



FINAL REPORT

CITY OF NEW ORLEANS AND SEWERAGE & WATER BOARD REPAIR COORDINATION AUDIT

SEPTEMBER 29, 2022

Edward Michel, CIG
Inspector General





September 29, 2022

Re: City of New Orleans and Sewerage & Water Board Repair Coordination Audit

I certify that the inspector general personnel assigned to this project are free of personal or other external impairments to independence.

Edward Michel, CIG
Inspector General

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The City of New Orleans Office of Inspector General (OIG) conducted an audit of the coordination between the City of New Orleans (City) and the Sewerage & Water Board of New Orleans (S&WB) as it relates to the more than \$2 billion comprehensive capital improvement program to restore damaged infrastructure. A significant portion of the capital improvement program is roadwork funded by the Federal Emergency Management Agency (FEMA) via the Joint Infrastructure Recovery Request Program (JIRR Program). JIRR Program projects involve coordination between the S&WB and the City, through the Department of Public Works (DPW), to restore a large portion of the City's damaged infrastructure using federal and local funds.

The objectives of the audit were to determine if:

- The City and the S&WB had sufficient policies and procedures as it related to the coordination of the JIRR Program, and if those policies were effectively implemented.
- The S&WB submitted accurate and timely data to the City to eliminate newly paved roads being torn up for pre-existing drainage repairs.
- The S&WB repaved utility cuts timely after completing subsurface repair work.

The scope of the audit included JIRR Program projects with invoices paid for City and S&WB expenses during the period January 1, 2020 through December 31, 2020. Auditors selected eight projects for testing, totaling \$27,352,907.

The OIG found:

- The City and the S&WB did not have coordination policies and procedures in place as required by the 1992 and 2012 CEAs to guide the execution of the JIRR Program.
- The S&WB's asset management and work order system, Cass Works, was outdated and, due to system limitations, did not consistently provide the City with credible information needed to properly plan and determine the full scope of JIRR Program projects.

- The City did not provide proactive or accurate information to the public concerning the status of planned or ongoing projects in their neighborhoods.
- The S&WB did not submit timely reimbursement requests to GOHSEP, as required by the JIRR Program CEA. The S&WB did not reimburse the City timely for any of the 98 invoices tested, totaling \$8,133,147.
- The S&WB did not comply with its duty to repave utility cuts timely after completing subsurface repairs, which increased the backlog of gravel-filled utility cuts awaiting permanent repaving.

Based on these findings, the OIG made the following recommendations to the City and the S&WB:

- The City and the S&WB should document JIRR Program policies and procedures, as well as coordination procedures, as required by the 1992 and 2012 CEAs. The City and the S&WB should update those coordination policies regularly to eliminate inefficiencies and to provide continuity in periods of transition.
- The S&WB should establish adequate funding for the acquisition, maintenance, security and training required to implement a new asset management and work order system as soon as possible.
- The City should update RoadworkNOLA with more transparent and timely information, searchable by address, to provide the public with more detailed information concerning the status of planned and ongoing construction in impacted neighborhoods.
- The City and the S&WB should obtain an understanding of the 2019 JIRR Program CEA and revise any procedures that are not working effectively and efficiently to ensure compliance with the CEA. The City and the S&WB should ensure staff is properly trained to comply with the required procedures.
- The S&WB should establish policy setting a firm deadline for completing timely permanent repaving of utility cuts and include funding in its annual budget to ensure it has the means to repave service cuts and eliminate the current backlog.

The City and the S&WB submitted a joint response to the OIG recommendations. The written response is attached to the Final Report in its entirety.

The City and the S&WB had a troubled history of coordination efforts as evidenced by the S&WB tearing up newly-paved roads to perform pre-existing subsurface repairs. However, the City and the S&WB complied with some aspects of the coordination procedures in place during the scope period of the audit and met consistently to discuss the status of each project. The City and the S&WB were responsive to OIG requests throughout the audit.

In May 2022, the City acknowledged that it would not complete all JIRR Program projects by the June 30, 2023 deadline. The City expressed confidence that it would receive FEMA approval for an extension to complete the projects, but approval is not guaranteed. Therefore, the City risks losing hundreds of millions of dollars for any projects not completed by June 30, 2023. After the FEMA-funding driving their current coordination has been exhausted, the City and the S&WB must continue to improve their coordination efforts for future infrastructure projects.

The DPW and the S&WB share responsibilities for the construction and maintenance of the City's infrastructure. The S&WB is responsible for constructing, controlling, maintaining, and operating the City's water, sewerage, and drainage systems.¹ DPW is responsible for "the design, construction, paving, maintenance, and marking of streets, bridges, and related structures and approaches" in Orleans Parish.² In 1992, the City and the S&WB entered into a Cooperative Endeavor Agreement (1992 CEA) where the City delegated to DPW the responsibility of maintaining a portion of the drainage system, which included cleaning all catch basins and catch basin laterals, drainage lines smaller than 36 inches in diameter, and manholes designed to accommodate those lines less than 36 inches in diameter.³

JIRR PROGRAM SUMMARY

In 2013, FEMA, the State of Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), the City, and the S&WB initiated negotiations for a major infrastructure plan to complete repairs to roads, water lines, sewer lines, minor drainage lines, and other incidentals that sustained significant damage from Hurricane Katrina in 2005. In March 2015, the City and the S&WB submitted a joint request to FEMA for \$2 billion in public assistance funds for projects to repair Katrina-related damage to the City's roadways and subsurface infrastructure. The joint request, referred to as the Joint Infrastructure Recovery Request (JIRR Request), would permit the City and the S&WB the flexibility to utilize the requested funds to repair the systems damaged by Katrina. Prior to the JIRR Request, FEMA awarded \$784.9 million to the City and the S&WB for infrastructure-related projects to repair damage related to Hurricane Katrina.⁴ In December 2015, FEMA reached a final determination of disaster eligible costs, which provided an additional \$1.25 billion out of the \$2 billion requested as

¹ La. R.S. 33:4071.

² New Orleans Home Rule Charter, Art. IV, Chapter 9, Section 4-901(1).

³ Agreement Between City of New Orleans, Department of Streets and Sewerage and Water Board of New Orleans. July 1, 1992.

⁴ FEMA awarded \$409,237,093 in public assistance funds to the City for disaster-eligible road and drainage repairs and \$375,660,835 in public assistance funds to the S&WB for disaster-eligible water, sewer and drainage repairs.

capped sub-grants to the City⁵ and the S&WB⁶ for infrastructure-related projects, known as the JIRR Program.⁷ FEMA’s final determination of disaster-eligible costs permitted funding from the previously awarded \$784.9 million for non-JIRR projects to be reallocated to the \$1.25 billion capped sub-grants for JIRR Program projects if construction for those non-JIRR projects had not commenced. In May 2016, FEMA reached a final agreement (JIRR Settlement) with the City and the S&WB, awarding approximately \$1.7 billion for JIRR Program projects, which included \$414.1 million reallocated to the capped sub-grants from the previously awarded funds. As shown in Figure 1, the JIRR Settlement consisted of the following FEMA funding for JIRR Program projects to restore the City’s infrastructure to its pre-storm function and condition:

Figure 1. JIRR Settlement Summary

| Funding Description | Amount |
|---|------------------------|
| Previously-awarded FEMA public assistance funds to the City reallocated to the JIRR Program | \$278,537,340 |
| Additional FEMA public assistance funds awarded to the City for JIRR Program projects | \$1,120,882,769 |
| Total FEMA Funding Awarded for JIRR Program Projects (City) | \$1,399,420,109 |
| Previously-awarded FEMA public assistance funds to the S&WB reallocated to the JIRR Program | \$135,593,353 |
| Additional FEMA public assistance funds awarded to the S&WB for JIRR Program projects | \$128,986,034 |
| Total FEMA Funding Awarded for JIRR Program Projects (S&WB) | \$264,579,387 |
| Total FEMA Funding Awarded to the City and the S&WB for JIRR Program Projects | \$1,663,999,496 |

To receive the funding, the City and the S&WB were required to pay for incurred expenses for JIRR Program projects using their own resources and then submit reimbursement requests to FEMA, as well as complete all JIRR Program projects prior to June 30, 2023.⁸

In addition to the \$1.7 billion FEMA funding, the City and the S&WB identified \$803 million of local, state, and federal funding for a total of approximately \$2.4

⁵ FEMA determined that an additional \$1,120,882,769 was eligible to the City to be provided as a capped sub-grant for road and drainage repairs.

⁶ FEMA determined that an additional \$128,986,034 was eligible to the S&WB to be provided as a capped sub-grant for water, sewer and drainage repairs.

⁷ FEMA’s final determination of eligible costs for Katrina-related infrastructure damage, including the \$784.9 million FEMA sub-grants previously awarded for non-JIRR projects, was approximately \$2.03 billion.

⁸ The JIRR Settlement permitted a deadline extension for JIRR Program projects through 2025 if such extension requests were approved by FEMA. FEMA may grant extensions to JIRR Program projects on an individual project basis based on demonstrated work, such as contracts awarded for construction at the time of the request.

billion funds available for JIRR Program projects.⁹ The City completed a comprehensive, scientific assessment of City-owned streets in Spring 2015 to determine which surface infrastructure was most in need of repair using JIRR Program funds. Approximately 65 percent of the City's streets rated in poor or worse condition. The City-wide pavement assessment concluded "[i]t would take approximately \$5 billion in funding to reconstruct/repave all of the City's streets that were in Poor or worse condition."¹⁰

The JIRR Program encompassed more than 200 individual projects and either all or portions of approximately 400 miles of roadway in New Orleans. Each JIRR Program project involved one or more of the following types of repairs:¹¹

- **Full Reconstruction:** Repair sewage, water, and drainage lines, rebuild the street entirely, and repair sidewalks and curbs.
- **Patch Mill/Overlay:** Repave the asphalt roadway from curb to curb and repair damaged sidewalks.
- **Patch Concrete:** Remove damaged portions of the concrete roadway and replace it with new smooth concrete pavement.
- **Incidental Road Repairs:** Remove damaged portions of the asphalt roadway and replace it with new smooth pavement.
- **Non-Paving Incidentals:** Repair damaged sidewalks, driveway aprons and curbs within the public right-of-way.
- **Streetscape:** Landscaping and other aesthetic improvements such as neighborhood signage and lighting.
- **Bridge Repairs:** Replace, restore or rehabilitate bridges over the City's waterways and roadways.

