

## Customer Experience Progress

### Customer Effort Score



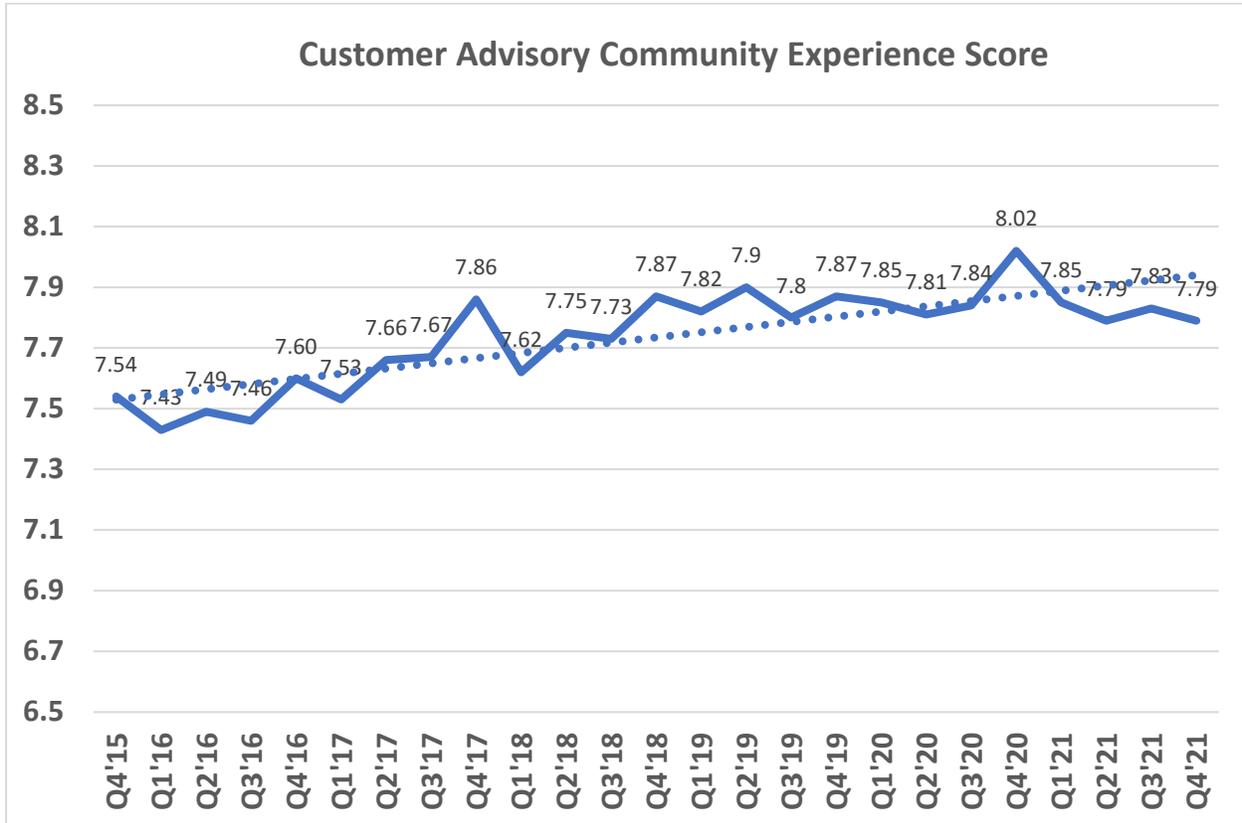
#### About this Metric:

Measures the ease of doing business with the Company. “Effort Score” is derived from effort-related questions from several surveys, including Call Center, Web, Advisory Community, Field, and Walk-in Centers, and are on a scale of 0-100. Efforts scores are an effective measure of the Company’s service and complement customer satisfaction surveys that are more likely to encompass non-service-related sentiments associated with the Company (i.e., brand and price).

#### Example survey question:

*Taking into consideration your recent Customer Operations service experience, please rate Con Edison on the following statement: Con Edison is easy to do business with. Response Options: 1 Strongly agree 2 Somewhat agree 3 Neither agree nor disagree 4 Somewhat disagree 5 Strongly disagree.*

**Customer Experience Score**



**About this Metric:**

Quarterly email survey of overall experience on scale of 0-10. Conducted with the Company’s standing customer advisory community made up of roughly 9,000 residential and 1,000 commercial customers. Each survey has over 600 responses. Provides a measure of overall sentiment about their customer experience with the Company. Respondents may or may not have had an interaction with the Company.

Survey question:

*Taking into consideration all aspects of your utility service experience, please rate Con Edison overall (0 - 10 point scale).*

## New Customer Service System 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input checked="" type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: New Customer Service System	
Project/Program Manager: Robert Melvin	Project/Program Number (Level 1): PR.20772705
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 2017	Estimated Date In Service: 2023
<b>A. Total Funding Request (\$000)</b> Capital: \$186,315 O&M: \$98,786	<b>B.</b> <input checked="" type="checkbox"/> 5-Year Gross Cost Savings (\$000) O&M: \$33,242 Capital: \$49,129 <input checked="" type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: \$23,738 Capital: \$37,862
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: \$61,147 Capital: \$22,100	<b>D. Investment Payback Period:</b> 13 Years
<b>Work Description:</b>  Consolidated Edison Company of New York, Inc. (“Con Edison” or the “Company”) is in the process of upgrading its Customer Service System (“CSS”) Information Technology (“IT”) enterprise system. The total expenditures associated with a new CSS for Con Edison are expected to be \$421 million in capital costs, including \$53.7 million for the Oracle PULA software license, and \$39 million in operations and maintenance (“O&M”) costs through 2023. The Company’s capital funding request during the rate period is approximately \$59.8 million, all in 2023, which is the last year of capital funding for implementation. The Company also seeks \$69.8 million in O&M expense during the rate period, or \$28 million in 2023, \$23 million in 2024, and \$19 million in 2025. Following implementation of the new CSS, the Company will seek to complete further technology enhancements within the authorized capital budget for 2024 and 2025, as described further in the whitepaper titled “New Customer Service System Enhancements.”  The Company’s legacy CSS, a mainframe-based application, was implemented in 1972. The legacy CSS supports all critical customer service functions, including, but not limited to, accurate and timely billing, credit and collections, and payment processing functions. The legacy CSS also supports the Con Edison Call Center and online customer self-service activities 24 hours a day, seven days a week. The number and complexity of business system integrations that CSS supports has expanded considerably over its life. Currently, there are	

over 500 legacy CSS interfaces with multiple systems, of which over 400 will need to be rebuilt or incorporated into the new system as part of the new CSS project.

Con Edison established a formal project team in September 2017 and engaged a specialized business consulting firm with extensive experience in the planning and delivery of complex CSS projects for utilities in the United States. From the last quarter of 2017 through the end of 2019, the CSS project team executed pre-implementation activities associated with the multi-year CSS project. In 2020, the Company commenced the formal project and initiated the Plan phase, including CSS analysis and design. In 2021, the Company initiated the Build phase of the project, which included the refinement of system configuration, integration, and data conversion designs to build and test within the system platform. In 2022, the Company will conclude the Build phase and commence system integration testing, performance testing, and user acceptance testing to confirm that the CSS meets the requirements to support day-to-day business operations.

During the anticipated rate period from 2023-2025, Con Edison will execute the following activities:

- **Stabilize:** During the Stabilize phase, the team will test the solution to confirm that the end-to-end product works as expected. The team will prepare and execute the performance test and perform the mock data conversion to test the conversion process. The last step in the Stabilize phase is the completion of User Acceptance Testing, in which the process or business users test the product so it meets the requirements previously established for their functional areas. Training also begins during this phase so that future system users are given the foundational knowledge required to perform their day-to-day activities, limiting the impact of deploying a new system on the operations. This phase is planned to be completed in the second quarter of 2023.
- **Deploy:** The Deploy phase is expected to begin in late second quarter of 2023. This occurs through a cutover process, where production is moved from the legacy CSS to the new CSS. At this point, the legacy system can be taken out of service and the new system is rolled out to the workforce and deployed. Training continues to be rolled out during this phase to minimize the impact on operations and properly adopt the target business processes. Deployment is expected to take approximately six months to complete, including a stabilization period which is scheduled to conclude before the end of 2023.

The new CSS will introduce new IT infrastructure and system environments to the Company. As such, associated implementation and ongoing O&M funds are needed to maintain the hardware and software of the new systems brought online for the life of the new CSS; solution integrator and Company staffing costs associated with the maintenance of the systems and training; provisional customer call center personnel to support staff augmentation for customer service training and proficiency; development of training materials to prepare over 2,400 end users for the new system; and costs associated with the shared service model of Con Edison and Orange and Rockland Utilities, Inc. ("O&R").

The \$69.8 million in O&M costs associated with the effort during the rate period include:

- A 2023 O&M request of \$28 million for operational support, which includes \$11.5 million for Provisional Customer Call Center personnel support. The provisional staffing is required to maintain Call Center operational performance as the new CSS goes into service and is scheduled to be incrementally reduced after the system goes live in 2023 and throughout 2024. These resources provide backfill coverage during training before the system goes live, as well as mitigate volume and customer service representative (“CSR”) productivity impacts that are typical when implementing customer software platforms. A total of \$8.3 million in costs are associated with additional temporary support for additional customer service back office and customer accounting functions and additional supervision to maintain operational performance. Company staffing costs of \$3.4 million are required for change management, training, and business readiness functions. A total of \$1.8 million in costs are required for software and external training. Costs of \$1.6 million are associated with solution integration charges associated with system maintenance and training. Shared services costs of \$1.4 million are needed to support the shared service cost model of Con Edison and O&R.
- A 2024 O&M request of \$23 million for continued operational support, including \$9.4 million in business and IT support personnel to support and maintain the system after go-live as the project team transitions from capital to O&M; \$3.8 million for provisional staffing required to maintain Call Center operational performance as the new CSS goes into service; \$10 million for hardware and software maintenance costs; and \$1 million in cloud-based system development and testing.
- A 2025 O&M request of \$19 million for continued operational support, including \$9.7 million in business and IT support personnel to support and maintain the system; \$10 million for hardware and software maintenance costs; and \$1 million in cloud-based system development and testing.

**Justification Summary:**

Con Edison is currently implementing its New CSS (Oracle CC&B), which was approved in the previous rate case for \$421 million of capital. To successfully complete the new CSS, Con Edison requires \$59.8 million of capital funding for 2023. The capital funds for 2023 are part of the project’s overall approved capital funding limit and not in addition to the \$421 million cap on capital spending set by the PSC. The O&M request of \$69.8 million is detailed in the work description section above.

The major benefits of the new CSS include:

- Promote growth and change by unlocking future capabilities, such as new products and services for our customers, and establishing a solid platform for the future
- Improve the Company’s ability to capture granular customer energy usage characteristics to build a richer customer profile for the development of new programs and services

- Enhance Con Edison’s go-to-market capabilities for rolling out new rate designs faster in order to continually improve the customer experience
- Leverage a configuration versus programming approach to handle many modifications necessitated by business requests that currently must be addressed with code changes (e.g., rates, tariffs, new programs)
- Benefit from a “productized” solution through regular base product upgrades by the vendor, which will address the collective needs of utilities that utilize their CSS products
- Utilize a modern commercial off-the-shelf CSS which will allow access to a broader pool of technical and business resources

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The New CSS project has a close relationship with many of the projects and programs in the Company’s long-range plans, including DCX, CRM, and privacy readiness, in addition to our core customer service business operations. The new system will be the foundation for the Company’s customer service efforts, which are part of the Company’s long-range plan objective of strengthening core operations. In addition to supporting the Company’s core operations, the New CSS also supports the Company’s long-range plan objective of helping the City and State achieve clean energy targets. One specific way the New CSS supports these goals is the system’s ability to implement new billing rates in a more cost-effective and efficient manner, specifically rates that promote the efficient use of energy and the grid by customers.

## 2. Supplemental Information

**Alternatives**

As part of its 2014 CSS Application Plan effort, the Company identified potential CSS solutions for consideration. After carefully reviewing the various alternatives, the team recommended replacing CSS with a commercial off-the-shelf (“COTS”) solution. The Company is currently implementing the recommended solution and as such alternatives are no longer being considered.

**Risk of No Action**

Risk 1 Without the requested funds the Company will not be able to implement the new CSS or maintain the system once it goes live.

Risk 2 Not preparing for temporary increases in staffing to offset user inefficiencies associated with a new CSS would cause negative impacts to call center performance and customer service.

Risk 3 Lack of new CSS support without continued investment to ensure the necessary hardware and software releases are available.

**Non-Financial Benefits**

Replacing the current legacy CSS with a market-leading COTS CSS product will provide the enhanced functionality needed to meet the demands of our rapidly changing customer, industry and regulatory landscape. A new CSS will allow for better integration with business systems and potentially reduce the current CSS application's footprint since more functionality is inherent in newer CSS systems, reducing the need for satellite systems to complete specialized work and processes. A new CSS using a customer-based data model will allow the Company to build a more complete view of our customers needed to facilitate customer segmentation and analysis.

**Summary of Financial Benefits and Costs**

In 2017, the Company engaged a professional services firm to collaborate with the CSS project team to develop a financial model to estimate benefits. This model, completed in 2018, was reviewed by the Company's Finance organization. The benefits include avoidance of continued investment in capital projects to support, maintain, and upgrade legacy CSS applications, once the new CSS is implemented. The new CSS will also generate operational efficiencies resulting in reduced or avoided labor and maintenance costs valued at more than \$10 million annually.

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

See below.

4. Basis for estimate

The business case developed during the pre-implementation work estimated the new CSS cost based on the anticipated resources and timeframe. The CSS project is estimated to cost \$421 million in capital funds, a detailed breakdown of which is provided in the Con Edison CSS Business Plan. The Company's 2023 capital funding request allows for the project to remain within the \$421 million total capital fund estimate. This will provide for all work required for the comprehensive implementation of the new CSS in 2023. These cost estimates are based on proposals provided by equipment and software vendors and installation service providers, as well as Company SME cost estimates for required personnel support. Standardization of business processes with O&R is expected to produce synergies, as well as provision of system updates/patches, training, cybersecurity, and statewide regulatory mandates that would require modifications to a single rather than two CSS platforms.

5. Conclusion

The \$59.8 million capital funding requested in 2023 is required to complete the implementation of the new billing system. The \$69.8 million of O&M requested is also required to complete the implementation and provide the required ongoing support for the period from 2023 to 2025.

#### **Project Risks and Mitigation Plan**

Risk 1: System testing is ineffective, which results in large numbers of erroneous bills being received by customers once the system is implemented.

Mitigation plan: The Company is working with an experienced system integrator and Company subject matter experts to execute a detailed testing plan that will support identification of billing errors for correction before the system is implemented.

Risk 2: The Company's performance testing is inadequate, and results in the system failing or reacting slowly, which impacts employee use and inhibits customer service.

Mitigation plan: The Company plans extensive performance testing to ensure that the system performs adequately in a variety of situations once implemented.

#### **Technical Evaluation / Analysis**

As part of its 2014 CSS Application Plan effort, the Company conducted a detailed review of the current state of our legacy CSS and guide the Company to an anticipated future-state CSS that serves current needs and provides a solid foundation to meet future business needs. The Company engaged a consultant with industry expertise in utility CSS application planning to execute the assessment and develop options and recommendations for the CSS and associated applications in the CSS suite. The project team conducted workshops to review applications that the Company could potentially retain, upgrade or replace. Con Edison worked with a specialized business consultant on pre-implementation activities such as performing current state business process analysis, "as-is" process documentation, reports inventory and related rationalization efforts, business case development and data conversion analysis. The market for COTS solutions for a utility of the Company's size, customer base and operational complexity was essentially a choice between two market leading vendors - SAP or Oracle - that can provide the type of comprehensive, modern platform that will meet the Company's needs. The Company evaluated CSS platform options based on 1) cost; 2) existing footprint and knowledge; 3) leverage experience and interoperability; and 4) functionality and usability. The team performed the necessary due diligence of the SAP and Oracle product sets to support a recommendation. The Oracle product was selected.

#### **Project Relationships (if applicable)**

- Customer Relationship Management
- Digital Customer Experience
- Customer Data and Analytics
- Privacy Readiness
- Customer Data Sharing
- Recommendations and Analysis Tools

- Billing and Payment Enhancements
- Virtual Assistant
- Outage Communications
- Journey Mapping
- Back Office Automation and Workforce Management
- Retail Access System Replacement

### 3. Funding Detail

#### Historical Spend

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historical Year</u> (O&M only)	<u>Forecast 2021</u>
Capital	2,635	6,775	14,152	51,950		105,590
O&M		32	76	2,726	1,905	3,679

#### Total Request (\$000):

#### Total Request by Year:

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	126,542	59,773			
O&M*	9,600	27,769	22,851	19,154	19,412

#### Capital Request by Elements of Expense:

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	11,968	12,078			
M&S					
Contract Services	71,328	29,036			
Other	39,424	14,794			
Overheads	3,822	3,865			
<b>Total</b>	<b>126,542</b>	<b>59,773</b>			

#### Total Gross Cost Savings / Avoidance by Year:

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings	3,069	5,095	8,235	8,359	8,484
O&M Avoidance		523	7,623	7,738	7,854
Capital Savings		6,841	13,887	14,095	14,306
Capital Avoidance		7,003	8,445	10,227	12,187

#### Total Ongoing Maintenance Expense by Year:

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M			22,851	19,154	19,412
Capital			7,800	7,800	6,500

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Strategic CX Portfolio Investments

Program / Project	RY1 Capital	RY2 Capital	RY3 Capital	RY1 O&M Incremental To Test Year and Normalization	RY2 Incremental O&M	RY3 Incremental O&M
Customer Data Analytics	\$ 13,720	\$ 18,900	\$ 19,900	\$ 3,080	\$ 220	\$ 1,450
New Customer Service System	\$ 59,773	\$ -	\$ -	\$ 27,769	\$ (4,918)	\$ (3,697)
New CSS Enhancements	\$ -	\$ 7,800	\$ 7,800	\$ -	\$ -	\$ -
Customer Recommendations and Analysis Tools (CES Panel)	\$ 12,000	\$ 12,000	\$ 11,000	\$ 5,500	\$ (500)	\$ (1,000)
Digital Customer Experience	\$ 11,400	\$ 15,026	\$ 15,050	\$ 2,600	\$ 360	\$ 380
Virtual Assistants	\$ 3,100	\$ 5,500	\$ 4,100	\$ 1,530	\$ 800	\$ 600
Back Office Automation and Workforce Mgmt	\$ 1,500	\$ 2,500	\$ 2,500	\$ 760	\$ 100	\$ -
Journey Mapping	\$ 1,100	\$ 2,200	\$ 2,000	\$ 380	\$ 100	\$ (400)
Customer Relationship Management	\$ 6,000	\$ 12,000	\$ 10,000	\$ 1,000	\$ 1,000	\$ -
Customer Data Sharing	\$ 1,000	\$ 2,500	\$ 2,500	\$ 1,350	\$ -	\$ -
Billing and Payment Enhancements	\$ 1,000	\$ 1,000	\$ 1,000	\$ 400	\$ -	\$ -
Outage Communications	\$ 1,013	\$ 1,600	\$ 2,100	\$ 1,090	\$ (50)	\$ 60
Privacy Readiness	\$ 12,000	\$ 4,125	\$ 2,000	\$ 5,980	\$ -	\$ 20
	<b>\$ 123,606</b>	<b>\$ 85,151</b>	<b>\$ 79,950</b>	<b>\$ 51,439</b>	<b>\$ (2,888)</b>	<b>\$ (2,587)</b>

# New CSS Enhancements 2022

1. Project / Program Summary	
<b>Type:</b> <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	<b>Category:</b> <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M
<b>Work Plan Category:</b> <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
<b>Project/Program Title:</b> New Customer Service System Enhancements	
<b>Project/Program Manager:</b> Bob Melvin	<b>Project/Program Number (Level 1):</b> 24156674
<b>Status:</b> <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other:	
<b>Estimated Start Date:</b> 1/1/2024	<b>Estimated Date In Service:</b> 12/31/2024
<b>A. Total Funding Request (\$000)</b> <b>Capital:</b> 22,100 <b>O&amp;M:</b>	<b>B.</b> <input type="checkbox"/> 5-Year Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) <b>O&amp;M:</b> <b>Capital:</b>
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> <b>Capital:</b> 0.0 <b>O&amp;M:</b>	<b>D. Investment Payback Period:</b> <b>(Years/Months) (If applicable)</b>
<b>Work Description:</b>	
<p>Consolidated Edison Company of New York, Inc. (“Con Edison”) will complete the installation of a new enterprise Customer Service System (“CSS”) by year-end 2023 for a projected total capital expenditure of \$421 million. Additional information on the enterprise New CSS project can be found in Exhibit_(CO-2) New Customer Service System.</p> <p>As large systems such as the New CSS are implemented, it is a best practice to follow the implementation effort with a new effort focused on addressing emerging items that become clear after employees begin to use the system; items which were not in scope for the initial implementation of the new system as they arose after the design process; and hardware upgrades, software patches and other timely system enhancements. In addition, this</p>	

work will allow the Company to address new regulations and changes to customer expectations that emerge after implementation.

For this reason, the Company is proposing capital funding for the years directly following the years after the 2023 implementation. This whitepaper provides an overview of those enhancements and the capital funding requested.

Notable enhancements that have been identified and may be implemented after the system goes live and is stabilized include:

- Build a customer bill impact tool to allow the Company to perform more efficient and accurate customer and bill impact analysis for future rate changes
- Add additional positive ID questions to assist in confirming customer identities
- Enhance the Leave on for Landlord program to improve the customer experience for landlords in New York City and Westchester County
- Enhance the Oracle Customer Care and Billing (“CC&B”) system to interface with the new Con Edison Outage Management v2.5 program to improve the outage process
- Procure new non-production hardware for disaster recovery environments that will need to be refreshed
- Enhance the Innovative Pricing Program (“IPP”) to automate the calculations and application of customer credits to accounts in the program
- Enhance the system to receive, store and analyze customer credit information from Experian to better assess risk for customers in the credit and collections processes
- Add the ability for the billing system to add additional thermal zones to allow for more localized pricing and billing for gas customers
- Enhance the system to integrate and store Building Identification Numbers within CC&B
- Enhance the system to automate the delivery of AMI Service Orders, Alarms and Events through the Billing System, which will provide process efficiencies and customer benefits

The capital funding described below will allow the Company to establish and enhancements team to work on these enhancements and other that emerge post implementation.

**Justification Summary:**

Con Edison has a large and diversified customer base. Evolving customer expectations and forward-looking energy policies require Con Edison to keep pace with current and future technology needs. To do this, Con Edison has developed a new CSS to replace its decades-old system. After the New CSS is implemented, the Company will require future updates and enhancements to maintain and unlock increasing value from the CC&B system. Additional capital spending is required to cover upgrades to application and database server hardware and non-CC&B software upgrades after the system is implemented in 2023. Con Edison has also identified additional functionalities that it may implement after the system goes live. The Company identified these new functionalities after completing the design phase, and so they could not be incorporated as part of project implementation. These

enhancements include items designed to improve the customer experience, enhance system reliability, and support regulatory initiatives.

**Relationship to Broader Company Plans and Initiatives (e.g., Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The New CSS Enhancements effort has a close relationship with many of the projects and programs in the Company's long-range plans, including DCX, CRM, and privacy readiness, etc. in addition to our core customer service business operations. Ongoing enhancement of the foundational CSS are consistent with the Company's long-range plan objective of strengthening core operations. In addition to supporting the Company's core operations, the New CSS Enhancement effort also supports the Company's long range plan objective of helping the City and State achieve clean energy targets. For example, ongoing enhancements to New CSS will be necessary as customer service practices are enhanced to support CLCPA initiatives such as the VDER and EV programs.

## 2. Supplemental Information

**Alternatives:**

The alternative to not investing to upgrade the hardware and enhance the functionality of the new CSS system is to maintain a static system with only the capabilities it has when it goes live in 2023. This will cause the system to not be current with potential new benefits for customers and regulatory requirements.

**Risk of No Action:**

Non-compliance with regulatory items such as new rates and other PSC initiatives, such as CLCPA and renewable or distributed energy programs that will promote customer choice and new rate initiatives.

**Non-financial Benefits:**

The CC&B platform allows Con Edison to continually create new rate structures efficiently and expediently to support regulatory and customer requirements and expectations. This funding will allow CC&B to continue to meet rising customer and regulatory expectations.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

3. Total Cost (\$000)

\$22,100

4. Basis for estimate:

The level of capital spending for ongoing enhancement post implementation of the New CSS was based allocating 1.8% of total capital expense for the implementation effort on an annual basis following project completion.

5. Previous budget variances:

None

6. Conclusion:

These capital expenditures are required to enhance the new CSS keep the technological platform current with regulatory changes and the evolving cyber and technological landscape.

**Project Risks and Mitigation Plan**

Risk	Mitigation Plan
Proper knowledge transfer does not occur once the New CSS is implemented and, as a result, ongoing enhancements result in errors or are delayed.	By allocating for enhancements to the New CSS in the years directly after implementation, the Company will be able to utilize key resources who worked on implementing the New CSS for the New CSS enhancements effort and mitigate loss of knowledge.

**Technical Evaluation/ Analysis**

N/A

**Project Relationships (if applicable)**

The New CSS Enhancements effort has relationships with all Customer Experience projects / programs as it is the foundation of the Company’s customer service efforts. These project / programs include:

- Customer Relationship Management
- Digital Customer Experience
- Customer Data and Analytics
- Privacy Readiness

- Customer Data Sharing
- Recommendations and Analysis Tools
- Billing and Payment Enhancements
- Virtual Assistant
- Outage Communications
- Journey Mapping
- Back Office Automation and Workforce Management
- Retail Access System Replacement

### 3. Funding Details

#### Historical Spend by Year (\$000):

	<u>Actuals 2017</u>	<u>Actuals 2018</u>	<u>Actuals 2019</u>	<u>Actuals 2020</u>	<u>Historical Year*</u> (O&M only)	<u>Forecast 2021</u>
<b>Capital</b>						
<b>Implementation O&amp;M**</b>						

\* For Rate Case only

#### Total Request by Year (\$000):

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	0.0		7,800	7,800	6,500
<b>Implementation O&amp;M**</b>					

\*\*If Whitepaper is supporting a capital project/program this refers to implementation O&M.

#### Capital Request by Elements of Expense (\$000):

<u>EOE</u>	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Labor					
M&S					
A/P					
Other			7,200	7,200	6,000
Overheads			600	600	500
<b>Total</b>	<b>0.0</b>		<b>7,800</b>	<b>7,800</b>	<b>6,500</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
O&M		0.0	0.0	0.0	0.0
Capital					

<b>4. Definitions</b>	
<b>Total Funding Request:</b>	All funding requested for program or project over program/project lifecycle, including all capital, O&M, retirement, and contingency expenses.
<b>Total Contingency:</b>	Total contingency expense according to the Corporate Contingency Guidelines
<b>Cost Savings:</b>	Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)
<b>Cost Avoidance:</b>	Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes if capital isn't replaced)

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Customer Data and Analytics	
Project/Program Manager: Rebecca Lessem	Project/Program Number (Level 1): 22678024
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 04/1/2020	Estimated Date In Service: 1/15/2022
<b>A. Total Funding Request (\$000)</b> Capital: \$77,420 O&M: \$20,342	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  The Customer Data and Analytics program is part of the Company's Strategic Customer Experience (Strategic CX) Portfolio of projects, which seeks to deliver a dynamic customer experience that will both meet evolving customer and stakeholder expectations and enable the Company to lead the transition to a clean energy future. The Customer Data and Analytics program supports Strategic CX by bringing together information from customer interactions, account and billing data, and program enrollments into a single location to enable reporting and advanced analytics use cases that are specifically focused on improving customer experience and/or clean energy program adoption and effectiveness.  The Customer Data and Analytics program began in 2020 with a goal of using modern data and analytics platforms to connect disparate customer data sources and sort through the resulting data to identify patterns, trends, correlations and relationships. The connected data can be used to develop a better understanding of customer pain points and predict current and future customer needs.  The program's key focus areas in 2020-2022 were to enhance the Company's Enterprise Data Analytics Platform (EDAP) with new technologies to integrate and model data sources that create a baseline of Con Edison's customers and omni-channel service offerings, and to deliver initial analytics use cases that provided greater intelligence into the full breadth of customer service interactions. An added benefit of this effort was a simplified data model with new reporting and analytics tools that significantly improve the speed of analyses requiring information from multiple data sources or systems.	

In 2023-2025, the Company proposes to expand the use cases and data sources that business units across the Company can leverage for customer and market insights. With these additional investments, the Company seeks to accomplish the following:

- Expand the number of data source integrations for analytics use cases and business reporting.
- Develop analytics models for additional insights, such as why customers drop off certain communication channels and why certain service channels provide higher customer satisfaction.
- Identify customer insights to improve and facilitate customer experiences, such as situations when the Customer Relationship Management (CRM) system should send preemptive outbound engagements, or where root cause analysis is needed to address customer satisfaction issues.
- Develop analytics models for insights on clean energy programs, including electrification opportunities, particularly in disadvantaged communities.
- Maintain the EDAP technologies that support the Customer Data and Analytics program.

The program will deliver on these goals via the below efforts:

### **Expanding data sources**

The Company's 2019 rate case testimony for this program in case 19-G-0066/19-E-0065 explained that the Company has historically housed customer data in disparate systems and databases, which made it challenging to derive valuable insights from the data that support improved customer experience and operational effectiveness. Since the program began in 2020, the Company successfully brought together fourteen of these different systems into EDAP and plans to expand EDAP's reach in rate years 2023-2025 with an additional 25 data sources. The data sources targeted in these rate years represent additional internal databases, databases from our third-party vendors that support fulfillment of customer communications or interactions, and publicly available data sets.

These new data sources (please see Exhibit\_\_(CO-8) Customer Data and Analytics Data Sources) vary in size and complexity and have been prioritized for integration based on the value they can provide to Company operations, rate case programs, and customers. Integrating these additional data sources is a critical step to elevate existing analytics insights, support ad hoc reporting performed by employees, and serve as a foundation for merging customer interaction data with program data from across the Company.

### **Personalizing customer insights**

The proposed use cases from 2023-2025 will primarily focus on using advanced analytics techniques (e.g., event-based analytics and machine learning) to recommend programs or activities that are best for a given customer's circumstances. These types of insights will enable the Company to deliver more personalized customer interactions that can improve satisfaction and trust in Con Edison's business delivery while enabling cost efficiencies.

Use cases associated with delivering personalized insights will be grouped in the following ways:

- Enhancing existing use cases with new customer data sources referenced in Exhibit\_\_(CO-8) Customer Data and Analytics Data Sources.
- Personalization and predictive insights that can be sent to the Virtual Assistant and Customer Service Representatives (CSRs) to enable personalized experiences and faster resolution times.
- Payment program propensities and payment agreement analytics to support new programs and processes to meet customers where they are in terms of their payment journey.
- Customer satisfaction monitoring and root cause analysis to surface and dig into the drivers of negative experiences with the Company.
- Leveraging machine learning tools to optimize service channels, support channel management strategies, and suggest which customer groups would benefit from proactive customer communications.

Each of these groupings of work is associated with the mapped use cases represented in Exhibit\_\_(CO-9) Customer Data and Analytics Use Cases. The general work for developing new use cases includes defining use case requirements and target data elements, performing modeling activities, testing the models and data visualizations, and outputting the results of the analytics models in the appropriate data presentation tool. Capital costs associated with delivering these analytics use cases can be found in Exhibit\_\_(CO-7) Customer Data and Analytics Capital Request Detail.

### **Supporting clean energy program insights**

Over the past few years, the Customer Data and Analytics program has made strides to develop a customer analytic model that has begun to enable a holistic view of the customer and provide deeper insights into how customers are interacting with the Company. In 2023-2025, the Company plans to integrate clean energy program data into the customer analytic record. With these integrations and the addition of external data sources, the Company will gain additional insights that support expansion of our clean energy programs across customer segments and identify buildings and/or communities that would benefit from targeted clean energy programs.

Use cases and insights that this part of the program will directly support include:

- Associating municipal and State building data with Con Edison programmatic data to identify buildings that would benefit most from the range of clean energy programs available to them, with a focus on building electrification opportunities in disadvantaged communities.
- Gaining actionable insights in targeted areas to develop demand management programs (gas and electric).
- Utilizing the Customer Analytic Record and outputs of the 2022 “Self Service Propensity” use case to identify which candidates are likely to use digital tools on their own to enroll in clean energy programs and which customers would benefit from more proactive outreach methods.
- Expanding and maintaining the Demand Management Analytics Platform (DMAP), which refers to the collection of demand management use cases that Customer Energy Solutions (CES) uses to more effectively and efficiently scale the Company’s

electric, gas, and targeted Energy Efficiency and Demand Management (EEDM) programs to expand reach, deepen savings, and manage costs.

### **Provide maintenance and support for Customer Data and Analytics**

The O&M portion of this program is being requested to maintain the robust customer analytics environment within EDAP, support the DMAP, implement new tools and software (e.g., speech to text and text analytics) that enable big data analysis on customer service issues, staffing to support the ongoing need for rapid insights and provide structured project and change management needed to maintain value from the program's use cases. Support and delivery costs for this program are summarized in Exhibit\_(CO-6) Customer Data and Analytics Request.

- Maintain robust customer analytics environment – These costs are related to the daily support and maintenance of the suite of technologies within EDAP that supports customer data analytics, this program's use cases, and its data feeds. These costs include:
  - Full Time Data Engineer, System Reliability Engineer, Data Scientist, and Release Manager
  - Subscription costs for Azure cloud, Databricks, and PowerBI resources
  - Storage costs for cloud data and on-premises hardware costs for four environments (development, test, production, and disaster recovery)
  - Maintenance and support costs for DMAP
- Implement and maintain new software – The program will expand its software to further enable quality assurance and voice of the customer analytics at scale. These software and tools include text analytics, speech-to-text capabilities and sentiment analysis tools.
- Support rapid insights by staffing a team that is dedicated to presenting quick insights on emerging issues, including dashboards not associated with analytics use cases, ad hoc analytics for storm response or inquiries by government officials, and data model governance.
- Enable the Con Edison workforce to leverage this program's capabilities via a change management and program governance team that measures and monitors the success of the program, de-risks the multi-faceted delivery of use cases and data sources supporting Customer Operations and Customer Energy Solutions, develops and maintains training resources to upskill employees on the analytics tools and use cases, and evaluates the total project roadmap and prioritizes any changes that may occur.

Please see Exhibit\_(CO-6) Customer Data and Analytics Request and Exhibit\_(CO-7) Customer Data and Analytics Capital Request Detail for additional information on the proposed funding request.

## Justification Summary

The Customer Data and Analytics program is a part of the Company's Strategic CX Portfolio of programs. The Strategic CX programs / projects work together to achieve the following value propositions:

- **Increase customer satisfaction** even as expectations continue to rise
- **Drive cost efficiencies** through improved service and resolution
- **Support statewide clean energy goals** by generating customer demand for and streamlining adoption of programs
- **Facilitating understanding and adoption of optional rates** which help customers save and support grid efficiency
- **Enable safe, reliable and resilient delivery of energy** through improved communication during an outage
- **Provide education and access to payment assistance** when a customer experiences financial difficulties that impact their ability to pay for service

The Customer Data and Analytics program specifically contributes to these value areas in many ways due to the wide range of modeled data sources available for analysis and the use cases and projects that will be enabled by this program. Specifically, this program will help the Company meet its Strategic CX objectives by:

- **Increase customer satisfaction**  
Customer Data and Analytics will provide greater intelligence into customer journeys, define and monitor drivers of customer satisfaction, and create propensity models that enable greater personalization opportunities. For example, customer segmentation and propensity models developed in the Customer Data and Analytics platform can be shared with the CRM system to help present personalized or proactive messaging at the right time in a customer's preferred communication channel. As identified by Gartner in May 2020, proactive customer service results in significantly better customer experiences across all customer service metrics.<sup>1</sup>

Additionally, the program's tools and planned use cases will provide insights into the effectiveness of customer service channels (coned.com, the Call Center, IVR, the Watt virtual assistant, etc.) and how different customers prefer to use or switch between each service channel. These insights will become critical in understanding an increasingly digital customer base and prioritizing self-service features.

- **Support statewide clean energy goals**  
Investments in the DMAP program will continue to support statewide clean energy goals by enabling optimization of sales and marketing activities via descriptive and predictive analytics. The work associated with this program will continue to improve program targeting and efficiency measures, enable more efficient delivery of EEDM operations via improved self-service, and surface opportunities to optimize program design and activities across programs, customer segments, and commodities.

In addition, projects such as mapping building data to Con Edison accounts enables the Company to identify and prioritize clean energy campaigns to building managers or residents of buildings with low energy efficiency grades.

- **Drive cost efficiencies**

The standardization and proliferation of pre-built analytics dashboards will streamline analyses by providing insights to Customer Operations and Customer Energy Solutions with enterprise tools that enable faster query and reporting capabilities. Consolidated data sources that are pre-joined and available to more employees will enable users to spend more time analyzing results and generating insights as opposed to spending time on low-value data engineering efforts. The Company has estimated that users can save up to 90% of the time it used to take to perform tasks like exporting lists and manually writing Structured Query Language (SQL) queries to join information that exists in different systems but will be consolidated into a central location as part of this program.

- **Facilitating understanding and adoption of optional rates**

A shared customer data model will allow the Company to analyze customer adoption, awareness and understanding of optional rate programs based on interactions with Con Edison's service channels (coned.com, the Call Center, IVR, Watt, etc.).

- **Enable safe, reliable and resilient delivery of energy**

The analytics insights and use cases supported by the DMAP program will continue to support Con Edison in efficiently scaling its electric, gas, and targeted EEDM programs, including automated analytics and reporting for EEDM advanced savings forecasting and measurement.

- **Provide education and access to payment assistance**

Investments in payment assistance-based use cases will enable greater customer access to helpful programs and help keep customers on track with their bills. The types of use cases that the program is looking to pursue include analytics to proactively identify good candidates for payment agreements and propensity models for late payments that can be provided to the CRM or other outreach campaigns. Additionally, the joining of data from EEDM and Customer Operations made possible by the Customer Data and Analytics program will support insights into how clean energy programs and incentives can support customers requiring payment assistance.

The continuation and expansion of the Customer Data and Analytics effort in 2023-2025 is critical to the Company's Strategic CX vision, to realizing the full value of the enterprise level framework developed under the Customer Data and Analytics program from 2020-2022, and to moving the Company up the scale of analytics maturity. Plans for 2023-2025 will enable extensive program and touchpoint personalization through propensity modeling, improve understanding of how service touchpoints impact customer perceptions of the Company, and deepen analyses into customer experience through quality assurance and voice of the customer analysis at scale.<sup>2,3</sup> The goals and delivery approach for this program also align closely with

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<sup>1</sup> Proactive Customer Service Is Valued by Customers, Despite What They Say, Gartner, Published May 2020 and updated Oct 2021

<sup>2</sup> Technology Trends in Service 2021: VoC and Analytics, Gartner, Published Sept 2021

<sup>3</sup> Speech Analytics' Current Trends and Opportunities for Customer Service and Support, Gartner, Published Sept 2021

recommendations from strategy leaders like McKinsey on how to deliver industry-leading customer experiences.<sup>4</sup>

Additionally, the tools and standards implemented as part of the program have introduced new ways of working within the Company that will provide dividends as more teams are trained on its tools and the types of information available for customer experience and energy efficiency analysis. The expansion of this program will provide a backbone for the growing need to quickly onboard and upskill data analysts and business users to provide data-driven insights on a daily basis.

### **Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The Customer Data & Analytics program has a close relationship with many of the projects and programs in the Company's long-range plans, including DCX, CRM, and clean energy programs, in addition to our core customer service business operations. The program will provide the Company with insights that enable an improved overall customer experience and targeted engagement of customers on key topics, both of which are critical to the Company's long-range plans and clean energy future.

## **2. Supplemental Information**

### **Alternatives**

#### Alternative 1 – Continue program as-is

One alternative to investing in the Customer Data and Analytics program is to continue to with the as-is state of the program. This will significantly impact the Company's analytics capabilities across data sets, render previous reports useless once the new customer service system goes live, and halt progress on the data-driven transformation occurring in Customer Operations. It would also prevent the Company from merging clean energy program-related datasets into the Customer Data and Analytics platform.

#### Alternative 2 – Store data in silos

Another alternative to the Customer Data and Analytics program is for Customer Operations and Customer Energy Solutions to continue storing customer or clean energy program data in a siloed manner and only using the EDAP system for analytics that were already built as part of the program in 2020-2022. This is not a sustainable practice as puts a limit on the analytical capabilities of each department and creates cost redundancies. Additionally, this practice promotes the proliferation of data outside of core enterprise-governed analytics systems and will require additional system maintenance and staff to perform basic data engineering tasks that should be performed and automated by an enterprise-grade analytics platform.

<sup>4</sup> Prediction: The future of CX, McKinsey, Feb 2021, <https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/prediction-the-future-of-cx>

## **Risk of No Action**

### Risk 1

The first risk of not pursuing the Customer Data and Analytics program is the reduction in efficacy and value of future Customer Energy Solutions and Customer Operations strategic programs. The new data sources, use cases, and maintenance detailed in this white paper were identified based on workshops and plans associated with Con Edison's Clean Energy Future and Strategic CX goals. The work performed in this program will enable the data-driven assessments needed to ensure the Company's strategic programs – including those supporting the State's CLCPA goals – are a success.

### Risk 2

The second risk of inaction is that customer interaction data gathered during the 2020-2022 rate plan will be the only data sources that can be used for analysis. In this scenario, future programs that use service channels outside of these data sources would not benefit from the effective benchmarking and cross-channel analysis enabled by the Customer Data and Analytics program. Additionally, building reference data will not be available in EDAP, limiting the usefulness of NYC Open Data to optimizing clean energy programming.

### Risk 3

Upcoming work proposed for the Customer Data and Analytics program includes integrations with the CRM system to feed segmented, propensity, or pre-emptive communication actions to the CRM for more relevant customer communications. If the Customer Data and Analytics program is not funded, then there will be less data and no additional models that the CRM can utilize, and the Company's new CRM will be less effective in delivering relevant tools for employees and customers.

### Risk 4

The final risk of no action in the Customer Data and Analytics program is the loss of the customer data model that unifies data from key systems involved in supporting Con Edison's customer base. This will not only affect the programs that are interdependent with the Customer Data and Analytics program, but it will perpetuate inefficiencies or ineffectiveness associated with reporting and analysis from sources that are not modeled into the Customer Analytic Record.

## **Non-Financial Benefits**

With deep customer insights from the Customer Data and Analytics program, the Company can meet rising customer expectations and introduce customers to new programs and services that will advance progress toward New York State's clean energy goals.

Additional non-financial benefits include productivity gains for analysts and end users who no longer need to spend hours joining data sets together and performing other manual data cleansing tasks.

Each use case delivered as part of the program is expected to provide additional non-financial benefits to the Company and customers based on the specific insights that the analytics produce. These benefits are loosely defined during the discovery phase of a use case, specifically delineated during use case build, and measured after production launch of the use case as part of the program's success metrics.

### Summary of Financial Benefits and Costs (attach backup)

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital: \$77,420

O&M: \$20,342

4. Basis for estimate

The basis for estimate was built off the proposed projects and goals of the program with inputs including historical information from current project delivery, the relative size and complexity of each implementation activity, the capitalization potential for each activity, the support needed to maintain and expand the program, and the costs associated with the technologies supporting the program. Exhibit\_(CO-6) Customer Data and Analytics Request and Exhibit\_(CO-7) Customer Data and Analytics Capital Request Detail for additional information.

5. Conclusion

The customer insights and predictive modeling enabled by the Customer Data and Analytics program are critical to the success of the entire Strategic CX portfolio. This program is a central part of how Con Edison will continue to meet rising customer expectations and support the State's clean energy goals via robust and timely customer engagement.

### Project Risks and Mitigation Plan

Risk 1

New technologies emerge that can deliver the program in a more efficient manner

Mitigation: The EDAP capabilities built to support this effort were based on an industry-leading adaptable platform that can support multiple technologies to achieve the goals described in this white paper. If better technologies are identified, the Enterprise Architecture team within IT will evaluate the technologies and define how they can be incorporated into EDAP.

Risk 2

Data source complexity may affect program timelines and costs

Mitigation: The program's governance structure includes a monthly review of the roadmap with the opportunity to re-prioritize or shuffle data sources and use cases based on changes in information and costs over time. These decisions and changes require Director approval from both IT and Customer Operations representatives and are reflected in the Next Gen Customer Experience quarterly reports.

**Risk 3**

Data source cleanliness and usability

**Mitigation:** The Program has implemented data reconciliation testing that requires validation of each data source's feeds by both the data engineering and data activation team leads. Additional validation of the data being outputted into the Customer Analytic Record model occurs from the business users that are closest to working with a given data source. Data quality or cleanliness concerns that cannot be mitigated by source system owners are escalated to the Customer Operations Data Governance Office for prioritization and resolution.

**Risk 4**

Customer data being stored in Azure Cloud

**Mitigation:** The Company followed cybersecurity best practices when building the EDAP capabilities supporting the Customer Data and Analytics program, including "islanding" the analytics environment from the internet, establishing appropriate encryption protocols, instituting role-based access for all environment components and row-level security on the data itself, and implementing logging and monitoring solutions. Additionally, personally identifiable information (PII) is not allowed in the environment and an explicit check for PII is done by both the data activation lead and source system owner prior to data integration.

**Risk 5**

Business teams do not have the bandwidth to act on the insights that are provided by the program's analytics use cases

**Mitigation:** Prior to starting each use case, the program receives full buy-in from the use case's product owner and its manager for the timing and value of delivering the given analytics use case. The program has also implemented a monthly "look-ahead" process where the next six months of work is reviewed with the delivery team and product owners to ensure clear alignment on expectations and risks. Additionally, the program is being delivered in an agile manner to ensure that use cases can be built and prioritized based on near-term business value and priorities.

**Technical Evaluation / Analysis**

Please refer to the Company's rate filing in Case 19-E-0065 and 19-G-0066 for further information.

**Project Relationships (if applicable)**

Customer Relationship Management (CRM)  
Journey Mapping  
DCX  
Integrated Energy Data Resource  
Privacy Readiness  
New Customer Service System  
EDAP Enhancements  
Energy Management

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
<b>Capital</b>	0	0	0	\$3,425		\$5,317
<b>O&amp;M</b>	0	0	0	\$500	\$830	\$550

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	\$5,000	\$13,720	\$18,900	\$19,900	\$19,900
<b>O&amp;M*</b>	\$900	\$3,910	\$4,130	\$5,580	\$5,822

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	\$348	\$1,700	\$2,360	\$3,000	\$3,000
M&S		\$410	\$590	\$620	\$620
Contract Services	\$4,483	\$10,650	\$14,640	\$14,656	\$14,656
Other		\$140	\$190	\$200	\$200
Overheads	\$169	\$820	\$1,120	\$1,424	\$1,424
<b>Total</b>	<b>\$5,000</b>	<b>\$13,720</b>	<b>\$18,900</b>	<b>\$19,900</b>	<b>\$19,900</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M Savings</b>					
<b>O&amp;M Avoidance</b>					
<b>Capital Savings</b>					
<b>Capital Avoidance</b>					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M</b>					
<b>Capital</b>					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation – New project, not authorized yet
- Planning – Project authorized, not started yet
- Executing – Project in-flight
- On-going – Annual program

**Customer Data and Analytics Request**

<b>Capital ('000s)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Customer Analytic Record Enhancements	\$894	\$738	\$1,946
Personalized and Streamlined Interactions	\$0	\$984	\$1,266
Payment Journey Insights	\$946	\$1,476	\$1,200
Customer Satisfaction (CSAT) Root Cause Analysis	\$468	\$492	\$500
Service Channel Strategy	\$3,570	\$984	\$900
Clean Energy Program Insights	\$4,680	\$8,856	\$9,772
Data Source Integration	\$3,162	\$5,370	\$4,316
<b>Total</b>	<b>\$13,720</b>	<b>\$18,900</b>	<b>\$19,900</b>

<b>O&amp;M ('000s)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Program Management	\$540	\$540	\$540
IT Support	\$725	\$983	\$1,698
Team for Non-Capitalizable Projects	\$889	\$995	\$1,214
Training Change Management	\$615	\$615	\$615
Speech-to-Text Software Tool and Implementation	\$425	\$100	\$200
Platform Licensing and Hosting	\$716	\$897	\$1,313
<b>Total</b>	<b>\$3,910</b>	<b>\$4,130</b>	<b>\$5,580</b>

**Customer Data and Analytics Capital Request Detail**

Focus Area	Projects Included		2023	2024	2025
Customer Analytic Record Enhancements	2023 Customer Analytic Record Use Case, Existing Use Case Upgrades based on new CAR Data (Yearly), 2024 Customer Analytic Record Use Case, 2025 Customer Analytic Record Use Case,	Project Management and Business	\$134,100	\$110,700	\$291,900
		IT Development and Services	\$223,500	\$258,300	\$681,100
		System Integrator	\$482,969	\$325,267	\$833,749
		Overheads	\$53,431	\$43,733	\$139,251
Personalized and Streamlined Interactions	Preemptive / Outbound Customer Support, Next Best Action – Contact Center,	Project Management and Business	\$0	\$196,800	\$253,200
		IT Development and Services	\$0	\$295,200	\$379,800
		System Integrator	\$0	\$433,689	\$542,408
		Overheads	\$0	\$58,311	\$90,592
Payment Journey Insights	LPP (Level Bill) Propensity, Slow Pay Propensity, ML-driven Customer Payment Likelihood, Payment Agreement Analytics, ML-driven Customer Bad Debt Likelihood,	Project Management and Business	\$189,200	\$295,200	\$240,000
		IT Development and Services	\$189,200	\$442,800	\$360,000
		System Integrator	\$511,061	\$650,533	\$514,131
		Overheads	\$56,539	\$87,467	\$85,869
Customer Satisfaction Root Cause Analysis	Customer Satisfaction (CSAT) Root Cause Analysis	Project Management and Business	\$93,600	\$98,400	\$100,000
		IT Development and Services	\$93,600	\$147,600	\$150,000
		System Integrator	\$252,829	\$216,844	\$214,221
		Overheads	\$27,971	\$29,156	\$35,779

Service Channel Strategy	Speech and Sentiment Analysis, Cross Channel Metrics Dashboard, IVR Drop Off Analysis, Cross Channel Optimization,	Project Management and Business	\$714,000	\$196,800	\$180,000
		IT Development and Services	\$714,000	\$295,200	\$270,000
		System Integrator	\$1,928,633	\$433,689	\$385,598
		Overheads	\$213,367	\$58,311	\$64,402
Clean Energy Program Insights	Demand Management Analytics Platform (DMAP) program activities, Address Clean Up, Low to Moderate Income Community Building Electrification Propensity, Mapping Building to Accounts, Account Hierarchy	Project Management and Business	\$936,000	\$1,771,200	\$1,954,400
		IT Development and Services	\$936,000	\$2,656,800	\$2,931,600
		System Integrator	\$2,528,292	\$3,903,200	\$4,186,737
		Overheads	\$279,708	\$524,800	\$699,263
Data Source Integration	EEDM customer program data, New York City Open data, New York State Open data, Local Law 87 data, Property Shark/Lexus nexus, DMTS Salesforce, Experian Commercial integration, Existing Energy Efficiency Data into EDAP, Bringing in DMAP into EDAP, Sprinkler Data Integration, Live Chat Provider Integration, Broadridge Communications Integration, WINS (work notification system), PowerClerk, CIG (Central Information Group), Escalated Case Databases & PEGA Obvient / Kubra, Service Link, Oracle Utility Analytics, CORE Data Integration and Remediation, IEDR Data Integration, CRM Data Integration, Call Center Data Warehouse Reports, VA Outbound Integration, Sitecore Data Integration (for A/B Testing), CC&B (outbound integration to serve insights to CSRs),	Project Management and Business	\$632,400	\$1,074,000	\$863,200
		IT Development and Services	\$632,400	\$1,611,000	\$1,294,800
		System Integrator	\$1,708,217	\$2,366,778	\$1,849,157
		Overheads	\$188,983	\$318,222	\$308,843
<b>Total</b>			<b>\$13,720</b>	<b>\$18,900</b>	<b>\$19,900</b>

Customer Data and Analytics Data Sources

Data Source Name	Data Description	Data Source Theme
Energy Efficiency and Demand Management Customer Program Data	Program level enrollment, success criteria, and other details related to past and current Energy Efficiency and Demand Management (EEDM) programs	Clean Energy Future
New York City Open Data	Public data provided by the NYC OpenData project that provides access to information that is produced and used by the New York City Government	Clean Energy Future
New York State Open Data	Public data provided by the New York Office of Information Technology Service's Open NY initiative that provides access to information that is produced and used by the New York State Government	Clean Energy Future
Local Law 87 Data	Building information, scores, and retro commission details based on the Local Law 87's energy audits for buildings over 50,000 square feet	Clean Energy Future
Property Shark/Lexus Nexus	Commercial and residential real estate information and public records	Clean Energy Future
Demand Management Tracking System (DMTS)	Tracking system for Energy Efficiency Demand Management program incentives	Clean Energy Future
Experian Commercial Data	Information collected by Experian about commercial properties and businesses including attributes and modeled data elements	Clean Energy Future
Demand Management Analytics Platform (DMAP)	Oracle standalone analytics system and environment with demand management data that will be modeled and merged with the Customer Analytic Record in the company's larger Enterprise Data Analytics Platform (EDAP)	Clean Energy Future
PowerClerk	System used for solar developers to interconnect to Con Edison's electric grid	Clean Energy Future
Sprinkler	Social media engagement, replies, and direct messages across Con Edison's social media presence	Customer Interaction
Moxie	Transcripts and chat details associated with the live chat functionality on coned.com where customers can interact with a Customer Service Representative online	Customer Interaction
Broadridge Communications	Paper mailing details defining what types of Con Edison mail (Bills, payment reminders, etc..) were sent to customers and on what day	Customer Interaction
Work Notification System (WINS)	Notifications sent to customers and local leaders to notify them about Con Edison related construction occurring in their neighborhood	Customer Interaction
Central Information Group Dashboard	System and team that notifies internal and external stakeholders when a reportable event has occurred	Customer Interaction
Escalated Case Databases & PEGA	System used to track, manage, and resolve customer requests or issues that have been escalated to the PSC	Customer Interaction
Kubra	Con Edison's Outage Map that visualizes where electric service outages have occurred within the service territory	Customer Interaction
Service Link	System that manages and reports on Customer Field Representative (CFR) activity	Customer Interaction
Oracle Utility Analytics	System that contains pertinent details related to electric service outages and restoration progress	Foundational
CORE / Customer Care and Billing	System that manages customer accounts and stores key customer attributes, processes customer transactions, and manages billing	Foundational
Integrated Energy Data Resource Integration (Con Edison Specific)	Anticipated data source or system integration related to the information being sent to New York State's newly created Integrated Energy Data Resource	Foundational
Customer Relationship Management (CRM) Data Integration	Integration with anticipated new system intended to manage and report on customer interactions across all interaction channels	Foundational

Data Source Name	Data Description	Data Source Theme
Call Center Data Warehouse Reports	Data and reports associated with Con Edison's Call Center that will remain in their data warehouses after the CORE/CC&B go live	Foundational
Virtual Assistant (Outbound Integration)	Con Edison's Virtual Assistant - WATT, that provides a guided self-service experience on coned.com. This integration is intended to send data from the Customer Data Analytics program to the Virtual Assistant to provide more relevant and personalized experiences	Personalization
Sitecore Data Integration	Content management system used for coned.com	Personalization
Customer Care and Billing (Outbound Integration)	Integration with the user interface for Customer Service Representatives (CSRs), or transaction workflow to provide a personalized experience based on analytics models used to predict the reason why the customer is contacting Con Edison	Personalization

**Customer Data and Analytics Use Cases**

Activity Theme	Activity Name	Activity Description	Activity Type	Capital %	O&M %
Customer Analytic Record Enhancements	2023 Customer Analytic Record Use Case	Extend the central data model for customer analytics - The Customer Analytic Record - to include the additional data sources that are activated in 2023. This includes data transformation and output logic needed to make new data sources accessible to end users in a business friendly manner	Use Case	100%	0%
Customer Analytic Record Enhancements	Existing Use Case Upgrades based on new CAR Data (Yearly)	Enhance existing reports and use cases built prior to 2023 with newly modeled and outputted data sources	Use Case	50%	50%
Service Channel Strategy	Cross Channel Metrics Dashboard	Channel metrics dashboard with channel interaction summaries, self-service metrics, and ability to drill down by major customer attributes. Understand drivers of e-bill enrollment churn in order to prevent it and determine customers most likely to churn to take preventative actions.  Identifying duplicate customer contacts across channels and removing the duplicate contact if the response has been provided by one channel. Analytics will search for duplicates cases and provide the suggested cases for removal. Reduces O&M and increases CSAT.	Use Case	100%	0%
Customer Analytic Record Enhancements	2024 Customer Analytic Record Use Case	Extend the central data model for customer analytics - The Customer Analytic Record - to include the additional data sources that are activated in 2024. This includes data transformation and output logic needed to make new data sources accessible to end users in a business friendly manner	Use Case	100%	0%

Activity Theme	Activity Name	Activity Description	Activity Type	Capital %	O&M %
Customer Analytic Record Enhancements	2025 Customer Analytic Record Use Case	Extend the central data model for customer analytics - The Customer Analytic Record - to include the additional data sources that are activated in 2025. This includes data transformation and output logic needed to make new data sources accessible to end users in a business friendly manner	Use Case	100%	0%
Personalized and Streamlined Interactions	Preemptive / Outbound Customer Support	Most customer service interactions are inbound. So what if we were able to preempt them and solve the issue before the customer reaches out to interact? This would not only reduce interaction volume, but also delight customers. Develop predictive analytics that predict interaction reasons even before customer and agent interactions happen to enable pre-emptive communications and resolutions before a customer needs to contact Con Edison	Use Case	100%	0%
Personalized and Streamlined Interactions	Next Best Action – Contact Center	Use case includes a recommendation engine (if this, then that model), delivery of customer materials (based on consumer history, 360-degree profile and recent engagements with utility through web, paper, email, text, bill, etc.), contact center actions, online actions, and outbound calls. Reduces O&M and increases CSAT.	Use Case	100%	0%
Payment Journey Insights	LPP (Level Bill) Propensity	Recommend customers that would be most likely to enroll in level payment plans based on past usage and payment habit	Use Case	100%	0%

Activity Theme	Activity Name	Activity Description	Activity Type	Capital %	O&M %
Payment Journey Insights	Slow Pay Propensity	Identify customers who pay their bills monthly but are typically "slow" or late. Support the identification of triggers or programs necessary to enable these customers to pay on time	Use Case	100%	0%
Payment Journey Insights	ML-driven Customer Payment Likelihood	Uses ML (logit propensity model) to predict customers most likely to pay their bills; utilizes 12 months of customer history, scores monthly, and model integrity verified annually	Use Case	100%	0%
Payment Journey Insights	Payment Agreement Analytics	Identify and proactively offer payment agreements, precluding a call and increasing satisfaction. Propensity to call for payment agreement. Reduces O&M (cost savings).	Use Case	100%	0%
Payment Journey Insights	ML-driven Customer Bad Debt Likelihood	Uses ML (gradient boosting model) to predict customers most likely to go into bad debt; learns from history up to three rolling years, scores weekly, and model integrity verified weekly	Use Case	100%	0%
Customer Satisfaction Root Cause Analytics	CSAT Root Cause Use Case (1 of 2)	Create visualizations and models to quickly uncover and evaluate causes for decreased customer satisfaction	Use Case	100%	0%
Customer Satisfaction Root Cause Analytics	CSAT Root Cause Use Case (2 of 2)	Expand upon root cause analysis models and visualizations based on operational feedback and new data sources to quickly uncover and evaluate causes for decreased customer satisfaction	Use Case	100%	0%
Service Channel Strategy	Speech and Sentiment Analysis - Natural Language Processing	Recognize the service intent and the sentiment of a customer's language to aid in quality assurance and customer satisfaction evaluations	Use Case	85%	15%

Activity Theme	Activity Name	Activity Description	Activity Type	Capital %	O&M %
Service Channel Strategy	IVR Drop Off Analysis	Provide insights into how customers flow through the 1-800-CONED phone number, define where customers most frequently complete their transactions in the IVR, and where customers hang up or request to speak to an agent	Use Case	100%	0%
Service Channel Strategy	Cross Channel Optimization	Understand customer end to end journey across channels and optimize interactions. Identify and fix ineffective channels and transactions. Forecast volumes by channel (including channel shifting projections) to improve planning. Optimize schedule by specialization. Increases CSAT.	Use Case	100%	0%
Clean Energy Program Insights	Demand Management Analytics Platform (DMAP) program activities	Use cases and program activities targeting more effective and efficient scaling of the Company's electric, gas, and targeted EEDM programs to expand reach, deepen savings, and manage costs. This will include optimization of sales and marketing activities via descriptive and predictive analytics to improve program targeting and efficiency measure cross- / upselling; more efficient operations via improved self-service and / or automated analytics & reporting and advanced savings forecasting and measurement; and identification of opportunities to optimize program design and activities across programs, customer segments, and commodities.	Program	85%	15%
Clean Energy Program Insights	Address Clean Up	Implement address standardization within EDAP based on a single source of truth (CORE system) and ensure that this information maps to address data from state and local governments	Use Case	100%	0%

Activity Theme	Activity Name	Activity Description	Activity Type	Capital %	O&M %
Clean Energy Program Insights	Low to Moderate Income Community Building Electrification Propensity	Identifying buildings in disadvantaged communities that could benefit from building electrification programs	Use Case	0%	100%
Clean Energy Program Insights	Mapping Building to Accts	Mapping building level energy efficiency data to the customers that live in those buildings via their account. Presenting insights based on building energy efficiency statistics and individual account energy usage	Use Case	100%	0%
Clean Energy Program Insights	Account Hierarchy	Creating a hierarchy of customer (or business), to building, to Con Edison accounts with relevant energy program participation information and 3rd party electrification data to better understand how programs are affecting specific businesses and identify additional clean energy program	Use Case	100%	0%
Platform and Program Maintenance	Quick Response Customer Analytics team	Team dedicated to supporting business operations for ad-hoc requests, providing technical change management support, and evangelizing benefits of Customer Data Analytics via proof of concepts	Support	0%	100%
Platform and Program Maintenance	Program Manager	Individual responsible for the coordination and management of the program	Support	0%	100%
Platform and Program Maintenance	Maintenance Costs	Costs associated with maintaining the platform including upgrades, daily monitoring, minor model updates, and migrations	Support	0%	100%
Platform and Program Maintenance	Azure Cloud Costs	Costs associated with the azure cloud resources (storage, compute, etc.) needed to support these enterprise grade analytics tools	Support	0%	100%

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Customer Relationship Management (CRM)	
Project/Program Manager: Rebecca Lessem	Project/Program Number (Level 1): 25546179
Status: <input checked="" type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 1/1/2023	Estimated Date In Service: 12/21/2026
<b>A. Total Funding Request (\$000)</b> Capital: \$34,000 O&M: \$11,000	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  The Customer Relationship Management (CRM) program is part of Customer Operations' Strategic CX (SCX) Portfolio of projects, which seeks to deliver a dynamic customer experience that will both meet evolving customer and stakeholder expectations and enable the Company to lead the transition to a clean energy future. The Company requests capital and operation and maintenance funding to begin implementation of a company-wide Customer Relationship Management (CRM) system, utilizing a best-in-class platform from a leading software provider that will represent a major step in meeting customers' increasing expectations of service. Please see Exhibit__(CO-11) Customer Relationship Management Request.  While billing systems effectively manage customer billing and rate information, they do not provide the ability to manage the full set of interactions a customer has with their utility, such as service-related inquiries and efforts and clean energy program participation. Best-in-class utilities utilize a modern CRM platform alongside a Customer Information System (CIS) to effectively manage the increasingly complex relationships they have with their customers.  As a general definition, a CRM solution gathers customer interactions across all channels in one place. It supports the entire customer lifecycle, beginning with the capture and management of prospective	

customer contact data. It manages all important information about the customer, including their profile, contacts, communications preferences and consents, in addition to the entire history of their interactions with the Company via any channel, from conversations with agents at the call center, to transactions made or attempted via self-service channels such as the web, interactive voice response systems (IVR), chatbots or mobile apps.

Implementing a complete suite of CRM solutions fully integrated with other internal platforms (e.g., the new Customer Service System and the Customer Data and Analytics platform) will require a multi-year effort. For the 2023-2025 period, the Company proposes taking the initial steps that will allow the selection and hiring of a knowledgeable and experienced system integrator, choosing a platform or vendor to build the system on, comprehensive planning for design and development of the system in phases, and developing the first set of value-added enhancements that will enable the Company to start realizing the benefits of a CRM system. Specifically, the Company's initial focus areas will be as follows:

- Marketing/Communications Management
- Knowledge Management
- Customer Interaction Dashboard
- Program Enrollment Management

#### **Marketing/Communications Management**

The CRM will help Con Edison resolve one of the biggest challenges for its numerous customer-facing organizations: eliminating silos and integrating fragmented processes that today prevent Con Edison's employees from having the full 360-degree view of customers. For this use case, the CRM will integrate with internal platforms that contain relevant customer information, such as:

- The new Customer Care & Billing system
- Our Outage Management System
- Our self-service and mobile applications
- All external vendors who provide customer communications

These integrations encompassing the Company's Electric and Gas operations will allow the CRM to become an actionable centralized platform that will provide employees with full visibility into all of Con Edison's interactions with customers, so we can engage with them successfully, with personalized experiences that are consistent across touchpoints, delivering the right message on the right channel at the right time.

#### **Knowledge Management**

In this phase of the CRM implementation, a new tool will be developed for employees that places all the information that employees need to reference to support customers in one centralized knowledge tool. This knowledge tool will hold documents with information on processes or "how to(s)", frequently asked questions, and instructions for all topics relevant to high-quality customer service. The CRM will provide a best-in-class solution to house this important information in searchable articles. This will allow customer-facing employees to deliver consistent answers to customers while maximizing their productivity. The tool will be an ever-expanding library, as a community of experienced service agents and internal writers keep adding content to it.

### **Customer Interaction Dashboard**

The CRM will provide a variety of helpful dashboards. The first one the Company will focus on building will provide our employees the history of all interactions with a customer. For example, employees will be able to see details of pending customer complaints or resolutions in progress and recent interactions with the Company's virtual assistant Watt. This will enable greater visibility into each individual customer journey, allowing employees to deliver a contextual and guided service experience and resolve all types of customer inquiries efficiently and effectively. This will eliminate the need for agents to have to interface with disparate systems across different screens, shortening the time to resolution. Having that visible context can reduce customer frustration and remove the barriers to resolution by avoiding the need for the customer to have to re-explain their issue to different agents.

In future phases, this dashboard will also pull information from the data analytics platform for best-action insights, allowing agents to provide suggestions and recommendations to customers proactively based on their specific profile, habits and needs.

### **Program Enrollment Management**

The CRM will provide effective ways of increasing customer adoption for programs that can help them conserve energy and save money. For example, the CRM will make clean energy (e.g., energy efficiency, distributed generation, electric vehicles, heating electrification) program enrollment history visible to agents, so they can make more informed suggestions or recommendations based on the customer's past behavior. This will engage customers around energy-saving opportunities during other interactions, such as high-bill inquiries, and support CLCPA goals.

Future iterations of the CRM system will further integrate with other internal systems to leverage additional customer information to tailor proactive clean energy offerings and campaigns.

### **Justification Summary:**

Implementing a CRM system will greatly enhance the ongoing evolution of the Company's customer care.

The plan to implement a CRM system is a part of the Company's SCX Portfolio of programs. The SCX Portfolio of programs work together to achieve the following value propositions:

- **Increase customer satisfaction** even as expectations continue to rise
- **Drive cost efficiencies through** improved service and resolution
- **Support statewide clean energy goals** by generating customer demand for and streamlining adoption of programs
- **Facilitating understanding and adoption of optional rates** which help customers save and support grid efficiency
- **Enable safe, reliable and resilient delivery of energy** through improved communication, especially while customers experience service issues
- **Provide education and access to payment assistance** when a customer experiences financial difficulties that impact their ability to pay for service

The CRM program will specifically contribute to these value areas as follows:

**Increase customer satisfaction:** The CRM will allow for improved customer service. By empowering our agents with the knowledge, tools, and insights they need to efficiently manage any type of customer request in one platform, we will allow for improved customers' experiences at every interaction.

