



City of New York

OFFICE OF THE COMPTROLLER

Scott M. Stringer
COMPTROLLER



MANAGEMENT AUDIT

Marjorie Landa

Deputy Comptroller for Audit

Audit Report on the Safety of the
Department of Parks and Recreation's
Public Swimming Pools

MH20-066A

June 15, 2021

<http://comptroller.nyc.gov>



THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
SCOTT M. STRINGER

June 15, 2021

Dear Residents of the City of New York:

My office has audited the New York City Department of Parks and Recreation (DPR) to determine whether DPR operates and maintains its outdoor public swimming pools in a manner that ensures the safety of pool patrons. We perform audits such as this to ensure that City agencies protect the safety of New Yorkers when they visit and use City facilities.

This audit found that while DPR generally operated and maintained its outdoor swimming pools in a safe manner, there were exceptions that increased risks to the health and safety of pool patrons and DPR staff. Visits during the 2019 summer pool season to a sample of 37 of DPR's 50 outdoor pool locations found 43 deficiencies that, based on DOHMH's criteria, were of a critical nature, including a high chlorine reading, tripping hazards, and damaged rescue tubes. Revisits to 7 of those pools in 2020 found that 10 of the 21 issues previously identified at these pools had still not been remediated. A review of issues noted by pool staff found that 5 of 29 sampled conditions requiring a skilled tradesperson to repair were not listed for repair in DPR's Asset Management Parks System (AMPS). Lists of lifesaving equipment in many of the pools' mandated Safety Plans have not been updated for at least 20 years and contain flotation devices that DPR no longer uses, but not the quantities of the flotation devices currently in use. Filter Plant Operators (FPOs) did not record readings for certain required water quality and pool operation tests in 280 of 425 sampled FPO Reports.

To address these issues, the audit made 14 recommendations, including that DPR should: improve controls to ensure that staff add work order requests for all issues that require a skilled tradesperson to perform the repair into AMPS; update Safety Plans for all pools and submit them to the New York State Department of Health and the New York City Department of Health and Mental Hygiene for review and approval; and establish written standards in its Operations Manual on how and how often FPOs should: record air temperatures, complete and record the results of the calcium hardness and total alkalinity tests, record the flow meter readings, and record the locations where the water samples are taken around the pool.

The results of the audit have been discussed with DPR officials, and their comments have been considered in preparing this report. Their complete written response is attached to this report.

If you have any questions concerning this report, please email my Audit Bureau at audit@comptroller.nyc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott M. Stringer".

Scott M. Stringer

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
Audit Findings and Conclusion	2
Audit Recommendations.....	2
Agency Response.....	3
AUDIT REPORT	4
Background	4
Objective.....	5
Scope and Methodology Statement.....	5
Discussion of Audit Results with DPR	5
FINDINGS AND RECOMMENDATIONS.....	7
Issues Observed at Outdoor Pools during Auditors' Visits.....	8
Follow-up Visits to Outdoor Pools	8
Recommendations	9
Operational Weaknesses.....	10
Deficiencies in Recording Repair Work Orders for Pool Issues in AMPS	10
Outdated Lists of Lifesaving Equipment in Pools' Safety Plans	11
Water Quality Testing Deficiencies	12
Recommendations	15
Other Matters.....	17
Filter Plants at Jackie Robinson and Astoria Pools Are in a State of Disrepair	17
Pool Information Not Updated on DPR's Website	18
Recommendations	18
DETAILED SCOPE AND METHODOLOGY.....	20
APPENDIX I	23
APPENDIX II	24
APPENDIX III	28
APPENDIX IV.....	30
APPENDIX V.....	31
ADDENDUM	

THE CITY OF NEW YORK OFFICE OF THE COMPTROLLER MANAGEMENT AUDIT

Audit Report on the Safety of the Department of Parks and Recreation's Public Swimming Pools

MH20-066A

EXECUTIVE SUMMARY

We conducted this audit to determine whether the New York City (City) Department of Parks and Recreation (DPR) operates and maintains outdoor public swimming pools in a manner that ensures the safety of pool patrons. DPR is responsible for operating outdoor swimming pools in City parks. DPR's Pool Mission is to maintain a safe and clean water recreation environment for all New Yorkers and to preserve and improve the infrastructure of the pools, pool decks, filter plants, and all surrounding areas.

During the pool season, DPR pool staff inspect pool facilities on a daily basis, before the pools open, to ensure that there is an adequate inventory of lifesaving equipment and supplies, that necessary signs are posted, and that the conditions of the facilities and the pool are adequate. If a condition is in need of repair and a skilled tradesperson is needed to perform the repair, pool staff record the issue in DPR's Asset Management Parks System (AMPS) to generate a work order.

Filter Plant Operators (FPOs) are responsible for maintaining the quality of the pool water to ensure that it is not irritating to the eyes and skin and safe for swimming. FPOs must test the water, take any necessary corrective steps if the water quality is not found to be at an acceptable level, and enter the results of the chlorine and pH readings into the FPO Daily Report of Operations (FPO Report). In addition to the chemical readings, the FPO must record other information, such as the weather, the air temperature, and flow meter readings.

During the summer, the City Department of Health and Mental Hygiene (DOHMH) Division of Environmental Health completes a Bathing Facility Inspection Report (DOHMH Inspection Report) for every outdoor pool at least once each summer pool season. The DOHMH Inspection Report includes information on the facility's pools and, if applicable, the violations each facility or pool received, which DOHMH Inspectors categorize as Critical Items or General Items. DPR staff must log into AMPS all DOHMH health code violations that require the services of a skilled tradesperson.

During the 2019 outdoor summer pool season, which covered the period from June 27, 2019 through September 8, 2019, DPR operated 77 outdoor swimming pools at 50 locations. Due to

the COVID-19 pandemic, there were restrictions and limitations put in place during the 2020 outdoor summer pool season. The season was shortened and ran for the period from July 24, 2020 through September 7, 2020. DPR operated 23 outdoor swimming pools at 15 locations.

Audit Findings and Conclusion

This audit found that while DPR generally operated and maintained its outdoor swimming pools in a safe manner, there were exceptions that increased risks to the health and safety of pool patrons and DPR staff members. During our observations, we found that the pool water was clear, the chlorine and pH readings were generally within DOHMH's acceptable levels, necessary signs were posted and the necessary lifesaving equipment was generally on deck, although certain obsolete equipment was also improperly present at some locations. Further, we found that AMPS contained work orders for 40 (95 percent) of the 42 health code violations that DOHMH Inspectors had issued to DPR. Additionally, our review of the FPO Reports found that pool staff generally recorded the hourly chlorine and pH readings for the pools we visited, as required.

However, we also found certain deficiencies and operational weaknesses that DPR should address. Through our visits to a sample of 37 outdoor pool locations during the 2019 summer pool season, we found 43 deficiencies that, based on DOHMH's established criteria, we identified as critical issues. These include a high chlorine reading at one location, tripping hazards, and damaged rescue tubes. In 2020, we revisited 7 of those pools and found that 10 of the 21 issues previously identified at those locations were still not remediated.

We also found that DPR staff did not consistently record work orders in AMPS as required for issues that pool staff noted on Pool Opening Inspection Check Lists, Daily Pool Reports, and FPO Reports (pool documents). We found that AMPS contained no records of work orders for 5 (17 percent) of the 29 sampled conditions requiring repair that pool staff noted on the pool documents. In addition, the lists of lifesaving equipment in many of the pools' mandated Safety Plans have not been updated for at least 20 years. Consequently, those plans include some flotation devices that DPR no longer uses, but do not include the required quantities of the flotation devices currently in use.

We also found that FPOs did not consistently record readings for certain required categories of water quality and pool operation tests. Of the 425 FPO Reports we reviewed, 280 (66 percent) had shortcomings; each either did not have one or more pieces of information, or lacked evidence of a required supervisor's sign-off on the water testing.

Under other matters, we observed potentially dangerous filter plant conditions that may pose health and safety risks to DPR's pool staff at the Jackie Robinson Pool and the Astoria Pool and found that DPR's website and individual pool webpages did not always reflect accurate pool information.

Audit Recommendations

Based on our findings, we make 14 recommendations, including:

- DPR should improve controls to ensure that staff add work order requests for all issues that require a skilled tradesperson to perform the repair into AMPS.
- DPR should update Safety Plans for all pools and submit them to NYSDOH and DOHMH for review and approval.

- DPR should establish written standards in its Operations Manual on how and how often FPOs should: record the air temperatures during the day, complete and record the results of the calcium hardness and total alkalinity tests, record the flow meter readings, and record the locations where the water tests are taken around the pool.
- DPR should inspect the filter plants at Jackie Robinson Pool and Astoria Pool, identify the source(s) of the leaks, and correct the issues.
- DPR should maintain and update its website and its individual pool webpages with current and accurate pool related information, including temporary pool closures for each day.

Agency Response

In its response, DPR generally agreed with all 14 recommendations.

