with the updates. The updated manual will include guidance on how supervisors should prioritize inspections.

"In addition, CDPH will start assigning inspections to inspectors through their cell phones using Field Force Manager (FFM). This option will focus inspectors to priority sites, decrease driving time, and help increase accountability by ensuring inspections are completed in a timely manner.

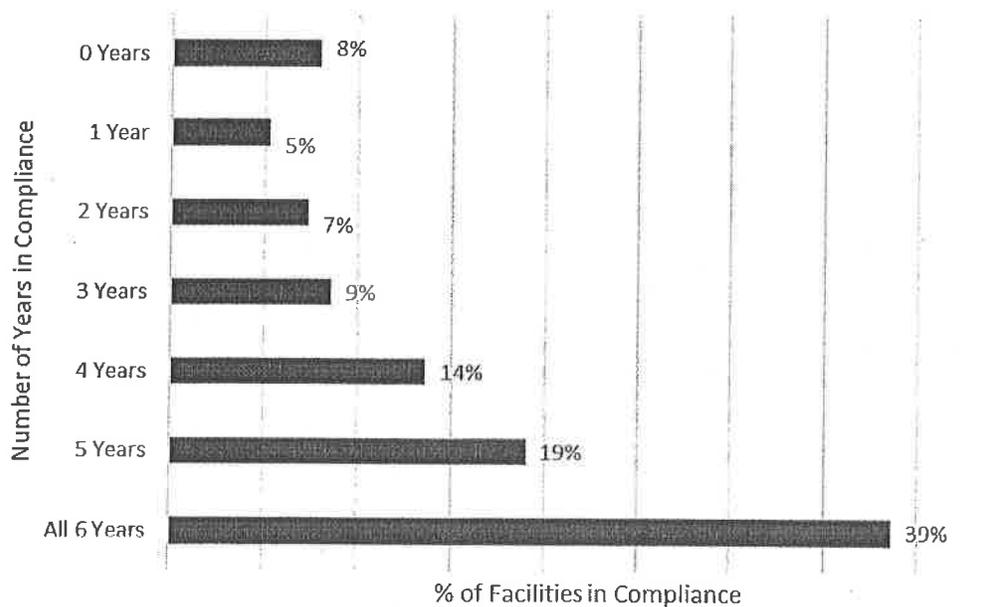
"CDPH will grant access rights in Hansen to inspectors to allow them to directly close applications of facilities that are no longer in business. This negates the need for inspectors to flag potentially closed sites to supervisors. Closed sites will appear in the inspector's weekly timesheet report and CDPH will create a procedure for supervisors to review closed facility reports."

FINDING 2: CDPH DID NOT ENSURE THAT FACILITIES RENEWED ANNUAL CERTIFICATES OF OPERATION.

In 2017, only 1,082 (or 48%) of the 2,235 facilities listed as "Open" in CDPH's inspection and permit system obtained the required Certificate of Operation. A Certificate of Operation must be renewed annually for as long as the facility is operational.

Furthermore, OIG determined that 1,293 of the facilities active in 2017 were required to obtain a Certificate of Operation every year between 2012 and 2017, yet only 39% fully complied. In fact, 8% never obtained a Certificate of Operation, as shown in Figure 9.

FIGURE 9: FROM 2012 THROUGH 2017, ONLY 39% OF FACILITIES FULLY COMPLIED WITH CDPH'S CERTIFICATE OF OPERATION REQUIREMENT



Note: Total exceeds 100% due to rounding.

Source: OIG analysis of CDPH Certificate of Operation payment data.

CDPH management told OIG that City Council created the Certificate of Operation to compensate for the City's inability to inspect every facility each year. The Certificate of Operation process requires a facility owner to self-certify that their facility is operating safely and in compliance with regulatory requirements. Given the low inspection frequencies described in Finding 1, it is especially important that CDPH ensure facilities obtain annual Certificates of Operation. Without a Certificate of Operation or

inspection, the Department will not know if a facility has made unauthorized changes to its operations that may negatively impact public health and the environment.