In January 2019, the City and the S&WB implemented the "Coordination Procedure for the City of New Orleans Department of Public Works and the Sewerage and Water Board of New Orleans" (Coordination Policies and Procedures) after conducting meetings with key leadership from FEMA and GOHSEP to design standard operating procedures for coordinating JIRR Program projects. According to the Coordination Policies and Procedures,

⁹ May 9, 2018 joint presentation by the City and the S&WB.

¹⁰ <https://roadwork.nola.gov/roadwork/media/Assets/Pavement-Assessment-fact-sheet-Oct-2016.pdf>. Updated June 2018. Accessed June 14, 2020.

¹¹ <https://roadwork.nola.gov/types-of-repairs/>. Accessed February 7, 2022.

The JIRR [Program] will be executed in [four] waves to reduce the size and ease implementation of construction contracts for [JIRR Program projects]. To reduce the sheer number of active projects within neighborhoods, work will be divided into neighborhood groups. The groups are assigned alphabetically in order of increasing complexity (i.e. Group A repairs will precede Group B repairs).¹²

The City and the S&WB designed the Coordination Policies and Procedures with the expectation of completing all four waves of JIRR Program projects by the June 30, 2023 deadline established by the JIRR Settlement. However, as of September 30, 2021 only \$317,911,113 of the budgeted funding was spent on JIRR Program projects with only 28 of the 204 JIRR Program projects having reached substantial completion/contract closeout. Fifty-one projects were in construction, while the 125 remaining JIRR Program projects had not begun construction.¹³

¹² Coordination Procedure for the City of New Orleans Department of Public Works and the Sewerage and Water Board of New Orleans. Version 4.0. Revised July 10, 2020.

¹³ Joint Infrastructure Recovery Request (JIRR) Program Quarterly Progress Report. City of New Orleans. Q4 2020. Uploaded to RoadworkNOLA website on November 1, 2021: https://roadwork.nola.gov/roadwork/media/Documents/JIRR%20Quarterly%20Reports/JIRR-Quarterly-Report_Q3-2021_1.pdf. Accessed April 12, 2022.

II. JIRR PROGRAM POLICIES AND PROCEDURES

The City and the S&WB had a troubled history of coordinating work. It was common for the City to repave a street, only for the S&WB to later cut into the new road to make repairs to subsurface infrastructure. To maximize available funding and to ensure underlying infrastructure issues were completed prior to surface repairs, it was imperative for the City and the S&WB to develop and implement coordination procedures for all phases of JIRR Program projects from their initial planning to contract closeout

The 1992 CEA between the City and the S&WB defined their working relationship and required them to,

... jointly prepare a manual of procedures and standards The manual shall include assignments of specific responsibilities of [S&WB] and [DPW] personnel. The manual shall address specific types of problems and areas of conflict that need a cooperative effort for resolution. The manual shall include or reference specific standards and specifications applicable to the design, installation, and repair of [S&WB] facilities as they affect [DPW] operations. The completed manual shall be approved by the chief executive of each party, or his/her designee.¹⁴

On February 6, 2012, the City and the S&WB executed another cooperative endeavor agreement (2012 CEA) that required the City and the S&WB to “jointly prepare procedures and standards” and define roles and responsibilities for the FEMA-funded projects.¹⁵ The 2012 CEA stated the jointly-prepared procedures “... shall include assignments of specific responsibilities of Board and DPW personnel and shall address specific types of problems and areas of conflict that need a cooperative effort for resolution.”¹⁶

¹⁴ Agreement Between City of New Orleans, Department of Streets and Sewerage and Water Board of New Orleans. July 1, 1992.

¹⁵ Agreement Between the City of New Orleans, Department of Public Works and the Sewerage and Water Board of New Orleans for Federal Emergency Management (FEMA) Funded Projects. February 6, 2012.

¹⁶ Ibid.

Finding 1: At the time of the 2016 JIRR Settlement, the City and the S&WB did not have any coordination policies and procedures in place as required by the 1992 and 2012 CEAs to guide the execution of the \$2 billion JIRR Program. The absence of these policies may have contributed to significant plan changes totaling \$9,983,357 and other delays during the construction phase for the eight projects tested.

In a November 2017 City of New Orleans Department of Public Works Transition Memorandum, DPW noted a “[l]ack of coordination between DPW projects and [S&WB] projects ... meetings are not frequent and often times there is difficulty reaching individuals at [S&WB].” City and S&WB management also acknowledged that coordination between the two agencies was not sufficient in the early stages of the JIRR Program. The City stated that it,

... was more than two years behind in implementing the \$2 billion federally-funded joint infrastructure program. Less than \$10 [million] in total work was underway, compared to nearly \$700 [million] now, and a very real threat existed that if the City didn’t show progress in constructing this work, the City would lose these funds that are so critical to our safety, our environment, and our economy. And so, we pushed hard and continue to move projects into construction.¹⁷

The City categorized the JIRR Program projects into four different waves. The first two waves included projects whose scopes required incidental repairs rather than full reconstruction. The final two waves included projects whose scopes required full reconstruction. The City rolled-out the JIRR Program projects in this order so that projects with smaller scopes would proceed to construction first with the intention of substantial completion before larger scale projects commenced. All eight projects selected for testing were Wave 1 and 2 Projects.¹⁸ Figure 2 shows

¹⁷ *City Announces Changes Aimed at Improving Transparency and Accountability in its Infrastructure Program*. August 25, 2021. <https://content.govdelivery.com/accounts/LANOLA/bulletins/2ee4d16>. Accessed August 25, 2021.

¹⁸ During the scope period the only projects with City and S&WB expenses incurred were Wave 1 and 2 projects. Therefore, the OIG’s selected sample did not include any Wave 3 and 4 projects.

the original awarded amount for the construction contracts tested for the eight projects, including the obligations of the City and the S&WB.

Figure 2. City and S&WB Funding Obligations for Contracts Tested

| Project ID | Project Wave | Contract Date | City-Funded | S&WB-Funded | Total Awarded Contract Amount |
|------------|--------------|---------------|---------------------|---------------------|-------------------------------|
| RR043 | Wave 2 | 8/13/2020 | \$2,831,867 | \$1,062,974 | \$3,894,841 |
| RR078 | Wave 1 | 2/28/2018 | 1,146,908 | - | 1,146,908 |
| RR100 | Wave 2 | 6/10/2019 | 8,930,170 | 5,218,765 | 14,148,935 |
| RR104 | Wave 2 | 4/27/2020 | 6,180,611 | 2,637,701 | 8,818,312 |
| RR109 | Wave 2 | 11/19/2019 | 4,383,436 | 1,284,510 | 5,667,946 |
| RR124 | Wave 1 | 6/24/2019 | 5,651,567 | 668,322 | 6,319,889 |
| RR132 | Wave 1 | 1/17/2020 | 4,695,500 | 1,587,042 | 6,282,542 |
| RR133 | Wave 1 | 11/25/2019 | 7,780,071 | 4,964,398 | 12,744,469 |
| | | Totals | \$41,600,130 | \$17,423,712 | \$59,023,842 |

In January 2017, the City and the S&WB stated that all Wave 1 projects had entered the design phase as of October 2016, and all Wave 2 projects had entered the design phase as of January 2017.¹⁹ The City and the S&WB also stated that the bidding process for construction contracts for Wave 1 projects began in January 2017 with the intention of those projects entering the construction phase by July 30, 2017. However, the City and the S&WB did not meet with key leadership from FEMA and GOHSEP to develop coordination policies for JIRR Program projects until Summer 2018. The discussion from those leadership meetings was incorporated into the Coordination Policies and Procedures and implemented in January 2019 for JIRR Program projects. Therefore, the City and the S&WB either completed the planning phase or entered/completed the design phase for all Wave 1 and 2 projects selected for testing as of January 2017, even though the Coordination Policies and Procedures were not implemented until January 2019.

¹⁹ "Update on Joint Department of Public Works and Sewerage and Water Board Capital Improvement Program" presentation to the Public Works, Sanitation and Environmental Committee. January 19, 2017.
https://cityofno.granicus.com/GeneratedAgendaViewer.php?view_id=42&clip_id=2548.
 Accessed May 8, 2020.

SIGNIFICANT PLAN CHANGES FOR WAVE 1 AND 2 PROJECTS

Per the City,

The original approach was taken for wave 1 and 2 projects to demonstrate progress towards the current program deadline of June 2023. It was imperative that the City bid projects after the [JIRR] settlement to ensure substantial progress was occurring, neighborhoods were not severely impacted with multiple projects in construction, that an over-saturation in the contractor market did not occur, etc.²⁰

Due to the City's and the S&WB's urgency to make progress toward breaking ground on the earliest projects, the OIG noted the approach for Wave 1 and 2 projects lacked efficient and effective procedures. The City's approach used in designing Wave 1 and 2 projects contributed to significant plan changes (also known as change orders) and construction delays.²¹ As of July 2021, three of the projects tested had plan changes that exceeded 20 percent of the original contract amount, and one project had plan changes that exceeded 10 percent of the original contract amount. These plan changes may have been for quantities that could have been included in the original bid if adequate pre-bid walkthroughs were performed for the projects. Through July 2021, the eight projects tested had total plan changes of \$9,983,357 or 16.9% of their original contract amounts, as shown in Figure 3.

²⁰ JIRR Program Plan Changes memorandum to OIG. December 8, 2021.