AUDIT REPORT

Background

DPR maintains a municipal park system of more than 30,000 acres, including more than 1,900 parks and 1,000 playgrounds, as well as 36 recreation centers. DPR is also responsible for operating outdoor swimming pools in City parks. DPR's Pool Mission is to maintain a safe and clean water recreation environment for all New Yorkers and to preserve and improve the infrastructure of the pools, pool decks, filter plants, and all surrounding areas.¹

Before the outdoor pools open for the summer season, which usually runs from late June through Labor Day, DPR performs seasonal start-up maintenance. That maintenance includes repainting the pool, replacing lifesaving equipment, reinstalling chlorinators and circulation pumps, and general clean-up.

During the summer pool season, outdoor pools are open seven days a week from 11:00 a.m. to 3:00 p.m., and from 4:00 p.m. to 7:00 p.m. The one-hour break between sessions allows maintenance personnel to clean the pool area and FPOs to adjust the water chemistry.

Prior to the pool's opening for the day, a Pool Manager or Pool Supervisor must inspect the pool facilities and record the inspection on the Pool Opening Inspection Check List. The Pool Opening Inspection Check List provides guidance to ensure that there is an adequate inventory of lifesaving equipment and supplies, that necessary signs are posted, and that the conditions of the facilities and the pool are adequate. It also includes space to record comments and actions taken to address any deficiencies. Throughout the day, pool staff also fill out the Daily Pool Report, noting, among other things, the number of staff present, attendance for the morning and afternoon sessions, and any visits by DOHMH Inspectors or DPR personnel.

FPOs are responsible for maintaining the quality of the pool water to ensure that it is not irritating to the eyes and skin and safe for swimming. FPOs must test the water, take any necessary corrective steps if the water quality is not found to be at an acceptable level, and enter the results of the chlorine² and pH³ readings into the FPO Report. In addition to the chemical readings, the FPO must record other information, such as the weather, the air temperature, the pool water's calcium hardness,⁴ total alkalinity,⁵ and flow meter readings.

¹The filter plant houses the water treatment system consisting of pumps, piping, filters, water conditioning and disinfection equipment, and other accessory equipment, to clarify, chemically balance, and disinfect the pool water.

² Chlorine is the chemical most commonly used for killing bacteria in swimming pools and is used as a disinfectant to destroy harmful bacteria, viruses, and fungi. The chlorine test readings run in 0.5 increments from 0.5 to 3.0, then to 5.0 and 10.0.

³ The pH scale is used to specify the acidity or alkalinity in pool water. The control of pH is important because it affects bather comfort as well as the chlorine activity in the pool water. The pH scale runs from 0 to 14 with a pH of 7 being neutral. The pH test readings are measured in increments of 0.2 ranging from 6.8 to 8.2.

⁴ Calcium hardness is the measure of the calcium content of pool water. If it is too low, the water becomes aggressive and will draw calcium from the cement walls and floor of the pools until the calcium demand of the water is satisfied. If calcium is constantly drawn from the wall of the pool, the walls will become saturated with water and develop leaks causing the walls to weaken. The range for calcium hardness is 140 to 500 parts per million (ppm), with 300 ppm as ideal.

⁵ Total alkalinity is the measure of the alkalinity of the pool water, which is needed in order to stabilize the pH. It also measures the water's ability to neutralize acids and resist changes in pH. Very low alkalinity is a cause for severe eye burn and mucous membrane irritation among swimmers. The ideal range for total alkalinity is 80 to 120 mg/l.

If the pool staff identifies or learns of a condition in need of repair, the pool staff will attempt to fix it. If a skilled tradesperson is needed to perform the repair, pool staff record the issue in AMPS to generate a work order. For issues related to the pools' filter plants, FPOs are instructed to call a DPR hotline, and DPR staff who receive or are made aware of those calls will determine whether to dispatch a tradesperson to the location.

During the summer, the DOHMH Division of Environmental Health completes a DOHMH Inspection Report for every outdoor pool at least once each summer pool season. The DOHMH Inspection Report includes a cover sheet with information on the facility's pools and, if applicable, a listing of the violations each facility or pool received, which DOHMH Inspectors categorize as Critical Items or General Items. The DOHMH Inspection Report's following pages list the DOHMH Inspector's notes, which include details of the inspector's review of the pools, equipment, and lifeguard certificates, as well as explanations of any violations the pools may have received. DPR staff must log into AMPS all DOHMH health code violations that require the services of a skilled tradesperson.

During the 2019 outdoor summer pool season, which covered the period from June 27, 2019 through September 8, 2019,⁶ DPR operated 77 outdoor swimming pools at 50 locations—13 Olympic pools, 23 intermediate pools, 24 wading pools, 14 mini-pools, and 3 diving pools. Due to the COVID-19 pandemic, there were restrictions and limitations put in place during the 2020 outdoor summer pool season. The season was shortened and ran for the period from July 24, 2020 through September 7, 2020. DPR operated 23 outdoor swimming pools at 15 locations—8 Olympic pools, 7 intermediate pools, and 8 wading pools.

Objective

The objective of this audit was to determine whether DPR operates and maintains outdoor public swimming pools in a manner that ensures the safety of pool patrons.

Scope and Methodology Statement

We conducted this performance audit in accordance with generally accepted government auditing standards. 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. This audit was conducted in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, §93, of the New York City Charter.

The scope of this audit was July 1, 2018 through September 4, 2020. Please refer to the Detailed Scope and Methodology at the end of this report for the specific procedures and tests that were conducted.

Discussion of Audit Results with DPR

The matters covered in this report were discussed with DPR officials during and at the conclusion of this audit. A preliminary draft report was sent to DPR on March 26, 2021 and was discussed at

⁶ Locations with Olympic and intermediate pools were open until September 8, 2019; mini-pools were open until September 2, 2019.

an exit conference held on April 15, 2021. On May 6, 2021 we submitted a draft report to DPR with a request for written comments. We received a written response from DPR on May 19, 2021.

In its response, DPR generally agreed with all 14 recommendations. DPR stated: “Parks is committed to addressing the Report’s findings during the 2021 pool season to the maximum extent possible. We are pleased that the Report found that Parks generally operated outdoor pools in a safe manner.”

The full text of DPR’s response is included as an addendum to this report.

FINDINGS AND RECOMMENDATIONS

This audit found that while DPR generally operated and maintained its outdoor swimming pools in a safe manner, there were exceptions that increased risks to the health and safety of pool patrons and DPR staff members. During our observations, we found that the pool water was clear, the chlorine and pH readings were generally within DOHMH's acceptable levels, the necessary signs were posted, and the necessary lifesaving equipment was generally on deck, although certain obsolete equipment was also improperly present at some locations. Further, we found that AMPS contained work orders for 40 (95 percent) of the 42 health code violations that DOHMH Inspectors had issued to DPR. Additionally, our review of the FPO Reports found that pool staff generally recorded the hourly chlorine and pH readings for the pools we visited, as required. In addition, of the 140 chlorine and pH readings we observed during our visits, we found that FPOs recorded all but 4 accurately in the FPO Reports we reviewed. Also, DPR completed its own 2016 internal audit of the outdoor pools based on the findings of the 2013 Comptroller's audit to determine whether the Comptroller's recommendations were implemented.⁷ Based on its audit, DPR established a new pool health and safety policy, which is documented in the DPR Policy Memo dated February 2015.

However, we also found certain deficiencies and operational weaknesses that DPR should address to help ensure the health and safety of the public, staff, and the efficient operation of the City's public pools. Through our visits to a sample of 37 outdoor pool locations during the 2019 summer pool season, we found 43 deficiencies that, based on DOHMH's established criteria, we identified as critical issues. These include a high chlorine reading at one location, tripping hazards, and damaged rescue tubes. In 2020, we revisited 7 of those pools and found that 10 of the 21 issues previously identified at those locations were still not remediated.

We also found operational weaknesses. Specifically, DPR staff did not consistently record work orders in AMPS as required for issues that pool staff noted on pool documents. We found that AMPS contained no records of work orders for 5 (17 percent) of the 29 sampled conditions requiring repair that pool staff noted on the pool documents. In addition, the lists of lifesaving equipment in many of the pools' mandated Safety Plans have not been updated for at least 20 years. Consequently, those plans include some flotation devices, specifically, ring buoys and torpedo buoys, that DPR no longer uses, but do not include the required quantities of the flotation devices currently in use, specifically rescue tubes.

We also found that FPOs did not consistently record readings for certain required categories of water quality and pool operation tests, such as calcium hardness, total alkalinity, and flow meter readings. Of the 425 FPO Reports we reviewed, 280 (66 percent) had shortcomings; each either did not have one or more pieces of information, or lacked evidence of a required supervisor's sign-off on the water testing.

In addition, during our visits to the Jackie Robinson Pool and the Astoria Pool, we were informed about issues in the filter plants, where we then observed potentially dangerous conditions that may pose health and safety risks to DPR's pool staff. Finally, we found that DPR's website and individual pool webpages did not always reflect accurate and up-to-date pool information.

⁷ Comptroller's Office *Audit Report on the Health and Safety Conditions of Department of Parks and Recreation's Public Swimming Pools* (#MH12-137A), issued August 22, 2013.