CDPH does not proactively review its data to identify facilities lacking a current Certificate of Operation. Instead, it relies on inspectors to take enforcement action if they find a non-compliant facility during an on-site inspection.²⁵ Reliance on inspections is an ineffective enforcement strategy because most facilities are not inspected annually.

In addition, CDPH offers a grace period that is not authorized by the MCC, further reducing the effectiveness of inspections as an enforcement strategy. In January of each year, CDPH sends a reminder to each facility with instructions to renew their Certificate of Operation and gives them until May to comply, before issuing an expired Certificate of Operation citation. This enforcement practice does not match MCC § 11-4-660, which states that a Certificate of Operation must be renewed one year after the issue date unless a shorter period is specified by the commissioner.

Lastly, CDPH management stated that, even after the grace period ends, some inspectors exercise their discretion to issue warnings instead of citations for expired Certificates of Operation. As discussed in Finding 1, the Department's lack of an operational manual leads to inconsistencies between inspectors.²⁶

RECOMMENDATIONS

CDPH should develop, document, and implement a Certificate of Operation enforcement system that takes full advantage of currently available data. For example, CDPH could run a monthly report identifying facilities that have not renewed their Certificate of Operation and recording the amount of time they have been operating with an expired Certificate. The Department could then contact those facilities to determine why they have not renewed and take appropriate enforcement action.

If CDPH continues its current practice of issuing reminders, it should send the reminders on a rolling basis—i.e., shortly before each facility's annual Certificate of Operation expiration date—rather than sending notice to all facilities in January.

²⁵ In these instances, CDPH also requires the facility owner to pay for past Certificates of Operation it did not obtain.

²⁶ The environmental unit (first at DOE and then at CDPH) created a manual in 2011 and began updating it in 2014 but did not complete or implement it.

To increase the consistency of enforcement action taken by inspectors, CDPH should clearly describe in its inspection manual the circumstances under which an inspector should issue a citation or a warning for an expired Certificate of Operation.

MANAGEMENT RESPONSE

"CDPH will develop, document, and implement an enforcement mechanism to identify facilities that have not renewed their Certificate of Operation (COO). CDPH will run monthly reports to identify facilities that have not renewed their COO. The supervisor will assign an inspector and the inspector will be responsible for contacting or visiting the facility as capacity allows and issuing violations or defect notices to compel compliance. This will require technical system changes in Hansen and coordination with DoIT.

"CDPH will evaluate ordinance, rule or other City licensing processes to better enforce compliance, such as revoking a business license until a facility is in compliance. As part of the evaluation, discussions with other pertinent departments will be required and an extended timeline is planned to consider options.

"CDPH considered the idea of sending reminders on a rolling basis and determined that this would result in a significant administrative burden. The annual reminder mailing is an automated process that ensures all facilities are notified of the requirement to renew their certificates each year. CDPH recently changed the COO form to specify that all COOs expire December 31st regardless of when they are issued. CDPH is working to change the timing of the annual reminder to a date at least two months prior to expiration, rather than in January, to ensure companies comply in a timely manner.

"The inspection manual will be updated to clarify when an inspector should issue a citation or warning for an expired COO. As above, CDPH will use the TOR process to identify a consultant to help update inspection guidelines so that enforcement actions are applied consistently."

FINDING 3: CDPH DID NOT CATEGORIZE POTENTIAL EMISSIONS FOR 359 FACILITIES.

CDPH assigns fee categories to regulated facilities based on their volume of actual or potential air pollution emissions. As of October 2018, CDPH had not categorized 359 (or 26%) of the 1,406 facilities holding active air pollution control permits issued prior to 2015. CDPH does not categorize facilities during the permit review stage. Rather, the Department assigns the category during initial inspection, which may not occur for up to three years. Without a category assignment, CDPH lacks a record of how much pollution these facilities may be emitting.

Moreover, CDPH lacks a basis for determining the amount to charge uncategorized facilities to obtain and renew their Certificates of Operation, because the fee varies based on category. CDPH charges each uncategorized facility an annual fee of \$999, an amount nowhere to be found in MCC § 11-4-680. CDPH management stated that this practice began when all payments were made in-person. The \$999 fee served as an indicator that the facility had not been categorized and required inspection. Rather than accepting the incorrect payment, CDPH staff would schedule an inspection. However, CDPH continued the practice even after it transitioned to an online application and renewal process. As a result, some facility owners actually paid the \$999 fee. CDPH told OIG that it is in the process of trying to identify every \$999 payment, and it plans to work with the Department of Finance to issue refunds as appropriate.