²¹ Finding 3 discusses project delays for the eight Wave 1 and 2 projects tested.

Figure 3. Plan Changes by Project through July 2021

| Project ID | Original Contract Amount | # Plan Changes through July 2021 | Total Plan Change Expense - City | Total Plan Change Expense - S&WB | Total Plan Change Expenses through July 2021 | Total Plan Changes as a % of Original Contract ²² |
|---------------|--------------------------|----------------------------------|----------------------------------|----------------------------------|--|--|
| RR043 | \$3,894,841 | 1 | \$40,236 | \$293,528 | \$333,764 | 8.6% |
| RR078 | 1,146,908 | 6 | 294,866 | - | 294,866 | 25.7% |
| RR100 | 14,148,935 | 6 | 1,591,444 | 735,812 | 2,327,256 | 16.4% |
| RR104 | 8,818,312 | 1 | (5,358) | 43,200 | 37,842 | 0.4% |
| RR109 | 5,667,946 | 3 | 47,493 | 481,722 | 529,215 | 9.3% |
| RR124 | 6,319,889 | 5 | 2,734,999 | 66,654 | 2,801,653 | 44.3% |
| RR132 | 6,282,542 | 7 | 2,402,133 | 66,895 | 2,469,028 | 39.3% |
| RR133 | 12,744,469 | 2 | 1,084,066 | 105,667 | 1,189,733 | 9.3% |
| Totals | \$59,023,842 | 31 | \$8,189,879 | \$1,793,478 | \$9,983,357 | 16.9% |

The City stated that the procurement department reviewed all plan changes and determined that they were within the scope of the original contract and did not violate Public Bid Law. The City stated that there were several factors triggering most of the additional work for Wave 1 and 2 projects:²³

- Inspections by the project Engineer of Record (EOR) and DPW at the time of construction required additional work not included in the original bid due to the dated scoping efforts used in the project’s design phase.
- New DPW general specifications for street paving adopted in 2015 required more comprehensive pavement repairs than those included in the original design, which resulted in increased quantities.²⁴
- During construction, the EOR determined it was necessary that underground S&WB repairs be added to the project’s original scope of work.

²² Percentages in red indicate projects with total plan changes that exceeded 10 percent of the original contract amount through July 2021.

²³ JIRR Program Plan Changes memorandum to OIG. December 8, 2021.

²⁴ Adopted by the City Council on November 5, 2015 by Ordinance No. 026696 MCS.

Per the City,

Wave 1 & 2 projects generally followed the original project worksheet scope of work and were sent to public bid after the [JIRR] settlement was reached. During construction, the [DPW] project manager and the [EOR] performed an inspection walkthrough to determine additional scope of work needed based on current field conditions. DPW incorporated additional scope of work into projects by executing plan changes/change orders recommended by the EOR following the inspection walkthroughs.²⁵

Although the plan changes were permissible under public bid law, the City should have had a procedure in place for the EOR and the DPW to perform inspection walkthroughs prior to seeking bid rather than during construction. Conducting pre-bid inspection walkthroughs would have allowed the City to include additional work and increased quantities in the original competitive bid to ensure the best price. If the City noted the need for plan changes during pre-bid inspections prior to construction, it could have determined more accurate project completion estimates. Instead, the City delayed estimated completion dates for the projects tested as further discussed in Finding 3.

The City stated that going forward Wave 3 and 4 projects will be rescope before going to bid to avoid similar plan changes as noted in the Wave 1 and 2 projects tested. In August 2021, the City also announced procedural changes, as further discussed in Finding 3, that would be implemented to hold contractors accountable for ensuring JIRR Program projects are completed more rapidly to reduce the impact those construction projects have on residents and their neighborhoods. The City stated, “[t]he changes made... over the last several months [of 2021] will minimize large change orders on remaining projects, while successfully meeting all program requirements and completing projects timely.”²⁶

COMMUNICATION AND CONTINUITY DURING DISRUPTIONS

In a November 2017 City of New Orleans Department of Public Works Transition Memorandum, the DPW noted the “[l]ack of coordination between DPW projects and [S&WB] projects, especially during staff transitions and fiscal matters ...” as a

²⁵ JIRR Program Plan Changes memorandum to OIG. December 8, 2021.

²⁶ Ibid.

major weakness in need of being addressed by the incoming administration. The City's and the S&WB's planning and implementation of the complex JIRR Program spanned several administrations from the early days of securing funding after Katrina to planning, designing and construction of over 200 construction projects. The City and the S&WB had a history of communication issues that was heightened with management turnover. The City and the S&WB experienced significant turnover at top level positions involved in the JIRR Program, including the DPW Director in February 2021 and the S&WB General Superintendent in March 2021. As of September 2022, both positions remained open with interim appointees. During the scope period, the City was still recovering from a December 2019 cyber-attack, as well as facing new challenges caused by the ongoing pandemic.

Recommendation 1: The City and the S&WB should document JIRR Program policies and procedures, as well as coordination procedures as required by the 1992 and 2012 CEAs. The City and the S&WB should update those coordination policies regularly to eliminate inefficiencies and to provide continuity in periods of transition. The City and the S&WB should also include FEMA and GOHSEP in the discussions as it updates the JIRR Program policies.

DPW and S&WB management should approve all jointly-prepared policies and any updates to those policies as required by the 1992 CEA. To bolster coordination efforts, the City and the S&WB should establish shared office space as required by the 2019 JIRR Program CEA.²⁷ Establishing shared office space for the City and the S&WB should remain a priority to bolster communication and coordination not only for the remainder of JIRR Program, but for continued coordination once the JIRR Program projects have been completed.

²⁷ The 2019 JIRR CEA required the City to “[p]rovide space for [the S&WB] at City Hall so that necessary JIRR team members will be housed together to foster closer collaboration and improve programmatic communication.” Cooperative Endeavor Agreement Between the City of New Orleans and the Sewerage and Water Board of New Orleans Joint Infrastructure Recovery Request Program. June 27, 2019.

III. S&WB ASSET MANAGEMENT AND WORK ORDER SOFTWARE

The S&WB used Cass Works asset management and work order software manufactured by RJN Group, Inc. (RJN) for tracking maintenance work orders for the water distribution and sewer collection systems. The S&WB estimated it implemented Cass Works in 1991. S&WB management acknowledged the Cass Works software was so outdated that the software developer, RJN, stopped providing support around 2005. For at least eight years, the S&WB publicly acknowledged that Cass Works needed to be replaced. In 2015, the S&WB stated,

Most of these information systems been [sic] utilized well beyond their designed lifespan and are in need of replacement. ... [The] planning for replacement of [Cass Works] will begin in 2016.²⁸

However, in 2018 the S&WB acknowledged it had not replaced Cass Works and stated,

Over the next five years, the Board will focus its information systems software replacements, upgrades, and enhancements in several directions ... [including replacing Cass Works] ... with a GIS-based system.²⁹

In 2018, the Louisiana Legislative Auditor recommended the S&WB should,

Replace [Cass Works] with a modern-day system that is user friendly and capable of scheduling, tracking (e.g., labor and material costs), and providing detailed management reporting on all S&WB projects from start to finish. Employees should be properly trained on the new system.³⁰

²⁸ Sewerage and Water Board of New Orleans “Report on Efficiency and Effectiveness of Information Systems” to the City Council. September 2015.

²⁹ Sewerage and Water Board of New Orleans “Report on Efficiency and Effectiveness of Information Systems” to the City Council. March 2018.

³⁰ Sewerage and Water Board of New Orleans; Louisiana House of Representatives Resolution 92 and Drainage Operations. Louisiana Legislative Auditor. Issued November 7, 2018. [https://app.la.state.la.us/PublicReports.nsf/0/819E2407C262F90A8625833E006BF9E5/\\$FILE/0001AB9E.pdf](https://app.la.state.la.us/PublicReports.nsf/0/819E2407C262F90A8625833E006BF9E5/$FILE/0001AB9E.pdf). Accessed January 14, 2020.

In its response to the Louisiana Legislative Auditor report, the S&WB agreed and stated,

The current [Cass Works] system deserves to be upgraded or replaced, and management is keenly aware of the importance of selecting the proper technology and ensuring the complete and ongoing training of staff with regard to same. Funding for acquisition, maintenance, enhancement, security and training remains an issue.³¹

Finding 2: Cass Works was outdated and, due to system limitations, did not consistently provide the City with credible information needed to properly plan and determine the full scope of JIRR Program projects.

The S&WB stated they did not replace Cass Works due to a lack of funding and the inability to train employees. The S&WB's reliance on its outdated Cass Works software hindered its ability to provide accurate information to the City concerning S&WB assets and work orders, as well as its ability to effectively and efficiently manage its own projects and work orders, including customer repair needs such as water and sewer leaks. The S&WB could not determine if service requests were fully open, partially open, or closed from the data in Cass Works. S&WB management stated that Cass Works was poorly designed for inputs related to tracking the status of work orders issued for service requests. For example, if a S&WB crew member partially completed a work order, they would indicate the work order was partially completed, but Cass Works would show the crew member closed out the entire work order as if the repairs were completed. Cass Works also showed work orders from some service requests as "open" even when the S&WB partially completed some repairs.

When planning JIRR Program projects, the City must rely on the information from Cass Works to determine the full scope of the subsurface repair needs. Unlike surface level repair needs, which are visible and corrected as part of the repaving scope of JIRR Program projects, subsurface repair needs are more difficult to spot

³¹ Sewerage and Water Board of New Orleans; Louisiana House of Representatives Resolution 92 and Drainage Operations. Louisiana Legislative Auditor. Issued November 7, 2018. [https://app.la.state.la.us/PublicReports.nsf/0/819E2407C262F90A8625833E006BF9E5/\\$FILE/0001AB9E.pdf](https://app.la.state.la.us/PublicReports.nsf/0/819E2407C262F90A8625833E006BF9E5/$FILE/0001AB9E.pdf). Accessed January 14, 2020.

when performing walkthroughs of the project area during the planning and design phase. The City stated that it could only ensure all subsurface repairs will be completed when the scope of a project required full reconstruction. The scope of the Wave 1 and 2 projects tested did not include full reconstruction. However, during construction, subsurface issues became apparent and resulted in significant plan changes. For the eight projects tested, the auditors noted \$1,793,478 for plan changes specific to S&WB work as shown in Figure 3 in Finding 1.