Issues Observed at Outdoor Pools during Auditors' Visits

Pools are to be maintained in a clean and safe condition, as prescribed by Article 165 of the New York City Health Code (Health Code). In order to keep the pools clean and safe:

- The water shall be chemically balanced to maintain clarity, proper disinfection, total alkalinity, and pH level.
- No overhead electrical wires should be within 20 feet of the pool.
- Lifesaving equipment shall be kept in good repair and readily accessible near the pool deck at all times when the pool facility is open, and shall include: rescue tubes; a reaching pole at least 15 feet long; a spine board with straps, a head immobilizer, and handholds; first aid kit; resuscitation equipment; and blankets.
- The pool decks shall be kept clean and free of puddled water; cracks in the pool decks shall be repaired when they may present a tripping hazard, or a potential cause of lacerations.

We visited 37 outdoor swimming pool locations between August 9 and August 30, 2019, at which 52 pools in total were operating—some locations had more than one pool. (See Appendix I for a list of the locations and pools that we visited.)⁸ As part of our observations, we checked 11 elements at each pool *location* (totaling 407 elements) and 8 elements at each *pool* (totaling 416 elements), for a total of 823 elements in all. Of these, we found 756 (92 percent) to be in satisfactory condition. (Please see Appendix II for the results of our observations at the pools.) Of the remaining 67 elements at 29 pool locations that needed correction, we determined that 43 (64 percent) involved critical issues and 24 (36 percent) involved general issues, based on the Health Code and DOHMH criteria. Critical issues observed included: a high chlorine reading (10.0), an inaccurate pool depth, a low fence, wires running above a wading pool, and tripping hazards. General issues observed included paint chips and peeling paint. (Please see Appendix III for a breakdown of these issues.) In addition, we found that two lifeguards, one each at Marie Curie Park and PS 186 Playground, both in Queens, did not know how to operate the oxygen tanks.

We informed DPR of the issues we found in correspondence dated August 27, 2019 and September 13, 2019. DPR responded that some of the issues were fixed and that the remainder would be addressed before the start of the next summer pool season.

Some issues, if left unresolved, may become worse over the course of the season. Critical issues could result in a patron getting injured or sick, and, if an injury occurs, could become a potential liability for the City. Accordingly, DPR should review the specific issues this audit identified and address them before the next pool season.

Follow-up Visits to Outdoor Pools

Due to restrictions put in place during the COVID-19 pandemic, DPR opened only 15 of its 50 outdoor pool locations during the 2020 summer pool season, and only from July 24, 2020 through September 7, 2020.

On September 3 and 4, 2020, we conducted follow-up visits at 7 of the outdoor pool locations we previously visited in 2019 to determine whether the 21 issues—14 critical and 7 general—we

⁸ At these 37 pool locations, there were a total of 52 individual pools. Fifteen of the 37 locations had a wading pool as well as an intermediate- or Olympic-sized pool.

identified at those pools during the 2019 season were remediated.⁹ We found that 10 (48 percent) of the 21 issues that we previously identified at the 7 pool locations were not corrected, as shown in Table I. (A more detailed analysis is presented in Appendix IV.)

Table I
Summary Results of Revisits
Conducted during 2020

Borough	Pool	Total Issues Followed Up	Issues Remediated				Issues Not Remediated				New Issues Found	
			Critical	General	Total	Percent	Critical	General	Total	Percent	Critical	Total
BX	Crotona	3		1	1	33%	2		2	67%	2	2
BX	Haffen	2	1	1	2	100%			0	0%		
BK	Betsy Head	2		1	1	50%	1		1	50%		
BK	Kosciuszko	5	3	1	4	80%	1		1	20%		
MN	Hamilton Fish	3		1	1	33%	2		2	67%		
MN	Wagner	3	1		1	33%	1	1	2	67%	1	1
QN	Liberty	3	1		1	33%	1	1	2	67%		
Totals	7	21			11	52%			10	48%		3

Examples of critical issues that were not remediated included ponding of water and tripping hazards on pool decks. In addition, we found three new issues at two pools, which included broken concrete on the pool deck and a missing latch on the gate between the wading pool and the main pool. We shared these observations with DPR officials shortly after our follow-up visits to the pools.

Recommendations

1. DPR should address any outstanding issues listed in this report if it has not already done so.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will address outstanding issues listed in the report. During preseason preparation and in-season operations, staff conducts inspections to identify new or outstanding issues and

⁹ Due to safety concerns related to COVID-19, we were not able to conduct our follow-up observations until the end of the 2020 summer pool season. As a result, DPR will not be able to take any corrective measures based on our observations until the following summer pool season.

schedules repairs. Routine seasonal work is performed, including scraping and painting pools, tightening ladders, and replacing damaged rescue tubes.”

Auditor Comment: We are pleased that DPR has agreed to implement this recommendation. However, we note that there were some issues observed from the 2019 pool season that we found were not remediated at the end of the 2020 pool season when we completed follow-up observations at those pools.

2. DPR should improve its efforts to identify and address hazardous conditions in a timely manner.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will work to improve methods to identify and address hazardous conditions in a timely manner. All pools undergo a thorough assessment prior to and at the end of each season. Pools are also inspected daily to identify and remedy potential hazards. When a hazardous condition is identified that requires a professional tradesperson, a work order request is created. Throughout the day, staff takes readings of water chemistry to detect and correct harmful water conditions. To maintain safe pool water, DPR adheres to more stringent water readings than required by state regulations.”

Operational Weaknesses

Deficiencies in Recording Repair Work Orders for Pool Issues in AMPS

According to a DPR Policy Memo dated February 2015, any conditions requiring repair found during the summer pool season should be logged into AMPS.

Only some of the Borough Coordinators, Pool Managers, and Pool Supervisors can enter information directly into AMPS to generate work orders, while other on-site pool staff with those and other titles do not have access to AMPS. DPR officials explained that pool staff without access to AMPS can email or call Maintenance and Operations at Citywide Services to report a problem that needs a repair. Further, a tradesperson who completes a repair can and should enter the relevant information directly into AMPS in response to the work order, including the date the repair was completed, and the identity of the person who completed the repair.

We randomly selected 29 issues that we identified as conditions requiring repair based on the pool staffs’ notations in the pool documents we obtained from DPR for the 37 locations we visited during the 2019 summer pool season. We examined AMPS and determined that work orders could not be identified for 5 (17 percent) of the 29 sampled repair issues. For three of those issues, we found additional information within the pool documents that indicated that pool staff had reported the issue and that one of the three issues had been fixed.

In addition, for one of the two remaining issues, we could not determine whether the issue had been addressed before the pool was closed on September 8, 2019, because it was never entered into AMPS. The issue was recorded as “Pump water out chlorine room.” It was first mentioned in the pool documents on June 27, 2019, and was then mentioned a total of 22 more times through September 4, 2019, 69 days later. When we asked DPR about this issue, officials replied that this was a “[r]ecurring issue of ground water (High water table) coming into Chlorine containment area through the wall. Citywide Services uses Sump pump to drain water from the containment area as needed.” DPR provided no evidence that this issue has been resolved.

Conditions requiring repair that are not recorded in AMPS may not be remediated and consequently may worsen substantially over time. In addition, unresolved conditions may lead to injuries of both pool patrons and staff members, alike.

Most DOHMH Violations Identified by Inspectors Were Recorded in AMPS

During the summer pool season, DOHMH inspects each DPR outdoor pool location at least once. At the conclusion of each inspection, the DOHMH Inspector completes the DOHMH Inspection Report, recording all pertinent information concerning the inspection, including any health code violations issued. According to the February 2015 DPR Policy Memo, DPR staff must enter work orders in AMPS for all DOHMH health code violations that require a skilled tradesperson to address.

We found that in most instances pool staff logged DOHMH health code violations into AMPS with corresponding work orders to ensure that required repairs would be completed. Specifically, our comparison of the DOHMH Inspection Reports with AMPS records revealed that 40 (95 percent) of the 42 health code violations issued during the summer of 2019, which we identified as requiring repairs by a skilled tradesperson were logged as work orders in AMPS as required. However, in two instances pool staff did not log DOHMH violations into AMPS during the 2019 summer pool season. These violations involved two ladders not properly maintained at one pool, and a missing flowmeter at a different pool. Regarding the latter violation, DPR subsequently provided a work order showing that a flowmeter was installed during the 2020 pool season. (The work order was initiated on August 4, 2020 and completed the following day.)

Outdated Lists of Lifesaving Equipment in Pools' Safety Plans

According to the NYC Health Code §165.19, "Pool Safety Plan", DPR shall develop and implement a written safety plan with policies and procedures to be followed by pool personnel. Each pool's Safety Plan should list the required items of lifesaving equipment that must be present near or on the pool deck at that specific pool location.

However, we found that Safety Plans at several pools we visited listed outdated lifesaving equipment that DOHMH has specifically advised is no longer safe to use. Specifically, at the 37 pool locations we visited, 33 Safety Plans listed torpedo and/or ring buoys.¹⁰ However, DPR no longer uses those items as rescue devices at City pools because they are made of hard plastic that could potentially cause further injury when thrown to a swimmer in distress.

The hard plastic buoys were supposed to have been replaced with rescue tubes, which are made of foam and covered by a soft plastic cover. However, although rescue tubes are listed in the Safety Plans for 23 of the 37 pool locations we visited, those Safety Plans also state, incorrectly, that none are required.