RECOMMENDATIONS

CDPH should continue reviewing payment records to identify instances of incorrect payments and issue refunds as appropriate. CDPH should also review the 359 unclassified facilities, determine whether they are in operation and, if so, assign them a category.

CDPH should implement a process that does not rely on charging facility owners a placeholder fee of \$999 to prompt them to contact CDPH for an inspection. For example, the Department could assign each facility a category during the initial permit application review, based on the information in the facility's state air permit and its intended operations. If a facility has not yet acquired a state permit, CDPH could assign a temporary category based solely on intended operations, which could then be confirmed or corrected upon initial inspection.

MANAGEMENT RESPONSE

"CDPH will continue monitoring payment records, has already identified the major cause for incorrect payment, and is working with DoIT to install technical safeguards to reduce instances of overpayment. CDPH is exploring mechanisms for issuing refunds as appropriate."

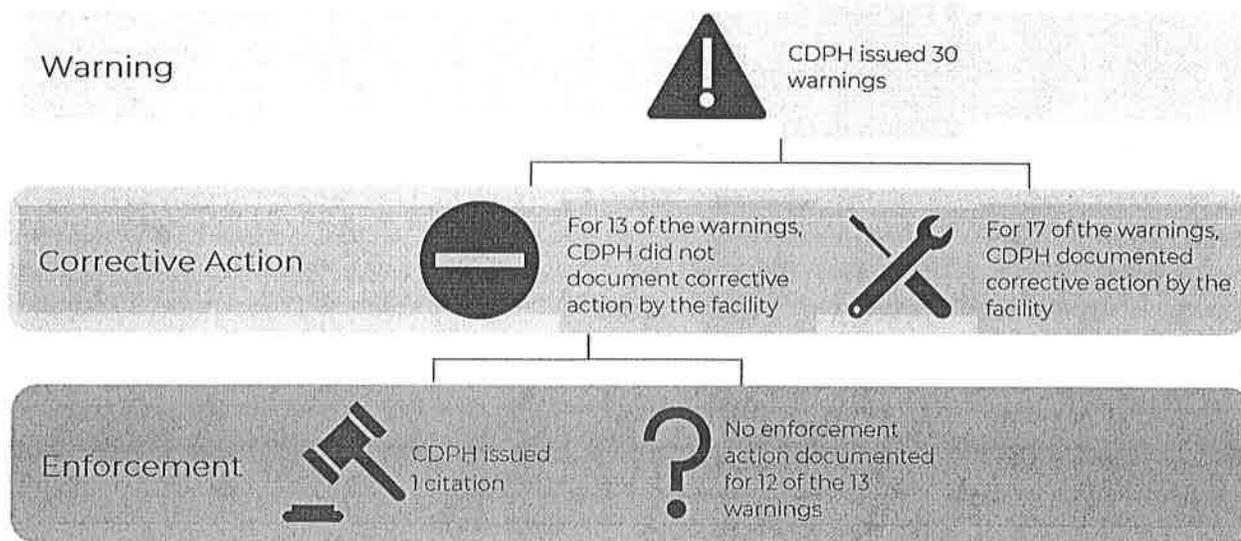
"CDPH obtained annual emission reports and air-permitting information from IEPA. CDPH is currently using this information to update Certificate of Operation (COO) classifications."

"CDPH has already ended this practice and will continue to work with DoIT to revise its existing process. CDPH will also work with DoIT to try to incorporate IEPA air permit information to better prescreen applicants and help avoid both category misassignment and under- or over-payment."

FINDING 4: CDPH DOES NOT ENSURE THAT VIOLATIONS IDENTIFIED BY INSPECTORS ARE CORRECTED, CREATING THE RISK OF AVOIDABLE IMPACT ON PUBLIC HEALTH AND THE ENVIRONMENT.