CITY AND S&WB INFORMATION SHARING FOR WORK ORDERS AND ASSETS

The City and the S&WB agreed they should use compatible systems to share information about their assets and work orders. In March 2021, DPW submitted a Request for Information (RFI) to upgrade its asset management and work order system. The City stated it indicated to the S&WB that there may be an opportunity to coordinate on this software purchase. The S&WB also acknowledged that since DPW was also seeking to update its system, it would be ideal if the two systems were the same or at least from the same vendor.

As of December 2021, the City stated that it was coordinating with the S&WB to determine the S&WB's requirements for its asset management and work order system. The City stated it delayed procuring DPW's new asset management and work order system until early 2022 so that the S&WB could submit the requirements needed for its system to provide the most efficient sharing of information when coordinating City and S&WB repairs.

Recommendation 2: The S&WB should establish adequate funding for the acquisition, maintenance, security and training required to implement a new asset management and work order system as soon as possible. A properly functioning system that provides accurate and timely information is needed to effectively and efficiently coordinate JIRR Program projects and other subsurface repairs with the City.

When procuring the new asset management and work order system, the S&WB should ensure the system is GIS-based and provides, at a minimum, accurate information for the following: (1) scheduling and estimated completion

information; (2) work order progress; (3) detailed work order status from start to finish (e.g. fully open, partially open, closed); and (4) labor and material costs. The City and the S&WB should consider using the same or compatible software to share accurate and timely information. If implemented effectively, a new system will minimize the instances in which the City completes surface repairs only to have the S&WB tear up the newly paved road to complete subsurface repairs, which results in wasted funding and labor resources.

IV. PUBLIC TRANSPARENCY

The City established the RoadworkNOLA website to provide, “[p]roactive communications so that residents are well informed throughout the [JIRR] program.”³² RoadworkNOLA provided the public with maps, timelines, and pre-construction information packets concerning planned and ongoing construction projects impacting their neighborhood.

Finding 3: The City did not provide proactive or accurate information to the public concerning the status of planned or ongoing projects in their neighborhoods.

Prior to the construction phase of each JIRR Program project, the City conducted a pre-construction community meeting, which included a discussion of the scope of the project and an estimated timeline from beginning of construction to substantial completion.^{33,34} However, the City did not hold progress or status meetings to update community members following the initial pre-construction meeting for each project. Essentially, the only source of information was provided on RoadworkNOLA and its corresponding social media pages. However, the searchable information on RoadworkNOLA was so broad that it did not provide accurate or reliable information when members of the public searched their address for planned and ongoing construction impacting their neighborhood. The information was limited to the estimated start and end dates for the entire project, which often spanned many miles and various neighborhoods.

For example, when auditors searched RoadworkNOLA for construction on the 1800 block of AP Tureaud Avenue on May 3, 2021, the corresponding project page provided a start date of October 30, 2020 and an estimated completion date of April - June 2022 as shown in Figure 4.³⁵ However, when auditors searched RoadworkNOLA on April 7, 2022, the completion date for the project was updated to October – December 2022, as shown in Figure 5.

³² <https://roadwork.nola.gov/about/>. Accessed November 10, 2021.

³³ The Coordination Policies and Procedures required, “Community outreach and neighborhood engagement [be] performed ...” prior to the beginning of construction for each project.

³⁴ The public can view the pre-construction community presentations to date for each project at the following link: <https://roadwork.nola.gov/projects/>. Accessed November 10, 2021.

³⁵ For this example, the 1800 block of AP Tureaud Avenue is part of Project RR004.

Figure 4. 1800 Block of AP Tureaud Ave as of May 3, 2021

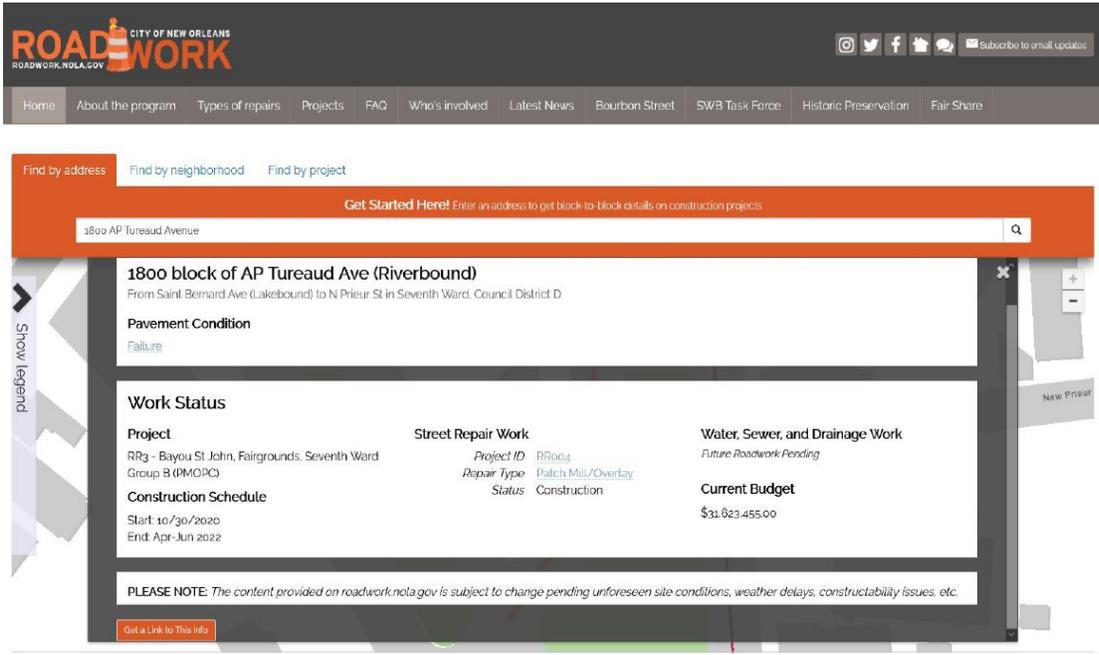
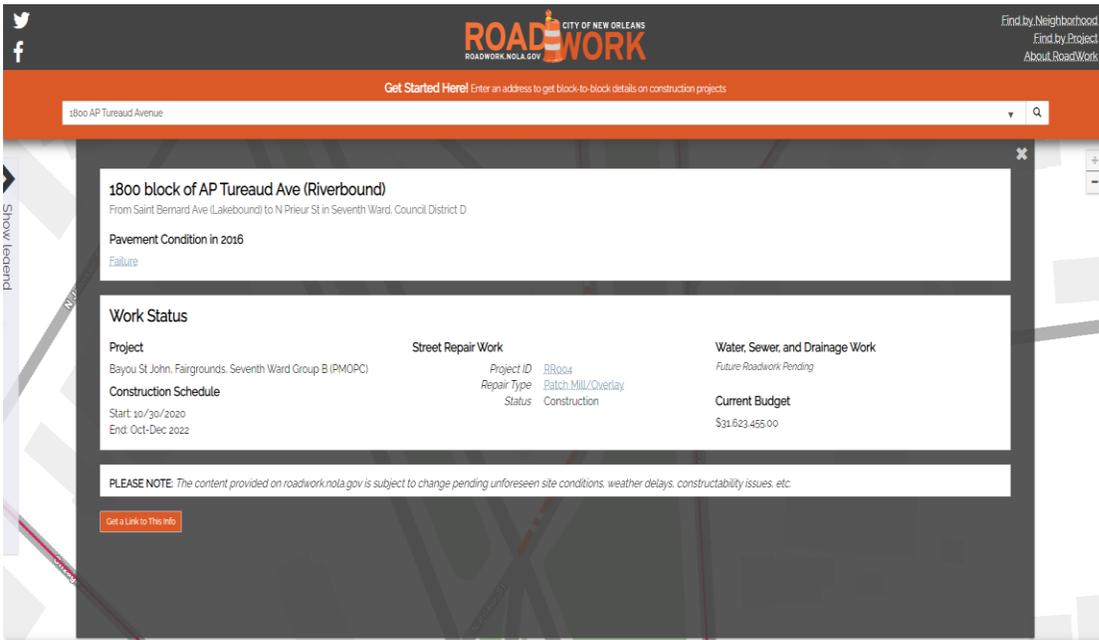


Figure 5. 1800 Block of AP Tureaud Ave as of April 7, 2022



The City also provided a project map on RoadworkNOLA that included the planned construction for the 1800 block of AP Tureaud Avenue. However, the entire project spanned from Interstate 610 to the North, St. Louis Street to the South, City Park to the East, and Elysian Fields Avenue to the West as shown in Figure 6. These boundaries for the JIRR Program project included 7.47 perimeter miles and 2.42 area square miles and across multiple neighborhoods.³⁶

Figure 6. Project Map for Project RR004



The OIG found that the limited information provided often proved to be inaccurate. As shown in Figure 7, none of the eight projects tested were substantially completed by the original completion date. On average, the estimated completion date provided on RoadworkNOLA was delayed by 229 days or 7.6 months as of January 1, 2022. The total delays will increase because six of the eight projects tested were still in the construction phase.

³⁶ The auditors obtained perimeter and square mile information for Project RR004 by applying the boundaries of the project map obtained from RoadworkNOLA (Refer to Figure 6) to Google Earth Pro on April 7, 2022.