According to DPR officials, pool Safety Plans are not updated unless a major change to the pool environment has been implemented. They further said that they consider a change in the type of equipment required minor and believe updating the plan to reflect it is unnecessary, because both the lifeguards and pool supervisory staff know the type and quantity of the lifesaving equipment their assigned pools require. However, auditors did observe ring and/or torpedo buoys at some of

¹⁰ Of the 37 pool locations we visited, the Equipment Lists for 20 listed torpedo buoys and 33 of the pools' Equipment Lists listed ring buoys.

the pools that we visited during the 2019 summer pool season. It should be noted that some of the buoys were not on the pool decks but were in storage areas shown to the auditors.

DPR's current position on this point conflicts with its response to a 2013 Comptroller's audit report that noted that some Safety Plans had been issued more than 15 years prior. At that time, DPR officials stated in their written response: "Parks agrees. Parks has already begun the updating process and plans to submit them to DOHMH." In addition, DPR stated in its 2016 internal audit that:

Updates to the pool Safety Plans are ongoing. Safety Plan templates have been created for each type of pool (Olympic, Intermediate and Mini), and reviewed by DPR senior management. The templates must also be reviewed and approved by DOHMH. However, prior to final approval the safety plans must include content relative to the Lifeguard staff whose review and input is required prior to DOHMH approval. Following DOHMH approvals, updates will be made to all outdated pool safety plans. [Emphasis original]

However, as of the 2019 summer pool season, the Safety Plans for 30 of the 37 pool locations we visited (81 percent) were dated between September 1995 and September 1996. According to DPR officials, the change in flotation devices used at the outdoor pools from ring and/or torpedo buoys to rescue tubes occurred sometime between 2009 and 2011.

Outdated Safety Plans increase the risk that pool staff may not know how many pieces of each type of equipment are actually required to be present on the pool premises. An inadequate amount of safety equipment on hand would increase the risks to the safety of pool patrons.

Water Quality Testing Deficiencies

Record Keeping of Water Readings Needs Improvement

According to DPR's Parks Academy Swimming Pool Operations Student Manual (Operations Manual), FPOs must record certain information and results from various tests performed (e.g., air temperature, chlorine, pH, calcium hardness, and alkalinity levels) at various times during the day to ensure that water quality is kept at acceptable levels. FPOs are required to record this information on FPO Reports, and Pool Supervisors review and sign-off on the hourly water testing. Our review of DPR's policies and procedures indicated that they are stricter than those identified in the Health Code. For example, the Health Code requires that water quality testing be completed three times a day, whereas, DPR's policy requires FPOs to conduct water quality testing a minimum of every hour.

Our review of the 425 sampled FPO Reports pool staff completed during the 2019 summer pool season revealed that 280 (66 percent) were missing some information.¹¹ While pool staff generally recorded the hourly chlorine and pH readings as required, that was not the case with other required tests. Specifically, as detailed in Table II below, each of the 280 FPO Reports was missing one or more items of information or lacked evidence that the water testing had been appropriately reviewed.

¹¹ Of the 432 FPO Reports we sought to review, DPR was unable to provide 7 FPO Reports—5 from Edenwald Houses Pool in the Bronx, 1 from Vesuvio Pool in Manhattan, and 1 from Liberty Pool in Queens.

Table II**Results of the FPO Water Quality
Testing**

DPR's Policy:	Our review of the 425 sampled FPO Reports revealed:
Air temperatures should be recorded three times per day: 8:00 a.m., 2:00 p.m., and 8:00 p.m.	146 (34 percent) documents were missing at least one of the required air temperature readings. In addition, 99 (23 percent) documents were either missing two of the three air temperature readings or were missing the air temperature reading at 2:00 p.m.
All pools must be tested for chlorine and pH on an hourly basis from 8:00 a.m. to 10:00 p.m.*	19 (4 percent) documents were missing two or more chlorine and pH readings during the time that pools were open (from 11:00 a.m. to 7:00 p.m.). In addition, the FPO Report for Abe Lincoln (mini) Pool in Manhattan for September 1, 2019 contained only one reading for the entire day, at 11:00 a.m., and no explanation was provided.
Water samples must be taken from three diverse locations around the main pool at 10:00 a.m., 1:00 p.m., 4:00 p.m., and 7:00 p.m.	119 (28 percent) documents did not contain either all or some of the required second and third location readings. Of those 119 reports, 23 (19 percent) were missing all readings at the second and third pool locations, 17 of those from 2 pools – PS 186 Playground (Castlewood) Pool (mini in Queens) for all 11 days sampled, and Kosciuszko Pool (Olympic in Queens) for 6 of the 12 days sampled.
Calcium Hardness and Total Alkalinity tests should be conducted once a day, usually in the mornings, and recorded on the FPO Report.	148 (35 percent) documents did not contain the Calcium Hardness readings. 112 (26 percent) documents did not contain the Total Alkalinity readings.
Flow Meter readings should be taken at least once per day to ensure proper circulation.	97 (23 percent) documents contained no Flow Meter readings.
Pool Supervisors must observe the FPO while he/she is performing the tests and sign off on the water quality tests on the FPO Reports. However, DPR's Policy Memo dated February 2015 states that at Mini pools, only one water quality test inspection is required to be observed daily.	33 (8 percent) documents contained no supervisory sign-off. The missing sign-offs on 31 (94 percent) of the 33 documents involved mini-pools.
Each chlorine and pH test will be taken from a different location around the pool.	113 (27 percent) documents did not identify the locations around the pool where the water quality tests were taken.

* There was an additional criteria that the chlorine and pH should be tested every ½ hour when the air temperature rises above 80° Fahrenheit. However, we were not able to test this criteria because not all the required temperatures were recorded on the FPO Reports. FPOs at mini-pools usually start their shift between 8:00 a.m. and 10:30 a.m., and end between 6:00 p.m. and 7:00 p.m.

Of particular note is our finding that, notwithstanding the testing deficiencies reflected in Table II above, pool staff generally recorded the hourly chlorine and pH readings as required. We believe that their overall compliance with this testing requirement is directly related to the very clear written instructions on the FPO Report form. However, DPR lacks such clear written instructions on how often the various other categories of testing processes are to be recorded on the FPO Report, such as testing for the pool water's calcium hardness and total alkalinity, flow meter readings, air temperature, and locations of water tests. Additionally, DPR does not consistently use a standardized FPO Report form that contains a designated space for FPOs to record the required flow meter readings.

With respect to the absence of supervisory sign-offs on FPO reports for mini-pools, DPR officials explained that Pool Supervisors are not permanently assigned to them throughout the day. Instead, Pool Supervisors visit the mini-pools in their respective boroughs daily on a roving basis to complete checks on them and to see whether anything is needed.

This roving assignment protocol likely contributed to our finding that mini-pools had a higher rate of missing information in all categories compared with Olympic and intermediate pools. Specifically, of the 299 FPO Reports we reviewed for Olympic and intermediate pools, 187 (63 percent) were missing one or more pieces of information. That error rate, while high, is lower than that for mini-pools. Of 126 FPO Reports reviewed for the mini-pools, 93 (74 percent) were missing one or more pieces of information.

When air temperatures are not recorded and the various measures of water quality are not tested frequently enough, the inadequate monitoring increases the possibility that water chemistry levels can become unsafe for swimming and potentially cause irritation to the eyes or skin of the bathers. In addition, pool records that do not accurately indicate test results, or which are incomplete, may hinder DPR's pool staff from quickly identifying problems, such as inadequate disinfectant levels, and hinder prompt corrective action. Furthermore, omitting the required testing of the pool water's calcium hardness can lead to the pool tub's becoming damaged, which in turn may lead to leaks.

These concerns relating to DPR's inadequate monitoring of pool water quality were evident in the DOHMH Inspection Reports of DPR pools that we reviewed. Of the 72 violations that DOHMH Inspectors issued in 2019, 13 violations (18 percent) involved instances of incorrect total alkalinity for the size of the pool, and 11 violations (15 percent) cited flow meters that were not installed or were not working properly.

FPO Recorded Water Quality Tests Generally Agreed with Auditor Observations

FPOs are required to accurately record the results of their chlorine and pH readings in the FPO Reports. Recording the results helps establish a log for troubleshooting pool water chemistry problems. The auditors visited 37 pool locations in the 2019 summer pool season and observed FPOs complete 70 chlorine and 70 pH readings for a total of 140 readings. Our review of the FPO Reports where those readings were recorded revealed that all but four readings (3 percent) at three pools matched what the auditors observed—three chlorine readings and one pH reading.

For one of the three chlorine readings, at the Wagner wading pool, we observed the FPO's 12:39 p.m. chlorine reading of 10.0, well in excess of the acceptable range of 0.6 to 5.0 that the Health Code specifies. The FPO attempted to adjust the chlorine level by stirring the pool water and then re-tested the water, which resulted in a second reading of 10.0. The FPO then made further adjustments by draining some of the over-chlorinated water, adding unchlorinated water, and stirring the pool water, and tested the water a third time, which resulted in a reading of 2.0. However, when we later obtained the FPO Report, we found that the FPO did not record the initial

reading of 10.0 as required but recorded only the reading of 2.0 instead. We note that the 2013 audit also found that the FPO at Wagner Pool was not following proper water-quality testing procedures and that the wading pool had a chlorine level of 10.0. Due to the pattern of high chlorine readings, we visited Wagner Pool a second time in 2019 and found the wading pool again had a reading of 10.0, which the FPO then adjusted by adding more water to the wading pool and stirring the pool water.