**Drive cost efficiencies:** With one unified actionable CRM platform, Con Edison will reduce call time, which will improve efficient use of employees to handle customer interactions.

**Support statewide clean energy goals; Facilitate understanding and adoption of optional rates; and Provide education and access to payment assistance:** The CRM platform will be a crucial tool to support the Company's efforts to promote clean energy services and energy efficiency programs. The CRM will enable seamless management from campaign development to customer messaging, allowing the Company to target the right customer with the right offers during the moments that matter, with sophisticated messages that aim to affect customer behavior.

In conclusion, the new CRM will become an action center for employees across the Company and provide much-needed transparency, coordination and collaboration in the way the Company responds to our customers' needs. It will ultimately allow the Company to work seamlessly with customer information that enters the Company's systems via several distinct internal platforms, such as the new Customer Service System, DCX, Virtual Assistant, Outage Management System, Advanced Metering Infrastructure (AMI) and others. The CRM will enable all of our customer-facing departments to act on the conclusions drawn in the Customer Data and Analytics program so that we can create intelligent solutions for day-to-day problems and have rich historical information available while we help customers during a transaction or interaction.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The CRM program has a close relationship with many of the projects and programs in the Company's long-range plans, including DCX, Customer Data and Analytics, clean energy programs, privacy legislation implementation, gas service line inspections, in addition to our core customer service business operations.

If the Company is going to meet its long-range plan goals – and help the City and State achieve clean energy targets – it needs organized and easy to access customer information. A CRM will allow the company to achieve increased customer engagement and levels of satisfaction by enabling all internal organizations to better understand our customers' needs and target them for the new programs that fit their profiles.

In particular, clean energy programs such as energy efficiency, demand management, distributed generation, energy storage and building electrification could leverage a robust CRM to improve the customer experience with tailored offerings based on a full 360-degree view of the customer's interactions with the Company. The programs described in Customer Energy Solutions' (CES) Panel testimony could leverage a CRM system to not only monitor customer engagement, but also gain useful insights on preferences and interests based on past interactions across the various organizations within the Company.

## 2. Supplemental Information

### Alternatives

#### Alternative 1

Con Edison could build a CRM in-house, but that would be a very costly and time-consuming project with uncertain results, as that is not an area of expertise of the Company's IT department and may miss valuable components that other systems have.

#### Alternative 2

The Company could depend fully on the new Oracle CC&B Customer Service and Billing system for customer relationship management. This solution, however, will not provide the coordinated communications or the 360-degree view of customers on a unified platform that could benefit programs Company-wide, resulting in continuation of a fragmented experience to customers.

### Risk of No Action

#### Risk 1

Without a CRM, the Company is at risk of not fully understanding our customers' needs and not being able to serve them in the proactive, personalized and low-effort ways they have come to expect from other companies like Amazon, Verizon and Netflix. Having disjointed customer information can lead to inefficient and even incorrect customer assistance, which can jeopardize the customer trust in the Company and negatively affect brand reputation.

#### Risk 2

Without a CRM, the Company risks constraining its ability to expand the clean energy programs to reach the State's ambitious environmental goals. A comprehensive 360-degree view of the customer across the entire Company will enable the Company to engage customers and effectively market programs and technologies that support energy savings, electrification, and greenhouse gas reductions.

#### Risk 3

Not implementing an enterprise CRM will mean maintaining multiple systems of record that could be subsumed by a CRM, and over the long term the Company may require additional applications to perform functions for which a CRM would otherwise be used. In addition to this cost and resource inefficiency, this scenario would create further complexity and risk in creating and managing controls to maintain customer data privacy based on current and anticipated legislative requirements.

### Non-Financial Benefits

There are multiple non-financial benefits of implementing an enterprise-wide CRM, including:

- Increased customer satisfaction and engagement with strategic Company initiatives, including clean energy programs

- Employees empowered with a 360-degree view of the customer and tools to help customers resolve issues holistically and efficiently
- Improved workflows and collaboration across departments
- Ensuring compliance with regulatory and legislative mandates, particularly those related to customer communications, and replying more quickly to DPS Staff inquiries related to customer enrollment in specific programs

#### **Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital: \$34,000

O&M: \$11,000

4. Basis for estimate

The Company has forecasted capital and O&M costs based upon a smaller departmental implementation of a similar customer relationship management technology. Additionally, team sizes and costs were based on similarly sized programs such as the NextGen Data Analytics platform, for which we have several years of expenditure information. Please see Exhibit\_\_(CO-11) Customer Relationship Management Request.

5. Conclusion

The value enabled by a Customer Relationship Management platform merits the costs of implementation. To keep up with the emerging needs and desire of effortlessly experiences, it is important for the company to have a full 360-degree view of customers. The initial architectural development and enhancements that the Company seeks to create in this program will form the basis of a robust platform that will enable new workflow efficiencies and operational optimization.

#### **Project Risks and Mitigation Plan**

Risk 1

One of the main risks associated with a new CRM system is its dependency on completion of the new Customer Service System.

Mitigation plan

The Company will mitigate this risk by pursuing an incremental approach, starting initially by integrating the CRM with the Customer Data and Analytics program and other ready-to-use Company platforms while the new Customer Service System is getting ready to launch. After the new Customer Service

System is implemented and stabilized as planned beginning in 2023, the Company will begin work to identify value added integrations.

**Risk 2**

Another risk is dependency on full integration with the Company's existing marketing platform, the Demand Management Tracking System and other internal platforms in order to take full advantage of a robust CRM.

**Mitigation plan**

The Company can mitigate this risk by hiring knowledgeable system integrators and implementing strong testing plans to facilitate full data transfer.

**Risk 3**

The length of time it takes for full implementation of a complex CRM (which will last beyond the 2023-2025 time frame) could mean that newer, better customer technology may be available by the time implementation is done.

**Mitigation plan**

The Company can mitigate this risk by using a Software as a Service (SaaS) provider so the Company will be eligible for any and all new upgrades. The Company will go through a detailed selection process to hire one of the leaders in the CRM field who will be able to provide us with the latest technology.

**Risk 4**

Putting customer information into a new system could present a level of cybersecurity risk.

**Mitigation plan**

To mitigate that risk, the Company's legal assessment and cybersecurity teams will follow protocols to monitor and predict any potential information leaks and protect the system against any liabilities.

**Technical Evaluation / Analysis**

N/A

**Project Relationships (if applicable)**

The CRM program is related to the following programs: Customer Data and Analytics, the new Customer Service System, AMI, DCX, Virtual Assistant, Journey Mapping, Billing and Payment Enhancements, Outage Communications, Outreach and Education, and numerous clean energy programs (e.g., REV Demonstration Projects, AMI Innovative Pricing Pilots, Energy Efficiency programs).

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u>	<u>Forecast 2021</u>

					(O&M only)	
Capital						
O&M					N/A	
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital		\$6,000	\$12,000	\$10,000	\$6,000
O&M*		\$1,000	\$2,000	\$2,000	\$6,000
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor		1770	5100	4400	2040
M&S		0	0	0	0
Contract Services		3490	4760	3750	3100
Other		0	0		0
Overheads		740	2140	1850	860
<b>Total</b>		<b>\$6,000</b>	<b>\$12,000</b>	<b>\$10,000</b>	<b>\$6,000</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

**Customer Relationship Management (CRM) Request**

<b>Capital ('000s)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
<b>CORE Customer Relationship Management BUILD</b>			
Project Management and Business	\$924	\$480	\$540
IT Development and Services	\$1,000	\$1,752	\$852
System Integrator	\$3,600	\$1,500	\$1,500
Overheads (*some IT and business costs will be contract services)	\$476	\$272.16	\$284.23
<b>Knowledge Management</b>			
Project Management and Business	\$0	\$1,056	\$650
IT Development and Services	\$0	\$360	\$360
System Integrator	\$0	\$900	\$900
Overheads	\$0	\$534.24	\$409.93
<b>Marketing and Communications</b>			
Project Management and Business	\$0	\$688	\$480
IT Development and Services	\$0	\$360	\$450
System Integrator	\$0	\$300	\$150
Overheads (*some IT and business costs will be contract services)	\$0	\$237.68	\$277.2
<b>Program Enrollment Management</b>			
Project Management and Business	\$0	\$624	\$480
IT Development and Services	\$0	\$360	\$540
System Integrator	\$0	\$400	\$200
Overheads	\$0	\$413.28	\$409.64
<b>Agent Dashboard</b>			
Project Management and Business	\$0	\$720.56	\$650
IT Development and Services	\$0	\$180	\$350
System Integrator	\$0	\$600	\$300
Overheads (*some IT and business costs will be contract services)	\$0	\$262.08	\$217
<b>Total</b>	<b>\$6,000</b>	<b>\$12,000</b>	<b>\$10,000</b>

<b>O&amp;M ('000s)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Administrative Service Management 1 Finance Specialist	\$60	\$144	\$144
Change Management – Training Development for Agents and All Users	\$25	\$180	\$180
Software License	\$700	\$1,226	\$1,226
Third Party Vendor – Integration with Existing Partners	\$190	\$400	\$400
IT Maintenance and Support	\$25	\$50	\$50
<b>Total</b>	<b>\$1,000</b>	<b>\$2,000</b>	<b>\$2,000</b>

### Example of Data Sharing Focus Areas

The list below is an example of current focus areas and enhancement examples a team would focus on delivering to iterate on value-added enhancements across data-sharing offerings. This will be worked through an agile product development structure to iterate with opportunity to prioritize work based on customer, regulator, and stakeholder feedback.

- Performance enhancements to improve data platform response time. This has been flagged by multiple third parties and would alleviate pain points in data transfer processes and API response time.
- Data integrity enhancements to address data mapping issues to improve data quality. Stakeholders have identified data issues and the team has logged improvements to address them, such as mapping of meter numbers across exchanges.
- Various enhancements and updates to align data sets and schema to updated Green Button Alliance (GBA) specifications where possible. The team is currently accessing certification and alignment opportunities that can be bundled into enhancement efforts over time.
- Enabling specific customer segments in API offerings. There has been interest to include New York Power Authority (NYPA) in access to ESCO API offering to enable them to access data for prospective NYPA premises.
- Expanding customer data sets across API offerings. Various stakeholders have inquired on new data elements that require facilitating discussions with Green Button Alliance for Spec Updates and then development to incorporate into API offerings. Additionally, the Green Button Alliance specification also includes required and optional data fields in its specifications. There is opportunity for the company to expand data availability within the specification.
- Improving the customer authorization process through the incorporation of bulk authorization capability for customers to authorize multiple accounts at one time, reducing friction when authorizing larger portfolio accounts.

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input checked="" type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
<b>Project/Program Title:</b> Customer Data Sharing	
Project/Program Manager: Eric Mastroianni	<b>Project/Program Number (Level 1):</b> 25524305
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: January 2023	Estimated Date In Service: Ongoing
A. Total Funding Request (\$000) Capital: \$8,500 O&M: \$5,400	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000)
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<b>Work Description:</b>  <p>The Customer Data Sharing program is part of the Company’s Strategic Customer Experience (Strategic CX) Portfolio of projects, which seeks to deliver a dynamic customer experience that will both meet evolving customer and stakeholder expectations and enable the Company to lead the transition to a clean energy future.</p> <p>Since 2018, the Company has built and maintained a number of data sharing platforms that enable third parties – including but not limited to distributed energy resource suppliers (DERs), energy services companies (ESCOs), demand response aggregators, rate consultants and building management firms – and large customers to access an array of energy usage and account data. The primary platforms include:</p> <ul style="list-style-type: none"> <li>• Share My Data (Green Button Connect My Data) – A platform that enables customers to provide consent for authorized third parties to retrieve customer billing and interval data via application program interface (API) technology aligned with Green Button specifications.</li> <li>• Large Customer API – A platform that allows large customers to use APIs to retrieve the same customer billing and interval data available in Share My Data without the upfront consent process.</li> </ul>	

- ESCO API – Similar to Large Customer APIs, ESCO API allows energy services companies to retrieve customer billing and interval data via APIs for customers with presumed consent in accordance with the Uniform Business Practices.
- Third Party Access to My Account – This is an extension of the Company’s My Account web portal that allows third parties to request access to customers’ My Account experience to manage their accounts, retrieve data, and transact on behalf of customers.
- Aggregated Whole-Building Usage Data – Con Edison provides New York City’s largest building owners (i.e., larger than 25,000 square feet) and their authorized agents with aggregated building usage for purposes of complying with the City’s benchmarking laws. Con Edison offers a web service for building owners or their authorized agents to automatically import aggregated whole-building data into Energy Star Portfolio Manager®. Owners of smaller New York City buildings and all Westchester buildings (or their agents, with a letter of authorization) are also eligible to request whole-building usage data, subject to Commission-approved privacy standards.

(For further information on the genesis of these platforms please refer to the Company’s 2016 and 2019 rate filings, AMI Customer Engagement Plan, and 2016, 2018 and 2020 Distributed System Implementation Plan (DSIP) filings.)

The Company requires incremental funding to support the continued evolution and growth of these platforms as utilization by customers and third parties increases. Capital requested will allow for the continued development and expansion of the first three program offerings listed above. Work will include infrastructure and dataset enrichment based on customer and third party needs in alignment with national Green Button data standards. This will also include expanded capabilities, such as bulk authorization sought after by third parties on the Share My Data platform, and enhancements to the onboarding processes through automation and improved testing capabilities. Please see Exhibit\_(CO-12) Example of Data Sharing Focus Areas for examples of work items for development. This is a list of current items identified and will evolve over time pulling from customer, third party, and regulatory feedback.

The incremental O&M is necessary to support the growing platforms through an expanded team of technical and business resources to monitor performance and system availability and engage third parties to improve onboarding and technical issue resolution. This same resource capacity will also support ongoing needs of customers and third parties using the Third Party Access to My Account service. (The Company is able to use the same resources to support multiple offerings because they require similar skill sets.) Please reference the appendix below for further information on the support team.

Finally, O&M funding will also be used to deliver incremental improvements to the Company’s processes that enable building benchmarking using aggregated whole-building data. This will include such items as the ability to benchmark Westchester buildings using the Company’s automated benchmarking platform and to create zero consumption exceptions and other data validations and improvements.

See Exhibit\_\_(CO-14) Customer Data Sharing Request and Exhibit\_\_(CO-15) Customer Data Sharing O&M Request Details for a breakdown of costs for this program.

**Justification Summary:**

The Customer Data Sharing program is a part of the Company's Strategic CX Portfolio of projects. These programs work together to achieve the following value propositions:

- **Increase customer satisfaction** even as expectations continue to rise
- **Drive cost efficiencies through** improved service and resolution
- **Support statewide clean energy goals** by generating customer demand for and streamlining adoption of programs
- **Facilitating understanding and adoption of optional rates** which help customers save and support grid efficiency
- **Enable safe, reliable and resilient delivery of energy** through improved communication during an outage
- **Provide education and access to payment assistance** when a customer experiences financial difficulties that impact their ability to pay for service

The Customer Data Sharing program specifically contributes to these value areas as follows:

- **Increase customer satisfaction:** Large customers will continue to have multiple options to access their own data and share it with third parties. This allows customers to develop key insights into their energy usage and adopt new energy management techniques and technologies that can lower their costs and carbon footprint. In addition, robust data sharing platforms facilitate third-party value-added service offerings for customers, such as solar energy installations.
- **Support statewide clean energy goals:** Enabling customers to securely access and share data with third parties is key to unleashing the clean energy solutions New York State needs to achieve its CLCPA goals. For examples, solar, energy efficiency, and demand response providers use these platforms to analyze customer energy usage and other information. This information is critical for these service providers to offer value-added services that help customers save energy, a key objective of the CLCPA.
- **Facilitating understanding and adoption of optional rates:** Customers, including building owners, will be able to use interval and/or aggregated data in consultation with the Company and third parties that can help them select the optimal rate for their energy needs.

The funding proposed for the Customer Data Sharing program supports legally mandated initiatives required by PSC Orders, local laws and New York State laws including CLCPA. Additionally, as the PSC directed in its February 11, 2021 Order Implementing an Integrated Energy Data Resource (IEDR), the Company must continue to support its existing data sharing channels until the IEDR is capable of replacing the functionality offered by some of the Company's platforms:

“The Commission notes that several programs have been initiated relating to various aspects of accessing and using energy customer and energy system data. The actions directed by this Order specify the next steps to substantially increase useful access to useful energy-related data through the IEDR, while not prematurely transitioning away from data access tools and resources that are already operational. *Considering the time needed to implement all the IEDR capabilities, it will be necessary and reasonable for the utilities to maintain existing data access resources and to continue developing currently planned resource enhancements and additions that would provide stakeholders with earlier access to more data.*” (IEDR Order, p. 10; emphasis added.)

In addition the Company will have a need to maintain and enhance customer data sharing platforms whose functionality will not be replaced by the IEDR, such as Large Customer APIs and Third Party Access to My Account, after the IEDR is implemented.

The Company needs to invest in additional resourcing to properly support third party and customer use of the data sharing platforms. The resourcing plan for the 2023-2025 timeframe includes expanded technical resources to support onboarding and analysis and resolution of technical issues in a timely manner. The Company also anticipates that with continued growth of platform use there will be a commensurate increase in need to resolve data issues for platform users. The proposed O&M funding will enable the Company to establish a formal framework for issue tracking and resolution to improve user experience and data availability. The Company requires a dedicated and focused team to provide proper service to third parties and customers to ensure that all involved are benefitting from the data-sharing platforms.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The Customer Data Sharing program supports CLCPA and other goals articulated in the Company’s long-range plans. The platforms supported in this program enable customers to securely share their data with third parties and engage in a wide range of energy-related initiatives, from community solar to demand response to electric vehicles and time-variant rates. Additionally, as noted above, the PSC has already determined that continued investment in utility data-sharing platforms is “necessary and reasonable” while the State pursues implementation of the IEDR.

## 2. Supplemental Information

**Alternatives**

There are currently no alternatives to continued operation of the platforms listed above until implementation of the statewide IEDR with completed use cases that address those supported by the current platforms. As noted in the Justification Summary, these programs are mandated by the PSC and needed by third parties to efficiently obtain data from the Company that they need to engage customers and operate in New York State.

**Risk of No Action**

If the Company does not receive the requested funding, the data sharing platforms listed above will not be adequately supported for customer and third-party utilization. The Company would not be able to address an existing backlog of requests for data enrichment and enhancements to APIs. This, in turn, would impact the ability of third parties to efficiently obtain data from the Company and engage customers and could hamper strategic energy initiatives that the State is relying on to achieve its emissions reduction targets. Failing to take action would also contravene the PSC's direction in the IEDR Order to continue support of and investment in existing data-sharing platforms.

With regard to the requested O&M, denying funding will put the Company at risk of not meeting expectations of interested parties looking to participate in programs. As noted above, the Company anticipates that with continued growth of platform use there will be a commensurate increase in need to analyze and prioritize the resolution of data issues for platform users. This growth would surpass the ability of current resources to support the platforms, eroding the user experience. Without the proposed O&M funding, the Company will also not be able to establish a formal framework for issue tracking and resolution to improve user experience and data availability.

**Non-Financial Benefits**

Non-financial benefits include: increased customer satisfaction, regulatory compliance, market enablement for REV and clean energy initiatives and facilitating building owners' compliance with benchmarking laws.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital: \$8,500,000

O&M: \$5,400,000

4. Basis for estimate

The basis for estimate is obtained from understanding of the costs related to prior enhancement work on data sharing platforms and analysis of proper support model for the platforms.

Additional detail on resources and roles that result in the projected costs in this whitepaper can

be referenced in Exhibit\_\_(CO-14) Customer Data Sharing Request and Exhibit\_\_(CO-15) Customer Data Sharing O&M Request Details.

## 5. Conclusion

As stated above, the Commission has ordered utilities to continue to maintain and complete planned enhancements to their data-sharing platforms. The funding requested in this paper will allow the Company to adequately support its platforms for three years for the benefit of both customers and third parties. This capability is critical to supplying the data needed to sustain clean energy efforts until the IEDR is operational, and to continue supporting the Company's data sharing platforms that will not be replaced by the IEDR.

### **Project Risks and Mitigation Plan**

Risk 1 – The costs here will address ongoing customer and regulatory objectives to achieve improved and stable data-sharing options for customers in support of company and state initiatives and clean energy goals. The risks to the ongoing development of these programs are sudden shifts in customer and/or regulatory direction, new data-sharing requirements, and third party emerging needs.

Mitigation plan – To mitigate the risk of an evolving utility environment, the work planned will be managed through an agile methodology. This will enable the company to be flexible to address customer and regulatory needs as they evolve. This agile methodology has been proven in other programs, such as the Digital Customer Experience Program, to deliver customer value and allow the team to adjust to meet emerging needs. This also enables the team to prioritize and manage work within funding allocations.

### **Technical Evaluation / Analysis**

N/A

### **Project Relationships (if applicable)**

The following ongoing project or programs have various dependencies or associations with the Customer Data Sharing program:

- Digital Customer Experience (DCX) Program
- AMI Program
- CORE Program
- Enterprise Data Analytics Platform (EDAP) Program
- IEDR program
- Data Access Framework implementation activities

### 3. Funding Detail

**Historical Spend (\$000)**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital						
O&M					<u>N/A</u>	
Retirement						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital		<u>\$1,000</u>	<u>\$2,500</u>	<u>\$2,500</u>	<u>\$2,500</u>
O&M*		<u>\$1,350</u>	<u>\$1,350</u>	<u>\$1,350</u>	<u>\$1,350</u>
Retirement					

**Capital Request by Elements of Expense (\$000):**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor		\$300	\$412	\$530	\$551
M&S					
Contract Services		\$553	\$1,886	\$1,710	\$1,679
Other					
Overheads		\$147	\$202	\$260	\$270
<b>Total</b>		<b>\$1,000</b>	<b>\$2,500</b>	<b>\$2,500</b>	<b>\$2,500</b>

**Total Gross Cost Savings / Avoidance by Year (\$000):**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year (\$000):**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

**Customer Data Sharing Request**

<b>Capital ('000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Labor - 2 FTEs with incremental increase per rate year to support growing work. - 1 Business and IT (RY 1) - 1 Business; 2 IT (RY 2) - 2 Business; 2 IT (RY 3)	\$300	\$412	\$530
Contract Services Staff Augmentation for Agile development and business support. - Partial Architect - Offshore Development - Quality Assurance (testing) - Business/Tech Analyst(s)	\$553	\$1,886	\$11,710
Overhead	\$147	\$202	\$260
<b>Total</b>	<b>\$1,000</b>	<b>\$2,500</b>	<b>\$2,500</b>

<b>O&amp;M ('000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Labor	\$173	\$173	\$173
Contract Services	\$1,177	\$1,177	\$1,177
<b>Total</b>	<b>\$1,350</b>	<b>\$1,350</b>	<b>\$1,350</b>

**Customer Data Sharing O&M Request Detail**

AREA	RESOURCE	ROLE	ALLOCATION	O&M Request
Business	Internal	Data Access PO/MGR - Customer Handling across all programs and decision making on program level	100%	\$172,800.00
Analyst	External	Prioritization in backlog refinement across programs and interface with business	100%	\$332,800.00
Project Manager	On shore Contractor	Triaging data issues and organizing priorities through PO for ongoing efforts across all Data Access Platforms. Coordinates with Offshore and provides program reporting.	100%	\$106,080.00
Sr Developer	Offshore Contractor	Support Onboarding and minor enhancements	100%	\$90,720.00
Developer	Offshore Contractor	Minor enhancements	100%	\$73,440.00
Tester	Offshore Contractor	Minor enhancements	100%	\$73,440.00
Benchmarking and O&M costs for enhancements	Employee FTE	1 Internal FTE	24%	\$500,000.00
	Offshore Contractor	Enhancement work by offshore resources	76%	
<b><u>Annual Cost*</u></b>				<b><u>\$1,350,000.</u></b>

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
<b>Project/Program Title: Billing and Payment Enhancements</b>	
Project/Program Manager: Raymond Joseph	Project/Program Number (Level 1): 25524305
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: January 2023	Estimated Date In Service: Phased in beginning in 2023
A. Total Funding Request (\$000) Capital: \$4,000 O&M: \$1,600	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000)
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>The Billing and Payment Enhancements program is part of the Company’s Strategic Customer Experience (Strategic CX) Portfolio of projects which seeks to deliver a dynamic customer experience that will both meet evolving customer and stakeholder expectations and enable the Company to lead the transition to a clean energy future.</p> <p>Each year Con Edison delivers over 55 million bills and other letters to its approximately 3.5 million customers, including both paper and electronic correspondence. The Company also receives and manages over 38 million customer payments annually. To improve the customer experience in these interactions, Con Edison recently completed its Bill Redesign Program, which made significant changes to customer bills, letters and electronic bill (“ebill”) delivery and created a modern customer-friendly bill format that aligns with the My Account portal and mobile applications. These improvements laid the groundwork for other programs – such as Journey Mapping and DCX – to support and encourage increased opportunities for digital engagement and self-service functionality for Con Edison customers.</p> <p>The Company proposes to further improve the customer experience by implementing a new Billing and Payment Enhancements program during the 2023-2025 time period. This program will continue to improve the Company’s billing and payment interactions with customers and third parties to meet customers’ needs and support new options consistent with technology trends and the Company’s clean energy commitment. As described below, this includes new</p>	

capabilities for tailored messaging on bills and options to pay with emerging digital payment applications, among other features.

Key projects in the Billing and Payment Enhancements program will include the following:

### **Billing and Customer Communication Process Enhancements**

- Improve bill content with customer-focused targeted messaging for clean energy offers. Continued enhancement of the billing format to improve presentation of complex/Distributed Energy Resource (DER) billing. Improved designs will assist with the clean energy transition as we offer more programs for new and emerging rates, such as net crediting for Community Distributed Generation (CDG). Please see Exhibit\_\_(CO-18) Post Bill Re-Design Survey Report.
- The Company plans to implement a centralized document archiving program. As part of this effort, a cross-functional assessment will be conducted jointly between the Billing and Payments Enhancements Program and the Back Office Automation and Workforce Management Program to identify synergies and opportunities to further streamline processes involving inbound and outbound customer related documents and information. Where such synergies overlap and align, an analysis will be performed to recommend a single set of technology improvements allowing for smarter document routing, storage, and access.
- Evaluate and begin implementation of a multi-channel customer communication management (CCM) software solution. This will enable the Company to create and deliver hard copy documents, electronic correspondence, emails, texts (SMS) and other types of messages to customers from a central, coordinated delivery platform. The CCM solution will enable customer service representatives (CSRs) and employees across departments to send ad hoc, personalized messaging to one or more customers at the push of a button, integrating preferences, account history and other business intelligence from the Enterprise CRM system and Customer Data & Analytics platform. In addition, the CCM solution will be integrated with the modern bill production platform developed as part of the Bill Redesign program, the new customer service system and other systems as necessary.
- To address the need for continued expansion of the Company's offerings to non-English speaking customers, the Company plans to study the impact of offering bills, bill messages, and correspondence in languages besides English and Spanish. The company will evaluate how best to begin this expansion on a phased basis during 2023-2025 and document the cost for additional phases that may require more significant cost and effort.

### **Payment Enhancements**

- Expand payment options to offer customers seamless payment interactions that integrate with third party pay partners (e.g., PayPal, Venmo, Apple Pay, Google Wallet, MasterCard, Picture Pay apps). The Company will also investigate options to pay by text/SMS and other emerging payment channels, as well as allowing bill payments to be split among individuals. Please see Exhibit\_\_(CO-19) CE Bill Payment Method Survey Report.

### **Technology Upgrades**

- During the 2023-2025 time period the Company will maintain billing and payment platforms so they are the most current version, and maintain a high level of reliability. The Company will also evaluate future platform upgrade features and capabilities to keep up with industry changes and customer expectations.
- Explore using automated program interface (API) technology across customer payment systems so bank account transactions are debited in near-real time as opposed to the 1-3 day delay customers experience today.
- The Company will continue to monitor both customer and evolving industry trends to offer customers simple and convenient ways to receive their bills and transact business across the Company's digital platforms. This includes leveraging billing and payment aggregators, bank billing, and same-day payments.

Throughout the program the Company will engage its customers in the development and design of strategic offerings through in-depth customer research and Proof of Concept ("PoC") usability testing, including prototyping. The Company will update Department of Public Service Staff and stakeholders on developments for the Billing and Payment Enhancements program via quarterly reporting.

Capital costs required to support the Billing and Payments Enhancements program include internal labor, vendor costs, technology infrastructure upgrades, programming implementation and software costs, as needed.

The Company is also requesting O&M program funding for the Billing and Payments Enhancements program in all three Rate Years. The proposed funding will be consistent over Rate Years 1, 2 and 3 and be used for such categories as:

- Contractor services and/or full time equivalent ("FTE") resources to coordinate bill content management functionality and management of third-party partnerships.
- Information Technology ("IT") resources needed to support and maintain our existing systems and make adjustments when necessary.
- New technology platform services and maintenance fees for OpenText CCM software, etc.
- To continue the progress of the program, the Company proposes to conduct and leverage customer and market research to expand the billing and payment platform based on the focus areas noted in this white paper.

For additional details of the funding request please see Exhibit\_\_(CO-17) Billing and Payment Enhancements Request.

### **Justification Summary:**

The Billing and Payment Enhancements program is a part of the Company's Strategic CX Portfolio of projects. The Strategic CX Portfolio projects work together to achieve the following value propositions:

- **Increase customer satisfaction** even as expectations continue to rise

- **Drive cost efficiencies** through improved service and resolution
- **Support statewide clean energy goals** by generating customer demand for and streamlining adoption of programs
- **Facilitating understanding and adoption of optional rates** which help customers save and support grid efficiency
- **Enable safe, reliable and resilient delivery of energy** through improved communication during an outage
- **Provide education and access to payment assistance** when a customer experiences financial difficulties that impact their ability to pay for service

The Billing and Payment Enhancements program specifically contributes to these value areas as follows:

- **Increase customer satisfaction:** The Company will survey customers to determine their most desired payment channels/methods and implement new offerings accordingly (e.g., Venmo, PayPal, etc.).
- **Drive Cost Efficiency:** A centralized CCM system may reduce costs by eliminating redundancies across multiple communications vendors and delivery channels.
- **Support statewide clean energy goals:** In addition to targeted messaging, the Company will promote clean energy programs on the bill and other customer correspondence using technology, such as QR codes or weblinks, to streamline education and awareness.
- **Provide education and access to payment assistance:** Continue to enhance the bill through specific targeted messaging for customers that could benefit from payment assistance programs.

A recent Bill Redesign project survey indicated that 97% of our customers were either somewhat or very satisfied with our new bill redesign. The bill has been designed to keep up with the new energy landscape to ensure it is convenient, informative and capable of offering timely promotions that can assist in advancing new energy initiatives.

The funding proposed in the Billing and Payment Enhancements program will assist in keeping up with further advances in digital technology and keeping pace with customer expectations, providing value to the customer by delivering the right message and payment options at the right time.

Demonstrating the speed with which customer preferences and expectations are evolving, in March 2021, 44% of Con Edison residential and commercial customers surveyed by a vendor showed interest in making payments through Venmo, PayPal or Zelle, stating that they consider these forms of payment to be convenient, easy to use and trustworthy. In a previous poll conducted in September 2019, only 4% of customers indicated they would prefer to use Venmo, PayPal or Zelle as their primary payment method. As third party payment options become more popular, customers expect their utility to provide options on par with their other day-to-day transactions.

The Billing and Payment Enhancements program will allow the Company to work with customers on evolving payment platforms, help to centralize communications delivery and offer customers easier methods for conducting transactions with the Company. Upgrading our technology platforms to offer on-demand functionality will provide tailored messaging to the individual at the time the customer wants the interaction, via their preferred channel. In addition, expanding our archival processes and systems to house additional forms of correspondence will improve customer confidence and give customer service employees the tools they need to easily and fully investigate accounts.

The Billing and Payment Program is also key to maintaining overall customer satisfaction and enabling self-service by customers that prefer digital channels. The Company has already seen positive trends in online digital billing and payment transactional activity that appear to support the idea that increased customer engagement on digital platforms promotes self-service when viewing and paying bills. An example of this is the positive performance of the recently released Electronic Deferred Payment Agreements (E-DPA) program, where e-mailed agreements have resulted in 29% of customers e-signing their agreements as compared to 3% for traditional paper DPAs. The Company expects that continued investment in a robust digital platform that meets rising customer expectations will allow for increased adoption of self-service channels, which can reduce the volume of calls that need to be answered by customer service representatives.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The Billing and Payments enhancements effort supports the Company's Long Range Plan goal of leading the way to a clean energy future. To support a clean energy future and Climate Leadership and Community Protection Act (CLCPA) goals the Billing and Payments Enhancement program seeks to improve the Company's ability to make personalized offers for clean energy programs and services on the bill. In addition, the Company will be focusing on improvements to presentation of complex rates, such as DER billing, which will help support customer satisfaction and adoption of clean energy programs. .

## 2. Supplemental Information

**Alternatives**

The alternative to the proposed investments would be to cease expanding payment and messaging options and perform maintenance work only on the Company's current digital platform. The Company would not provide customers with a continuously improving experience that stays in step with their evolving expectations, making customers less likely to learn about new energy initiative programs and miss opportunities to utilize digital self-service options or engage in strategic programs designed to provide energy management options, such as new rates and programs that require sophisticated digital interactions.

**Risk of No Action**

There are several key risks associated with no action:

- Diminished digital bill delivery and lower electronic payments leading to increased costs;
- Declining customer satisfaction as users become increasingly frustrated with an aged experience and technology;
- More customers contacting the Company's Customer Experience Centers rather than using self-service electronic applications;
- Inability to adapt to evolving customer needs and regulatory requirements;
- Failure to achieve operating efficiencies enabled by centralized messaging and archiving solutions; and
- Failure to support and leverage new customer engagement opportunities and emerging clean energy initiatives made possible by smart meter technology.

**Non-Financial Benefits**

The Billing & Payment program will result in several non-financial benefits, including but not limited to the following:

- Improved customer satisfaction through a multi-channel, simple and intuitive billing and payment experience;
- Improved customer awareness, through more engaging and informative bill content;
- Improved customer engagement through proactive communications and additional choices and control in how and when to make payments; and
- Improved agility, with more robust technology modules allowing for flexibility and iterative development of new content to better meet customer needs, communications, and regulatory initiatives.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital: \$4,000,000

O&M: \$1,600,000

4. Basis for estimate

Capital costs are based on past program costs. O&M costs are estimated based on a review with IT of costs to maintain the Company's billing platforms, including ongoing software and labor costs to support associated IT infrastructure. Please see Exhibit\_\_(CO-X) Billing and Payment Enhancements Request.

## 5. Conclusion

The Billing and Payment Enhancements Program is critical to meeting customer expectations for digital, seamless and easy interactions with the Company, regardless of what channel they are using. The funding proposed for this program will enable the Company to keep up with further advances in digital technology and evolve our billing and payment platforms, providing value to the customer by delivering the right message and payment options at the right time, on the channel of their choice.

## Project Risks and Mitigation Plan

### *Unplanned Regulatory Mandate or Customer Necessity*

The Billing and Payment Enhancements program will mitigate this risk by working through an agile project management framework. This means scope is not necessarily fixed and the team can prioritize new needs as they arise.

### *Insufficient Information Technology and Business Resourcing*

The Company has procured multiple contracts, including minimal staff augmentation partners, to allow for flexible teams that can scale to address capacity needs and mitigate this risk.

## Technical Evaluation / Analysis

A comprehensive technical evaluation of the components of the Billing and Payment Enhancements program will be performed as part of the agile, iterative program development process. As noted above the Company will utilize both industry and customer analysis to develop the scope, staffing, and cost estimates for the program components. In addition, customer research will be conducted to create an informative evaluation.

In addition, the Company will continue to evaluate investments required to meet customer expectations in future years. This evaluation will include a review of future customer needs and trends, and the strategies and technology to meet these needs.

## Project Relationships (if applicable)

The Billing and Payments program is complementary to the new customer service system, the proposed Enterprise CRM solution and numerous clean energy programs. Additionally, the Billing and Payment program will share several dependencies with other programs proposed in this filing including Virtual Assistants, Journey Mapping, Customer Data and Analytics, DCX, Back Office Automation and Workforce Management and Customer Outreach.

### 3. Funding Detail

**Historical Spend (\$000)**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital						
O&M					N/A	

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital		\$1,000	\$1,000	\$1,000	\$1,000
O&M*		\$400	\$400	\$400	\$400
Regulatory Asset					

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor		\$300	\$300	\$300	\$300
M&S					
Contract Services		\$550	\$550	\$550	\$550
Other					
Overheads		\$150	\$150	\$150	\$150
<b>Total</b>		\$1,000	\$1,000	\$1,000	\$1,000

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

**Billing and Payment Enhancements Request**

<b>Capital (\$000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Labor 1 Project Manager 1 Business Analyst/QA	\$300	\$300	\$300
Contract Services 2 IT Developer Resources Software/Hardware Upgrades	\$550	\$550	\$550
Overhead	\$150	\$150	\$150
<b>Total</b>	<b>\$1,000</b>	<b>\$1,000</b>	<b>\$1,000</b>

<b>O&amp;M (\$000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Labor 1 Project Specialist	\$100	\$100	\$100
Contract Services 1 IT Resource Customer Research	\$260	\$260	\$260
Overhead	\$40	\$40	\$40
<b>Total</b>	<b>\$400</b>	<b>\$400</b>	<b>\$400</b>



# Post Bill Re-Design Survey Report

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**SEPTEMBER 2021**

# Background, Objectives and Methodology



Based on customer feedback, Con Edison tested several prototypes and re-designed its bill. The new paper bill and e-bill format launched on April 9, 2021. Con Edison would like to get customer feedback and gain insights on the new bill re-design.



The findings from this survey will be used to make any additional changes to the bill design to better fit customer needs.

	Audience	Residential and Commercial Customers in the Con Edison Advisory Community who review the monthly bills and <b>at least</b> glance at them once in a while
	# of Participants	Total n=1,961 <ul style="list-style-type: none"> <li>Residential: n=1,784 (91%)</li> <li>Commercial: n=177 (9%)</li> </ul>
	Response Rate	20%
	Testing Period	9/9/2021 – 9/16/2021
	Method	Online survey <i>*Differences between paper bill and e-bill recipients noted where applicable</i>

# Key Findings and Recommendations

Customers like the new bill design; it is clear and provides helpful information.

## Key Findings

Virtually all customers (96%) are satisfied with the design of the new bill, citing the ease of locating information they are most interested in.



- Satisfaction with the newly designed bill is consistent among customers who receive paper and e-bills.

Customers like the easy-to-understand layout; they find the information helpful, and the usage trends useful for understanding their overall usage habits.

- Most (89%) find the temperature line at least somewhat helpful.
- Three-quarters (76%) believe the bill contains the right amount of information.



Dislikes include the bill feeling cluttered and missing year-over-year comparisons.

Suggestions for improvement include:

- Reducing the amount of text and increasing the font size.
- Providing more usage information, including year-over-year usage data.

## Recommendations:

- Explore ways to further streamline information included in the bill to make it less wordy and overwhelming for customers.
- In the usage chart, find some way to highlight the two anchor bars for the year-to-year comparison (i.e., Sept'20 & Sept'21).
- Consider using larger, bold font or other colors to call out the most important information on the bill.

# Detailed Findings

# Virtually all are satisfied with the new bill design, as it is clear and easy to find (key) information.

## Overall Satisfaction with Bill

Very satisfied

59%

Somewhat satisfied

37%

Not very satisfied

3%

Not at all satisfied

1%

“It not only makes my bill and due date clear but explains in detail what the charges are for and provides info like how my costs vary with the seasons. I can choose to adjust my usage if I want to based on the provided information.” – **BK Customer, Residential, Receives paper bill, Very satisfied**

“I like that the most important things, amount and due date, are large and clear at the top.” – **MN Customer, Residential, Receives e-bill, Very satisfied**

“It is comprehensive, with the most important information very easy to find.” – **QN Customer, Residential, Receives e-bill, Very satisfied**

“No issues, looks great and easy to find the information, usage, previous year comparison, delivery charges, etc.” – **BX Customer, Residential, Receives paper bill, Very satisfied**

“The pertinent information is easy to find, and additional information is displayed visually, and it offers food for thought.” – **WS Customer, Residential, Receives e-bill, Very satisfied**

“It’s clearer and better laid out than the previous format.” – **MN Customer, Commercial, Receives paper bill, Somewhat satisfied**

“As a senior citizen, I appreciate when details are broken down to make it easier for people my age to understand. And, I appreciate you doing your very best to work with your customers and address our needs.” – **BX Customer, Residential, Receives paper bill, Somewhat satisfied**

“Too much info is crowded on the page.” – **MN Customer, Commercial, Receives paper bill, Not very satisfied**

“The comparison to last year's usage is missing.” – **BK Customer, Residential, Receives e-bill, Not at all satisfied**

Exhibit (CO-18)  
Page 5 of 18

Q10 - Overall, how satisfied are you with the current look and layout of the bill? (Base: Total; n= 1,961)  
Q11 - Please explain why you answered this way, and please be as specific as possible. (Base: Total; n= 1,961)



## Reasons for Level of Satisfaction with Bill Design

"I like having all the information, including temperature, on one bill. Nothing is left for me to guess at." – **MN Customer, Commercial, Receives paper bill, Very satisfied**

"It is very detailed, so it leaves no question unanswered." – **MN Customer, Residential, Receives e-bill, Very satisfied**

"The information is easy to find and easy to read. If I just want to find payment info, it is highlighted & bolded, easy to locate. The graphs on the 1st page provide me with usage info at a glance." – **QN Customer, Residential, Receives e-bill, Very satisfied**

"It is clear, the amount due and date jump to the eyes. Easy to navigate through details. But I would not add more info, or risk to become too crowded; I think this is the limit of info on that bill." – **QN Customer, Residential, Receives e-bill, Very satisfied**

"I would like a full and simple-to-understand listing of all the charges that go into the bill." – **BK Customer, Commercial, Receives e-bill, Somewhat satisfied**

"It's definitely an improvement over the old version in that it's easy to find the information I need, but it's still too cluttered for my liking." – **WS Customer, Residential, Receives e-bill, Somewhat satisfied**

"It's good and nice! Easy to read and has all info I'm looking for." – **MN Customer, Residential, Receives e-bill, Somewhat satisfied**

"As I said, I want to understand how I can change my bill. What is drawing energy and how can I do better? Maybe there is no way, and I am a low user, but this is just what it costs." – **MN Customer, Residential, Receives e-bill, Not very satisfied**

"Need more usage detail, and cost breakdown." – **QN Customer, Residential, Receives e-bill, Not very satisfied**

"Removing the prior year's monthly usage comparison makes the bill much less useful and insightful." – **BK Customer, Residential, Receives paper bill, Not very satisfied**

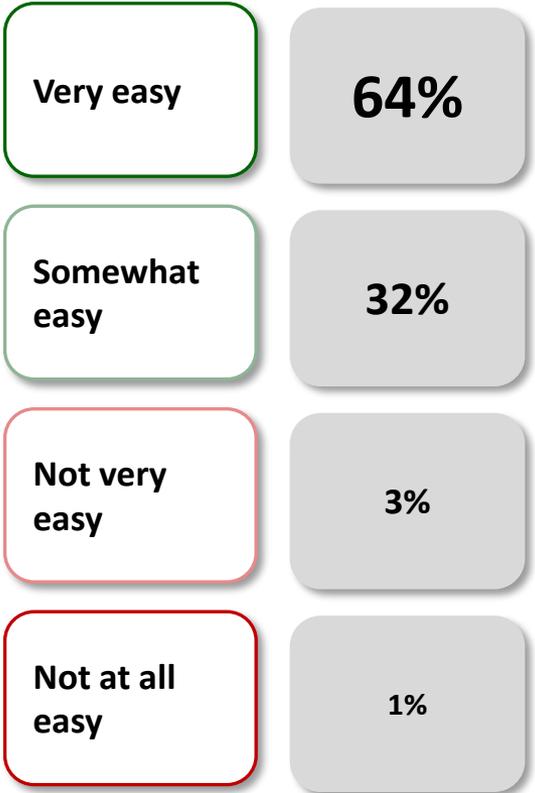
"it is hard to tell how much of my bill change from prior year-month is due to increased USAGE vs increased RATES." – **MN Customer, Residential, Receives e-bill, Not very satisfied**

Exhibit (CO-18)  
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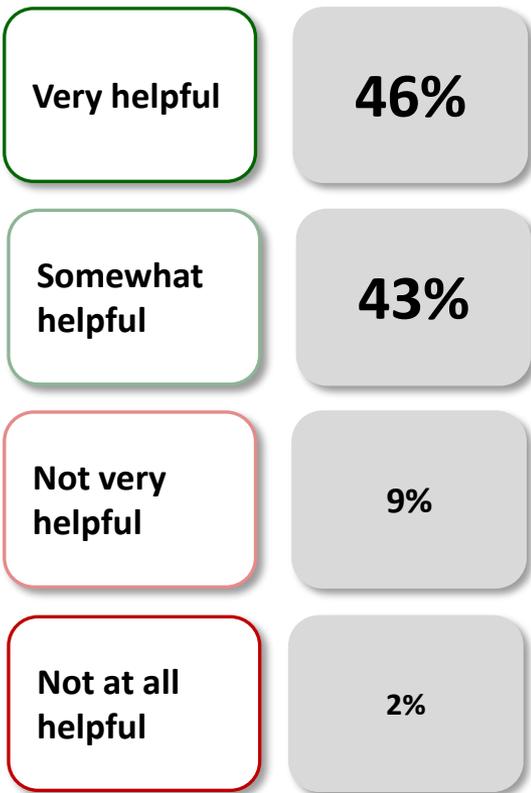
Q10 - Overall, how satisfied are you with the current look and layout of the bill? (Base: Total; n= 1,961)  
Q11 - Please explain why you answered this way, and please be as specific as possible. (Base: Total; n=1,961)

# The new bill contains the right amount of information and is easy to navigate; the temperature line is considered helpful.

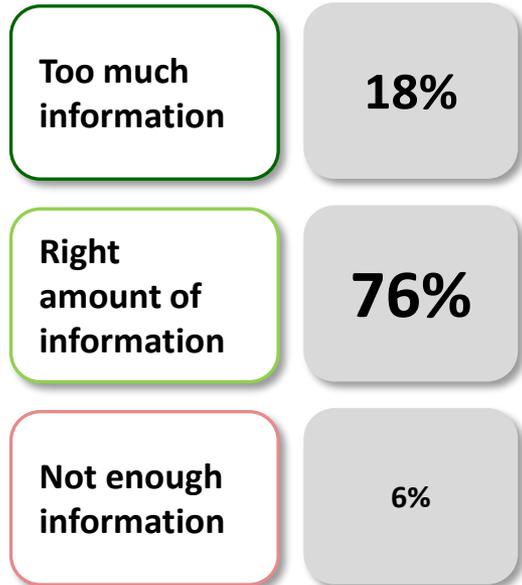
## Ease of Finding Information\*



## Helpfulness of Temperature Line\*\*



## Amount of Information in Bill



\*These scores are consistent with results from the Nov. 2019 research  
 \*\*The top 2 box score is significantly higher than that from the Nov. 2019 research (89% vs 83%)

Q7 - How easy is it to find the information you are interested in on your bill? (Base: Total; n=1,961)  
 Q8 - How helpful to you is having a temperature line included in the usage chart? (Base: Total; n=1,961)  
 Q9 - Do you think the information shown in the newly designed bill contains...? (Base: Total; n=1,961)

# Customers like the clearly labeled information (especially amount due) and the use of color and usage charts, which help them understand their overall habits.

## What Customers Like about Bill Re-Design

- ✓ **Sections containing relevant information are clearly highlighted (easy to read)**
- ✓ **Amount due is easy to locate**
- ✓ **Usage trends and charts are helpful to understanding overall habits**
- ✓ **Colors are eye-catching and help distinguish each section**

“The balance due and pay by date are upfront and clear. The bill breakdown is also front and center.” – **WS Customer, Residential, Receives e-bill, Somewhat satisfied**

“I like that the important areas are highlighted. I like the colorful design and layout.” – **WS Customer, Residential, Receives e-bill, Very satisfied**

“I like that the balance is large and easy to view. I like the colors that were chosen - they are easy to see and do a good job of separating sections.” – **MN Customer, Residential, Receives e-bill, Very satisfied**

“Every section is clearly labeled, so it is easy to locate what I am searching for quickly; I like that the total amount due and its due date are right at the top; it is useful to have the last billing period included as a reference, as well as the average usage charts.” – **MN Customer, Commercial, Receives e-bill, Very satisfied**

“I like that almost everything relevant for a quick glance is on page 1.” – **MN Customer, Residential, Receives e-bill, Very satisfied**

“The first page is very easy to read, and I like the charts showing average daily/monthly usage. I also appreciate the clarity on the many different ways to pay the bill.” – **MN Customer, Residential, Receives e-bill, Very satisfied**

“It’s easy to find what I owe immediately, if I am in a hurry paying bills. The other information is clearly stated if I need to find it to analyze my usage and charges.” – **BK Customer, Residential, Receives e-bill, Very satisfied**

“It is a smarter design and colorful.” – **MN Customer, Residential, Receives e-bill, Somewhat satisfied**

Exhibit (CO-18)  
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## What Customers Like about Bill Re-Design

“It's very easy to see current usage, amount due supply and delivery charges and consumption trends.” – **WS Customer, Residential, Receives paper bill, Very satisfied**

“The amount due is easy to see. I like the chart of daily usage. The supply charges and delivery charges are easy to understand.” – **BK Customer, Residential, Receives paper bill, Very satisfied**

“I like how clearly labeled each section is, with very helpful breakouts, as well as daily averages and other precise information.” – **MN Customer, Residential, Receives e-bill, Somewhat satisfied**

“The new look is simple to follow. The graphs are colorful and other information is in bold and differently sized. My eyes appreciate it.” – **BX Customer, Residential, Receives paper bill, Very satisfied**

“I like the color differentiation between gas and electric. It's very easy to read and detailed.” – **WS Customer, Residential, Receives paper bill, Somewhat satisfied**

“Shown clearly balance due and date. Also like the Average Daily usage and break down on calculations.” – **BK Customer, Residential, Receives e-bill, Very satisfied**

“I love the way that all the necessary information is presented right away, on the first page, in the first paragraph. I also like the energy usage graph right next to it, and the large bold bill amount is easy to see.” – **BX Customer, Residential, Has gone back to paper bill, Very satisfied**

“Amount due and due date is clearly at the top, as is account number and previous and new billing charges.” – **WS Customer, Commercial, Receives e-bill, Very satisfied**

“It is very easy to see the information at a glance with charts detailing daily usage. Colors and clear distinction of sections is also helpful.” – **BK Customer, Commercial, Receives paper bill, Very satisfied**

“I like that is simpler to understand it. The balance is clearer and the letters are bigger. Also, the bill is more reader-friendly.” – **QN Customer, Residential, Receives paper bill, Very satisfied**

Exhibit (CO-18)  
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# Six in ten customers do not have any dislikes. And, even though most believe the bill contains the right amount of information, it still feels cluttered.

## What Customers Dislike/Find Confusing about Bill Re-Design

- ❖ **Small font size, excessive text and condensed format makes the bill seem cluttered**
- ❖ **Year-over-year comparison is missing**
- ❖ **Lack of explanation of the delivery and supply charges**
- ❖ **Combined gas and electric usage**
- ❖ **Lack of color to call out important information (color too similar)**

“Too much to look at - font is small and everything is so close together.” – **WS Customer, Commercial, Receives e-bill, Somewhat satisfied**

“It’s a very busy layout/design. I understand the green and blue color coordination for electric and gas usage between the pages, but there is a lot of small type that makes the pages look confusing. I enjoyed when the gas and electric usage breakdowns were on two separate pages, though I understand this new format may be due to a desire to save paper on Con Ed’s part.” – **QN Customer, Residential, Receives e-bill, Somewhat satisfied**

“I think some of the taxes, fees, supply costs, etc. could be explained more.” – **MN Customer, Residential, Receives e-bill, Somewhat satisfied**

“It’s clear. Just the small font writing clutters the page too much.” – **QN Customer, Commercial, Receives e-bill, Somewhat satisfied**

“Supply charges and delivery charges. They need to be explained in more detail.” – **BX Customer, Commercial, Receives paper bills, Somewhat satisfied**

“There’s a large amount of text on the second page. I feel like most of this would be ignored, though it seems like there is some important information.” – **QN Customer, Residential, Receives e-bill, Somewhat satisfied**

“It would be helpful to see a year-over-year comparison of my gas and electricity usage, so I know if I’m doing better or worse.” – **MN Customer, Residential, Receives e-bill, Very satisfied**

Exhibit (CO-18)  
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## What Customers Dislike/Find Confusing about Bill Re-Design

“I think the bill design is a bit too crowded. I would simplify or remove sections like ‘Messages for You’ and ‘Power Problems.’ “  
– **BK Customer, Residential, Receives e-bill, Somewhat satisfied**

“I missed the comparison of my usage with previous year. How is the scale of the usage graph determined? Depending on how the max and min values are set, one can easily change the viewer's perception of their monthly usage changes.” – **BK Customer, Residential, Receives paper bill, Somewhat satisfied**

“The fine print on page 2 is a tad too much not only in terms of readability but looks concentrated.” – **QN Customer, Residential, Receives e-bill, Very satisfied**

“The graphs are missing last year's comparison.”  
– **BX Customer, Residential, Receives e-bill, Somewhat satisfied**

“Too much small print in a lot of different areas on the bill; it's a lot of text - a bit overwhelming at first glance. If I weren't looking for some specific information, I doubt I would read through any of it.” – **QN Customer, Residential, Receives paper bill, Somewhat satisfied**

“It's a bit clustered. It's a lot of information very small font size for you to read. Also, everything is listed from left to right although, similar to the previous design for the bill, it would list/stack the gas/electric readings and you would read it as if it was a math problem/equation to solve, meaning vertically and not horizontally.” – **BX Customer, Commercial, Receives e-bill, Not very satisfied**

“It was very, very, very useful, helpful, and insightful to previously see the historical usage per month from the prior year as a comparison, but sadly this information is no longer available.”  
– **BK Customer, Residential, Receives paper bill, Not very satisfied**

“Would love to see the Electricity and Gas charges also displayed on the first page, albeit less prominently...perhaps in smaller but even different color fonts.” – **BX Customer, Residential, Receives e-bill, Somewhat satisfied**

“I would like additional data on my bill that compares my usage to prior months and spots trends in usage. Sometimes, I don't know if the fluctuations in my charges are driven primarily by rate changes or my own utilization.” – **WS Customer, Residential, Receives paper bill, Somewhat satisfied**

# Roughly one-fifth of customers have suggestions to improve the bill, which include fewer words and more usage information.

## Improvement Suggestions

**No**  
**79%**

**Yes**  
**21%**

n=411

- Improvement suggestions include...
- Limit text to help de-clutter and streamline information
  - Include more detailed usage information (e.g., daily usage, year-over-year usage, trend lines)
  - Increase font sizes

“Make it more clear by reducing the amount of text, adding more graphics (graphical breakdown of fees) and consolidating the text in the ‘understanding your bill’ section.” – **WS Customer, Residential, Receives e-bill, Somewhat satisfied**

“Average usage by time of day and day of week, preferably for current month compared to previous month and average for last 12 months.” – **WS Customer, Residential, Receives paper bill, Somewhat satisfied**

“Please increase the font size of the account number and period of coverage.” – **QN Customer, Residential, Receives e-bill, Somewhat satisfied**

“Cut down the small print and the superfluous information.” – **MN Customer, Commercial, Receives e-bill, Somewhat satisfied**

“Adding more spacing among the paragraphs to make it more readable.” – **QN Customer, Residential, Receives e-bill, Somewhat satisfied**

Exhibit (CO-18)  
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## Improvement Suggestions

“Consolidate information a little bit more efficiently; would add tips on how to save (like for instance if the highest usage was a hot day, perhaps Con Ed could suggest ways that I could decrease costs for that day).” – **MN Customer, Residential, Receives e-bill, Somewhat satisfied**

“Change the font to something easier to read. Also, color contrast is not great for accessibility.” – **SI Customer, Residential, Receives e-bill, Somewhat satisfied**

“I prefer a break down of the billing that directly shows the connection between consumption and bill. It’s not possible to calculate it in the new bill.” – **WS Customer, Residential, Receives e-bill, Somewhat satisfied**

“1. In Understanding Your Bill, the wording could be reduced and made more concise; 2. In Ways To Pay Your Bill, the virus should be written as COVID-19; 3. Why are walk-in centers even listed if they are all closed due to COVID-19? The list should be removed until they are opened; 4. Why do you have on page 2 both "Sales tax @4.5000%" and "Total sales tax"? It seems redundant, combine them.” – **BX Customer, Residential, Receives paper bill, Very satisfied**

“Give more analysis of hour-by-hour breakdown. ‘Your highest spending hour is Tuesdays at 1pm’.” – **MN Customer, Residential, Receives e-bill, Very satisfied**

“More graphic or other style of illustration to convey complicated info in an easy digestible way (i.e., cost per unit for each of the last 12 months vs average customer cost per unit) to see if I'm paying too much or not.” – **WS Customer, Commercial, Receives paper bill, Somewhat satisfied**

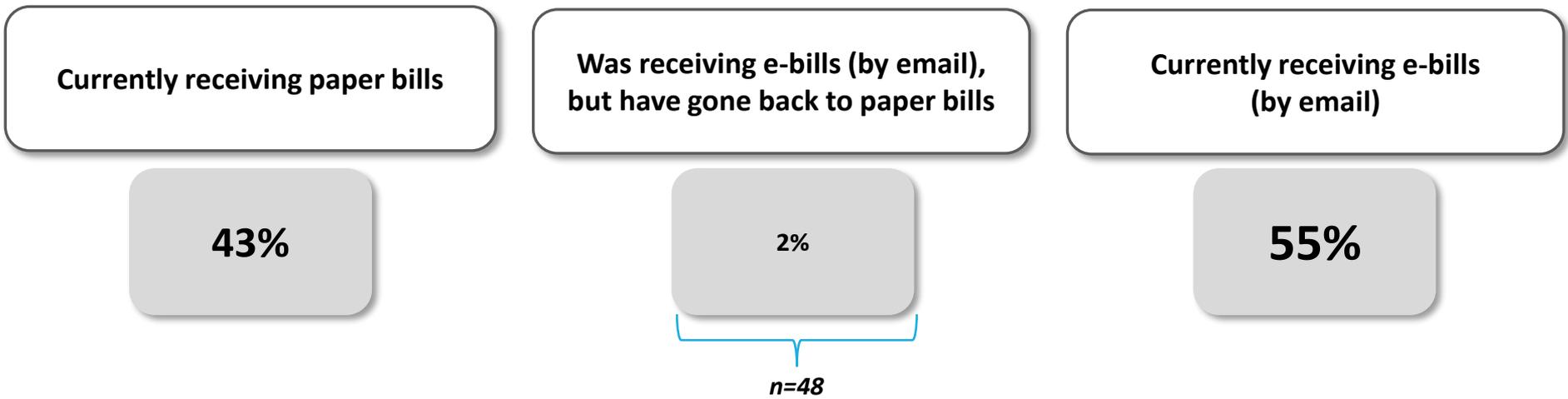
“Yes, maybe spacing or formatting the charges a little bit differently and not packing them so tightly together would help us to better understand them.” – **BK Customer, Residential, Receives paper bill, Somewhat satisfied**

“As I am an electricity heavy business, I might like to see a more detailed breakdown of my electricity usage (dates/times/costs) to determine what, if any, machines or procedures are creating high demand and driving up prices.” – **QN Customer, Commercial, Receives paper bill, Very satisfied**

# Appendix

# Just over half of customers receive e-bills; a few returned to paper bills because it is easier to read, needed for records or they just prefer paper copies.

## Method of Receiving Bill



“The charges were unusually high for several months, and I wanted to be able to review the bills thoroughly. The website was not always reliable.” – *SI Customer, Residential, Has gone back to paper bill, Very satisfied*

“I like having a ‘hard copy’ of the bill, for record keeping.” – *BX Customer, Residential, Has gone back to paper bill, Very satisfied*

“Easier to read the information.” – *MN Customer, Residential, Has gone back to paper bill, Somewhat satisfied*

“I would forget to pay the bill and couldn't remember log in info.” – *BK Customer, Residential, Has gone back to paper bill, Very satisfied*

“I liked being able to save for me records for our building.” – *QN Customer, Commercial, Has gone back to paper bill, Somewhat satisfied*

“I liked being able to save for me records for our building.” – *QN Customer, Commercial, Has gone back to paper bill, Somewhat satisfied*

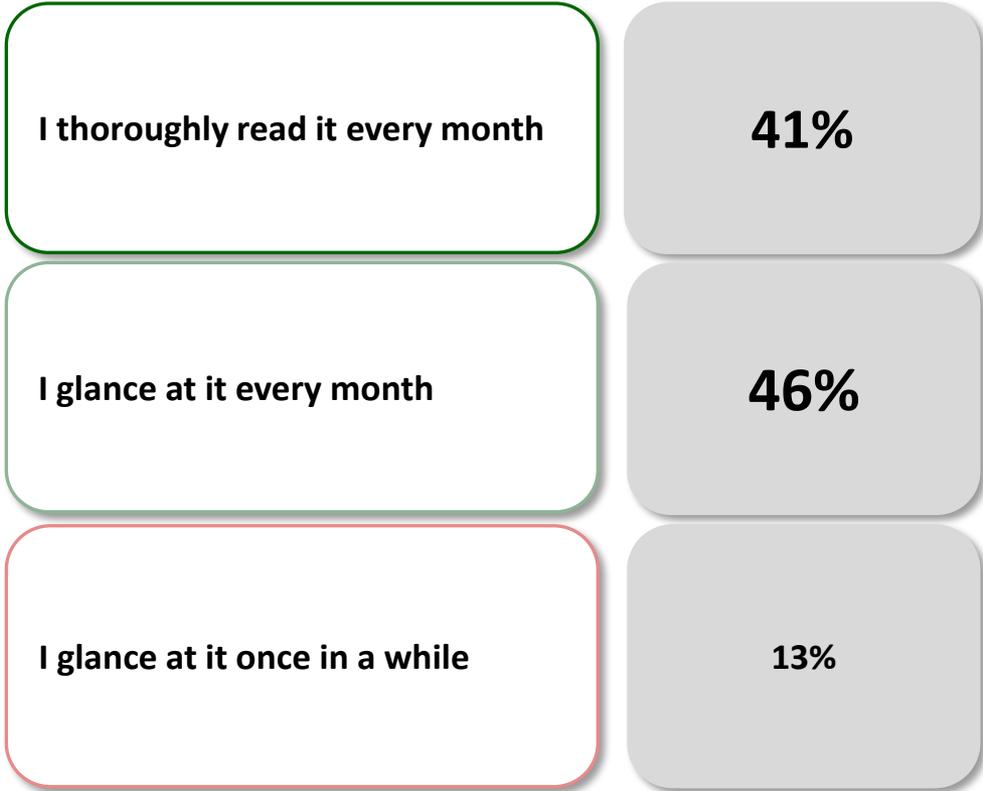
Q3 - What is your current method of receiving Con Edison bills? (Base: Total; n=1,961)

Q4 - Why did you go back to paper bills? Please be as specific as possible. (Base: Those who have gone back to paper bills; n=48)



# Most customers at least glance at their bill every month.

## How Closely Read/Review Bill



*Customers who receive paper bills tend to read the bill more thoroughly than those who receive e-bills.*

# Bill Re-Design Example Shown



**MINA MILLER**  
Account Number: 99-9999-9999-9999-9

### Your Bill Breakdown

**Last billing period**  
Avoid estimated bills - please give us access to read your meter.  
Your billing summary as of Dec 9, 2020  
Your previous charges and payments  
Total charges from your last bill \$97.93  
Payments through Dec 7, thank you -\$97.93  
**Balance from previous bill None**

**Your new charges**  
Billing period: Nov 04, 2020 to Dec 08, 2020  
Electricity charges - for 34 days \$87.25  
Gas charges - for 34 days \$46.25

**Total from this billing period \$133.50**  
**Total amount due \$133.50**

Payment is due upon receipt of this bill. To avoid a late payment charge of 1.5%, please pay the total amount due by **Jan 4, 2021**.

### Messages For You

- Want to go paperless and receive your bill electronically? Sign up at [coned.com/eBill](http://coned.com/eBill).
- Join our Direct Payment Plan (DPP). Just place an 'X' in the Auto Pay enrollment box on your payment slip when you mail back your payment by check. We'll use your banking information to enroll you in the plan. Then, each month, after you've had time to review your bill, we will automatically deduct your Con Edison bill payment from your checking account. Join Now.

Current balance due  
**\$133.50**  
Pay By 01/04/21

Service delivered to: 25-257 PEARL STREET  
Next meter reading date: Friday, Jan 8, 2021

### Your average daily electric usage



### Your average daily gas usage



Questions? Contact Us : [conEd.com/ContactUs](http://conEd.com/ContactUs) 1-800-752-6633



Account number: 99-9999-9999-9999-9

Pay By 01/04/21 **\$133.50**  
Amount Enclosed

Please make checks payable to Con Edison.  
 Enroll In Auto Pay

conEdison  
PO BOX 1702  
NEW YORK, NY 10116-1702

+ M79 M97  
000006 9999 99999999999999 9999999999 9999999999

## Your electricity breakdown Rate, E1 Residential or Religious

### Electric Meter Detail - billing period from Nov 04, 2020 to Dec 08, 2020 (34 days)

Meter #	New Reading	Reading Type	Date	Prior Reading	Reading Type	Date	Reading Diff	Total Usage
08945258	10641	Actual	Dec 08, 20	10358	Actual	Nov 04, 20	273	273 kWh

### Your Supply Charges

Supply 273 kWh @9.0330¢/kWh	\$24.66
Merchant function charge	\$1.03
GRT & other tax surcharges	\$0.62
<b>Total supply charges</b>	<b>\$26.31</b>

Your total electricity supply cost for this bill is 9.6¢ per kWh. You can compare this price with those offered by energy services companies (ESCOs). For a list of ESCOs, visit [PowerYourWay.com](http://PowerYourWay.com) or call 1-800-780-2884.

### Your Delivery Charges

Basic service charge	\$18.77
Delivery 273 kWh @12.5604¢/kWh	\$34.29
System Benefit Charge @0.5018¢/kWh	\$1.37
GRT & other tax surcharges	\$2.75
<b>Total delivery charges</b>	<b>\$57.18</b>

Sales tax @4.5000% \$3.76  
**Total sales tax \$3.76**

**Your electricity total \$87.25**

## Your gas breakdown Rate, GSI Residential or Religious

### Gas Meter Detail - billing period from Nov 04, 2020 to Dec 08, 2020 (34 days)

Meter #	New Reading	Reading Type	Date	Prior Reading	Reading Type	Date	Reading Diff	Usage in ccf
2770667	5461	Actual	Dec 08, 20	5193	Actual	Nov 04, 20	11	11 ccf

Therm conversion factor 11 therms  
Total Gas Use 11 therms

### Your Supply Charges

Supply 11 therms @32.7273¢/therm	\$3.60
Merchant function charge	\$0.17
GRT & other tax surcharges	\$0.09
<b>Total supply charges</b>	<b>\$3.86</b>

Your total gas supply cost for this bill is 35.0¢ per therm. You can compare this price with those offered by energy services companies (ESCOs). For a list of ESCOs, visit [PowerYourWay.com](http://PowerYourWay.com) or call 1-800-780-2884.

### Your Delivery Charges

Basic service charge (includes first 3.4 therms)	\$27.84
Remaining 7.6 therms @137.3684¢/therm	\$10.44
Monthly rate adjustment @2.0909¢/therm	\$0.23
System Benefit Charge @0.0000¢/therm	\$0.00
GRT & other tax surcharges	\$1.89
<b>Total delivery charges</b>	<b>\$40.40</b>

Sales tax @4.5000% \$1.99  
**Total sales tax \$1.99**

**Your gas total \$46.25**

### Understanding your bill

**Basic service charge (Electric):** Charge for basic system infrastructure and customer-related services, including customer accounting, and metering services. A billing and payment processing charge of \$0.64, which may be avoided by switching to an energy services company (ESCO). It also includes:  
**Basic service charge (Gas):** Charge for basic system infrastructure and customer-related services, including customer accounting and metering services. A billing and payment processing charge of \$0.64, which may be avoided by switching to an energy services company (ESCO). It also includes:  
**Billing charges:** These charges are for the electricity and gas you need (supply) and getting the electricity and gas to you (delivery). Rates are based on a 30 day period. When your billing period is more or less than 30 days, we prorate your bill accordingly.  
**Delivery:** Charge for maintaining the system through which Con Edison delivers electricity to you.  
**Electricity Supply:** Charge for the electricity applied to you by Con Edison.  
**Gas Supply:** Charge for the gas supplied to you by Con Edison.  
**GRT & other tax surcharges:** Taxes on Con Edison gross receipts from sales of utility services and other tax surcharges.  
**Merchant Function Charge (Electric and Gas):** Charge associated with procuring electricity and storing natural gas, credit and collection related activities and uncollectible accounts.  
**Monthly rate adjustment:** Adjustment for miscellaneous costs and credits, and from October through May, for the effect of variation from normal weather.