Upon identifying a violation of the City's Environmental Code, an inspector may either issue a citation or a warning.²⁷ CDPH told OIG that its inspectors generally exercise their discretion to issue warnings for less serious offenses. If a facility that received a warning does not cure the violation within 30 days, the follow-up inspector is expected to issue a citation. As described in Figure 10, however, from September 2017 to September 2018, CDPH did not resolve 12 of the 30 warnings identified by OIG.²⁸

FIGURE 10: CDPH DID NOT RESOLVE 12 OF 30 WARNINGS ISSUED FROM SEPTEMBER 2017 TO SEPTEMBER 2018



Source: OIG analysis of CDPH inspection data.

²⁷ For this analysis, we categorized warnings as each instance where an inspector identified a missing permit or Certificate of Operation, or discovered another violation of the Environmental Code, but did not issue a citation.

²⁸ OIG identified these 30 warnings by manually reviewing inspection records, because CDPH does not have an inspection result category that it consistently uses to identify warnings. CDPH may have issued additional warnings during this time period that we did not identify.

Seven of the 12 unresolved warnings would require follow-up inspections—which CDPH did not conduct—to confirm that the facility owners made required operational changes.²⁹ The remaining five warnings concerned permit and Certificate of Operation compliance, issues that CDPH could have followed up on without needing to conduct inspections.

CDPH has no policy regarding when, if ever, inspectors are authorized (or expected) to issue warnings rather than citations, nor how inspectors should ensure facilities correct violations noted in warnings. Compounding the problem, inspectors use at least three different codes to signify that a warning has been issued. As a result, CDPH supervisors lack the complete and reliable information needed to track the status and resolution of warnings.

RECOMMENDATIONS

If CDPH continues to allow discretionary warnings, it should ensure that inspectors follow up promptly. The Department should identify a single code to be used for all warnings, and management should regularly generate reports to monitor their status. CDPH should also document in its inspection manual all follow-up and enforcement activities required when an inspector issues a warning.

MANAGEMENT RESPONSE

“CDPH intends to continue using defect notices [(warnings)] to allow inspectors some discretion. However, CDPH will limit the defect code types that inspectors may issue.

“CDPH will also develop processes to ensure defect notices are resolved in a timely manner. CDPH will seek a modification in Hansen that automatically flags such inspections with a ‘Warning’ result code. The flagged inspection will be reassigned to the inspector using Field Force Manager. The new inspection will appear as a mandatory job in the inspector’s cell phone to be completed by a certain date, e.g. within 30 days. This will require technical updates to Hansen and coordination with DoIT.

“The existing draft inspection manual outlines the enforcement activities when inspectors must follow-up on warnings, including Defect Notices and Notices of Violations (NOVs) [(citations)]. With the consultant’s assistance, the manual will be updated and reissued to all inspectors, along with appropriate training.”

²⁹ One facility received a complaint inspection for an unrelated issue, but the inspection did not address the outstanding warning.

FINDING 5: CDPH RESOLVES APPROXIMATELY 84% OF AIR-QUALITY COMPLAINTS WITHIN 24 HOURS, BUT THE DEPARTMENT SHOULD RECORD COMPLAINT-BASED INSPECTIONS MORE CONSISTENTLY.

CDPH responds to a variety of air-quality complaints regarding emissions, odors, and fugitive dust. The Department has adopted an internal performance goal of resolving each complaint within 24 hours.³⁰ OIG found that, between 2015 and 2017, CDPH met this goal approximately 84% of the time, as illustrated in Figure 11.

FIGURE 11: CDPH RESOLVED MOST AIR-QUALITY COMPLAINTS WITHIN 24 HOURS

	2015	2016	2017
 Complaints resolved within 24 hours	84% (230 of 274)	88% (347 of 395)	81% (318 of 393)
 Complaints that took over 24 hours to resolve	32	36	35
 Complaint inspections that lacked a resolved date so could not be assessed	12	12	40

Source: OIG analysis of CDPH complaint data

CDPH’s high rate of timely complaint-based inspections is due to its prioritization of that group. The Department directs inspectors to conduct complaint-based inspections before periodic inspections because, while the latter are intended to prevent violations from occurring, complaints identify conditions that may constitute immediate threats to public health and the environment.