Pool records that do not accurately reflect test results may hinder DPR's pool staff from quickly identifying problems, such as excessive or inadequate disinfectant levels, and taking immediate action. The inaccuracies may also negatively impact DPR's monitoring efforts by depriving DPR of relevant information concerning the water quality at its pools that would help decision makers identify pool locations requiring heightened attention.

Recommendations

3. DPR should improve controls to ensure that staff add work order requests for all issues that require a skilled tradesperson to perform the repair into AMPS.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will review our process to ensure that work order requests that require skilled trades are entered into AMPS. However, some issues which may appear to require a tradesperson and a work order often are fixed by a pool supervisor or manager. When pool staff makes the necessary repair, no work order request is needed.”

4. DPR should ensure that staff log all DOHMH violations that require a skilled tradesperson for remediation with a corresponding work order into AMPS.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will remind staff to enter a work order request into AMPS for all DOHMH violations which require a response from skilled trades. We are pleased that this audit found that ‘AMPS contained work orders for 40 (95 percent) of the 42 health code violations that DOHMH Inspectors had issued to DPR.’”

5. DPR should update Safety Plans for all pools and submit them to NYSDOH and DOHMH for review and approval.

DPR Response: DPR agreed with this recommendation and stated, “[w]e are working with DOHMH to update appropriate sections of the Safety Plans. Parks is required to update Safety Plans after a major renovation or Capital project, and we will continue to do so.”

Auditor Comment: We are pleased that DPR has agreed to work with DOHMH to update appropriate sections of the Safety Plans. Nonetheless, we note that while DPR stated in its response to the previous Comptroller's audit issued in 2013 that it “has already begun the updating process and plans to submit them to DOHMH,” we found in this audit that the plans had still not been updated. We therefore urge DPR to fully implement this recommendation.

6. DPR should remove all torpedo and ring buoys from the pools to prevent them from mistakenly being used.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will remove and discard remaining torpedoes from the pools. However, we plan to keep some ring buoys in storage. They help with rescues when no lifeguards are onsite. This is especially important for night watch and FPO's.”

Auditor Comment: For the pools that will still have some ring buoys, DPR should ensure that pool staff are aware that the ring buoys should not be placed on the pool deck while the pool is open.

7. DPR should ensure that all FPOs use the standard FPO Report and record the flow meter readings, as required.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will remind FPOs to use the standard form to record flow meter readings when required.”

8. DPR should ensure that Pool Supervisors adequately review FPO Reports for completeness.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will remind Pool Supervisors to review FPO Reports for completeness. Table II in the Report notes that ‘33 (8 percent) documents contained no supervisory sign-off.’ We are pleased that 392 (92% of) documents did have the required supervisory sign-off. We will strive to improve an existing excellent level of compliance.”

Auditor Comment: We are pleased that DPR has agreed to implement this recommendation. Although most of the FPO Reports reviewed had the required supervisory sign-off, we nonetheless note that many of them were still missing required information.

9. DPR should establish written standards in its Operations Manual on how and how often FPOs should: record the air temperatures during the day; complete and record the results of the calcium hardness and total alkalinity tests; record the flow meter readings; and record the locations where the water tests are taken around the pool.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will review our written standards requiring FPOs to record these items and make adjustments where necessary.”

Auditor Comment: We are unaware of the written standards that DPR states it will review. As stated in the report, DPR’s Operations Manual contains no instructions regarding the methodology and frequency with which the FPOs should record the air temperatures, calcium hardness, total alkalinity, flow meter readings, and locations around the pool where the water tests were taken. Therefore, we urge DPR to establish written standards to address these areas in its Operations Manual.

10. DPR should reinforce its policy that FPOs must record every initial reading taken and improve monitoring of whether they do so to help ensure compliance. In addition, any time the FPO needs to make adjustments because the readings are outside of the acceptable levels, that information should be recorded in the designated chart on the back of the FPO Report.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will remind FPOs that they are to record initial water test results and record any readings outside acceptable levels on the appropriate form.”

11. DPR should perform an analysis of the chemical readings and the chlorine pump for Wagner wading pool, because of the issue of high chlorine readings found during the auditors’ visits.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will investigate the Wagner Pool chlorine pump and chemical readings and take corrective action as needed.”

Other Matters

Filter Plants at Jackie Robinson and Astoria Pools Are in a State of Disrepair

DPR’s Operations Manual states that building drains and the sewer system shall have adequate capacity to carry filter backwash flows without surcharging or flooding.¹² It also states that, due to the presence of water and electrical systems in and around a pool, special precautions must be taken to prevent electrical shock.

During our visits to the Jackie Robinson and Astoria Pools, we were informed about issues in the filter plants and observed potentially dangerous conditions. Specifically, during our visit to Jackie Robinson Pool, we saw puddles of water near electrical extension cables connecting sump pumps within the filter plant area. This condition potentially puts the employees working in the filter plant at risk. Astoria Pool staff informed us that the filter plant at Astoria Pool is usually flooded and cannot be fixed until a capital contract is secured. We observed extensive flooding in the filter plant underneath the circulation pipes. We also observed a makeshift walkway laid on top of flooded areas. (See Appendix V for photos of these conditions.)

The above-described flooding conditions in the filter plants at the Jackie Robinson and Astoria Pools may be related to their large size, the high volume of water they handle, and what appears to be old equipment in poor condition that may leak or otherwise operate inefficiently. The Jackie Robinson Pool’s filter plant is still operational. However, when we visited, both of its recirculation pumps were leaking water, and the drain appeared to be clogged. The Astoria Pool’s filter plant contains hair catchers that we observed leaking water during our visits, and we were told by pool staff that the large filter beds do not function properly.¹³ According to pool staff, a temporary filter plant must be brought in by contractors before the start of each summer pool season, and disassembled after the summer pool season ends.

Both pools’ filter plants may become unsafe at any time if a flood occurs due to ongoing leaks in the filtration system and clogged drains. These pools may be closed due to issues in the filter plant and will not be able to reopen until repairs are performed. In addition, these conditions make

¹² Backwash is the process of cleaning a swimming pool filter by reversing the flow of water through it. Sewer surcharge refers to the overloading of the sewer beyond its design capacity due to inflow and infiltration of water, often resulting in sewer overflow.

¹³ A hair catcher is a device containing a removable strainer basket designed to protect a pump from debris in the water flow installed in the pump suction line.

it difficult for pool staff, supervisors, and managers to ensure the safety of themselves and their colleagues.

Pool Information Not Updated on DPR's Website

The New York City Department of Information Technology and Telecommunications (DoITT) Citywide User Experience Design Guidelines states that an agency's website should deliver timely, reliable, official, accessible, and authoritative information.

However, during the 2019 summer pool season, we found that DPR's website and individual pool webpages did not always reflect accurate and up-to-date pool information. DPR's website includes a *Free Outdoor Pools* webpage that lists each pool and provides information on its location, the types of pools at the location (Olympic, intermediate, wading, or mini), and a link to the specific pool's webpage. Within the list of pools we found the following errors:

- The Bronx River Playground Pool in the Bronx was listed as "open" on DPR's website throughout the 2019 season, even though it was closed and under construction. As of August 22, 2019, DPR's website had not been updated to indicate the pool's closure, and even the pool's individual webpage also listed it as open.
- The Douglass and DeGraw Pool in Brooklyn was listed as "currently closed" on DPR's website on July 24, 2019 and August 22, 2019. However, the pool's individual webpage stated that, due to water conditions, the pool would be closed July 20 and re-opened the next day on July 21. Patrons would therefore not have known the pool was open for most of the summer season unless they had looked at the pool's individual webpage.
- Red Hook Pool in Brooklyn was listed on DPR's website on July 24, 2019, as having only an Olympic pool at its location when in fact it also has a wading pool. As of September 2019, DPR had still not updated the listing for the wading pool on the website.

By not maintaining an updated website, DPR provides inaccurate information to the public, and inconveniences potential pool patrons who may arrive at a pool that is closed but incorrectly reported on the website as open or who may forgo a trip to a pool that is open but inaccurately reported on the website as closed.

Recommendations

12. DPR should inspect the filter plants at Jackie Robinson Pool and Astoria Pool, identify the source(s) of the leaks, and correct the issues.

DPR Response: DPR agreed with this recommendation and stated, "[e]xtensive repairs have been done on the Jackie Robinson filter plant. The Astoria Pool filter plant, pool liner and affected portions of the pool deck will be replaced through a \$19 million Capital project beginning in 2022."

Auditor Comment: We are pleased that DPR has agreed to implement this recommendation; however, DPR did not provide any evidence of the extensive repairs completed at Jackie Robinson's filter plant and whether the leaks were fixed.

13. DPR should ensure that all filter plant drains are maintained and kept clear in order to prevent flooding.

DPR Response: DPR agreed with this recommendation and stated, “[w]e will remind staff to keep filter plant drains clear.”

14. DPR should maintain and update its website and its individual pool webpages with current and accurate pool related information, including temporary pool closures for each day.

DPR Response: DPR agreed with this recommendation and stated, “[t]he pool portion of the website is currently up-to-date and accurate and will be kept this way during the season.”

DETAILED SCOPE AND METHODOLOGY

We conducted this performance audit in accordance with generally accepted government auditing standards. 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. This audit was conducted in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, §93, of the New York City Charter.