How to get in touch with us Email or chat: [conEd.com/ContactUs](mailto:conEd.com/ContactUs) Phone: 1-800-752-6633 Mail: Con Edison, Cooper Station, P.O. Box 138, New York, NY 10276-0138

### Ways to pay your bill

- Auto Pay:** Pay your bill automatically from your checking or savings account at no charge. Enroll at [conEd.com/MyAccount](http://conEd.com/MyAccount) or call 1-212-243-1000.
- Online:** Pay at [conEd.com/MyAccount](http://conEd.com/MyAccount) using your bank account, credit card or debit card.
- App:** Download the Con Edison app from the App Store or Google Play Store.
- Phone:** Pay by phone at 1-888-925-5016 using your bank account, credit card or debit card.
- In Person:** We have temporarily closed our walk-in centers due to covid-19. Our walk-in center locations are below.  
  - Manhattan: 122 East 124th Street
  - Brooklyn: 345 Jay Street
  - Queens: 89-67 162nd Street
  - Bronx: 1775 Grand Concourse
  - Staten Island: 1140 Richmond Terrace
  - Westchester: 1 Bogopa Plaza
- Mail:** Send a check or money order, payable to Con Edison, using the envelope provided to authorize us to make a one-time electronic fund transfer from your account or to process the payment as a check. You will not get the check back. Do not send cash.  
  - Con Edison
  - PO Box 1702
  - New York, NY 10116-1702

Questions? Call toll free 1-800-752-CONED (1-800-752-6633)

Save a stamp. Pay your bill online at [ConEd.com/MyAccount](http://ConEd.com/MyAccount)



**For Additional Questions, Please Contact:**

**Nancy Stahl**  
**Customer Experience,**  
**Marketing**  
**[stahln@coned.com](mailto:stahln@coned.com)**



# Bill Payment Method Survey Report

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**MARCH 2021**

**KL COMMUNICATIONS**



# Background, Objectives and Methodology



Gauge customer interest in different monthly bill payment methods, including Venmo, PayPal and Zelle, as well as paying directly in a large bank branch.



The findings will be leveraged for considering the feasibility of offering additional bill payment options to customers.

	Audience	<b>Residential and Commercial customers</b> within the Con Edison Advisory Community
	# of Participants	n=1,875 total
	Response Rate	23%
	Testing Period	3/16/2021 - 3/22/2021
	Method	Online survey <i>*Some findings compared with previous polls asked within the Con Edison Advisory Community.</i>

Exhibit (CO-19)  
Page 2 of 17

# Key Findings and Recommendations

Customers appreciate the possible addition of new monthly bill payment options, regardless of whether they would use them.

## Key Findings



Convenience drives interest to pay monthly bills via a **bank branch** or via **Venmo, PayPal or Zelle**. Even those who prefer alternate payment methods **appreciate other options** to have as a back-up.



Most customers **currently pay their bills through their bank or through auto-pay**. Some say they **prefer these methods** of payment to the new options.

- Those who are not as interested in the new options **prefer their current payment methods** or have **concerns about safety and security** (e.g., privacy, COVID concerns).



Among the 11% who self-reported as a **business** customer, more than half would find **paying digitally with an invoice number helpful**, as it would be **easy and convenient**.

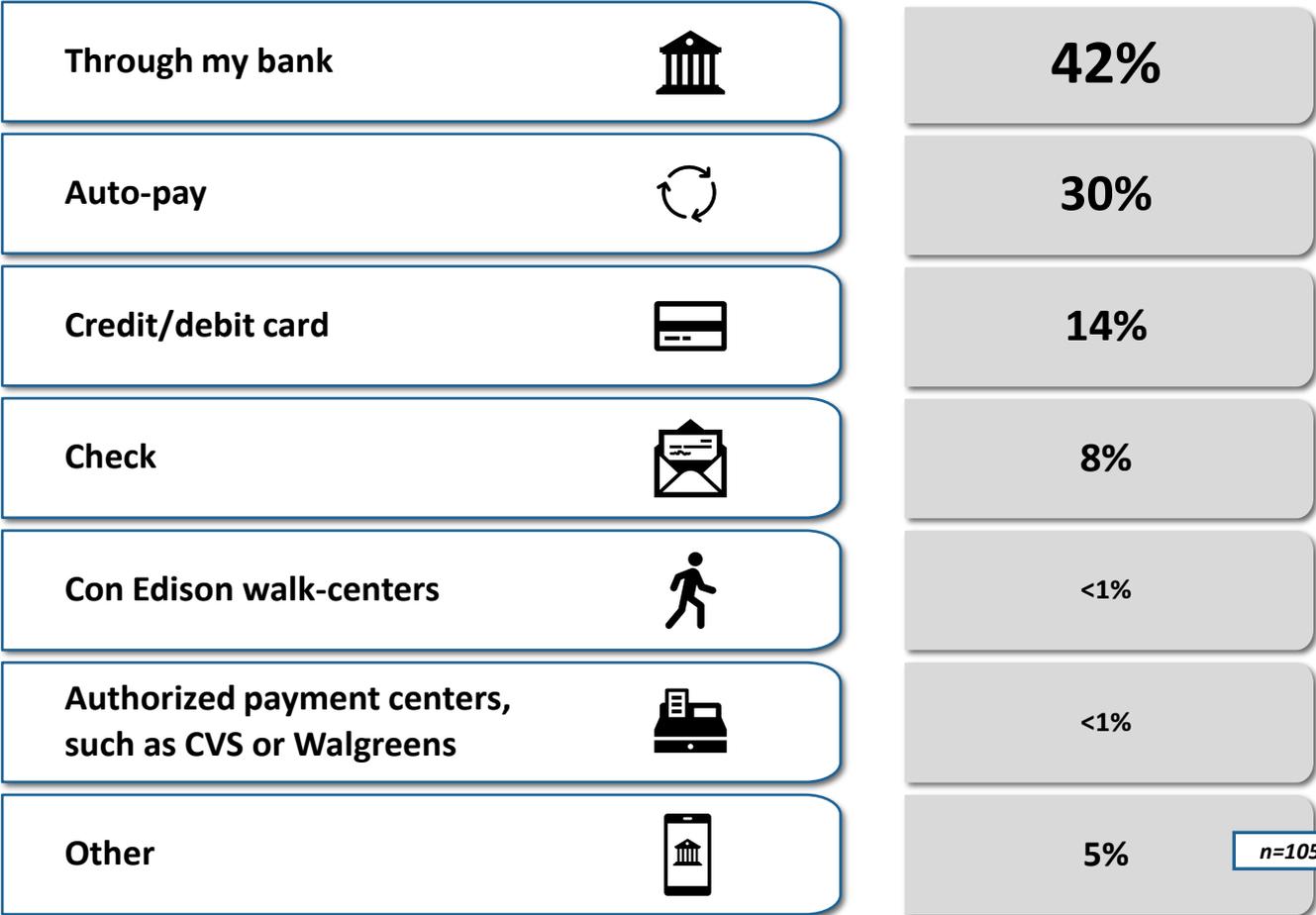
## Recommendations:

- Consider whether it is feasible to offer customers additional bill payment options, as there is interest.*
- For business customers, consider offering the option of paying digitally with an invoice number.*

# Detailed Findings

# Most customers currently pay their Con Edison bill through their bank or use auto-pay.

## Method to Pay Con Edison Bill



**Other methods include:**

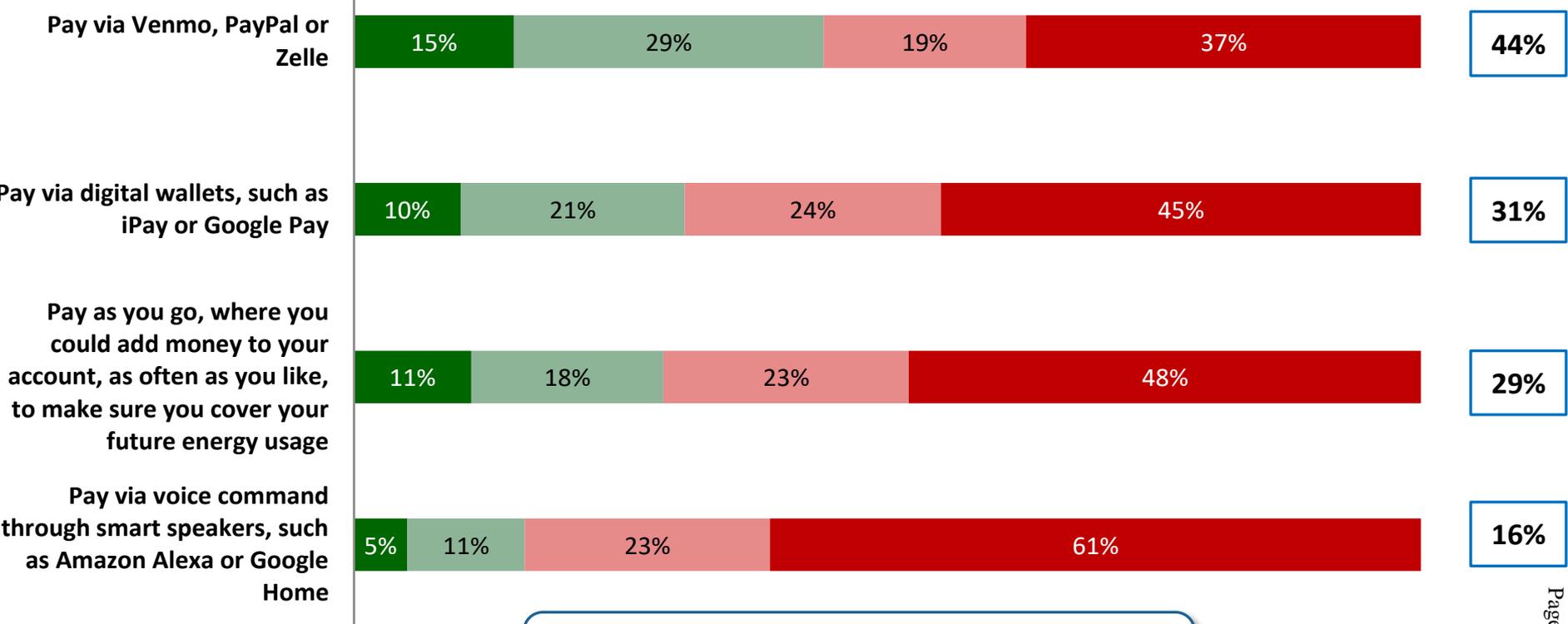
- Con Edison website
- Con Edison app

*n=105*

# Just under half of customers express interest in using Venmo, PayPal or Zelle to pay their bills.

## Interest in Different Bill Payment Options

■ Very interested   
 ■ Somewhat interested   
 ■ Not very interested   
 ■ Not at all interested



*In a previous poll, 4% indicated they would prefer to use Venmo, PayPal or Zelle as their primary payment method.*

Top 2 Box

44%

31%

29%

16%

Exhibit (CO-19)  
 Page 6 of 17

# Venmo, PayPal or Zelle are considered convenient, easy to use and trustworthy, though many are happy with their current payment method.

## Reason for Interest Level in Venmo, PayPal or Zelle



### Those who are interested (44%) say...

- ✓ Apps are convenient/easy to use
- ✓ Familiar with/trust these apps
- ✓ Good back-up for normal payment method



### Those who are NOT interested (56%) say...

- ☒ Happy with current payment method
- ☒ Do not use these apps
- ☒ Unsure about information security

"It's **quick and easy**. Like sending a text. I already have auto pay. This would be a close second." – **Very interested, BK Customer, Residential**

"I currently **pay through online banking and am perfectly satisfied with the way that works** for me. I use PayPal and Zelle for other things." – **Not at all interested, BK Customer, Commercial**

"I **currently use those services to pay bills and receive payments**. Adding Con Ed to the list of vendors is a viable option." – **Very interested, QN Customer, Residential**

"**Do not use any of these**. As an older person, I do a minimum of financial transactions online. I have an issue with **privacy and hacking**." – **Not at all interested, QN Customer, Residential**

"Because I actually **already use Venmo and PayPal, so I'm familiar with it**. Would also be **good for paying in a pinch** if you didn't receive a bill or forgot it was due, etc." – **Somewhat interested, MN Customer, Residential**

"Autopay direct drafts from my bank account. **I set it and forget it (so to speak, I still monitor the account) and is by far the most convenient for me**. The only way I would be interested in these options would be if Autopay was no longer an option... but even then, I'd likely just use my debit card." – **Not very interested, BK Customer, Residential**

"**I use services like this** for various payments. It **would be convenient in a pinch if I needed another source of money** for payments or there was a problem with my bank account." – **Somewhat interested, BK Customer, Residential**

"Honestly, **I'm happy paying the way that I am**. I do use these other services, so maybe I'd be interested in the future, but I don't know." – **Not very interested, BK Customer, Residential**

Reason for Interest Level in Venmo, PayPal or Zelle

“I use all three of these services, so it would be **easy to pay** my bill with these. If possible, to not have to log in to my Con Ed account each time, that would be ideal.” – **Very interested, BK Customer, Residential**

“This is a **very convenient** way to make payments and includes a receipt for record, it is also free. I hope it includes all the info of acting history as well.” – **Very interested, BX Customer, Commercial**

“Having **multiple payment avenues has proven convenient** in the past, especially when traveling.” – **Somewhat interested, BK Customer, Residential**

“I **have a Venmo account** and it would be an **additional option** I could use along with paying through the website.” – **Somewhat interested, WS Customer, Residential**

“I probably wouldn’t use this option regularly, but I do use Venmo and Zelle for other transactions regularly, so if my Autopay wasn’t working for some reason, **this could be useful to me as a back-up payment method.**” – **Somewhat interested, MN Customer, Residential**

“All those 3rd party payment options are almost the same as the current online bill payment option offered from most banks. **From a security point of view, bank offers more protection than 3rd party app/web site.** Hence, I will use bank’s online payment instead.” – **Not at all interested, BK Customer, Commercial**

“I already **pay my bill via my bank account and I’m happy with that form of payment.**” – **Not at all interested, MN Customer, Residential**

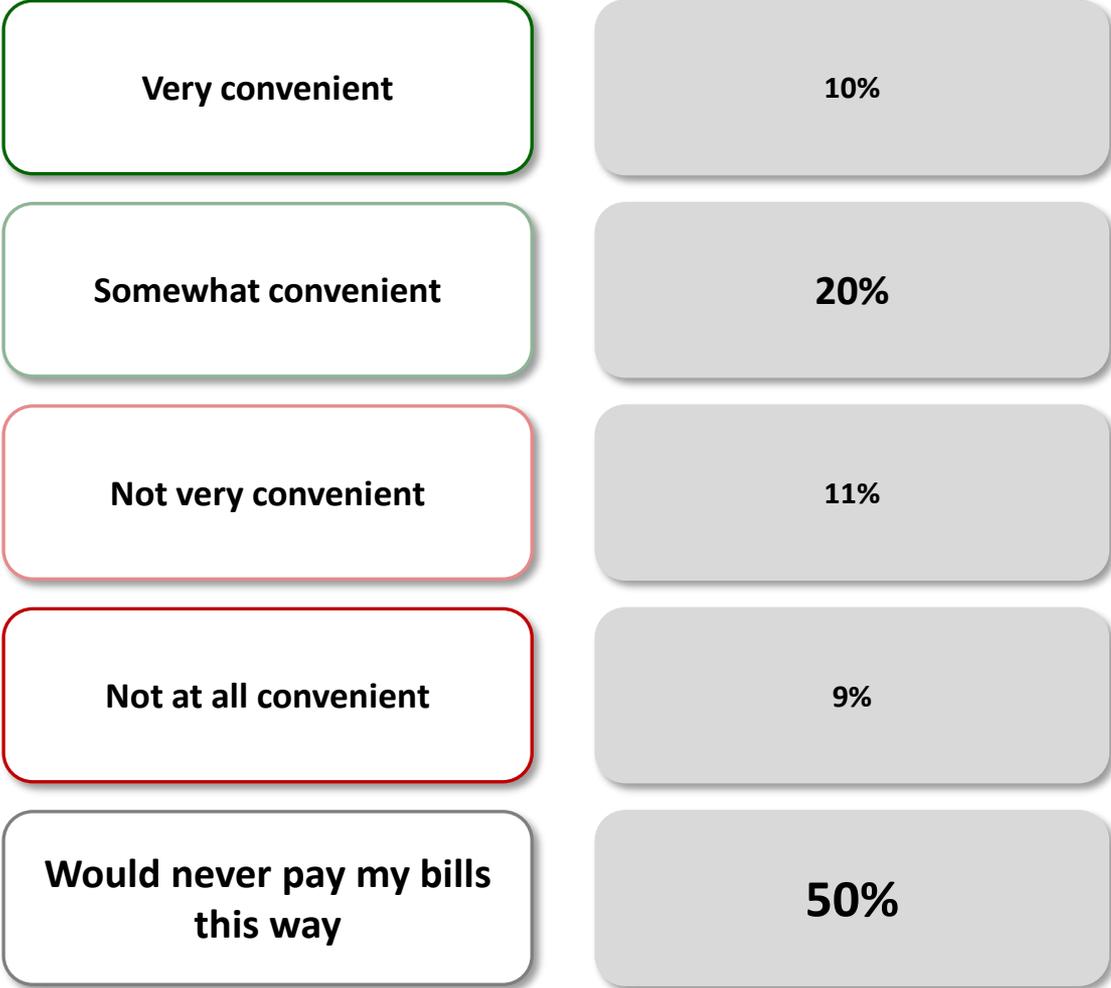
“With the exception of PayPal, **not as trusting in those options.** I heard horror stories of transfers being sent to the wrong place, not being received or unable to get credit or refund and posting time.” – **Not very interested, BX Customer, Residential**

“I **prefer to pay ConEd directly** from my bank account through the ConEd website, instead of bringing in an **unnecessary third party** to handle payments.” – **Not very interested, BX Customer, Residential**

“I **do not use them**, so it would not make sense for me to start just for this.” – **Not very interested, BK Customer, Residential**

# While half would never pay their Con Edison bill at a bank, three in ten would find it convenient.

## Convenience Level of Paying Con Edison Bill at Bank



*In a previous poll, 38% (T2B) of customers said paying their Con Edison bill at a bank would be convenient.*

Q4 - In the future, if Con Edison were to offer customers the ability to pay their monthly bill at a local branch office of a large bank (and you were not obligated to be a member of the bank), how convenient would this be for you? (Base: Total; n=1875)  
To see previous poll results [click here](#).

Convenience drives interest in paying Con Edison bills at a bank. Customers appreciate knowing the option could be available, regardless of whether they'd use it. Many of those not interested are happy with their current payment method.

Interest in Paying Con Edison Bill at Bank

**Very interested**  
16%

**Somewhat interested**  
33%

**Not very interested**  
32%

**Not at all interested**  
19%



Those who are interested (49%) say...

- ✓ Would be easy/convenient
- ✓ Nice to have options to pay bills
- ✓ Could work as a back-up option to pay bills



Those who are NOT interested (51%) say...

- Happy with current payment method
- Prefer contactless payment methods
- Less convenient

“Depending on the bank, they would be **easily accessible** because of their number and location. Also, it would **offer another method for payment.**” – *Very interested, BX Customer, Residential*

“Going somewhere in person is **less convenient** for me and my circumstances when **I could pay online instead.**” – *Not very interested, BK Customer, Residential*

“If the bank were **near my home or work location this would make paying my bill easy.** I have more than one option to pay my bill.” – *Very interested, BK Customer, Residential*

“I am very **satisfied with autopay**, which requires no extra thought or attention, works well and is safe.” – *Not very interested, MN Customer, Residential*

“**There are banks everywhere** - this would be **convenient** and would save a stamp and still allow you to have a receipt and know that it's paid.” – *Very interested, MN Customer, Residential*

“**Inconvenient to travel to bank** and wait in line just to pay a bill that can currently be paid online from anywhere.” – *Not very interested, BX Customer, Commercial*

Exhibit (CO-19)  
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Q5 - Again, in the future, if Con Edison were to offer customers the ability to pay their monthly bill at a local branch office of a large bank (and you were not obligated to be a member of the bank), how interested would you be in this? (Base: Would consider paying bills at bank; n=932)  
Q6 - Why do you say that? Please be as specific as possible. (Base: Would consider paying bills at bank; n=932)



Interest in Paying Con Edison Bill at Bank

“Because I have a lot of bank branches all around my apartment, **all I would have to do is walk to any corner to pay - that's easy.**” – *Very interested, MN Customer, Residential*

“Going into banks may mean I am subjected to **long lines and long waiting times.**” – *Not very interested, QN Customer, Residential*

“I live in a city where there are several different banks and **that would be convenient,** and I bet it would be for others.” – *Very interested, WS Customer, Residential*

“I do not go into banks to pay any bills. **I pay all my bills online.**” – *Not very interested, WS Customer, Commercial*

“I **already have my payment method** set up and it is convenient, so I am unlikely to change it. However, I like the possibility of paying nearby in person.” – *Somewhat interested, BK Customer, Commercial*

“I am **fine by paying my bills online** through your website.” – *Not very interested, BX Customer, Residential*

“I think that **would be a great convenience, especially for customers that don't use auto-pay or technology.** Not everyone is into technology and still need a human connection for service.” – *Somewhat interested, WS Customer, Residential*

“**I pay all of my bills online. I don't want to have to go out of my way** to pay in person, especially since COVID.” – *Not at all interested, MN Customer, Commercial*

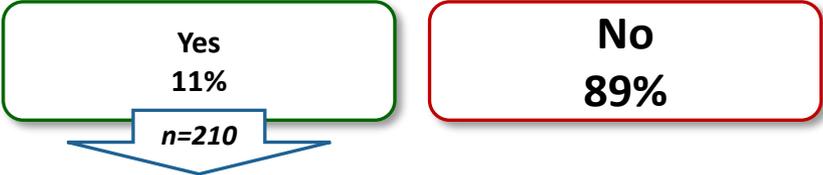
“**If for some reason I could not pay** from my checking account, **this will be easy.**” – *Somewhat interested, QN Customer, Residential*

“**It is much more convenient to pay my bills from the comfort of my home!** This is particularly important during a worldwide pandemic.” – *Not at all interested, SI Customer, Residential*

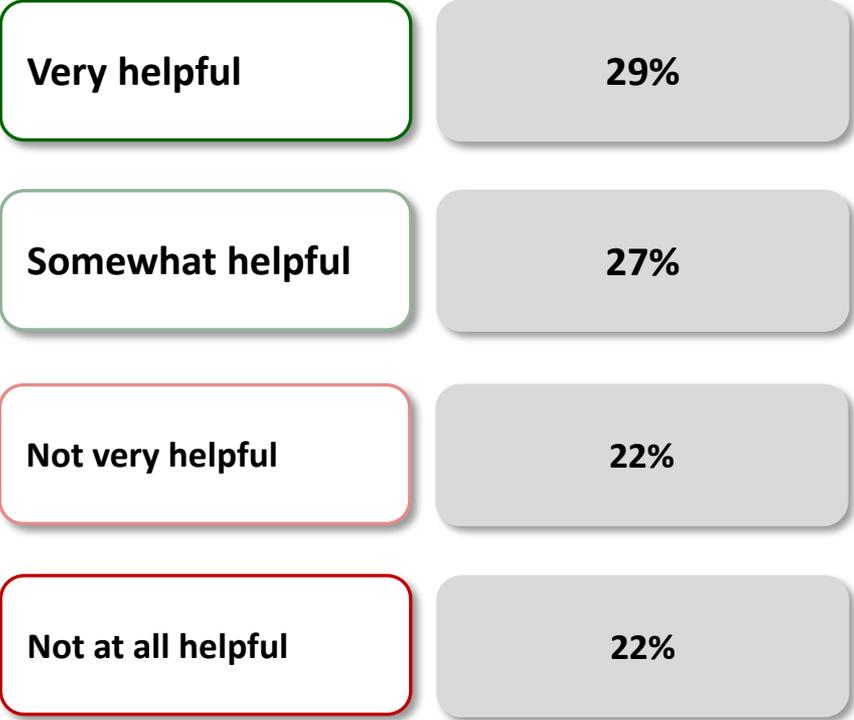
Exhibit (CO-19)  
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# Among the 11% who self-reported as business customers, more than half would find paying digitally with an invoice number convenient and would help them keep track of payments.

## Own or Pay Bills for a Business Serviced by Con Edison



## Helpfulness of Paying Con Edison Bills Digitally with Invoice Number



**Business customers say...**

- ✓ It would be easy/convenient
- ✓ Helps keep track of payments
- Already use autopay or prefer other methods

“I prefer to pay my bills digitally. An invoice number **would help keep track of payments.**” – *Very helpful, WS Customer, Commercial*

“I currently pay the bills via our Con Edison online account and it is **very easy and convenient.**” – *Very helpful, MN Customer, Commercial*

“I currently pay online, but the signing process is not easy nor fast. **That would help in that sense.**” – *Somewhat helpful, MN Customer, Commercial*

Q7 - Do you currently own or pay the bills for a business that is serviced by Con Edison? (Base: Total; n=1875)  
 Q8 - How helpful would it be for you to pay your monthly Con Edison bills digitally, with an invoice number? (Base: Business owners/pays bills; n=210)  
 Q9 - Why do you say that? Please be as specific as possible. (Base: Business owners/pays bills; n=210)

**Helpfulness of Paying Con Edison Bills Digitally with Invoice Number**

“I would rather have all business payments digital for **easier record keeping.**” – *Very helpful, MN Customer, Commercial*

“It **would cut down on the paperwork needed** to pay the bills each month.” – *Very helpful, BK Customer, Residential*

“**Very convenient** and without having to look for a place to make payments.” – *Very helpful, MN Customer, Commercial*

“It could be helpful, but I **would have to see how it is implemented** and if it offers a benefit over the auto payment we have established currently.” – *Somewhat helpful, SI Customer, Residential*

“**Would be easier to remember a 6-digit number** than an entire account number.” – *Somewhat helpful, QN Customer, Commercial*

“**I don't think an invoice number for my Con Ed bills would help** my organization of accounts payable.” – *Not very helpful, QN Customer, Commercial*

“I have a procedure that I have set up for paying bill and I am not interested.” – *Not very helpful, WS Customer, Commercial*

“I pay all my Con Ed bills through autopay, so **I do not need to pay another way.**” – *Not very helpful, WS Customer, Commercial*

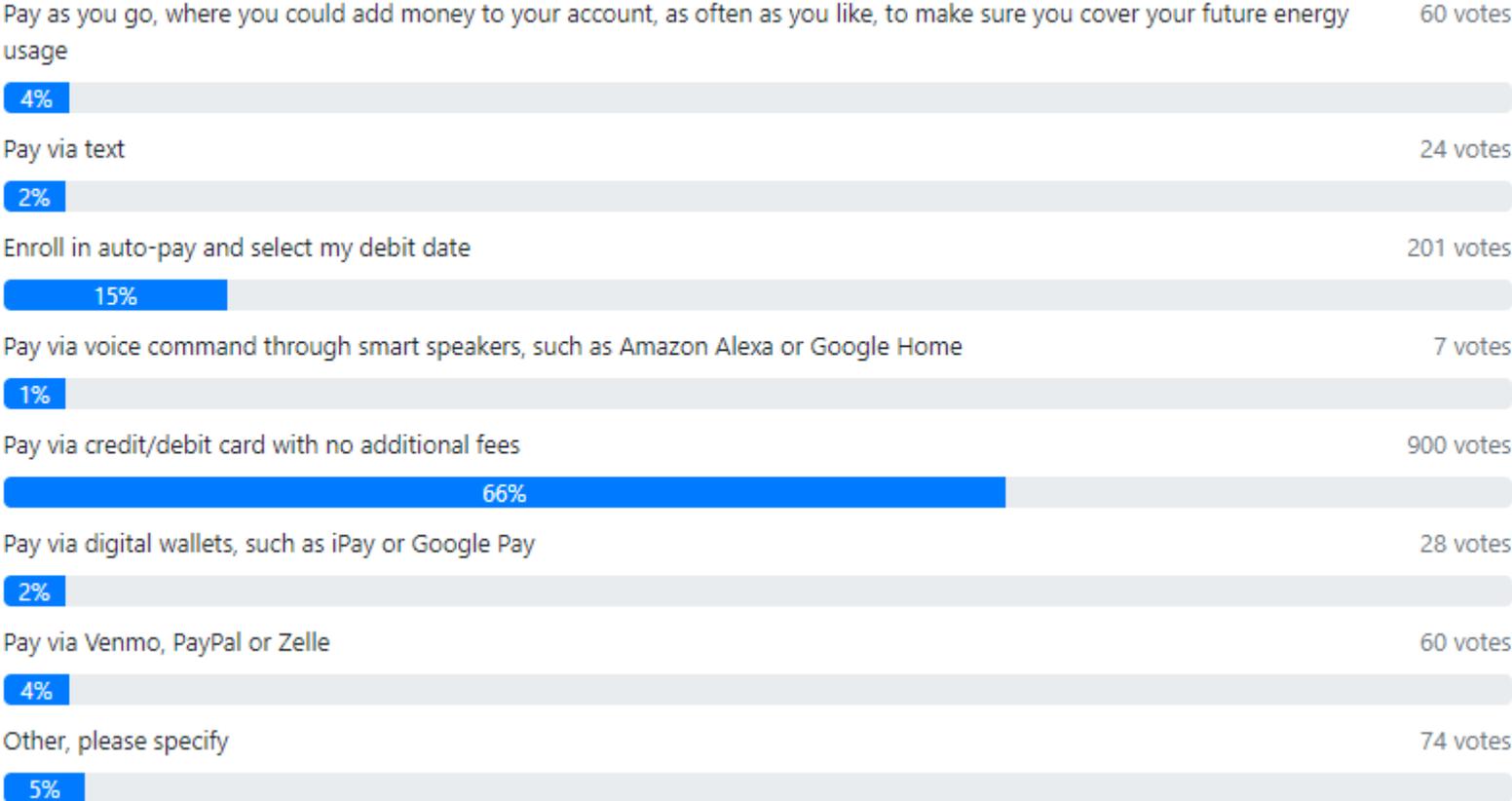
“Because my monthly payment is **automatically taken from my building's bank account.**” – *Not at all helpful, MN Customer, Commercial*

“**I like getting a paper statement** with my account information I'm not quite sure why an invoice number would be a benefit.” – *Not at all helpful, WS Customer, Commercial*

# Appendix

# Previous poll: Paying via Venmo, PayPal or Zelle

**In the future, if Con Edison were to offer any of the following options to pay your monthly bill, which one would you prefer to use?**



1,354 responses

# Previous poll: Paying at a bank branch

**In the future, if Con Edison were to offer customers the ability to pay their monthly bill at a local branch office of a large bank (and you were NOT obligated to be a member of the bank), how convenient would this be for you?**



1,529 responses

**For Additional Questions, Please Contact:**

**Nancy Stahl**  
**Customer Experience,**  
**Marketing**  
**[stahln@coned.com](mailto:stahln@coned.com)**

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
<b>Project/Program Title:</b> Digital Customer Experience (“DCX”)	
Project/Program Manager: Eric Mastroianni	<b>Project/Program Number (Level 1):</b> PR.21088410
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: January 2015	Estimated Date In Service: Ongoing
A. Total Funding Request (\$000) Capital: \$66,280 O&M: \$45,990	B. <input checked="" type="checkbox"/> 5-Year Gross Cost Savings (\$000) \$1,774 <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000)
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: \$ 45,990	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>The Digital Customer Experience (DCX) program is part of the Company’s Strategic Customer Experience (Strategic CX) Portfolio of projects, which seeks to deliver a dynamic customer experience that will both meet evolving customer and stakeholder expectations and enable the Company to lead the transition to a clean energy future.</p> <p>The DCX program is a multi-year program that continually refines and builds upon the Company’s core digital platform. Since 2017, the DCX program has consistently delivered customer value. This includes increased adoption of digital self-service across various key customer transactions (see Justification Summary for further information). The program continues to identify customer experience enhancements to meet changing market and customer needs. The Company looks to continue to fund the program guided by the principles below:</p> <ul style="list-style-type: none"> <li>• <b>Customer First</b> – Through surveys, in-depth interviews and journey mapping, customers are guiding the Company to a best-in-class digital customer experience.</li> <li>• <b>Simplicity</b> – Customers have indicated through usability testing and benchmarking that they expect simple and intuitive experiences when interacting with their utility.</li> <li>• <b>Personalization</b> – Utilizing data-enabled analytics and customer-driven optionality to provide customers with relevant content and tailored solutions.</li> <li>• <b>One Company</b> – DCX enables a collective, cross-functional approach and delivers a digital experience that is consistent across the entire website/app.</li> </ul>	

- **Agility** – An agile operating approach underlays the solution architecture and positions Con Edison to quickly adapt to changes in customer preferences, markets and regulatory requirements.
- **Security** – Safeguarding customer information while maximizing usability is a central objective of DCX.

The DCX program will continue to use a customer centric, “Agile” project management approach (i.e., an iterative and incremental method of managing the design and build of the digital platform) that will adapt project scopes to changing priorities based on customer feedback, analytics and regulatory priorities. The Company will continue to update Department of Public Service Staff and stakeholders on the evolution of the DCX program through quarterly reports.

The key focus areas that will guide the efforts to optimize and expand Con Edison’s digital platforms during the 2023-2025 time period are enumerated below.

**Ongoing Optimization & Transactional Expansion:** Embedded in the DCX work process is an ongoing review of customer feedback through the “provide feedback” link posted throughout the web and mobile experience, post-chat and transactional surveys, and ad hoc focus groups. In addition, website analytics are reviewed to develop actionable insights. This information helps the Company identify opportunities to benefit customers and remove transactional friction points. Examples include changes to transactional flows, such as the placement of text, buttons and icons to make it easier for customers to find information and remove known pain points, or to optimize business rules and logic to allow for improved self-service. Additionally, the team optimizes digital performance through reduced page weight, load time, carbon footprint, and search engine optimization. This focus area also covers opportunities for new transactional experiences to address emerging issues. This capability was exemplified in the Company’s nimble digital response to Covid-19 protections in 2020 and 2021, including zero-down self-service payment agreements for residential and commercial customers and online self-attestation to financial hardship in compliance with the Parker-Mosley Act of 2020. The DCX program’s agile framework and funding allowed the Company to move quickly to address customer needs and legislative requirements.

The Company will also continue to expand online self-service offerings to include transactions that are currently only available through a Customer Service Representative (“CSR”), as well as new content experiences that deliver additional value to specific customer segments. Examples include but are not limited to:

- Appointment scheduling
- Expansion of commercial customer offerings, such as improved data visualization and improved multi-account portfolio management
- Streamlining payment agreement flows (post-Covid-19)
- Improving outage reports and tracking outages experiences
- Enhancing document submission and form templates, and
- Spoilage and General Claims experience enhancements

With the implementation of a new customer service system (CSS), there will be opportunities to deliver several new functional experiences for customers. These enhancements will take advantage of efficiencies of the newer billing system and the alignment of all commodities within a single billing system. Additionally, digital enhancements identified during the new

CSS transition will be earmarked for implementation after it goes live. Examples of this work include design and development work to introduce multi-commodity transactional experiences within My Account, enabling a true one-stop shop for customer interaction across commodities. Other examples will require new integrations, such as features to show post-dated payment in the payment history, and case tracking, such as for low-income enrollment.

Finally, as described in the Billing and Payment Enhancements program testimony, the Company plans to expand customer payment options to offer seamless payment interactions through third-party pay partners (e.g., PayPal, Venmo, Apple Pay). This will require DCX to perform some necessary platform updates and integrations to support new payment channels.

**Mobile App Enhancement:** This focus area addresses mobile expansion and optimization, including development of key features as they are expanded across the digital platforms, as noted above (e.g., implementation of new transactional offerings, content optimization). The Company must keep the mobile apps consistent with the web enhancements and planned work outlined in this white paper and will continue to evaluate if native mobile functions, such as photo and GPS capabilities, can be leveraged for improved experiences.

**Technology Upgrades and Enhancements:** To meet customers' rising expectations, the Company's digital platform must maintain a high level of reliability and an error-free experience. To accomplish this, the Company will continue to evaluate timing of upgrades to the Web Experience Management (WEM) platform and continually look at infrastructure improvements needed over time. Upgrades to the WEM platform will unlock new features and capabilities that have not been utilized to date, such as faster delivery of forms without the substantial development needed today. DCX will evaluate future upgrade features and capabilities so that, as technology evolves, Con Edison sites keep up with customer expectations. DCX will also invest in the development of WEM functionality for content authors to allow for easier distribution of content across all digital channels and media, providing improved consistency across the digital experience. This focus area also incorporates improvements to allow for resilient solutions that can withstand future customer adoption growth as customer preferences continue the shift to digital, and during major customer emergency events and campaigns.

**Personalization and Control:** Customers value control and personalized experiences. The DCX program will continue efforts to provide experiences with customized and tailored messaging and offerings based on an understanding of customers' needs. For example, a residential apartment dweller visiting the Company's website may see tailored messaging about energy efficiency programs for renters or a customer in arrears may be offered payment plans or payment assistance when logging into My Account. The DCX program will continue to look for opportunities within this focus area by leveraging the Customer Data and Analytics program to build granular customer segmentation that will allow for more targeted journeys and experiences.

In addition, the Company seeks to develop improved web tools to allow Community Distributed Generation (CDG) hosts to more effectively manage their subscribers. This includes improved features to input and update subscriber allocations and view changes in the status of subscriber accounts. A DCX web portal for CDG providers will support increasing regulatory requirements and customer expectations, digitize CDG-related transactions to provide faster response times, enable more self-service features, and provide customers a unified experience to CDG billing and crediting history within a single portal. This

will support long term 10 GW statewide solar goal (by 2030) and the state's recent proposal to fund at least an additional 200 MW of CDG in Con Edison service territory.

**Interactive Voice Enhancements & Upgrades:** The Company will also expand the DCX program scope to incorporate and optimize additional digital channels, such as Interactive Voice Response (IVR), text, and email management, including making these channels more consistent in key areas, such as setting preferences for notifications. Additionally, the Company plans to evaluate natural language IVR expansion that uses automated speech recognition (ASR) technology that allows callers to say what they are calling about in a wide variety of ways. So instead of prompting them to say specific phrases, the system will typically just say something like: *"Welcome to Con Edison, how can I help you today?"* This technology will improve customer friction points on the existing IVR and allow for greater self-service containment (e.g., allowing customers to complete more transactions on self-service channels without needing to speak with a CSR).

**Leveraging Emerging Technology:** The Company will continue to monitor both customer and industry trends to offer simple and convenient ways to transact across its digital platforms. This includes expanding upon the smart home developments from the 2020-2022 rate period for new functions on the Amazon Alexa and Google Home platforms. DCX will also continue to support and build where required new and expanded features to support clean energy programs, such as smart homes, electric vehicles, solar, and building electrification initiatives to improve customers' ability to control and monitor their energy usage.

Capital costs required to support the DCX program include internal labor, vendor costs, and software and hardware costs associated with implementation of the capital work described above. To continue the progress of the program, the Company proposes to continue with a digital-focused team to expand the DCX platform based on the focus areas noted in this white paper.

The Company is also proposing O&M changes for the DCX program in all three Rate Years.

First, the Company must maintain the foundational information technology (IT) infrastructure that was implemented in 2017-2021, which involves non-labor expenses such as software-related fees charged by technology vendors and ongoing costs for technology solutions deployed by the DCX program. DCX technology fees fall into the following categories:

- **Software as a Service fees:** Identity Access Management, Preference Management, Feedback/Survey Tools, Ad Hoc Customer Engagement Platform enhancements; Notification Fulfillment
- **Cloud Hosting fees:** Azure cloud hosting environment to store DCX program code
- **Maintenance fees:** Web Experience Management Platform
- **Contractor Services:** Ancillary support functions filled by contactors to support ongoing maintenance and support of the DCX experience
- **Storm Hardening Testing:** Various tests for system resiliency and availability across web, mobile app and IVR.

Second, the Company requires funding for additional full time equivalent (FTE) resources (i.e., above the FTE utilized in the Historic Year) to provide day-to-day maintenance of the

Company's growing digital architecture, manage the customer experience, and create and introduce new creative content.

For detailed cost and resourcing information reference:

- Exhibit\_\_(CO-21) DCX Request
- Exhibit\_\_(CO-22) DCX Capital Request Detail
- Exhibit\_\_(CO-23) DCX O&M Request Detail

#### **Justification Summary:**

The DCX program is a part of the Company's Strategic CX Portfolio of projects. The Strategic CX Portfolio projects work together to achieve the following value propositions:

- **Increase customer satisfaction** even as expectations continue to rise
- **Drive cost efficiencies through** improved service and resolution
- **Support statewide clean energy goals** by generating customer demand for and streamlining adoption of programs
- **Facilitating understanding and adoption of optional rates** which help customers save and support grid efficiency
- **Enable safe, reliable and resilient delivery of energy** through improved communication during an outage
- **Provide education and access to payment assistance** when a customer experiences financial difficulties that impact their ability to pay for service

The DCX program specifically contributes to these value areas as follows:

- **Increase Customer Satisfaction:** DCX will continue to implement various digital enhancements through its Agile framework, journey mapping recommendations and customer feedback received through various channels. This continuous improvement approach has resulted in measurable increases in Customer Satisfaction and Effort scores, confirming that customers are finding it easier to do business with the Company.
- **Drive Cost Efficiency:** DCX will continue to drive cost efficiency through increased adoption of lower-cost digital channels, expansion of new online functions, and improvements to customer friction points. Examples of success in this value area include enhancements to the customer moving process that resulted in an increase from ~20% to over 55% of customers completing start service online instead of calling the call center.
- **Enable safe, reliable and resilient delivery of energy:** DCX will continue to refine the customer outage journey to better communicate customer Estimated Times of Restoration (ETRs) and improve the customer experience for reporting and checking outages. The Company will also develop the ability to track customer claims online.
- **Provide education and access to payment assistance:** The DCX program has already launched features within My Account for customers to view their low-income enrollment information online. An upcoming eligibility inquiry form is also underway. Future improvements include enhanced payment agreement experiences and content

updates as customer assistance programs continue to be developed, so that customers can obtain this valuable information quickly.

- Support statewide clean energy goals: This is a broad value area that requires a digital presence for customers that provides them and third parties with access to data, clear content, navigation to programs, and lead generation for energy efficiency programs. DCX has delivered data access through its historical efforts on smart meter data visualizations and data sharing options, giving customers the control to work with clean energy solution providers and to understand their usage. Additionally, digital channels will continue to evolve over the next rate term with additional personalization and capabilities to support targeted program marketing to customers, making navigating complex offerings more palpable.
- Facilitating understanding and adoption of optional rates: DCX will provide value in this area by integrating with tools and building new experiences in conjunction with the Customer Recommendation & Analysis Tools program (see Customer Energy Solutions Panel) to help customers select rates and plans that work best for them. The Company will also need to support content that simplifies rate design for customers under the DCX program. The Company has already achieved success in this area, including previous work on Rate Pilot programs.

The DCX program has already delivered improved customer satisfaction, customer engagement, and reduced costs through call deflection. Since the launch of the new My Account experience in July 2017, the Company has seen monthly average users (i.e., the number of users who log in at least once in a month) dramatically increase from 99,000 to 376,000.

The Company's Net Promoter Score (NPS – a common metric for websites that is also referred to as an online user's "likelihood to return") has increased from –28.6 to +45, which is considered excellent. The Company has also seen improvement in effort scores to 4.5 out of 5 in direct correlation with DCX implementation efforts, meaning it has become easier for customer to do business with the Company. However, customers' expectations of digital customer service are expected to increase based on their interactions with companies outside of the energy industry. To sustain this performance while keeping up with rapidly changing customer expectations and evolving technology trends, the Company must continue to invest in and modify its digital platforms.

In addition, the Company's proposal to continue investment in the DCX platform is in line with the Company's approach to replacing its Customer Service System (CSS), as described in the Company's 2019 rate filing. The Company's customer-facing experiences were designed with the flexibility to continue to provide value to customers as the Company migrates to the new CSS. The Company will need to integrate the new CSS with the existing DCX platform as part of the transition. Costs associated with integrating the DCX platform to the new CSS have been included in the funding estimates for the new CSS program as detailed in the Customer Operations Panel testimony.

The value to be gained by customers from continued support and funding for the DCX program is best illustrated by the program's ability to nimbly pivot priorities to meet emerging regulatory, customer and business needs. As previously mentioned, the Company met the COVID-19 legislative and regulatory requirements around customer attestation and payment assistance options through flexible payment agreements with robust self-service options.

Additionally, the Company responded after Tropical Storm Isaias with online spoilage claim forms and, later, expanded claim form options for non-storm matters. DCX allows the Company to continually evaluate priorities and work with stakeholders to deliver value with speed and agility.

Finally, continued investment in mobile applications is necessary. The initial mobile applications have been well received by customers, with an average score of 4.8 in the Android and iOS app stores. Additionally, the adoption and use of the Company's app continues to show positive trends. As customers adopt this technology, they will expect to see features and capabilities evolve as seen on other popular applications. For example, customers will expect to use native phone technology for voice-enabled transactions through Siri or Google Assistant, so that customers can report an outage by simply saying "Siri, my power is out."

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

DCX is a strategic project and enabler for many initiatives to improve the customer experience, increase customer satisfaction, deflect calls for transactions that are available online, provide customers with convenient payment assistance options in the wake of the COVID-19 economic downturn, and support clean energy goals. DCX therefore supports the Company's strategic customer goals in the long-range plan.

## 2. Supplemental Information

**Alternatives**

Now that the DCX program is well underway, the only alternative to the investments proposed here would be to suspend capital investment in the DCX platform and instead perform maintenance work only on the Company's digital platform. The Company would not provide customers with a continuously improving experience that stays in step with their evolving expectations, which in turn would make customers less likely to utilize digital self-service options or engage clean energy programs. Not investing in DCX would also make it harder to adopt new rates that require sophisticated digital interactions.

**Risk of No Action**

There are several key risks associated with no action:

- Diminished smartphone and tablet user experience due to lack of long-term optimization planning and execution;
- Declining customer satisfaction as users become increasingly frustrated with an aged experience and technology;
- More customers contacting the Company's Customer Experience Centers rather than using self-service applications, driving increased cost and longer wait times;
- Inability to adapt to evolving customer and regulatory requirements;

- Failure to support and leverage new customer engagement opportunities and emerging clean energy initiatives; and
- Failure to reduce operating costs.

### **Non-Financial Benefits**

The DCX program will result in several non-financial benefits, including but not limited to the following:

- Improved customer satisfaction, through a comprehensive, simple and intuitive web and app experience;
- Improved community relationships, through a more engaging and informative website;
- Improved customer engagement, through proactive communications and additional choice, control and customer tools;
- Improved accessibility for special needs customers through content that meets regulations for hearing and visually impaired customers;
- Improved agility, with a more robust technology suite, which allows for flexibility and iterative development of new content to better meet customer needs, outage communications, and regulatory initiatives;
- Improved resiliency related to storm, public safety, and other vital communications; and
- Improved speed of delivery of customer and regulatory needs, as demonstrated through the delivery of COVID-19 protections and related self-service options delivered through latest rate year.

### **Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital: \$66.28M

O&M: \$45.99M

4. Basis for estimate

Capital costs are based on historical DCX program costs. O&M costs are estimated based on a review of past program costs, Historic Year expenses, projected staffing needs, and ongoing software and labor costs to support associated IT infrastructure.

For detailed cost and resourcing information reference:

- Exhibit\_\_(CO-21) DCX Request
- Exhibit\_\_(CO-22) DCX Capital Request Detail
- Exhibit\_\_(CO-23) DCX O&M Request Detail

## 5. Conclusion

DCX is a strategic project and enabler for many initiatives to improve the customer experience, increase customer satisfaction, deflect calls for transactions that are available online, provide customers with convenient payment assistance options in the wake of the COVID-19 economic downturn, and support clean energy goals. This program is a central part of how Con Edison will continue to meet rising customer expectations and support the State's clean energy goals via robust and timely customer engagement.

### **Project Risks and Mitigation Plan**

#### *Unplanned Regulatory Mandate or Customer Necessity*

DCX performs its work through an agile framework. This means the scope is not necessarily fixed and the team can prioritize new needs into the project plan. This framework represents a strategic direction taken to manage this risk.

#### *Information Technology and Business Resourcing*

DCX has procured multiple contracts, including a staff augmentation partner to allow for flexible teams that can scale to address capacity needs to mitigate this risk.

### **Technical Evaluation / Analysis**

A comprehensive technical evaluation of the DCX program was completed during the 2015 Phase 0 analysis. The Company used this analysis as the basis for scope, staffing, and cost estimates for the program. In addition, the Company conducted customer research to inform the evaluation. This research confirmed customer expectations for robust digital channels and a simple, engaging experience. Please refer to the Company's rate filings in Case 16-E-0060 and 19-E-0065 for further information.

In addition, the Company has continued to evaluate investments required to meet customer expectations in future years. This evaluation included a review of future customer needs and trends and the strategies and technology to meet these needs. This research identified the continued development of an omni-channel experience as a cross-industry best practice to meet future customer needs. Continued investment in the DCX program is the cornerstone of the Company's broader omni-channel investments.

### **Project Relationships (if applicable)**

The DCX program is related to the Advanced Metering Infrastructure (AMI) program and numerous clean energy programs (e.g., REV Demonstration Projects, AMI Innovative Pricing Pilots, Energy Efficiency programs, Electric Vehicle programs). Additionally, the DCX program will share several dependencies with capital projects proposed in this filing including Virtual Assistants, Journey Mapping, Customer Analytics, Outage Communications, Customer Data Sharing, Customer Recommendation Tools, the Customer Relationship Management system, and the New CSS Implementation program.

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### 3. Funding Detail

**Historical Spend (\$000)**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
<b>Capital</b>	<u>\$17,240</u>	<u>\$9,472</u>	<u>\$9,831</u>	<u>\$12,621</u>		<u>\$10,030</u>
<b>O&amp;M</b>	<u>\$6,330</u>	<u>\$6,327</u>	<u>\$6,045</u>	<u>\$6,456</u>	<u>\$6,970</u>	<u>\$6,317</u>

**Total Request (\$000):**

**Total Request by Year (\$000):**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	<u>\$12,050</u>	<u>\$11,400</u>	<u>\$15,030</u>	<u>\$15,050</u>	<u>\$12,750</u>
<b>O&amp;M*</b>	<u>\$7,380</u>	<u>\$9,570</u>	<u>\$9,930</u>	<u>\$10,310</u>	<u>\$8,800</u>

**Capital Request by Elements of Expense (\$000):**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	\$750	\$700	\$850	\$850	\$750
M&S					
Contract Services	\$10,550	\$10,000	\$13,305	\$13,325	\$11,250
Other	\$450	\$350	\$450	\$450	\$450
Overheads	\$300	\$350	\$425	\$425	\$300
<b>Total</b>	<b>\$12,050</b>	<b>\$11,400</b>	<b>\$15,030</b>	<b>\$15,050</b>	<b>\$12,750</b>

**Total Gross Cost Savings / Avoidance by Year (\$000):**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M Savings</b>	<u>\$582</u>	<u>\$582</u>	<u>\$610</u>		
<b>O&amp;M Avoidance</b>					
<b>Capital Savings</b>					
<b>Capital Avoidance</b>					

**Total Ongoing Maintenance Expense by Year (\$000):**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M</b>	<u>\$7,380</u>	<u>\$9,570</u>	<u>\$9,930</u>	<u>\$10,310</u>	<u>\$8,800</u>
<b>Capital</b>					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

**DCX Request**

<b>Capital (\$000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Internal Labor	\$700	\$850	\$850
Overheads & Indirects	\$350	\$425	\$425
System Integrator & Digital Agency	\$4,250	\$6,000	\$6,000
Biztalk	\$200	\$200	\$200
Testing	\$800	\$1,000	\$1,000
Staff Augmentation	\$4,360	\$5,785	\$5,780
IVR Development	\$740	\$770	\$795
<b>Total</b>	<b>\$11,400</b>	<b>\$15,030</b>	<b>\$15,050</b>

<b>O&amp;M ('000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Internal Labor -Resources Across Business, IT and Corporate Affairs	\$2,910	\$2,983	\$3,045
Software -Various Software to Support Digital Ecosystem (Chat, Survey, Translation, etc.)	\$2,405	\$2,518	\$2,644
Contractor Services -Contractor/Vendor Services to Augment DCX Staff	\$4,210	\$4,380	\$4,560
Misc. -Incidentals Such ad Training and Professional Development	\$45	\$49	\$51
<b>Total</b>	<b>\$9,570</b>	<b>\$9,930</b>	<b>\$10,310</b>

## DCX Capital Request Detail

Role	Count 2023	Count 2024	Count 2025	Cost (avg. p/hr)	Hrs	Total Cost 2023	Total Cost 2024	Total Cost 2025
SI & Design Agency Program Management	1.5	2	2	\$207	2080	\$645,840	\$861,120	\$861,120
DCX Technical Architect	0.2	0.5	0.5	\$115	2080	\$47,840	\$119,600	\$119,600
Project Managers	1	2	2	\$207	2080	\$430,560	\$861,120	\$861,120
Scrum Masters	1	2	2	\$180	2080	\$374,400	\$748,800	\$748,800
Product Owners	3	3	3	\$95	2080	\$592,800	\$592,800	\$592,800
Business Analysts	2	2.5	2.5	\$165	2080	\$686,400	\$858,000	\$858,000
API Technical Architects	1	2	2	\$330	2080	\$686,400	\$1,372,800	\$1,372,800
API Developers	3	4	4	\$80	2080	\$499,200	\$665,600	\$665,600
Accessibility Validator	1	1	1	\$40	2080	\$83,200	\$83,200	\$83,200
Biztalk Developer	1	1	1	\$100	2080	\$208,000	\$208,000	\$208,000
End to End Testing Lead	1	1	1	\$110	2080	\$228,800	\$228,800	\$228,800
End to End Testers	3	4	4	\$90	2080	\$561,600	\$748,800	\$748,800
UX Lead	1	1	1	\$207	2080	\$430,560	\$430,560	\$430,560
UX Designer	1.5	2	2	\$207	2080	\$645,840	\$861,120	\$861,120
Content Strategist	0.5	0.5	0.5	\$207	2080	\$215,280	\$215,280	\$215,280
Creative Design Resources (Lead, Designers, Illustrators, and Mobile Design)	2	2.5	2.5	\$200	2080	\$832,000	\$1,040,000	\$1,040,000
Front End Lead	1	1	1	\$75	2080	\$156,000	\$156,000	\$156,000
Sitecore Developers	2	3	3	\$75	2080	\$312,000	\$468,000	\$468,000
Sitecore QA Analyst	2	2	2	\$75	2080	\$312,000	\$312,000	\$312,000
Mobile Project Manager	0.75	0.75	0.75	\$180	2080	\$280,800	\$280,800	\$280,800
Mobile Technical Architect	0.25	0.25	0.25	\$180	2080	\$93,600	\$93,600	\$93,600
iOS/Android Lead	0.75	1	1	\$180	2080	\$280,800	\$374,400	\$374,400
iOS Developer/Engineer	1	1.5	1.5	\$180	2080	\$374,400	\$561,600	\$561,600
Android Developer/Engineer	0.75	1.5	1.5	\$180	2080	\$280,800	\$561,600	\$561,600
Mobile QA Manager/Analyst	0.75	1	1	\$180	2080	\$280,800	\$374,400	\$374,400
Analytics Manager	0.75	0.75	0.75	\$207	2080	\$322,920	\$322,920	\$322,920
Digital/Marketing Science Analyst	1	1	1	\$207	2080	\$430,560	\$430,560	\$430,560
Overheads & Indirects						\$350,000	\$425,000	\$425,000
IVR Vendor Costs						\$740,000	\$770,000	\$795,000
<b>Total (Rounded)</b>						<b>\$11,400,000</b>	<b>\$15,030,000</b>	<b>\$15,050,000</b>

**DCX O&M Request Detail**

<b>Cost Category</b>	<b>Cost Type</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Business	Internal Labor (Customer Operations)	\$1,008,061.38	\$1,033,821.65	\$1,058,165.10
Technology	Internal Labor (Information Technology)	\$1,202,021	\$1,231,511.20	\$1,259,379.44
Web Team (Content Authors)	Internal Labor (Corporate Affairs)	\$698,203.23	\$718,113.39	\$736,928.49
Inter-organizational middleware system	Software (Biztalk)	\$162,281.78	\$170,395.87	\$178,915.66
Testing	Contractor	\$380,070	\$399,073.50	\$419,027.18
Content Management System	Software (Sitecore)	\$254,925	\$267,671.25	\$281,054.81
Identity Access Management	Software (OKTA)	\$1,575,900	\$1,654,695	\$1,737,429.75
Chat	Software (Moxie)	\$115,875	\$121,668.75	\$127,752.19
Voice of Customer (Survey)	Software (Qualtrics)	\$133,488	\$140,162.40	\$147,170.52
Preference Management	Software (Possiblenow)	\$126,072	\$132,375.60	\$138,994.38
Energy Calculators	Software (Apogee)	\$90,846	\$95,388.30	\$100,157.72
System Integrator and Design Agency	Contractor	\$1,576,654.24	\$1,650,455.17	\$1,741,472.26
Web Translation	Software (Lionbridge)	\$75,087	\$78,841.35	\$82,783.42
Misc. Professional Services	Contractor	\$56,547	\$59,374.35	\$62,343.07
Testing Tools	Software	\$9,270	\$9,733.50	\$10,220.18
Misc.	Misc.	\$46,350	\$48,667.50	\$51,100.88
IT Staff Augmentation Support	Contractor	\$2,041,662.38	\$2,100,263.17	\$2,156,510.66
Enterprise Analytics Platform Utilization Costs	Software	\$16,686	\$17,520.30	\$18,396.32
<b>Totals (Rounded)</b>		<b>\$9,570,000.00</b>	<b>\$9,930,000.00</b>	<b>\$10,310,000.00</b>

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Virtual Assistants	
Project/Program Manager: Rebecca Lessem	Project/Program Number (Level 1): PR.23242021
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 4/1/2020	Estimated Date In Service: 02/26/2021
A. Total Funding Request (\$000) Capital: \$17,810 O&M: \$11,970	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: \$0 Capital: \$0	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>The Virtual Assistant program is part of the Company’s Strategic Customer Experience (Strategic CX) Portfolio of projects, which seeks to deliver a dynamic customer experience that will both meet evolving customer and stakeholder expectations and enable the Company to lead the transition to a clean energy future.</p> <p>The Virtual Assistant program began in 2020 after approval in the previous rate case, Cases 19-M-0065 and 19-G-0066. From 2020-2022, the Company developed a virtual assistant named Watt that can help customers with a number of transactions, including opening an account and entering into a payment agreement. As the digital literacy of customers improves and customers increasingly prefer to interact with all types of businesses online, Watt is helping to bridge the gap between a structured web experience and a conversational interaction with Con Edison. To continue the Company’s goal of serving customers in the communication channel of their choice, the Company plans to further invest in its virtual assistant by expanding the types of interactions it can support. As described in the Company’s NextGen CX quarterly reports filed in Cases 19-E-0065 and 19-G-0066, the virtual assistant is available 24 hours a day, 7 days a week, 365 days a year on the web and IVR channels and has the capability to transfer a customer chat to a live customer service representative (CSR) when additional support is needed.</p> <p>Use cases and areas of focus for the 2023-2025 time period include:</p> <ol style="list-style-type: none"> <li>1. Offering additional self-service capabilities through Watt, such as ability to: <ol style="list-style-type: none"> <li>a. Sign up for electronic billing.</li> <li>b. Submit a meter reading for AMI opt-out customers.</li> </ol> </li> </ol>	

- c. Set up a Level Payment Plan.
  - d. Report an outage.
2. Expanding Watt's skills by integrating with other parts of the business and empowering customers to make informed decisions. Such experiences may include:
  - a. Checking the status of new business and service upgrade cases handled by the Company's Energy Services department.
  - b. Offering a payment agreement with flexible terms based on the customer's payment and credit history, to better support customers that are having payment-related issues.
  - c. Interacting with Watt on the Company's mobile apps.
  - d. Updating and modifying how customers would like to be contacted for different types of communications.
3. Using Watt to further the Company's and the State's clean energy goals by, for example:
  - a. Providing customers with answers to questions about electric vehicles and guiding them to resources on the Con Edison website to help inform their purchasing decisions.
  - b. Supporting the Connected Home Pilot by linking AMI, home energy audit and Alexa/Google assistant skills in one intelligent bot.
  - c. Updating Watt's skillset to act as an energy advisor and provide customers with energy conservation advice based on their personal usage history.
4. Ensuring that Watt is updated regularly to align with DCX enhancements and other system changes that are necessary to support the transition from the Company's legacy Customer Service System (CSS) to the new Customer Care & Billing (CC&B) environment. This will ensure that customers have no interruption in accessing their information or in using Watt during the transition period.
5. Add additional reporting and tracking functionality and resources to drive future enhancements:
  - a. Establishing resources to continuously monitor Watt's performance to improve existing use cases. This includes the ongoing review of chat transcripts and design of appropriate responses to ensure greater customer satisfaction and containment. After analyzing and categorizing the breaks in the flow, FAQs will be developed that will help guide customers to the pertinent page of the website where applicable.
  - b. Expanding reporting capabilities to provide analysis of user drop off and confusion points across all use cases. The Company will be able to zero in on the moments where customers are struggling with the bot and identify ways to correct the bot and enable the transaction to remain in the channel without needing to escalate to a CSR.

Please see Exhibit\_\_(CO-25) Virtual Assistants Request and Exhibit\_\_(CO-26) Virtual Assistants Capital Request Detail for a detailed cost breakdown of the above activities.

**Justification Summary:**

The Virtual Assistant project / program is a part of the Company's Strategic CX Portfolio of projects. The Strategic CX Portfolio works together to achieve the following value propositions:

- **Increase customer satisfaction** by a providing convenient and highly available self-service channel, even as expectations continue to rise
- **Drive cost efficiencies through** improved service and resolution (deflected calls)
- **Support statewide clean energy goals** by generating customer demand for and streamlining adoption of programs
- **Facilitating understanding and adoption of optional rates** by directing customers to educational resources on the web which help customers save and support grid efficiency

- **Enable safe, reliable, and resilient delivery of energy** by providing more avenues to report an outage and follow up on their status
- **Provide education and access to payment assistance** when a customer experiences financial difficulty that impact their ability to pay for service

The Virtual Assistant program specifically contributes to these value areas as follows:

Increased Customer Satisfaction and Cost Efficiencies

After its launch in 2021, Con Edison’s Virtual Assistant, Watt, immediately began elevating the customer experience by offering a channel to self-serve without any wait 24 hours a day, 365 days a year. The program took an agile and iterative approach to Watt’s capabilities and continued to enhance Watt to handle more service transactions since launch. In 2021, this resulted in 16,000+ successful transactions, and a total customer satisfaction score of 4.19 out of 5. In addition to supporting these customers in a channel of their choice, the Company avoided calls to the Call Center, helping to drive cost efficiencies by eliminating unnecessary calls to customer service representatives.

Even if customers need to speak to a CSR after speaking to Watt, there are still cost efficiencies for the Company. Watt validates who the customer is so that even if the call is escalated, the ensuing live chat or call time is reduced because the CSR does not need to authenticate the customer. Before Watt, a CSR’s live chat handle time was 12 minutes, but now with the addition of Watt handling the customer authentication, handle time has been shortened to 11 minutes. Outside of time savings, the fact that the customer does not need to repeat themselves also improves the customer experience.

Investments in the Virtual Assistant during the 2023-2025 time period will continue to build on the improvements to customer experience and service channel efficacy that Watt has achieved. The addition of new customer service abilities and transactions within Watt will increase its ability to support customers without needing to escalate to a live agent. The proposed new capabilities for Watt will target transactions which currently make up approximately 43,000 monthly customer inquiries handled by CSRs at Con Edison, as shown in the table below.

<b>Proposed new Watt Capability</b>	<b>Current Monthly CSR Volume</b>
Enroll in E*bill	4,521
Submit meter reading	15,823
Enroll in Level Payment Plan	8,590
Report an outage	14,434

Support Statewide Clean Energy Goals

Given that Watt is available 24/7 and will include integrations with the Customer Data and Analytics and Customer Relationship Management (CRM) systems, Watt will be able to provide personalized and dynamic messaging that takes into account a customer’s specific needs and household energy factors. In addition to clean energy advisors, Watt will provide a simple, accessible resource for customer clean energy solutions and support statewide clean energy goals in a new channel.

As noted above, work is planned that directly supports clean energy goals. This includes providing Watt the capability to provide customers with answers to questions about electric vehicles and the Connected Home Pilot program supporting an energy advisor role for Watt.

**Facilitate Adoption of Optional Rates, Enable Reliable Delivery of Energy and Provide Access to Payment Assistance**

The Company will look to expand Watt’s skills by integrating with other parts of the business. This will empower customers to make informed decisions about their rates. Watt will facilitate understanding and adoption of optional rates, that help customers save and support grid efficiency, and will provide education and access to payment assistance options. Watt will also offer links to relevant information on the Company’s website.

In summary, the Company’s continued enhancements to the Virtual Assistant program, combined with ongoing advancements in this proven technology, will provide meaningful benefits to customers in terms of an enhanced customer experience in a cost-efficient manner.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The Virtual Assistant program has a close relationship with many of the projects and programs in the Company’s long-range plans, including DCX, CRM, and clean energy programs, in addition to our core customer service business operations. The program will provide customers with a convenient, seamless, on-demand means of interacting with the Company that will improve the overall customer experience and increase customer engagement regarding clean energy programs, both of which are critical to the Company’s long-range plans.

## 2. Supplemental Information

**Alternatives**

**Alternative 1**

Cease support of the Virtual Assistants program – this would require the Company to increase the number of CSRs dedicated to customer service (above the projections included in this rate filing) to handle the calls that would have been handled by Watt.

**Alternative 2**

Maintain the Virtual Assistant program as-is, without further investment – this would mean the Company fails to maximize the full potential of its technology and result in an inferior customer experience. The Company would not be able to scale or add additional use cases without upfront costs, and the bot would have a limited number of transactions it would be able to handle.

**Risk of No Action**

**Risk 1**

Customer satisfaction over time would decrease, as digital-first customers who are unable to resolve their inquiry via traditional, non-AI-enabled self-service channels (e.g., web, IVR) would only have the option of speaking with a CSR to complete a transaction. As customer expectations rise, the need to speak with a CSR (and any associated wait time) will frustrate these digital-first customers.

Risk 2

Failing to take action also presents the risk of not attracting new customers to self-service options. The Company is mitigating this risk by making the chatbot available not only on web, but also accessible from the IVR system. Customers can therefore switch from phone to the chatbot and avoid a live agent call while being able to self-serve in a guided platform.

Risk 3

Customers continue to see their daily transactions become increasingly easier and faster through the use of chatbots at other companies, while at Con Edison the chatbot would not evolve. Customers can continue to use the website and call center but the chatbot would appear outdated as technology improves. Customers will expect the same convenience from their utility through a Virtual Assistant that can enable them to get their transactions done without navigating the website or waiting to speak to a CSR, but without further development Con Edison will not be able to deliver this experience.

**Non-Financial Benefits**

As noted above, the Virtual Assistants program will result in non-financial benefits such as increased customer satisfaction and improved, timely resolution of inquiries, on the customer's channel of choice.

**Summary of Financial Benefits and Costs (attach backup)**

Please see Exhibit\_\_(CO-25) Virtual Assistants Request and Exhibit\_\_(CO-26) Virtual Assistants Capital Request Detail for a detailed cost breakdown of the above activities.

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital: \$17,810

O&M: \$11,970

4. Basis for estimate

The Virtual Assistant program has been in place for since 2020 and, as such, we have a strong basis for determining resources needed to develop new capital use cases and to maintain and improve the platform.

#### 5. Conclusion

The Virtual Assistant program is a core component of the Company's strategy to deliver a dynamic customer experience that will both meet evolving customer and stakeholder expectations and enable the Company to lead the transition to a clean energy future.