It bears noting that although CDPH’s goal of addressing complaints within 24 hours is commendably aggressive, the Department acknowledged to OIG that many complaints are difficult to resolve due to the fleeting nature of the alleged problem. Odors or fugitive dust, for example, may be discernable for less than an hour.

³⁰ CDPH said a “resolved complaint” means that an inspector went to the site and performed an inspection; it does not necessarily mean any enforcement action was taken. In many cases, inspectors noted they were unable to observe or measure the alleged violations.

Consequently, by the time an inspector arrives on site there may be no evidence supporting the complaint. Moreover, CDPH does not have inspectors available around the clock, so complaints made during the evenings or over the weekend cannot be addressed until the next weekday at the earliest. Some organizations told OIG that CDPH's slow response time frustrates their communities, and expressed their perception that the former Department of Environment responded more quickly to air-quality complaints.

As shown in Figure 11, some complaint inspections lacked a resolved date in CDPH's inspection system. CDPH stated that this may be a result of inspectors recording the complaint response as a periodic inspection. This sort of inconsistent record keeping makes it harder for CDPH to identify and measure performance, resulting in an incomplete picture of how efficiently and effectively its inspectors are dealing with complaints.

RECOMMENDATIONS

To ensure data consistency and accurately measure air-quality complaint resolution, CDPH should direct inspectors to record any complaint inspection in the original complaint record within its inspection system. These instructions should be documented in the Department's inspection manual.

MANAGEMENT RESPONSE

"CDPH will evaluate the option of requiring inspectors to record any complaint inspection in the original complaint record. There are several reasons why an inspector might need to open a new inspection report rather than enter the report in the original complaint record (e.g., the property address provided in the complaint was incorrect or there are multiple follow-up inspections in response to a single complaint). However, CDPH will seek a modification in Hansen so that anytime an inspector does this, a comment must be entered in the inspection log directing users to see the relevant inspection number. This will require technical updates to Hansen and coordination with DoIT.

"CDPH will review and revise its inspection manual as necessary. In the meantime, CDPH will create a policy to clarify documenting complaints and will train inspectors on the new policy."

FINDING 6: THE INFORMATION REGARDING AIR-QUALITY PERMITS, COMPLAINTS, AND INSPECTIONS AVAILABLE ON THE CITY'S DATA PORTAL IS INCOMPLETE.

In December 2012, former Mayor Rahm Emanuel signed an executive order requiring the City to create the Data Portal for the stated purpose of facilitating transparency and accountability to the public through data and information sharing, thereby encouraging and allowing residents to “participate in government in a meaningful manner.”³¹ OIG’s review of CDPH’s permit, complaint, and inspections datasets on the Data Portal found inaccuracies and missing data.

(a) Permit Data



The Environmental Permits data set is described as containing all permits issued by the Department since January 1, 2012.³² However, we found that 1,536 (or 10.8%) of the 14,272 unique Air Pollution Control permit applications in the dataset related to permits that the City never actually issued. We also identified at least 20 active permits in the dataset that appeared to be miscategorized (e.g., dry cleaning facilities that erroneously had a general air pollution permits rather than dry cleaning facility permits).

(b) Complaint Data



The Environmental Complaints data set is described as containing all environmental complaints received by the Department since January 1, 2012.³³ By comparing information on the Data Portal to the Department’s air-quality complaint records, we identified 932 complaint records that were missing from the Portal. CDPH management did not know why the records were missing.

³¹ City of Chicago, Office of the Mayor, Open Data Executive Order (No. 2012-2), December 10, 2012, accessed May 30, 2019,

https://www.chicago.gov/city/en/narr/foia/open_data_executiveorder.html

³² The data set also contains permits issued by the Department of the Environment from January 1993 to December 31, 2011, City of Chicago, Data Portal, CDPH Environmental Permits, accessed May 30, 2019,

<https://data.cityofchicago.org/Environment-Sustainable-Development/CDPH-Environmental-Permits/ir7v-8mnc8>.

³³ City of Chicago, Data Portal, CDPH Environmental Complaints, accessed May 30, 2019,

<https://data.cityofchicago.org/Environment-Sustainable-Development/CDPH-Environmental-Complaints/fypr-ksnz>.