The audit scope was from July 1, 2018 through September 4, 2020.

To obtain an understanding of the policies, procedures, and regulations for DPR's outdoor swimming pools operations, we reviewed and used the following as criteria:

- New York City Health Code Article §165 - Bathing Establishments;
- Pool Operations Student Manual 2019; Filter Plant Operators Manual; and Mini-Pool Filter Plant Operators Manual;
- 5Boro Shops Pool Work Request and Pool Supply Request Protocol, updated 5/1/2019;
- 2019 AMPS Training Quick Guide and AMPS data dictionary;
- Pool Health & Safety Policy Memo dated February 2015; and
- DoITT Citywide User Experience Design Guidelines.

In addition, we also reviewed the following information:

- Comptroller's Office *Audit Report on the Health and Safety Conditions of Department of Parks and Recreation's Public Swimming Pools* (#MH12-137A), issued August 22, 2013;
- Information from DPR's website regarding the outdoor swimming pools operating during the 2019 summer swimming season;
- DPR's Internal Follow-up Review on the Health and Safety Conditions of DPRs Public Swimming Pools dated February 2018;
- NYC Open Data website showing work orders and related information for 2019 from DPR's AMPS database; and
- NYC Mayor's Management Report, Fiscal Year 2019.

To obtain a further understanding of DPR's policies and procedures, we interviewed DPR's First Deputy Commissioner of Operations; Deputy Commissioner/Chief Operating Officer; Assistant Commissioner for Citywide Services; Chief of Operations for Citywide Services; Deputy Chief of Citywide Operations; Administrative Parks and Recreation Manager, Citywide Services; Chief of Staff to the Assistant Commissioner for Urban Park Service and Public Programs; and Chief of Staff to the Assistant Commissioner for Innovation and Performance Management. We also met with Director of Training, Parks Academy; Supervisor of Mechanics at Five Boroughs; and Special Project Coordinator, Brooklyn Shops.

To obtain an understanding of pool operations, we conducted a walkthrough of Wagner Pool with DPR officials, staff from the Manhattan Borough Office, and pool staff at Wagner Pool. In addition, we observed the closing process at Bushwick Pool in Brooklyn, and Astoria Pool, in Queens, after

the outdoor pools closed for the 2019 season. We also reviewed the prior audits conducted by our office, including the *Audit Report on the Health and Safety Conditions of the Department of Parks and Recreation's Public Swimming Pools* (MH12-137A), issued August 22, 2013.

On January 15, 2020, DPR provided six Excel spreadsheets containing data from AMPS. The first spreadsheet contained data for all Work Orders related to “pools” and “filter plants” that were created from January 1, 2018, through December 30, 2019. The remaining spreadsheets contained the Assets, Labor, Transactions, Transaction Details, and Comments related to those Work Orders’ identification numbers. DPR also provided the SQL query it used to generate the data from AMPS.

To evaluate the overall conditions at DPR’s outdoor swimming pools and to determine whether there were any health and safety hazards, we conducted two rounds of unannounced visits. During our first round of visits, conducted from August 9 through August 30, 2019, we visited and completed observations at 52 outdoor pools at 37 sampled locations throughout the five boroughs. The 37 locations included 6 pools in the Bronx, 10 pools in Brooklyn, 10 pools in Manhattan, 6 pools in Queens, and 5 pools in Staten Island. Our observations revealed several health and safety issues, which we provided to DPR on August 27, 2019 and September 13, 2019. We categorized the issues we found as either “critical” or “general” in accordance with their classification in DOHMH’s Inspection Report form. To ascertain whether these issues were subsequently remediated, we conducted a second round of unannounced visits on September 3, and 4, 2020. Due to the COVID-19 pandemic, DPR limited the number of pools it opened to 15 and reduced the duration of the 2020 summer pool season from July 24 to September 7, 2020. We revisited 7 of the 15 pools, including 2 pools in the Bronx, 2 pools in Brooklyn, 2 pools in Manhattan, and 1 pool in Queens. Following the visits, we provided DPR with a list of the hazards or issues which were not remediated from 2019 and of the new issues we observed.

To determine whether the issues noted by pool staff at DPR’s outdoor pools requiring repairs are entered into AMPS as work orders, we first obtained and reviewed the hard copies of the pool documents. We then compiled a list of the issues that we determined, based on DPR’s explanations, would require the services of skilled tradespeople to complete the repairs, and randomly selected a sample of 29 issues. We then searched AMPS to determine whether corresponding work orders could be found in AMPS for our sample of 29 issues.

To determine whether the DOHMH violations were entered into AMPS, we obtained and reviewed the 2019 DOHMH Inspection Reports for the 50 pool locations that were open. We noted that DOHMH Inspectors issued 72 violations. Of those violations, we determined that 42 (58 percent) required a skilled tradesperson to complete the repairs, and should therefore have been entered into AMPS and resolved within 12 days of being issued. We then checked AMPS to see whether work orders were created for the remediation of these violations. We determined that the remaining 30 violations did not require a skilled tradesperson to remediate the violation but could have been remediated by pool staff, and therefore, may not have been entered into AMPS.

To determine if the FPOs at the 37 pools are correctly documenting the required information on the FPO Reports, we randomly selected a sample of 12 days during the timeframe from June 27 through September 8, 2019, and reviewed the FPO Reports for those days for each of the 37 pool locations we visited, except for the 12 mini-pools, which had closed for the season before the 12th sample day. We reviewed the FPO reports for the mini-pools for the 11 remaining days. For this test we reviewed a total of 425 FPO Reports, consisting of 126 for mini-pools and 299 for Olympic and intermediate pools. Because DPR’s policy requires that all pools (other than mini-pools) must be tested for chlorine and pH on an hourly basis from 8:00 a.m. to 10:00 p.m., we reviewed the

FPO Reports to see whether the FPOs filled in the correct number of chlorine and pH readings.¹⁴ Our analysis encompassed all readings that occurred while the pools were open to the public from 11:00 a.m. to 7:00 p.m. We also checked whether the FPOs recorded: air temperatures, the additional chlorine and pH readings at a second and third location around the pool, the calcium hardness, total alkalinity, flow meter readings, and necessary supervisory sign-offs, to determine whether the FPO Reports complied with DPR and DOHMH standards. In addition, we compared the information in the FPO Reports on the mini-pools to the information in the FPO Reports on the Olympic and intermediate pools to determine whether there was a significant difference in the amount of information missing from the FPO Reports based on the type of pool.

To determine whether the FPOs at the pools were accurately recording the readings for chlorine and pH levels at the 37 outdoor pool locations we visited, we observed a total of 70 chlorine and 70 pH readings the FPOs performed and documented. We then obtained the FPO Reports, compared the readings recorded for the date and time of our visit against our checklists, and determined whether there were any differences between the chlorine and pH readings recorded versus the readings we observed.

The results of our sample tests, while not projectable to their respective populations, provide a reasonable basis for us to determine whether DPR is operating outdoor swimming pools in a safe manner.

¹⁴ The filter plants at large pools operate 24 hours a day and have a FPO present during that time, whereas, the filter plants of the mini-pools operate for a limited time during the day when pools are open and the FPO is present.

APPENDIX I

List of 37 Outdoor Pool Locations Visited August 2019

#	Borough	Pool	Pool Type
1	Bronx	Crotona Pool	Olympic
2	Bronx	Edenwald Houses Pool	Mini
3	Bronx	Floating Pool	Intermediate
4	Bronx	Haffen Pool	Intermediate & Wading
5	Bronx	Mapes Pool	Intermediate & Wading
6	Bronx	Van Cortlandt Pool	Intermediate & Wading
7	Brooklyn	Betsy Head Pool	Olympic
8	Brooklyn	Bushwick Pool	Intermediate & Wading
9	Brooklyn	Commodore Barry Pool	Intermediate & Wading
10	Brooklyn	Douglass and DeGraw Pool	Intermediate & Wading
11	Brooklyn	Kosciuszko Pool	Olympic & Wading
12	Brooklyn	Lindover Park Pool	Mini
13	Brooklyn	McCarren Park Pool	Olympic
14	Brooklyn	PS 20 Playground (Adelphi) Pool	Mini
15	Brooklyn	Red Hook Pool	Olympic & Wading
16	Brooklyn	Sunset Park Pool	Olympic
17	Manhattan	Abe Lincoln Pool	Mini
18	Manhattan	Frederick Douglass Pool	Mini
19	Manhattan	Hamilton Fish Pool	Olympic & Wading
20	Manhattan	Jackie Robinson Pool	Olympic
21	Manhattan	Lasker Pool	Olympic & Wading
22	Manhattan	Marcus Garvey Pool	Intermediate
23	Manhattan	Sheltering Arms Pool	Intermediate & Wading
24	Manhattan	Tompkins Square Pool	Mini
25	Manhattan	Vesuvio Pool	Mini
26	Manhattan	Wagner Pool	Intermediate & Wading
27	Queens	Astoria Pool	Olympic
28	Queens	Fisher Pool	Intermediate & Wading
29	Queens	Liberty Pool	Intermediate & Wading
30	Queens	Marie Curie Park Pool	Mini
31	Queens	PS 186 Playground Pool (Castlewood/Glen Oaks)	Mini
32	Queens	Windmuller Pool	Mini
33	Staten Island	Faber Pool	Intermediate
34	Staten Island	General Douglas MacArthur Pool	Mini
35	Staten Island	Lyons Pool	Olympic
36	Staten Island	PS 46 Playground (Old Town) Pool	Mini
37	Staten Island	Tottenville Pool	Intermediate & Wading