### **Project Risks and Mitigation Plan**

#### Risk 1

Better technology is released after implementation: Ever-changing technology means that a new chatbot framework or tool may be released while we are working on our existing chatbot.

Mitigation plan: By selecting Microsoft LUIS, which is a cutting-edge platform, we anticipate that any advances in the field will be made available to us via that platform. Additionally, by keeping the infrastructure in Azure and by separating our code by use case, we have the ability to enable and disable parts of our bot, improving and modernizing them individually while keeping the rest of the bot online.

#### Risk 2

Regression in customer experience: If implemented incorrectly, the chatbot could add time and frustration to a transaction that would have been easier in another channel.

Mitigation plan: The use cases we have chosen for the chatbot are selected based on their potential for a better customer experience. As we did with our initial set of call deflection use cases, transactions that we will select will be analyzed and tested to confirm that the experience is faster and easier via Watt. We will also continue to monitor customer feedback and adjust based on pain points found in transactional surveys.

### **Technical Evaluation / Analysis**

The Company's approach to the Virtual Assistant program was based on a study performed with a leading consultant in the customer experience space. Please refer to the Company's filings in Cases 19-E-0065 and 19-G-0066 for further information.

### **Project Relationships (if applicable)**

The VA platform has relationships with various projects. It uses web services and APIs that are built on DCX website infrastructure. We therefore rely on continuous DCX updates and the availability of their APIs. The VA team has closely collaborated with DCX. In addition, all of the data and transaction records produced by our chatbot are stored in our Customer Data and Analytics platform (see Customer Data and Analytics white paper). With the implementation of a new CRM, our chatbot will read and input data about customer preferences and interactions into that record so that the chatbot

transaction can be part of the 360-degree customer view and that the chatbot can learn from the 360-degree customer view to best serve a customer's needs.

### 3. Funding Detail

#### Historical Spend (\$000)

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital				\$4,512		\$3,516
O&M					\$370	\$500

#### Total Request (\$000):

##### Total Request by Year:

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	\$1,410	\$3,100	\$5,500	\$4,100	\$3,700
O&M*	\$370	\$1,900	\$2,700	\$3,300	\$3,700

#### Capital Request by Elements of Expense:

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	\$641	\$1,074	\$2,093	\$1,603	\$690
M&S	\$0	\$0	\$0	\$0	\$0
Contract Services	\$426	\$1,132	\$2,092	\$1,536	\$2,405
Other	\$48	\$400	\$352	\$224	\$288
Overheads	\$295	\$494	\$963	\$737	\$317
<b>Total</b>	\$1,410	\$3,100	\$5,500	\$4,100	\$3,700

#### Total Gross Cost Savings / Avoidance by Year:

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

#### Total Ongoing Maintenance Expense by Year:

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

**Virtual Assistants Request**

<b>Capital ('000s)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Labor	\$1,074	\$2,093	\$1,603
M&S	\$0	\$0	\$0
Contract Services	\$1,132	\$2,092	\$1,536
Other	\$400	\$352	\$224
Overhead	\$494	\$963	\$737
<b>Total</b>	<b>\$3,100</b>	<b>\$5,500</b>	<b>\$4,100</b>

<b>O&amp;M ('000s)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
IT Labor Maintenance (Business services support, System Reliability Engineering, Administrative Costs)	\$1,000	\$1,200	\$1,350
Software Costs	\$650	\$1,250	\$1,700
Third Party Integration Costs	\$250	\$250	\$250
<b>Total</b>	<b>\$1,900</b>	<b>\$2,700</b>	<b>\$3,300</b>

**Virtual Assistants Capital Request Detail**

<b>Capital ('000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
<b>CRMS (Appointment Scheduling System)</b>			
IT Business Services Development Labor	\$132		
Electric Ops Manager	\$216		
Web Services Manager	\$80		
Call Center System Expert	\$27		
Overhead	\$209.3		
Chat Bot Developers	\$240		
Testing	\$192		
System Integrator	\$253		
<b>Report Outage</b>			
IT Business Services Development Labor	\$44		
Outage Comms Manager	\$44		
Web Services Manager	\$40		
Call Center System Expert	\$36		
Overhead	\$75.44		
Chat Bot Developer	\$80		
Testing	\$16		
System Integrator	\$64		
<b>Energy Services</b>			
IT Business Services Development Labor	\$132		
Energy Services Manager	\$216		
Web Services Manager	\$80		
Call Center System Expert	\$27		
Overhead	\$209.3		
Chat Bot Developers	\$240		
Testing	\$192		

System Integrator	\$254		
<b>Intelligent Credit Options</b>			
IT Business Services Development labor		\$208	
Credit workflow experts		\$176	
Web Services Manager		\$80	
Call Center system expert		\$54	
Overhead		\$238.28	
Chat Bot Developers		\$320	
Testing		\$64	
System Integrator		\$312	
<b>AI - Building an Energy Advisor</b>			
IT Business Services Development labor		\$260	
Chat bot PM		\$220	
Web Services Manager		\$100	
Energy Efficiency experts		\$320	
Overhead		\$414	
Chat Bot Developers		\$400	
Testing		\$96	
System Integrator		\$444	
<b>EV 2024</b>			
IT Business Services Development labor		\$132	
Chat bot system manager		\$216	
Web Services Manager		\$60	
Call Center system expert		\$27	
Data System Integration		\$240	
Overhead		\$310.5	
Chat Bot Developers		\$240	
Testing		\$192	
System Integrator		\$376	

<b>Connect Home Pilot</b>			
IT Business Services Development labor			\$208
Chat bot PM			\$88
Web Services Manager			\$160
Energy Efficiency experts			\$256
Overhead			\$327.52
Testing			\$128
Chat Bot Developers			\$320
System Integrator			\$400
<b>Next Best Action</b>			
IT Business Services Development labor			\$252
Chat bot PM			\$198
Web Services Manager			\$90
Call Center system expert			\$63
Energy Efficiency experts			\$288
Overhead			\$409.86
Chat Bot Developers			\$360
Testing			\$96
System Integrator			\$455
<b>Total (Rounded)</b>	<b>\$3,100,000</b>	<b>\$5,500,000</b>	<b>\$4,100,000</b>

## Journey Mapping Completed Journey Improvements

Journey Mapping Improvement	Description	Customer Benefit
Address Optimization	Improved the search experience for customers using the ConEd website	Before customers had a list of several addresses including apartment numbers to look through when inputting their address. Now with improved technology customers receive a more manageable list if not their exact address when searching
Average Bill Amount (Online)	Developed a feature that allowed a customer to see the average cost of electricity at a new address.	Customers can see the average cost of energy at their new address to help them budget, make energy efficiency choices, enroll in auto-payments and more.
Broken Agreement Communications	Revised content of our messaging to customers who had broken their payment agreement.	Customers now receive easier to understand and more empathetic messaging when they find themselves unable to keep up with their payment agreements. The communications were also revised to be COVID specific in the help that was on offer.
Credit Cards in the Field	Enabling CFRs to take credit card payments during the collection process.	Customers will have another low effort option to pay at the time of collection.
Digital communications for customers new to service with Con Edison	Developed a set of digital communications for new customers to Con Edison.	Customers receive a set of digital communications welcoming them as a Con Edison customer with helpful tips which include energy saving tips, how to set up MyAccount, emergency information and more.
Digital Overdue Alerts for Payment Agreements	Created digital alerts for customers overdue on payment of their bill.	Customers with past due bills will get a gentle reminder to pay their bill via a text message with a link to the ConEd website.

Digital Payment Agreements	Developed a feature that allows our customers to set up a payment agreement online at ConEd.com.	Customers used to only be able to set up a payment agreement through a CSR of the IVR. Customers can now set up an agreement completely online.
Daily Post Transaction Surveys	Stamp CIS with the customer web, text, mobile app reflecting customer feedback on all the channels	Previously we were only receiving customer survey responses for IVR and CSR, we now collect customer survey responses on text, web and mobile app giving us the customer feedback and sentiment we need to make CX improvements.
iPads installed in Walk-in Centers	Installed iPads in the Brooklyn, Queens and Westchester walk-in centers.	iPads in the Walk-in Centers give all customers access to the digital ConEd experience with the help of the Centers CSRs. This enables customers without access to technology the opportunity to complete transactions digitally.
Payment Agreement Text Pilot	Developed and deployed a companion SMS campaign to the payment agreement emails, targeting COVID impacted customers in arrears.	Customers impacted by COVID and opted into text notifications will receive a text with a link to our payment assistance web page.
Field Appointment Emails	Formerly email confirmations were not sent to customers automatically to confirm or remind about field appointments and the technology was updated to make emails automatic	Customers making field appointments will receive a confirmation and reminder email automatically unless they express they would prefer not to receive it.

Proactive Moving email campaign	Created how-to emails for customers either moving or transferring their energy service.	Customers in more transient boroughs of NYC receive on their 1st, 2nd, and 3rd anniversary as a ConEd with an email with helpful tips on how-to stop, start or transfer their service if they plan on moving soon.
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## **Outage Communications Past Progress**

Recent improvements to outage communications have centered around improving the frequency, clarity and reach of messaging and making the experience of reporting an outage easier. This exhibit will list some of the improvements that the Company has made from 2017-2021 based on customer feedback and research. The Company seeks to further expand its ability to deliver specific and timely messaging to customers with the platforms and updates outlined in the white paper.

### **Channel Expansion and Enabling Easier Outage Reporting**

In the past, the primary method customers used to report an outage or to receive any updates was to call the hotline, wait on hold and speak directly with a CSR. The company has since conducted research showing that over 80% of customers relayed a preference for text messaging, and therefore has enabled easier self-service reporting through additional channels via the following programs.

- Customers receive a proactive pre-event text message in preparation for an anticipated outage, emergency or weather occurrence has made. This has made the outage reporting experience easier by allowing customers to report an issue by simply replying “OUT” to the text they received.
  - The pre-event text messages are activated by region based on weather impact and are designed to communicate the type of weather occurrence (heatwave, wind, snow, rain, etc.) and the time frame (today, tonight, this week).
  - This update resulted in a drastic reduction in the number of inbound calls to the call centers during weather-related outage events and made CSRs more available for urgent calls. It also increased inbound reporting and allowed both control and call centers to have a better picture of storm or event damage.
- Customers are able to receive outage and restoration updates via more channels of their choice, now including text message and email.
  - The number of customers receiving text updates about their outage has increased from 5% of all outage communications in 2018 to 93% in 2021.
  - This enhancement has won national recognition, being selected by the utility consulting company Chartwell for an Excellence in Outage Communications award in 2019.

### **Increasing the Frequency and Types of Outage Communications**

Customer research and feedback indicated a desire for more frequent communications and reassurance, as well as more information that could help inform their decisions. In response, the Company increased the types of outage communications we send and sends them in a more consistent cadence to increase customer confidence and assure them that their issues are tracked. When customers receive adequate communication, they have less need to initiate follow-ups with the Company.

Several initiatives were completed to this end:

- Customers now receive public safety related messages. To address the period of time between which customers have reported an outage and when Con Edison has completed initial assessments and reported restoration times to customers, customers receive a new type of message.

In severe events with extended restoration times, the Company has created daily messages to customers confirming that their estimated time of restoration (ETR) is still on track.

- Customers receive new types of urgent messages notifying them that de-energization is likely or has occurred. Now customers are proactively informed before or shortly after loss of service via a text or automated voice call.
- In response to surveys showing customers feel the cause of an outage is important to include in outage messaging, new restoration message scripts were developed to include that information.

#### **Additional Information and Clarity for Customers**

Customers are receiving the benefits of smart meter (AMI) data in their outage communications.

- Customers are no longer asked to confirm if their power is back if smart meter data validates that power has been restored because the Company can rely on meter confirmation.
- Additionally, customers with individual (non-network) outages can be restored more quickly. If a smart meter does not report that power is back on after a restoration effort, the data allows control centers to identify and address secondary issues more efficiently and inform and update customers.
- Customers are now able to access consistent outage information no matter which channel they use because the back-end systems for mobile, web, outage map, and IVR are aligned.
- No matter what channel customers use to report or check the status of an outage, the estimated time of restoration delivered to the customer is provided by the same source in the Outage Management System, eliminating a point of customer confusion.

#### **Broaden Our Reach:**

The Company expanded the outage communications program by ensuring broader reach of the outage messages.

- Instead of sending updates to only the one account holder, information is sent to multiple members of same account/household, keeping family members, roommates and property managers all informed about restoration progress.

#### **Analysis for Value Assurance:**

Customers can write back to the Company in response to an automated text they received requesting feedback as to whether they felt positively or negatively about a transaction with the Company.

- The Company has new abilities to perform deeper analytics on customers' text responses. The Company can now identify key words that require immediate response and alert appropriate teams, for example, when a customer has life-sustaining equipment.
- This enhancement has helped numerous customers and received national recognition by receiving awards from Chartwell, ESource, and the Stevie Awards for Sales and Customer Service.

Customer Operations  
2022

**1. Project / Program Summary**

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Journey Mapping	
Project/Program Manager: Kerry Lay	Project/Program Number (Level 1): 22959952
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: November 2017	Estimated Date In Service: On-going
A. Total Funding Request (\$000) Capital: \$7,800 O&M: \$5,500	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>The Journey Mapping program is part of the Company’s Strategic Customer Experience Portfolio of projects which seeks to deliver a dynamic customer experience that will both meet evolving customer and stakeholder expectations and enable the company to lead the transition to a clean energy future. The Journey Mapping program was launched in 2017 to enable the Company to consistently provide a high satisfaction, low effort experience across several types of customer interactions. Journey Mapping uses Agile project management and Design Thinking practices with customer research, data analytics, and employee input to design enhanced experiences and deliver quick to market improvements. (For further information on the Journey Mapping program’s process and activities to date please refer to the NextGen CX quarterly reports filed in Cases 19-E-0065 and 19-G-0066.)</p> <p>The Company has made extensive progress with the initial journeys outlined for improvement in its 2019 rate filing. The Company therefore seeks to continue its Journey Mapping efforts, including refinement of the experience as program offerings and customer expectations change. In addition, the Company seeks to focus on Journeys that are emerging in importance, such as the experience of low-income customers, commercial customers and their representatives, and customers adopting clean energy programs.</p> <p>The Journey Mapping process includes repeated assessments of previously implemented solutions and allows for continuous refinement and further improvements. An example of a proposed refinement to an improvement we have made is to address communications with customers experiencing partial outages. One Journey Mapping focus from the past rate case was on improving the frequency and clarity of outage event information to our customers. Our research during this effort also highlighted</p>	

an opportunity to improve the experience of customers with partial power issues such as flickering lights or low voltage conditions outside of a major event, which are treated differently than complete outages. The Journey Mapping program seeks to address communications and resolution process for customers who report slow resolutions timelines and lack of information from the Company.

For the years 2023-2025 the Company proposes O&M and Capital funding to continue the success of the Journey Mapping program. The company seeks additional O&M funding to expand the team and capabilities to provide increased value to customers, as well as fund the implementation of identified improvements which cannot be capitalized. Expanded capabilities will include additional customer research, toolkits, and a playbook for enabling Journey Mapping principles across the enterprise, and data analysis and project execution resources. Capital funding is also proposed to implement technology improvements identified during the Journey Mapping process. Please see a breakdown of the proposed funding in Exhibit\_\_(CO-30) Journey Mapping Request.

Examples of previously completed Journey improvements and focus areas for the 2023-2025 rate years can be found in Exhibit\_\_(CO-27) Journey Mapping Completed Journey Improvements and Exhibit\_\_(CO-31) Journey Mapping Focus Areas.

#### **Justification Summary:**

##### **Journey Mapping Methodology**

With experience gained during the Journey Mapping program's first four years, the Company validated that Journey Mapping is an effective process improvement method that warrants implementation as a best practice across all customer interactions.

Customer research, data analysis and customer testing, the principles of Journey Mapping, mitigate the risk of creating long expensive projects that do not meet customers' needs and expectations. A dedicated Journey Mapping team that uses the methodology of researching, investigating, validating, and monitoring improvements ensures customer experience enhancements are implemented effectively and efficiently. The team has no operational distractions and specializes in finding and fixing problems as the primary focus.

As part of the Company's Strategic CX Portfolio of projects, the Journey Mapping program works together with other programs / projects to achieve the following value propositions.

- **Increase Customer Satisfaction** even as expectations continue to rise
- **Drive Cost Efficiencies** through improved service and resolution
- **Support statewide clean energy goals** by generating customer demand for and streamlining adoption of programs
- **Facilitating understanding and adoption of optional rates** which help customers save and support grid efficiency
- **Enable safe, reliable and resilient delivery of energy** through improved communication during an outage

- **Provide education and access to payment assistance** when a customer experiences financial difficulty that impacts their ability to pay for service

Specifically, Journey Mapping will help the Company meet the Strategic CX objectives by:

**Increase customer satisfaction**

As customer expectations continue to rise, the Company must have the ability to design and deliver better experiences with agility. Customer satisfaction increases when customers are given the experience they want or accomplish a desired goal. The Journey Mapping team creates journey maps to better understand customers on an emotional level in order to design and implement meaningful improvements like self-service and outage communications enhancements.

**Drive cost efficiencies**

Journey Mapping designs low effort, high satisfaction interactions that drive cost efficiency. Designed experiences, such as lower cost self-service options, make it easy for our customers to achieve their goal and avoid follow up calls and interactions which increase costs. Journey Mapping will continue to improve self-service options to lower the Company's cost of serving our customers while raising customer satisfaction through continuous improvement of products and services.

**Support statewide clean energy goals**

As the clean energy transformation continues it will necessitate streamlined customer adoption of clean energy products and programs. Mapping the customer's experience with new clean energy related journeys will support this goal by improving understanding of new technologies and integrating opportunities for customers to learn about clean energy solutions at various touchpoints with the Company (e.g., high bill inquiries or when establishing service).

**Facilitating understanding and adoption of optional rates**

Journey Mapping has been utilized to facilitate understanding and adoption of optional rates for the Company's Innovative Pricing Pilot. Journey Mapping will continue to support efforts such as these by incorporating rate choice and energy efficiency program choice into Journey Maps. This will enable the identification of experience gaps and opportunities to increase adoption and customer satisfaction associated with new rate structures that are emerging as a result of the clean energy transition. Adoption of these programs will also help customers save energy and support grid efficiency.

**Provide education and access to payment assistance**

When a customer experiences financial difficulty that impacts their ability to pay for service, Journey Mapping is used to identify how customers can better understand, access, and receive the payment assistance needed for their situation. Journey maps give a deep understanding of what a customer is doing, thinking, and feeling when completing a transaction, which enables the Company to provide effective, timely education and access to payment assistance programs. This will be increasingly important as the COVID pandemic has resulted in more customer requiring assistance.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The Journey Mapping program has a close relationship with many of the projects and programs in the Company's long-range plans, including DCX, CRM, clean energy programs, etc. in addition to our core customer service business operations. The program will continue to provide the Company with customer insights and process enhancements that enable an improved overall customer experience and targeted engagement of customers on key topics, both of which are critical to the Company's long range plans and clean energy future.

## 2. Supplemental Information

### Alternatives

#### Alternative 1

Outsourcing Journey Mapping to third party vendors and consultants for work on customer experience efforts on a part-time basis, only when projects are identified. This alternative would result in less effective customer enhancements at a greater overall cost. An in-house Journey Mapping Program manages improvements from discovery to design to implementation, which allows for more effective and efficient implementation.

#### Alternative 2

Suspending or limiting the Journey Mapping team - This alternative would dramatically reduce the potential benefits that could be gained from a scaled program that can bring together and improve customer interaction-related processes across the Company. It would also pose the risk of the company quickly falling behind customer expectations and meeting challenges including COVID customer interactions and the clean energy transition.

### Risk of No Action

Eliminating funding for Journey Mapping would disband the Journey Mapping program, ceasing support for large projects and improvements to the customer experience utilizing the Journey Mapping tools and resources. This would impact customer satisfaction and have follow-on impacts on all the programs in the Company's long-range plans that will be informed by and benefit from Journey Mapping. It could also lead to a higher cost to serve our customers to the extent that sub-optimal processes and technologies perpetuate cost-intensive and/or error-prone processes that could be improved and increase customer service calls. The Journey Mapping program through benchmarking, data analysis and customer research are essential to keeping up with changing customer expectations. Without the Journey Mapping program as a resource the Company will struggle to keep up with the evolving needs of our customers and the ability to deliver changes and improvements.

### Non-Financial Benefits

- Journey Mapping creates direct non-financial strategic value through increases in Customer Satisfaction (CSAT) and improved customer experiences, across the customer spectrum as described in the Customer Satisfaction section.
- Improved customer experiences and increases in CSAT are essential for the Company's brand trust, customer value – particularly for customers that are adopting clean energy solutions, struggling to pay their bills, or have special needs.

- Journey Mapping designs CX improvements that increase employee engagement and increase collaboration between departments, both which lead to more effective and efficient implementation of customer experience enhancements.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital \$7,800,000

O&M \$5,500,000

4. Basis for estimate – This estimate is based on the labor, materials, services, and contingency costs of similar past projects and program expenses. Please see Exhibit\_\_(CO-30) Journey Mapping Request.

5. Conclusion – With incremental increases in Capital and O&M funding the Journey Mapping program can continue to identify and address customer experience problems and improvements. Funding for customer research and for Design Thinking solutions enables the company to create experiences that best meet customer needs and improve customer satisfaction.

**Project Risks and Mitigation Plan**

Risk 1 Delays in interdependent project launches such as the new customer service system expected to launch in 2023 and interdependencies on other planned projects, including the Customer Relationship Management system (CRM) and Digital Customer Experience (DCX) could cause the allocation of resources and technologies needed for customer experience improvements to be redirected or completely unavailable.

Mitigation plan – The Journey Mapping program would create a diverse roadmap of improvement designs that rely on a variety of company resources and technologies. The team would iterate their project priorities and move to projects which are not dependent on the same resources and technologies of another key project

**Technical Evaluation / Analysis**

Please see the Company’s 2019 rate filing and subsequent NextGen CX quarterly reports for information on the genesis of and recent activities in the Journey Mapping program.

**Project Relationships (if applicable)**

The Journey Mapping program has a symbiotic relationship with many of the projects and programs in the Company’s long-range plans including DCX, Customer Data & Analytics, CRM, clean energy programs and many other Company initiatives. The Journey Mapping program is currently involved with projects across the Company including the Innovative Pricing Pilot. Even programs not traditionally considered to be customer-related, like back-office processes, will benefit from a permanent Journey Mapping team during the 2023-2025 rate period. As proposed in this filing, Journey Mapping will be able to support strategic and operational projects and programs across the Company.

**3. Funding Detail**

**Historical Spend (\$000)**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
<b>Capital</b>		\$673	\$786	\$629		\$894
<b>O&amp;M</b>				\$650	\$920	\$580

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	\$600	\$1,100	\$2,200	\$2,000	\$1,900
<b>O&amp;M*</b>	\$600	\$ 1,300	\$1,400	\$1,000	\$1,200

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	\$200	\$460	\$480	\$480	\$480
M&S					
Contract Services	\$400	\$420	\$1,490	\$1,290	\$1,190
Other					
Overheads		\$220	\$230	\$230	\$230
<b>Total</b>	\$600	\$1,100	\$2,200	\$2,000	\$1,900

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>

<b>O&amp;M Savings</b>					
<b>O&amp;M Avoidance</b>					
<b>Capital Savings</b>					
<b>Capital Avoidance</b>					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M</b>					
<b>Capital</b>					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

#### 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that do not occur today (e.g., anticipated short-term fixes/maintenance if capital is not deployed)

Project Status:

- Initiation – New project, not authorized yet
- Planning – Project authorized, not started yet
- Executing – Project in-flight
- On-going – Annual program

**Journey Mapping Request**

<b>Capital ('000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
IT Development and Services — Technical PM — Tech Architect — Data Security Architect	\$260	\$280	\$300
Project Management and Business — Project Manager — Journey Experience Designer	\$200	\$200	\$180
Contract Services — UX Designer — Tech Architect — PM Support — Business Analyst	\$420	\$1,490	\$1,290
Overhead	\$220	\$230	\$230
<b>Total</b>	<b>\$1,100</b>	<b>\$2,200</b>	<b>\$2,000</b>

<b>O&amp;M ('000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Section Manager	\$150	\$150	\$150
Scrum Master	\$135	\$135	\$135
Journey Mapping Researcher	\$115	\$115	\$115
Metrics and Value Analyst	\$125	\$125	\$125
Journey Experience Designer	\$70	\$75	\$75
Contract Services — UX Designer — Technical Architect — Business Analyst — Project Manager	\$500	\$550	\$200
Customer Research	\$50	\$50	\$40
Materials — Workshop materials — Training materials	\$30	\$30	\$40
3rd Party Vendor Support — Text Messaging Campaigns — Mail Campaigns — Email Campaigns	\$120	\$120	\$120
<b>Total</b>	<b>\$1,300</b>	<b>\$1,400</b>	<b>\$1,000</b>

## Journey Mapping Focus Areas

Journey Mapping keeps an extensive backlog of potential projects that would alleviate customer pain points. Before launching a Journey Mapping project, potential projects are prioritized by level of customer impact through discovery work including customer research, operational data analysis, and benchmarking. The following are proposed potential focus areas for 2023-2025 based on this research. Our process also allows for emerging customer needs and requirements which may have a higher level of customer impact, superseding other projects in the rate case years 2023 to 2025.

Proposed Projects	Description	Customer Benefit
Website FAQs Improvements	Improve the website frequently asked questions (FAQ) journey through content updates and new technology	Provide the customer with a low effort, intuitive experience when using the website FAQ feature
Gas Customer Journey	Map the Gas Customer Journey to identify pain points and opportunities for improvement	Improvements that provide a low effort high, satisfaction gas customer experiences
Start Service Experience Tracker	For customers starting service with Con Edison create a new website feature with a visualization on the progress of their start service request	Customers will have transparency on the progress of their request through a convenient, self-service, digital channel
Field Crew Status Tracker	Create the technology to track field crew status for customer appointments	Customers will have greater transparency on when a crew will arrive at their property
Start Service Energy Efficiency Journey	Map the start service customer journey for customers wishing to save money and maximize clean energy options	New customers will have low effort, high satisfaction options on how to save energy and money from the beginning of their relationship with Con Edison

Low Income Customer Journey	Map the Low-Income Customer Journey to identify pain points and opportunities for improvement to design and implement low effort, high satisfaction low-income customer experiences	Low-income customers will receive an easy to navigate and personalized customer experience
Auto Enroll Credit Card Payments	Design and implement the feature of pay by credit card for customers enrolled in automated bill pay	Customers who pay their bill through the automatic payment service will have the option to pay by credit card
Expand Ways to Pay: digital wallet	Create digital wallet payment features for customer bill pay	Customers will be able to choose their preferred payment method to pay their monthly bill
Customer Arrears Journey	Map the Customer Arrears Journey to identify pain points and opportunities for improvement	Customer driven improvements will create a customer experience which enhances the support and options available to customers in need of payment assistance
High Bill Customer Journey	Map the Customer High Bill Journey to identify pain points and opportunities for improvement	Customer driven improvements will create a high bill customer experience with easy to navigate and personalized payment options
Dynamic Customer Improvements	Customer expectations are always changing - Con Edison will meet our customer needs by taking on unforeseen projects with speed and agility	Our customers will be provided with features and improvements that matter most to them and meet their evolving needs and expectations

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Back Office Automation & Workforce Management	
Project/Program Managers: Richard Brown, Raymond Joseph, Sebastian Cacciatore, Michael Falanga	Project/Program Number (Level 1): 23242008
Status: <input type="checkbox"/> Planning <input type="checkbox"/> Design <input type="checkbox"/> Engineering <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Other: _____	
Estimated Start Date: 1/1/2020	Estimated Date In Service: Varies by project - starting 12/31/23
<b>A. Total Funding Request (\$000)</b> Capital: \$9,170 O&M: \$4,610	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period:</b> (Years/months)
<b>Work Description:</b>  The Back Office Automation and Workforce Management program is part of the Company’s Strategic Customer Experience (Strategic CX) Portfolio of projects, which seeks to deliver a dynamic customer experience that will both meet evolving customer and stakeholder expectations and enable the company to lead the transition to a clean energy future.  The Back Office Automation and Workforce Management program encompasses a collection of investments in software and new systems that will automate repetitive and manual back-office tasks, improve workflow and exception management processes and enhance tools used by employees. Work streams include implementation of robotic process automation (“RPA”) technology, automation of gas service line inspection processes, workforce management solutions to optimize workforce efficiency, and enhancements to tools used to control employee access to multiple operational systems.  <b>Robotic Process Automation (RPA)</b>  The Company continues to expand upon its RPA technology, which has resulted in process automations that take many business rules into consideration and perform actions across several software programs. Recent processes the Company has automated include addressing customer accounts when there is a discrepancy in the load factor for more than two consecutive readings, closing open workflows for different types of customer requests (e.g., meter add, meter delete, meter updates and meter retire) and validating account information before issuing an estimated bill.  While the Company has made great strides in RPA, more work is necessary to automate more processes, freeing up employees to conduct higher value work as opposed to repetitive back-office	

tasks. The Company plans to implement additional automation opportunities using RPA tools during the 2023-2025 time period, based on a consideration of the effort involved in developing the RPA tool and the associated customer satisfaction and cost efficiency value. These automations will be concentrated in the area of exception work management, and in coordination with the implementation of the new customer service system.

Exception work management processes are required when the new customer service system cannot complete specific tasks automatically due task complexity or business rule exceptions, and instead issues a citation for an employee to review. Based on benchmarking from utilities that have recently implemented new customer service systems, it is common for a large number of exception citations to be issued during the transition and stabilization period of the new system. In these cases, the number of exceptions issued by the customer service system creates a backlog of work that cannot be resolved in a timely manner through employee review. If left unhandled, exception work could drastically increase manual work for back-office teams and increase the resolution time for customer inquiries, including un-resolved billing inquiries, leading to customer frustration and complaints. Using RPA technology to process these exception cases is a best practice that the Company seeks to deploy. Please see Exhibit\_\_(CO-35) RPA Implementation Steps for more details.

### **Access Management System for Workflow Management Tools**

The Company also plans on implementing an automated access management system (AMS) for its existing back-office workflow management tools, including the Field Collection System, Load Profile Data System and others. The AMS will act as a central controller that unifies different access rights systems and automates employees' access to multiple applications, and allows system administrators to add, suspend and delete permissions in a single interface. This project will enable users to access systems needed to do their job and protect of customer data by managing the processes by which employees are approved to access customer information in specific systems and removed when they should no longer have access (i.e., termination or change of job responsibilities). The Company expects the AMS to be implemented in stages from 2023-2025.

### **Gas Service Line Inspection Application**

The Company's gas service line inspection program was created in 2017 per Commission Order in Case 15-G-0244, establishing an ongoing requirement for inspection of gas service lines and piping on customer premises. Specifically, New York State local distribution companies ("LDCs"), including Con Edison, are required to perform atmospheric corrosion inspections on gas service lines every three years. Additionally, LDCs are required to perform leakage surveys on gas service lines annually in business districts and every five years in non-business districts. The Commission also ordered utilities to issue fines for customers that do not provide access for inspections and to terminate service to customers that fail to cooperate after fines are applied. Implementing this program requires multiple forms of communications with all residential and commercial gas customers in the Company's service territory.

To manage and support compliance with this mandate, Customer Operations and Gas Operations will develop and implement an automated process to communicate with customers and field necessary terminations, replacing the existing manual process that has presented challenges in terms of prompt customer communications and coordination across departments. In addition, this project will include a dashboard that will quickly identify a population of target customers and enable reporting functions. This solution will leverage a direct two-way connection between Customer Operations' appointment scheduling software and the Gas Inspection System (GIS), the Company's gas operation work management tool. Once operational, the tools will eliminate the need for Gas Operations to manually

run reports and share them with Customer Operations, which in turn must upload the reports into its own systems.

Finally, the project will automate the inspection-related disconnection process for gas meters, including issuing referrals and opening service requests to operating areas, replacing the need to manually enter and process the referrals.

### **Content Management**

The Company will obtain Content Management software and tools to manage the lifecycle, distribution, and use of customer content/documents received by customer service representatives (CSRs) at the Customer Experience Centers, from the time of receipt, capture or scanning through to archiving and disposition. Content Management will allow the organization to collect customer content/documents, build stepped workflows, apply process governance, and create a long-term archive solution with security and proper retention regulation. Such tools will enable departments to manage the flow of inbound paper documents and convert them to electronic format, so they become actionable and manageable as part of a more complete and consistent content and process management strategy.

As part of this effort, the Back Office Automation and Workforce Management program and the Billing and Payment Enhancements program will jointly conduct a cross-functional assessment to identify synergies and opportunities to further streamline processes involving customer-related documents and information. Where such synergies overlap, the programs will perform an analysis to recommend a single set of technology improvements allowing for smarter routing and storage and a more comprehensive means to access such customer documents faster and more easily.

### **Call Center Workforce Management Solution**

The Company plans to procure a Workforce Management (WFM) solution to monitor call center and back-office staffing levels, exception times (e.g., holidays, vacation, sick and training time), scheduling accommodations and intraday performance in one centralized platform. The WFM solution will replace the existing, inefficient management process used by our operating areas and positively impact Customer Operations on multiple levels.

While the existing call management system enables the Company to efficiently receive and route high volumes of calls, it does not perform the types of analytics needed to identify and adapt to changes in call patterns (e.g., percent of calls coming in on certain days compared to historical data) on a consistent basis.

A new WFM tool operating in parallel with the existing call management system will provide the advanced analytics and scheduling capabilities needed to more effectively manage call center and back-office resources and provide a high level of service to our customers. To that end, the Company plans to acquire, test and begin implementing a WFM tool by 2024, completing the project at the end of 2025. Please see Exhibit\_\_(CO-35) Back Office Automation & Workforce Management Tool Assessment Readout for more details.

The following list shows the combined project milestones expected across the Back Office Automation and Workforce Management Program during the 2023-2025 time period:

- 2023
  - Operationalize top value RPA use cases and procure and implement exception management tool

- Enhance the Gas Line Inspection Process
- Implement top use case for Access Management System
- Review Content Management Solution business case and technology landscape
- 2024
  - Implement additional use cases for the Access Management System
  - Add use cases to RPA tool
  - Acquire Workforce Management tool, test and begin implementation
- 2025
  - Additional use cases added to RPA tool
  - Additional use cases for the Access Management System
  - Workforce Management tool goes live

The capital funding requested in this white paper includes funding for implementation and development activities, software and hardware costs for an AMS tool, Content Management tools and Workforce Management solutions, RPAs, and Gas Service Line Inspection applications.

The O&M funding requested in this white paper covers licensing costs and support, including ongoing training, software bug fixes, testing and code migration.

**Justification Summary:**

The Back Office Automation and Workforce Management program is a part of the Company's Strategic CX Portfolio of projects. The Strategic CX Portfolio projects work together to achieve the following value propositions:

- **Increase customer satisfaction** even as expectations continue to rise
- **Drive cost efficiencies through** improved service and resolution
- **Support statewide clean energy goals** by generating customer demand for and streamlining adoption of programs
- **Facilitating understanding and adoption of optional rates** which help customers save and support grid efficiency
- **Enable safe, reliable and resilient delivery of energy** through improved communication during an outage
- **Provide education and access to payment assistance** when a customer experiences financial difficulties that impact their ability to pay for service

The Back Office Automation and Workforce Management program specifically contributes to these value areas as follows:

- **Increase Customer Satisfaction:** Content Management will create a means to effectively capture, index, route and archive customers' documents, allowing processing to advance more rapidly and giving front and back-office personnel a more complete view of the customer. Having a full view of the customer allows call takers, specialists and other personnel to handle customer inquiries more efficiently and with greater accuracy. Robotic Process Automation will reduce the number of customers receiving estimated bills, or not receiving a bill, and result in bills being issued in a timely fashion. The Workforce Management tool is expected to improve staff utilization with accurate demand-based scheduling and drive an improved customer experience in terms of CSR availability. It will also improve

the Company's understanding and adaptation to fluctuations in call volumes, patterns and agent availability, leading to shorter wait times for customers.

- **Drive Cost Efficiency:** Content Management will eliminate time-consuming searches for documents, which will contribute to shorter call handle times and eliminate the need for repeated interactions by customers, thereby improving cost efficiency. The Content Management solution will also streamline processes across departments, create intelligent document workflows and avoid unnecessary storage costs. Robotic Process Automation of back-office work provides the benefit of O&M cost reductions as repetitive work becomes automated and the need for manual employee reviews is reduced. The AMS will improve employee productivity and help secure and speed up the provisioning of user permissions.
- **Enable safe, reliable and resilient delivery of energy:** The Gas Service Line Inspection Application will enable the Company to keep in compliance with Commission requirements for safety inspections on all gas service lines. These improvements and process automations will expedite processes and reduce risk of human error. Implementing an AMS will also reduce the risk of human error in managing access to important customer information systems. The improved security controls of AMS also increase consistency and mitigate risks of users inappropriately retaining access to important systems that contain customer information.

For each of the projects outlined in this paper, continuation of existing inefficient and manually intensive processes will increase customer resolution time, erode customer satisfaction and reduce operational efficiencies. Investments in Back Office Automation and Workforce Management will contribute to a more efficient, positive customer experience while reducing costs, enhancing back-office processes and empowering employees with the proper tools to provide exceptional customer service. The Back Office Automation and Workforce Management systems proposed above will help to optimize business procedures by saving time, money and human effort and will continue to benefit the Company through data storage and manipulation, data management, data exchange, accuracy, saved time and money and reduced costs.

Please see Exhibit\_\_(CO-33) Back Office Automation and Workforce Management Request for more details of the funding request.

#### **Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The Back Office Automation and Workforce Management program will contribute to increased operational efficiency, faster resolution time for exceptions and increased customer satisfaction. This is aligned with the long-range plan's emphasis on improving the customer experience as a part of the Company's core operations.

## **2. Supplemental Information**

### **Alternatives**

For RPA, the alternative is to continue to manage these processes manually and have employees review all back-office exception management tasks, which would not allow for the realization of cost savings and resolution time benefits.

For AMS, the alternative is continuing to utilize multiple system access tools and failing to improve engineering controls to strengthen security of access to customer data. This in turn could put the Company at risk for data breaches and negatively impact customer trust and satisfaction.

For the Gas Line Inspection process, the alternative would be to continue to use a time-consuming manual process to manage work, resulting in safety risks and potential non-compliance with Commission Orders.

For Content Management, the alternative would be to archive paper documents, which compromises security and retention regulation. Without progressing to an electronic archiving tool, the Company cannot manage the flow of inbound paper documents by converting them to electronic format, which does not align with the Company's digital content and process management strategy.

For Workforce Management, an alternative would be to build custom features on top of our existing platform. This alternative was considered during the Company's assessment but determined, in the long run, to be more costly. In addition, a custom-built solution would not allow the Company to acquire the advanced capabilities a new platform offers.

**Risk of No Action**

The risk of no action on the enhancements in the Back Office Automation and Workforce Management program is eroding customer satisfaction due to inefficient processes and work practices and not realizing the operational efficiencies associated with a more automated and efficient back office.

As an example, one of the main risks the Company will encounter in not acquiring a new Workforce Management solution is a deficiency in its response time to customers' calls. For example, since the beginning of the pandemic, the Company's workforce has migrated to a remote working arrangement on a temporary basis. This transition in environment has increased the need for a workforce management tool for our supervisors to monitor performance and better assist our CSRs with day-to-day functions. A Workforce Management tool is therefore necessary to enable the Company to move ahead with its ongoing efforts to optimize staffing and service levels.

**Non-Financial Benefits**

There are several non-financial benefits associated with the Back Office Automation and Workforce Management program, as noted throughout this paper. These include increased customer satisfaction through faster resolution of inquiries handled by CSRs and resolving back-office work in an automated fashion. Additionally, the Company anticipates that its WFM project has the potential to improve CSR utilization and drive improved customer experience while also helping employees better understand their performance in real time and historically.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital \$9,170,000

O&M \$4,610,000

4. Basis for estimate

These estimates are based on past costs for similar efforts, and benchmarks and analysis from experienced consultants. Please see Exhibit\_\_(CO-33) Back Office Automation and Workforce Management Request for more details.

5. Conclusion

Based on the efficiencies and process improvements noted in this paper, the Company should implement the processes and tools identified above.

**Project Risks and Mitigation Plan**

Risk 1

WFM Solution: During the implementation phase, we may experience transitional issues if the new platform affects the existing call management system. If this scenario occurs, we risk temporarily increasing our call handle and hold times.

Mitigation plan

The Company will work closely with its implementation vendor to formulate a robust contingency plan to minimize this potential risk during implementation.

**Technical Evaluation / Analysis**

Please see the Company's testimony in Cases 19-E-0065 and 19-G-0066 for a technical analysis of the RPA project. The analysis identified the back-office work that was feasible for automation and the work was prioritized based on the potential benefits.

To develop its WFM proposal, the Company worked with a consulting firm to assess whether making improvements to its current management tools or building or buying a new workforce management solution is most feasible for the Company's business. A total of 37 functional and technical requirements were identified addressing system management, agent scheduling, scheduling profiles and reporting analytics.

Below are the main areas of opportunities discovered in conjunction with this analysis:

- Currently there is no ability to create volume-based schedules automatically for customer service or back-office case work
- The Company experiences challenges in consolidating call center employee sick time information to project impacts on call answer rates and make adjustments in real time
- Currently there is no central repository to track vacation requests and project how they will impact call answer rates
- CSRs' overall performance reporting is limited to raw outputs and manual input is required to obtain a holistic view of performance across key metrics

- Managers have limited capability to view CSR activity mode (i.e., managers cannot view an agent's hold status in real time)

Please see Exhibit\_\_(CO-34) Back Office Automation & Workforce Management Tool Assessment Readout for more information on the Company's WFM analysis.

**Project Relationships (if applicable)**

The Back Office Automation and Workforce Management program is related to the Digital Customer Experience program, Enterprise Customer Relationship Management system, new customer service system, Field Collection System, Customer Project Management System, Gas Information System, Customer Information System and other systems.

**3. Funding Detail**

**Historical Spend (\$000)**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
<b>Capital</b>						
<b>O&amp;M</b>					\$240	
<b>Retirement</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	\$170	\$1,500	\$2,500	\$2,500	\$2,500
<b>O&amp;M*</b>	\$110	\$1,000	\$1,100	\$1,100	\$1,300
<b>Regulatory Asset</b>					

**Capital Request by Elements of Expense (\$000):**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor					
M&S					
Contract Services	\$170	\$1,500	\$2,500	\$2,500	\$2,500
Other					
Overheads					
<b>Total</b>	\$170	\$1,500	\$2,500	\$2,500	\$2,500

**Total Gross Cost Savings / Avoidance by Year (\$000):**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M Savings</b>					

O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year (\$000):**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

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Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

**Back Office Automation and Workforce Management Request**

<b>Capital ('000s)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
<b>Robotic Process Automation (RPA)</b>			
Contract Services	\$300	\$650	\$650
IT Development and Services	\$50	\$350	\$350
<b>Access Management System</b>			
Contract Services	\$150	\$150	\$150
<b>Gas Service Line Inspection Application</b>			
Contract Services	\$200	\$250	\$250
<b>Content Management</b>			
Contract Services	\$200	\$500	\$500
IT Development and Services	\$100	\$100	\$100
<b>Call Center Workforce Management Solution</b>			
Contract Services	\$300	\$300	\$300
IT Development and Services	\$200	\$200	\$200
<b>Total</b>	<b>\$1,500</b>	<b>\$2,500</b>	<b>\$2,500</b>

<b>O&amp;M ('000s)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
<b>Robotic Process Automation (RPA)</b>			
IT Support	\$100	\$280	\$280
License Cost	\$360	\$250	\$250
<b>Gas Service Line Inspection Application</b>			
IT Support	\$50	\$30	\$30
License Cost			
<b>Content Management</b>			
Labor	\$60	\$60	\$60
Vendor Services	\$250	\$200	\$200
<b>Access Management System</b>			
IT Support	\$0	\$60	\$60
<b>Call Center Workforce Management Solution</b>			
IT Support	\$60	\$120	\$120
License Cost	\$120	\$100	\$100
<b>Total</b>	<b>\$1,000</b>	<b>\$1,100</b>	<b>\$1,100</b>



# Workforce Management Tool Assessment Readout

*June 15, 2021*



Item	Speaker	Timeline
WFM tool assessment summary	Manny Gutierrez	11:00 - 11:02
Current gaps	Clinton Diamond	11:02 - 11:05
Business value	John Rushing	11:05 - 11:15
Functional & IT requirements summary	John Rushing	11:15 - 11:20
Build vs. buy analysis	John Rushing	11:20 - 11:30
Vendor landscape	John Rushing	11:30 - 11:40
Proposed WFM tool implementation schedule	John Rushing	11:40 - 11:45
Vendor questions	John Rushing	11:45 - 11:50
Q&A and next steps	All	11:50 - 12:00

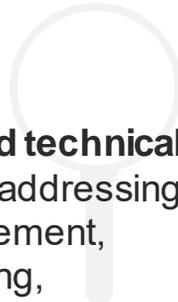
An assessment of workforce management practices in Customer Assistance was performed over the past six weeks

4



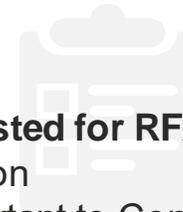
**In-depth workshops** to discover business and technical requirements with various stakeholders from Customer Assistance

37



**Functional and technical requirements** addressing system management, agent scheduling, scheduling profiles / rules management, and reporting and analytics

4



**Vendors suggested for RFx shortlist** based on capabilities important to Con Edison

1



**Build vs. buy recommendation** based on attributes important to Con Edison

**Implementing a workforce management tool in Customer Assistance is foundational in accessing benefits to operational efficiency, employee experience, performance management, and ultimately customer experience**



# Several pain points were identified during the discovery workshops

## FORECASTING & SCHEDULING

## REAL TIME REPORTING

### Demand based schedules

### Sick exceptions, vacation requests and intra day reconciliation

### Agent performance & CSR activity

### Call patterns and staffing

GAPS

- There is **no** ability to **create demand-based schedules** for customer service or back-office case work

- Con Edison experiences **challenges** in obtaining employee sick exceptions in **real time**
- Currently there is **no central repository** for **vacation requests** and access is outside the system,
- Ability to **swap shifts intra-day** is done **manually** on SharePoint

- CSRs overall performance reporting is **limited**
- Viewing agent performance is **manual** and **cumbersome**
- Con Edison **has limited capability** to view the **CSR activity** mode, i.e., they cannot view an agent's hold state in real time

- It is **difficult** to **identify** and **adapt** to **changes in call patterns** (percent of calls coming in on certain days and comparing to historical data) on a consistent basis



# Robust workforce management tool positively impacts Edison on multiple levels



# Functional and IT Requirements Summary

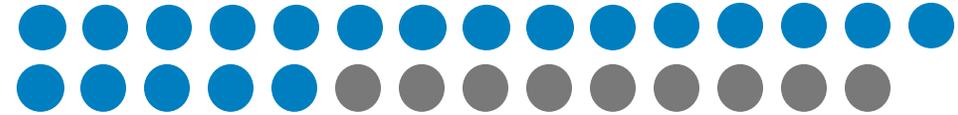
## 8 Technical Requirements

3 must have



## 29 Functional Requirements

20 must have



### System Management & Administration

System management and administration includes user management, system set up, audit capabilities and other key administration tasks.

### Agent Scheduling Tools

Agent scheduling tools includes agent portals that allow agents to view their schedule, review performance, request changes or updates to posted schedules, and the types of scheduling and forecasting algorithms available in the platform.

### Scheduling Profiles / Rules Management

Scheduling profiles/ rules management includes establishing and maintaining business rules related to specific schedules, shifts and individual agents to promote a streamlined scheduling process.

### Reporting and Analytics

Reporting and analytics includes inherent reporting ability of forecasts vs. actuals, staffing alerts and exporting data to external systems, such as a data warehouse.

# conEdison Build vs. Buy Analysis

ATTRIBUTE	Buy	CON EDISON CONTEXT	Build
Customization	<i>Out-of-the-Box</i>		<i>Specific</i>
Upfront build time	<i>Short</i>		<i>Long</i>
Custom-built integrations	<i>Yes</i>		<i>No</i>
Nature of cost outlay	<i>Ongoing</i>		<i>Upfront</i>
Software roadmap control	<i>Low</i>		<i>High</i>
Fix response time	<i>Fast</i>		<i>Slow</i>

CAPABILITY	Verint-Monet	Nice InContact	Calabrio	Genesys
Scheduling Profiles / Rules Management	●	●	◐	◐
Multichannel Forecasting / Blended Teams	●	●	●	◐
Reporting and Analytics	●	●	●	◐
Robust Integration Capabilities	●	●	◐	●
Ease of Use / Administration	●	◐	●	●
AI / ML Tools and Capabilities	●	●	◐	◐

**LEGEND**

● Fully developed   ◐ Partially developed   ○ Not a capability

# PROPOSED WFM TOOL IMPLEMENTATION SCHEDULE

	2024							2025								
	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	AUG	SEP	
<b>Internal Approvals</b>																
Confirm funding																
Complete Technology Approval Process (TAP)																
<b>RFP</b>																
Prioritize requirements																
Develop RFP content																
Develop RFP scorecard																
Procurement review and approval																
<b>Planning</b>																
Complete solution design																
Gather historical volume and handling data																
Complete reporting design / integration planning																
Develop implementation plan																
Identify resource requirements																
<b>Vendor Interviews &amp; Selection</b>																
Issue RFP																
Narrow vendor selection, vendor capabilities presentations & scoring																
Complete total cost of ownership (TCO) by vendor																
Complete vendor selection																
Negotiate contract / acquire license																
<b>WFM Tool Implementation</b>																
Tool implementation kick-off																
Set up sandbox (WFM tool and connected systems / applications)																
Pre-implementation training session																
Implement WFM																
Post-implementation training session																
Post-implementation monitoring																

1. How does the vendor ensure the ability for individuals and/ or groups to meet scheduling rules?
  - Can this be done at a schedule, shift and/or agent level?
2. How does the vendor provide the ability to forecast and schedule non-communications work such as case management?
3. How many different types of forecast models does the vendor solutions support?
4. How granular are the audit capabilities of the system (i.e., approval of schedule change, schedule generation, shift approvals, etc.)?
5. How easy is the navigation of the management interface?
6. Describe the detail of the vendor's future roadmap and how are the items selected and prioritized for development and future releases?
  - How are new updates released and how are they tested for backward compatibility, bugs, etc. prior to release?

KEY QUESTION	ANSWER
<p>Are there any requirements or MVPs of the WFM requirements that can be reasonably built by Con Edison and provide incremental value to the business now?</p>	<p>A full custom build system would not be possible to build in a faster timeframe, certain requirements could be met through enhancements to certain existing spreadsheet-based processes.</p>
<p>Would the company's Oracle CC&amp;B system fulfill or streamline the fulfillment of these requirement?</p>	<p>Oracle's CC&amp;B system does not have any functionality that can address the fulfillment of the WFM functional / technical requirements.</p>
<p>Which vendors presented within the vendor landscape have integrability with CC&amp;B?</p>	<p>All vendors presented within the vendor landscape can be integrated with CC&amp;B. Some configuration of APIs may be required.</p>

# Q&A

- Determine IT acceptor and timeline
- Align with team on reviewers and approvers / timeline for requirements document

# APPENDIX

KEY CAPABILITY	DESCRIPTION
Scheduling Profiles / Rules Management	This capability refers to a solutions ability to provide administrators with the capability to define and manage scheduling parameters that how an individual agent, agent group, agent type or shift may be applied to a given schedule
Multichannel Forecasting / Blended Teams	This capability refers to a solutions ability to create forecasts and schedules for non-voice channels such as email, chat, and back-office functions and to apply these to either blended or non-blended teams
Reporting and Analytics	This capability refers to a solutions ability to provide robust reporting and analytics capabilities in support of both real-time and historical performance management.
Robust Integration Capabilities	This set of capabilities refers to the ability of a given solution to integrate with other common contact center infrastructure using either native integrations or a robust set of API's
Ease of Use / Administration	This set of capabilities refers to the user interfaces designed to support systems management and administrations as well as key WFM operations such as generating forecasts, generating and updating schedules and administering users
AI / ML Tools and Capabilities	This set of capabilities refers to the AI and ML tools provided by each vendor solution and how useful and practical these are in day-to-day operations

# VENDOR LANDSCAPE DETAIL

## Vendor Landscape Detail – Nice inContact

- Nice has a long and successful history as one of the oldest providers of call recording and quality assurance tools for contact center applications. The company's products were the “go-to” solution for quality assurance for decades
- In 2006, Nice acquired IEX which was one of the original Workforce Management and like Nice in the call recording space, was widely considered the leading provider of WFM tools
- In 2016, Nice acquired inContact which is one of the original cloud-native CCaaS solutions
- Through continuous development of its own solutions and successful integration of capabilities it has acquired, Nice has created a suite of products that are unrivaled in the industry. Nice solutions are well known across the industry for their robust and often, leading edge capabilities

- Though Verint has not been in the market as long as Nice, it is still widely recognized as a leader in the industry. Like Nice inContact, the company provides a robust and well-designed suite of products that include WFM, QA, Employee Engagement, and Performance Management
- Through its acquisition of Monet in 2019, Verint offers two distinct solutions to the market
  - Verint Enterprise which is a powerful set of tools offered as premise-based point solutions for WFM, QA, Employee Engagement, and Performance Management
  - Verint – Monet which is a cloud-based offering that can be implemented more easily and at a lower price point than the enterprise offerings

- Calabrio was for over a decade the preferred vendor for both quality and workforce management for Cisco UCCE and UCCX solutions. In 2017, Calabrio began to make a focused effort to expand beyond Cisco and to compete with Nice and Verint in the broader market
- Calabrio solutions are well-known in the industry for solutions that are robust and yet practical and easy-to-use as compared to other vendors in the market (namely Nice and Verint)
- In 2019, Calabrio acquired a cloud-based WFM company called Teleopti and has since integrated this solution into their own to create a cloud-native WFM solution

# Vendor Landscape Detail – Genesys PureConnect Interaction Optimizer

- Interaction Optimizer is part of a suite of products that Genesys acquired through its purchase of Interactive Intelligence in 2016
- Unlike the other WFM solutions considered, Interaction Optimizer is specifically designed for the Genesys PureConnect solution and is not available to support other contact center infrastructure or applications
- Perhaps the product's greatest strength is that it can be acquired through the purchase of the required licenses and is automatically integrated into the PureConnect environment – this substantially limits the cost and complexity associated with the acquisition of a third-party solution
- While Interaction Optimizer can support multichannel forecasting and scheduling, this capability is limited to those channels that are routed and delivered to agents using the PureConnect system

**RPA Implementation Steps**

Item No.	Deliverable	Description
1	Process Design Documents (PDD)	Detailed process design document leveraging Con Edison provided template; will include: <ul style="list-style-type: none"><li>• Current &amp; target state process - workflow, roles, narratives</li><li>• Org model analysis</li><li>• Risk analysis</li><li>• Business continuity</li></ul>
2	Technical Design Documents (TDD)	Detailed technology design document leveraging Con Edison provided template; will include: <ul style="list-style-type: none"><li>• High-level application and technology architecture</li><li>• Integration requirement (high level)</li><li>• Interface review</li></ul>
3	Test Cases	Detailed test cases for SIT execution
4	Bots with Unit Tested	Configured and unit tested bots as per the PDD and TDD in the BluePrism environment
5	Job Aid Documents	Job aid documents will include <ul style="list-style-type: none"><li>• Summary of changes</li><li>• Known issues and workarounds/instructions on trouble shooting</li></ul>

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Outage Communications	
Project/Program Manager: Rebecca Lessem	Project/Program Number (Level 1): 25547144
Status: <input checked="" type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: January 2023	Estimated Date In Service: December 31, 2025
<b>A. Total Funding Request (\$000)</b> Capital: \$5,680 O&M: \$4,530	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Avoidance (\$000) O&M: \$875 Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period:</b> (Years/months) (If applicable)
<b>Work Description:</b>  The Outage Communication program is part of the Company's Strategic Customer Experience (Strategic CX) Portfolio of projects which seeks to deliver a dynamic customer experience that will both meet evolving customer and stakeholder expectations and enable the Company to lead the transition to a clean energy future.  Customer and stakeholder expectations of communications capabilities related to outages are increasing. As noted by the New York Public Service Commission (PSC) in its April 18, 2019 Order Instituting Proceeding and to Show Cause in Case 19-E-0107, "effective communication with customers through press releases, social media, and other customer messaging or alerts is a key aspect of how a utility disseminates useful information." With increased frequency of climate events and related outages, the importance of agility and coordination to get messages out to customers will only increase.  To meet the growing customer expectations and continuously improve the customer experience, the Company proposes capital and expense initiatives for the period from 2023 to 2025 that will enable it to respond to the ever-evolving outage communication needs. Capital funds will be used to build new technology platforms that enable messaging to customers and internally to organize outage event response. O&M expenses are required to support the capital technology and to fund message delivery and ongoing supervision of the tools. Please see Exhibit__(CO-37) Outage Communications Request for a breakdown of costs by area. The Company sees an opportunity to develop the new technologies and platforms described below to provide more detailed information to targeted groups of customers before, during and after outage events to meet safety and customer satisfaction goals.	

### **Emergency Customer Messaging Center (ECMC)**

ECMC will be a centralized platform that will allow the Company to identify a specific group of customers affected by an imminent or ongoing emergency and create a customized message that can be quickly approved and sent out to those customers. Specifically, the ECMC will deliver the following capabilities:

- Quickly identify customers affected by an imminent or ongoing emergency event and pull a very targeted list of customer contact information (e.g., based on their geographic area, equipment their account is associated with, smart meter status, etc.).
- Write a new emergency communication specific to the event, to be sent via text and automated calls to customers during that imminent or ongoing emergency.
- Execute the steps above and include an approval process within one single platform in order to get the messages out to customers as quickly as possible.

The ECMC will require building integration with the currently isolated data systems used to house customer information to pinpoint those specific customers the Company wants to reach and pull the customer data with precision and agility. The platform would be built to push the customer list and text/recorded voice message to a messaging partner to send to customers. Please see Exhibit\_\_(CO-39) Outage Communications ECMC for detailed plans.

### **Continued Investment in Outage Messaging**

#### **Maintain and improve the current outage management communications, processes and technologies:**

In the past four years, the Outage Communications team made great strides in expanding the frequency, volume, clarity and delivery of outage communications directly to customers and has had proven success with resolving customer pain points. In creating new technologies and messages there has been an increase in the complexity and maintenance of our platforms which we will need to continue to fund and improve in response to stakeholder feedback. There are additional opportunities to further improve technical performance and create iterative customer enhancements with greater focus on customer care and function, including our internal message creation process, our reach and efficacy of messages, and our customer outreach tools.

- As Con Edison has installed Smart Meters (AMI) in a large portion of its service territory, there are opportunities to enhance and create new messaging based on the new AMI data.
- Continue to improve the Outage Map for increased reliability, performance, and features.

#### **Expand the current outage management communications, processes and technologies:**

The Company would like to expand the reach of the existing outage communications by delivering messages in new languages, through new and preferred channels, and to specific subsets of customers.

- Expand the reach of the existing outage communications by delivering messages in Spanish. This project will result in delivering clear and easier to understand messages for 310,000 customers, or about 10% of our customer base, who have indicated they prefer to receive communications in Spanish.
- Include new channels to interact with customers about their power issues, such as the Company's Virtual Assistant and social media channels. The goal of this project is to make it as easy as possible for a customer to reach the Company to report service problems and get

resolutions quickly and efficiently by leveraging platforms that are very familiar to the vast majority of our customers, such as Facebook and Twitter.

- Expand the Outage Communications program to:
  - Eliminate gaps in communication with master-metered customers (i.e., the approximately 400,000 renters who do not have Con Edison accounts, but whose properties are powered by the Company).
  - Create new touchpoints with customers facing electric problems considered “non-outage,” such as flickering lights or low voltage issues.
- Create a comprehensive and continuous human-centered training for all Control Center and field employees associated with the restoration process, enabling teams on the operations side to fully understand how their actions impact our customers’ experiences and to take agency on triggering proper communications in a timely manner.

### **Emergency Event Task Tool (EETT)**

EETT will be an internal operational and communications task management platform focused on large-scale predictive outages.

- Develop a centralized digital tool for a variety of outage scenarios to coordinate internal tasks for executing customer communications. This will allow all customer-facing employees to be prepared to collaborate and execute their tasks before, during and after any outage event
- All internal employees should be able to interact with the tool in real time, receive email notifications on tasks due, and obtain updates on events
- Archiving: the tool will save a record of all event activity and tasks, including time stamps, comments, and customer communications

### **Justification Summary:**

The Outage Communication program is a part of the Company’s Strategic CX Portfolio of projects. These programs work together to achieve the following value propositions:

- **Increase customer satisfaction** even as expectations continue to rise
- **Drive cost efficiencies through** improved service and resolution
- **Support statewide clean energy goals** by generating customer demand for and streamlining adoption of programs
- **Facilitating understanding and adoption of optional rates** which help customers save and support grid efficiency
- **Enable safe, reliable and resilient delivery of energy** through improved communication during an outage
- **Provide education and access to payment assistance** when a customer experiences financial difficulties that impact their ability to pay for service

The Outage Communication program supports these value propositions in the following ways:

- **Increase customer satisfaction** even as expectations continue to rise

The Outage Management program will deliver the specific and timely outage communications that our customers want.

Over the last several years, the Company has made great strides in expanding the frequency, volume, clarity, and delivery of customer outage communications as detailed in Exhibit\_\_(CO-28) Outage Communications Past Progress. Increasing the number of touchpoints with customers experiencing an outage and expanding communication channels has reduced call volumes and freed up customer service representatives to focus on customers in need of the most urgent assistance. Further justification for continued improvements can be found by examining the progress of other utilities that have invested in programmatic and messaging updates. Please see Exhibit\_\_(CO-38) Outage Communications Benchmarking.

- **Drive cost efficiencies** through improved service and resolution

Optimized outage communications management will lead to resource efficiency. Today, developing messages and communicating with customers about power issues is the responsibility of several Company departments with overlapping tasks as well as multiple external vendors who help the Company to program and deliver the messages. This complex ecosystem makes it difficult to coordinate and act quickly mid-emergency and can create a disjointed experience for customers. Additionally, our continued enhancements to self-service technologies in outage communications and reporting will improve cost efficiency because self-service is a lower-cost channel of customer service.

The proposed ECMC and EETT solutions will consolidate and streamline internal processes to track tasks and get customer messages prepared and approved, as well as consolidate technical and vendor relationships and operations, making message campaigns swifter and easier to execute. Ultimately, if we have faster and more efficient tools, we can get messages to customers more quickly.

- **Enable safe, reliable and resilient delivery of energy** through improved communication during an outage

Weather and climate realities are evolving rapidly, creating a need to constantly adapt and develop more agile processes and technologies that enable faster and more flexible communications. As the Company's service territory experiences unprecedented extreme weather, the Company needs the ability to craft new, non-template messages that speak to customers about the events we all face.

The improvements proposed in the Outage Communications program are crucial to enhancing customer communications for safety. While today we have the ability to create web banners, press releases and social media posts, we do not yet have the ability to script a message specific to an urgent event and get it to customers quickly via email and text. Increasing our ability to communicate with customers more quickly will enable them to react sooner. It is also important to build digital tools that can accurately track and record outage-related tasks and communications in real time as well as report out after events occur.

In emergency situations, the ECMC platform will provide the Company with a simple interface that streamlines the messaging process to accomplish the following:

- **Targeting** a specific group of customers in geographic areas affected by an imminent or ongoing event.
- **Speed**, both of automatically pulling customer contact information by indicating desired data parameters housed in a variety of data systems, and routing for expedited approvals with required stakeholders.

- **Specific Custom Messaging**, the ability to draft a customized message with valuable information specific to an emergency event, especially as it progresses, without depending on pre-canned templates.

These technologies will also allow for more personalization. For example, messaging customers in targeted geographic areas, delivering a message specific to an ongoing or imminent emergency, or personalizing to a customer's preferred language or channel will meet customers' expectations for useful, personalized guidance.

#### **Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

Outage communications strategy is crucial to the success of our long-term strategies. Because of the realities of climate change, and despite our efforts to make our systems as resilient and reliable as possible, the Company wants to be prepared for outages and increased demand on the system and the increased need for engagement with our customers. Therefore, the Outage Communication program's proposed improvements are critical to the Company's customer engagement and brand trust long-term.

## 2. Supplemental Information

### **Alternatives**

#### Alternative 1 – Use Outage Map Vendor for All Event Communications

Many of the Company's benchmarking peers make use of their outage map provider as the main platform to deliver outage messaging to customers. This would mean starting the outage communications process from scratch and losing many of the helpful customizations the Company has built over the past several years based on feedback from customers and DPS Staff. Moving to an outage map-based model would also force the Company to go through a lengthy and expensive software change with substantial licensing costs. Additionally, if the Company switched to a vendor-controlled outage communications platform, we would not have the same control over the specific messaging, nor would we have the enhanced specificity in targeting groups of customers that is proposed in the Outage Communication program. Additionally, this would increase our dependency on a single provider and their infrastructure, which we have seen from other utilities can be a liability in large emergencies.

#### Alternative 2 – Continue Without Centralized Program

Continue outage communications with the current structure and attempt to make small tweaks in wording to communicate more clearly with customers. Because of the efforts of the Outage Communication the Company has made some good strides on improving communication, but centralized tools would allow us to make much larger strides in providing customers more detailed and accurate information as soon as possible. The current process, unfortunately, requires time to sync information before sending any messaging to customers, resulting in slower than optimum delivery times.

### **Risk of No Action**

Slow or conflicting messaging – A disjointed infrastructure in which responsibilities are dispersed among several teams adds delays to the decision-making process during times when speed of

response to get information out to customers is critical. There is greater chance of error or messaging duplication caused by multiple vendors with overlapping responsibilities.

Delays in reporting and ability to distribute information internally – Providing data on the aftermath of a large event is made more difficult by the multiple teams that execute outage communications. Without a centralized and dedicated outage communications program that can house the record keeping for storm and emergency response communications, these challenges will continue.

Erosion of Existing Capabilities as Software becomes Outdated – The lack of investment in continued improvements and the technologies that enable them will cause a progressive deterioration of the existing platforms that sustains the current outage communications infrastructure.

### **Non-Financial Benefits**

- Opportunity for more efficiency in operations, task management, decision-making and speed of approval processes by centralizing them in the ECMC and EETT technology platforms.
- More nimble when addressing and messaging customers about weather and other emergencies that arise and do not fit with the standard message templates
- Increase customer satisfaction due to ability to target and message specific customer subsets. For example,
  - Message customers targeted to more specific geolocation, equipment their account is associated with, or smart meter status
  - Message customers who are not direct Con Edison customers such as tenants of master-metered buildings
- Con Edison is nearing completion of Smart Meter installations in its territory. Centralized and automated tools would free up resources to focus on the access to new data and therefore new opportunities for communication and customer education

### **Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital: \$5,680

O&M: \$4,530

4. Basis for estimate

Capital costs and O&M costs were estimated based on labor, services, and contingency costs compared with benchmarked projects. Project components and labor necessary to achieve was mapped out utilizing extensive forecasting with an external consultant and our internal IT partners. Please see Exhibit\_\_(CO-37) Outage Communications Request for more details.

5. Conclusion

Customers' expectations for specificity and timeliness of utility communications are expanding as immediacy of information becomes the standard in transactions with companies like Amazon, Uber and Verizon. Utility customers expect realistic, reliable, and frequent information about their outage, via multiple communication channels. , It is critical to expand the Company's ability build technological solutions, such as ECMC and EETT, to deliver communications that are more flexible, robust, targeted, personalized and timely.

**Project Risks and Mitigation Plan**

Risk 1

Any delays in the New CSS implementation and changes will impact the timeline of how we are able to pull data from that source for messaging.

Mitigation plan

The Company can work around this issue by integrating with the Enterprise Data Analytics Platform (EDAP), which connects with the legacy customer information system and therefore will have usable customer data.

Risk 2

We could experience delays in importing new data tables to EDAP for the purpose of selecting small and specific groups of customers for specific messaging.

Mitigation plan

To mitigate this, the Company could send messages through the new Outage Communications platform to broader groups, such as by zip code or borough.

Risk 3

Missing or incomplete customer information, for example cell phone or email address, which will prevent us from communicating with certain customers.

Mitigation plan

The Company plans to send messages using the best contacts from all fields, and send both text and voice calls, so we can reach customers even when a cell phone number is not available.