Figure 7. Estimated Project Completion Date Analysis as of January 1, 2022

| Project ID | Start Date ³⁷ | Original Completion Date ³⁸ | Project Duration (Days) | Estimated Completion Date ³⁹ | Completed On-Time | # Days Delayed from Original Completion Date |
|--|--------------------------|--|-------------------------|---|-------------------|--|
| RR043 | 9/28/2020 | 12/21/2021 | 449 | 3/31/2022 | No | 100 |
| RR078 | 4/23/2018 | 4/30/2019 | 372 | Completed on 6/14/2019 | No | 45 |
| RR100 | 8/1/2019 | 6/20/2021 | 689 | 6/30/2022 | No | 375 |
| RR104 | 6/15/2020 | 12/21/2021 | 554 | 3/31/2022 | No | 100 |
| RR109 | 12/4/2019 | 11/30/2020 | 362 | 6/30/2022 | No | 577 |
| RR124 | 7/29/2019 | 12/21/2020 | 511 | 3/31/2022 | No | 465 |
| RR132 | 2/3/2020 | 9/22/2021 | 597 | Completed on 12/1/2021 | No | 70 |
| RR133 | 1/21/2020 | 12/21/2021 | 700 | 3/31/2022 | No | 100 |
| Average # of Days Expected Completion Was Delayed as of January 1, 2022 | | | | | | 229 |

There were many reasons that could cause projects to be delayed (e.g. scope changes, labor shortages, scheduling/supply chain issues, etc.). The auditors verified for the projects tested, the City and the S&WB held progress meetings approximately twice a month during the scope period, as required by the Coordination Policies and Procedures.⁴⁰ Each project manager included a bi-weekly status update in the City’s Infrastructure Reporting and Integration System (IRIS). These updates included a two-week look ahead of planned work for each project, as well as updates on construction delays, plan changes, and other items that could impact the expected completion time. However, the City did not provide similar updates for delays or work stoppages to residents in impacted neighborhoods through RoadworkNOLA. The City did not inform residents when they could expect construction to resume and/or conclude in neighborhoods impacted by JIRR Program projects. Instead, it simply extended the overall

³⁷ As documented on the City’s Notice to Proceed letter provided to the contractor for each project.

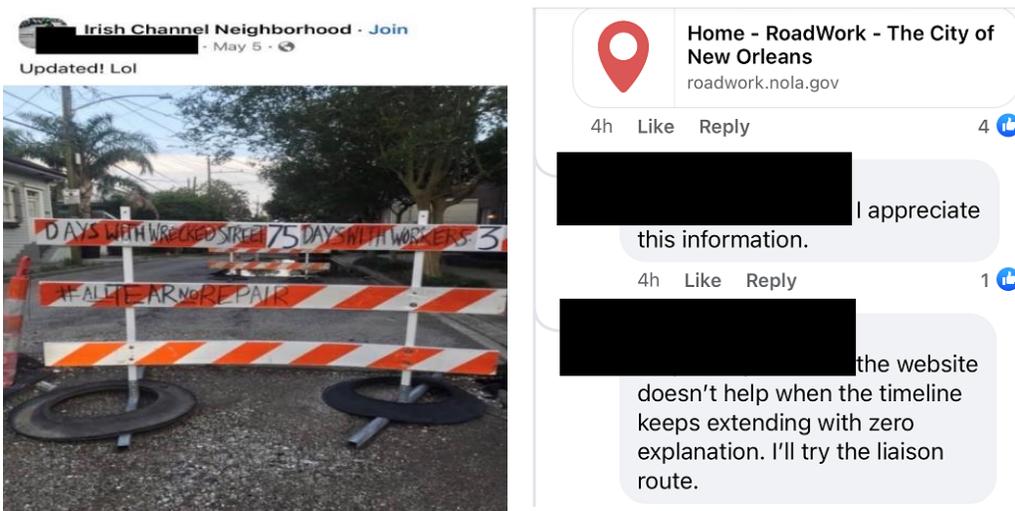
³⁸ As provided by the City in the pre-construction community meeting materials. For purposes of testing, if the estimated completion date provided by the City at the pre-construction community meeting was not a specific date (e.g. "Fall 2021" or "November 2021"), the auditors used the last day of the season/month for the estimate given (e.g. "Fall 2021" = December 21, 2021, "November 2021" = November 30, 2021).

³⁹ As shown on RoadworkNOLA when accessed on January 1, 2022.

⁴⁰ The Coordination Policies and Procedures required, “[c]onstruction progress meetings will be held every two weeks. Discussion at meetings will include contractor delay, problems, two week look-ahead, revised schedule, construction expectations, site conditions, and open roadways.”

estimated completion date for the entire project on RoadworkNOLA. The lack of information left the public with a negative opinion of the management of the JIRR Program and allowed residents to form their own conclusions about why construction was halted. Frustrated residents saw no visible progress and often vented their frustrations on the very same social media outlets used by RoadworkNOLA to provide positive JIRR Program project updates as illustrated in Figure 8.

Figure 8. Public Reaction to Lack of Information Concerning Project Status⁴¹



The City acknowledged JIRR Program contract terms were too lenient for project completion times and resulted in the contractors conducting work in ways that were most efficient to the contractors at the expense of the impacted neighborhoods. The contract terms allowed contractors to tear up pavement segments within a project footprint at the same time, only to leave those areas torn up to complete project work in other areas. In August 2021, the City announced it would implement procedural changes to ensure contractors completed projects more rapidly to reduce the impact on residents and their neighborhoods. Those changes included,

initiating a "phased in" task-order contract approach, ensuring, for example, that the first ten blocks of work gets completed in a

⁴¹ Picture sources: Screenshots of a picture posted on May 5, 2021 to the "Irish Channel Neighborhood" Facebook group (left) and a separate conversation posted on October 1, 2021 to the "Mid-City Neighborhood" Facebook group (right). Accessed February 22, 2022.

neighborhood prior to the contractor initiating work on the next ten blocks; guaranteeing that two-week look ahead schedules are submitted directly to residents to provide a better sense of where and when work will happen; publicly providing "report cards" on City roadwork contractors; and, in some cases, cancelling, redesigning, and rebidding certain projects. To fully ensure that these new operational changes have the time to fully become implemented, procurement of all new DPW/[S&WB] joint infrastructure projects will be paused for the next 90 days.⁴²

In December 2021, the City acknowledged to OIG auditors that the JIRR Program project "timelines are not where we need them to be" and most of the estimated completion dates were not accurate. The City stated that it could not provide more specific information on RoadworkNOLA, but it may be able to provide more detailed information as it begins to implement the new task order-based contracts.

As of September 30, 2021, the City and the S&WB budgeted \$1.74 billion, which included \$78.69 million from additional funding sources, to complete the 204 JIRR Program projects from planning to completion.⁴³ As of September 30, 2021, only \$317.91 million of the budgeted funding was spent on JIRR Program projects and only 28 of 204 JIRR Program projects were substantially completed or closed out. Fifty-one projects were in construction, while the 125 remaining JIRR Program projects had not begun construction. Due to the delays, lack of coordination and planning, and other inefficiencies, the City and the S&WB will not complete all projects before the June 30, 2023 FEMA deadline, which the City acknowledged in May 2022. The JIRR Settlement noted it may be necessary for the City and the S&WB to request a deadline extension through 2025. The City expressed confidence it would receive FEMA approval for any extension requests, but these approvals are not guaranteed. If not approved, the City and the S&WB risk losing

⁴² *City Announces Changes Aimed at Improving Transparency and Accountability in its Infrastructure Program*. August 25, 2021. Accessed August 25, 2021.

<https://content.govdelivery.com/accounts/LANOLA/bulletins/2ee4d16>.

⁴³ Joint Infrastructure Recovery Request (JIRR) Program Quarterly Progress Report. City of New Orleans. Q4 2020. Uploaded to RoadworkNOLA website on November 1, 2021.

https://roadwork.nola.gov/roadwork/media/Documents/JIRR%20Quarterly%20Reports/JIRR-Quarterly-Report_Q3-2021_1.pdf. Accessed April 12, 2022.

hundreds of millions of dollars for any projects not completed by the June 30, 2023 deadline.

Recommendation 3: The City should update RoadworkNOLA with more transparent and timely information, searchable by address, to provide the public with more detailed information concerning the status of planned and ongoing construction in impacted neighborhoods.

If implemented effectively, the City's task-order approach will reduce the construction area's footprint for each JIRR Program project. This would enable the City to provide more accurate project completion timelines to the public specific to neighborhoods impacted by planned and ongoing construction. The City must also improve the quality of the information provided to the public through RoadworkNOLA and other forms of communication. Project managers' project status updates should be translated into usable information and posted to RoadworkNOLA for the public's consumption when they search their address for planned and ongoing construction impacting their neighborhood. This information should include construction timelines and the scope of plan changes that are specific to impacted neighborhoods.

The City should also host quarterly briefings with the public in various neighborhoods to provide updates on planned/ongoing construction within their neighborhoods. This serves two purposes: (1) to inform the public of the magnitude and status of construction specific to their neighborhood, and (2) to receive feedback from residents. Improved transparency would provide members of the public with relevant and timely information and increase their understanding of the magnitude of those projects beyond what they see in their neighborhood.

V. S&WB REIMBURSEMENTS TO THE CITY

In June 2019, the City and the S&WB entered into a JIRR Program CEA to “document the annual management agreement between [the S&WB] and [the City] for the JIRR Program.”⁴⁴ The JIRR Program CEA defined the City’s and the S&WB’s roles and responsibilities for the management of the JIRR Program in the interest of streamlining the JIRR Program by enhancing the collaboration between the two parties. The JIRR Program CEA obligated the City to pay the City’s and the S&WB’s invoices and to assist the S&WB in preparing their requests for reimbursement to GOHSEP for FEMA-funded S&WB expenses. The JIRR Program CEA also established procedures for the City to invoice the S&WB for reimbursement for those JIRR Program expenses and a timeline for the S&WB to pay those invoices.