Results of Observations Conducted on 37 NYC Outdoor Public Pool Locations (with 52 pools) during August 2019

(Legend for column number definitions found after this table)

Borough / Pool Name	Pool Type	Issues Identified by Location											Issues Identified by Pool									Total Issues
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
BX / Crotona	Olympic						X			X		X										3
BX / Edenwald Houses	Mini							X														1
BX / Floating	Inter.								X									X			X	3
BX / Haffen	Inter.										X							X				2
	Wading																					0
BX / Mapes	Inter.										X											1
	Wading											X										1
BX / Van Cortlandt	Inter.							X			X											2
	Wading																X					1
BK / Betsy Head	Olympic										X						X					2
BK / Bushwick	Inter.										X						X					2
	Wading												X									1
BK / Commodore Barry	Inter.							X			X											2
	Wading																					0
BK / Douglas and DeGraw	Inter.																					0
	Wading																					0
BK / Kosciuszko	Olympic					X		X			X						X					4
	Wading																X					1
BK / Lindover Park	Mini							X			X									X		3
BK / McCarren Park	Olympic										X											1

Borough / Pool Name	Pool Type	Issues Identified by Location											Issues Identified by Pool									Total Issues
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
BK / PS 20 Playground	Mini							X	X			X					X		X		5	
BK / Red Hook	Olympic											X									1	
	Wading																				0	
BK / Sunset Park	Olympic							X				X				X					3	
MN / Abe Lincoln	Mini																				0	
MN / Frederick Douglass	Mini																				0	
MN / Hamilton Fish	Olympic							X	X			X									3	
	Wading																				0	
MN / Jackie Robinson	Olympic							X				X									2	
MN / Lasker	Olympic									X		X					X				3	
	Wading																				0	
MN / Marcus Garvey	Inter.																				0	
MN / Sheltering Arms	Inter.											X									1	
	Wading																				0	
MN / Tompkins Square	Mini											X									1	
MN / Vesuvio	Mini																				0	
MN / Wagner	Inter.											X					X				2	
	Wading													X							1	
QN / Astoria	Olympic							X								X					2	
QN / Fisher	Inter.							X	X			X									3	
	Wading																				0	
QN / Liberty	Inter.							X				X					X				3	
	Wading																				0	
QN / Marie Curie Park	Mini							X				X							X		3	
QN / PS 186 Playground	Mini																		X		1	

Borough / Pool Name	Pool Type	Issues Identified by Location											Issues Identified by Pool									Total Issues
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
QN / Windmuller	Mini																					0
SI / Faber	Inter.							X														1
SI / Gen Douglas MacArthur	Mini											X										1
SI / Lyons	Olympic																					0
SI / PS 46 Playground	Mini											X										1
SI / Tottenville	Inter.																					0
	Wading																					0
		Yes	37	37	37	37	36	30	28	35	34	37	13	51	50	52	50	41	52	48	51	756
		No	0	0	0	0	1	7	9	2	3	0	24	1	2	0	2	11	0	4	1	67
		Total	37	37	37	37	37	37	37	37	37	37	37	52	52	52	52	52	52	52	52	823
		Percent Positive	100%	100%	100%	100%	97%	81%	76%	95%	92%	100%	35%	98%	96%	100%	96%	79%	100%	92%	98%	92%

Legend:

By Pool Location

1. Was all mandated signage posted?
2. Was the number of "Observed Bathers" below the pool's maximum capacity?
3. Did pool have a valid Permit?
4. Was there a physical copy of the safety plan?
5. Was the minimum quantity of lifesaving equipment present as listed in safety plan? (Note: Does not include flotation devices. It includes reaching poles, spine boards, pocket masks, First Aid kits, blankets, and oxygen tanks.)
6. Were rescue tubes undamaged and testing kits adequate?
7. Were all ladders and/or handrails securely fastened?
8. Were the minimum of 2 ladders at pools, except for wading pools?
9. Were all gates and fencing adequate and secure?
10. Was pool clear of unprotected electrical circuits or wiring within 10 ft. of pool?
11. Was pool clear of paint chips/peeling paint, or rust stains in/around the pool?

By Pool

12. Was pool clear of any overhead electrical wires within 20 ft. of pool?
13. Was pool chlorine level within range?
14. Was pool pH level within range?
15. Was pool clear of glass or sharp objects in pool/deck area?
16. Was the pool deck free of puddled water and cracks that present a tripping hazard or a potential cause of lacerations?
17. Was main drain grate in pool visible and in proper place?
18. Was pool water level maintained at level that allows for effective surface skimming (water level not above the scum drain/gutter)?
19. Were depth markings present and accurate?

Description of Issues Found at the 37 Visited Pool Locations

Borough	Pool	Critical Issues	Count	General Issues	Count	Total Count
Bronx	Crotona	-Damaged rescue tubes -Crumbling concrete at base of fence surrounding pool	2	-Peeling paint	1	3
Bronx	Edenwald Houses	-Loose ladders (2 of 2)	1			1
Bronx	Floating	-Inaccurate Pool Depth due to listing of barge -Barge has low fence (risk of fall) -Uneven and loose concrete blocks (tripping hazard)	3			3
Bronx	Haffen	-Ponding water on pool deck due to damaged drain pipe	1	-Peeling paint	1	2
Bronx	Mapes	-Wires over wading pool	1	-Peeling paint	1	2
Bronx	Van Cortlandt	-Ponding water on pool deck by main pool & wading pool -Loose ladders (1 of 4)	2	-Paint chips/Peeling paint	1	3
Brooklyn	Betsy Head	-Elevated section of concrete (tripping hazard)	1	-Peeling paint	1	2
Brooklyn	Bushwick	-Chlorine level low (0.5) in wading pool -Ponding water due to clogged deck drains	2	-Peeling paint	1	3
Brooklyn	Commodore Barry	-Loose ladders (2 of 2)	1	-Paint chips/Peeling paint	1	2
Brooklyn	Kosciuszko	-Missing 2 (of 4) reaching poles -Pooling water on deck (especially bad in certain areas) -Loose ladders (2 of 4) -Metal cover by wading pool uneven with pavement (tripping hazard)	4	-Paint chips/Peeling paint	1	5
Brooklyn	Lindover Park	-Only 1 ladder and uncovered pipe for holding second ladder -Water level above scum drain/gutter	2	-Rust stains in pool	1	3
Brooklyn	McCarren Park			-Peeling paint	1	1
Brooklyn	PS 20 Playground	-Loose ladder -Only 1 ladder and uncovered pipes for holding second ladder -Water level above scum drain/gutter -Metal edges uneven with wooden planks (tripping hazard)	4	-Peeling paint	1	5
Brooklyn	Red Hook			-Peeling paint	1	1

Borough	Pool	Critical Issues	Count	General Issues	Count	Total Count
Brooklyn	Sunset Park	-Glass shard found on pool deck -Loose ladders (3 of 4)	2	-Peeling paint	1	3
Manhattan	Hamilton Fish	-Damaged rescue tubes (most of the 10) -Loose ladders (2 of 10)	2	-Peeling paint - both pools	1	3
Manhattan	Jackie Robinson	-Damaged rescue tubes	1	-Peeling paint	1	2
Manhattan	Lasker	-Both wheelchair gates to wading pool have gaps -Holes and cracks in cement deck around pool (tripping hazard)	2	-Peeling paint	1	3
Manhattan	Sheltering Arms			-Peeling paint	1	1
Manhattan	Tompkins Square			-Peeling paint	1	1
Manhattan	Wagner	-High chlorine reading (10.0) at wading pool -Cracks & missing concrete on pool deck	2	-Paint chips/Peeling paint	1	3
Queens	Astoria	-Damaged rescue tubes -Concrete chunks on pool deck	2			2
Queens	Fisher	-Damaged rescue tubes (3 of 5) -Loose ladders (2 of 2)	2	-Paint chips/Peeling paint	1	3
Queens	Liberty	-Concrete around main pool deck slopes resulting in ponding of water -Test kit dirty	2	-Paint chips/Peeling paint - both pools	1	3
Queens	Marie Curie Park	-Test kit dirty -Water level above scum drain/gutter	2	-Peeling paint and rust stains around pool	1	3
Queens	PS 186 Playground	-Water level above scum drain/gutter	1			1
Staten Island	Faber	-Loose ladders (2 of 4)	1			1
Staten Island	General Douglas MacArthur			-Peeling paint	1	1
Staten Island	PS 46 Playground			-Peeling paint	1	1
Total			43		24	67
Percent			64%		36%	100%

Description of Issues Found at 7 Pool Locations during Revisits in 2020

Borough	Pool	Total Issues	Issue Remediated				Issues Not Remediated				New Issues Found	
			Critical Issues	General Issues	Total	%	Critical Issues	General Issues	Total	%	Critical Issues	Total
Bronx	Crotona	3		-Peeling paint	1	33%	-2 of 12 damaged rescue tubes -Crumbling concrete at base of fence surrounding pool		2	67%	-Concrete chunks from roof awning missing (section closed off) -Small section of concrete missing from deck	2
Bronx	Haffen	2	-Clogged drain cleared	-Peeling paint	2	100%			0	0%		
Brooklyn	Betsy Head	2		-Peeling paint	1	50%	-Tripping hazard on pool deck (elevated section of concrete)		1	50%		
Brooklyn	Kosciuszko	5	-All 4 reaching poles -Loose ladders -Metal cover uneven with pavement	-Paint chips/ Peeling paint	4	80%	-Pooling water on deck		1	20%		
Manhattan	Hamilton Fish	3		-Peeling paint	1	33%	-2 of 7 Damaged rescue tubes -2 of 10 ladders loose		2	67%		
Manhattan	Wagner	3	-Chlorine readings are within acceptable ranges		1	33%	-Cracks & missing concrete on pool deck	-Paint chips/ Peeling paint	2	67%	-Latch was missing from 1 gate by Wading pool	1
Queens	Liberty	3	-New test kit		1	33%	-Concrete around main pool deck slopes which could result in ponding of water	-Peeling paint	2	67%		
Totals		21			11	52%			10	48%		3

Photos of Jackie Robinson Pool Filter Plant



Image 1: Standing water underneath pool area on August 12, 2019.