**Technical Evaluation / Analysis**

N/A

### **Project Relationships (if applicable)**

The ECMC, EETT platforms, and Continued Investment in Outage Messaging will create many benefits for customers and the Company's internal organizations through a series of alignments and integrations with other current and planned programs and projects, as described below:

**Customer Analytics:** The Customer Analytics platform will gain from the technology and outage messaging improvements by collecting and processing data from the Outage Management System and messaging vendors to track trends in operational response and communications that can help continuous improvements in serving our customers. For example, if data shows persistent reliability issues based on various criteria such as season or time of year, geolocation, type of building, etc., that customer data analysis can help operations prioritize the work in areas that need the most attention. The data analytics can also help determine the efficacy of messaging by reporting on customer engagement.

**DCX:** The technology and outage messaging improvements teams will work closely with the Digital Customer Experience team to develop and refine all messages and calls to action offered to customers via the digital self-service channels. The ECMC and EETT platforms will be designed to align with DCX on the development and management of APIs and integrations with the Outage Management System, CRM and other internal programs and processes required for the execution and delivery of outage transactions and communications.

**Virtual Assistant:** In future integrations, the Virtual Assistant program will be able to help customers report outages and get status updates on restoration directly on the VA platform.

**Journey Mapping:** Journey Mapping methodology is the foundation for existing and new and improved customer outage communications and supporting technologies. If these tools are funded, the Journey Mapping team will be more equipped to manage and optimize new developments and improvements to the customer outage communication journey.

**Customer Outreach:** Customer Outreach is one of the first responder groups for any large emergency faced by Con Edison's customers. Centralized and agile outage communications platforms such as ECMC, EETT, as well as messaging improvements will be of great support to the Outreach team's efforts. They will aid their support to customers in the field by delivering a constant flow of information both to them and customers to free up resources where they are needed most.

**CRM:** Once fully integrated with the Outage Management System, the CRM will allow customer-facing employees and digital self-service channels to have quick access to electric service issues either predicted or reported, to provide the most updated information and the best course of action to customers. The integration between CRM and OMS will also allow the fast creation of contact lists for various groups of customers, based on their geolocation, equipment their electric service is associated with and other criteria, for efficient target messaging.

## **3. Funding Detail**

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital						
O&M						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital		\$1,010	\$1,600	\$2,100	\$970
O&M*		\$1,090	\$1,040	\$1,100	\$1,300

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor		\$570	\$938	\$1,268	\$628
M&S					
Contract Services		\$200	\$268	\$300	\$78
Other					
Overheads		\$240	\$394	\$532	\$264
<b>Total</b>		\$1,010	\$1,600	\$2,100	\$970

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance		\$100	\$200	\$250	\$325
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

**Outage Communications Request**

<b>Capital (\$000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
<b>Emergency Customer Messaging Center (ECMC)</b>			
IT Development and Services	\$300	\$534	\$790
Project Management and Business	\$185	\$282	\$478
Contract Services	\$200	\$268	\$300
Overhead	\$204	\$343	\$532
<b>Emergency Event Task Tool (EETT)</b>			
IT Development and Services	\$65	\$95	\$0
Project Management and Business	\$20	\$27	\$0
Contract Services	\$0	\$0	\$0
Overhead	\$36	\$51	\$0
<b>Total</b>	<b>\$1,010</b>	<b>\$1,600</b>	<b>\$2,100</b>

<b>O&amp;M (\$000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
<b>Emergency Customer Meeting Center (ECMC)</b>			
Labor	\$170	\$280	\$280
Vending Services	\$360	\$250	\$330
Messaging Costs	\$100	\$120	\$150
<b>Emergency Event Task Tool (EETT)</b>			
Maintenance	\$50	\$30	\$30
<b>Outage Messaging Expansion</b>			
Labor	\$60	\$60	\$60
Vendor Services	\$250	\$200	\$150
Messaging Service Costs	\$100	\$100	\$100
<b>Total</b>	<b>\$1,090</b>	<b>\$1,040</b>	<b>\$1,100</b>

## **Outage Communications Benchmarking**

- Southern California Edison (SCE) has invested in updating its outage operations and communications, including forming an Outage Management and Communications Group. Their efforts have centralized outage communications efforts so that SCE can quickly query specific customer attributes to create custom ad hoc emergency messages in minutes. The efficiency of having a centralized messaging platform has led to a 60% increase in staff productivity, notification speed has increased over 80%, and wildfire mitigation efforts and safety of their customers has been greatly strengthened.
- Duke Energy is among the utilities that have made heavy investments in outage communications to revise emergency communication strategies in response to more severe climate events. Duke participates in Message Broadcast's EONS platform that enables crafting of ad hoc messages to send to customers specific to storms and events through their preferred channel. They were able to increase customer satisfaction and help customers feel safer by delivering timely, personalized, and relevant communications during severe weather events and restoration.
- Florida Public Utilities in 2017 created a dedicated outage communications team to successfully execute social media strategies to ensure customers are safe and informed throughout storms and restorations. Through these efforts they were able to make personal connections with customers and win many new customer advocates for the utility.

## **Outage Communications ECMC**

Please find below more details about the proposed work for the Emergency Customer Messaging Center (ECMC). Requirements for this platform have been created around the need for the Company to have new agility to communicate with customers about events as they emerge and will have impacts on customer safety and satisfaction.

### **Background & Pain Points:**

The ECMC Platform is intended to drive centralization of customer, asset, and system operations information and enable timely communication with customers impacted by an event with an ad hoc or pre-scripted message. The intent is not to replace current process for Estimated Time to Restoration communications, for example, but to supplement and enhance user capabilities to engage with customers. The ECMC Platform will require data from several different systems across Con Edison.

The ECMC Platform integration approach was designed to remediate some existing technical and process gaps and challenges. Based on workshops and team interviews, three key pain points emerged:

- Current outage and other emergent communication processes are disparate and time-consuming. Customer communication workflows vary by customer classification and event, making it difficult to generate customer lists and to track past communications with customers regarding outages and other system events.
- Integrations of customer, asset, and operational data vary, and the data is not updated consistently across different tools and platforms. Several Con Edison systems can generate targeted customer lists, but each is configured for a unique purpose and the data is refreshed at different intervals. This leads to questions of data quality at times when contacting the impacted customer is most critical.
- The ability to send ad hoc messages to customers is limited, and these abilities exist in different communications for each channel such as email or text.

### **Requirements and Specifications:**

In the process of surveying internal users to discover scenarios when the Company may need to send a new emergency message, the Company discussed situations such as elected official outreach, corrective communications, and new emergency event types.

Please see below for new custom message types that the platform will enable:

<b>Message Types</b>	<b>Description</b>
Emergency	A message would be sent to customers because of a potential or ongoing equipment failure or specific dangers due to severe weather, climate events, or other unexpected emergencies.
Instructional	A message would be sent to customers if the Company has overburdening equipment on the grid and needs to ask those customers to cooperate in reducing their usage.
Correction	A message would be sent due to an incorrect message or inaccurate ETR sent to the customer.
Informational/Updates	A message would be sent to customers to provide service information and updates in/around the affected area.

To build this platform, we will need to integrate with data systems we use to house customer information so that we can access appropriate contact data, have a selection of filters to pinpoint those specific customers we want to reach, automate a process to transfer the customer list and text and recorded message to a messaging partner to push to customers, and build an interface for the platform to streamline the data, message, approval and packaging process.

Required system integrations include:

<b>Customer Contact System</b>	<b>Information We Need</b>
CIS	Phone numbers from account opening
OKTA	Phone numbers from My Account profiles

To enable detailed filters to narrow down the customers who should receive communications, we will need to integrate the following data systems into the platform:

<b>Filters to Select Specific Customers</b>	<b>Data System Used</b>
Geographical/regional/zip code	GIS, APS
Associated network	APS
Associated device (transformer, feeder)	STAR
Associated AMI	VCAP

Taking into account the technical and design needs of this project, we have developed a preliminary estimated schedule for implementation. As project details are further determined, timing and phases may change.

### **Proposed Implementation Plan:**

<b>Phase 1 Back End IT Integration</b>	
Develop requirements, design, and build data integration	Q1-Q2 2023
Coordination across IT functions, forming processes across the project	
<b>Phase 2 Data Governance</b>	
Assign ownership of customer master data (i.e. contact info, preferences)	Q2-Q3 2023
Determine master data hierarchy	
Outline targets for data improvements and milestones for tracking	
Profiling data quality to ensure the process works	
Ensure proper access and view into customer communication	
<b>Phase 3 Back End IT Development</b>	
Develop API process to pull impacted customer list and additional outage information from input parameters	Q3 2023 - Q1 2024
Determine Licensing	
Update interface to include mapping of non-AMI customers to network	
Create data use cases and test them	
<b>Phase 4 Integration of Gas and Steam</b>	
Integrate Gas and Steam databases and customer information	Q2 2023 - Q2 2024
<b>Phase 5 Build the User Interface</b>	
Build versus buy comparison and identify potential tool vendors	Q2 2024 -
Identify front end use cases and user requirements	Q1 2025
Map requirements to tool feature sets	
Design and build platform interface internally or with partner	
<b>Phase 6 Change Management</b>	
Implement process changes in business functions and monitor	Q1-Q2 2025
Create employee training materials and process documents	

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input checked="" type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Privacy Readiness	
Project/Program Manager: Richard Brown	Project/Program Number (Level 1): 25524259
Status: <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Design <input type="checkbox"/> Engineering <input type="checkbox"/> Construction <input type="checkbox"/> Ongoing <input type="checkbox"/> Other: _____	
Estimated Start Date: 2022	Estimated Date In Service: 2023
<b>A. Total Funding Request (\$000)</b> Capital: \$23,380 O&M: \$23,960	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period:</b> (Years/months)
<b>Work Description:</b>  The Privacy Readiness program is part of the Company’s Strategic Customer Experience (Strategic CX) Portfolio of projects, which seeks to deliver a dynamic customer experience that will both meet evolving regulatory requirements and customer/stakeholder expectations, enabling the Company to lead the transition to a clean energy future.  The Privacy Readiness Program is a set of strategic efforts intended to position the Company to comply with expected upcoming privacy law changes and support business and customer needs. The Company expects compliance with these upcoming privacy requirements to have significant operational implications. Legislatures throughout the United States are implementing legislation that would require companies to, among other things, provide state residents the ability to request the data that companies maintain on the resident, allow the resident to opt out of sharing information, and permit the resident to request that the companies erase their data (with certain exceptions). These legislative efforts have features that are similar to the European Union’s General Data Protection Requirements (GDPR) and California’s Consumer Privacy Act (CCPA). Currently, there are similar bills pending with the New York State legislature. Moreover, the proposed New York regulations apply to “personal information,” which is a much larger set of information than Personally Identifiable Information (PII).  While the Company has been consistently improving its privacy practices over the last five years, it will be challenging both from a people and technology perspective to implement a framework and program structure that effectively and efficiently provides customers and consumers the rights afforded them under regulations that New York and other states are asserting to mirror the GDPA and CCPA. The Company has a significant population of applications and systems that collect and store personal information and PII, as well as numerous third-party vendors that process personal information and PII on the Company’s behalf.  To proactively assess and prepare for the evolving regulatory landscape, the Company engaged a third-party consultant in 2020 to conduct a discovery phase/gap analysis and develop a Privacy Readiness Plan focused on preparing the Company for expected compliance with anticipated privacy legislation based on leading practices. The consultant proposed thirteen recommendations covering people, processes and technologies to bridge the gap	

and meet the expected privacy law mandates. The recommendations were based on the consultant's understanding of Con Edison's operating environment and the consultant's experiences in developing and executing privacy readiness plans for similar organizations.

The program can be divided into two areas of emphasis: Technology Infrastructure and Governance Resources.

#### Technology Infrastructure

To meet customers' and regulators' expectations, the Company will invest in a combination of computer software and hardware to build the technology infrastructure needed to comply with the proposed privacy laws. The technology ecosystem will track the types of personal data collected by the Company and its uses, while giving individuals "data subject rights" over that data, including the right to view, update and erase stored data when applicable.

The key tools to be developed under this part of the program include:

- Standardized consent management solution to obtain, manage and store consent at all data collection points (e.g., online, paper, or phone) and justify handling of personal information
- Enterprise Customer Preference Portal to manage customer preferences, including opt-ins and opt-outs
- Framework and platform for data subject rights management
- Mechanism for verification of the data subject right requestor
- Customer-facing software and workflows to allow customers to make data fulfillment, modification and deletion requests
- Integration of the consent management solution with the data subject rights management process.
- Mechanism to fulfill customer data requests, which would:
  - Collect the user request by presenting a user interface and an appropriate action flow
  - Manage the request, understand the type of data request and take action based on the request
  - Integrate the downstream systems and search the Company data ecosystem and retrieve the data
  - Package the data in consumable, reportable format that can be provided to the customer as a copy of the data that resides within Company systems
  - Complete and submit data requests (fulfillments, corrections, modifications and deletion) for the Company to act upon the data. Upon receiving such request, the tool will be able to take the required action at the system level and report completion.

Work to be completed under this part of the program will strengthen the corporate privacy posture and assist the Company in complying with impending New York privacy regulations. The work will also allow the Company to keep pace with customers' privacy needs and expectations in an evolving marketplace.

#### Governance Resources

To assure efficient coordination, oversight and accountability of the privacy program, the Company has hired a Director of Privacy Compliance (aka Chief Privacy Officer), who will build a dedicated team of three specialists. This team will provide centralized leadership, guidance, and monitoring of privacy-related activities and controls, including but not limited to:

- Privacy governance and development of a privacy policy/procedure
- Privacy risk assessment and monitoring
- Privacy training and awareness
- Data Subject Rights management
- Notice and Consent management
- Records retention and data disposition in privacy matters
- Third Party management of Personal Information
- Data breach and incident reporting

Capital costs required to support the Privacy Readiness program include labor and accounts payable costs associated with implementation of the capital work described. These costs cover internal labor, vendor costs, and software and hardware costs, as needed. To continue the progress of the program, the Company proposes O&M funding for an Office of Privacy Compliance team as described above to implement and maintain the technology infrastructure and processes based on the focus areas noted in this white paper.

- The Company is also proposing the following O&M costs for the Privacy Readiness program to update some of the foundational information technology (“IT”) infrastructure, involving non-labor expenses such as software-related fees charged by vendor support and ongoing costs for technology. The technology fees are expected to fall into the following categories:
  - Software as a Service fees: Identity Access Management, Preference Management, Data Subject Right System, Workflow Tools (PEGA/Sales Force/ServiceNow)
  - Cloud hosting fees: A cloud environment to store program code (depending on selected technology)
  - Maintenance fees: Web Experience Management Platform
  - Contractor Services: Ancillary support functions filled by contactors to support ongoing maintenance and support of the Privacy Program

Please see Exhibit\_\_(CO-41) Privacy Readiness Request and Exhibit\_\_(CO-42) Privacy Readiness Capital and O&M Request Detail for additional details of the Company’s proposed funding.

#### **Justification Summary:**

The Privacy Readiness program is a part of the Company’s Strategic CX Portfolio of programs. These programs work together to achieve the following value propositions:

- **Increase customer satisfaction** even as expectations continue to rise
- **Drive cost efficiencies through** improved service and resolution
- **Support statewide clean energy goals** by generating customer demand for and streamlining adoption of programs
- **Facilitating understanding and adoption of optional rates** which help customers save and support grid efficiency
- **Enable safe, reliable and resilient delivery of energy** through improved communication during an outage
- **Provide education and access to payment assistance** when a customer experiences financial difficulties that impact their ability to pay for service

The Privacy Readiness program specifically contributes to these value areas as follows:

- **Increase customer satisfaction:** The Company will develop a mechanism to provide customers with accurate and timely data fulfillment/correction/erasure requests regarding information the Company holds. Additionally, the Company will develop a strong governance and compliance program that will increase customer confidence and trust around the appropriate use and protection of their data.
- **Enable safe, reliable and resilient delivery of energy:** The program will strengthen the Company’s privacy posture by implementing robust technology solutions and business processes intended to manage and protect personal information. These measures will protect the Company against both internal and external threats to its operations.

As noted above, the Company expects the New York State legislature to enact privacy legislation that will dramatically affect how it handles customer data and associated privacy rights. With this program, the Company

aims to implement multiple technology solutions and processes that will position us to meet these requirements in a timely manner and with consideration to both operational and customer needs.

The staffing, processes, and technologies implemented as part of this program will provide the Company with the capabilities to respect consumer rights, maximize the value and utility of data, and continue to meet evolving compliance requirements.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The activities proposed in this program support the Company's long range plan objective of enabling safe, reliable and resilient delivery of energy by strengthening the Company's privacy posture and increasing customer confidence and trust around the protection of their data.

## 2. Supplemental Information

**Alternatives**

Alternative 1 description and reason for rejection

Given the current state of regulatory change in New York and other states with pending and approved legislation, non-compliance is not an alternative.

Alternative 2 description and reason for rejection

Develop a manual process with the available resources. This is not advisable as the process would be prone to error and would not adequately ensure compliance.

**Risk of No Action**

There are several key risks associated with no action:

- Noncompliance with legislative mandate
- Increased regulatory scrutiny
- Loss of goodwill and/or negative public image
- Declining customer satisfaction as users become increasingly frustrated with not having control over their data
- Inability to adapt to evolving customer and regulatory requirements

**Non-Financial Benefits**

Implementing the recommendations will provide the key functionalities needed to meet the imminent privacy law requirements and by extension ensure regulatory compliance. The platform for data subject rights management and the consent management solution will allow for better integration with business systems and strengthen the Company's privacy program.

- Improved customer satisfaction, through increase transparency and additional security of personal data
- Reduced risk of financial compliance penalties due to more robust compliance processes
- Reduced risk of brand loss

<p><b>Summary of Financial Benefits and Costs (attach backup)</b></p> <p>1. Cost-benefit analysis (if required)</p> <p>N/A.</p> <p>2. Major financial benefits</p> <p>Cost avoidance from penalties</p> <p>3. Total cost</p> <p>Capital: \$23.38M O&amp;M: \$23.96M</p> <p>4. Basis for estimate</p> <p>The estimates are based on projects of similar efforts, bench marking and analysis from experience consultant. Please see Exhibit__(CO-41) Privacy Readiness Request and Exhibit__(CO-42) Privacy Readiness Capital and O&amp;M Request Detail for additional information.</p> <p>5. Conclusion</p> <p>Based on the rapid changes of privacy laws across the country and the likelihood of similar legislation being enacted in New York State, the Company should begin work on implementation of this program as soon as possible.</p>									
<p><b>Project Risks and Mitigation Plan</b></p> <table border="1"> <thead> <tr> <th><b>Risk 1</b></th> <th><b>Mitigation plan</b></th> </tr> </thead> <tbody> <tr> <td>Changes to in flight parallel capital projects like New CSS</td> <td>Align with New CSS team</td> </tr> <tr> <td>Internal IT resource availability</td> <td>Engage the services of a 3<sup>rd</sup> party System Integrator</td> </tr> <tr> <td>Legislators and regulators provide short timeline to implement project</td> <td>Work closely with regulators to monitor and understand requirements</td> </tr> </tbody> </table>		<b>Risk 1</b>	<b>Mitigation plan</b>	Changes to in flight parallel capital projects like New CSS	Align with New CSS team	Internal IT resource availability	Engage the services of a 3 <sup>rd</sup> party System Integrator	Legislators and regulators provide short timeline to implement project	Work closely with regulators to monitor and understand requirements
<b>Risk 1</b>	<b>Mitigation plan</b>								
Changes to in flight parallel capital projects like New CSS	Align with New CSS team								
Internal IT resource availability	Engage the services of a 3 <sup>rd</sup> party System Integrator								
Legislators and regulators provide short timeline to implement project	Work closely with regulators to monitor and understand requirements								
<p><b>Technical Evaluation / Analysis</b></p> <p>A comprehensive technical evaluation of the Privacy Readiness Program was completed during 2020 Phase 0 analysis by a third-party vendor. This analysis was utilized as the basis for scope, staffing, and cost estimates for the program. The Phase 0 effort included a gap analysis, system inventory and an enterprise technology roadmap to position the company to be in compliance with the imminent changes in the privacy laws.</p>									
<p><b>Project Relationships (if applicable)</b></p> <p>The Privacy Readiness Program is related to the Customer Data Sharing program, CSS replacement program, Customer Data and Analytics program, Customer Relationship Management (CRM) program, Virtual Assistants and the Company's existing Cyber and Data Governance programs.</p>									

### 3. Funding Detail

**Historical Spend (\$000)**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
<b>Capital</b>						
<b>O&amp;M</b>						
<b>Retirement</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	3,250	12,000	4,130	2,000	2,000
<b>O&amp;M*</b>		5,980	5,980	6,000	6,000
<b>Retirement</b>					

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor		2,300	575	475	475
M&S					
Contract Services	2,000	8,300	3,205	1,275	1,275
Other	1,250	1,400	350	250	250
Overheads					
<b>Total</b>	3,250	12,000	4,130	2,000	2,000

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M Savings</b>					
<b>O&amp;M Avoidance</b>					
<b>Capital Savings</b>					
<b>Capital Avoidance</b>					

**Total Ongoing Maintenance Expense by Year:**

	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
<b>O&amp;M</b>					
<b>Capital</b>					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Total Contingency:** Total contingency expense according to the Corporate Contingency Guidelines

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

DRAFT

**Privacy Readiness Request**

<b>Capital ('000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
System Integrator (Vendor) Consultants	\$4,000	\$1,000	\$250
Business and IT Implementation and Support	\$4,000	\$1,500	\$500
Technology Modifications Associated Fees	\$3,500	\$1,500	\$1,000
Other	\$500	\$130	\$250
<b>Total</b>	<b>\$12,000</b>	<b>\$4,130</b>	<b>\$2,000</b>

<b>O&amp;M ('000)</b>	<b><u>2023</u></b>	<b><u>2024</u></b>	<b><u>2025</u></b>
Law Privacy Governance Team	\$500	\$500	\$500
Business and IT Support	\$2,300	\$2,300	\$2,300
Software Maintenance Fees	\$3,180	\$3,180	\$3,200
<b>Total</b>	<b>\$5,980</b>	<b>\$5,980</b>	<b>\$6,000</b>

**Privacy Readiness Capital Request Detail**

<u>Capital ('000)</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
<b>Data Subject Rights (DSR) Management</b>			
Contract Services	\$2,000	\$1,000	\$500
IT Development and Services	\$1,000	\$600.6	\$300.6
<b>Consent Management (Enterprise-wide)</b>			
Contract Services	\$2,000	\$500	\$200
IT Development and Services	\$500	\$200	\$100
<b>PI Purpose Determination (Records of Processing Activities)</b>			
Contract Services	\$200	\$200	\$100
IT Development and Services	\$180	\$0	\$0
<b>PI /PII Inventory Automation</b>			
Contract Services	\$200	\$75	\$75
IT Development and Services	\$200	\$178	\$178
<b>3rd Party PI Inventory Automation, Technology Changes</b>			
Contract Services	\$1,500	\$300	\$100
IT Development and Services	\$1,000	\$200	\$100
<b>Records Management and Data Disposition</b>			
Contract Services	\$500	\$200	\$100
IT Development and Services	\$120		
<b>Privacy Impact Assessment Process Automation</b>			
Contract Services	\$500	\$400	\$120
IT Development and Services	\$300	\$1.4	\$1.4
<b>Privacy Notice, Policy links &amp; website Changes</b>			
Contract Services	\$100	\$50	\$50
IT Development and Services	\$200	\$0	\$0
<b>Security of PII (and where applicable PI)</b>			
Contract Services	\$800	\$100	\$50
IT Development and Services	\$400	\$25	\$25
<b>Privacy Policy and Procedures (Internal)</b>			
Contract Services	\$100	\$100	\$0
<b>Privacy Training and Awareness</b>			
Contract Services	\$200	\$0	\$0
<b>Total</b>	<b>\$12,000</b>	<b>\$4,130</b>	<b>\$2,000</b>

**Privacy Readiness O&M Request Detail**

O&M (\$000)	<u>2023</u>	<u>2024</u>	<u>2025</u>
<b>Data Subject Rights (DSR) Management</b>			
Business and IT Support	\$2,000	\$2,000	\$2,000
License Cost	\$500	\$500	\$500
<b>Consent Management (Enterprise-wide)</b>			
Business and IT Support	\$1,500	\$1,500	\$1,500
License Cost	\$200	\$200	\$200
<b>PI Purpose Determination (Records of Processing Activities)</b>			
Business and IT Support	\$280	\$280	\$280
License Cost	\$2	\$2	\$2
<b>PI /PII Inventory Automation</b>			
Business and IT Support	\$180	\$180	\$180
License Cost	\$2	\$2	\$2
<b>3rd Party PI Inventory Automation, technology changes</b>			
Business and IT Support	\$170	\$170	\$170
License Cost	\$6	\$6	\$6
<b>Records Management and Data Disposition</b>			
Business and IT Support	\$247	\$247	\$247
License Cost	\$8	\$8	\$8
<b>Privacy Impact Assessment Process Automation</b>			
Business and IT Support	\$400	\$400	\$400
License Cost	\$5	\$5	\$5
<b>Privacy Notice, Policy Links &amp; Website Changes</b>	\$0	\$0	\$0
Business and IT Support	\$172	\$172	\$172
License Cost	\$6	\$6	\$6
<b>Security of PII (and where applicable PI)</b>			
License Cost	\$102	\$102	\$122
<b>Privacy Policy and Procedures (Internal)</b>			
Contract Services	\$100	\$100	\$100
<b>Privacy Training and Awareness</b>			
Contract Services	\$100	\$100	\$100
<b>Total</b>	<b>\$5,980</b>	<b>\$5,980</b>	<b>\$6,000</b>

**O&M Human Resources**

<b>Law</b>	<b>Information Technology</b>	<b>Customer Operations</b>
Privacy Officer	Developers	Program Manager
Project Specialist	Project Specialist	Project Manager
	Architects/Leads	System Specialists
	System Specialists	

**Sample Roles for Project Implementation**

<b>Organization</b>	<b>Staff Type</b>	<b>Role</b>
Con Edison	Business Staff	Executive Sponsor
Con Edison	Business Staff	Program Manager
Con Edison	Business Staff	Subject Matter Expert (SME)
Con Edison	Business Staff	Product Owner
Con Edison	IT Staff	Infrastructure/Database (DB) Architects
Con Edison	IT Staff	Solution Architect
Con Edison	IT Staff	Integration Team Lead
Con Edison	IT Staff	User Acceptance Testing (UAT) Tester
Vendor/SI	Business Staff	Project Manager/Scrum Master
Vendor/SI	Business Staff	Project Manager Scrum Master
Vendor/SI	Business Staff and IT Staff	Lead System Architect (LSA)
Vendor/SI	Business Staff	Lead Business Architect (LBA)
Vendor/SI	It Staff	Pega Senior System Architect (SSA) - Lead
Vendor/SI	It Staff	Pega Senior System Architect (SSA)
Vendor/SI	It Staff	Pega System Architect (SA)
Vendor/SI	It Staff	Data Solution Architect
Vendor/SI	It Staff	Data Architect
Vendor/SI	It Staff	Tech Lead
Vendor/SI	It Staff	Tech Lead
Vendor/SI	It Staff	Metadata Developers
Vendor/SI	It Staff	Artificial Intelligence(AI)/Machine Learning (ML) Lead
Vendor/SI	It Staff	Artificial Intelligence Developers
Vendor/SI	It Staff	Test Engineer
Vendor/SI	It Staff	Quality Assurance Consultant

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Retail Access System Replacement	
Project/Program Manager: Salvatore Flagiello	Project/Program Number (Level 1): 25543066
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 6 / 2024	Estimated Date In Service: 5 / 2026
<b>A. Total Funding Request (\$000)</b> Capital: 33,242 O&M: 7,060	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  Beginning in 2024, after implementation of the new customer service system (“New CSS”), the Company proposes to replace its legacy Retail Access applications that were developed over 20 years ago in the early stages of the Retail Access market in New York State. Between 2024 and 2026, the Company will select and hire a knowledgeable and experienced system integrator, select a technology solution, and initiate system development, including testing, training, and overall change management.  The scope for this project is focused on the continuing the Company’s functions that enable the Retail Access market for electric and gas residential and commercial customers. This project does not include the Company’s functions to schedule natural gas on behalf of all approved Gas Marketers. For information on the Company’s plans related to Gas Marketers, please see the Gas Infrastructure, Operations and Supply Panel’s testimony.  The key focus areas of the Retail Access System Replacement project are the systems that enable the following market interactions with energy service companies (ESCOs) and Electronic Data Interchange (EDI) providers:  <ul style="list-style-type: none"> <li>- Account enrollments, de-enrollments, reinstatements, billing option selections, and supply price changes</li> </ul>	

- Requests for customer historical and monthly usage and the associated responses
- Exchange of customer billing cycle usage and billing determinants
- Exchange of customer profile usage
- Processing of transactions to effect changes to customer accounts requested by ESCOs
- Notifications to ESCOs of customer/account information changes initiated by the Company
- Management of ESCOs' account information, including the total number of customers per entity, pending enrollments and de-enrollments, and rejected transactions
- Purchase of receivables

This project will seek to implement a robust new platform that is adaptable to meet future needs through modern technologies and infrastructure.

The capital funding requested will support the replacement of the existing Retail Access systems and includes labor and accounts payable costs associated with implementation of the capital work described. These costs cover internal labor, vendor costs, and software and hardware costs, as needed. To support of the new system, the Company proposes O&M funding to maintain the technology infrastructure, software license fees, and processes for the focus areas noted above.

The high level timeline for this effort is as follows:

- 2024:
  - o RFP for technology solution and System Integrator,
  - o Selection of technology solution and System Integrator
- 2025:
  - o Requirement gathering
  - o Design and Development
- 2026:
  - o Testing
  - o Release

**Justification Summary:**

The Retail Access Program was established in furtherance of the New York Public Service Commission's (PSC) goal of increasing competition in the energy markets following deregulation. The Company has supported the Retail Access program through engagements with the growing number of ESCOs and customers who elect to enroll in the program. Since the inception of the program, the Retail Access market in the Company's service territory has grown to over 600,000 electric and gas customers and over 200 ESCOs.

The introduction of the Electronic Data Interchange (EDI) framework in 2001 required the Company to develop a suite of Retail Access-related applications that would facilitate daily market transactions with participating ESCOs. This suite of applications - custom built over 20 years ago, when the market was not as robust and customer adoption had not approached current levels - remains critical to our ability to support our customers' choice and ESCO participation. However, the technology used to build the applications is now considered obsolete.

The combined number of EDI transactions for account changes, price changes, and monthly and historical usage requests is now close to 14.5 million per year. Additionally, the Retail Access program's rules and requirements – reflected in the PSC's Uniform Business Practices for ESCOs and utilities and numerous PSC orders in multiple proceedings – have evolved throughout the years. The existing suite of applications cannot scale to meet current demands in an already-complex market, let alone future rate or billing innovations that may be required to facilitate the clean energy transition.

This combination of complex rules and requirements, growth in volume of transactions and aging technology is causing Retail Access transactions to fail more frequently. It is also more difficult to identify the points of failure, and the time for recovery is increasing. While the Company has made a concerted effort over the years to enhance its processes, modify the applications, and implement monitoring and alerts for when transactions fail to process, there are limitations in what can be achieved because the technologies used to build these applications are obsolete and do not integrate with more modern monitoring tools.

To maintain compliance with the Uniform Business Practices and PSC orders as they relate to the EDI requirements and the Company's obligation to respond timely to ESCOs, the Company must replace its legacy applications and improve operational efficiencies through the Retail Access System Replacement project.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

As the clean energy transition moves forward, the foundational systems proposed in this project will allow the Company to facilitate customer choice in the Retail Access market including clean energy options and alternative rates. This is consistent with the Company's ongoing commitment to facilitating the Retail Access market and customer choice and its support for achieving the State's clean energy goals.

**2. Supplemental Information**

**Alternatives**

The alternative to the Retail Access System Replacement project is to continue with the as-is suite of applications. This is not a recommended alternative considering the ongoing challenges that are leading to operational inefficiencies and customer dissatisfaction.

**Risk of No Action**

The risk of not pursuing the Retail Access System Replacement project is that current systems will eventually fail and the Retail Access market will only be able to continue with resource-intensive manual intervention.

**Non-Financial Benefits**

N/A

<p><b>Summary of Financial Benefits and Costs (attach backup)</b></p> <p>1. Cost-benefit analysis (if required)</p> <p>N/A</p> <p>2. Major financial benefits</p> <p>N/A</p> <p>3. Total cost:</p> <p>Capital: \$33.242M O&amp;M: \$7.06M</p> <p>4. Basis for estimate</p> <p>The Company has forecasted capital and O&amp;M costs based on its best knowledge and projects for similar efforts. Additional detail on resources and roles that contributed to the projected costs in this whitepaper can be found in Exhibit__(CO-44) Retail Access System Replacement Request.</p> <p>5. Conclusion</p> <p>As described above, this project is essential to the continued functioning of the Retail Access market and therefore should be undertaken at the funding levels proposed.</p>									
<p><b>Project Risks and Mitigation Plan</b></p> <table border="1"> <thead> <tr> <th><b>Risk</b></th> <th><b>Mitigation plan</b></th> </tr> </thead> <tbody> <tr> <td>Changes to timing of in-flight capital projects like New CSS</td> <td>Align with New CSS team</td> </tr> <tr> <td>Internal resource availability</td> <td>Engage the services of a third party system integrator</td> </tr> <tr> <td>Integration testing with third parties such as ESCOs and EDI providers</td> <td>Early engagement with third parties and a rigorous testing plan</td> </tr> </tbody> </table>		<b>Risk</b>	<b>Mitigation plan</b>	Changes to timing of in-flight capital projects like New CSS	Align with New CSS team	Internal resource availability	Engage the services of a third party system integrator	Integration testing with third parties such as ESCOs and EDI providers	Early engagement with third parties and a rigorous testing plan
<b>Risk</b>	<b>Mitigation plan</b>								
Changes to timing of in-flight capital projects like New CSS	Align with New CSS team								
Internal resource availability	Engage the services of a third party system integrator								
Integration testing with third parties such as ESCOs and EDI providers	Early engagement with third parties and a rigorous testing plan								
<p><b>Technical Evaluation / Analysis</b></p> <p>N/A</p>									
<p><b>Project Relationships (if applicable)</b></p> <p>This project intersects with numerous customer service-related platforms including New CSS, the EDI platform and the Transportation Customer Information System.</p>									

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital						
O&M						
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital			3,842	21,700	7,700
O&M*				2,160	4,900
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor			438	898	299
M&S					
Contract Services			3,192	19,861	7,004
Other				650	300
Overheads			212	291	97
<b>Total</b>			3,842	21,700	7,700

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

### 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

**Retail Access System Replacement Request**

<b>Capital</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
System Integrator (Vendor) Consultants	\$0	\$2,688,000	\$14,677,632
Application Development Contractors	\$0	\$504,000	\$4,032,000
Testing resources	\$0	\$0	\$1,152,000
Business and IT Implementation and Support	\$0	\$649,522	\$1,190,292
Other	\$0		\$648,078
<b>Total (Rounded)</b>	<b>\$0</b>	<b>3,842,000</b>	<b>21,700,000</b>

<b>O&amp;M ('000)</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
System Integrator (Vendor) Consultants	\$0	\$0	\$960
Application Development Contractors	\$0	\$0	
Testing resources	\$0	\$0	
Business and IT Support	\$0	\$0	
Other	\$0	\$0	\$1,200
<b>Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2,160</b>

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Contact Center Cloud	
Project/Program Manager: Sebastian Cacciatore	Project/Program Number (Level 1): 25524247
Status: <input checked="" type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 2025	Estimated Date In Service: 2026
<b>A. Total Funding Request (\$000)</b> Capital: \$2,000 O&M: \$1,000	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  In 2026, the company’s Customer Experience Center infrastructure will reach an operational age of ten years. According to research leaders, companies with mission-critical IT-related systems and assets in service for such a period must evaluate the risks associated with continued use of their infrastructure. Evaluating these risks in Customer Operations requires an assessment of the contact center systems and technology stack to identify which applications/systems and technologies are nearing the end of their lives, and where there might be opportunities to rethink operations, processes, and architecture to take advantage of cloud services. Ongoing evaluations have indicated that it is most beneficial, financially and operationally, for the Company to transition our platform to a vendor-provided Software as a Service (SaaS) cloud solution beginning in 2025.  The Contact Center Cloud program seeks to replace on-premises contact center voice applications, systems and related infrastructure with cloud-based SaaS services for a user population of more than 1,000 employees. The existing on-premises contact center suite of voice applications and systems processes more than 15 million inbound and outbound interactions annually and consists of the following key components currently serviced by infrastructure at two Company server farms:	

- Speech-enabled Interactive Voice Response (IVR) system allowing customers to perform a variety of self-service transactions, ranging from bill payments to outage reporting, via telephone. Customers can interact with the IVR using their voice or telephone keypad.
- Automatic Call Distribution (ACD) routing engine, which allows various types of inbound and outbound calls and email interactions to be intelligently routed throughout the contact centers, connecting customers to the appropriately skilled next available Customer Service Representative (CSR).
- Call and screen recording technology and infrastructure that records all customer service calls and screen content under our record retention policies.
- Computer Telephony Integration (CTI) technology allowing for screen-pop functionality so that CSRs are presented with caller information, including account data, reason for call, and other information that helps CSRs handle calls efficiently.
- Robust reporting and analytics that provides access to a variety of out-of-box and customized reports that the Company uses to monitor and track call volume, real-time queuing activity, and much more.

In the current rate plan, the Company commenced an effort to perform a proof of concept of moving the contact center platform to the cloud and use it for disaster recovery purposes. The Company successfully completed this effort and will use these lessons as it starts planning to migrate the full contact center production platform to the cloud in the 2023-2025 time period.

We anticipate a 2-year window from identifying a SaaS provider to the transition to a cloud-based platform.

- Q1 2025 – Vendor selection and award contract
- Q2 2025 - Discovery
- Q3 2025 through Q1 2026 – Design and implementation
- Q2 2026 through Q4 2026 – Training, testing and go live

The Company is requesting \$2,000,000 capital funds in 2025 and \$1,000,000 in O&M funds in 2026 to support the move to a cloud-based platform.

The Company will use capital funding for development and vendor costs associated with the initial effort to transition the environment to the cloud. The Company proposes O&M funding for ongoing licensing and maintenance costs. For additional details on the proposed funding, please see Exhibit\_\_(CO-46) Contact Center Cloud Request.

**Justification Summary:**

The Company's on-premises contact center systems depend on hardware and software infrastructure owned by the Company. The existing contact center voice applications are supported by infrastructure residing at two Company-owned server farms. On-premises contact center solutions are becoming out of date and require high availability/reliability infrastructure, which is expensive to own and maintain. The Company requires upfront capital to design, purchase, implement, and test the hardware, software, and applications.

Post go-live, O&M dollars are required to fund service contracts and salaries of personnel who support, maintain, and upgrade all the infrastructure (hardware and software) needed during the lifespan of the applications.

In contrast, the proposed SaaS solutions use a pay-as-you-go model for service subscriptions, and all the technology and infrastructure are owned and maintained by the SaaS provider. An obvious benefit of subscribing to a SaaS contact center solution is not having to own and maintain complex layers of infrastructure as you would with an on-premises model. For all critical applications, Con Edison's contact center uses three types of physical infrastructure environments, including development, testing, and production environments. These are needed to support the daily operational needs of the organization and system changes initiated by business areas or regulatory mandates. Having a third-party vendor maintain and upgrade the platform achieves cost efficiencies over maintaining the on-premises infrastructure.

In addition to cost efficiencies associated with moving to a cloud-based platform, the transition will allow the Company to keep up with industry-leading technologies while investing in a resilient, reliable, and agile product. Given the critical nature and function of the contact center, it is important that cyber protections are well designed and monitored. As the platform is moved to the cloud, we will achieve enhanced cybersecurity capabilities due to best practices implemented by SaaS providers, while also achieving a more geographically diverse design.

Finally, moving to the cloud supports the Company's ability to scale the platform during period of high use, such as after a major storm. This will support increased availability for platform users and customer traffic during the peak usage period and allow for this scaling in a cost-efficient manner.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

Migration of the Company's on-premises contact center infrastructure to a cloud-based software as a service platform will allow the Company to keep up with industry-leading telecommunications technologies while investing in a resilient, reliable and agile product. This effort is aligned with the Company's long-range plan emphasis on strengthening core operations so that customers continue to benefit from safe, reliable and resilient delivery of energy.

## 2. Supplemental Information

**Alternatives**

An alternative to a cloud platform is continuing to invest in the on-premises infrastructure. However, on-premises systems require continuous updates and maintenance, which takes time and personnel away from the business needs and is not on par with emerging industry trends. Additionally, the ongoing costs of maintaining the on-premises platform are higher than moving to the cloud.

**Risk of No Action**

Risk 1

Continual use of the existing I3 product and infrastructure, with no further investments, will eventually lead to an obsolete platform and system that is no longer supported by vendors and hinders our ability to service customers over the phone. This includes our ability to effectively manage and respond to emergency situations.,

Risk 2

Customer satisfaction will decrease if the Company remains in the past and does not keep up with industry-leading trends and technologies.

Risk 3

System outages resulting from obsolete platforms can tarnish the Company's image and cause a loss of trust with our customers and the communities we serve.

**Non-Financial Benefits**

- More functionality and flexibility in operating the call center.
- Alignment with other channels throughout the Company, including further enhancement and continued development with Artificial Intelligence and existing automation technologies offered through the IVR.
- Improved cybersecurity.
- Improved relationships with external stakeholders and customers by implementing the most reliable and current platform and keeping up with emerging industry trends.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital: \$2,000,000

O&M: \$1,000,000

4. Basis for estimate

The Company leveraged its experience with SaaS to estimate costs associated with moving to the cloud and the professional services involved in maintaining the platform. Although cloud-based solutions require less capital for infrastructure, the applications that reside on

such infrastructure are customized and need funding to be built in the cloud and integrated with external systems to satisfy business rules and customer needs .

The Company makes its capital estimate based on historical knowledge of costs associated with developing IVR and ACD applications via third-party professional services. The Company explored contingency plans before COVID-19 to assess basic ACD solutions in the event of an on-premises failure. During the COVID-19 pandemic, we studied the O&M costs associated with a cloud platform, though the full production environment would require a more sophisticated ACD solution which would increase O&M cost. Furthermore, there will be additional O&M costs associated with IVR functionality.

## 5. Conclusion

This project is critical to the continuity of quality customer service. Transitioning to a cloud-based platform in 2026 will coincide with the 10-year lifespan of our current on-premises Customer Experience Center infrastructure. Leading industry research has shown that after 10 years, mission-critical IT-related systems and assets should be reevaluated. Moving to a cloud-based platform will reduce costs; increase reliability, resiliency, flexibility and safety; and improve cybersecurity. This will allow employees to spend more time supporting the Company's business needs, increase customer satisfaction and improve relationships with stakeholders.

## Project Risks and Mitigation Plan

Risk 1 More extensive front end, mid-tier, and back-end development services than initially anticipated

Mitigation plan: Diligent discovery to accurately define scope of work to avoid unanticipated changes that may cause delays with subsequent phases of the project

Risk 2 Challenges with training the user community leading to setbacks in go live

Mitigation plan: Leverage best practices around training methods and training materials to achieve desired outcome and allow ample time for the user community's training.

## Technical Evaluation/ Analysis

The Company already uses cloud services, and the IT organization forecasts that cloud technology will continue to play an important role in the overall IT strategy. As on-premises infrastructure and maintenance costs increase and as cloud services become more prevalent, robust, and affordable, the transition to the cloud becomes a more obvious choice. Our analysis reveals manufacturers of existing voice products used in the contact center are already transitioning their portfolio of products to the cloud. Additionally, as critical contact center suppliers and vendors who currently have a footing in the cloud further plans to merge, there can be a significant benefit to the Company to help reduce the cost of migrating to the cloud.

**Project Relationships (if applicable)**

- Customer Service System
- DCX
- Virtual Assistant
- Customer Data and Analytics
- Back Office Automation and Workforce Management

### 3. Funding Detail

**Historical Spend (\$000)**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital						
O&M						
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital				\$2,000	
O&M*					\$1,000
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor					
M&S					
Contract Services				\$2,000	
Other					
Overheads					
<b>Total</b>				\$2,000	

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

Contact Center Cloud Request

O&M

		Operating System	Server Size	Quantity	Monthly Recurring Cost	Est. Annual Cost
<b>O&amp;M Platform</b>	Production	Windows	Extra Large	26	\$400	\$124,800
	Production	Windows	Large	20	\$325	\$78,000
	Production	Linux	Extra Large	4	\$415	\$19,920
	Development/ Test	Windows	Small	10	\$185	\$22,200
	Development/ Test	Linux	Small	2	\$200	\$4,800
<b>O&amp;M Services</b>	Concurrent License Subscription	NA	NA	550	\$165	\$1,089,000
	Named License Subscription	NA	NA	150	\$200	\$360,000
	Dedicated Support Resources	NA	NA	1	\$25,000	\$300,000
Subtotal (Rounded)						\$2,000,000
Less current funding for on-premises solution						(\$1,000,000)
Request for Contact Center Cloud Migration						<b>\$1,000,000</b>

**Capital**

	<b>Est. Quantity</b>	<b>Est. Labor Rate</b>	<b>Est. Annual Cost</b>
<b>Discovery</b>	500	\$225	\$112,500
<b>Design &amp; Documentation</b>	1400	\$250	\$350,000
<b>Software Development, Installation &amp; Configuration</b>	3000	\$250	\$750,000
<b>Testing &amp; Training</b>	3500	\$225	\$787,500
<b>Total Capital Cost:</b>			<b>\$2,000,000</b>

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Site Safety Program	
Project/Program Manager: Art Hudman	Project/Program Number (Level 1): 10101045-0010/ 25524248
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: January 2023	Estimated Date In Service: September 1, 2023
<b>A. Total Funding Request (\$000)</b> Capital: \$1,400 O&M: \$	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period:</b> (Years/months) (If applicable)
<b>Work Description:</b>  The Company has a requirement in its Electric Emergency Response Plan filed with the Public Service Commission (PSC) to protect the public from downed wires during an overhead electric emergency. To meet this requirement and protect the public, the Company has developed a comprehensive Site Safety program that manages the resources needed to address reports of downed wires. Specifically, Site Safety resources are dispatched to a downed wire location, make the area safe and stay at the location until additional Company personnel arrive who have the means to fix or de-energize the downed wire. Approximately 3,000 Company employees have storm assignments that relate to Site Safety.  The Company proposes funding to update to all Site Safety program training material (e.g., eLearnings, training videos, customer materials) and system applications (Site Safety Management System and Site Safety Mobile App) in the 2023-2025 time period. The latest update to Site Safety training and systems took place in 2019. Several improvements were also identified following Tropical Storm Isaias in 2020. Additional updates to the Site Safety systems and mobile app are required to integrate with new mobile technology, meet cybersecurity requirements and improve ease of use and efficiency. The Company proposes to make these enhancements so that the many employees performing Site Safety can do so safely, efficiently and in accordance with changes to the Site Safety process that have already been communicated to the PSC.  Enhancements to the Site Safety Management System and mobile app will include: <ul style="list-style-type: none"> <li>• The capability to integrate with non-company personnel (i.e., contractors) who support Site Safety efforts.</li> </ul>	

- Development of automated responses and tracking to more effectively monitor deployment of wire guards in the field.
- Reporting improvements, which will replace the current manual process of exporting information from various systems and sorting through data to determine Site Safety post storm performance for PSC reporting purposes (i.e., Storm Scorecard and Part 105 reports).
- Improved ability to track downed wire tickets and wire guard resources and account for Site Safety personnel's time in the field. The management system will also allow for automatic distribution of work/tickets to wire guards, eliminating manual distribution.
- Integration with the Company's emergency callout system, which asks employees to report for Site Safety emergency assignments, including the ability to automatically mark employees active for a shift when they respond "yes" to the callout.
- Enhanced location information for downed wires to enable more accurate routing of personnel.
- Improvements to in the mobile app for personnel to view downed wire ticket remarks.
- A Site Safety tutorial incorporated into the mobile app.
- Ability for field personnel and contractors to take and send photos of downed wire locations and equipment to the Company's internal applications.

**Justification Summary:**

Enhancements to technology systems will enable the Company to more efficiently respond to downed wire reports from municipal authorities and from Company forces. In the aftermath of Tropical Storm Isaias, the Company evaluated response time to downed wires and identified potential improvements to both technology and processes that would facilitate better performance. For example, the Company found that there were delays in releasing wire guards due to unexpected technical issues in the existing Site Safety Management System.

The identified enhancements to the Site Safety Management System and Mobile Application will help the Company respond to downed wires faster and more efficiently and protect customer and public safety while crews work to restore power as quickly and safely as possible. These improvements are all the more necessary as we anticipate an increase in overhead outage events in the future due to climate change.

The proposed investments will also enhance communication between Site Safety teams in the field (both Company personnel and contractors) and those in the office, which in turn will increase transparency between field personnel and the community, as wire guards are often approached by local residents with questions about power restoration. The more information that is available, the better equipped the Company will be to protect the public and provide up-to-date information.

Additionally, it is critical to update and maintain the various Site Safety training documents so that all employees and contractors are trained on new processes, system and application features and can stay informed and perform their work safely. Keeping Company employees knowledgeable about the work they are performing during a storm is essential to keeping themselves and the public safe when watching downed wires.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

Consistent updates of processes, training guides, Site Safety Management System and Site Safety Mobile Applications will help the Company achieve its goal of responding to weather-related events in

a safe and swift manner and assigning site safety representatives in a timely manner in conjunction with the Emergency Response Plan (ERP). Remaining stagnant in procedures and technology will cause safety risks to employees and the public, increased restoration times and cause the Company to not be in compliance with its ERP.

## 2. Supplemental Information

### Alternatives

#### Alternative 1 description and reason for rejection -

The Company could choose not to enable integrations so contractors can use the technology. However, this would leave a significant portion of our Site Safety workforce without access to crucial technologies that will ensure all deployed wire guards are accounted for and have access to information critical to safe and timely emergency response.

### Risk of No Action

#### Risk 1

Leaving eLearning modules and site safety videos without crucial updates to processes will result in uninformed personnel who are not aware of process changes. This will put themselves and the public at risk. It will also cause the Company to be out of compliance with its ERP.

#### Risk 2

Not updating the Site Safety technology will delay restoration times and cause delays in wire guards arriving at downed wires. It will also keep the many contractors and non-company personnel we work with unable to access our technology or receive important information. This is a safety issue that will negatively impact employees, non-company personnel and the public.

#### Risk 3

If there are not any enhancements to Site Safety Management System and the Site Safety Mobile Application, some process functions will continue to be performed manually. This is a time-consuming process that could result in safety issues, delayed restoration time and PSC reporting challenges.

### Non-Financial Benefits

Updating the Site Safety training materials and implementing system enhancements will allow all Company personnel and contractors to become more comfortable with their role and the enhanced process updated based on lessons learned from Tropical Storm Isaias. System enhancements will allow more process automation and efficient dispatching and tracking of wire guards. Improved information flow will allow wire guards to provide the best available information to the public.

### Summary of Financial Benefits and Costs (attach backup)

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital - \$1,400,000  
O&M - \$0

4. Basis for estimate

The estimate is based on costs related to updating training materials and costs related to enhancing the Site Safety Management System and a compatible mobile application system. Ongoing enhancements to the Management System and mobile application will be necessary to keep up with technological trends and continue to enable safe, efficient and timely responses to Site Safety events.

5. Conclusion

The Site Safety Program is necessary as it provides safety to the public by guarding down wires during weather events that impact the overhead electric system. The updates to the training related to the Site Safety program are crucial to informing Company employees on their role during a weather event and safety related topics to keep in mind while performing Site Safety duties.

The updates to the Site Safety Management System and mobile application will allow dispatchers to better track and keep accountable wire guards in the field and efficiently utilize personnel to keep the public and employees safe and relieve crews and damage assessors that may be the first on site. Additionally, the updates will allow for smoother interactions with contractors, as they will have access to the Site Safety Management System and mobile applications.

**Project Risks and Mitigation Plan**

Risk 1

Updating Site Safety trainings is more costly or takes longer than expected.

Mitigation plan

Bi-monthly meetings with The Learning Center and vendor to ensure that the content is correctly updated and that the updates stay within budget.

Risk 2

There may be some information technology issues that prevent certain technology updates from being implemented or additional costs incurred based on the work required. Integration from one system to another requires a lot of initial time, coding, and analysis to ensure that all the correct information is being captured and presented to the user.

Mitigation plan

Weekly meetings with the various organizations to ensure that progress is being made on the system updates and address any issues that may arise.

**Technical Evaluation / Analysis**

N/A
Project Relationships (if applicable)
N/A

### 3. Funding Detail

**Historical Spend (\$000)**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital						
O&M						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital		350	350	350	350
O&M*					

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor		25	25	25	25
M&S		25	25	25	25
Contract Services		300	300	300	300
Other					
Overheads					
<b>Total</b>		350	350	350	350

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Credit Modeling Tool	
Project/Program Manager: Kirsy Veloz	Project/Program Number (Level 1): 10103465/0001
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: February 2022	Estimated Date In Service: February,2022
A. Total Funding Request (\$000) Capital: O&M: \$1,600	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>Con Edison has been using a predictive analytics credit modeling and customer behavior risk scoring tool since 2018. The tool helps identify accounts most likely to close with a high balance and prioritizes them for field collection activities, which helps to mitigate uncollectible bills losses which, in turn, benefits all customers. Similarly, it assigns a low score to customers who are likely to pay and will not require a field visit, helping to avoid customer disruption and allowing the Company to maximize the efficient use of field resources. The existing behavioral score algorithm uses internal account attributes, factors, and patterns to make three main predictions and translates these into a composite overall risk score. The three predictions are: 1) whether an account will close and be set to "Final" status with the existing balance, 2) the time between field collection and "Final" status, and 3) the total amount due at the time of the account's "Final" status. The score is assigned when an account is ready to be fielded to help prioritize accounts for field collections.</p> <p>The company proposes funding to maintain and enhance the credit modeling tool, which will allow for more frequent updates to the model and enable more accurate field prioritization. In addition to routine maintenance and updates, enhancements will include the use of machine learning models that capture relationships among known data factors and use data mining, statistics, modeling, and artificial intelligence to make predictions. In addition, new data will be incorporated into the model to improve the accuracy of the algorithms. The Company plans to work on this effort with a vendor, Experian, who is a leader in this area.</p> <p>The requested O&amp;M funding will be used to pay for vendor services and support internal staffing to maintain and enhance the model as noted.</p>	
<b>Justification Summary:</b>	

The proposed maintenance funding and enhancements to the credit modeling tool will help ensure the Company can continue to manage field collections resources in an effective manner and achieve the resulting benefits for customers. These benefits include the mitigation of overall uncollectible bill write-offs, which place upward pressure on all customers rates if not managed properly. The Public Service Commission expects utilities to effectively manage customer arrears and field collections and take prudent steps to collect balances from customers when all other avenues have been exhausted (including working with customers on flexible payment agreements and following the provisions of the Home Energy Fair Practices Act). The Commission has reinforced this expectation by proposing and ultimately adopting in the Company's current rate plan an incentive for the Company to reduce uncollectible bill write-offs. The credit modeling tool is consistent with the Commission's expectation that the Company will act prudently to collect customer arrears.

The Credit Modeling Tool reduces uncollectible bill write-offs by effectively identifying customers who have arrears that are likely to result in uncollectible bills and prioritizing these accounts for field collection. This in turn prevents additional arrears and results in lower overall balances for accounts that do become uncollectible. In addition, the credit modeling tool helps identify customers who are likely to cure their arrears or enter into payment agreements avoid disruption of service. Since 2018, the Company has validated that the credit modeling tool mitigates uncollectible bill write-offs, while treating customers fairly.

The proposed enhancements to the Credit Modeling Tool will be important in the upcoming years to help reduce the risk of uncollectible bills resulting from the COVID-19 pandemic. As of December 31, 2021, residential customers in arrears greater than 60 days increased approximately 40% compared to 2019 and accounts receivable balances have increased over 147% compared to 2019. The impact is even higher on commercial customers with an increase of over 95% of customers in arrears over 60 days and balances increased approximately 417% when compared to pre-pandemic levels in 2019. Given the unprecedented number and balances of customers in arrears, proactively using the Credit Modeling Tool to identify customers early in the arrears process will assist in maximizing our field resources and mitigating uncollectible bills, providing value to all customers.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

This tool will help mitigate the Company's risk of customer non-payment resulting in final bill balances that must be written off to uncollectible. This is directly aligned with the Company's long range plan objective of managing costs and the associated bill increases.

**Alternatives**

The alternative to the proposed maintenance and enhancement funding is to use the current credit modeling tool without proper maintenance and enhancements. This would create the potential for the tool to no longer work properly due to the lack of updates and maintenance. The Company would then lose the value this tool provides in reducing uncollectible balances.

**Risk of No Action**

Continued reliance on the existing credit tool would prevent the Company from leveraging data attributes, factors, and patterns to more accurately predict which customers are likely to have an uncollectible final bill balance. By not using advanced machine learning technology, this will result in a suboptimal credit and collections process that will not mitigate the forecasted impact of COVID-19 on uncollectible bills. In turn, this will lead to upward pressure on rates for all customers.

**Non-Financial Benefits**

The non-financial benefits of the credit modeling process include the fact that the process creates a fair and repeatable process for field collection prioritization, which incorporates the fact that some customers will resolve their arrears and are at low risk to result in uncollectible write-offs.

**Summary of Financial Benefits and Costs (attach backup)****1. Cost-benefit analysis (if required)**

N/A

**2. Major financial benefits**

N/A

**3. Total cost**

O&M - \$1.6M

**4. Basis for estimate**

Based on Experian licensing fees for data on projected number of transactions annually, as well as internal staffing support. On an annual basis approximately \$260,000 is required for Experian fees, while \$140,000 is required for internal staffing support.

**5. Conclusion**

The technology and data strategy proposed in this program will enable the Company to offer proactive help to customers earlier in the credit cycle, making it less likely that they will fall behind on payments and have a final bill balance that is deemed uncollectible. This outcome is in the interest of both the customers in arrears and all other customers that carry the cost of uncollectible bill write-offs. Given that the Company estimates that COVID-19 will have a financial impact similar to that of the 2008 recession, now is the right time to make this investment.

<p><b>Project Risks and Mitigation Plan</b></p> <p>Risk 1 A key risk is that the algorithms produce unintended consequences due to the algorithms not operating as intended after they are updated.</p> <p>Mitigation Plan The Company will mitigate this risk with an extensive testing plan and quality control review.</p>
<p><b>Technical Evaluation / Analysis</b></p> <p>N/A</p>
<p><b>Project Relationships (if applicable)</b></p> <p>N/A</p>

### 3. Funding Detail

#### Historical Spend

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital						
O&M					N/A	
Regulatory Asset						

#### Total Request (\$000):

#### Total Request by Year:

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital					
O&M*		\$400	\$400	\$400	\$400
Regulatory Asset					

#### Capital/Regulatory Asset Request by Elements of Expense:

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor					
M&S					
Contract Services					
Other					
Overheads					
<b>Total</b>					

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Replevin and Final Bills	
Project/Program Manager: Kirsy Veloz	Project/Program Number (Level 1): Final Bills 10103465/0001 Replevin 24374812/0001
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 2023	Estimated Date In Service: N/A
A. Total Funding Request (\$000) Capital: O&M: \$29.2M	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>A temporary increase in operations and maintenance (O&amp;M) expenses is being proposed to support increased costs in the Inactive Gas Replevin and Final Bills processes in 2023 and 2024. These processes are intended to protect customer and public safety and reduce uncollectible losses, respectively, which benefits all customers.</p> <p>The Inactive Gas Replevin process is used as a final resort to ensure the safety of the Company’s customers and mitigate operational, financial, and regulatory risks associated with unlocked gas service without a responsible party. The process involves the request of an order through the courts to remove a meter when we are not able to gain access to the premises and are not able to cut service in the street. For each request the Company pays court fees and in some cases marshal fees to physically remove the meter.</p> <p>The Final Bill process is the Company’s last attempt to collect unpaid bills. The Company works with collection agencies using to help collect from customers who closed an account with an unpaid balance and have not opened a subsequent account. When the customer closes an account and does not open a new account in the Company’s service territory after a period of approximately 41 calendar days, Con Edison refers the account to a collection agency to collect outstanding balances on the Company’s behalf for a commission.</p> <p>The Company anticipates increased costs in these two areas due to the COVID-19 pandemic. In the case of Inactive Gas Replevin, the Company has not been able to pursue court requests because courts have been closed. As such, there is a growing list of cases that will need to be addressed once the courts re-</p>	

open, and the Company intends to pursue these cases expeditiously in order to protect customer and public safety.

Similarly, the Company voluntarily suspended collections activity for all customers in March 2020 and plans to slowly resume the Final Bill process in 2022. During the disconnection moratorium both residential and commercial customers have collectively built up a very large arrears balance. As of December 31, 2021, residential customers in arrears greater than 60 days increased approximately 40% compared to 2019 and accounts receivable balances have increased over 147% compared to 2019. The impact is even higher on commercial customers, with customers in arrears over 60 days increasing more than 95% and balances increasing approximately 417% compared to pre-pandemic levels in 2019. The Company anticipates that this will result in a backlog of Final Bill cases when collections resume. It is important that the Company pursue these Final Bill cases in order to mitigate an increase in bad debt write-offs, which ultimately are paid for by all customers via uncollectible bill costs in rates.

To meet these needs the Company proposes temporary O&M increases of \$1.7 million in 2023 and \$1 million in 2024.

**Justification Summary:**

Increasing funding for Inactive Gas Replevin and Final Bill costs is in the best interests of the Company's customers' safety and financial well-being.

Con Edison employs a multilevel program to manage its inactive gas accounts including landlord/occupant outreach, in-person visits by field personnel to attempt to identify a premises' occupant, discontinuing gas service at the meter or cutting and capping service from the street, and the replevin process wherein the Company petitions the courts to secure its property, the gas meter, from a premises. This final step is necessary to protect the safety of our customers and the public and mitigate operational, financial, and regulatory risks associated with unlocked gas service without a responsible party. Without an increase in funding for replevin-related fees, the Company risks a backlog of inactive gas cases that will remain open as the Company continues to leverage the replevin process within the limits of its existing budget. Recent DPS Staff gas safety audit findings (see, e.g., DPS Staff's May 21, 2019 letter in Case 16-G-0061) highlight the importance of accessing and locking inactive gas meters, as well as the risk in letting meters remain unlocked without a customer of record for long periods of time. The funding sought by the Company will allow it to fulfill this important safety goal in a timely manner and avoid a years-long delay in addressing the most difficult-to-reach inactive cases.

The Company is forecasting an increase in uncollectible bills over the next five years due the economic impact of the COVID-19 pandemic. As noted above, current trends indicate an unprecedented increase in the number of customers in arrears and the balances associated with those accounts. The Company expects that the financial impact of the pandemic will surpass the impact of the 2008 recession during the 2023-2025 time period, especially because the recession had a lesser impact on customer arrears. Given these factors, the Company anticipates higher final bill balances which will translate to higher commission to be paid to collection agencies. Without an increase in collection agency costs as requested the Company will not be able to pursue former customers who owe substantial sums of money, which will increase the burden of higher uncollectible balances on all customers.

**Relationship to Broader Company Plans and Initiatives (e.g., Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The funding requested in this paper addresses both gas safety and customer non-payment risks.

## 2. Supplemental Information

**Alternatives**

Alternative 1 description and reason for rejection

Continuing to pursue the Inactive Gas Replevin process within the confines of existing budgets will delay mitigating the backlog of inactive gas cases that have accumulated during the pandemic.

Alternative 2 description and reason for rejection

Without an increased utilization of collection agencies as requested, the Company will not be able to pursue former customers who owe substantial sums of money, which will increase the burden of higher uncollectible balances on all customers.

**Risk of No Action**

Risk 1

With the rising number of inactive gas meters we have seen and will continue to see, the Company risks not being able to secure gas meters to resolve the safety issues they pose.

Risk 2

No action will result in former customers who owe unpaid balances going unaddressed and the Company not being able to take steps to reduce uncollectible costs. The sooner we can get the collection agencies involved in the Final Bills process, the better chance the Company has to recover the funds.

Risk 3

Final bill balances are predicted to be higher as the Company has been facing the inevitable increase in arrears due to COVID-19. No action will increase uncollectible bill costs which will have to be recovered in rates, and increase all customers' energy burden, which puts further pressure on customers that are in - or close to being in - arrears.