Finding 4: The S&WB did not submit timely reimbursement requests to GOHSEP as required by the JIRR Program CEA for all 54 applicable invoices, totaling \$4,196,735. The S&WB did not reimburse the City timely for any of the 98 invoices tested, totaling \$8,133,147.

As shown in Figure 9, auditors selected eight projects for testing that included City and S&WB invoices paid during the scope period, totaling \$27,352,907. The auditors tested all invoices for S&WB expenses paid by the City during the scope period for the eight selected projects. During the year ended December 31, 2020, the City paid 98 invoices for S&WB expenses, totaling \$8,133,147. Fifty-four of the 98 S&WB invoices, totaling \$4,196,735, were FEMA-funded and the remaining 44 invoices, totaling \$3,936,412, were funded by other sources.

⁴⁴ Cooperative Endeavor Agreement Between the City of New Orleans and the Sewerage and Water Board of New Orleans Joint Infrastructure Recovery Request Program. June 27, 2019.

Figure 9. Invoices Paid for Projects Selected for Testing

| Project ID | # of Expenses Tested | City Expenses | | S&WB Expenses | | Total Project Expenses |
|---------------|----------------------|-------------------|------------------|--------------------|------------------|------------------------|
| | | FEMA | Non-FEMA | FEMA ⁴⁵ | Non-FEMA | |
| RR043 | 6 | 20,613 | - | - | 12,569 | 33,182 |
| RR078 | 6 | 235,161 | - | - | - | 235,161 |
| RR100 | 46 | 1,882,191 | 1,937,825 | 1,379,105 | 1,571,811 | 6,770,932 |
| RR104 | 26 | 349,676 | - | 656,526 | - | 1,006,202 |
| RR109 | 40 | 2,334,415 | - | 395,893 | 732,353 | 3,462,661 |
| RR124 | 54 | 4,575,585 | 64,031 | 36,366 | 25,041 | 4,701,023 |
| RR132 | 52 | 3,163,384 | - | 1,113,318 | 6,555 | 4,283,257 |
| RR133 | 62 | 4,656,879 | - | 615,527 | 1,588,083 | 6,860,489 |
| Totals | 292 | 17,217,904 | 2,001,856 | 4,196,735 | 3,936,412 | 27,352,907 |

The City and the S&WB emphasized two extraordinary events occurred soon after the implementation of the JIRR Program CEA, stating:

In December 2019, the City experienced a cyber-attack. In March 2020, Covid-19, the transition to remote work and significant staff changes further delayed coordination efforts.

S&WB REIMBURSEMENT REQUESTS TO GOHSEP

For FEMA-funded S&WB expenses, the JIRR Program CEA required the City to, “jointly [assist the S&WB] ... with the preparation and transmission of requests for reimbursement to the ‘GOHSEP’ within 14 days of [the City’s] receipt of [S&WB] invoices.”⁴⁶ The S&WB did not transmit reimbursement requests to GOHSEP within 14 days of the City's receipt of invoices for S&WB expenses for any of the 54 FEMA-expenses tested, totaling \$4,196,735.⁴⁷ For those 54 expenses, an average number of 241 days elapsed from when the City received an invoice from the vendor and the date the S&WB submitted a Reimbursement Request Form to

⁴⁵ At the time the projects were selected for testing, a \$38,500 expense for Project RR078 was categorized as S&WB FEMA funds and later adjusted to City funds. Because of the adjustment, Project RR078 had zero dollars of S&WB expenses for the period tested.

⁴⁶ Cooperative Endeavor Agreement Between the City of New Orleans and the Sewerage and Water Board of New Orleans Joint Infrastructure Recovery Request Program. June 27, 2019.

⁴⁷ The auditors used the date invoices were uploaded to the City’s Budget, Requisition, and Accounting Services System (BRASS) as the date of receipt.

GOHSEP.⁴⁸ Per discussion with S&WB management, they could not submit a request to GOHSEP until they first received the invoice from the City. However, the City stated that the S&WB had access to the invoices as they were received in BRASS. Therefore, the S&WB did not need to wait for an invoice from the City to seek reimbursement from GOHSEP.

S&WB REIMBURSEMENTS TO THE CITY FOR JIRR PROGRAM EXPENSES

For FEMA-funded S&WB expenses, the JIRR Program CEA required “[a]ll reimbursements to [the City] shall be made by [the S&WB] within 3 business days of reimbursement from GOHSEP by ACH transactions.”⁴⁹ Because the S&WB failed to submit timely reimbursement requests to GOHSEP, FEMA reimbursements for all 54 FEMA-funded S&WB expenses, totaling \$4,196,735, were delayed.⁵⁰ For non-FEMA-funded S&WB expenses, the 1992 CEA between the City and the S&WB required the S&WB to, “provide payment within thirty (30) days of receipt of invoice.”⁵¹ However, the S&WB did not reimburse the City within 30 days of receipt of the City's invoice for all 44 applicable expenses, totaling \$3,936,412. As of November 2021, the S&WB had not reimbursed the City for four out of the 98 total S&WB expenses tested, totaling \$114,497. For the remaining 94 expenses, the City received reimbursement from S&WB an average of 257 days after the City received an invoice from the vender.

The JIRR Program CEA required the City to provide the S&WB “with Invoices for all JIRR work performed on behalf of [the S&WB] ... not longer than 30 calendar days after receipt from the [City's vendor].”⁵² During testing, the OIG noted the City did not provide the S&WB with invoices for work performed on behalf of the S&WB within 30 calendar days for all 98 S&WB expenses tested.⁵³ The City acknowledged that it did not invoice the S&WB timely because the S&WB did not have the

⁴⁸ The auditors did not include one of the 54 expenses in the calculation because the S&WB had not submitted a reimbursement request to FEMA as of December 1, 2021. At that time, 485 days elapsed since the City initially received an invoice for that expense.

⁴⁹ Cooperative Endeavor Agreement Between the City of New Orleans and the Sewerage and Water Board of New Orleans Joint Infrastructure Recovery Request Program. June 27, 2019.

⁵⁰ S&WB paid three of the City's invoices prior to receiving reimbursement from GOHSEP. However, it did not submit timely reimbursement requests to GOHSEP for all 54 applicable expenses tested.

⁵¹ Agreement Between City of New Orleans, Department of Streets and Sewerage and Water Board of New Orleans. July 1, 1992.

⁵² Cooperative Endeavor Agreement Between the City of New Orleans and the Sewerage and Water Board of New Orleans Joint Infrastructure Recovery Request Program. June 27, 2019.

⁵³ The auditors used the date invoices were uploaded to BRASS as the date of receipt.

funding in place to pay those invoices on time. Therefore, the City delayed invoicing the S&WB for approximately a year, which included many of the invoices paid by the City during the scope period. Per explanation provided by the City,

[t]here was not an agreement but an understanding. [The S&WB] experienced significant financial challenges thru most of 2020. While the 2019 JIRR CEA enabled the City to bill [the S&WB] within 30 days of receiving a vendor invoice, the City delayed doing so until [the S&WB's] ability to reimburse the City began to improve toward the last quarter of 2020.

The undocumented agreement between the City and the S&WB created an inefficient use of the City's time spent delaying invoices to the S&WB and then reconciling the status of invoices the S&WB paid to date and those it still needed to pay. The delayed payments were in effect an interest free loan from the City to the S&WB at a time when the City needed to make the best use of its own limited funds because of the ongoing pandemic.

Recommendation 4: The City and the S&WB should obtain an understanding of the 2019 JIRR Program CEA and revise any procedures that are not working effectively and efficiently to ensure compliance with the CEA. The City and the S&WB should ensure staff is properly trained to comply with the procedures that are required in the CEA.

The S&WB should submit requests for reimbursement to GOHSEP when invoices are received by the City and reimburse the City timely. The City should assist the S&WB to the extent possible with submitting reimbursement requests to GOHSEP. The City and the S&WB should document any temporary agreements that differ from the JIRR Program CEA requirements, such as the pause on invoices sent from the City to the S&WB for reimbursement.

VI. S&WB REPAVING BACKLOG

The S&WB performs routine repairs to the subsurface water and sewage lines below the City's streets. Once a repair is complete, the S&WB fills the utility cut in the street temporarily with sand and gravel until it can be permanently repaved. However, the temporary fill often erodes before the cut is repaved, leaving the pavement uneven. In November 2015 the City and the S&WB executed a CEA (2015 CEA) that obligated the City to complete permanent pavement restoration within 30 days of receiving notification from the S&WB that it had completed subsurface repairs. The S&WB was then obligated to reimburse the City for the pavement restoration.⁵⁴ However, poor scheduling and lack of communication between the City and the S&WB left City streets covered with a backlog of more than 4,000 temporarily-filled utility cuts in need of permanent repaving.⁵⁵

In February 2019, the City and the S&WB executed a Max Pave Program CEA that transferred the duty of repaving utility cuts from the City to the S&WB.⁵⁶ As part of the Max Pave Program CEA, the City committed to repaving approximately 900 S&WB utility cuts using \$6.5 million of capital funding from bonds. Per the Max Pave Program CEA, the S&WB assumed the responsibility of providing permanent paving restoration for any utility cuts not covered by the \$6.5 million, as well as any new S&WB utility cuts. At the time of the Max Pave Program CEA, the City estimated it would cost \$50 to \$100 million to provide permanent repaving to the entire backlog of S&WB utility cuts. Figure 10 provides a "Before" example of a S&WB utility cut with temporary fill and an "After" example of the repaved utility cut.

⁵⁴ Cooperative Endeavor Agreement Between the City of New Orleans and the Sewerage and Water Board of New Orleans. November 3, 2015.

⁵⁵ *Work to repair thousands of SWB holes in New Orleans roads to start Monday.* WDSU News. October 18, 2018. <https://www.wdsu.com/article/work-to-repair-thousands-of-swb-potholes-to-start-monday/23867710>. Accessed June 29, 2022.