(c) Inspections Data



The Environmental Inspections data set is described as containing inspections conducted by the Department since January 1, 2012.³⁴ We compared this data set to the Department's inspection records and identified 3,813 inspection records with results of "pass," "reinspect," "violation," and "warning" that were missing from the Data Portal. CDPH staff stated that these inspection records were missing because the computer code used to update the Data Portal excluded inspection records with blank inspection narratives and addresses.

RECOMMENDATIONS

CDPH should remove unissued permits from the Data Portal, and determine if the 20 potentially miscategorized active permits require correction. CDPH should also review each complaint record that is missing from the Data Portal, determine the cause for its omission, and ensure that it is added. Finally, CDPH should identify and correct any system process errors preventing inspection records from uploading to the Data Portal.

MANAGEMENT RESPONSE

"CDPH will verify and change as needed the 20 potentially miscategorized active permits."

"CDPH will review these missing records, assess the reason(s) why they are missing in the Data Portal, and determine if the records warrant publishing in the Data Portal. If there is inspection data to publish (rather than administrative duplication, for example), it will be published."

"CDPH will discuss and address with DoIT any potential system failures that are preventing all valid records from appearing in the Data Portal."

³⁴ City of Chicago, Data Portal, CDPH Environmental Inspections, accessed May 30, 2019, <https://data.cityofchicago.org/Environment-Sustainable-Development/CDPH-Environmental-Inspections/i9rk-duva>

FINDING 7: CDPH'S ENVIRONMENTAL RECORDS LOOKUP TABLE IS ORGANIZED IN A MANNER THAT IS EASY FOR THE PUBLIC TO USE AND UNDERSTAND.

CDPH created a Lookup Table on the City's Data Portal that allows users to search addresses and view environmental records related to the site, including complaint history, periodic inspections, enforcement actions, environmental permits, and the presence of under- or aboveground storage tanks.³⁵ In OIG's assessment, the Lookup Table provides information in user-friendly and readily understandable manner.

(a) Permit Data



Users can review a facility's permit history. Available information includes the type and quantity of equipment applied for, as well as the name of the business or individual that applied for the permits.

(b) Complaint Data



Users can review original complaint narratives entered by 311, the date the complaints were received, and CDPH's inspection narratives, which also include the date and findings of the inspection.

(c) Inspections Data



Users can review the type of inspections performed at a specific site (e.g. solid waste, complaint, air-quality), as well as the date of the inspection and the inspector's written narrative report, which details their observations and whether they issued any citations for violations.

CDPH's environmental records Lookup Table provides useful information to the public, policymakers, and researchers, allowing them to assess the impact that certain sites may have on public health and the environment. Perhaps most important, members of the public can use this tool to view the history of complaint-based and periodic inspections at specific addresses, as well as the findings and outcomes of such inspections. Providing this sort of helpful data to the public creates

³⁵ City of Chicago Data Portal, Department of Public Health, "CDPH Environmental Records Lookup Table," accessed May 30, 2019, <https://data.cityofchicago.org/Environment-Sustainable-Development/CDPH-Environmental-Records-Lookup-Table/a9u4-3dwb>

transparency and bolsters faith in City agencies. By addressing the issues identified above in Finding 6, CDPH can improve on its already strong performance in this area.

IV. OBJECTIVES, SCOPE, AND METHODOLOGY

A. OBJECTIVES

The objectives of the audit were to determine if CDPH,

- meets its air-quality inspection frequency goals;
- ensures that applicable facilities maintain a valid Certificate of Operation;
- responds to air-quality complaints within 24 hours; and
- maintains complete and accurate records on the City's Data Portal.

B. SCOPE

This audit examined CDPH's processes related to air pollution prevention, including permitting, inspections, and data provided to the public.

We analyzed Certificate of Operation data between 2012 and 2017 and inspection data between 2015 and 2017.

We did not assess the quality of inspections due to the engineering and technical expertise that would be required.