**Non-Financial Benefits**

- Continued protection of customer and public safety via the inactive gas process.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

O&M: \$29.2M
4. Basis for estimate  The Company is projecting a 41% increase in backlog of accounts in Replevin as a result of minimal Replevin cases completed in 2020 and 2021. (Note that the 41% increase is net of the reduction in volume as a result of AMI remote disconnect capability.) The Company is also projecting a 43% increase in Final Bills Collection Agency fees/commissions, account match/recovery files, etc. due to increased dollars in arrears.
5. Conclusion  The funds requested in this white paper are necessary to protect customer and public safety and enable the Company to recover unpaid final bills which are increasing at an unusually high rate due to the COVID-19 pandemic. This proposal will help mitigate key risks associated with gas safety and uncollectible bills.
<b>Project Risks and Mitigation Plan</b>  N/A
<b>Technical Evaluation / Analysis</b>  N/A
<b>Project Relationships (if applicable)</b>  N/A

### 3. Funding Detail

#### Historical Spend

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
<b>Capital</b>						
<b>O&amp;M</b>		\$5,347	\$5,717	\$3,920	\$5,300	\$3,110
<b>Regulatory Asset</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital					
O&M*	\$5,300	\$7,000	\$6,300	\$5,300	\$5,300
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor					
M&S					
Contract Services					
Other					
Overheads					
<b>Total</b>					

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation – New project, not authorized yet
- Planning – Project authorized, not started yet
- Executing – Project in-flight

- On-going - Annual program

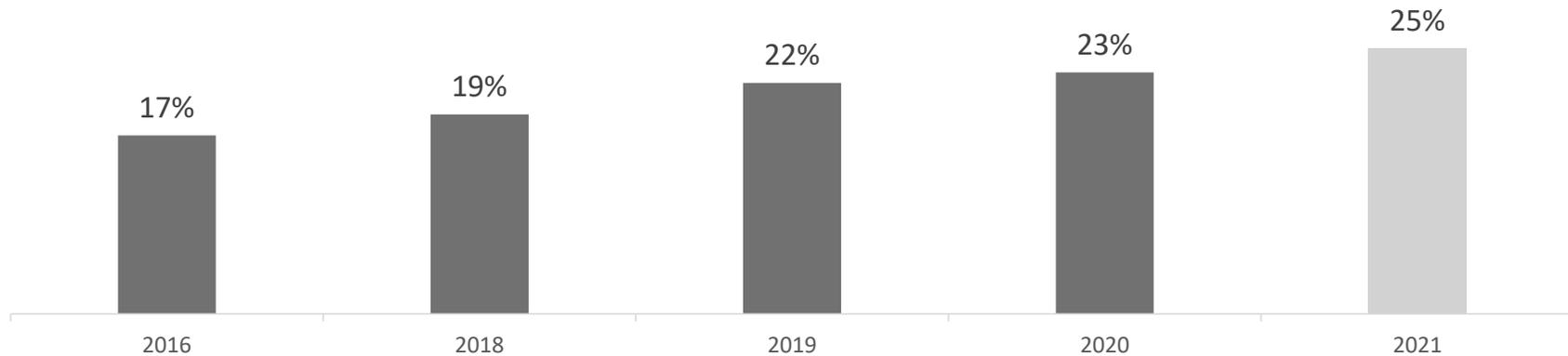


# Credit card fees

## October 12, 2021

# The number of utilities removing credit card fees for residential payments continues to increase

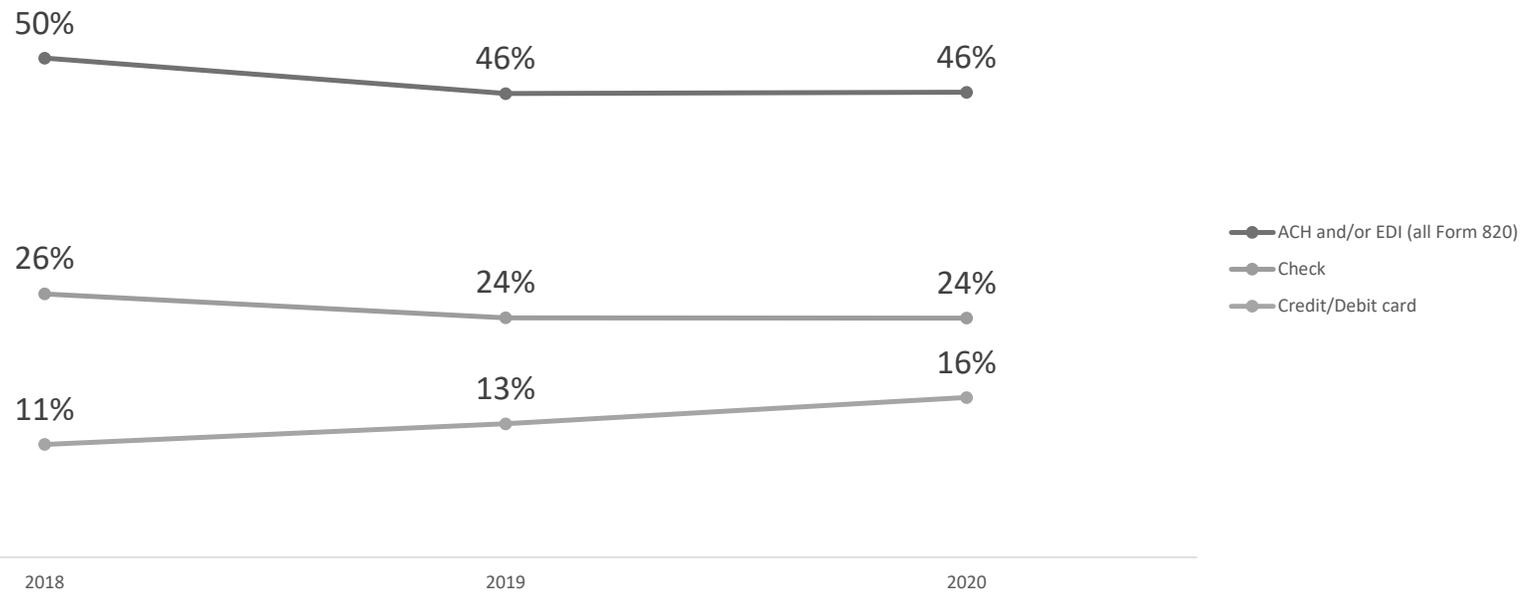
Utilities charging no fee for payments via credit card for residential customers



Source: 2016-2021 Chartwell Credit Card Fees, Processors and Acceptance Audits

# The percentage of customers paying via credit card has steadily increased

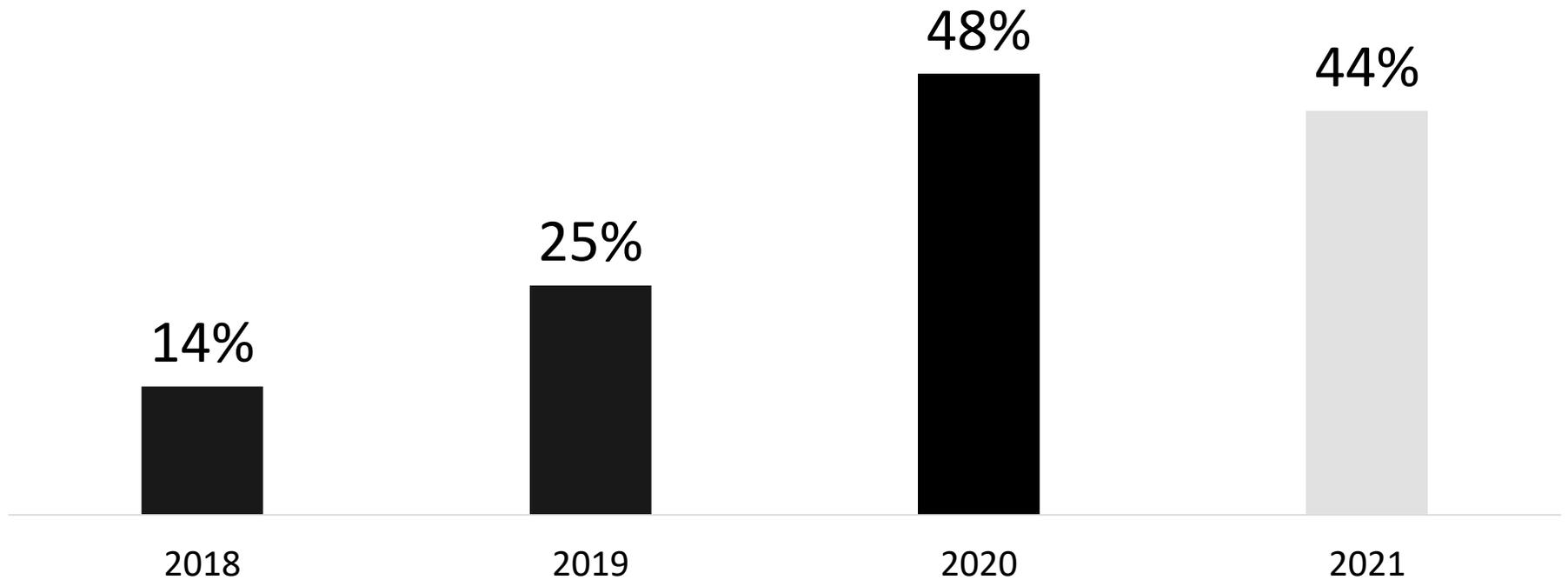
Q: What percentage of customers post payment through this method? (YTD 2020)



Source: 2020 Chartwell Billing Survey, n=48

# ...and this interest is the highest in 2020-21 it has been in years

Interest in paying with credit card with no fee



## Customer Operations 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input checked="" type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Customer Outreach and Education	
Project/Program Manager: Jon Minners	Project/Program Number (Level 1): 101009070003
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: Ongoing	Estimated Date In Service: Ongoing
<b>A. Total Funding Request (\$000)</b> Capital: O&M: \$25,600	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description</b>  <p>The Company’s Customer Outreach and Education program has been in place for many years and was developed to provide customer outreach, education activities and materials for programs to educate the Company’s customers regarding their rights, responsibilities, and options as utility customers. The program has been expanded to help customers learn more about energy safety, scam awareness, new program initiatives, energy management, energy efficiency and other clean energy topics, energy savings and financial resources available to them.</p> <p>Increased funding for this program is needed for the following activities:</p> <ul style="list-style-type: none"> <li>• Increasing staff capacity to deepen and expand relationships in the community as part of the targeted Regional Outreach program outlined in the Company’s 2020 Regional Outreach and Education Plan filed on August 31, 2020 and further described in the Company’s 2021 Annual Outreach and Education Plan filed on April 1, 2021 in Cases 19-E-0065 and 19-G-0066. This will allow Con Edison to have a more targeted approach that provides culturally competent, sensitive, and relevant services to constituents year-round, in person and through hybrid/online engagement. Increased staffing will also expand our reach during emergencies related to increased storms and heat events.</li> </ul>	

- Increasing translation capabilities for communications and marketing campaigns aimed at our low-income communities as part of the targeted program outlined in the Company's 2020 Low-Income and At-Risk Outreach and Education Plan and 2021 Annual Outreach and Education Plan. This will enable enhanced segmentation for digital educational campaigns and provide highly targeted, language-specific information to diverse low-income and at-risk customers impacted by financial constraints.
- Expanding the Work Notice Information System (WINS) to enhance customer emails related to important construction work, placement of generators in the community, load shedding during heat events, and other important energy-related matters that need to be addressed in an expedited manner. Increased funding will allow the Company to maintain the system and provide instantaneous communication with customers during these large-scale projects. This expansion will upgrade our messaging capabilities in WINS so that emails can be sent to location-specific groups of customers quickly.
- Developing additional personalized online (website), offline (email and direct mail), and mobile (apps) engagement campaigns that provide customer-specific and actionable information to targeted audiences, including languages besides English and Spanish.
- Expanding generalized email campaigns, including those associated with key customer journeys such as electric vehicles, payment agreements and self-service tools.
- Paying increased costs for direct mail campaigns and educational awareness materials.
- Maintaining our current level of engagement with the communities we serve through the development of multichannel communications.
- Expanding customer notifications, including e-mails and texts, around credit and collections activities.

For a detailed breakdown of the Outreach and Education budget, please see Exhibit\_\_(CO-52) Customer Outreach and Education Request.

### **Justification Summary:**

As part of its ongoing commitment to enhancing the customer experience, the Company believes the best way to communicate with customers starts with understanding their most pressing needs and providing customized, seamless services. As Customer Outreach works to implement its Targeted Outreach and Education Plan, the team has deepened its understanding that what affects a customer in one community is not the same as what affects customers in other communities. To avoid a one-size-fits-all approach to customer outreach and education, a more personalized effort is required and can be achieved through increased staffing that provides communities with a consistent staff member they can rely on to answer their questions and address customer concerns. In addition, New York City and Westchester County face increases in weather-related emergencies (e.g., storms and heat events); it is important to expand our staffing to address customer concerns during regional and system-wide emergencies.

COVID-19 has had a significant financial impact on our customers. Regular communications during this unprecedented period were important to help customers navigate the Company's

self-service tools to set up payment agreements and keep up with their increased bills due to working and schooling from home. It was crucial to let customers know the Company was there to help them by providing timely, clear information on available programs. These customers will continue to face challenges and we will be there to help beyond the immediate end of the pandemic as they navigate self-service tools, set up payment agreement plans, maintain payment agreement plans, and understand other benefits that can help them get manage and address their arrears.

Low-income customers can expect an expanded outreach approach consistent with our 2020 Low-Income and At-Risk Outreach and Education Plan. Our customer research reflects customers are most engaged by communications that are personalized and provide actionable information, such as personalized messaging for customers who speak another language aside from English and Spanish. A segment of low-income customers come from immigrant communities. We include a language block to help these customers, but if we are to address their concerns more effectively, we must expand this effort to include communications to low-income customers in the languages they speak. Doing so will drive engagement with the Company and help further educate our customers about the programs and resources available to them.

In addition, an expansion of our Work Notice Information System (WINS) will help us further address customer pain points related to construction performed by the Company, the use of generators in a community and other important energy-related matters that need to be addressed in an expedited manner. It is important that WINS is updated and maintained so that notifications are continually refreshed to remain current and useful to customers.

Sustained messaging is needed to increase customer understanding and awareness of energy safety, energy savings, scam awareness and the various Company resources and programs that are available to customers. The Company provides this information through the Customer News bill insert, email blasts, direct mail, paid advertising, and informational brochures; online at coned.com; and via media messaging. Additional communications will keep customers informed in the face of increased weather-related events.

Increasing credit and collections alerts/notifications and sending them via email and text channels will allow the Company to keep customers more informed and help them stay current with their account. The proposed communications will provide customers with updated information on the status of their accounts and the offers available to them. It will make it easier for customers to get the credit-related help/assistance they need, especially as the New York region continues to recover from the pandemic. This effort will also help the Company proactively communicate with customers in a faster way. Currently, Con Edison sends most of its credit-related communications via USPS mail. Increasing email and text alerts/notifications will provide customers with real-time information on the channels they prefer.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The Outreach and Education program will support achievement of the State’s clean energy goals by promoting energy-savings tips through a variety of channels, including email blasts, customer newsletters, smart meter engagement communications, brochures, and web content. In addition, Customer Outreach will promote the Company’s Electric Vehicles offerings through flyers at community events like the event Con Edison hosted in Staten Island on October 26, 2021. Customer Outreach will also promote energy conservation through the Company’s Energy Marketplace and by sending weatherization kits to low-income customers. Customer Outreach will also promote the Company’s Home Energy Assessment tool as a way for customers to lower their energy usage and save money on their bill. As new offerings are made available to promote the Company’s own clean energy goals, Customer Outreach and Education will provide that information to customers to boost engagement in these offerings.

## 2. Supplemental Information

### Alternatives

Limit outreach and educational materials within our current budget, without revisiting new, emerging, and popular platforms for media and communal gathering, and without increasing messaging capacity and efficacy based on customer data. If it foregoes updating and improving outreach methods, the Company will be unable to increase communication and transparency regarding energy safety, scam awareness, new program initiatives, energy management, energy efficiency and other clean energy programs, energy savings, financial resources available and weather-related events and outages.

### Risk of No Action

#### Risk 1

The Company’s ability to quickly and effectively communicate with customers before and during potential outages would not keep pace with increased risks posed by observable shifts in weather patterns that affect our customers’ well-being. In addition, the effectiveness of critical messaging related to safety and customer support would diminish by not adapting to customers’ preferred languages, communication platforms, and formats.

#### Risk 2

Failing to act would hinder the Company’s ability to engage customers on clean energy topics, which would slow adoption of the technologies needed to achieve the State’s goals. It would also frustrate customers that are concerned about their energy footprint but do not feel supported by the Company to make important changes in energy use.

### Non-Financial Benefits

- o Improved customer satisfaction, safety, and trust.
- o Improved community relations, which builds trust in our service territories and allows the Company to address constituent concerns more effectively.

- o Increased relevance and adoption of tools and programs designed to assist customers, particularly customers who are struggling to pay their bills.
- o Increased customer adoption of clean energy programs and technologies.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

Capital: N/A  
O&M: \$25,600

4. Basis for estimate

O&M costs were based on estimates of increased email campaigns, hiring four additional resources, and fees for non-Spanish language translation. As an example, we anticipate a continuing trend related to rising costs in weather-related email communications as weather patterns continue to change, with associated costs increasing from \$87,000 in 2020 to \$172,000 in 2021 (through October). Additionally, the cost for a marketing campaign to low-income customers in English and Spanish was \$130,000 in 2021. A similar marketing campaign over six months, including print and out-of-home advertising in multiple languages, would cost \$600,000. Four additional human resources is the minimum needed to expand our coverage over the entire service territory. Please see Exhibit\_\_(CO-52) Customer Outreach and Education Request for further information on these costs.

5. Conclusion

The communities we serve are changing, and their needs are expanding. Immigrant communities need the same outreach often provided to English-speaking residents. While the Company does consistently provide information in Spanish, additional resources must be spent to target customers that speak other languages who are greatly impacted by financial difficulties while also often being subject to scams. In addition, as climate change continues to impact our service territory, we must be better equipped to communicate with customers in times of weather-related emergencies.

**Project Risks and Mitigation Plan**

It is unlikely, but possible, that the Company may experience delays in reaching out to its customers due to time constraints related to the design, translation, and delivery of customer communications. To meet the demand, Outreach is planning smaller campaigns to better target communities in the languages they speak and to ensure that those communications are delivered in a timely manner, in addition to larger campaigns that will be run throughout the service territory.

#### Technical Evaluation / Analysis

N/A

#### Project Relationships (if applicable)

- o Work Notice Information System (WINS)
- o Gas Operations public safety awareness initiatives
- o Clean energy programs
- o Digital Customer Experience (DCX)
- o Journey Mapping
- o Customer Data and Analytics
- o Customer Relationship Management (CRM)
- o Billing & Payment Enhancements
- o Customer Data Sharing
- o Outage Communication
- o Virtual Assistant

### 3. Funding Detail

#### Historical Spend (\$000)

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital						
O&M	\$4,390	\$3,462	\$3,597	\$3,270	\$3,020	\$4,356
Regulatory Asset						

#### Total Request (\$000):

#### Total Request by Year:

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital					
O&M*	\$4,500	\$5,200	\$5,200	\$5,300	\$5,400

<b>Regulatory Asset</b>					
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**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor					
M&S					
Contract Services					
Other					
Overheads					
<b>Total</b>					

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

**Customer Outreach and Education Request**  
**('000)**

	<b>Program Description</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Variations</b>
<b>Direct Mail</b>	Direct mailings to life-support equipment (LSE) customers, community organizations, medical professionals and master-metered buildings with elevators; energy-safety mailings to direct and indirect Con Edison customers.	\$781	\$781	\$783	2023 - 2025 - Fluctuation from year to year due to scratch and sniff mailing every other year to master metered buildings and some increases expected in postage and printing costs.
<b>Customer Outreach Events</b>	Energy and community-themed events at which Outreach Advocates distribute literature and speak with customers about energy efficiency, safety, the programs and services offered by Con Edison and other related topics. Participation in 90+ energy-themed and community events per year; collateral for distribution at events; association dues for community advocacy groups.	\$251	\$251	\$251	2023 - 2025 - Increased costs are projected for collateral.
<b>Educational Awareness/Literature and Publications</b>	Bill inserts, including Customer News — the Company's multi-topic newsletter, which is sent quarterly to all customers; Spotlight — the Company's biannual newsletter for elderly, blind and disabled customers; brochures, flyers and other printed material for distribution at Company events and upon customer request.	\$138	\$139	\$141	2023 - 2025 - Increased costs are projected for printing and postage costs.
<b>Educational Media Me</b>	Annual energy education ad campaign; online videos on billing-and-payment-related topics; blast email campaigns (general education and storm-related); energy and safety program for schoolchildren; kids mobile applications. Low Income Regional Plan including Resource Direct labor.	\$1,967	\$1,967	\$1,968	2023 - 2025 -increased costs to expand energy management information and tools and increased email blast campaigns.
<b>Employee Education</b>	Web-based "eLearning" modules centered on Enhancing the Customer Experience and other important topics; educational videos; employee-engagement campaigns; Diversity and Inclusion.	\$142	\$142	\$142	2023 - 2025 - Increased costs for training in customer experience, and other topics (e.g., D&I, REV).
<b>Market Research and Customer and Stakeholder Focus Groups</b>	Focus groups; Company-sponsored customer opinion surveys; subscriptions to utility customer satisfaction studies.	\$170	\$170	\$170	2023 - 2025 - Increased costs for research (surveys, focus groups) and subscriptions to studies.
<b>Website Improvement</b>	conEd.com/kids upgrades and maintenance; maintenance and enhancement of the My Energy Calculators suite of online bill analysis tools; continued support of the mobile-optimized version of conEd.com and the My conEdison mobile app; Customer Central website enhancements.	\$196	\$196	\$203	2023 - 2025 - Cost eliminated due to migration of energy calculators to DCX platform.
<b>Labor</b>		\$1,554	\$1,554	\$1,642	Full Time Employees
	<b>Totals (Rounded)</b>	\$5,200	\$5,200	\$5,300	

**Current Low Income Discount Amounts**

<b>Discount Amount</b>	<b>Electric Heat</b>	<b>Electric Non-Heat</b>	<b>Gas Heat</b>	<b>Gas Non-Heat</b>
Tier 1	\$21.73	\$21.73	\$92.62	\$7
Tier 2	\$30.82	\$30.82	\$114.42	\$7
Tier 3	\$59.80	\$47.50	\$131.10	\$7
Tier 4	\$41.91	\$38.56	\$122.16	\$7

**Current Low Income Discount Budget**

<b>Total Electric Discounts</b>	<b>\$118,818,606</b>
<b>Total Gas Discounts</b>	<b>\$35,393,093</b>
<b>Combined Total</b>	<b>\$154,211,699</b>

**Customer Service Performance Mechanism Incentive Targets**

<b>Indicator</b>	<b>Maximum Revenue Adjustment</b>	<b>Threshold Level</b>	<b>Revenue Adjustment</b>
Commission Complaints	\$9 million	$\leq 2.0$	N/A
		$> 2.0 - \leq 2.2$	\$2,000,000
		$> 2.2 - \leq 2.4$	\$5,000,000
		$> 2.4$	\$9,000,000
Customer Satisfaction Surveys Emergency Calls (electric only)	\$18 million		
	\$6 million	$\geq 85.2$	N/A
		$< 85.2 - \geq 82.2$	\$1,500,000
Customer Satisfaction Survey of Phone Center Callers (non-emergency)	\$6 million	$< 82.2 - \geq 79.2$	\$3,000,000
		$< 79.2$	\$6,000,000
		$\geq 88.5$	N/A
Customer Satisfaction Survey of Service Center Visitors	\$6 million	$< 88.5 - \geq 86.5$	\$1,500,000
		$< 86.5 - \geq 84.5$	\$3,000,000
		$< 84.5$	\$6,000,000
Outage Notification	\$8 million	$\geq 89.0$	N/A
		$< 89.0 - \geq 87.0$	\$1,500,000
		$< 87.0 - \geq 85.0$	\$3,000,000
		$< 85.0$	\$6,000,000
Gas Emergency Calls	\$3.3 million	Communication Timeliness; Communication Content	\$300,000 per communication activity
Call Answer Rate	\$5 million	$\leq 88.4\%$ to $< 89.0\%$	\$0 to \$3.3 million
		<b>Rate Year 1:</b>	
		$\geq 66.3$	N/A
		$< 66.3 - \geq 64.5$	\$1,000,000
		$< 64.5 - \geq 62.8$	\$2,000,000
		$< 62.8 - \geq 61.0$	\$4,000,000
		$< 61.0$	\$5,000,000
		<b>Rate Year 2:</b>	
		$\geq 66.6$	N/A
		$< 66.6 - \geq 64.8$	\$1,000,000
		$< 64.8 - \geq 63.1$	\$2,000,000
		$< 63.1 - \geq 61.3$	\$4,000,000
		$< 61.3$	\$5,000,000
		<b>Rate Year 3:</b>	
		$\geq 67.0$	N/A
$< 67.0 - \geq 65.2$	\$1,000,000		
$< 65.2 - \geq 63.5$	\$2,000,000		
$< 63.5 - \geq 61.7$	\$4,000,000		
$< 61.7$	\$5,000,000		

## 2021 Commission Complaint Drivers (SRS cases)

Complaint Code	Description	Number of Cases
595	Consultant Case	254
200	High Bill	150
212	Inaccurate Bill	47
278	Back Billing	45
205	Estimated Bill	43
130	Delayed Service - New Service	36
112	Property Restoration / Debris Removal	20
315 & 405	Meter / Regulator Safety Inspection	29
100	Svc Outage	19
107	Delayed Repair	18
830	Svc. Susp/Term/Block Threat	18
236	Smart Meters	16
110	Voltage Levels / Gas Pressure	12
140	Relocation Of Facilities	12
241	Transfer Balance	12
221	Wants Breakdown Of Bill	10
235	Cross Meter/Billing	10
246	Responsibility	10

Complaint Code	Description	Number of Cases
108	Intermittent Out Of Svc.	9
275	Bill Delay/Not Received	9
590	Other	9
300	Dangerous Company Facility	8
402	Disputes Special Charge on Bill	3
400	Svc Class	7
219	Wants Refund On Overpayment	6
155	Svc Disconnect Request Not Done	5
271	Billed For Svc Doesn't Have/Didn't Order	5
138	Disconnected In Error	4
206	Incorrect Reading	4
815	Svc. Terminated/ Limited	4
118	Missed Scheduled Appointment (other than repair/installation)	3
122	Street Light Problems	3
800	Deferred Payment Agreement	3
250	Budget	2
840	Application Denied	2
125	Tree Trimming	1
225	Meter Inaccuracy	1
234	Net Metering	1
433	New Construction Charges	1
556	Life-Line/Low Income Program	1
872	Threat of Termination w/in 72 hrs.	1

**Proposed Customer Service Performance Mechanism Incentive Targets**

<b>Indicator</b>	<b>Maximum Revenue Adjustment</b>	<b>Threshold Level</b>	<b>Revenue Adjustment</b>
Commission Complaints	\$9 million	$\leq 2.0$ $> 2.0 - \leq 2.2$ $> 2.2 - \leq 2.4$ $> 2.4$	N/A \$2,000,000 \$5,000,000 \$9,000,000
Customer Satisfaction Surveys of Emergency Interactions	\$10.65 million	$\geq 3.55$ $< 3.55 - \geq 3.4$ $< 3.4 - \geq 3.25$ $< 3.25$	N/A \$2,250,000 \$4,500,000 \$10,650,000
Customer Satisfaction Surveys of Non-Emergency Interactions	\$10.65 million	$\geq 3.75$ $< 3.75 - \geq 3.6$ $< 3.6 - \geq 3.45$ $< 3.45$	N/A \$2,250,000 \$4,500,000 \$10,650,000
Call Answer Rate	\$5 million	$\geq 65.0$ $< 65.0 - \geq 63.2$ $< 63.2 - \geq 61.5$ $< 61.5 - \geq 59.7$ $< 59.7$	N/A \$1,000,000 \$2,000,000 \$4,000,000 \$5,000,000

**CSPM Target Supporting Data****Commission Complaints**

Year	Number of Escalated Complaints	Commission Complaints per 100,000 customers
Proposed 2023-2025	NA	2.0
2021	858	2.0
2020	702	1.6
2019	730	1.7
2018	768	1.8
2017	633	1.5
2016	630	1.5

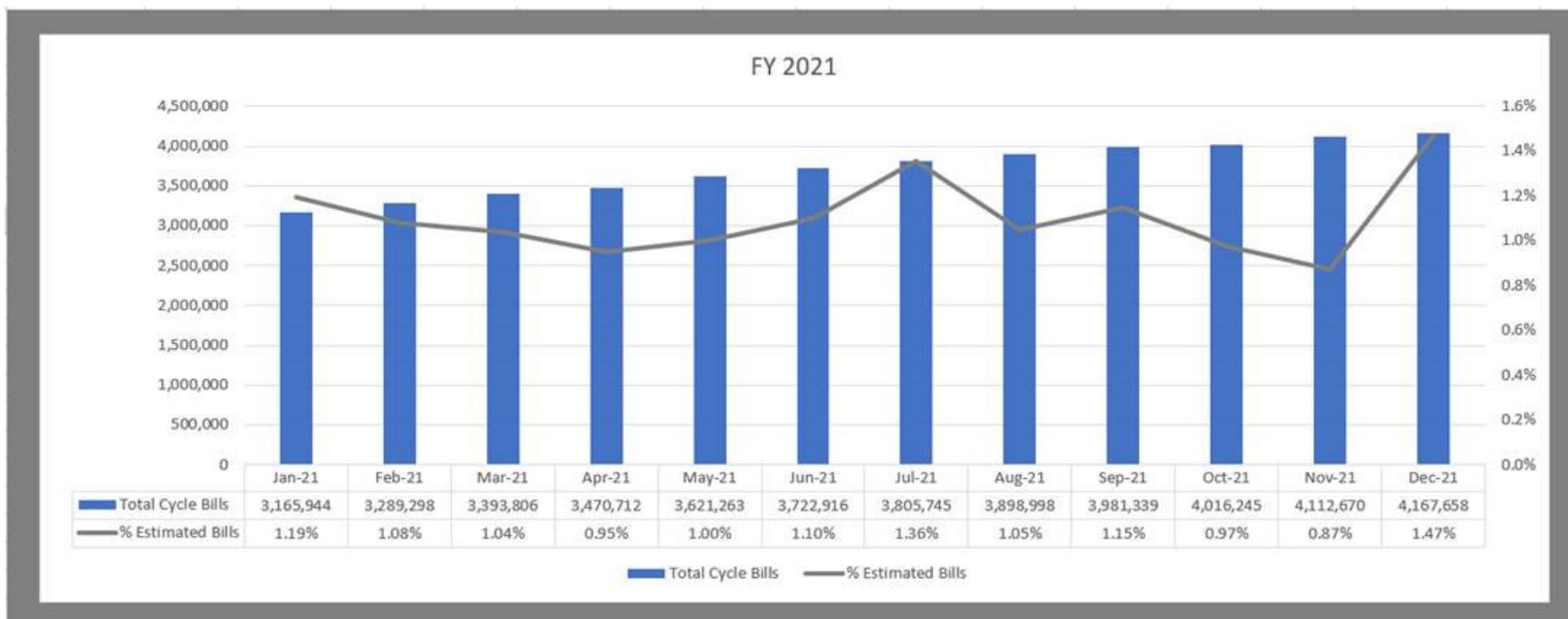
**Customer Satisfaction Surveys**

Year	Emergency Interactions		Non-Emergency Interactions	
	Responses	Avg. Score 1-5	Responses	Avg. Score 1-5
Proposed 2023-2025	NA	3.55	NA	3.75
2021	1942	3.82	31348	4.04
2020	1157	3.83	31236	4.10
2019	641	3.65	18067	4.07

**Call Answer Rate**

Year	Call Answer Rate
Proposed 2023-2025	65.0%
2021	67.0%
2020	66.6%
2019	66.3%
2018	67.7%
2017	67.1%
2016	64.3%

## 2021 AMI Estimated Bill Percentages



# **Shared Services Panel**

## **General Equipment**

### **Exhibit SSP-1**

Shared Services Panel General Equipment - Capital (SSP-1)	Year Total			
	Current Budget			
	Total Dollars (\$000)			
	RY1	RY2	RY3	3 Yr. Total
XM 1-Office Furniture and Equipment	\$ 700	\$ 700	\$ 700	\$ 2,100
XM 2/XM 13 - Vehicles and Equipment	\$ 55,527	\$ 58,015	\$ 75,910	\$ 189,452
XM 3 - Stores Equipment	\$ 437	\$ 437	\$ 437	\$ 1,311
XM4 - Shop Equipment	\$ 360	\$ 360	\$ 360	\$ 1,080
XM 5/ XM15 - Lab and Test Equipment	\$ 4,134	\$ 3,000	\$ 3,000	\$ 10,134
XM 6 -Tools and Work Equipment	\$ 10,482	\$ 4,000	\$ 4,000	\$ 18,482
XM 7 -Miscellaneous Equipment	\$ 900	\$ 900	\$ 900	\$ 2,700
<b>Total General Equipment</b>	<b>\$ 72,540.08</b>	<b>\$ 67,412.36</b>	<b>\$ 85,307.10</b>	<b>\$ 225,260</b>

Note this exhibit also contains Corporate Instruction 610-1, which is provided for reference.

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: XM 1 - Office Furniture and Equipment	
Project/Program Manager: Katrina Benites	Project/Program Number (Level 1): 10025701
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: Ongoing	Estimated Date In Service: Ongoing
<b>A. Total Funding Request (\$000)</b> Capital: 3,402 O&M:	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  The XM-1 budget represents the portion of the Capital Budget devoted to the purchase of business machines, general office furniture, modular office partitions, carpeting, drafting room equipment, safes, security containers, bookcases, cabinets, and window air conditioners. Facilities Planning administers the XM-1 budget. Corporate Architectural Design Policy: 200-6 governs that all items are in compliance with state and local building codes to safeguard life, health, property and public welfare.  An organization requiring purchase of capital General Equipment classified as XM-1 submits a request to Facilities Planning for purchasing such equipment, along with a justification. That organization, in conjunction with Facilities Planning, will review the request and identify any available options to include what is in the recycled inventory. Additionally, the request is reviewed to confirm that it is cost-effective and compliant to the Company's policy and procedures before purchasing.	
<b>Justification Summary:</b>  Business machines, furniture, partitions, and other equipment categorized as XM-1 in the General Equipment capital budget are necessary to replace defective and unusable equipment. It is also used to purchase equipment for renovated spaces that better optimize workspace for our workforce. As part of Con Edison's goal to maintain an operational and safe environment, this program focuses on being cost effective, meeting the needs of the workforce and selecting safe/ergonomic equipment.	

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The equipment in this category of spend supports both operational and safety needs. Equipment like window AC units that cool critical infrastructure and charging cabinets for field equipment are essential to the operations. Employees need useable and ergonomic furniture. Those with medical conditions require special furniture that supports their work.

## 2. Supplemental Information

**Alternatives**

Our operations require proper working and compliant working business machines and equipment. There are no alternatives, per se, but the Company does employ various mitigation efforts. Facilities and Field Services recycles desks, chairs, and office partitions as a general practice and extend the life of the equipment whenever possible. Furniture and office equipment are evaluated before being replaced; items found to be in good operating condition are stored onsite and become part of the recycled inventory to be reused in temporary work assignments, remote office trailers, shops, etc. Only those items that are deemed beyond economical repair and have no salvage value are disposed of.

There are several contracts available to purchase new furniture; these contracts were competitively bid, and whenever possible, new orders are consolidated to take advantage of volume discounts.

It should also be noted that at times, organizational priorities may be shifted to meet organization's requirements and available funding. Each organization identifies their equipment requirements. This includes forecasting temporary deployment of extra crews in the field that would require office furniture. Organizations submit corresponding requests for the following year's General Equipment during the capital budgeting process. Then the XM-1 group works to prioritize those requirements.

**Risk of No Action**

The Company's work forces would be prevented from meeting their objectives in an efficient and safe manner without functioning business machines and equipment. Employees with medical conditions are accommodated so that they can do their job effectively.

**Non-Financial Benefits**

Procuring the appropriate office furniture for the Company will create a safe working environment for employees by replacing broken and damaged furniture. In addition, procurement of ergonomic furniture can positively impact productivity by reducing potential injuries, such as repetitive strain injuries, and minimize lost time due to such injuries.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)  
N/A

2. Major financial benefits  
N/A

3. Total cost \$3,402,000
4. Basis for estimate The final invoice price for specific furniture that will need to be purchased or replaced is typically not known for future years. Replacement in future years is based on the anticipated needs of each operating organization, the aging of furniture/equipment and historical spending.
<b>Project Risks and Mitigation Plan</b> N/A
<b>Technical Evaluation / Analysis</b> N/A
<b>Project Relationships (if applicable)</b> N/A

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecasted 2021</u>
<b>Capital</b>	4,353.0	2,150.3	1,461.7	823.8		777.0
<b>O&amp;M</b>						
<b>Regulatory Asset</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	602	700	700	700	700
<b>O&amp;M*</b>					
<b>Regulatory Asset</b>					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	-	-	-	-	-
M&S	-	-	-	-	-
Contract Services	542	630	630	630	630
Other	30	35	35	35	35
Overheads	30	35	35	35	35
<b>Total</b>	<b>602</b>	<b>700</b>	<b>700</b>	<b>700</b>	<b>700</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation – New project, not authorized yet
- Planning – Project authorized, not started yet
- Executing – Project in-flight
- On-going – Annual program

## Utility Shared Services / Facilities & Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: XM2 - Vehicle Replacement Program	
Project/Program Manager: Salvatore Tarantola	Project/Program Number (Level 1): 10025750
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: Ongoing	Estimated Date In Service: Ongoing
<b>A. Total Funding Request (\$000)</b> Capital: 258,052 O&M:	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period:</b> (Years/months) (If applicable)
<b>Work Description:</b>  The XM-2 capital vehicle replacement program categories provide for the annual replacement of mobile equipment such as cars, SUVs, heavy trucks, cranes and construction equipment used throughout Con Edison Operations. The control agent for this equipment, as set forth in CI 610-2, <i>Capital General Equipment Budgeting, Ordering and Control</i> , is Facilities and Field Services' Automotive Engineering section. The Company owns approximately 4,200 over-the-road, self-propelled vehicles, in addition to other pieces of mobile and mounted equipment, such as trailers, knucklebooms, winches, generators, and compressors, bringing the total number of assets to approximately 5200 individual assets.	
<b>Justification Summary:</b>  Maintaining an annual vehicle replacement program reduces vehicle maintenance costs and vehicle downtime by providing Operations (Electric, Gas, Steam, etc.) with new vehicles and equipment which displace older, unreliable, and potentially unsafe vehicles and equipment. New vehicles and equipment facilitate the operating organizations' ability to perform routine system maintenance, as well as the ability to respond to system emergencies and other emergent events, and prevent the slow-down of response times due to vehicles that are unavailable because they are in the garage for repairs. The annual vehicle replacement program also introduces new vehicles into the fleet that meet the latest fuel efficiency, emissions, and safety requirements. The most currently available advances in safety/technology on vehicles that will be purchased include lane-departure alert systems, front, rear, and side cameras, traffic warning systems, and tailpipe emissions/noise-reduction systems. These latest technologies enable the operating groups to be more productive and work more safely, but they also significantly drive up procurement costs. In general, the average purchase price of replacement vehicles has gone up significantly, regardless of propulsion fuel types. Overall, purchase prices on average have increased 34% since 2016, with several individual vehicle types increasing as much as 67% since 2016.	

In addition to the foregoing, in 2014 Con Edison made a commitment to allocate part of the annual vehicle replacement program funding toward the purchase of plug-in hybrid electric vehicles (PHEVs) and electric power take off (ePTO)-equipped bucket trucks. Additionally, in support of our Clean Energy Commitment, in 2020 we began to transition replacements of our fleet of light-duty vehicles from gasoline-powered to electrified vehicles. To support that transition, 100% of new light-duty vehicles purchased will be electrified and we will expand the availability of fleet charging stations to align with the procurements of these electrified vehicles. Our long-term goal is for 100% of our light-duty fleet to be electrified by 2035. We will also explore, through R&D, alternative technologies to reduce fossil fuel consumption for medium and heavy-duty trucks. The Clean Energy Commitment and the Energy Policy Act (EPAAct) compliance requires additional funding, as electrified vehicles and medium/heavy truck procurements are higher-dollar. In addition, electrified vehicles also require the engineering and installation of charging station infrastructure which also increase costs.

Further, the company is required by law to comply with the petroleum reduction regulations under EPAAct, which is managed by the U.S. Department of Energy's Vehicle Technologies Office. EPAAct sets forth, under its Standard and Alternate Compliance programs, the fuel consumption reduction parameters the company must meet in our vehicle replacement program.

Fleet Additions: There are also three phases of fleet additions addressed in the XM2 Capital Vehicle Budget:

1) Operational requirements have necessitated the procurement of 52 additional vehicles to support our energy systems for this rate case. We estimate an additional cost of \$12,151,106 for these procurements and \$703,979 for the maintenance of these additional vehicles in RY1.

2) The Company plans to use reasonable business efforts to purchase up to 100 additional overhead bucket trucks to assist in restoring service after a storm. The rationale for the trucks is provided by the Electric Storm Response and Resilience Panel.

3) As more fully explained by the Company's Electric Infrastructure and Operations Panel, the Company will require additional employees to perform the capital work related to the Company's core, clean energy, and resilience investments. The Company will need to provide these employees with additional vehicles for this work.

The funding for category 2 and 3 is not included in the revenue requirement and will be provided in the preliminary update.

Please see attached table for additional details.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

This project will help achieve the Corporate Clean Energy Commitment/Vision, by supporting the 2035 electrification of the light duty fleet.

## 2. Supplemental Information

**Alternatives**

The sole alternative to the fleet replacement program is extending the service life of incumbent vehicles instead of replacement. Extension of vehicle service life will drastically increase maintenance costs, as well as the potential for these vehicles to become unsafe as they age, and obsolete in design/functionality as automotive and equipment technology advances will continue and not be incorporated into our fleet. Additionally, under EPCRA requirements, the company must replace older vehicles with newer-technology/alternative fuel vehicles to avoid penalties and fines. There are no other acceptable alternatives.

**Risk of No Action**

Risk of no action would mean older, less reliable equipment would remain in service. Vehicle availability would decrease substantially, and in some cases equipment would age beyond our ability to purchase replacement components. The consequences could have an adverse effect on Operations' ability to respond to emergencies efficiently, and have a negative impact on maintenance and capital projects. If vehicles and equipment are not available to respond to emergencies, it could adversely affect the Company's ability to achieve Reliability Performance Mechanism (RPM) targets. It's also conceivable that continuing to operate aged equipment could put the public and our employees at risk due to catastrophic failure of aged components, and the potential for environmental releases due to failed fittings, gaskets and seals.

**Non-Financial Benefits**

Ongoing, timely replacement of fleet vehicles and equipment helps to ensure their reliability, in order to meet applicable motor vehicle safety standards and incorporate the latest vehicle technology designed to reduce fuel consumption and tailpipe emissions. The back-ends (i.e., aerial devices, cable pulling apparatus, cranes, etc.) of work trucks also incorporate the latest design technologies that improve performance and efficiencies of the units, as well as incorporating features that allow for their safe operation and reductions in noise levels. Additionally, the accelerated incorporation of electrified vehicles into our fleet aligns with the PowerReady infrastructure program, which aims to provide incentives to our customers for the installation of electric vehicle charging stations, promotes the purchase of electric vehicles, and provides for Con Edison to lead by example by utilizing electrified vehicles on the street.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

Regarding electric vehicles, there are alternative fuel vehicle tax credit programs that may be available, however, these tax credits are dependent upon legislative approval and purchase dates. Further, there are fuel cost savings related to the use of gasoline versus electric energy: for example, by subtracting the Company's internal electric rate (assuming \$.12/kWh & 3.3 mil/kWh = \$.04/mil) from the projected price per gallon of gasoline (assuming \$3.50/gallon & 25 mil/gal = \$.14/mil), and then using the approximate average annual vehicle mileage (gasoline-powered cars - 9,000 miles), we can estimate petroleum fuel savings in terms of cost. For example, the cost to fuel a battery electric vehicle (BEV) would be \$360/yr. vs. \$1,260/yr. for a gasoline-powered equivalent vehicle. In addition to vehicle fuel savings, Con Edison will realize annual maintenance savings of approximately \$150/vehicle/yr. as a result of no oil changes necessary for BEVs.

3. Total cost \$258,052,000
<b>Project Risks and Mitigation Plan</b> N/A
<b>Technical Evaluation / Analysis</b> N/A
<b>Project Relationships (if applicable)</b>  Procurements of electrified vehicles directly aligns with the company's efforts through the Electric Vehicle Charging Expansion Project, to introduce more electric charging stations throughout the service territory for both our employees and electrified fleet vehicles.

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
<b>Capital</b>	53,672.2	42,251.7	33,306.4	66,668.1		38,900.4
<b>O&amp;M</b>		\$40,781	\$41,736	\$35,443		

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	32500	55,527	58,015	75,910	\$36,100
<b>O&amp;M*</b>	\$39,987	\$41,564	\$42,335	\$43,396	\$43,396

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	325	555	580	7,590	361
M&S	975	1,666	1,740	2,277	1,083
Contract Services	-	-	-	-	-
Other	29,900	51,085	53,374	69,837	33,212
Overheads	1,300	2,221	2,321	3,036	1,444
<b>Total</b>	<b>32,500</b>	<b>55,527</b>	<b>58,015</b>	<b>75,910</b>	<b>36,100</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M Savings</b>					
<b>O&amp;M Avoidance</b>					

Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/ maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

2023-2025 CECONY RATE CASE FLEET ADDITIONS

RATE YEAR	SPEC	Average Fuel	SPEC DESCRIPTION	Category	Qty	LOADED COST EACH	TOTAL COST (w/15% OH)	O&M COST EACH (EST MAINT)	TOTAL O&M COST (EST MAINT)	ORG	DEPARTMENT	SECTION	REGION
2023	334	600	FULL-SIZE PICKUP	LIGHT DUTY TRUCKS	6	\$ 54,491	\$ 326,946	\$ 3,196	\$ 19,176	CUSTOMER OPS	301	217	Customer Ops
2023	373	900	SPLICING CARGO VAN	LIGHT DUTY TRUCKS	1	\$ 55,318	\$ 55,318	\$ 3,196	\$ 3,196	ELEC OPS	566	943	SI Transformer Shop
2023	678	1800	REEL LOADER	UG PRIMARY CABLE TRUCKS	3	\$ 358,813	\$ 1,076,439	\$ 20,000	\$ 60,000	ELEC OPS	325/312	653/503	BW Under
2023	666S	1600	CABLE PULLER	UG PRIMARY CABLE TRUCKS	2	\$ 435,425	\$ 870,850	\$ 20,000	\$ 40,000	ELEC OPS	325/313	653/504	BW Under
2023	473	1100	SPLICING STEP VAN	MEDIUM DUTY TRUCKS	5	\$ 149,900	\$ 749,500	\$ 8,371	\$ 41,855	ELEC OPS	325	653	BW Under
2023	440	300	RACK TRUCK-SMALL	MEDIUM DUTY TRUCKS	5	\$ 78,449	\$ 392,245	\$ 8,371	\$ 41,855	GAS OPS	760	629	BW Gas Const
2023	224	390	SUV - PHEV	PASSENGER	3	\$ 42,178	\$ 126,534	\$ 3,196	\$ 9,588	GAS OPS	760	629	BW Gas Const
2023	311G	1300	WINDOW VAN	LIGHT DUTY TRUCKS	1	\$ 57,511	\$ 57,511	\$ 3,196	\$ 3,196	GAS OPS	760	629	BW Gas Const
2023	674	600	DIGGER DERRICK	AUGER/DERRICK OH	4	\$ 454,137	\$ 1,816,548	\$ 22,300	\$ 89,200	ELEC OPS	720	652	BW Over
2023	662	1200	MATERIAL HANDLER	TWO MAN BUCKET & MAT HANDLER	8	\$ 377,080	\$ 3,016,640	\$ 25,100	\$ 200,800	ELEC OPS	720	652	BW Over
2023	560	1000	ONE-MAN BUCKET	ONE MAN BUCKET EMERGENCY #9	3	\$ 225,016	\$ 675,048	\$ 20,000	\$ 60,000	ELEC OPS	720	652	BW Over
2023	674	600	DIGGER DERRICK	AUGER/DERRICK OH	2	\$ 454,137	\$ 908,274	\$ 22,300	\$ 44,600	ELEC OPS	722	477	BQ Over
2023	662	1200	MATERIAL HANDLER	TWO MAN BUCKET & MAT HANDLER	3	\$ 377,080	\$ 1,131,240	\$ 25,100	\$ 75,300	ELEC OPS	722	477	BQ Over
2023	560	1000	ONE-MAN BUCKET	ONE MAN BUCKET EMERGENCY #9	3	\$ 225,016	\$ 675,048	\$ 20,000	\$ 60,000	ELEC OPS	722	477	BQ Over
2023	427U	1000	STEP VAN w/COMPR	MEDIUM DUTY TRUCKS	3	\$ 198,678	\$ 596,034	\$ 8,371	\$ 25,113	ELEC OPS	711	302	SI Electric
					<b>52</b>	<b>TOTAL REQUIRED</b>	<b>\$ 14,345,301</b>		<b>\$ 773,879</b>				

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: XM3 - Stores Equipment	
Project/Program Manager: Balvinder Gaeta	Project/Program Number (Level 1): 10025788
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: Ongoing	Estimated Date In Service: Ongoing
<b>A. Total Funding Request (\$000)</b> Capital: 2,124 O&M:	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  The XM-3 budget represents the portion of Con Edison’s Capital Budget devoted to the purchase of storage bins, pallet racks, pipe racks, shelving, and strapping/wrapping equipment used for storeroom operations. Facilities and Field Services’ Operations Services group administers the XM-3 budget.  An organization requiring purchase of capital General Equipment classified as XM-3 submits a request to Facilities Operations Services for purchasing such equipment, along with a justification. Facilities Operations Services will review the request and identify budget availability and confirm that it is cost-effective and compliant to the Company’s policy and procedures before initiating the procurement.  Items covered under the XM-3 category are typically replaced when they are found to be in an unsafe operating condition and deemed beyond economical repair, or if a procedure or specification is revised, requiring an enhancement in the equipment currently used. Additionally, some equipment is purchased to increase operational efficiency. For example, shelving systems, wrapping & banding machines as well as cable reels have been purchased as upgrades for the replacement of existing equipment, which allows for faster wrapping, banding and equipment delivery to job locations.	
<b>Justification Summary:</b>  Stores equipment that is categorized as XM-3 in the General Equipment capital budget are necessary to replace defective and obsolete equipment and required in order to facilitate the efficient handling of material used by Company work forces in the replacement, reinforcement, and / or refurbishment of the electrical, gas, and steam systems.	

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

This category of spend is required to safely store material and equipment in the Company storerooms and Facilities' locations.

## 2. Supplemental Information

**Alternatives**

There are no alternatives, per se, but the Company does employ various mitigation efforts such as maintaining the existing equipment beyond its useful life. This would result in increased maintenance and repair costs, potential delays to the operating organizations, and increased risk of employee injury. In addition, without these funds, the ability to take advantage of new equipment technologies, such as advanced shelving systems, would limit efforts to improve ergonomics and operational efficiencies, potentially having an adverse effect on employee productivity and safety.

**Risk of No Action**

The tools and equipment purchased through the XM-3 budget would need to be maintained beyond their useful life, provided the manufacturers still produce the parts needed to make repairs.

**Non-Financial Benefits**

Procuring the appropriate equipment is necessary for the safe storage and transport of materials needed throughout the Company. For example, wrapping and strapping machines allow for the quick and safe packaging of materials for transport. Without these machines, employees would need to find other means of packaging materials, which may be slower (impacting productivity), or place additional unnecessary physical stresses on employees, resulting in potential injuries.

**Summary of Financial Benefits and Costs (attach backup) N/A**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

Non-financial Benefits:

Procuring the appropriate equipment is necessary for the safe storage and transport of materials needed throughout the Company. For example, wrapping and strapping machines allow for the quick and safe packaging of materials for transport. Without these machines, employees would need to find other means of packaging materials, which may be slower (impacting productivity), or place additional unnecessary physical stresses on employees, resulting in potential injuries.

3. Total cost

\$2,124,000.

<p>4. Basis for estimate Specific XM-3 Stores equipment to be replaced and their final invoice price are market driven and therefore not known for future years. Replacement in future years is based on the anticipated needs of each operating organization and historical spending in addition to an applied percentage for inflation and overheads</p>
<p><b>Project Risks and Mitigation Plan</b> N/A</p>
<p><b>Technical Evaluation / Analysis</b>  XM-3 Equipment is evaluated before being replaced, and only those that are deemed beyond economical repair, or unreparable, are replaced. However, there are occasions when equipment is purchased due to operating or work practice changes, requiring a new type of storage that addresses the new requirement. In addition, the majority of contracts utilized to purchase new equipment are competitively bid and, where possible, orders are consolidated to take advantage of volume discounts.</p>
<p><b>Project Relationships (if applicable)</b> N/A</p>

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
<b>Capital</b>	772.2	559.2	238.7	276.6		376.3
<b>O&amp;M</b>						
<b>Regulatory Asset</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	376	437	437	437	437
<b>O&amp;M*</b>					
<b>Regulatory Asset</b>					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	-	-	-	-	-
M&S	-	-	-	-	-
Contract Services	338	393	393	393	393
Other	19	22	22	22	22
Overheads	19	22	22	22	22
<b>Total</b>	<b>376</b>	<b>437</b>	<b>437</b>	<b>437</b>	<b>437</b>

**Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation – New project, not authorized yet
- Planning – Project authorized, not started yet
- Executing – Project in-flight
- On-going – Annual program

## Central Operations / Construction 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: XM4 - Shop Equipment	
Project/Program Manager: Edson White	Project/Program Number (Level 1): 10025803
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date:	Estimated Date In Service:
A. Total Funding Request (\$000) Capital: 1,800 O&M:	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input checked="" type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<b>Work Description:</b>  <p>Construction Service's Shop Operations is the Control Agency for XM4 Shop equipment. The XM4 budget is primarily designated for the purchase of equipment utilized at the Van Nest Shop Operations' facility. Equipment is also purchased for the Company's transformer shop in Astoria and the automotive repair shops. The equipment includes floor grinders, compressors, lathes, milling machines, scribes, brazing and welding equipment, Computerized Numerical Control (CNC) machinery, jib cranes and hoists. The purchase and use of the equipment is based upon the work load, which includes routine fabrication and maintenance as well as emergency fabrication and repair of specialized parts such as: turbines, boilers, pumps, motors, switchgear and bus work, gas regulating stations, and permanent support structures and work platforms. The Van Nest Shop supports the steam generating stations, electric and gas distribution operations, substation, and transmission operations. The impact of not having equipment funding to support this work would have a severe impact on steam production, electric and gas distribution as well as substation and transmission operations.</p>	
<b>Justification Summary:</b>  <p>This shop equipment is required to maintain system reliability as it provides the workforce with the assets to effectively provide improvements to Company facilities and to quickly return power generation equipment, transmission and distribution, and gas regulating equipment to service in an expedited manner. This reduces the risk of extended down times and forced customer outages.</p>	
<b>Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)</b> N/A	

## 2. Supplemental Information

### Alternatives

#### Alternative 1 description and reason for rejection

An economic and time-based comparison is made between contracting the work out vs. performing the work in-house. In most cases, on an emergency basis, contracting out is not cost effective due to the premiums applied for the short notice associated with emergency work. Another factor is the time lag involved with getting a contractor and equipment on-site within the specified time frame needed to perform the work on an emergency basis.

#### Alternative 2 description and reason for rejection

Often during projects, a change of scope or an unexpected condition will emerge. Having a shop equipped with extensive capabilities allows additional work to be performed in house and in a rapid fashion. This keeps contract extras to a minimum and helps to maintain the schedule of a project. Not having this capability would be costly to the Company.

### Risk of No Action

The machinery and equipment would need to be maintained beyond their useful life, provided the manufacturers still produce parts needed to make repairs. No action would have an adverse effect to the electric, gas and steam system reliability. Without funding for replacement equipment, the Company would risk not being able to restore equipment in a timely, or cost effective, fashion during an emergency.

### Non-Financial Benefits

Having a well-equipped facility allows for prototypes of specialty tooling to be designed and fabricated. Examples of such items include gas bypass carts, that allow us to avoid interrupting gas service to a customer when maintenance is being performed on the main supply. Safety shields for substation breakers allowing for protection in the event of an electrical flash.

Our fabrication shop frequently fabricates stairs and handrails for many of our older facilities bringing them in compliance to new OSHA fall protection regulations. We often go beyond these regulations when improving the facility enhances employee safety. Having an in-house group performing these enhancements makes this process simpler for our facilities. There is a cost savings as using Company resources for these smaller jobs avoids expenses for preparing specifications and contract oversight. Some of our recent capital purchases were for equipment in this area of our shop.

### Summary of Financial Benefits and Costs (attach backup)

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

\$1,800,000

4. Basis for estimate Cost is based on estimated cost of new capital tools.								
5. Conclusion N/A								
<b>Project Risks and Mitigation Plan</b>								
<table border="1"> <tr> <td>Risk 1</td> <td>Mitigation plan</td> </tr> <tr> <td>Delay in the purchase or replacement of needed equipment.</td> <td>Extend the life of existing equipment with an increase of maintenance costs and rent needed equipment until a purchase can be made.</td> </tr> <tr> <td>Risk 2</td> <td>Mitigation plan</td> </tr> <tr> <td>Lack of capability to perform certain work.</td> <td>Have contacts in place to perform this work.</td> </tr> </table>	Risk 1	Mitigation plan	Delay in the purchase or replacement of needed equipment.	Extend the life of existing equipment with an increase of maintenance costs and rent needed equipment until a purchase can be made.	Risk 2	Mitigation plan	Lack of capability to perform certain work.	Have contacts in place to perform this work.
Risk 1	Mitigation plan							
Delay in the purchase or replacement of needed equipment.	Extend the life of existing equipment with an increase of maintenance costs and rent needed equipment until a purchase can be made.							
Risk 2	Mitigation plan							
Lack of capability to perform certain work.	Have contacts in place to perform this work.							
<b>Technical Evaluation / Analysis</b> N/A								
<b>Project Relationships (if applicable)</b> N/A								

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecasted 2021</u>
Capital	1,173.3	748.3	334.8	333.2		471.2
O&M						
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	360	360	360	360	360
O&M*					
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	20	20	20	20	20
M&S					
Contract Services	305	305	305	305	305
Other					
Overheads	35	35	35	35	35
<b>Total</b>	<b>360</b>	<b>360</b>	<b>360</b>	<b>360</b>	<b>360</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: XM5 / XM15 - Lab and Test Equipment	
Project/Program Manager: Balvinder Gaeta	Project/Program Number (Level 1): 10024870
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: Ongoing	Estimated Date In Service: Ongoing
<b>A. Total Funding Request (\$000)</b> Capital: 15,414 O&M:	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  The XM-5 budget is designated for the replacement of portable electronic measurement instrumentation, including volt meters, ammeters, gas testers, recorders, analyzers, pressure gauges, etc. These devices are used to safeguard the safety of employees, and to manage, monitor, and operate the gas, electric, and steam systems. Facilities and Field Services' Operations Services group is the control agency for XM-5.  Items covered under the XM-5 category are typically replaced when they are found to be in an unsafe operating condition and deemed beyond economical repair, or if a procedure / specification is changed, requiring an enhancement in the devices currently used.  An organization requiring purchase of capital General Equipment classified as XM-5 must submit a written request to Facilities and Field Services' Operations Services for purchase of such equipment. The organization's XM budget coordinator reviews each request to ensure that the total cost is within the budget and then initiates the procurement process.	
<b>Justification Summary:</b>  Lab and test equipment that is categorized as XM-5 in the General Equipment budget is required in order to facilitate the measurement and testing requirements needed to be performed by Company work forces in the replacement, reinforcement, and refurbishment of the electrical, gas, and steam systems.  The Company will need to significantly increase the number of vehicles purchased in the XM-2 category during a three-year rate plan. The Company's request falls into three categories: 1) trucks to meet current employee and needs, 2) bucket trucks for storm response, and 3) vehicles for new hires required to meet	

the increased capital spend by Electric Operations. For each of these categories of equipment the vehicles will require fitting of XM-5 equipment such as ground fault equipment and air monitoring equipment.

The funding for category 2 and 3 is not included in the revenue requirement and will be provided in the preliminary update.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The equipment in this category of spend is required to help crews to carry out safety and diagnostic testing and in turn help crews maintain and repair the Company's energy systems through scheduled maintenance and/or during unplanned outages e.g., heat and storm events.

## 2. Supplemental Information

**Alternatives**

Maintain existing equipment beyond their useful life. This would result in increased maintenance and repair costs, potential delays to the operating organizations, and increased risk of employee injury. In addition, without these funds, the ability to take advantage of new instrument and equipment technologies, such as noise reduction, ergonomics, and operational efficiencies, would be limited, potentially having an adverse effect on employee and public safety.

**Risk of No Action**

The instruments and equipment purchased through the XM-5 budget would need to be maintained beyond their useful life, provided the manufacturers still produce the parts needed to make repairs. Additional information on the risks of this option is addressed in the Alternatives section.

**Non-Financial Benefits**

Equipment in this category is necessary to safeguard employees in the field through measuring and monitoring environmental conditions in the field, and alerting employees to potential hazards. In addition, some equipment in this category is used to measure and monitor conditions on the electric, gas, and steam systems, and assist in identifying potential issues.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

\$15,414,000

4. Basis for estimate

Specific instrumentation and test equipment to be replaced and their final invoice price are not known for future years. Replacement in future years is based on the anticipated needs of each operating

organization, the addition new fleet vehicles, and historical spending as well as an applied percentage for inflation and overheads.
<b>Project Risks and Mitigation Plan</b> N/A
<b>Technical Evaluation / Analysis</b>  XM-5 Instruments and equipment are evaluated before being replaced, and only those that are deemed uneconomical to repair, or devices that are obsolete with repair parts no longer available are replaced. However, there are occasions when equipment is purchased due to operating or work practice changes, requiring a new type of device that addresses the new requirement. In addition, the majority of contracts utilized to purchase new tools and equipment are competitively bid and, where possible, orders are consolidated to take advantage of volume discounts.
<b>Project Relationships (if applicable)</b> N/A

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
<b>Capital</b>	7,917.7	3,627.5	2,897.0	7,388.2		5,441.1
<b>O&amp;M</b>						
<b>Regulatory Asset</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	2,280	4,134	3,000	3,000	3,000
<b>O&amp;M*</b>					
<b>Regulatory Asset</b>					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	-	-	-	-	-
M&S	-	-	-	-	-
Contract Services	2,052	3,721	2,700	2,700	2,700
Other	114	207	150	150	150
Overheads	114	207	150	150	150
<b>Total</b>	<b>2,280</b>	<b>4,134</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: XM 6 - Tools and Work Equipment	
Project/Program Manager: Balvinder Gaeta	Project/Program Number (Level 1): 10025830
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: Ongoing	Estimated Date In Service: Ongoing
<b>A. Total Funding Request (\$000)</b> Capital: 25,622 O&M:	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input checked="" type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000) N/A</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  The XM-6 budget is designated for the replacement of tools and equipment used for general construction and repair, such as portable pumps, chain saws, hydraulic jacks, pneumatic hammers and drills, hydraulic cutting and crimping tools, tire repair equipment, etc. These devices are used to manage and operate the gas, electric, and steam systems. Facilities and Field Services' Operations Services group is the control agency for XM-6.  Items covered under the XM-6 category are typically replaced when they are found to be in an unsafe operating condition and deemed beyond economical repair, or if a procedure or specification is changed requiring an enhancement in the tools currently used.  An organization requiring purchase of capital General Equipment classified as XM-6 must submit a written request to Facilities and Field Services' Operations Services for purchase of such equipment. The organization's XM budget coordinator reviews each request to ensure that the total cost is within the budget and then initiates the procurement process.	
<b>Justification Summary:</b>  Capital tools that are categorized as XM-6 in the General Equipment capital budget are necessary in order to facilitate the efficient repairs to be performed by Company work forces in the replacement, reinforcement, and refurbishment of the electrical, gas, and steam systems.  The Company will need to significantly increase the number of vehicles purchased in the XM-2 category during a three-year rate plan. The Company's request falls into three categories: 1) trucks to meet current employee and needs, 2) bucket trucks for storm response*, and 3) vehicles for new hires required to meet	

the increased capital spend by Electric Operations\*. For each of these categories of equipment the vehicles will require fitting of XM-6 equipment such as battery-operated crimper/cutting/bending tools, chain hoists, emergency personnel retrieval devices, and other tools required for their daily work operation.

The funding for category 2 and 3 is not included in the revenue requirement and will be provided in the preliminary update.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The equipment in this category of spend is required to help crews maintain and repair the Company's energy systems through scheduled maintenance and/or during unplanned outages e.g., heat and storm events.

**2. Supplemental Information**

**Alternatives**

Maintain the existing equipment beyond their useful life. This would result in increased maintenance and repair costs, potential delays to the operating organizations, and increased risks of employee injury. Without these funds, the ability to take advantage of new tool and equipment technologies, such as noise reduction, ergonomics, and operational efficiencies, would be limited, potentially having an adverse effect on employee and public safety. Additionally, the additional Mutual Aid vehicles would not be equipped with the necessary tools required for the crews to perform their work.

**Risk of No Action**

The tools and equipment purchased through the XM-6 budgets would need to be maintained beyond their useful life. Additional information on this option can be found in the Alternatives section.

**Non-Financial Benefits**

The tools in this category of equipment support the construction and repair activities of employees throughout the Company. For example, hydraulic cutting tools allow employees to cut through cable of various sizes quickly and with a minimal amount of physical effort, reducing the potential for strains and injuries. These tools allow employees to perform these activities efficiently and to minimize the potential for injury.

**Summary of Financial Benefits and Costs (attach backup)**

- 1. Cost-benefit analysis (if required)  
N/A
- 2. Major financial benefits  
N/A
- 3. Total cost  
\$25,622,000
- 4. Basis for estimate

Specific work tools and equipment to be replaced and their final invoice price are not known for future years. Replacement in future years is based on the anticipated needs of each operating organization, the addition of new fleet vehicles in 2023, and historical spending as well as an applied percentage for inflation and overheads.
<b>Project Risks and Mitigation Plan</b> N/A
<b>Technical Evaluation / Analysis</b>  Tools and equipment are evaluated before being replaced, and only those that are deemed beyond economical repair are replaced. However, there are occasions when equipment is purchased due to operating or work practice changes, requiring a new type of device that addresses the new requirement. In addition, with the consolidation of several contracts utilized to purchase new XM-6 tools and equipment, to take advantage of volume discounts, several contracts are now under a single one-stop shop Supplier.
<b>Project Relationships (if applicable)</b> N/A

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital	7,611.2	4,649.5	3,521.0	5,065.7		4,672.3
O&M						
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	3,140	10,482	4,000	4,000	4,000
O&M*					
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	-	-	-	-	-
M&S	-	-	-	-	-
Contract Services	2,826	9,434	3,600	3,600	3,600
Other	157	524	200	200	200
Overheads	157	524	200	200	200
<b>Total</b>	<b>3,140</b>	<b>10,482</b>	<b>4,000</b>	<b>4,000</b>	<b>4,000</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: XM 7 - Miscellaneous Equipment	
Project/Program Manager: Balvinder Gaeta	Project/Program Number (Level 1): 10025850
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: Ongoing	Estimated Date In Service: Ongoing
<b>A. Total Funding Request (\$000)</b> Capital: 4,374 O&M:	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  <p>The XM-7 budget is devoted to the purchase of miscellaneous equipment such as cafeteria and kitchen equipment, medical equipment, defibrillators, safety and training equipment, fire protection, and audio-visual and photographic equipment. Facilities and Field Services' Operations Services group is the control agency for XM-7.</p> <p>An organization requiring purchase of capital General Equipment classified as XM-7 must submit a written request to Facilities and Field Services' Operations Services for purchase of such equipment. The XM-7 budget coordinator reviews each request to ensure that the total cost is within the budget and then initiates the procurement process.</p>	
<b>Justification Summary:</b>  <p>Kitchen equipment, medical equipment, safety equipment, and other equipment categorized as XM-7 in the General Equipment capital budget are necessary to provide basic needs, employee safety, and assist in training for all divisions and departments within the Company.</p> <p>Each organization anticipates their budget needs by identifying their future requirements. This would include forecasting deployment of extra crews in the field that would require additional safety or training equipment. Organizations submit their corresponding requests for the following year's General Equipment during the capital budgeting process. The request is reviewed by Operations Services. If the equipment is deemed as required, the procurement process is initiated.</p>	

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

Not purchasing training equipment may lead to potentially unsafe conditions, environmental concerns, fines, violation orders, and regulatory non-compliance.

This category of spend addresses safety and compliance training. Training covers personal safety, first-hand practical experience using safety equipment and identifying unsafe conditions. Similarly, not purchasing medical equipment could put employees at risk of receiving early medical attention from our MARS team.

Procuring the appropriate audio-visual equipment for the Company will create an efficient and collaborative working environment for employees that will allow for social distancing during the pandemic and the ability to provide technology for hybrid (in-person and remote) meetings.

## 2. Supplemental Information

**Alternatives**

There are no alternatives, per se, but the Company does employ various mitigation efforts. All miscellaneous equipment is evaluated before being replaced and only those that are deemed unrepairable are replaced. Facilities and Field Services recycles this equipment whenever possible as a general practice. In addition, the majority of contracts utilized to purchase new equipment are competitively bid and, whenever possible, orders are consolidated to take advantage of volume discounts.

**Risk of No Action**

The Company's work forces would be prevented from meeting their objectives in an efficient and safe manner without some equipment, such as supplied air respirators for training purposes. It is essential to train our workforce to use safety equipment they would use in the field.

**Non-Financial Benefits**

This equipment is necessary for the safety of Company employees and also to support operations of the Company, such as cafeteria food services. Additionally, equipment in this category is used to complement training and communication.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

\$4,374

<p>4. Basis for estimate The final invoice price for specific miscellaneous equipment that will need to be purchased or replaced is typically not known for future years. Replacement in future years is based on the anticipated needs of each operating organization and historical spending as well as an applied percentage for inflation and overheads.</p>					
<p><b>Project Risks and Mitigation Plan</b></p> <table border="1"> <thead> <tr> <th>Risk 1</th> <th>Mitigation plan</th> </tr> </thead> <tbody> <tr> <td>The Company could experience supply chain delays due to the pandemic. This would cause a delay in receiving XM-3 equipment.</td> <td>Users would be required to plan in advance to take into account supply chain delays and the Company would consider establishing additional contracts with alternative suppliers.  As stated in the Risk of no Action section, all miscellaneous equipment is evaluated before being replaced and only those that are deemed unrepairable are replaced.</td> </tr> </tbody> </table>		Risk 1	Mitigation plan	The Company could experience supply chain delays due to the pandemic. This would cause a delay in receiving XM-3 equipment.	Users would be required to plan in advance to take into account supply chain delays and the Company would consider establishing additional contracts with alternative suppliers.  As stated in the Risk of no Action section, all miscellaneous equipment is evaluated before being replaced and only those that are deemed unrepairable are replaced.
Risk 1	Mitigation plan				
The Company could experience supply chain delays due to the pandemic. This would cause a delay in receiving XM-3 equipment.	Users would be required to plan in advance to take into account supply chain delays and the Company would consider establishing additional contracts with alternative suppliers.  As stated in the Risk of no Action section, all miscellaneous equipment is evaluated before being replaced and only those that are deemed unrepairable are replaced.				
<p><b>Technical Evaluation / Analysis</b> N/A</p>					
<p><b>Project Relationships (if applicable)</b> N/A</p>					

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital	1,614.3	1,218.6	958.5	749.7		774.0
O&M						
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	774	900	900	900	900
O&M*					
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	-	-	-	-	-
M&S	-	-	-	-	-
Contract Services	697	810	810	810	810
Other	39	45	45	45	45
Overheads	39	45	45	45	45
<b>Total</b>	<b>774</b>	<b>900</b>	<b>900</b>	<b>900</b>	<b>900</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation – New project, not authorized yet
- Planning – Project authorized, not started yet
- Executing – Project in-flight
- On-going – Annual program



# Corporate Instruction

SUBJECT

## 610-1 CI Capital Budget Process

- 1.0 PURPOSE** -- This Instruction describes the capital budget process and specifies the procedures for authorization of, appropriation of funds for, and funding control for capital projects and programs in accordance with Consolidated Edison Company of New York, Inc. (CECONY) Corporate Policy Statement 000-1, "Delegation of Authorities" ("Delegation").
- 2.0 APPLICATION** -- This Instruction applies to all CECONY organizations involved with the capital budget process including the authorization of, appropriation of funds for, and funding control for capital projects and programs. The term *Company* when used in this Instruction refers to CECONY unless otherwise stated.
- 3.0 PROCEDURES** -- The components of the capital budget process are described in paragraphs 3.1 through 3.7.