⁵⁶ Cooperative Endeavor Agreement Between the City of New Orleans and the Sewerage and Water Board of New Orleans Max Pave Pavement Restoration Program. February 28, 2019.

Figure 10. S&WB Utility Cut Before and After Repaving⁵⁷



Finding 5: The S&WB did not comply with the Max Pave Program CEA because it did not repave utility cuts timely after completing subsurface repairs, which increased the backlog of gravel-filled utility cuts awaiting permanent repaving.

The Max Pave Program CEA transferred the duty of repaving roads from the City to the S&WB after S&WB repairs were completed. According to the Max Pave Program CEA, “[n]ew utility cuts that are opened after construction begins in a given zone ... will remain with [the S&WB] for permanent paving restoration.”⁵⁸ The Max Pave Program CEA did not establish a timeframe for the S&WB to repave utility cuts after completing subsurface repairs, and the S&WB lacked a policy establishing a timeframe. S&WB management acknowledged the growing backlog of S&WB utility cuts that had not been repaved.⁵⁹ The S&WB stated that the utility cuts were temporarily filled and a work order for repaving was created in Cass Works. However, the S&WB categorized work orders by urgency, rather than the date they were entered in Cass Works. The S&WB assigned work orders for utility cuts requiring repaving a lower urgency rating than other types of work orders. Doing so caused a growing backlog of work orders for utility cuts. The S&WB also acknowledged that it did not budget funding for repaving utility cuts in 2020 and 2021 after the Max Pave Program CEA transferred the duty for permanent paving restoration from the City to the S&WB. For these reasons, the S&WB

⁵⁷ Image Source: <https://roadwork.nola.gov/news/january-2019/max-pave-%E2%80%93-rejuvenating-our-roads/>. Accessed January 10, 2022.

⁵⁸ Cooperative Endeavor Agreement Between the City of New Orleans and the Sewerage and Water Board of New Orleans Max Pave Pavement Restoration Program. February 28, 2019.

⁵⁹ This duty did not apply to S&WB repairs that occurred within the scope of JIRR Program projects since the City was responsible for repaving duties after the S&WB completed any repairs to underlying infrastructure.

acknowledged it was unable to fulfill its duty of permanently repaving utility cuts after completing subsurface repairs. The S&WB stated that all utility cuts that exist within the footprints of JIRR Program projects have temporary gravel fill because they will be repaved by the City as part of the scope of those projects. In December 2021, the City stated it was in the process of finalizing a Max Pave Program Phase 2 agreement that would add additional funding to the original Max Pave Program CEA. However, the additional Max Pave Program funding would only cover repaving a portion of the total backlog of S&WB service cuts in need of permanent repaving. The City emphasized it remained the S&WB's duty to provide permanent repaving to any S&WB utility cuts not covered by the City through JIRR Program projects or additional Max Pave Program funding. As of January 2022, the S&WB stated there were approximately 1,500 open paving work orders in Cass Works for street utility cuts.⁶⁰

Recommendation 5: The S&WB should establish policy setting a firm deadline for completing timely permanent repaving of utility cuts after it has completed subsurface repairs. The S&WB should include funding in its annual budget to ensure it has the means to repave utility cuts and eliminate the current backlog.

The S&WB should coordinate with the City to determine the utility cuts not covered for permanent repaving by the City. As discussed in Recommendation 2, the DPW and the S&WB should ensure their asset management and work order systems provide accurate reporting of open utility cuts in need of repaving to ensure all open cuts are repaved timely.

⁶⁰ Finding 2 of this report discusses the need for S&WB to replace Cass Works with a modern asset management and work order system.

VII. IMPROVED COORDINATION BETWEEN THE CITY AND THE S&WB

As discussed in Finding 1, at the time of the JIRR Settlement, the City and the S&WB did not jointly prepare a manual of procedures and standards, as required by the 1992 and 2012 CEAs. Although the City and the S&WB did not jointly establish coordination procedures in compliance with the 1992 CEA, they did eventually implement coordination procedures specific to the JIRR Program in January 2019 in compliance with the 2012 CEA.

Positive Finding: The City and the S&WB complied with some aspects of the coordination procedures in place during the scope period.

The Coordination Policies and Procedures for the JIRR Program required:

- “Prior to the bid phase, a funding memo request will be generated as the official cost share agreement to the project.”⁶¹
- “Construction progress meetings will be held every two weeks. Discussion at meetings will include contractor delay, problems, two week look-ahead, revised schedule, construction expectations, site conditions, and open roadways.”
- “All change orders will be submitted as [Plan Changes] by the agency instituting the change. ... This process will include the [City and the S&WB]. ... [Plan Changes] will reflect changes in scope and cost.”⁶²
- “[V]endors and/or consultants will be required to submit two separate invoices based on DPW items and [S&WB] items.”⁶³

For the eight projects tested, the auditors noted the following:

- The City and the S&WB documented their financial responsibilities for the agreed upon scope for each project in a funding memo prior to seeking bid. The City maintained cost estimate templates for construction contracts for each project that aligned with the awarded quantities and

⁶¹ Coordination Procedure for the City of New Orleans Department of Public Works and the Sewerage and Water Board of New Orleans. Version 4.0. Revised July 10, 2020.

⁶² Ibid.

⁶³ Agreement Between the City of New Orleans, Department of Public Works and the Sewerage and Water Board of New Orleans for Federal Emergency Management (FEMA) Funded Projects. February 6, 2012.

cost and documented the agreed-upon funding allocation for the City and the S&WB.

- Progress meetings for projects tested occurred approximately twice per month during the scope period for projects in the construction phase. The City and the S&WB attended the meetings, along with the consultants and contractors involved with each project.
- For all scope changes, the City submitted plan changes during construction that documented the agreed-upon change in scope and the associated cost for the City and the S&WB.
- Vendors accurately separated City and S&WB expenses on their invoices. The City accurately tracked expenses by project in its project management software, Quick Base, and expenses conformed to the terms of the contracts without exception.

Additionally, the City procured all contracts for public works and construction in compliance with City policy and Louisiana Public Bid Law.⁶⁴ The auditors noted no evidence in the plan changes or project status updates concerning repaved roads having to be torn up to fix pre-existing S&WB repair needs underneath. However, seven of the eight projects selected for testing were still ongoing during fieldwork. Therefore, the auditors could not test if newly paved roads were being torn up to perform underlying repairs that should have been included in the scope of the work prior to repaving the surface.

⁶⁴ Policy Memorandum No. 113(R). Procurement of Public Works and Construction. Revised December 14, 2016.

APPENDIX A. OBJECTIVES SCOPE AND METHODOLOGY

The OIG conducted an audit of the coordination between the City and the S&WB as it relates to the JIRR Program. The objectives of the audit were to determine if:⁶⁵

- The City and the S&WB had sufficient policies and procedures as it related to the coordination of the JIRR Program and if those policies were effectively implemented.
- The S&WB submitted accurate and timely data to the City to eliminate newly paved roads being torn up for pre-existing drainage repairs.
- The S&WB repaved utility cuts timely after completing subsurface repair work.

The scope of the audit included JIRR Program projects with invoices paid for City and S&WB expenses during the period January 1, 2020 through December 31, 2020.

To accomplish the audit objectives, auditors:

1. Conducted interviews with City and S&WB management to obtain an understanding of the JIRR Program coordination policies and procedures;
2. Requested and reviewed the policies and procedures to verify they provided adequate guidance for coordinating JIRR Program activities and complied with best practices;
3. Developed a population that consisted of 45 projects with City and S&WB invoices paid during the scope period, totaling \$85.3 million.
 - a. Selected all projects with a total dollar value greater than 5 percent of the population for a total of four projects.
 - b. Randomly selected an additional four projects from the remaining population.

Because the sample was not statistically selected, auditors were not able to project the results to the entire population. Refer to Figure 11 for the eight JIRR Program projects selected for testing.

⁶⁵ The audit objectives did not include verifying if the City and the S&WB spent FEMA funds in accordance with FEMA policy, which was separately audited by other entities.

Figure 11. JIRR Program Projects Selected for Testing

| Project ID | Sampling Method Used for Selection | \$ Amount |
|--|---|-----------------------------------|
| RR043 | Randomly Selected from Remaining Population | 33,182 |
| RR078 | Randomly Selected from Remaining Population | 235,161 |
| RR100 | Greater than 5% of Population Total | 6,770,932 |
| RR104 | Randomly Selected from Remaining Population | 1,006,202 |
| RR109 | Randomly Selected from Remaining Population | 3,462,661 |
| RR124 | Greater than 5% of Population Total | 4,701,023 |
| RR132 | Greater than 5% of Population Total | 4,283,257 |
| RR133 | Greater than 5% of Population Total | 6,860,489 |
| Total Dollar Value of Selected Projects During Scope Period | | \$ 27,352,907⁶⁶ |

The OIG performed the following procedures for the eight projects selected for testing:

1. Reviewed planning meeting minutes and supporting documentation for each project.
2. Reviewed community engagement meeting presentations and the RoadworkNOLA website to determine the adequacy of information provided to the public concerning the scope of the projects.
3. Reviewed contracts for each project to determine if the City and the S&WB:
 - a. Established funding memo obligations prior to seeking bid; and
 - b. Procured contracts in accordance with Louisiana Public Bid Law.
4. Reviewed all plan changes (i.e. change orders) through July 2021 to verify they were within the scope of the original contract and included the City and the S&WB's obligations.
5. Reviewed all invoices paid during the scope period for each project to verify the following:
 - a. The City accurately recorded invoice information into Quick Base.
 - b. The expense was allowable within the scope of the contract; and
 - c. The City invoiced the S&WB for expenses paid by the City, and the S&WB reimbursed the City in accordance with policies and procedures.

⁶⁶ The total dollar value of invoices paid during the scope period for the eight projects represented 32 percent of the total dollar value of the population.