C. METHODOLOGY

To address all objectives, OIG conducted more than 60 interviews with CDPH supervisors, inspectors, and administrative staff, as well as community groups, environmental experts, and peer jurisdictions. We reviewed Chicago's Environmental Protection and Control Ordinance, the federal Clean Air Act, and delegation agreements between IEPA and the City of Chicago. OIG also reviewed CDPH process flowcharts, policies, and procedure draft documents. We assessed the reliability of the Department's permit, Certificate of Operation, inspection, and complaint data by (1) testing for internal inconsistencies between data fields, (2) reviewing existing information about the data and the system that produced them, and (3) interviewing agency officials knowledgeable about the data. Although we identified some issues in the Department's permit data, we determined that the permit, Certificate of Operation, inspection, and complaint data were sufficiently reliable for the purposes of this audit.

1. PERIODIC INSPECTIONS

To determine if CDPH met its goals for inspection frequency, OIG reviewed Department records from 2015 to 2017. Specifically, for delegated facilities, we selected

a random, representative sample of 85 facilities that had been open since 2015 and reviewed CDPH's inspection system to determine if they were inspected every year from 2015 to 2017.³⁶ For category A1 and A2 facilities, we reviewed all 88 facilities that had been open since 2015 to determine if they received inspections at least once every two years from 2015 to 2017. For category B facilities, we selected a random, representative sample of 87 facilities that had been open since 2015 and reviewed their inspection file to determine if they were inspected at least once every two years from 2015 to 2017.³⁷ For category C facilities, we selected a random, representative sample of 86 facilities that have been open since 2015 to determine if they were inspected at least once from 2015 to 2017.³⁸ While reviewing permit records we found facilities that had not been assigned to a category.

We also reviewed inspection records to identify all inspections that resulted in a warning from September 16, 2017 to September 15, 2018. For each warning, we reviewed CDPH's records to determine if the issue had been resolved within 30 days.

To determine if CDPH accurately categorized facilities in their record system (Hansen 8), we reviewed facilities designated as "P2" (Pollution Prevention). Specifically, for each facility, we used a formula to search in a comment field for words such as: "condo," "grind," "tuck," "mason," "demol," "lead," "brick," and "cleaner" to determine if the permit categorization did not match the comments. We then manually reviewed each positive result to confirm.

2. CERTIFICATES OF OPERATION

To determine if CDPH ensured that applicable facilities acquired Certificates of Operation between 2012 and 2017, OIG reviewed the Chicago Environmental Code and analyzed Department records. Specifically, we established a population of relevant facilities for each year based on when the facility received a permit and whether it was required to obtain a Certificate of Operation. We then reviewed each

³⁶ The estimated inspection frequency rate in the population is based on observations of rates in our probability sample of delegated facilities. Because this estimate is based on a probability sample, it is subject to sampling error. A different probability sample could have produced different results. Based on the size of our sample and the method used to select it, we are 95% confident that the inspection rate is between 9.96% and 25.10%.

³⁷ The estimated compliance rate in the population is based on observations of the inspection compliance rates in our probability sample of category B facilities. Because this estimate is based on a probability sample, it is subject to sampling error. A different probability sample could have produced different results. Based on the size of our sample and the method used to select it, we are 95% confident that the compliance rate is between 28.73% and 47.74%.

³⁸ The estimated compliance rate in the population is based on observations of the inspection compliance rates in our probability sample of category C facilities. Because this estimate is based on a probability sample, it is subject to sampling error. A different probability sample could have produced different results. Based on the size of our sample and the method used to select it, we are 95% confident that the compliance rate is between 41.2% and 61.12%.

facility's fee records to determine if it had acquired a Certificate of Operation each year that one was required.

3. COMPLAINT-BASED INSPECTIONS

To determine if CDPH responds to complaints within 24 hours, OIG reviewed all air-quality complaints entered into CDPH's inspection system by the Department for 2015, 2016, and 2017. Specifically, we measured the time from a complaint being entered into the system until an inspector marked the complaint as resolved. For any complaints that were not resolved within 24 hours, we manually reviewed the inspection reports to determine cause.