### 3.1 Capital Budget –

- a. The Capital Budget is comprised of individually planned projects or groupings of smaller and similar projects called programs, as well as general equipment purchases.
- (1) Capital Projects: A scope of capital work defined by specific goals. The goals for some projects are determined by forecasts of customer demand. Other projects result from mandated regulatory commitments such as commodity, transmission and distribution voltages, ranges, pressures); or operations and user department requests to address concerns, issues, or identified deficiencies.
  - (2) Capital Programs: Groups of projects similar in nature occurring at multiple locations and/or different annual periods in specific categories (e.g., burnouts, leaking services, batteries, roof, failed equipment) or defined types of work (e.g., technology upgrade, end of life, and regulatory standards such as environmental or safety) that have trends of on-going and continuing expenditures. Estimated program expenditures may include both identified and unidentified work.
  - (3) General Equipment: Specific categories of equipment (commonly termed XM) classified under the Uniform System of Accounts as General Plant that usually have a purchase cost of \$500 or more and a life expectancy of more than one year ("General Equipment").

APPROVED	APPROVED DATE	LAST REVIEWED DATE	NUMBER	SUPERSEDES	PAGE 1 OF
Robert Hoglund	September 23, 2021	September 23, 2021	610-1	Jul 16, 2018	16 PAGES



# Corporate Instruction

SUBJECT

## 610-1 CI Capital Budget Process

EXHIBIT A summarizes information about capital General Equipment and the organizations responsible for budgeting, managing, and controlling general equipment purchases.

- b. All capital budget items are required to have the following for accounting and reporting categorizations, to facilitate rate case filings as well as manage changes in the budget through the capital governance process:
- (1) Function Category Code: Capital projects, programs, and general equipment are categorized and grouped by function for reporting purposes. Functions are established at the highest level nature of the work. A list of function codes and their descriptions can be found on the [Business Intelligence Support Website](#). Any additions, deletions, or changes to function codes require advance approval by the Vice President, Financial Planning and Analysis (FP&A).
  - (2) Project Number: Items in the capital budget require a unique project number (an eight-digit number that is assigned in the designated accounting and budgeting systems). Refer to "[Oracle EBS Reference Document - Project Accounting/FAQ](#)" for additional guidance on the use of Project/Task numbers. Each project number has an owning cost center that designates the organization responsible for the project or program.
  - (3) White Paper: A document used to summarize information pertinent to a capital project or program. In addition to scope and estimated expenditures, the white paper will:
    - (a) Demonstrate the alignment of a capital project or program with the Company's strategic objectives, enterprise risk management efforts, financial and non-financial benefits, and other long-term goals.
    - (b) Standardize the preparation of business cases. (See the [Capital Projects Playbook CPP-10, "Capital Optimization Guideline"](#) for additional information.)
  - (4) Capital Portfolio: Capital projects, programs, and general equipment are managed within portfolios that aggregate capital into commodity and/or functional groupings. Each portfolio has a governance

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committee comprised of senior management that oversees the capital budgeting and forecasting activities (“Governance Committee”, see 4.5). The appropriate capital portfolio for a project or program is determined through the owning cost center associated with the project number and/or the function code. The five capital portfolios are: Electric Transmission and Distribution, Gas Operations, Steam Operations, Information Technology and Facilities Field Services and General Equipment.

### 3.2 Annual Capital Budget Preparation, Review, and Approval Process –

- a. A guidance document for the preparation of the annual capital budget for the ensuing year and five-year forecast is issued by the Senior Vice President and Chief Financial Officer each year. The guidance document:
  - (1) Establishes target spending levels for aggregate capital projects and programs for five years.
  - (2) Sets the timetable for budget requests, review, and approval by the President of the Company and the Chief Executive Officer (CEO) of Consolidated Edison, Inc (“CEI”).
- b. FP&A in collaboration with the representatives from each capital portfolio, manage a capital optimization process in accordance with CPP-10, “Capital Optimization Guideline.”
- c. Each organization will:
  - (1) Submit budget documentation at the time specified in the annual guidance document to FP&A.
  - (2) Present their capital budget requests as indicated below:
    - (a) Operations organizations and Corporate and Utility Shared Services will present their capital budget requests to the President of the Company for review.
    - (b) Other support organizations will present their capital budget requests to their respective Senior Vice President (Corporate Affairs, Finance, Law, and Auditing).

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- (3) Following the budget presentation, the President of the Company and the respective Senior Vice Presidents (Central Operations, Corporate Shared Services, Customer Energy Solutions, Customer Operations, Electric Operations, Gas Operations, and Utility Shared Services) and the Vice President, Environment, Health and Safety will present their respective budget requests to the CEO of CEI.
- d. Corporate FP&A will coordinate and consolidate the budget requests for the proposed annual capital budget for review by the Finance Committee and the Board of Trustees (“Board”) and will also coordinate any subsequent Finance Committee or Board approvals required for specific projects or budget increases. The documents that require submission to the Finance Committee include:
- (1) A request from the Finance Committee to the Board recommending approval of the annual budget funding level.
  - (2) A detailed listing of projects/programs of \$10 million or greater with funding in the specific budget year, including those with long-lead time approval, and total annual capital budget request. Long-lead time projects/programs are specific projects/programs that do not require funds in the given budget year but require contractual commitments that will affect future years.
  - (3) Approval requests for capital projects with an aggregate estimated cost in excess of \$50 million, and approval requests to the Board for capital projects with an aggregate estimated cost in excess of \$100 million.
  - (4) Subsequent increases to the capital budget in excess of 5% of the amount authorized in the annual capital budget.
- e. The executive sponsor is the officer who is responsible for overall technical and cost accountability for the planning, design, scheduling, procurement, and construction of a capital project or program (see 4.4). After Board approval of the annual capital budget, the executive sponsors may direct their project or program managers and project engineers to proceed with design engineering and/or other necessary preparations including the evaluation of environmental, health, and safety considerations in planning (reference Corporate Environmental, Health and Safety Procedure CEHSP A11.03, “Environment, Health and Safety Considerations in Project

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Engineering and Planning”). Design engineering may be completed before project appropriation; however, obligations for construction or procurement may not be incurred until an appropriation request is approved (see paragraph 3.4). Spending cannot exceed \$5 million prior to the approval by the Finance Committee or Board as appropriate.

**3.3 Authorization** – Approval of the capital budget request by the Board establishes authorization for the total capital budget and each line item within the budget, including in their entirety all long lead equipment purchases or projects scheduled to involve expenditures in succeeding years and contained within the five-year capital budget. Adjustments to line items within the authorized total budget amount that do not require Board of Trustees’ approval, will be reviewed and sanctioned by the appropriate Governance Committee. However, before funds can be expended on a specific project or program contained within an approved budget or sanctioned via the appropriate Governance Committee, an appropriation request must be submitted and approved.

- a. Adjustments to line items within the authorized total budget amount that do not require Board of Trustees’ approval, will be sanctioned and managed by the appropriate Governance Committee.
- b. Band 71 (CEO) is authorized to approve increases in the capital budget as deemed appropriate, provided that any increase of 5% or more in the overall capital budget shall require the approval by the Board.

**3.4 Appropriation** – Appropriation represents a formal grant of authority to obligate a specific amount of Company funds for a project or a program.

- a. For inside plant projects (assets inside company property such as office buildings, substations, etc.) and work not specifically covered in the Property Accounting Manual, Property Record issues account rulings. Outside plant work is determined by the information in the [Property Accounting Manual](#).
- b. Before funds can be obligated or expended for capital projects, an appropriation request must be approved and submitted to Project Accounting using the *Appropriation Form*. The appropriation requests must include all capital costs and retirement (i.e., the cost of removal costs) for a project.

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- c. Appropriation approvals for projects are contingent upon funding being established for the project either through a line item in an approved budget or sanctioned through a capital Governance Committee for an amount that is equal to or greater than the amount of the proposed appropriation. Appropriation requests will be approved in accordance with the Delegation and submitted to Project Accounting.
- d. Individual projects should be appropriated in portions equaling the total budgeted or sanctioned amount over the duration of the specified scope of work.
- e. Partial appropriation requests for projects should include a reasonable estimate for the total expected project cost. The initial and subsequent partial appropriation(s) must be approved by the authority specified in the Delegation.
- f. Individual projects budgeted and managed within the same program that would otherwise be individually appropriated can be combined into a program appropriation. The program appropriation can span the expected duration of a program with a defined scope and timeline or for programs that continue indefinitely can span the annual budget and work plan.
- g. After approval of the appropriation request, the project or program manager will proceed with procurement and work to complete the project. The project or program manager with support from FP&A is responsible for the correct accounting for all costs for the applicable projects/programs so that expenditures do not exceed the approved amount of the appropriation. See Capital Projects Playbook CPP-06, "Project Control Cost Guideline" for additional information.

### 3.5 Increase of Appropriation –

- a. The project or program manager, with the support of FP&A, will maintain records of the total contractual commitments and actual expenditures so that the total of both does not exceed appropriated amounts.
  - (1) In the case of Construction, these records will be handled in accordance with Operating Procedure OP-280-1, "Contract Administration Manual," or relevant procedure.
  - (2) FP&A at its own direction, or at the request of the project or program manager, will produce and maintain a Current Working Estimate

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(CWE) for any project that is greater than \$2.5M and expected to have a duration of three months or longer. If a CWE exceeds the approved appropriation amount, the project or program manager will analyze the project or program and should consider changing the scope of work. If the project or program is still expected to exceed the appropriated amount, the project or program manager, the original requestor, and essential personnel (e.g., Construction, FP&A, Engineering) will prepare an *Appropriation Form* to be submitted to Project Accounting requesting an increase in the appropriation. See Capital Projects Playbook CPP-06, "Project Control Cost Guideline" for additional information.

- (3) If the expected funding increase exceeds \$250,000, an appropriation increase is required for any funds that may not have been previously appropriated. An appropriation increase is not required when the cumulative funding increases for a project are not expected to exceed \$250,000.
- b. Requests for increases of appropriation for Capital or Net Retirement Projects must be approved in accordance with the Delegation.
- c. Appropriation increases for projects are contingent upon funding being established for the project either through a line item in an approved budget or sanctioned through a capital Governance Committee for an amount that is equal to or greater than the amount of the proposed cumulative appropriation value.

### 3.6 Emergency Work Orders–

- a. Property Records will expedite requests requiring immediate action that cannot be processed through the normal appropriation method (e.g., an emergency project requiring the immediate procurement of equipment, materials, and/or labor). All requests for emergency work orders in advance of appropriation must be submitted using the *Capital L2/L3 form*, which is available in [Oracle Primavera Unifier](#). This form will be submitted by the organization requesting the emergency work order(s) and approved in accordance with the Delegation, based on the total estimated cost (capital or retirement). The *Capital L2/L3 form* must contain the following information:
  - (1) A description of the work to be performed;
  - (2) A Property Record Ruling Reference Number (if inside plant);
  - (3) The total estimated cost of the project (including overheads);

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- (4) A work schedule containing the estimated start and completion dates of the project;
  - (5) A Project Number (if budgeted);
  - (6) A justification for emergency Work Order Number/Project ID Number (e.g., equipment failure, emergency outage, safety action);
  - (7) A characterization of the work as either related to an immediate failure or a failure anticipated within 48 hours that is expected to disrupt service to customers, and/or is expected to harm the public or environment; and
  - (8) An appropriation submittal schedule.
- b. Property Records will assign and validate the applicable Work Order number(s)/Project/Task(s) and notify the requesting organization of the number(s) issued. Property Records will review the status of all emergency work orders issued that are awaiting appropriation, periodically. An *Appropriation Form* must be submitted within 90 days of issuance of the Work Order number.
  - c. Where prompt action is deemed necessary for items requiring the Finance Committee or Board action, the CEO may authorize such projects on an emergency basis in accordance with the Delegation.

### **3.7 Funding and Budget Control –**

- a. For each capital project, program or equipment item, various levels of project numbers will be established to track costs.
- b. Each capital project, program or equipment item is managed within a capital portfolio overseen by a Governance Committee. Capital budgets will be managed through a capital governance review process. Proposed changes including funding additions or amendments to the annual capital budget are submitted to the appropriate Governance Committee by the project/program managers and approved by the Governance Committee members.
  - (1) Each Governance Committee has all funding approving rights within its capital portfolio; however, increases above the original budget for a given portfolio not resulting from a swap between portfolios and

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net zero impact for the overall capital budget must be reviewed by the President of the Company. Increases in the overall authorized capital budget level for the Company must be approved by the CEO. Further, Board approval must be obtained when the year-end estimate for the total capital budget exceeds the approved budget by 5% or more. Once the Governance Committee has approved funding for a capital project, the requesting organization must complete an appropriation request.

- (2) Starting in April of each year, and for every month thereafter, the capital forecast for the Company is presented to the Board of Trustees in the Finance Report of the Company.
  - (3) The status of capital projects exceeding \$50 million will be provided to the Finance Committee of the Board and capital projects exceeding \$100 million will be provided to the Board periodically. The current periodicity is at the end of each quarter.
- c. FP&A will distribute a monthly Performance Report to the Senior Vice Presidents and to other designated management employees that reports the variance between actual capital expenditures versus budget and a year-end estimate versus budget.
- d. General Equipment has the additional following requirements:
- (1) EXHIBIT B sets forth categories of Capital General Equipment that require ongoing custodial inventories and the designation of a custodial organization responsible for inventories. The custodial organization shall maintain a governing document that details the conduct of inventories, their frequency, and the remedial actions required when inventories reveal missing items. EXHIBIT B also lists XM items that require Company-issued tracking numbers and systems.
  - (2) User Organizations who consume general equipment throughout the Company and identify capital general equipment “missing” shall report the lost item(s) by completing and submitting a [Security Incident Report Form](#) with a copy to the XM Coordinators for appropriate action.

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- (3) The User Organization is responsible for resolving problems with capital general equipment purchases with the appropriate XM Coordinator. If a User Organization reports a problem to the Action Line, they shall send a copy to the appropriate XM Coordinator. (Reference Corporate Instruction CI-240-2, “The Action Line.”)

## 4.0 **RESPONSIBILITIES** --

**4.1 Board of Trustees and Finance Committee** – The Finance Committee’s responsibilities are outlined in the Charter of the Finance Committee.

### **4.2 Financial Planning and Analysis (FP&A)** –

- a. The Vice President, FP&A, is the process owner and is responsible for monitoring the process, updating procedures as necessary, and providing advice and counsel on this Corporate Instruction.
- b. Publishes and distributes the annual capital budget upon approval by the Board.
- c. When overruns require the approval of the Board and/or the CEO, notifies the responsible executive sponsor.
- d. Works with the Corporate Leadership Team (CLT) to identify and rank the Corporate Strategic Drivers.
- e. Manages the capital optimization and governance processes, and provides enterprise-wide guidance and support on project/program/portfolio cost management practices, tools, and standardized processes for all capital project and program white papers.
- f. Consolidates the proposed annual capital budget request from submission of the executive sponsors and the recommendations made by the President.
- g. Monitors expenditures on applicable capital and retirement projects and programs. When variances occur between the expenditures and the budgeted and/or appropriation levels, notifies the project or program manager. Creates and maintains CWE’s on certain capital projects.

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- h. Prepares and issues a monthly financial highlight report to CLT and other appropriate Company personnel. The most recently sanctioned expenditure forecast will be included in the monthly financial highlight report.

### 4.3 Corporate Accounting –

- a. Project Accounting. Establishes project levels as required, either as a result of the annual capital budget process or the *Appropriation Form*.
- b. Property Record. Provides accounting rulings on inside plant projects (assets inside company property such as office buildings, substations, etc.) and work not specifically covered in the Property Accounting Manual in advance of project appropriation.

**4.4 Executive Sponsor** – The executive sponsor is the officer who is responsible for overall technical and cost accountability for the planning, design, scheduling, procurement, and construction of the capital projects or programs under his or her jurisdiction. This responsibility includes having the necessary forms properly prepared and submitted and designating the project or program manager for individual projects or programs. Note that this role may be a functional role and not the individual’s actual title.

**4.5 Governance Committee** – The Committee for each capital portfolio (Electric, Gas, Steam, Information Technology, Facilities Field Services and General Equipment) that reviews and approves the optimized portfolio within its scope each year. Additionally, the Committees review capital performance and can approve changes to the line items in the capital budget based on updated forecasts for each line item or emergent new requests.

### 4.6 Project or Program Managers –

- a. The project or program manager, or designee, is responsible for planning, organizing, controlling, and coordinating all activities relating to the execution of assigned projects including the assurance of correct accounting for all resources used including the identification of environmental, health and safety considerations in planning (reference CEHSP A11.03), as well as compliance with all applicable regulatory requirements and the overall safety of the workforce engaged with the project.

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b. The project or program manager is responsible to all items as listed in the Capital Projects Playbook (See the “Project Management Guideline” [Capital Projects Playbook CPP-00](#)) in areas of initiating, planning, executing, monitoring and controlling, and closing.

**4.7 Requestor** – The requestor (e.g., an engineer) is responsible for preparation of the white paper as part of the Capital Optimization Process and the *Appropriation form* and routes the white paper and template appropriately. Note the requestor of a white paper and of an appropriation form for the same project or program may not be the same individual.

**5.0 EXHIBITS --**

**5.1 EXHIBIT A** - Summary of General Equipment for Capital Accounts

**5.2 EXHIBIT B** - Matrix of Required XM Inventory Controls

**6.0 REFERENCES --**

**6.1** Charter of Resolutions of the Finance Committee of the Board of Trustees

**7.0 ADVICE AND COUNSEL --** The Vice President, Financial Planning and Analysis, shall provide advice and counsel on this Instruction.

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## EXHIBIT A

### Summary of General Equipment for Capital Accounts

Capital Budget Item	Account Code	Account Description	PSC Account	Examples	XM - General Equipment Coordinator
XM1	n/a	OFFICE FURNITURE, BUSINESS MACHINES,	391000	DESKS, CHAIRS, TABLES, COPYING MACHINES, CABINETS, BOOK CASES, DRAFTING ROOM EQUIPMENT, SAFES, WINDOW TYPE AIR CONDITIONERS, SAFES AND SECURITY CONTAINERS, ETC.	FACILITIES AND FIELD SERVICES
	n/a	MODULAR OFFICE PARTITIONS, CARPETING, SAFES		MODULAR OFFICE PARTITIONS, CARPETING, SAFES	
XM2	n/a	TRANSPORTATION EQUIPMENT	392000	AUTOMOBILES, ELECTRIC VEHICLES, MOTOR TRUCKS, MOTORCYCLES, REPAIR CARS/TRUCKS, TRACTORS/TRAILERS, OTHER TRANSPORTATION VEHICLES, AND VEHICLES WHERE MOUNTED EQUIPMENT CAN BE EASILY REMOVED AND USED FOR TRANSPORTATION	FACILITIES AND FIELD SERVICES
XM3	n/a	STORES EQUIPMENT	393000	INCLUDES THE COST OF PORTABLE AND INSTALLED EQUIPMENT USED FOR THE RECEIVING, SHIPPING, HANDLING, AND STORAGE OF M&S AND CAPITAL ITEMS: STORAGE BINS, ELEVATING AND STACKING EQUIPMENT, COUNTER, CHAIN FALLS, HOISTS, WHEEL BARROWS, STENCIL MACHINES, BATTERY CHARGERS, ETC.	FACILITIES AND FIELD SERVICES
XM4	n/a	SHOP EQUIPMENT	394000	EQUIPMENT USED SOLELY IN GENERAL SHOPS (GENERATING STATION SHOPS EXCLUDED): FLOOR GRINDERS, LATHES, MILLING MACHINES, SCRIBERS, BRAZING AND WELDING EQUIPMENT, DRILL PRESSES, SHAPERS, JIB CRANES, HOISTS, VISE BAND SAWS, AIR COMPRESSORS, PORTABLE TOOLS, ETC.	CONSTRUCTION
XM5	3760	LABORATORY EQUIPMENT (TESTING)	395000	PORTABLE ELECTRIC, CHEMICAL AND MECHANICAL INSTRUMENTS AND LABORATORY EQUIPMENT USED FOR SYSTEM-WIDE TESTING PURPOSES SUCH AS VOLTMETERS, AMMETERS, WATTMETERS, GAS AND VAPOR TESTERS, ANALYZERS, AMPLIFIERS, RECORDERS, VIBROMETERS, TACHOMETERS, PRESSURE GAUGES, ANEMOMETERS, LABORATORY BENCHES, ETC.	FACILITIES AND FIELD SERVICES

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## EXHIBIT A (Cont'd)

### Summary of General Equipment for Capital Accounts

Capital Budget Item	Account Code	Account Description	PSC Account	Examples	XM - General Equipment Coordinator
XM6	n/a	TOOLS & WORK EQUIPMENT	394000	TOOLS USED IN GENERAL CONSTRUCTION OR REPAIR WORK: PNEUMATIC HAMMERS, DRILLS, TOOL CARTS, SUBMERSIBLE & PORTABLE PUMPS, CHAIN SAWS, LAWN MOWERS, GRAVELY TRACTORS, CONCRETE MIXERS, SMALL TRENCHERS, SURVEYING EQUIPMENT, HEAVY DUTY FLOOR CLEANING EQUIPMENT, ROWBOATS, HYDRAULIC JACKS, BATTERY CHARGER, STEAM CLEANERS, PARTS WASHERS, WORK BENCHES, VISES, ENGINE STANDS, POWER PAK, TIRE REPAIR EQUIPMENT, BODY SHOP TOOLS AND PAINTING EQUIPMENT, GRINDERS, DRILLS, LATHES, PRESSES, GREASING AND LUBE EQUIPMENT, GASOLINE PUMPS AND STORAGE TANKS, DYNAMETERS, ETC.	FACILITIES AND FIELD SERVICES
XM7	n/a	MISCELLANEOUS EQUIPMENT	398000	RECREATIONAL, CAFETERIA, AND KITCHEN EQUIPMENT, MEDICAL (INCLUDING HOSPITAL AND INFIRMARY), WATCHMAN'S CLOCKS, SAFETY EQUIPMENT, TRAINING EQUIPMENT, INHALATORS, RESUSCITATORS, SIGN AND ADVERTISING DISPLAYS, FIRE PROTECTION EQUIPMENT, AUDIO VISUAL EQUIPMENT, PHOTOGRAPHIC EQUIPMENT, ETC.	FACILITIES AND FIELD SERVICES
XM8	n/a	COMMUNICATION EQUIPMENT	397000	ALL COMMUNICATIONS EQUIPMENT USED ANYWHERE IN GENERAL COMPANY OPERATIONS: TRANSMITTERS, RECEIVERS, AMPLIFIERS, REFLECTORS, TOWERS, RADIO TELEPHONES, VEHICLE-MOUNTED RADIOS, WALKIE TALKIES, MICROWAVE EQUIPMENT INCLUDING SWITCHING EQUIPMENT, FIBER OPTIC EQUIPMENT, FAX MACHINES, ETC.	INFORMATION TECHNOLOGY
XM10	n/a	COMPUTER EQUIPMENT	391000	ALL ELECTRONIC DATA PROCESSING EQUIPMENT AND RELATED COMPUTER EQUIPMENT	INFORMATION TECHNOLOGY
XM13	n/a	POWER-OPERATED EQUIPMENT	396000	AIR COMPRESSORS W/VEHICLE, BACK-FILLING MACHINES, BORING MACHINES, BULLDOZERS, CRANES & HOIST, DIGGERS, PILE DRIVERS, PIPE CLEANING/COATING/WRAPPING MACHINES, TRACTORS (CRAWLER TYPE), TRENCHERS, AND OTHER POWER-OPERATED EQUIPMENT	FACILITIES AND FIELD SERVICES
XM15	3761	LABORATORY EQUIPMENT (CHEMICAL)	395000	EQUIPMENT PURCHASED SOLELY FOR USE BY THE CHEMICAL LABORATORY: GAS, STEAM, AND ELECTRIC TESTING EQUIPMENT, VOLTMETERS, ANALYZERS, LAB BENCHES, MICROSCOPES, ETC.	FACILITIES AND FIELD SERVICES

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## EXHIBIT B

### Matrix of Required XM Inventory Controls

Equipment Category	Inventory Tag Required	Custodial Inventory Required	Custodial Organization	Inventory Method and Cycle	Tracking System
XM1 Office Furniture	No	No	None	Not Applicable	Not Applicable
XM2 Transportation Equipment	Vehicle # Assigned	Yes	Facilities and Field Services	Annual State Inspection	VMS
XM3 Stores Equipment	No	No	None	Not Applicable	Not Applicable
XM4 Shop Equipment	No	No	None	Not Applicable	Not Applicable
XM5 Lab Equipment (Testing)	Yes	No	None	Not Applicable	Mainsaver
XM6 Tools & Work Equipment	No	Yes	User Organizations <sup>(1)</sup>	Annual Physical Inventory	User Defined
XM7 Safety & Miscellaneous Equipment	No	No	None	Not Applicable	Not Applicable
XM8 Communication Equipment					
Portable & Mobile Radios	No	Yes	Information Technology <sup>(1)</sup>	Annually during budget cycle	TEMS (2)
Stationary (Hubs & Switches)	No	No	None	Not Applicable	Not Applicable
XM10 Computer Equipment – Mainframes, Servers, Desktop & portable PCs, and printers	No	Yes	Information Technology <sup>(2)</sup>	Every Year via CCC for PC's	SMSSCCM/CC C (3)
XM13 Power-Operated Equipment	Vehicle # Assigned	Yes	Facilities and Field Services	Annual State Inspection	VMS
XM15 Lab Equipment (Chemical)	Yes	No	None		Mainsaver

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NOTES:

1. Facilities and Field Services will provide guidance to the custodial organizations to develop an inventory method. Cycle will be annual. See Facilities and Field Services Guidance Document [GD-010, "Capital Tools and Work Equipment"](#) for further reference.
2. See Corporate Instructions [CI-330-10, "Security and Use of Mobile and Portable Communications Equipment"](#) and [CI-310-11, "Inventory of Telecommunication Lines."](#)
3. Information Technology performs a daily inventory of servers and personal computers on the network for deployment of software patches. Personal computers will be placed into inventory in Computer Cost Central (CCC) when they are shipped from the vendor.

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# **Shared Services Panel**

**Research and  
Development**

**Exhibit SSP-2**

Shared Services Panel (SSP-2) Research and Development - O&M	Year Total			
	Current Budget			
	Total Dollars (\$000)			
	RY1	RY2	RY3	3 Yr. Total
Medium & Heavy Duty Fully Electric Vehicle Development	1,500	1,250	750	3,500
Cable Splicing Machine	1,000	1,000	1,000	3,000
<b>Total Research and Development</b>	<b>\$ 2,500.00</b>	<b>\$ 2,250.00</b>	<b>\$ 1,750.00</b>	<b>\$ 6,500</b>

## Utility Shared Services/Research and Development 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Medium & Heavy Duty Fully Electric Vehicle Development	
Project/Program Manager: Antonio Ruvio	Project/Program Number (Level 1):
Status: <input checked="" type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 1/1/2023	Estimated Date In Service: On-going
<b>A. Total Funding Request (\$000)</b> Capital: O&M: 3,500	<b>B. To be determined</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period:</b> (Years/months) (If applicable)
<b>Work Description:</b>  This program is developing medium and heavy duty electric vehicles commonly used in the utility industry. Con Edison is in the process of building a fully electric material handling bucket truck and would like to expand this project to include a digger derrick, a flush truck and a cable pulling truck. As passenger vehicles transition to fully electric, the medium and heavy duty truck platforms are closely following suit with major manufacturers preparing to release several electric truck chassis in the near future. This project will allow Con Edison to be part of the development and design process for these types of trucks, leading the industry and also moving towards Con Edison's clean energy commitments of fleet decarbonization. The Company's first fully electric material handling bucket truck has a target completion of the first quarter of 2022, with the intent to develop one additional truck type per year starting in 2023.	
<b>Justification Summary:</b>  Transportation Operations' has implemented an Alternative Fuel Vehicle Strategy and Sustainability Plan with goals to use alternative fuels in the fleet, where applicable, achieve lower greenhouse gas emissions, reduce petroleum usage, and meet the Department of Energy's regulations (EPAAct). Developing new applications for fully electric vehicles will provide the Company with the means to achieve these goals. With the future availability of fully electric medium and heavy duty chassis, equipment manufacturers will begin to develop and integrate equipment and accessories on these platforms.  The project will provide Con Edison a means to lead the development and tailor this equipment to the Electric Utility industry. Leading the initiative will give Con Edison a strategic position and help advance the industry forward. The three proposed truck types are all used in supporting Con Edison's Electric	

Operations division which will help to improve the electrical infrastructure required for charging these vehicles going forward. Con Edison currently has 26 Battery Electric Vehicles (BEV), 81 Plug-in Hybrid Electric Vehicles (PHEV), and 23 Electric Auxiliary Power Units (e-APU). In addition to the Company's goal to replace all light duty vehicles with an electrified counter part by 2035, Con Edison is now seeking to do the same for its medium/heavy duty vehicles by leading their development to help jumpstart the market. Due to the developmental nature of this project, high initial cost for fully electric chassis and limited availability, the cost benefit is yet to be determined. With future development, this project will allow for reduced operating costs as well as increased vehicle reliability.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

This project will help the Company achieve its goals of fleet decarbonization and position it at the forefront of medium and heavy duty utility truck development. Throughout this five year period Con Edison will test these trucks in different climate conditions, duty cycles and work types to identify what works and what requires improvement. Once data has been gathered the Company will be able to perform further analysis and benchmarking to help improve the future generations of electric trucks.

Risks for this project include technology limitations, charging infrastructure robustness and application specific limitations. These risks are outweighed by the benefit developing these types of trucks creates to meet the Company's clean energy commitments of fleet decarbonization. Successfully managing these risks will lead to the development of equipment Con Edison can use and further improve upon.

## 2. Supplemental Information

**Alternatives**

Other medium and heavy duty vehicle types Con Edison could further develop include Walk-in Vans and Crane Trucks. These truck types all have their unique challenges and should be explored in the future.

1. Walk-in Van - require exportable power, have limited capacity and are only built by two manufacturers world-wide.
2. Crane Trucks - are built using the higher end of the Gross Vehicle Weight Rating (GVWR of 80,000 Lbs.) chassis which are currently not available and will likely be the last chassis types to be developed.

**Risk of No Action**

Without input from Electric Utility Fleets, manufacturers will likely focus their research and development on larger market segment truck types not used in Con Edison's fleet, for example parcel service and bus applications. This will delay availability for these Utility truck types and hinder the Company's ability to make the transition to fully electric medium and heavy duty trucks.

**Non-Financial Benefits**

Fully electric vehicles produce no air emissions, are virtually silent and eliminate engine idling. This is especially true when comparing them to heavy duty truck applications. As a result, electrifying these types of trucks reduces impacts on the environment, air quality, climate change and public health. The

use of fully electric vehicles in the fleet will also reduce the Company's carbon footprint, which supports one of Con Edison's Sustainability Initiatives.

In addition to the cleaner air and lower environmental impacts, electric trucks require less maintenance than internal combustion engine counter-parts. These trucks have no exhaust system, no emissions controlling devices (Diesel Particulate Filter, Selective Catalytic Reduction, and Diesel Exhaust Fluid Injection Systems), no transmissions, no engine oil, fewer motor and body parts. Using regenerative braking, service brake life is estimated to be approximately 3 times longer than in a traditional truck.

Aside from these benefits, being leaders in the development of these trucks will improve the public image and reinforce the Company's green initiatives.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

\$3,500,000

4. Basis for estimate

To estimate project cost Con Edison used the existing contract price for the fully electric material handling bucket truck and derived a delta vs the Company's standard internal combustion engine (ICE) counter part.

"ICE" Material Handling Bucket \$319,620  
Electric Material Handling Bucket Truck \$779,439  
Delta - 144%

"ICE" Digger Derrick =  $\$351,616 \times 144\% = \$857,943$

"ICE" Flush Truck =  $\$553,375 \times 144\% = \$1,350,236$

"ICE" Cable Truck =  $\$526,732 \times 144\% = \$1,285,227$

5. Conclusion

The proposed trucks as described will be the first of their kind in the USA. This project seeks to establish Con Edison as a pioneer in the electric utility and transportation industries to develop a long term evaluation strategy of all electric medium and heavy duty truck solutions. The long term field testing will be conducted in collaboration with Con Ed's Electric Operations and Transportation Operations to track the vehicles drivability, worksite performance and overall reliability. This project will serve to be a proof of concept necessary for determining the practicality of these trucks in electric utility segment fleet application.

In light of this, no actual cost savings can be determined at this time; however, in the future should these trucks prove to be successful and the costs for the technology reduced to be on par with traditional diesel trucks - Con Edison would be able to decide whether electric work trucks were feasible in critical fleet applications. As described above, there is no cost benefit to this project at this time. This project will

benefit Con Edison from a lesson's learned perspective and will further cement the Company's commitment to EV deployment.
<b>Project Risks and Mitigation Plan</b> N/A
<b>Technical Evaluation/ Analysis</b> N/A
<b>Project Relationships (if applicable)</b> <ul style="list-style-type: none"> <li>• Electric vehicle charging infrastructure</li> <li>• Mission Electric The New York City Electric Vehicle Reeadiness Plan NYC (Clean Cities/NYC)</li> <li>• NYS Letter of Memorandum 2030 commitment for 30% of all new medium/heavy duty vehicle purchases must be electric.</li> </ul>

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Actual 2021</u>
Capital	0	0	0	0	0	0
O&M						

**Total Request (\$3,500,000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	0				0
O&M		1,500	1,250	750	0

**O&M Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	0	0	0	0	0
M&S	0	0	0	0	0
Contract Services	0	1,500	1,250	750	0
Other	0	0	0	0	0
Overheads	0	0	0	0	0
<b>Total</b>	0	1,500	1,250	750	0

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					

Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services/Research and Development 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Cable Splicing Machine	
Project/Program Manager: Thomas Campbell	Project/Program Number (Level 1):
Status: <input checked="" type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input checked="" type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 1/1/2023	Estimated Date In Service: On-going
<b>A. Total Funding Request (\$000)</b> Capital: O&M: 3,000	<b>B. To be determined</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period:</b> (Years/months) (If applicable)
<b>Work Description:</b>  This project seeks to develop and demonstrate the use of an underground splicing machine to make medium voltage cable splices. Currently, processing and restoring feeders that open automatically consists of many steps, including positive identification, and placement and removal of additional protective grounds around the worksite required for workers. While we have decreased outage durations over the years by process optimization, we see little opportunity to make further significant reductions by process optimization alone. The use of a splicing machine could potentially streamline feeder processing further by changing the existing work methods as well as tighten quality consistency of splices made. To reduce overall project risk the development is divided into four phases. They are as follows: phase 1- scoping, requirement, concept generation, phase 2 technical feasibility, phase 3 system development and phase 4 validation. Phase 1 is to be completed in 2022. We expect phase 2 through 4 of this project to start in 2023 and end by 2025. By completion we expect to demonstrate a fully functional splicing machine in real conditions. Beyond 2025 we expect to expand the capability of the splicing machine to accommodate various types of cables and splices within our electric system.	
<b>Justification Summary:</b>  Con Edison experiences over a thousand underground distribution feeder failures each year, a small portion of which are caused by inconsistent assembly. To repair failures and to make extensions and other changes to the underground medium voltage network feeder system, splicers must spend long periods of time in underground electrical enclosed spaces, commonly called manholes. We have reduced premature failures and improved useful life of splices by improving splice components and splicer training, but more is needed. In addition, we have steadily improved worker safety by engineering and administrative controls and personal protective equipment, but underground electrical enclosed spaces are not zero-risk environments.	

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

This Project will help the company address its strategic and operational needs to ensure the long-term sustainability of the company by:

- Reducing risk and enhancing public and employee safety
- Increasing operational performance and flexibility

Throughout this five-year period Con Edison will test the cable splicing machine in various field sites and operating conditions to identify splice quality and workflow process improvements.

Risks for this project are technology limitations. The risk is outweighed by the benefit of the company’s commitment to safety and operational performance and flexibility.

**2. Supplemental Information**

**Alternatives**

There are no alternatives to this technology. The company is embarking an industry-first in development of a cable splicing machine.

**Risk of No Action**

This risk of no action includes missed opportunity to improving safety of our employees, improving operational performance and flexibility.

**Non-Financial Benefits**

Employee safety is one primary benefits of this project. The splice machine can reduce the amount of time a technician is required to perform a cable splice thus reducing time spent in enclosed spaces.

Con Edison historically schools and trains technicians to perform cable splices. The process from trainee to certified splicer can take many years. While this process can be lengthy it ensures that the workmanship of technicians is consistent in performance and of quality. The splicing machine will not replace the role of the technician, it will however help ensure consistent performance and quality of splices regardless of the experience of the technician.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

\$3,000,000

4. Basis for estimate

To estimate project cost, Con Edison uses the cost estimates provided by splicing machine manufacturer. The cost estimate includes field support as development of the splicing machine requires.

<p>5. Conclusion</p> <p>The proposed cable splicing machine described will be first of its kind. Con Edison is pioneering the technology to improve the safety of employees while maintaining the consistent quality of cable splices required.</p> <p>No actual cost savings can be determined at this time; however, in the future should cable splice machines prove to be successful Con Edison would be able to decide whether cable splicing machines would be adapted to its feeder processing workflow.</p>
<p><b>Project Risks and Mitigation Plan</b> N/A</p>
<p><b>Technical Evaluation / Analysis</b> N/A</p>
<p><b>Project Relationships (if applicable)</b> Endcap cable splicing machine</p>

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Actual 2021</u>
Capital						
O&M						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital					0
O&M		1,000	1,000	1,000	0

**O&M Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	0	0	0	0	0
M&S	0	0	0	0	0
Contract Services	0	1,000	1,000	1,000	0
Other	0	0	0	0	0
Overheads	0	0	0	0	0
<b>Total</b>	0	1,000	1,000	1,000	0

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

# **Shared Services Panel**

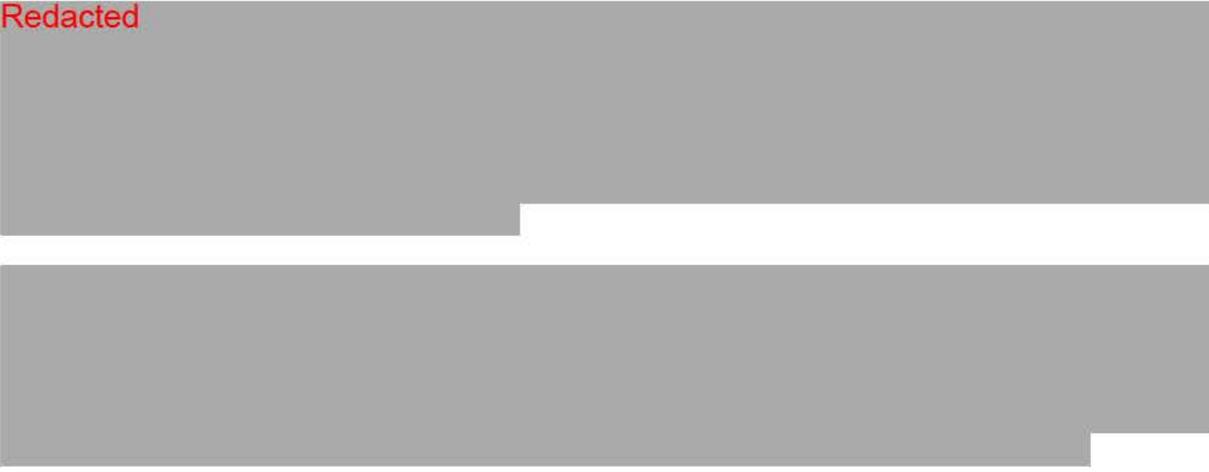
## **Corporate Security**

### **Exhibit SSP-3**

Shared Services Panel (SSP-3) Corporate Security - O&M	Year Total			
	Current Budget			
	Total Dollars (\$000)			
	RY1	RY2	RY3	3 Yr. Total
Corporate Security Perimeter Enhancement Program - CONFIDENTIAL	\$ 3,000	\$ 3,001	\$ 3,000	\$ 9,000

**Utility Shared Services/Corporate Security  
 2022**

**1. Project / Program Summary**

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Corporate Security - Perimeter Enhancement Program	
Project/Program Manager: Sean O'Connor	Project/Program Number (Level 1): NEW
Status: <input checked="" type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: January 2023	Estimated Date In Service: Ongoing Program
A. Total Funding Request (\$000) Capital: 12,000 O&M:	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
Work Description:  Redacted 	
Justification Summary:  Redacted 	

- **Redacted**  
[Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

**Redacted**  
[Redacted]

**2. Supplemental Information**

**Alternatives**

Alternative 1 description and reason for rejection

**Redacted**  
[Redacted]

Alternative 2 description and reason for rejection

**Redacted**  
[Redacted]

<p><b>Risk of No Action</b></p> <p><u>Risk 1</u> Redacted</p> <p>Redacted</p> <p>Redacted</p>				
<p><b>Non-Financial Benefits</b></p> <p>Redacted</p>				
<p><b>Summary of Financial Benefits and Costs (attach backup)</b></p> <p>1. Cost-benefit analysis (if required) N/A</p> <p>2. Major financial benefits N/A</p> <p>3. Total cost \$12,000,000</p> <p>4. Basis for estimate Cost has been determined by using cost metrics from previous projects that took place. The cost per location will vary due to the size differential as well as conditions relevant to each location.</p> <p>5. Conclusion This project will play an crucial role in keeping Company locations secure. It will also keep the Company up with industry standards and changing atmospheres in security platforms. Redacted</p> <p>Redacted</p>				
<p><b>Project Risks and Mitigation Plan</b></p> <table border="1"><thead><tr><th>Risk 1</th><th>Mitigation plan</th></tr></thead><tbody><tr><td>Redacted</td><td>Redacted</td></tr></tbody></table>	Risk 1	Mitigation plan	Redacted	Redacted
Risk 1	Mitigation plan			
Redacted	Redacted			

<p>Risk 2 <b>Redacted</b></p>	<p>Mitigation plan <b>Redacted</b></p>
<p>Technical Evaluation/ Analysis N/A</p>	
<p>Project Relationships (if applicable) N/A</p>	

### 3. Funding Detail

**Historical Spend (\$000)**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital						
O&M						
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	0	3,000	3,000	3,000	3,000
O&M*					
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense: (\$000)**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	0	1,500	1,500	1,500	1,500
M&S	0	600	600	600	600
Contract Services	0	200	200	200	200
Other	0	400	400	400	400
Overheads	0	300	300	300	300
<b>Total</b>	<b>0</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>

**Total Gross Cost Savings / Avoidance by Year: (\$000)**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year: (\$000)**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/ maintenance if capital isn't deployed)

Project Status:

- Initiation – New project, not authorized yet
- Planning – Project authorized, not started yet
- Executing – Project in-flight
- On-going – Annual program

# **Shared Services Panel**

## **Human Resources**

### **Exhibit SSP-4**

Shared Services Panel (SSP-4) Human Resources - O&M	Year Total			
	Current Budget			
	Total Dollars (\$000)			
	RY1	RY2	RY3	3 Yr. Total*
Local 1,2 and Local 3 Contingency	\$ 450	\$ 450	\$ 450	\$ 1,350

\* Note: Total including 2026 is \$1,800

## Corporate Shared Services/Human Resources 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Local 1,2 and Local 3 Contingency	
Project/Program Manager: Vincent Frankel	Project/Program Number (Level 1):
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 6/2024	Estimated Date In Service:
A. Total Funding Request (\$000) Capital: O&M: \$1,800	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<b>Work Description:</b>  The Local 1-2 contract expires in June 2024 and the Local 3 contract expires in June 2025. In preparation for the expiration of these union contracts the Company will incur costs associated with these negotiations. These costs include consultants, hotel expenses, electronic data processing, reproduction and forms, telephone communications and other miscellaneous items. Additionally, to prepare the Company for the possibility of a work stoppage there will be contingency plans made which include incremental costs associated with training management for new assignments and food supplies and transportation costs associated with these.	
<b>Justification Summary:</b>  This program is required for the Company to conduct contract negotiations with both Local 1-2 and Local 3 and to have in place our contingency plan in the event of a work stoppage.	
<b>Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)</b> N/A	

### 2. Supplemental Information

Alternatives
--------------

There are no alternatives. The Company must negotiate with the union to continue operations.
<p><b>Risk of No Action</b></p> <p>The Company would not be prepared to assume operations if there is a work stoppage.</p>
<p><b>Non-Financial Benefits</b></p> <p>N/A</p>
<p><b>Summary of Financial Benefits and Costs (attach backup)</b></p> <p>1. Cost-benefit analysis (if required)</p> <p>2. Major financial benefits</p> <p>3. Total cost \$1,800,000</p> <p>4. Basis for estimate Budget is consistent with the 2018-19 budget for negotiations and contingency planning. A straight line recovery has been requested and Accounting will address the proper allocation of these O&amp;M costs among electric, gas and steam.</p> <p>5. Conclusion N/A</p>
<p><b>Project Risks and Mitigation Plan</b></p> <p>N/A</p>
<p><b>Technical Evaluation/ Analysis</b></p> <p>N/A</p>
<p><b>Project Relationships (if applicable)</b></p> <p>N/A</p>

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Actual Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
<b>Capital</b>						
<b>O&amp;M</b>	393	10	88	1,507	22	14
<b>Regulatory Asset</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital					
O&M*		450	450	450	450
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor					
M&S					
Contract Services					
Other		450	450	450	450
Overheads					
<b>Total</b>					

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

# **Shared Services Panel**

## **Learning and Inclusion**

### **Exhibit SSP-5**

Shared Services Panel (SSP-5) Learning and Inclusion - O&M	Year Total			
	Current Budget			
	Total Dollars (\$000)			
	RY1	RY2	RY3	3 Yr. Total
Diversity, Equity, & Inclusion Action Plan Program	\$ 150.00	\$ 150.00	\$ 150.00	\$ 450.00

## Corporate Shared Services Learning and Inclusion 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Diversity, Equity, & Inclusion Action Plan Program	
Project/Program Manager: Nicole Leon	Project/Program Number (Level 1):
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: Ongoing	Estimated Date In Service: Continue
<b>A. Total Funding Request (\$000)</b> Capital: \$0 O&M: 150	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  The focus of this project is to annually conduct a comprehensive, corporate-wide diversity, equity and inclusion employee survey. Valuing diversity, fostering equity, and advancing inclusion is imperative for the Company as we continue to experience growing change in our business environment in a manner that best meets the needs of all stakeholders. These changes require that the organization have the necessary talent poised to carry the Company into the future. To that end, the experience of inclusion survey represents our efforts to create a culture where employees are able to work to their full potential, feel valued and a sense of belonging. Con Edison employs more than 14,000 employees with 49% diverse and 21% women - we must continue to ensure that our workforce reflects the demographics of the markets we serve. Measuring the level of employee inclusion enables the Company to better support our current and future employees and fully leverage talent across all dimensions of diversity. The Diversity, Equity and Inclusion (DEI) survey enables the Company to: <ul style="list-style-type: none"> <li>- Hear directly from our employees and gain their insights about our diversity, equity, and inclusion strategy</li> <li>- Identify areas where we are making and have made progress and opportunities for improvement</li> <li>- The results of the survey also provide us with a measure for our ongoing efforts and performance</li> </ul>	

This program change is requesting funding to engage an experienced vendor to administer/ support employee DEI survey and feedback, benchmarking, communications, and focus groups. Thus enabling the Company to carry out its DEI Action Plan and adapt to our community's dynamic social justice landscape.

**Justification Summary:**

In 2015, the Company launched the corporate DEI strategy. After the events of social and racial injustice in 2020, Con Ed, like many other companies took a renewed look at work around DEI - with a particular eye on the current climate. We developed and implemented the corporate DEI Action Plan supported by a newly developed Diversity and Inclusion ("D&I") Task Force. Implementation of a corporate wide DEI survey was one of the key elements of the action plan. A key factor to ensuring employee engagement was the concern around anonymity, data collection and reporting back. To that end, we benchmarked to identify the best methodology to administer the survey and determined it was through the use of an external third-party vendor with resources and expertise in implementing and administering DEI surveys.

DEI is also one of the risks that is managed at an organizational level across the Company. Recent societal events impact how we look at this risk - the ongoing activity around racial injustice; new political administration in office; increased demands from employees - expecting more from their employers and to take a role/ position in social justice issues; in addition to increased investor focus around Environmental, Social and Governance ("ESG") and DEI. In addition to New York State Public Service Commission inquiries as to the Company's DEI efforts.

The Company revisited and reassessed this risk with an eye towards any potential vulnerabilities such as:

- Broadly - knowing our people and ensuring that we are tapping into all of the talent in our workforce in a manner that is equitable.
- Attention to barriers to inclusion -how our programs and systems are administered
- Understanding our culture, the behaviors, and mindsets in which we operate
- Critical that we address any potential areas of inequity in our employment practices - hiring, retention, development, promotions.

Leveraging the diverse talent across our workforce opens-up so much more potential and innovation for us as a company.

- These behaviors present potential conflict and impact the well-being of our employees
- Not to mention the potential for increased legal exposure from allegations of harassment/ discrimination
- Which has a damaging effect on the reputation of our company

Survey result provides key quantitative and qualitative metrics to help with mitigation:

- Employee Experience of Inclusion survey will specifically help us target and address gaps in a critical area.
- Provides insight into - whether our employees feel their diversity is honored; they feel like they belong, are valued and respected; and if the Company provides access to career development opportunities - can I be successful here: fair and equitable treatment. Very targeted survey different from an engagement survey which looks at discretionary effort
- This survey helps us to see through the lens of all of our employees
- Core elements/ foundation of the Culture of Inclusion Survey and this is what makes this survey different than engagement surveys

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

Potential Consequences of not implementing DEI risk mitigation

- Lack of inclusion creates potential hostile and unsafe work environments
- Limits creativity, innovation, problem-solving and effectiveness of work team
- Adverse impact to morale and well-being; energy and engagement; retention
- Legal issues such as allegations of discrimination/ harassment from employees
- Negative perception of company as being non-inclusive or discriminatory by the public, government agencies; and stakeholders
- Inability to effectively compete for, attract, and retain talent

## 2. Supplemental Information

### Alternatives

Alternative 1 description and reason for rejection

Perform employee surveys, benchmarking, and focus groups in-house. Performing this work in-house will risk anonymity of employees and limits us to what we know instead of gaining perspective from other experts in the DEI sector. As such, the chance of success and change will be limited. An experienced vendor also brings industry best practices in technology, resources, benchmarking information utilized at other peer organizations and that further enable quick implementation and processes that have been tested and are fully developed

Alternative 2 description and reason for rejection

Without proceeding with this project, ensuring compliance with diversity and inclusion mandates, as well as advancing the corporate agenda to build a more inclusive culture becomes increasingly challenging. The process of improving cultural diversity, equity and inclusion in the workplace would be slow and ineffective. The Office of Diversity and Inclusion could minimally support the effort, however, due to size of the workforce in comparison to number of in-house staff and limited technology, this approach is neither comprehensive, nor timely, and will not yield the desired culture shift.

### Risk of No Action

Risk 1

A lower level of success in achieving our DEI strategy, vision, and mission.

Risk 2

Damage to Corporate Public Image – External agencies such as the Equal Employment Opportunity Commission (EEOC) – federal, the New York State Division on Human Rights (NYS DHR) and the New York City Commission on Human Rights (NYCCHR), Office of Federal Contract Compliance Programs (OFCCP), Attorney General (AG) investigate allegations of unlawful discrimination filed by applicants for employment, employees, and former employees. In cases where the external agencies find probable cause to substantiate the allegations of discrimination, potential risk exposure to corporate image may

occur if the cases are reported by the media – high profile cases. This could also undermine our marketing of Con Edison as an employer of choice.

Risk 3

Risk of decreased morale and unrest of the workforce due to delayed changes in norms and behaviors which may ultimately impact retention and productivity.

**Non-Financial Benefits**

Employer of Choice:

- Promotes a positive, productive work environment
- Increased ability to compete for, and retain talent
- Workplace where employees are fully engaged and able to deliver to their full potential
- Engaged employees who demonstrate behaviors that support our company values of service, honesty, concern, courtesy, excellence, and teamwork
- Maintain high standards for equity, respect, and fairness

Corporate Image/ Company Brand/ Customer Satisfaction

- Enhanced customer engagement and relationships
- Enhanced focus on delivering service excellence
- Sustainability
- Minimize risk of discriminatory behaviors that are contrary to our standards of business conduct

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

N/A

2. Major financial benefits

N/A

3. Total cost

The O&M cost will average \$150,000/year per year.

4. Basis for estimate

N/A

Implementation and administration of the survey based on recent similar work by vendor/ external agency

5. Conclusion

N/A

**Project Risks and Mitigation Plan**

N/A

**Technical Evaluation/ Analysis**

Recent DEI Survey and Assessment performed by Willis Towers Watson

Recent DEI Action Plan Review.

<b>Project Relationships (if applicable)</b>
DEI affects morale, psychological and physical safety, teamwork, leadership, and innovation. Without it many projects will suffer due to low employee engagement, lack of innovation and productivity.

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital						
O&M					22.5	90
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital					
O&M*	0	150	150	150	150
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor					
M&S					
Contract Services					
Other					
Overheads					
<b>Total</b>					

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

# **Shared Services Panel**

## **Facility and Field Services**

### **Exhibit SSP-6**

Shared Services Panel (SSP-6) Facilities and Field Services - Capital	Year Total					Page #
	Current Budget					
	Total Dollars (\$000)					
	RY1	RY2	RY3	3 Yr. Total		
Sherman Creek Service Center	\$ 89,025	\$ 16,162	\$ -	\$ 105,187	3	
Worth Street Service Center, Yonkers - Site Master Plan - New Construction	\$ 15,427	\$ 25,067	\$ 7,271	\$ 47,765	12	
30 Flatbush Avenue - Lease Exit Strategy	\$ -	\$ 5,482	\$ 35,839	\$ 41,321	18	
Van Nest Renovations - Van Nest Building 2 - Cable Lab Office Renovation	\$ 5,522	\$ -	\$ -	\$ 5,522	24	
Facilities Critical Infrastructure Short Term Priority/Programs	\$ 16,979	\$ 16,977	\$ 20,583	\$ 54,539	29	
Facilities Buildings and Yards - (Roof Replacement Program)	\$ 9,002	\$ 3,979	\$ 5,967	\$ 18,948	34	
Facilities Service Center Renovations and Storeroom Modernization	\$ 8,014	\$ 8,013	\$ 11,002	\$ 27,029	40	
Facilities Security Upgrades - CONFIDENTIAL	\$ 3,000	\$ 3,000	\$ 3,000	\$ 9,000	45	
FFS Energy Efficiency Program	\$ 23,959	\$ 19,957	\$ 5,009	\$ 48,924	49	
Facilities Buildings and Yards - (Safety Environmental Regulatory)	\$ 4,974	\$ 10,008	\$ 13,010	\$ 27,992	55	
Astoria Southwest Water System Action Plan	\$ 14,613	\$ -	\$ -	\$ 14,613	125	
Fuel Station Upgrade Project - Liquid Fuel Station Replacement Program	\$ 808	\$ 2,014	\$ 5,967	\$ 8,790	207	
Third Avenue Transportation Garage Demolition - Capital Work	\$ 8,850	\$ 2,950	\$ -	\$ 11,800	211	
Third Avenue New Transportation Building	\$ 991	\$ 3,976	\$ 6,966	\$ 11,933	215	
Electric Vehicle Charging Infrastructure - EV Charging Expansion	\$ 2,006	\$ 2,501	\$ 3,008	\$ 7,515	219	
<b>Total Facilities and Field Services</b>	<b>\$ 203,170</b>	<b>\$ 120,085</b>	<b>\$ 117,623</b>	<b>\$ 440,878</b>		

Shared Services Panel (SSP-6) Facilities and Field Services - O&M	Year Total					Page #
	Current Budget					
	Total Dollars (\$000)					
	RY1	RY2	RY3	3 Yr. Total		
Prevailing Wage	\$ 4,853	\$ 4,997	\$ 5,147	\$ 14,997	224	

## Utility Shared Services/Facilities & Field Services 2022

### 1. Project / Program Summary

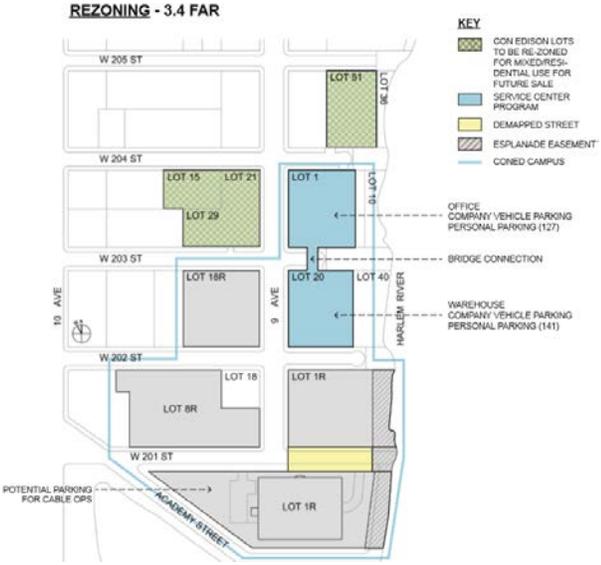
Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset								
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic									
Project/Program Title: Sherman Creek Service Center									
Project/Program Manager: Alastair W. Lamb	Project/Program Number (Level 1): 21656717								
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____									
Estimated Start Date: 10/2017	Estimated Date In Service: 06/2024								
<b>A. Total Funding Request (\$000)</b> Capital: 180,786 O&M: 6,950	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:								
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>								
<b>Work Description:</b>  Con Edison plans to continue to develop a new approximately 215,000 square foot service center on Company-owned property in the Inwood section of northern Manhattan (Sherman Creek). The planned facility will house office and field support space as well as warehouse, storage, and vehicular parking for Con Edison passenger & heavy-duty trucks, limited personal parking and other equipment as follows:									
<table style="width: 100%; border: none;"> <tr> <td style="padding-left: 40px;">Offices &amp; Staff Support Space</td> <td style="text-align: right;">22,000 SF</td> </tr> <tr> <td style="padding-left: 40px;">Warehouse/Stores</td> <td style="text-align: right;">8,000 SF</td> </tr> <tr> <td style="padding-left: 40px;">Parking</td> <td style="text-align: right;"><u>185,000 SF</u></td> </tr> <tr> <td style="padding-left: 40px;"><b>Total SF</b></td> <td style="text-align: right;"><b>215,000 SF</b></td> </tr> </table>		Offices & Staff Support Space	22,000 SF	Warehouse/Stores	8,000 SF	Parking	<u>185,000 SF</u>	<b>Total SF</b>	<b>215,000 SF</b>
Offices & Staff Support Space	22,000 SF								
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<b>Total SF</b>	<b>215,000 SF</b>								
The new service center will address congestion at the existing Manhattan and Bronx service centers, which has become a safety concern for pedestrian and vehicular traffic and an impediment to productivity and response times for various Con Edison field operations organizations.									
The existing 28 <sup>th</sup> Street service center has been identified as of particular concern, due to continued development in the surrounding area, as well as the possible construction of the Hudson River rail tunnel over the next decade, which is expected to exacerbate congestion and related safety issues at that facility.									

In addition, it is anticipated that the City’s East Side Coastal Resiliency (ESCR) project along the FDR drive will adversely impact the available parking and yard storage at our E16th Street service center.

In early 2017, the City advised Con Edison that it was proceeding with a District re-zoning plan for Inwood, which would include six Con Edison owned lots located on either side of 9th Avenue between West 202nd and West 205th Street. Under the re-zoning plan, the City proposed zoning modifications that would allow Con Edison to consolidate the construction of the new Sherman Creek service center from five lots as initially designed onto two lots (Lots 1 & 20) to the east of 9th Avenue. This benefitted the City in three ways. First, due to Con Edison consolidating the new service center onto two lots, the City would be able to “upzone” three of the remaining four lots from manufacturing to mixed use/residential use. Upon completion of the new Service Center, Con Edison agreed to market the remaining surplus lots for sale at (the increased) fair market value for development by others, including for affordable housing, which was a key objective of the re-zoning plan. Second, consolidating Con Edison’s operations onto the two lots to the south of 204th Street would help the City to create a ‘buffer’ between manufacturing type uses to the south of Inwood and commercial and residential uses to the north. Lastly, Con Edison and the City negotiated the transfer of various property rights, including Con Edison granting the City an easement along the waterfront of Con Edison owned lots between Academy Street and West 202nd Street to improve public access to the Harlem River. This will facilitate the City’s future construction of a waterfront esplanade for the neighborhood’s residents. The current status of the four lots is as follows:

- Lot 51* – currently vacant; during construction, to be made available to the Design-Builder for temporary construction trailers, material storage etc.
- Lots 21 & 29* – currently in use by Electric Operations and Gas Operations for field trailers, vehicle parking and limited yard storage.
- Lot 15* – this is zoned for residential use only and is currently vacant.

**Sherman Creek Overview**



Programming studies and test-fit plans were developed (2017-2018) under a re-zoning scenario assuming construction on the two Con Edison-owned Lots 1 and 20 to the east of 9<sup>th</sup> Avenue between 202<sup>nd</sup> and 204<sup>th</sup> Street. Related environmental and geotechnical engineering field studies were completed, and the schematic design work (2019) was completed to refine and finalize the sizing and layout for the proposed service center. Con Edison obtained a wetlands permit (2019) required due to the proximity of the Harlem River and also obtained Public Design Commission approval for the design of the bridge connection over 203<sup>rd</sup> Street (2019 – renewed in March 2021). The space program will provide sufficient workstations, lockers, shower and bathroom facilities, meeting and storage areas, warehouse and parking areas for the Gas, Electric and related support personnel that are planned to operate out of the facility. The design will accommodate flexible work arrangements as customer needs evolve. The program also accounts for the increased demand for personal parking due to the limited public transport options available for employees reporting for the earlier shifts.

The 2020-2021 capital plan was updated to include \$137M, based on an internal estimate and a preliminary test-fit plan assuming a 215,000SF multistorey service center facility on two of Con Edison’s owned parcels (to the east of 9<sup>th</sup> Avenue between 202<sup>nd</sup> Street and 204<sup>th</sup> Street) with a vehicular bridge connection over 203<sup>rd</sup> Street.

In December 2020, Con Edison Supply Chain re-started the Design-Build procurement process by re-engaging with the low-bid Design-Builder subject to the vendor standing by the commercial terms previously negotiated during the competitive bid selection process. Con Edison also immediately re-engaged with the City (NYCEDC and NYC Law) to negotiate and document the transfer of the various property interests between the City and Con Edison approved under the Inwood District Rezoning, including a volume easement over 203<sup>rd</sup> Street to be granted to Con Edison that is critical to construct the vehicular bridge connection between the two service center buildings. As of November 2021, Con Edison continues to negotiate with the City with the goal of finalizing these negotiations in the first quarter of 2022. Assuming a PO award to the Design-Builder in late first quarter/early second quarter 2022, the anticipated project completion is mid-2024.

**Justification Summary:**

Lack of space and resulting congestion at the existing Manhattan and Bronx service centers is impeding movement of work crews in and out of the yards, slowing response times and productivity, and impacting pedestrian and vehicular safety within the yards. In the three years up through the end of October 2021 there have been 22 personnel accidents and 56 vehicular incidents at Bronx and Manhattan workout centers, primarily attributed to vehicle and material storage and the resulting yard congestion.

The new service center will support an additional 220 Gas Operations employees and 167 Gas Operations vehicles, along with related equipment and materials needed to address ongoing gas main replacement and gas leak repair work in Manhattan and the Bronx.

In addition, the new service center will allow for the redeployment of approximately 116 Manhattan Electric personnel from other Manhattan service centers to Sherman Creek. This will include electric construction field personnel that currently operate out of trailers located in Inwood and the Bronx due to insufficient capacity in existing service centers. Redeployment, coupled with space and resource optimization at the existing service centers, will alleviate congestion allowing for improved response times, particularly at the West 28<sup>th</sup> Street location as Hudson Yards construction continues and anticipating that the Hudson River rail tunnel project moves forward over the course of the coming decade.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation):**

The Sherman Creek Service Center development will optimize the use of currently under-utilized Con Edison owned property in line with the Company's real estate strategy. The facility has been designed to account for climate adaptation such as increased precipitation, temperature rise, and sea level rise with reference to Con Edison's Climate Change Planning and Design Guideline. The design-build contract requires that a minimum LEED (Leadership in Energy & Environmental Design) Gold standard be achieved for the office space and the base design includes solar panels, rainwater detention to reduce run-off and all-electric HVAC in support of Con Edison's corporate sustainability initiatives.

## 2. Supplemental Information

**Available Options:** In 2014/2015, the Company undertook a strategic review of its real estate portfolio and operations to evaluate alternative options to address congestion at existing service centers and support the projected expansion in Company operations in northern Manhattan and the Bronx. The options considered were:

- Take No Action - continue to serve northern Manhattan and the Bronx from existing locations. In this case, Gas Operations would house new employees in satellite yards and temporary construction trailers. Electric construction crews would continue to operate out of trailers as well. This was not considered a viable long-term option due to the inherent inefficiencies and because trailers are not meant for long-term housing of personnel. Temporary permits are approved by the NYC DOB on an as-needed basis and then renewed every three to six months. This is a precarious situation, as NYC DOB can decide to not renew a permit at any time, which could place a trailer arrangement in jeopardy if it became a long-term solution.
- Purchase or Lease Additional Property - Real Estate personnel worked with commercial real estate advisors to identify privately-owned properties suitable for a new service center location that were available for purchase or leasing. Given the robust commercial and industrial development market in New York City, particularly in Manhattan and the Bronx, few industrial zones sites were identified as available either for purchase or long-term lease. All potential locations were cost prohibitive, particularly when development costs were taken into consideration.
- Optimize Under-utilized Company Owned Properties - the Company evaluated Con Edison owned properties in Manhattan and elsewhere. The existing service centers – owned lots held for future use in Sherman Creek, 59<sup>th</sup> Street Generating Station, 74<sup>th</sup> Street Generating Station, East River Generating Station, and various substation sites – were all considered. Of all the sites reviewed, the Sherman Creek parcels were determined to be the most suitable for the new facility, given their location, size, existing zoning (with potential for up-zoning), and lack of existing building structures.

### **Risk of No Action:**

Taking no action will not address the loss in productivity and slower response times for both Electric and Gas Operations in Manhattan and the Bronx.

### **Non-Financial Benefits:**

Locating the Gas Operations crews closer to the service territory will reduce travel time and help us to continue to meet our PSC-reported gas main replacement and leak response goals.

For Electric Operations, creation of a fourth district will decrease transit times to work locations and increase productivity. This project will thus help enhance worker and public safety and improve customer service. Further, Sherman Creek is well located as and when congestion pricing is introduced in Manhattan.

**Summary of Financial Benefits and Costs:**

The estimated cost savings or benefits associated with the Sherman Creek project include:

1. Cost Savings & Benefits:

*420 Morris Park Ave. Lease* – Gas Operations previously leased yard space here at an annual cost of \$289,000. The lease was terminated, and the crews have been temporarily moved to our Worth Street, Yonkers facility pending relocation to the new facility.

*Temporary Construction Trailers* – Gas and Electric crews are currently housed in trailers at Sherman Creek and elsewhere. Such crews will relocate into the new facility. The annual costs that will be eliminated by eliminating use of such trailers is approximately \$600,000.

*Sustainable Design* – the project is targeting a minimum LEED Gold and potentially LEED Platinum certification. The design team has completed a comprehensive cost benefit analysis of alternative mechanical systems, building envelopes, and solar panels to determine the lowest operating cost over the life of the facility. This includes the adoption of an all-electric HVAC system.

*Productivity Improvements* – Sherman Creek’s strategic location will greatly reduce the travel time for work crews assigned to work in northern Manhattan and south Bronx. In addition, the efficient design and alternative material handling initiatives outlined below will reduce the turnaround time for crews to leave and return to the Service Center during peak hours.