6. For any projects that were completed at the time of fieldwork, auditors verified the subsurface repair needs were not reported prior to construction and the S&WB repaved the road after completing the repair.

We assessed the reliability of computer-processed data by (1) interviewing officials knowledgeable about the data, (2) comparing data to source documents for reliability, and (3) reviewing selected system controls. Auditors determined that the data were sufficiently reliable for the purposes of this report.⁶⁷

Auditors used the following criteria for this performance audit:

- City and S&WB Coordination Policies and Procedures and Cooperative Endeavor Agreements;
- Louisiana Revised Statutes;
- New Orleans, LA Code of Ordinances;
- City of New Orleans Executive Orders; and
- CAO Policy Memoranda.

AUDITING STANDARDS

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards (GAGAS) 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.⁶⁸

Auditors also conducted this performance audit in accordance with the Principles and Standards for Offices of Inspector General.⁶⁹

LEGAL AUTHORITY

The authority to perform this audit is established in La. R.S. 33:9613 and in City Code Sec. §2-1120 of the City of New Orleans.

⁶⁷ GAO-20-283G Assessing Data Reliability. December 2019.

⁶⁸ *Government Auditing Standards, Chapter 9.03*; U.S. Government Accountability Office, 2021.

⁶⁹ "Quality Standards for Audits by Offices of Inspector General," *Principles and Standards for Offices of Inspector General* (Association of Inspectors General, 2014).

OFFICIAL COMMENTS FROM THE CITY AND THE S&WB

City of New Orleans Ordinance, §2-1120(8)(b) provides that a person or entity who is the subject of a report shall have 30 days to submit a written explanation or rebuttal of the findings before the report is finalized, and that such timely submitted written explanation or rebuttal shall be attached to the finalized report.

On July 13, 2022, the OIG distributed an Internal Review Copy of this report to the City and the S&WB so they would have an opportunity to comment on the findings prior to the public release of this Final Report. At the City's request, the OIG extended the 30-day comment period to allow additional time for the City and the S&WB to develop revised coordination policies in response to the recommendations in this report. The OIG received the City's and the S&WB's joint response on September 2, 2022. The OIG attached the written response to the report in its entirety.

The City and the S&WB were responsive to OIG requests throughout the audit.

CITY OF NEW ORLEANS AND SEWERAGE & WATER BOARD REPAIR COORDINATION AUDIT
JOINT SWBNO AND CNO RESPONSES

RESPONSE TO RECOMMENDATION 1:

DPW is drafting revised processes and policies as part of the implementation phase of the Procore construction management software roll out. Once it is operational, many processes shared with DPW and SWBNO will be moved to Procore, which will put construction data for the City and SWBNO on the same platform, enabling better workflows and streamlining of information sharing. DPW anticipates finalizing the draft processes and policies in December 2022, to be ready for release when Procore is operational.

RESPONSE TO RECOMMENDATION 2:

To maximize coordination while a new asset management and work order system is being procured and implemented, SWBNO is following updated procedures that prioritize identifying open work orders that affect current or upcoming pavement projects, to determine which work orders must be completed by SWBNO prior to going into construction and which work orders will be completed within the scope of the JIRR project, as well as closing out completed work orders in a timely manner. These changes in the review process are designed to help consolidate maintenance paving and utility work orders into work being completed as part of the JIRR program, reduce the duplication of work, and alert SWBNO maintenance personnel of work orders that may have been addressed as part of JIRR projects.

SWBNO agrees the Cass Works work order software is outdated and planning for funding to replace it commenced in 2022 through discussions with the Infrastructure Advisory Board and the hiring of an IT professional also occurred in 2022 to serve as the project manager for a replacement system. The risk of inaccurate underlying data exists for any asset management and work order system and proper planning for a modern, well-designed system with controlled processes for data maintenance will be a primary focus in addressing challenges faced with Cass Works. Both DPW and SWBNO have projects underway to update software systems utilized in performing joint work therefore compatibility and electronic sharing of information are important considerations in the overall evaluation and planning processes related to the new systems. SWBNO will strive to coordinate closely with the City as to allow future programs to align, and interface as much as possible without jeopardizing each other's cyber security systems or respective operational integrity.

RESPONSE TO RECOMMENDATION 3:

DPW has put the policies and procedures below in place to improve communication on projects between the City and residents.

1. Contractor Report Cards – DPW is providing construction contractors performance ratings, overall and by project, on Roadwork.nola.gov
 - Contractors are rated on a scale of 1 to 5 based on their performance in terms of Project Management, Public Convenience, Quality Control, Safety, and Timeliness & Schedule in accordance with the Department of Public Works General Specifications
 - The next phase, within the next 90 days, will include reports for A/E firms
2. Schedules – DPW has made two-week look ahead schedules publicly available on Roadwork.nola.gov
 - DPW Project Controls is working with contractors to ensure that schedules are submitted in a consistent format
 - RoadworkNOLA outreach specialists are now sharing approved schedules when they are available as part of their responses to Council and directly to residents who inquire about projects
 - DPW has added a new specification for all future construction projects requiring a two-week look ahead be submitted on a DPW provided template. Going forward, this will allow roadwork.nola.gov to display the status of every block within a project and additional detail on those blocks identified as having active work within the two-week look ahead
3. Text Messaging via Rave - RoadworkNOLA has created and will continue to expand its distribution list of approximately 15,000 subscribers to provide important construction updates (such as planned and unplanned water service interruptions, road closures, pre-construction meetings, etc.) via text messaging to better serve our residents with more timely communication
 - To sign up, residents can text ROADWORK to 77295 and follow the link to include an address in their profile or go to ready.nola.gov/alerts to create a whole profile and select the “roadwork” alert list
4. Updated Contract Terms with Notification Guidelines – For new construction, DPW has moved to task order-based contracts that specify Contractor’s work on a defined number of blocks at one time and contractually require proper notice be given ahead of construction, service interruptions, road closures, etc.
 - Failure to properly give notice could result in a stop work order for failure to comply which would allow contract time to continue

5. In-Person Pre-construction Meetings / Neighborhood Association Meetings / NEO Events – RoadworkNOLA will continue to hold in-person pre-construction community meetings and neighborhood association meetings as requested. In addition, RoadworkNOLA outreach specialists will regularly attend NEO’s community days, Coffee on Your Corner, and other such events to connect with residents about infrastructure projects in their neighborhoods
6. Additional Outreach Staffing – RoadworkNOLA is in the process of adding two outreach specialists to provide more oversight on projects and reduce the number of active construction projects each outreach specialist manages. RoadworkNOLA is also in the process of adding one digital support specialist to assist with the increase in digital inquiries

RESPONSE TO RECOMMENDATION 4:

The City & SWBNO are continuously looking for ways to improve JIRR coordination and working to amend the CEA to reflect our standard practices and provide realistic timelines for the processing and reimbursement of JIRR invoices. Following the execution of the 2019 JIRR CEA two extraordinary events occurred, which impacted coordination efforts. In December 2019, the City experienced a cyber-attack and in March 2020 the worldwide pandemic necessitated a transition to remote work and significant staff changes further delayed coordination efforts. The City and SWBNO restarted coordination efforts in January 2021 including increasing staffing and dedicating two employees to work with these reimbursements full time. In addition, the department is now utilizing Microsoft Teams for documentation and communication to improve coordination amongst teams.

The City & SWBNO have reviewed their processes and have determined that increasing a few specific permissible processing timelines more realistically defines the administrative processing time required for these invoices, aligns processing timelines with the current capabilities and processing bandwidth available for reimbursement at the City, and makes us consistent with other City invoice processing timelines that dictate 30-45 days. The proposed updates to the 1992 and 2019 CEA agreements are detailed below and draft versions of the updated CEAs are attached as part of this response.

1992 CEA Updates –

- Due to the complexity of this agreement and the pending results of “Drainage Consolidation Task Force recommendations”, updates to the 1992 CEA are still in the process of being drafted and are expected to be ready in the Spring of 2023.

2019 JIRR CEA Updates -

- DPW and Law Department are working to finalize the updated 2019 JIRR CEA and anticipate being able to route the updated agreement by October 2022. The key updates to the 2019 JIRR CEA relative to recommendation 4 are below and a draft copy of the updated agreement is attached to this response.
 1. Clarify SWBNO is submitting their own reimbursements to GOHSEP with City support
 2. Change timeline to submit invoice to SWBNO to 30-45 days from PAID invoices
 3. Change reimbursement timeline to 10 days for SWBNO to reimburse the City from the day they are reimbursed by GOHSEP

RESPONSE TO RECOMMENDATION 5:

The October 29, 2018 Max Pave Program CEA intended to assist SWBNO in reducing a backlog of paving cuts after completing subsurface repairs by identifying a set number of open service orders and transferring the responsibility to perform repaving for the designated service orders to DPW while SWBNO remained responsible for new paving cuts in a given zone. The City agreed to \$5,000,000 of financing to SWBNO to facilitate more timely repaving during the 1-year term of the CEA. Due to labor shortages, cost overruns and funding challenges the targeted 900 service orders were not able to be completed in a satisfactory manner and DPW and SWBNO are coordinating a planned additional \$8,300,000 phase to further assist SWBNO with the ongoing challenge of both inhouse and contractor labor capacity shortages which are the primary drivers in managing the repaving backlog.

In 2022, SWBNO began including an annual budget line item to repay DPW for the October 29, 2018 Max Pave Program CEA and further entered into additional third-party contracts for paving with 2 vendors to supplement in house staff. The more recent actions taken in response to the challenges faced are intended to address a still existing backlog so that steps can be taken to develop an expected timeline for future repaving activities. SWBNO will continue to seek adequate funding streams to support their maintenance and infrastructure work including annual funding in the Capital budget to plan for the necessary resources to address the repaving backlog and improve the overall timeliness.

The next phase of \$8.3M Max Pave funding will require a new CEA, with updated terms addressing the concerns in Finding V of the OIG report.