Image 2: Area around recirculation pumps #2 and #1 showing leaks and corrosion on September 5, 2019.

Photos of Astoria Pool Filter Plant on August 19, 2019



Image 1: Showing extensive flooding in Filter Plant underneath Circulation Pipes.



Image 2: Showing makeshift walkway laid on top of flooded areas.



David Cerron
Assistant Commissioner
Planning and Development

T 212.360.3457

E david.cerron@parks.nyc.gov

ADDEMDUM

Page 1 of 5

City of New York
Parks & Recreation

The Arsenal
Central Park
New York, NY 10065
www.nyc.gov/parks

May 18, 2021

Marjorie Landa
Deputy Comptroller for Audit
Office of The Comptroller
1 Centre Street, Room 1100
New York, NY 10007

RE: Draft Audit Report on the Safety of the Department of Parks and Recreation's
Public Swimming Pools / Audit MH20-066A

Dear Deputy Comptroller Landa:

I am writing in response to the New York City Comptroller's ("Comptroller's")
Draft Audit Report ("Report") referenced above.

The New York City Department of Parks & Recreation ("Parks") is committed to maintaining its pool infrastructure and providing the care required to ensure optimal health, safety, cleanliness, and maintenance standards. We assess all pools before and after each season, and conduct inspections daily during the pool season. Pool staff also perform measurements of water chemistry throughout the day to ensure proper chlorine and pH levels. Further, we adhere to water chemistry standards that exceed state and local requirements. All these procedures allow us to prevent, detect and correct potentially unsafe conditions.

In mid-summer 2020, at the height of the COVID-19 pandemic, Parks proudly opened 15 outdoor pools across the City. Dedicated Citywide Service and Maintenance & Operations teams worked tirelessly to perform months of pool preparation in just three weeks. With most indoor leisure and recreational facilities closed, 200,000+ visitors enjoyed our pools.

During summer 2019, pool attendance was 1.62 million visitors, a 1.2% increase over 2018. Each summer, several pools across the City are transformed into *Cool Pools*. These brightly colored pools, affectionately called 'resorts' by visitors, offer such amenities as extensive furnishings, lush horticulture, and free activities such as Zumba, yoga, arts and crafts, and games. Visitors love them. This summer, Bushwick, Howard (BK), and Van Cortlandt (BX) will become Cool Pools.

Parks is committed to addressing the Report's findings during the 2021 pool season to the maximum extent possible. We are pleased that the Report found that Parks generally operated outdoor pools in a safe manner. Auditors observed our staff performing appropriate water chemistry readings; clean pool water; and chlorine and pH readings within acceptable levels.



NYC Parks

We are also pleased that this audit found 95% of DOHMH health code violations documented in AMPS and 92% of the audit's 823 observed elements to be in satisfactory condition.

Our response to the Report Recommendations is attached. Going forward, Parks will continue to exercise and refine preventive, maintenance, and corrective practices to ensure our City pools are open, functional, safe, and clean for public enjoyment.

Sincerely yours,

David Cerron

Assistant Commissioner, Planning and Development

RESPONSE TO RECOMMENDATIONS AND IMPLEMENTATION PLAN FOR
PARKS AND RECREATION AUDIT MH20-066A

RECOMMENDATION 1: DPR should address any outstanding issues listed in this report if it has not already done so.

DPR RESPONSE: We will address outstanding issues listed in the report. During pre-season preparation and in-season operations, staff conducts inspections to identify new or outstanding issues and schedules repairs. Routine seasonal work is performed, including scraping and painting pools, tightening ladders, and replacing damaged rescue tubes.

RECOMMENDATION 2: DPR should improve its efforts to identify and address hazardous conditions in a timely manner.

DPR RESPONSE: We will work to improve methods to identify and address hazardous conditions in a timely manner. All pools undergo a thorough assessment prior to and at the end of each season. Pools are also inspected daily to identify and remedy potential hazards. When a hazardous condition is identified that requires a professional tradesperson, a work order request is created. Throughout the day, staff takes readings of water chemistry to detect and correct harmful water conditions. To maintain safe pool water, DPR adheres to more stringent water readings than required by state regulations.

RECOMMENDATION 3: DPR should improve controls to ensure that staff add work order requests for all issues that required a skilled tradesperson to perform the repair into AMPS

DPR RESPONSE: We will review our process to ensure that work order requests that require skilled trades are entered into AMPS. However, some issues which may appear to require a tradesperson and a work order often are fixed by a pool supervisor or manager. When pool staff makes the necessary repair, no work order request is needed.

RECOMMENDATION 4: DPR should ensure that staff log all DOHMH violations that require a skilled tradesperson for remediation with a corresponding work order into AMPS.

DPR RESPONSE: We will remind staff to enter a work order request into AMPS for all DOHMH violations which require a response from skilled trades. We are pleased that this audit found that “AMPS contained work orders for 40 (95 percent) of the 42 health code violations that DOHMH Inspectors had issued to DPR.”



RECOMMENDATION 5: DPR should update Safety Plans for all pools and submit them to NYSDOH and DOHMH for review and approval.

DPR RESPONSE: We are working with DOHMH to update appropriate sections of the Safety Plans. Parks is required to update Safety Plans after a major renovation or Capital project, and we will continue to do so.

RECOMMENDATION 6: DPR should remove all torpedo and ring buoys from the pools to prevent them from mistakenly being used.

DPR RESPONSE: We will remove and discard remaining torpedoes from the pools. However, we plan to keep some ring buoys in storage. They help with rescues when no lifeguards are onsite. This is especially important for night watch and FPO's.

RECOMMENDATION 7: DPR should ensure that all FPOs use the standard FPO Report and record the flow meter readings as required.

DPR RESPONSE: We will remind FPOs to use the standard form to record flow meter readings when required.

RECOMMENDATION 8: DPR should ensure that Pool Supervisors adequately review FPO Reports for completeness.

DPR RESPONSE: We will remind Pool Supervisors to review FPO Reports for completeness. Table II in the Report notes that "33 (8 percent) documents contained no supervisory sign-off." We are pleased that 392 (92% of) documents did have the required supervisory sign-off. We will strive to improve an existing excellent level of compliance.

RECOMMENDATION 9: DPR should establish written standards in its Operations Manual on how and how often FPOs should: record the air temperatures during the day, complete and record the results of the calcium hardness and total alkalinity tests, record the flow meter readings, and record the locations where the water tests are taken around the pool.

DPR RESPONSE: We will review our written standards requiring FPOs to record these items and make adjustments where necessary.

RECOMMENDATION 10: DPR should reinforce its policy that FPOs must record every initial reading taken and improve monitoring of whether they do so to help ensure compliance. In addition, any time the FPO needs to adjust because the readings are outside of the acceptable levels, that information should be recorded in the designated chart on the back of the FPO Report.

DPR RESPONSE: We will remind FPOs that they are to record initial water test results and record any readings outside acceptable levels on the appropriate form.



RECOMMENDATION 11: DPR should perform an analysis of the chemical readings and the chlorine pump for Wagner Pool, because of the issue of high chloring readings found during the auditors' visits.

DPR RESPONSE: We will investigate the Wagner Pool chlorine pump and chemical readings and take corrective action as needed.

RECOMMENDATION 12: DPR should inspect the filter plants at Jackie Robinson Pool and Astoria Pool, identify the source(s) of the leaks, and correct the issues.

DPR RESPONSE: Extensive repairs have been done on the Jackie Robinson filter plant. The Astoria Pool filter plant, pool liner and affected portions of the pool deck will be replaced through a \$19 million Capital project beginning in 2022.

RECOMMENDATION 13: DPR should ensure that all filter plant drains are maintained and kept clear to prevent flooding.

DPR RESPONSE: We will remind staff to keep filter plant drains clear.

RECOMMENDATION 14: DPR should maintain and update its website and its individual pool webpages with current and accurate pool related information, including temporary pool closures for each day.

DPR RESPONSE: The pool portion of the website is currently up-to-date and accurate and will be kept this way during the season.