4. DATA PORTAL

To determine if CDPH maintains complete and accurate environmental permit, inspections, and complaint records on the Data Portal, we reviewed the Data Portal for internal consistency and accuracy relative to the Department's permitting and inspection system records. Specifically, in the Data Portal, we looked for blank fields, dates out of sequence, comments that did not match the category of the permit or inspection, comments with dates that did not match relevant fields, and duplicates. We also matched the Data Portal with records exported from CDPH's permitting and inspections system to ensure that all appropriate records had been posted to the Portal and that individual fields within each record matched.

Finally, we reviewed the Department's Environmental Records Lookup Table to determine if it was organized in a way that is easy for the public to use and understand. Specifically, we searched for eight addresses that are of known interest to the public or that had received media attention. We then reviewed the data available for each address to ensure that it matched the Department's records in Hansen 8 and to determine whether the data provided would allow the public to understand the permit, inspection, and complaint history of that address.

D. STANDARDS

We conducted this audit in accordance with generally accepted Government Auditing Standards issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

E. AUTHORITY AND ROLE

The authority to perform this audit is established in the City of Chicago Municipal Code § 2-56-030 which states that OIG has the power and duty to review the programs of City government in order to identify any inefficiencies, waste, and potential for misconduct, and to promote economy, efficiency, effectiveness, and integrity in the administration of City programs and operations.

The role of OIG is to review City operations and make recommendations for improvement.

City management is responsible for establishing and maintaining processes to ensure that City programs operate economically, efficiently, effectively, and with integrity.

APPENDIX A: DELEGATION OF FORMER DOE RESPONSIBILITIES TO OTHER CITY DEPARTMENTS

The following image depicts the delegation of DOE responsibilities and authorities to other City departments upon DOE's dissolution in 2011. Some of the initiatives may no longer exist or may have been reassigned to other departments.



Chicago Police Department

- Noise Ordinance enforcement



Department of Public Health

- Permits and inspections for air pollution, solid waste, recycling, and storage tanks
- Citywide air quality and climate change preparedness policy
- Hazardous materials response
- Environmental complaint inspections



Mayor's Chief Sustainability Officer

- Environmental committees, events, and agendas
- Clean Air Counts
- Energy efficient community projects
- Citywide policies for climate change, air quality, urban forests, energy, and waste management



Department of Transportation

- Clean air initiatives and committees
- Clean Air Counts
- Chicago Center for Green Technology
- Greencorps Chicago
- Citywide policies for climate change, air quality, urban forests, and waste management



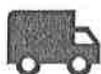
Department of Buildings

- Stormwater permits and enforcement, flood plain review
- Energy conservation code enforcement
- Chicago Green Homes program



Department of Procurement Services

- Clean Diesel Contracting Ordinance



Fleet and Facility Management

- Utility oversight and assessment of geothermal, wind, and photovoltaic installations for city-owned properties
- Brownfield policy
- Waste management support



Planning and Development

- Waste-to-Profit Network
- Refrigerant management program
- Citywide policies for climate change, urban forests, waste management, and natural resource protection



Streets and Sanitation

- Multi-unit building recycling enforcement
- City-wide zero waste initiatives

Source: OIG review of DOE memos, MCC, and City Council Journal of Proceedings.

MISSION

The City of Chicago Office of Inspector General (OIG) is an independent, nonpartisan oversight agency whose mission is to promote economy, efficiency, effectiveness, and integrity in the administration of programs and operations of City government. OIG achieves this mission through,

- administrative and criminal investigations by its Investigations Section;
- performance audits of City programs and operations by its Audit and Program Review Section;
- inspections, evaluations and reviews of City police and police accountability programs, operations, and policies by its Public Safety Section; and
- compliance audit and monitoring of City hiring and employment activities by its Hiring Oversight Unit.

From these activities, OIG issues reports of findings and disciplinary and other recommendations,

- to assure that City officials, employees, and vendors are held accountable for violations of laws and policies;
- to improve the efficiency and cost-effectiveness of government operations; and
- to prevent, detect, identify, expose, and eliminate waste, inefficiency, misconduct, fraud, corruption, and abuse of public authority and resources.

AUTHORITY

OIG's authority to produce reports of its findings and recommendations is established in the City of Chicago Municipal Code §§ 2-56-030(d), -035(c), -110, -230, and 240.

Cover image courtesy of City of Chicago Department of Fleet and Facility Management.

AUDIT TEAM

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