*Inventory Management Initiatives* – the Sherman Creek Service Center will incorporate material delivery and handling initiatives that will reduce the amount of storage required for inventory and reduce the frequency and duration of vehicle stops to pick up materials at peak morning hours. Initiatives include delivering materials overnight to lay-down areas adjacent to parked vehicles; pre-kitting materials for planned work and implementing new work management processes and technology to reduce the time required for crews to collect materials.

*Reduced Congestion at Manhattan Yards* - Electric and Gas Operations savings from reduced yard time/increased productivity: Significant congestion has been identified as a major factor in increasing the yard exit time of Con Edison crews at the start and end of the workday, which was found in 2015 to be between 12% and 30% overcapacity at the Manhattan facilities. The congestion issues have not improved since then and are only expected to further impact operations as the Amtrak tunnel project and New York City’s East Side Coastal Resiliency project progress over the next few years.

2. Capital Costs:

As of November 2021, the capital project budget has increased from \$155 million to \$184 million, based on updated cost estimates submitted by the low-bid design-builder for the design and construction of the facility following a competitive RFP process based on schematic design drawings and specification in the Owner’s Criteria Documents Bid Package including additional scope items including: seismic foundation design as required by Code based on geological site conditions; all-electric HVAC aligned with Con Edison’s sustainability goals; the cost to maintain two separate tax lots following guidance from the NY City Dept of Finance during the bid evaluation process and cost escalation due to pandemic-

related supply chain constraints. Under the terms of the design-build contract, the parties will work towards a 'Guaranteed Maximum Price' within approx. six months of contract award which is now anticipated in late first quarter/early second quarter 2022.

To date, approximately \$2.8 million dollars has been spent in design and other pre-construction costs.

The estimated annual O&M cost to operate the new Sherman Creek service center facility including janitorial services, rubbish and snow removal and security is based on historic costs to operate similar facilities and is provided in Section 3 below.

**Project Risks and Mitigation Plan:**

Risk 1 - Design-Builder withdraws bid proposal: The low-bid design-builder has been kept advised of the delay in PO award. In the event that the Design-Builder does not stand by their bid and pricing proposal, Con Edison may elect to re-bid the project.

Risk 2 - Delays/Failure to secure 203<sup>rd</sup> Street Bridge Volume Easement: The project team continues to proactively engage with the City to finalize the transfer of the bridge volume easement that is essential to the construction of the vehicular bridge connection between the two buildings.

Risk 3 - Price Escalation due to Supply Chain constraints: The Design-Builder's pricing proposal includes contingency to account for anticipated material price fluctuations into 2022, specifically in steel and other construction materials. The project team will continue to proactively monitor pricing as the bid-package costs are confirmed prior to agreeing the Guaranteed Maximum Price.

**Technical Evaluation / Analysis:**

- Extensive studies have been undertaken to refine and optimize the design, reducing where possible, the overall size & layout and environmental impact of the proposed service center. These studies include environmental and geotechnical field investigations; traffic impact studies to determine the flow of traffic both within and around the service center; logistics studies to optimize the storage and handling of materials and a sustainability review to set sustainability targets for the design, construction and operation of the new facility. The findings from the technical evaluation have been incorporated into the schematic 'basis of design' and will be further developed with the additional input of the Design-Builder team.

**Project Relationships (if applicable)**

N/A

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital	250	2,149	349	36		250
O&M						
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	75,600	89,025	16,161		
O&M*					
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

EOE	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Labor	2,268	2,671	485		
M&S	3,780	4,451	808		
Contract Services	49,140	57,866	10,505		
Other	1,512	1,781	323		
Overheads	18,900	22,256	4,040		
<b>Total</b>	<b>75,600</b>	<b>89,025</b>	<b>16,161</b>		

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M	0	0	1,800	2,500	2,650
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services/Facilities & Field Services 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Worth Street Service Center, Yonkers – Site Master Plan – New Construction	
Project/Program Manager: Alastair Lamb	Project/Program Number (Level 1): 24615687
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 11/2020	Estimated Date In Service: 07/2026
<b>A. Total Funding Request (\$000)</b> Capital: 56,066 O&M:	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period:</b> (Years/months) (If applicable)
<b>Work Description:</b>  A comprehensive site analysis was conducted in 2021 to study all aspects of the Company-owned service center site at 267 Saw Mill River Road, Yonkers, (commonly known as the “Worth Street” Service Center). The purpose of the site analysis was to document existing site conditions including zoning, topography, site drainage and geotechnics in order to inform a site master plan study to be issued in mid-2022. The study will present a minimum of two alternative site master plans to help determine the optimal layout for the planned development of the Worth Street Service Center site. In addition to the cost to provide temporary office and bathroom accommodation for employees displaced from the 1920’s service center building, the preliminary estimated cost of \$59 million for the site master plan anticipates the relocation and construction of a new service center building (\$25 million) and, if warranted, re-location of the fuel station to improve site circulation (\$4 million), improved site ingress and egress (\$4 million), site security improvements including perimeter fencing (\$6 million), site drainage improvements ((\$5.2 million) and other improvements to improve vehicular and pedestrian safety (\$9.6 million). In consultation with Gas Operations, the service center program will also incorporate the primary Gas Control Center, currently located in Building 21 at Van Nest Service Center. Relocating the Gas Control Center will address security concerns identified in a recent internal audit and align with the recommendations to relocate form Van Nest. Worth Street has been identified as the preferred location to relocate the Gas Control Center to address these concerns and also take advantage of the opportunity to improve the Control Center layout. Separately, Gas Operations will submit a White Paper for the furniture, systems and equipment dedicated to the Control Center operation. The decision to proceed (or not) with the engineering and construction of each project to be contained within the site master plan will be taken based on updated cost estimates for each element and subject to the further review and approval of leadership.	

**Justification Summary:**

Initially, the capital project plan for Worth Street anticipated the gut renovation of the existing service center (Building 1), to provide office, muster space, locker room, storage, etc. for existing customers and to accommodate Gas Operations expansion. Other separate site improvements were also planned, including the replacement of the underground fuel storage tank to the fueling station, possible site access improvements and new perimeter security fencing. However, in 2019 following receipt of bids for the service center renovation and due to a concern for potential cost increases once the true condition of the building structure was fully exposed, the service center renovation was suspended. Specific concerns included the potential significant cost to repair severely frost/water damaged exterior brickwork; replace life-expired roof covering; the mitigation of widespread mold to bathrooms and occupied offices and the known presence of asbestos throughout the premises. The bid costs to renovate Building One (not including possible additional costs that may be incurred as the structure was fully exposed as the work progressed) were comparable to the estimated cost to build a new facility. As such, it was agreed to evaluate alternative new-build options for a modern service center, ideally located outside the Saw Mill River flood zone, that was not constrained by the limiting layout and condition of the original 1920's building. Further, it was agreed that a more holistic review of the Worth Street Service Center site was appropriate to better integrate the previously planned but separate projects into a cohesive site master plan to be presented in due course to the City of Yonkers and New York State Department of Environmental Conservation (NYSDEC) in accordance with State Environmental Quality Review Act (SEQRA) requirements which prohibits the 'segmentation' of individual projects planned for the same site. Recent dealings with City of Yonkers have demonstrated the benefit of a coordinated approach in order to obtain necessary permits and approvals and also to ensure compliance with NYSDEC development controls.

Please note that due to health and safety concerns, in 2020 all employees currently operating out of Worth Street were relocated into temporary office, muster and bathroom accommodation installed immediately to the south of Building One. The associated costs to install and operate the temporary accommodation is included in the preliminary estimated project cost.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation):**

Worth Street Service Center, Yonkers is an owned, industrial zoned, property comprising approximately eight acres which is ideally located to support the Company's current and future operations both in Westchester and the Bronx. The site master plan is aligned with the Company's overall real estate strategy to optimize owned property assets. The proposed construction of a new service center provides the opportunity to locate the building above the flood zone in accordance with Con Edison's Climate Change Planning and Design Guideline. For budget planning purposes, the current development schedule anticipates completing a two-stage site evaluation (Stage 1 - Site Analysis and Stage 2 - Site Master Plan Options & Recommendations) in 2021/mid 2022 respectively, with engineering and permitting in 2023/2024 followed by phased site construction extending into 2026. The timing of future site development at Worth Street will also be aligned with the ongoing evaluation of other owned and leased office and service center locations.

Subject to further engineering analysis, it is anticipated that the cost to operate and maintain the new service center building, will be lower than the cost to operate and maintain the existing 1920's building, even after significant renovations and improvements.

## 2. Supplemental Information

### Alternatives

#### Alternative 1 – Do Nothing

This option was not considered. The existing service center building has been vacated and employees are now operating out of temporary office accommodation. Further, the underground storage tank for the fuel station needs to be replaced to remain in compliance and there have been ongoing security concerns due to breaches through the existing perimeter fence.

#### Alternative 2 – Gut Renovation of Existing Service Center with other separately planned projects

As stated above, the gut renovation of the service center was considered but rejected due to the poor condition of the building structure, the limitations of the building's age & footprint and the potential for significant cost increases once the building structure was exposed. Further, proceeding with independent separate projects may introduce additional permit and approval 'risk' and result in a sub-optimal site development plan overall.

### Risk of No Action

#### Risk 1 – Temporary Service Center Accommodation will not be able to support the Company's long-term operational needs

The service center will be able to continue to operate from temporary office and bathroom accommodations in the short to medium term but eventually the City of Yonkers will require these facilities to be removed if no permanent solution is submitted for permit. Further, the yard area is currently congested with Facilities Operations being required to shuffle competing vehicle parking needs from existing and, potentially, new customers.

#### Risk 2 – Temporary Office and Engineering Costs revert to O&M

The costs incurred to install the temporary offices and bathrooms are currently being capitalized. If the new-build service center project does not proceed these costs (along with the engineering costs) will revert to O&M for Facilities & Field Services which is unfunded.

#### Risk 3 – Failure or delay to address audit concerns for Gas Control Center at Building 21, Van Nest Service Center

The development of the new Service Center at Worth Street provides an ideal and strategic opportunity to plan, design, and relocate the existing antiquated and potentially vulnerable Gas Control Center into a new, purpose-built, Company-owned facility with necessary critical infrastructure, security measures, and modernization opportunities required for anticipated business user needs. If the Worth Street Service Center project were delayed or postponed this could result in a delay or failure to address known vulnerabilities and operational risks identified.

### Non-Financial Benefits

The primary justification for the proposed site master plan is to provide a safe working environment for our employees reporting out of Worth Street. Improvements will include providing modern, flexible office and muster space and other measures to improve safe access/egress to the site.

**Summary of Financial Benefits and Costs (attach backup)**

For budgeting purposes only, the preliminary estimated costs and five year budget forecast for the various projects currently included in the site master plan are provided in the table below. All costs are preliminary pending the outcome of the site master plan study.

**Worth Street Site Master Plan - Budget Overview**

FFS Actual/Budget (\$000)	
2018	3
2019	1,672
2020	1,304
2021	600
2022	1,000
2023	15,424
2024	25,003
2025	7,291
2026	7,291
<b>TOTAL \$</b>	<b>59,588</b>

} FFS SYR Total Request - \$56M

Breakdown by Project	ROM Estimate * (\$000)	Comments
Temporary Accommodation	1,823	Temp. office accommodation set up; IT infrastructure
Feasibility Study	1,000	
Engineering	3,000	
New Service Center Building	25,000	2/3 story new-build service center (25,000SF) - subject to program review during feasibility study
Fuel Station	4,000	Appropriated \$3.6M; included for escalation.
Security Fencing	6,000	Based on comparable work at Farrington Yard
Traffic Improvements	4,000	Based on comparable Van Nest Improvements
Re-Paving	8,500	Assumed 8 acres based on similar rep-paving projects at other service yards
SW Drainage Improvements	5,200	Assumed 8 acres based on similar rep-paving projects at other service yards
Lighting Improvements	1,065	Placeholder cost
<b>TOTAL \$</b>	<b>59,588</b>	

\* ROM (Rough Order of Magnitude) Estimate for miscellaneous projects bundled into Site Master Plan

For the reasons stated above, it is anticipated that at a minimum the new-build service center will be required. The other site improvements could be phased as needed to align with the Company's strategic needs and any funding constraints.

**Project Risks and Mitigation Plan**

The project risks and associated mitigation plan will evolve as the alternative site development plans are developed and refined. However, potential risks may include:

Risk 1 Costs Underestimated - update cost estimates during site master plan study with input from the technical team and customers

Risk 2 Unforeseen Site Conditions/Constraints - review existing site documentation and recommend further field investigations as appropriate.

Risk 3 Permits & Approvals Delayed - closely manage site approvals and permit applications with guidance from real estate counsel familiar with City requirements

**Technical Evaluation / Analysis**

A comprehensive site analysis was conducted to study all aspects such as zoning, topography, site drainage and geotechnics, of the existing yard. A final site master plan analysis report will be

produced to help determine the most appropriate solution for the site usage and redevelopment in terms of location of the new building, and if warranted, location of the new fuel station, ingress and egress improvements, site security, fencing, vehicular circulations and parking layout, etc.

**Project Relationships (if applicable)**

The program for the new Service Center building includes for sufficient space and building infrastructure to support the primary Gas Control Center.

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital				1,304		538
O&M						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	1,000	15,427	25,067	7,271	7,301
O&M*					

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	700	1,234	2,006	582	584
M&S	-	771	1,253	364	365
Contract Services	50	9,256	16,294	4,726	4,746
Other	-	309	501	145	146
Overheads	250	3,857	5,013	1,454	1,460
<b>Total</b>	<b>1,000</b>	<b>15,427</b>	<b>25,067</b>	<b>7,271</b>	<b>7,301</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

**4. Definitions**

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services/Facilities & Field Services 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: 30 Flatbush Avenue - Lease Exit Strategy	
Project/Program Manager: Alastair W. Lamb	Project/Program Number (Level 1): 25551150; 25553090; 25781443
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 01/2024	Estimated Date In Service: 08/2027
A. Total Funding Request (\$000) Capital: 88,205 O&M:	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input checked="" type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: ~\$42.8M Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p><u>Background</u> - In October 1970, Con Edison entered into an agreement with a developer, Nevin Associates, L.P. ("Landlord"), to lease approximately 211,000 square feet of office space and 21,000 square feet of ground floor retail space and associated below grade parking within a six story building to be constructed by the Landlord at 30 Flatbush Avenue, Brooklyn, NY. The original thirty-year lease term lease was extended three times and the current term ends in November 2027. The lease is on Triple Net ("NNN") terms and Con Edison is responsible for all repairs and maintenance required including any improvements required to remain in compliance with updated building code and local laws. There is one further option to renew the lease for an additional ten years through 2037 but there is no further option to purchase the building.</p> <p>The 30 Flatbush Ave Lease Exit Strategy project comprises the work required to be able to exit the leased premises at 30 Flatbush Avenue, Brooklyn in advance of the lease expiration in November 2027. The project scope includes:</p> <p><u>Relocation of Regional Electric Control Center</u> - the Regional Electric Control Center (RECC) for Brooklyn/Queens is located on the third floor of 30 Flatbush Avenue. Electric Operations is currently evaluating alternative Company-owned locations to construct a new Control Center in support of the lease exit strategy.</p> <p><u>Migration of Customer Operations Call Center Operations to Virtual Operating model</u> - currently, approximately 500 Customer Operations employees report out of 30 Flatbush Avenue. During the pandemic, the group successfully implemented a 'home agent' operating model. Customer Operations</p>	

recently reached an agreement with Local 1-2 Leadership to continue the home agent model and plans to move permanently to a virtual operation in the future. This project includes the cost to relocate existing IT infrastructure from 30 Flatbush Avenue to other Company-owned location(s) to support a virtual call center operation.

Alterations & Upgrades to Company Owned Facilities to receive 30 Flatbush employees - approximately 950 employees currently report out of 30 Flatbush Avenue - approximately 500 working in Customer Operations and 450 working in Electric Operations. Following the permanent move to a virtual call center model, Customer Operations anticipates that approximately 450 employees will work remotely full-time. This project includes minor alterations and upgrades at other Company-owned properties to be able to receive approximately 50 Customer Operations employees who will likely continue to report to an office location. In addition, this project includes other alterations and upgrades to make-ready Company-owned properties to receive the balance of the 450 employees who currently report out of 30 Flatbush Avenue. The full scope of alterations and upgrades required to prepare receiving locations is currently being evaluated but is anticipated to include internal alterations and upgrades including architectural, lighting, fire protection, HVAC improvements and new furniture at Third Avenue and internal architectural alterations, restacking and new furniture at other potential receiving locations including 4 Irving Place, Rye HQ and Davis Avenue.

**Justification Summary:**

Less Office Space Required - currently, approximately 950 Con Edison employees report out of 30 Flatbush Avenue. However, the Company's office needs continue to evolve in response to the pandemic and technological advances that support remote working. As stated above, it is anticipated that approximately 500 customer service representatives or 56% of the current headcount will continue a 'home-agent' work arrangement, greatly reducing the need for office space. In addition, Con Edison continues to evaluate more flexible office-based practices and it is anticipated that the overall need for office space will reduce as employees adopt a hybrid work model.

Occupancy Cost forecast to Increase - The current annual cost to occupy 30 Flatbush Avenue including rent, taxes and facilities' related costs is approximately \$10 million. However, if Con Edison exercises the option to extend the lease for a further ten years, it is anticipated that the office rent (currently below market) will be reset to 95% of fair market value. Assuming a step-increase in rent and anticipated increases in other facilities' related costs, the annual occupancy cost is forecast to increase to approximately \$15 million in 2027 and the aggregate cost to extend our occupancy through 2037 is approximately \$200 million.

Cost Risk associated with NNN Lease - as stated above, under the NNN lease Con Edison is responsible for all repairs and for work associated with code compliance. Due to the age and type of construction of the building, there is significant additional cost risk to Con Edison if our occupancy were extended through 2037. For example, Con Edison may be liable for building upgrades required to achieve emissions reductions and energy efficiency goals by 2030 to comply with Local Law 97.

Landlord's Development Plans - In 2019, the Landlord's interest was acquired by Robert L. Stark Enterprises, Inc., a Cleveland based real estate development company. Before the pandemic, Stark indicated to Con Edison their intention to further develop the site, including possibly renegotiating Con Edison's lease to allow the developer to add floors to the existing building in order to maximize the available development rights. Stark's development plans for the property remain uncertain at this time.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

This project supports the Company's plans to migrate the customer operations Call Center to a virtual model and provides the opportunity to implement other improvements by relocating the Control Center to a Company-owned location. The project is also aligned with Con Edison's real estate strategy to optimize use of owned facilities, reduce our leased footprint and associated O&M. The project will include re-stacking and targeted alterations & improvements to optimize the use of Company-owned locations including 4 Irving Place, Rye Headquarters and Third Avenue.

## 2. Supplemental Information

### Alternatives

Alternative 1a: Extend the 30 Flatbush Avenue Lease – as summarized above, Con Edison has the option to extend our occupancy through 2037. However, the anticipated O&M cost to continue occupation is forecast to increase significantly with additional cost risk due to the age of the building and NNN lease obligations. Further, extending the lease by ten years not only defers the make-ready costs to relocate operations and employees to alternative Company-owned locations assuming the Landlord pursues further development on the site but, also introduces potential liability for Local Law 97 compliance

Alternative 1b: Renegotiate Lease Terms – as for Alternative 1a but assuming the Landlord is willing to negotiate preferential terms for Con Edison to reduce its lease footprint and associated occupancy costs. Any such scenario would have to take into consideration the potential disruption to critical operations in the event that the Landlord proceeded with site development activities above and around Con Edison leased space.

Neither option is aligned with the Company's real estate strategy to reduce our leased footprint and associated O&M costs and are not recommended.

### Risk of No Action

Risk 1: Failure to either execute the lease exit strategy or exercise the remaining 10 year option would result in default under the lease and expose Con Edison to substantial operating risks.

### Non-Financial Benefits

Risk Mitigation - Migrating the Customer Operations Call Center to a virtual operating model is aligned with IT strategy to leverage the cloud and build-in redundancy and resilience to the call center operation.

Operational Synergies – relocating the Regional Electric Control Center to a Company-owned facility will benefit from existing IT and utilities infrastructure.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost Savings - the annual occupancy cost is forecast to increase to approximately \$15 million in 2027 and the aggregate cost to extend our occupancy through 2037 is approximately \$200 million. Relocating operations and employees to Company-owned locations will, at a minimum, save rent and real estate taxes (approximately \$121 million) and potentially a proportion of other Facilities related occupancy costs.

2. Project Cost - the preliminary cost estimate for the anticipated scope of ‘make ready’ work to relocate the regional electric control center; move to a virtual customer assistance call center model including associated IT costs and complete alterations to receive employees at alternative Company-owned locations is summarized in the table below:

	Cost to Achieve (\$000)				Total	Assumptions
	Engineering	Make-Ready Construction	IT Equipment & Infrastructure	Furniture		
Relocate Electric Control Center	3,450	25,875	9,200	incl	<b>38,525</b>	~ 15,000SF build-out at Rye HQ or 4IP
Migrate to Virtual Call Center Operation	1,150	-	11,500		<b>12,650</b>	Implement virtual home agent model allowing Customer Ops employees to work remotely
Absorb ~ 50 Customer Ops Employees	incl	2,875	incl	469	<b>3,344</b>	Minor alterations only at Rye HQ & Davis Ave; new workstations, data & electric
Absorb ~ 370 Other Employees	3,450	25,300	incl	5,023	<b>33,773</b>	Alterations at 3rd Ave. inc HVAC upgrades, new workstations, data & electric. Minor alterations to receive other employees at Rye HQ and 4IP.
					<u><b>88,292</b></u>	

3. Basis for estimates - the basis for the preliminary cost estimates are as follows:

*Relocate Regional Electric Control Center* - based on early concept plan layouts and approximately \$/SF costs using adjusted historic costs for similar projects. Cost estimates include anticipated alterations and improvements to IT infrastructure at receiving location.

*Migrate to Virtual Call Center* - based on preliminary budget costs provided by IT.

*Make-ready Work* - based on early concept plan layouts and approximate \$/SF costs using adjusted historic costs for similar scope of work required to receive employees at receiving locations.

**Project Risks and Mitigation Plan**

Risk 1 – Disruption to Critical Operations

*Mitigation* - complete further technical evaluation and develop schedule to design, construct, test and commission relocated Regional Electric Control Center and virtual Call Center operation prior to decommissioning existing facilities at 30 Flatbush Avenue.

Risk 2 – Schedule Delays

*Mitigation* - complete all make-ready work required to relocate operations and employees from 30 Flatbush Avenue by late 2026 to allow sufficient time (accounting for unforeseen delays) to safely relocate operations, move employees and complete lease restoration work during 2027.

<p><b>Risk 3 – Unforeseen costs to execute lease exit strategy</b></p> <p><i>Mitigation</i> – continue to define the scope and cost of all make-ready work; monitor and update preliminary cost estimates as required.</p>
<p><b>Technical Evaluation / Analysis</b></p> <p>An initial evaluation of the business case and possible operational impacts of exiting the lease at 30 Flatbush Avenue has been completed. A multi-disciplinary project team is continuing to evaluate and refine the technical aspects to the project.</p>
<p><b>Project Relationships (if applicable)</b></p> <p>The 30 Flatbush Avenue Lease Exit Strategy includes the relocation of the Brooklyn Queens Regional Electric Control Center; the migration of the customer operations Call Center to a virtual operating mode and various alterations and upgrades at various Company-owned locations in readiness to receive employees from 30 Flatbush Avenue prior to lease expiration.</p>

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
<b>Capital</b>						
<b>O&amp;M</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>			5,482	35,839	46,884
<b>O&amp;M*</b>					

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	-	-	3,837	2,867	3,751
M&S	-	-	-	1,792	2,344
Contract Services	-	-	274	21,503	28,130
Other	-	-	-	717	938
Overheads	-	-	1,371	8,960	11,721
<b>Total</b>	-	-	<b>5,482</b>	<b>35,839</b>	<b>46,884</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>
<b>O&amp;M Savings</b>					

<b>O&amp;M Avoidance</b>	~ \$10.5M	~ \$10.6M	~ \$10.7M	~ \$10.8M	~ \$10.9M
<b>Capital Savings</b>					
<b>Capital Avoidance</b>					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M</b>					
<b>Capital</b>					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

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**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services/Facilities & Field Services 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Van Nest Renovations - Van Nest Building 2 - Cable Lab Office Renovation and Storeroom Modernization	
Project/Program Manager: Alastair Lamb	Project/Program Number (Level 1): 24657223
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 11/2021	Estimated Date In Service: 12/2023
A. Total Funding Request (\$000) Capital: 16,791 O&M:	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input checked="" type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: ~7,500 Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<b>Work Description:</b>  The project comprises two phases.  <b>Phase I</b> – the base project scope of work comprises the gut renovation of the vacant former Cable Lab space within Van Nest Building 2 including demolition and interior construction to create approximately 17,500 square feet of open-plan collaborative office space (147 seats), reference tables (8), meeting/ conference rooms (5), bathrooms and muster space (80 men & 80 women). The office design has been developed to account for socially distanced occupancy in the short-term and more flexible workplace requirements post-pandemic. The interior design and construction will incorporate existing Company design standards and evolving best-practices to provide a healthy, flexible workplace environment to support the customers’ needs post-pandemic. LEED (Leadership in Energy and Environmental Design) v4.1 for Interior Design & Construction has been identified as a project goal.  <b>Phase II</b> - in addition to the gut renovation of the former Cable Lab area, the team will evaluate certain alterations and upgrades to the adjacent Stores area (approximately 13,000 square feet) in support of Stores Operations’ ongoing modernization plans, including inventory management initiatives and other efficiency improvements. For example, it is anticipated that upgrades to building life-safety and mechanical systems that will serve both the office and Stores areas may be required for code compliance. Other alterations may include new storage racking, upgrades to IT and security systems and other alterations to the stores layout to improve material storage and handling in support of Stores modernization efforts. Any building alterations and improvements to the Stores area that may be	

incorporated as a second phase to the project will be subject to further technical review and funding approval.

**Justification Summary:**

This project will allow for an exit of the 1601 Bronxdale leased premises no later than February 2023 to support the Company's real estate strategy to optimize the use of owned facilities, reduce lease costs and to coincide with the landlord's planned redevelopment of the property. Relocation space is needed to receive the approximately 440 office and field employees in BW Electric Operations, Customer Operations, Construction, Gas Engineering, Meter & Test, Corporate Security, and Facilities and Field Services that are currently housed at that leased location. While relocation to other existing offices, including 4 Irving Place headquarters, is possible to accommodate some employees, the bulk of the employees currently housed at 1601 Bronxdale service our Bronx region and customers therefore, supporting the need to be located at or near the Van Nest Service Center.

The renovated Cable Lab space will provide potential swing space for employees temporarily displaced during the planned reconfiguration of the Gas Control Center and Gas Emergency Response Center spaces in the adjacent Building 21/21A. Building 2 at Van Nest is ideally located to receive these employees as it is on the same site as both 1601 Bronxdale Avenue and Building 21/21A which will minimize relocation costs and mitigate disruption to ongoing operations.

The rectangular footprint and clear spans within Building 2 will facilitate the creation of open-plan, flexible space utilizing the Company's current workplace standards. The new office space will incorporate different sized meeting rooms and collaboration space which will enable more effective safety job briefings, training and communication compared to the existing leased space which extends inefficiently over two levels.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

This project supports the Company's real estate strategy to optimize use of owned facilities and reduce the leased footprint and associated O&M. The proposed project area will utilize space in Building 2 at the Van Nest Service Center, which had formerly housed the Electric Cable Lab and a portion of the Stores warehouse ("Building 2 space") that was previously vacated as part of separate cost reduction initiatives.

## 2. Supplemental Information

**Alternatives**

Alternative 1: Relocate employees from 1601 Bronxdale Avenue to Irving Place and to other service centers. This alternative has the potential to impact productivity and efficiency by dispersing employees that need to work together in the Bronx area and is not recommended.

Alternative 2: Renew the 1601 Bronxdale lease or lease alternative premises when the current lease expires. This option is not aligned with the Company's real estate strategy and will, almost certainly, increase the total cost of occupation. Further, the landlord of 1601 Bronxdale has communicated its intention to redevelop the site, which calls into question whether such space would be available at all. As such, this option is not recommended.

**Risk of No Action**

Risk 1

Relocating employees from 1601 Bronxdale Avenue to other service centers will disperse employees that need to work together and reduce productivity/efficiency.

Risk 2

Renewing the 1601 Bronxdale lease or leasing alternative premises when the current lease expires is not aligned with the Company's real estate strategy and will increase the total cost of occupation.

**Non-Financial Benefits**

Maintain Van Nest as a Strategic Hub - this project will allow the bulk of the employees currently housed at 1601 Bronxdale to maintain a presence at Van Nest Service Center, a strategic hub for Bronx operations. This project can also accommodate employees displaced during the renovation of Building 21/21A if needed.

Minimize Impact to Ongoing Operations - the project site is ideally located to allow a controlled relocation of employees within the Van Nest Service Center itself.

Workplace of the Future - the former Cable Lab space is ideally suited to build out flexible workspace required to meet the internal customers future needs.

Storeroom of the Future - the proposed modernization to the Stores area will support the ongoing 'Storeroom of the Future' initiative to optimize material storage and handling at Van Nest.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost Savings - the current annual cost to lease 1601 Bronxdale Avenue is approx. \$1.3 million. If the equivalent space were to be leased from 2023, (assuming suitable space were even available locally), the projected rent would likely increase significantly. The use of Company-owned space avoids such lease costs.

2. Project Cost - pending receipt of competitive bids for the general construction, the current cost estimate for the base scope of work within the former Cable Lab incorporated in the current FFS 5YR Capital Plan is \$17.2 million.

3. Basis for estimate - the current estimate is based on 100% design documents and internal estimate based on historic costs for projects of similar scale and scope.

**Project Risks and Mitigation Plan**

Risk 1 - Unforeseen Existing Conditions

*Mitigation* - review historic drawing and survey information to confirm presence of hazardous materials such as asbestos, lead paint etc. Undertake additional due diligence including field inspections and testing in advance of the demolition and construction work.

Risk 2 - Delays/Changes to Confirmed Project Program

*Mitigation* – early engagement with internal customers to confirm program requirements. Leveraging feedback from the LIFT (Leveraging Innovation and Flexibility Team) project to inform program requirement post-pandemic.

Risk 3 – Pandemic-related Design Impacts

*Mitigation* – monitor and incorporate evolving best-practice design recommendations to support a healthy and safe workplace environment e.g. higher HVAC fresh-air make up/total and recirculated air requirements, touchless fixtures & fittings; more flexible power, IT and furniture standards.

Risk 4 – Pandemic-related Schedule Impacts

*Mitigation* – monitor and mitigate potential schedule impacts related to the pandemic including:

- Permitting Strategy - engage relevant authorities early in the process with the assistance of code consultant to develop optimal permitting strategy.
- Supply Chain Strategy – identify and pre-qualify general contractor(s) and suppliers as early as possible. Confirm availability of long-lead materials and equipment.

**Technical Evaluation / Analysis**

Standard evaluation and analysis required during the planning and implementation of a Facilities interior construction project.

**Project Relationships (if applicable)**

This renovation is related to the planned exit of the leased premises at 1601 Bronxdale Avenue and to receive employees displaced by the planned gut renovation of the Gas Control Center and GERC within Building 21/21A.

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital				8		361
O&M						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	11,269	5,522			
O&M*					

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	902	442			
M&S	564	276			
Contract Services	6,761	3,313			
Other	225	110			
Overheads	2,817	1,381			
<b>Total</b>	<b>11,269</b>	<b>5,522</b>			

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M Savings</b>					
<b>O&amp;M Avoidance</b>		~ 1,400	~ 1,500	~ 1,600	
<b>Capital Savings</b>					
<b>Capital Avoidance</b>					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M</b>					
<b>Capital</b>					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Facilities Critical Infrastructure Short Term Priority/Programs	
Project/Program Manager: Leo Palmer	Project/Program Number (Level 1): 21381032
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: various Project withing Program	
Estimated Start Date: Ongoing	Estimated Date In Service: Ongoing
<b>A. Total Funding Request (\$000)</b> Capital: \$78,526 O&M:	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  These capital projects are intended to maintain and improve on overall conditions at the buildings and yards and are intended to upkeep the facilities. The program addresses efficiency improvements, equipment modernization and upgrades, and projects that are evaluated and prioritized based on facility assessments. These projects generally involve yard paving/resurfacing and drainage, HVAC systems nearing the end of their expected useful life, bathroom and locker room renovations, the replacement of emergency generators and load bank installations, façade and veneer replacements, sidewalk replacements, and other equipment upgrades. Projects are listed in Critical Infrastructure either as a result of a completed Engineering Service Request (“ESR”) or program assessment, or as a placeholder based on engineering or historical knowledge of the systems and equipment (e.g., since the expected life of a Freon-based heating, ventilation and air-conditioning (“HVAC”) system is approximately 20 to 25 years, units that are 15 years or older will be listed in the five-year plan). A completed ESR provides the scope of work and budgetary order of magnitude cost-estimate required to address a particular system problem.  Note that there are currently numerous projects identified in this category, which include: <ul style="list-style-type: none"> <li>• 110th Street - Men's Locker Room Ventilation Improvement/Energy Recovery Unit)</li> <li>• 16th Street - Absorption Chiller(s) Replacement (750 Building)</li> <li>• 16th Street - Parking Lot Paving</li> <li>• 28th Street - Parking Lot Paving</li> <li>• Astoria - Generator Yard Paving</li> <li>• 3rd Ave Yard - Stores Building 1 Remediation of Cracks on Building Walls</li> <li>• Astoria Building 138 - Chem Lab AC-1 &amp; AC-2 System Replacement</li> </ul>	

- Eastview - Alternate Electric Control Center HVAC Replacement with ERV
- Irving Place - 2300-ton Steam Chiller Replacement with 500 ton Elect Chiller
- Neptune Ave - Bathroom Renovation
- Irving Place - Replacement of Chilled Water Distribution Risers & add Strainers
- Van Nest Building 3 - East and West Wall Facade Repairs - Engineering Service Request (“ESR”) 19028
- Davis Ave - Absorption Chiller Replacement
- Van Nest Building 21 - Correction of Flooding Issues at GERC Conference Rm/Offices
- Irving Place - 15th Street Landmarked Door Replacement
- Irving Place - Sidewalk Concrete/Structural Rehabilitation & Water Intrusion

**Justification Summary:**

Most of Con Edison’s building structures are over thirty years old, with certain locations, such as Cleveland Street and Rye Service Centers, over sixty years old. The equipment associated with operating these facilities and their infrastructures has aged to the point where it is no longer economical or practical to continue to repair. For instance, HVAC equipment, in most cases, is over twenty years old and has outlived its useful life. This equipment should be gradually replaced with more efficient systems that include Building Management Systems (“BMS”), as well as use more environmentally friendly refrigerants.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

Con Edison recognizes that due to climate change the floodplain will extend over time due to sea-level rise, and that temperature and rainfall amounts will also increase. As such, facilities will be designed in accordance with standards for climate adaptation. Engineering will design systems in accordance with Climate Change Planning and Design Guideline Document & Corporate Instruction CI-610-4. The specific project will determine which climate change pathways (“the Pathways”) and design elements to incorporate into the project for increased precipitation, temperature rise, and sea level rise; the design work scope will apply the “Pathway” for the decadal time horizon associated the specific project. Note that each project and application will need to be reviewed and analyzed.

Examples

Building structures are anticipated to have a 75-year useful life span: buildings systems will therefore be designed to accommodate rising temperatures by making HVAC systems modular/expandable and/or providing additional surface area space; increased rainfall amounts (drains and gutters to account for approximately 4 extra inches of rain in a 24-hour period by year 2099); and depending on location, and rising sea levels (FEMA +5).

Roofs have a 25-year life and will apply the increased precipitation pathway to design larger gutters and drains to handle the greater anticipated rainfall values in the future years.

## 2. Supplemental Information

**Alternatives**

Other than to address Safety, Environmental, and Regulatory issues, these projects have been deemed necessary to maintain the structural integrity of the buildings, to allow them to operate as designed, or to protect critical equipment such as corroded/thin-walled chilled water piping, as indicated during ultrasonic testing (“UT”); high maintenance HVAC systems; and LAN Room AC installations. These

projects are added to the Facilities Capital List and are selected and undertaken as Engineering Service Request ESRs are completed and programmatic assessments, such as the EDG/electrical assessment program, bathroom assessment program, HVAC assessment program and facade assessment program are performed and provide their recommendations. During the ESR process, and with each assessment program, problems are thoroughly evaluated, and the most cost-effective means of proceeding is undertaken. There is no alternative to ensuring the operating integrity of this critical infrastructure.

Depending on the selected climate pathway, the structure and associated facilities will be designed accordingly. Structures that are not in the existing FEMA 100-year floodplain could be built to a lower DFE. Within the useful life of these assets, however, the flood plain is expected to extend to this location. If this alternative is selected, this facility would be vulnerable to damage from future flooding. That would result in an inability to use the facility and disruptions to operations. The incremental cost of planning to a higher DFE is outweighed by the risk of disrupting operations during future storm events and the cost of repairing water damage to the facility.

**Risk of No Action**

Some projects, despite planning and preventative maintenance, may be identified when systems, equipment, and components are at or close to failure. These projects that address replacement of critical infrastructure may then need to be completed in a quick time frame or building integrity will be affected (*e.g.*, Davis Avenue Chiller, 16th Street - Absorption Chiller(s) Replacement (750 Building), etc.) – the risk of no action is to allow these systems to fail, and then to rush to remedy them at great cost and with potentially adverse consequences for personnel.

**Non-Financial Benefits**

These projects are generally associated with correcting critical infrastructure issues in the various buildings of Facilities and are intended to be addressed prior to equipment failure or on a programmatic basis. They may, in some instances, be associated with comfort, safety, compliance, and Business Continuity.

The DFE of the facility helps maintain continuous operations during emergency storm events.

**Summary of Financial Benefits and Costs (attach backup)**

Not applicable. By studying, evaluating, and assessing the condition of its equipment and systems, and developing work scopes and cost estimates, categorizing, and prioritizing its projects accordingly, Facilities develops an understanding of where and when to most efficiently allocate its funding and personnel resources. The short and long term/five-year program established by Facilities ensures that the project is done at the best time to avoid further equipment/system deterioration, which will eventually/potentially lead to higher capital replacement costs. Facilities meets on a weekly and/or monthly basis to review its portfolio of projects which helps the Department best allocate resources to keep projects on track and costs under tight control.

Total cost  
\$78,526,000

Basis for estimate  
Engineering Estimates/Engineering Support Requests.

Facility is to be designed to a DFE that incorporates the FEMA 100-year base flood elevation plus 2-feet of projected sea-level rise plus 2-feet of freeboard). This results in additional labor and material to add

approximately 5-feet of height to the structure. In additional waterproofing measures may be required on the first floor of the facility.

Conclusion

Yes

**Project Risks and Mitigation Plan**

Systems are being evaluated and Engineering Service Requests (ESRs) are being reviewed to address problems and concerns with Critical Infrastructure in Facilities Buildings and Yards. Engineering packages are being developed to address these issues and Engineering Resources are available.

In order to minimize this risk and mitigate equipment failure, Engineering will continue to monitor equipment and work with Facilities personnel to ensure systems are operated and maintained per design basis and Original Equipment Manufacturer (OEM) recommendations are followed; this action plan will help to extend the life of systems as long as reasonably possible (and until projects can be executed).

**Technical Evaluation / Analysis**

These projects are intended to be performed each year to maintain and improve overall conditions at the Facilities buildings and yards and may be required on a critical short-term priority basis or as a programmatic improvement. The program may also address efficiency improvements and/or equipment modernization or upgrades and projects are evaluated/ prioritized based on facility assessments. These projects generally have to do with Yard Paving/Resurfacing, HVAC systems nearing the end of their normally useful life, general office renovations, EDG and electrical upgrades, elevator upgrades, window replacements, security improvements, fire alarm systems.

**Project Relationships (if applicable)**

N/A

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
<b>Capital</b>	19,597	25,512	16,127	14,656		14,296
<b>O&amp;M</b>						
<b>Regulatory Asset</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	3,423	16,979	16,977	20,583	20,564
<b>O&amp;M*</b>					
<b>Regulatory Asset</b>					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	274	1,358	1,358	1,647	1,645
M&S	171	849	849	1,029	1,028
Contract Services					
	2,225	11,036	11,035	13,379	13,367
Other	68	340	340	412	411
Overheads	685	3,396	3,395	4,117	4,113
<b>Total</b>	<b>3,423</b>	<b>16,979</b>	<b>16,977</b>	<b>20,583</b>	<b>20,564</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input checked="" type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Facilities Buildings and Yards - (Roof Replacement Program)	
Project/Program Manager: Leo Palmer	Project/Program Number (Level 1): 21384633
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> <input checked="" type="checkbox"/> Other: Various Projects with the Program - Planning and Engineering	
Estimated Start Date: Ongoing	Estimated Date In Service: Ongoing
A. Total Funding Request (\$000) Capital: 26,466 O&M:	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>These roof projects are intended to be performed annually in order to maintain and improve on overall conditions at Company facilities, and to prevent any failure/water leakage into the building. In most cases, aging black roofs will be replaced by white roofs and may also be replaced by green roofs.</p> <p>The projects list continues to grow from Engineering Service Requests, i.e., ESR's, customer needs and programmatic assessments. The list of capital projects planned for 2022-2026 is provided in the attached table.</p>	
<p><b>Justification Summary:</b></p> <p>Facilities Engineering inspects each roof on a periodic basis and recommends critical repairs or roof replacements as required. Note that a roof generally has a life-span of 20 to 25 years and that most of the buildings of Facilities are over twenty-five years old, with certain locations such as Cleveland Street and Rye Service Centers, over sixty years old. The roofs for the Facilities listed in the above pdf are scheduled to be completed in their respective years as a result of the Facilities Engineering comprehensive annual roof inspection program and resulting prioritization.</p> <p>While it is recommended all aging black roofs to be replaced by 2025, roofs that have water leakage should be temporary repaired until they can be scheduled for replacement.</p>	
<p><b>Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)</b></p>	

Roofs must be maintained and periodically repaired/replaced in order to improve on overall conditions at Company facilities, and to prevent any failure/water leakage into the building and damage to indoor equipment and office spaces, often recently renovated. Failure to maintain a robust roof inspection and repair/replacement program will affect projects previously executed and planned.

Con Edison recognizes that climate is changing and considers that the floodplain will extend over time due to sea-level rise, and that temperature and rainfall amounts will also rise. As such facilities will be designed in accordance with standards for climate adaptation. Engineering will design systems in accordance with Climate Change Planning and Design Guideline Document & Corporate Instruction CI-610-4. The specific project will determine which climate change pathways (“the Pathways”) and design elements to incorporate into the project for increased precipitation, temperature rise, and sea level rise; the design work scope will apply the “Pathway” for the decadal time horizon associated the specific project. Note that each project and application will need to be reviewed and analyzed.

Examples

Building structures are anticipated to have a 75-year useful life span: buildings systems will therefore be designed to accommodate rising temperatures by making HVAC systems modular/expandable and/or providing additional surface area space; increased rainfall amounts (drains and gutters to account for approximately 4 extra inches of rain in a 24-hour period by year 2099); and depending on location, and rising sea levels (FEMA +5).

Roofs have a 25-year life and will apply the increased precipitation pathway to design larger gutters and drains to handle the greater anticipated rainfall values in the future years

## 2. Supplemental Information

**Alternatives**

Continue to repair roofs after they have moved beyond their normal lifespan. In certain situations, the roof insulation has become so saturated and roofing waterproof membrane so compromised that repairs are no longer effective. Once this happens, it becomes extremely difficult to identify the source of the leak requiring that we "chase" the leak, usually with poor results, leading to water infiltration into the building and the formation of mold, the mitigation of which requires immediate attention.

Depending on the selected climate pathway, the structure and associated facilities will be designed accordingly. Structures that are not in the existing FEMA 100-year floodplain could be built to a lower DFE. Within the useful life of these assets, however, the flood plain is expected to extend to this location. If this alternative is selected, this facility would be vulnerable to damage from future flooding. That would result in an inability to use the facility and disruptions to operations. The incremental cost of planning to a higher DFE is outweighed by the risk of disrupting operations during future storm events and the cost of repairing water damage to the facility.

**Risk of No Action**

If leaks are not addressed and water infiltrates a building, serious health issues will arise as a result of the formation of mold. In addition, personal space becomes increasingly more difficult to work in as catch basins and drums are needed to capture and cart water away (*i.e.*, previously occurred at Bruckner Building 3, College Point Blvd).

**Non-Financial Benefits**

See Risks above Summary of Financial Benefits below.

**Summary of Financial Benefits and Costs (attach backup)**

1. Major financial benefits

See “alternatives” above and the repair issues associated with roof leaks. There are costs associated with repairing/replacing interior office components which can become saturated by roof leaks (carpeting, ceiling tiles, lighting, sheetrock walls, etc.) and productivity issues associated with workers who may have had their work destroyed and who must be displaced when repairs take place.

2. Total cost

**\$26,466,000**

3. Basis for estimate

Engineering estimates and Engineering Support Requests.

Facility is to be designed to a DFE that incorporates the FEMA 100-year base flood elevation plus 2-feet of projected sea-level rise plus 2-feet of freeboard). This results in additional labor and material to add approximately 5-feet of height to the structure. In additional waterproofing measures will be required on the first floor of the facility.

4. Conclusion

In addition to the benefits mentioned above, the installation of both white and green roof types will help prevent energy losses and provide important environmental benefits compared to traditional dark roofs, according to researchers from Columbia University. For one, green roofs keep heat in the building during the winter, reducing the need for heating, and keep heat out during the summer, reducing the need for air conditioning. The energy-saving benefits of the white roof occur mainly in the summer, when the roof absorbs less heat than a dark roof, cutting down on air conditioning needs. According to a study led research scientists at Columbia’s Center for Climate Systems Research, the green and white roofs perform equally well in preventing a phenomenon scientists call “heat island effect.” The effect states that conventional dark roofs absorb sunlight during the day and radiate heat back into the atmosphere at night, contributing to warmer urban temperatures.

The green roofs provide the added benefit of retaining, through plant absorption, approximately 30 percent of the rainwater that falls on it. This would reduce the amount of rainwater that would otherwise flow into a city sewer system which often overflows during heavy rains – allowing raw sewage to spill into New York Harbor, the Hudson River, the East River, and other waterways.

**Project Risks and Mitigation Plan**

N/A

**Technical Evaluation/ Analysis**

See above.

**Project Relationships (if applicable)**

N/A

**3. Funding Detail**

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital	3,320	4,956	3,602	5,067		2,654
O&M						
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	1,556	9,002	3,979	5,967	5,962
O&M*					
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	124	720	318	477	477
M&S	78	450	199	298	298
Contract Services	934	5,401	2,586	3,879	3,876
Other	31	180	80	119	119
Overheads	389	2,251	796	1,194	1,192
<b>Total</b>	<b>1,556</b>	<b>9,002</b>	<b>3,979</b>	<b>5,967</b>	<b>5,962</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/ maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

**Facilities Roof Replacement Program 2022 - 2026**

Year	Location	Building/Roof	Year Inspected	Rating	Area (sf)	Capital Cost	
						per sf.	Estimated Cost
2022	4 Irving Place Corporate HQ	4th Floor Setback Roof	-	-	1,600	\$200.00	\$320,000
2022	4 Irving Place Corporate HQ	19th Fl. N. & S. Promenade Roofs	-	-	6,000	\$200.00	\$1,200,000
						<b>TOTAL:</b>	<b>\$1,520,000</b>
2023	Bruckner Boulevard Service Center	Building 3			57,000	\$110.00	\$6,270,000
2023	Van Nest Service Center	Building 2	2013	6	30,000	\$89.99	\$2,699,674
						<b>TOTAL:</b>	<b>\$8,969,674</b>
2024	16th Street Service Center	Old Building	2014	7	14,000	\$93.59	\$1,310,242
2024	Neptune Avenue Service Center	Main Building	2017	7	16,800	\$93.59	\$1,572,290
2024	Davis Avenue Service Center	Old Building	2013	7	10,000	\$93.59	\$935,887
						<b>TOTAL:</b>	<b>\$3,818,418</b>
2025	Astoria	Transmission Building	2014	6	3,800	\$97.33	\$369,862
2025	West End Avenue ECC	Main Building Penthouse	NA	NA	3,000	\$97.33	\$291,997
2025	Davis Avenue Service Center	Front Garage	2013	6	7,500	\$97.33	\$729,992
2025	Davis Avenue Service Center	New Building	2015	6	7,500	\$97.33	\$729,992
2025	Davis Avenue Service Center	Fiber Hut	NA	NA			\$5,000
2025	16th Street Service Center	Main Building	2015	6	40000	\$97.33	\$3,893,289
						<b>TOTAL:</b>	<b>\$6,020,132</b>
2026	Astoria	Electronic Communication Bldg.	2014	8	1,700	\$101.23	\$172,083
2026	Astoria	Guardhouse	2014	7	900	\$101.23	\$91,103
2026	Astoria	Chem Lab Building	2013	6	12,000	\$101.23	\$1,214,706
2026	Astoria	Cable Yard Building	2013	6	1,500	\$101.23	\$151,838
2026	Astoria	Cable Yard OH Crane Building	2014	4	2,000	\$101.23	\$202,451
2026	Astoria	Pipe Yard Wrapping Shed	2014	8	250	\$101.23	\$25,306
2026	Astoria	Pipe Yard Building	2013	6	1,600	\$101.23	\$161,961
2026	Astoria	Transformer Shop Annex	2014	7	400	\$101.23	\$40,490
2026	Van Nest Service Center	Babbitt Shop	2014	7	5,200	\$101.23	\$526,373
						<b>TOTAL:</b>	<b>\$2,586,312</b>

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Facilities Service Center Renovation and Storeroom Modernization	
Project/Program Manager: Leo Palmer	Project/Program Number (Level 1): 21506897
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> <input checked="" type="checkbox"/> Other: Various Projects with Program - Planning and Engineering	
Estimated Start Date: 01/2023	Estimated Date In Service: 12/2025
A. Total Funding Request (\$000) Capital: 38,491  O&M:	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>The capital exhibit lists Service Center Renovation and Storeroom Modernization projects planned in this category.</p> <p>Service Center Renovation projects are performed each year in order to maintain and improve on overall conditions at Con Edison buildings and yards. This program will renovate various office spaces throughout the Facilities Headquarter Buildings (such as Rye HQ, and Davis Ave) and Service Centers (such as College Pont, Victory Blvd and Eastview), many of which have not been fully renovated since their original construction. Much of the infrastructure at Con Edison buildings and yards is outdated. The air conditioning is essentially unchanged since it was installed, with inefficient controls which result in unsatisfactory comfort levels in the buildings. As part of the renovations, all the distribution ductwork and controls will be replaced, including Variable Air Volume (“VAV”) systems that change the air flow depending on need. Similarly, lighting will be completely replaced with an energy-efficient system that responds to a central controller and dims at the perimeter to respond to available daylight. The new office space will also look to incorporate lessons learned from the COVID pandemic (e.g., improved ventilation /increased air changes, use of displacement ventilation, better air filtration, better humidity control, greater spacing/flexible furniture designs).</p> <p>The Storeroom Modernization project aims to consolidate the various storerooms, originally created by individual operating groups, into one main storeroom in each service center. The primary purpose of the project will be to reduce material and tool redundancy, minimize physical storeroom footprints, streamline, and standardize processes, and optimize staffing required to manage the storerooms. Additionally, there is significant opportunity to update processes by reducing or eliminating paper-based transactions and employing state of the art technology for ordering and tracking material.</p>	

An in-depth study performed by Establish in 2019—an industry expert in space optimization for warehouses—has provided recommendations for improvement and budgetary cost estimates for College Point, E. 16th Street, Eastview, Rye, W. 28th Street, Victory Blvd, 3rd Ave, Bruckner Blvd and Van Nest. By restructuring the internal arrangement of the storerooms and using better-designed shelving systems, Stores Operations plans to add an additional 32,877 sq. ft. of storage capacity.

**Justification Summary:**

Most Con Edison buildings are over thirty years old, with certain locations, such as Cleveland Street and Rye Service Centers, over sixty-five years old. Interior offices, in certain cases, do not meet current space-use, indoor air quality or industry safety standards. Con Edison's policies emphasize open communication and collaboration. The "Office of the Future" open floor plan reflects and supports this management approach. The planned renovations will bring the floors to (and in many ways above) standard for new office buildings. While providing an attractive work environment is important, the focus is on providing a productive work environment that is easy to maintain and will require no additional investment for many years. The new office space will also look to incorporate lessons learned from the COVID pandemic (e.g., improved ventilation /increased air changes, use of displacement ventilation, better air filtration, better humidity control, greater spacing/flexible furniture designs).

Currently, each service center consists of independent tool rooms and storerooms serving individual groups in Electric, Gas, Steam, and Meter Operations. The rooms are distributed throughout the service center, although these Storerooms contain some of the same material and tools.

Stores Operations is seeking to gain efficiencies by better utilizing the available storage space in ~~eight~~ nine storerooms. An in-depth study performed by Establish—an industry expert in space optimization for warehouses—has provided recommendations for improvement and budgetary cost estimates. By restructuring the internal arrangement of the storerooms and using better-designed shelving systems, Stores Operations plans to add an additional 32,877 sq. ft. of storage capacity. This optimized space equals an additional 792 pallet positions and 11,370 additional bin positions. The improvements will be made by procuring new racking systems that will better utilize vertical space, and by more efficient use of the available storeroom floor space. Modifications to existing fencing and minor building modifications will be necessary to allow for the enhanced floor plan. Such restructuring of the storerooms will allow Stores Operations to consolidate material, reduce the redundancy of inventory, reallocate floor space for other usage and optimize staffing levels. Technology will need to be purchased so that productivity within the new floor plans can be realized. The technology will integrate with current warehouse management systems so that all transactions will be paperless and real-time inventory data can be analyzed. This technology will include point-of-sale self-service checkout counters, scanners, and vending machines. Upgrades to the existing security systems will also be made to include ID card reader access, cameras, and possible Radio-Frequency Identification tagging-technology for improved tracking and control.

The modernization of the Storerooms will give Stores the ability to reevaluate the staffing levels at each Storeroom and optimize staffing, which could result in a cost savings of approximately \$100,000 per storeroom.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

Most Con Edison buildings are over thirty years old, with certain locations, such as Cleveland Street and Rye Service Centers, over sixty-five years old. This program is in line with the Company's long-term plan to modernize the buildings and yards of Facilities.

## 2. Supplemental Information

<p><b>Alternatives</b></p> <p>These spaces can be repainted and cleaned in order to make slight improvements to the office environment and employee comfort, but few of the benefits described above can reasonably be achieved.</p>
<p><b>Risk of No Action</b></p> <p>If the storerooms are not modernized, Stores would continue to operate at less-than-optimal efficiency, resulting in the continued redundancy of materials and staffing for the various satellite storerooms. There are Storerooms in the same location that contain similar materials and are being operated by different personnel at each respective room.</p>
<p><b>Non-Financial Benefits</b></p> <p>Switching to an “Office of the Future” open floor plan will support a productive team-working environment and will enable the Company to more efficiently utilize its office space. By benchmarking with other companies, we have determined that additional employees can fit into the same spaces. A professional and modern storeroom environment will improve not only the cost effectiveness of the operation but will instill pride and ownership in the team running it. This effort will also free up space which can be use by Facilities and Field Services.</p>
<p><b>Summary of Financial Benefits and Costs</b></p> <p>See above</p> <p>1. Total cost <i>State the total project/program implementation cost (which should match the detailed funding breakdown below), along with any on-going financial costs associated with the project/program. For software projects, segregate costs by each phase of development: feasibility, design, development, and production/implementation.</i></p> <p>2. Basis for estimate Engineering estimates/Engineering Support Requests</p> <p>3. Conclusion See above.</p>
<p><b>Project Risks and Mitigation Plan</b></p> <p>Lack of Funding <span style="float: right;">Mitigation plan - None.</span></p>
<p><b>Technical Evaluation / Analysis</b></p> <p>See above.</p>
<p><b>Project Relationships (if applicable)</b> N/A</p>

### 3. Funding Detail

#### Historical Spend

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital		5,233	6,367	2,940		206
O&M						
Regulatory Asset						

#### Total Request (\$000):

#### Total Request by Year:

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	460	8,014	8,013	11,002	11,002
O&M*					
Regulatory Asset					

#### Capital/Regulatory Asset Request by Elements of Expense:

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	37	641	641	880	880
M&S	23	401	401	550	550
Contract Services	276	5,209	5,208	7,151	7,151
Other	9	160	160	220	220
Overheads	115	1,603	1,603	2,200	2,200
<b>Total</b>	<b>460</b>	<b>8,014</b>	<b>8,014</b>	<b>8,013</b>	<b>11,002</b>

#### Total Gross Cost Savings / Avoidance by Year:

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

#### Total Ongoing Maintenance Expense by Year:

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

### 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/ maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Facility Security Upgrades	
Project/Program Manager: Leo Palmer	Project/Program Number (Level 1): 22093063
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: <span style="background-color: gray; color: red;">Redacted</span>	Estimated Date In Service: <span style="background-color: gray; color: red;">Redacted</span>
A. Total Funding Request (\$000) Capital: 13,147 O&M:	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>The Facilities Security Program will include upgrade/enhancements to various facilities buildings and yards. The current Plan includes:</p> <p><span style="background-color: gray; color: red;">Redacted</span></p> <div style="background-color: gray; height: 150px; width: 100%; margin-top: 10px;"></div>	
<p><b>Justification Summary:</b></p> <p><span style="background-color: gray; color: red;">Redacted</span></p>	

Redacted  
[Redacted content]

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

This program is funded in the Facilities capital budget.

**2. Supplemental Information**

**Alternatives**

Redacted  
[Redacted content]

**Risk of No Action**

Redacted  
[Redacted content]

**Non-Financial Benefits**

These measures will significantly enhance employee safety and security.

**Summary of Financial Benefits and Costs (attach backup)**

N/A

**Project Risks and Mitigation Plan**

**Risk 1**

Redacted  
[Redacted content]

[Redacted content]

[Redacted content]

**Risk 2**

Redacted  
[Redacted content]

Redacted
Redacted
Redacted
Technical Evaluation/ Analysis
Redacted
Project Relationships (if applicable) N/A

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital	3,463	2,730	4,657	1,448		3,037
O&M						
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	1,147	3,000	3,000	3,000	3,000
O&M*					
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	92	240	240	240	240
M&S	57	150	150	150	150
Contract Services	688	1,800	1,950	1,950	1,950
Other	23	60	60	60	60
Overheads	287	750	600	600	600
<b>Total</b>	<b>1,147</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation – New project, not authorized yet
- Planning – Project authorized, not started yet
- Executing – Project in-flight
- On-going – Annual program

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: FFS Energy Efficiency Program	
Project/Program Manager: Leo Palmer	Project/Program Number (Level 1): 23317531
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: Various Projects within the Program - Planning and Engineering	
Estimated Start Date: 01/2023	Estimated Date In Service: 12/2025
<b>A. Total Funding Request (\$000)</b> Capital: \$54,434 O&M:	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  The Energy Efficiency Program is a compilation of various Energy Efficiency Measures (“ECM’s”) identified in the Level III Investment Grade Energy Audits completed for: the Irving Place Corporate Headquarters; the Flatbush Avenue, Rye and Davis Avenue Regional Headquarters; and the Learning Center (“TLC”) buildings.  These ECM’s identify methods to reduce energy use at each location. The majority of the ECM’s identified are associated with lighting, HVAC systems (to include sensor, Building Management System (BMS) and software) and attributed to the inefficient building façades (e.g., building envelope components such as windows). The window replacement program which addresses over 2,000 windows at Irving Place is underway and will carry over into the rate years. This program request will address the lighting ECM items identified in the building Energy Audits and Local Law 88 (“LL88”), which requires large non-residential buildings to upgrade their lighting systems to meet the NYC Energy Conservation Codes by January 1, 2025. The Energy Efficiency Program will primarily address the installation of new LED lights and daylight harvesting controls at the Regional Headquarters and Service Centers and address completion of the Irving Place window installation project.	
<b>Justification Summary:</b>  Lighting in non-residential buildings accounts for almost 18% of energy use in New York City Buildings. Dramatic improvements in lighting technology have made it feasible to significantly reduce energy consumption by installing more efficient lighting systems with automated controls and daylight harvesting. Under Supplemental Information, see the attached Energy Audits for building energy use and recommended ECMs and the LL88 lighting upgrade concept estimates.	

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

These LL88 lighting replacement projects will serve as the basis for the estimated value of the Energy Efficiency Program request. HVAC replacements have in the past and will continue to be addressed in the Facilities Critical Infrastructure Short Term Priority/Program.

Con Edison recognizes that climate is changing and considers that the floodplain will extend over time due to sea-level rise, and that temperature and rainfall amounts will also rise. As such facilities will be designed in accordance with standards for climate adaptation. Engineering will design systems in accordance with Climate Change Planning and Design Guideline Document & Corporate Instruction CI-610-4. The specific project will determine which climate change pathways (“the Pathways”) and design elements to incorporate into the project for increased precipitation, temperature rise, and sea level rise; the design work scope will apply the “Pathway” for the decadal time horizon associated the specific project. Note that each project and application will need to be reviewed and analyzed.

It is not anticipated that these elements of climate change will affect the lighting design that is a part of this program.

**2. Supplemental Information**

**Alternatives**

An alternative to implementing lighting ECM is to continue to utilize less efficient lighting & obsolete control systems. This alternative is not recommended and will not allow for meeting the January 1,2025 LL88 compliance date.

**Risk of No Action**

Risk 1

Not meeting the LL88 January 1, 2025 compliance date.

Risk 2

If low-cost options continue to be implemented over Energy Conservation Measures, the Company will not be able to bring our buildings Energy Use Index down. Currently Con Edison buildings Energy Use Index is greater than the norm for an office building as per EPA’s benchmarking analysis.

**Non-Financial Benefits**

Energy Conservation is the major non-financial benefit of implementing the ECM’s outlined in the Energy Audits. These benefits trickle down to more comfortable working conditions for our work force and efficiencies in running our buildings mechanical systems.

**Summary of Financial Benefits and Costs (attach backup)**

Major financial benefits

This program will address the lighting ECM items identified in the building Energy Audits & Local Law 88, which requires large non-residential buildings to upgrade their lighting systems to meet the NYC Energy Conservation Codes by January 1, 2025. The Energy Efficiency Program will primarily address

the installation of new LED lights and daylight harvesting controls at the Regional Headquarters and Service Centers, which will result in reduced energy usage in the Facilities Buildings and Yards.

3. Total cost  
\$54,434,000

4. Basis for estimate  
Engineering estimates and Engineering Support Requests.

Please see the attached worksheet for additional details.

5. Conclusion  
This Program should be executed in order to ensure compliance with LL88, which produce the financial and non-financial benefits mentioned above.

**Project Risks and Mitigation Plan**

This is a project with a compliance date of January 1, 2025. The Brooklyn/Staten Island installation is nearing completion. Engineering has completed the design package for the Queens Region and will complete the Bronx package by mid-2022, followed by the Manhattan package. This work plan provides sufficient time for construction in all Regions by the compliance date provide funding is available.

**Technical Evaluation / Analysis**

See above.

**Project Relationships (if applicable)**

N/A

**3. Funding Detail**

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
<b>Capital</b>				6,309		5,587
<b>O&amp;M</b>						
<b>Regulatory Asset</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	501	23,959	19,957	5,009	5,009
<b>O&amp;M*</b>					
<b>Regulatory Asset</b>					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>

Labor	40	1,917	1,597	401	401
M&S	25	1,198	998	250	250
Contract Services	326	15,573	12,972	3,256	3,256
Other	10	479	399	100	100
Overheads	100	4,792	3,991	1,002	1,002
<b>Total</b>	<b>501</b>	<b>23,959</b>	<b>19,957</b>	<b>5,009</b>	<b>5,009</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

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**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/ maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

FACILITIES ELECTRICAL EQUIPMENT LONG TERM UPGRADE PROGRAM

	<u>Generator(s)</u>	<u>Emergency Power Distribution Equipment</u>	<u>Service Entrance Equipment</u>	<u>Normal Power Distribution Equipment</u>	<u>Lighting Systems (Local Law 88)</u>	<u>Fire Alarm Systems</u>	<u>Voicecom System</u>	<u>Notes</u>	
MANHATTAN	4 IRVING PLACE	Load Bank - In Progress	ATS & Fuel Sys Monitoring - In Progress	Replace (17) Main Service Switches - Too difficult to do	Being replaced floor by floor during sprinkler installation	Being replaced floor by floor during sprinkler installation - LED fixtures, Auto Controls, Daylight Harvesting on South & East Sides - Implement Local Law 88 Project	Upgrade FA Command Station to add new display panel  Install new FA Riser In Elev Shaft From existing 400A ATS switch in basement	None	FA system of the building will soon be obsolete and will require entirely new system to be installed
	EAST 16TH STREET	750 E16 St - Good Condition	750 E16 St - Good Condition	750 E16 St - Good Condition	750 E16 St - Good Condition	750 E16 St - Lighting Replacement In Progress - Implement Local Law 88 Project	Replace FA System	None	FA system is an addressable EST 2 automatic and manual detection system which is obsolete
		729 E16 St - None	729 E16 St - None	729 E16 St - Working Condition	729 E16 St - Working Condition	729 E16 St - Lighting Replacement In Progress	None Required	Working Condition	
	EAST 110TH STREET	None	None	Adequate, Good Condition	Good Condition	Lighting Replacement In Progress	None Required	Working Condition	Operations request additional power panel for convenience loads. Will verify availability with load calculation or check with George Giamos if this was recently done for the EV job.
	WEST 28TH STREET	None	None	Adequate, Good Condition	Adequate, Good Condition	Lighting Replacement In Progress - Implement Local Law 88 Project	None Required	Working Condition	There is no FA system in existence but there is an ARCO voicecom system with manual push buttons, There is a stand-alone CO detection system in the shop area but no detectors are visible
WEST END AVE	Owned by Substation Operations	Adequate, Good Condition	Owned by Substation Operations	Rewire Dist Board & ATS in Basement - Owned by Substation Operations	Lighting Replacement In Progress	FA System Approved August 2007	None	FA system is an addressable FCI Honeywell system with manual/automatic detection & horn/strobe devices. Supervisor states that there have been numerous trouble alarms possibly due to faulty wiring issues.	
BROOKLYN	3RD AVE YARD	Adequate, Good Condition	Adequate, Good Condition	Adequate, Good Condition	Adequate, Good Condition	Lights Replaced - 2015 - Implement Local Law 88 Project	FA System Approved January 2009	Install Voicecom System	FA system is an addressable EST 3 system with manual/automatic detection & horn/strobe devices. Supervisor states a lot of automatic detection devices need to be replaced & there are a lot of nuisance tripping. There is also no detection and notification in the shop building. Supervisor request system with speaker/strobe devices so that building wide announcements can be made via the FA panel
	30 FLATBUSH AVE	Generator Replacement Completed	At Capacity, Good Condition	Adequate, Good Condition	Separate Normal/Em Ckts	Lights Replaced - 6th, 7th Floors. Replacement need to be done for other areas & Local Law 88 Project	FA System Approved - June 2014	None	FA system is an addressable PyroSignal system with a fire command station and a fire safety safety director, however no visual notification devices are connected to the system
	CLEVELAND STREET/ATLANTIC AVE	None	None	Adequate, Good Condition	Adequate, Good Condition - Except Panel HP-3	Upgraded with T5 Lights however there are no automatic controls	None Required	Working Condition	Panel HP-3 is rated at 125A but has a 2#8 AWG feeder wire. There is a jumper between the B phase lug and the C phase lug - Panel needs to be brought to a code compliant state.
	NEPTUNE AVE	None	None	Adequate, Good Condition	Adequate, Good Condition - Request Outdoor Panel for Charging Truck Boom Lift Batteries	Upgraded with T5 & LED Lights however there are no automatic controls	Replace FA System	Working Condition	Operating Supervisor request installation of 100A distribution panel and outdoor receptacles for charging trucks boom lift batteries from an existing circuit located in a storage room. FA system is an old notifier system with only bells, manual pull stations, & duct detectors.
QUEENS	ASTORIA	None	None	Adequate, Good Condition	Distribution Panelboards are not in good condition and not code compliant	Lighting Replacement In Progress - Implement Local Law 88 Project	Replacement in Progress	None	Distribution Panelboards are in unsafe condition with missing locks, space cover, and many are residential type panels that need to be changed to commercial type
	COLLEGE POINT	Good Condition	Adequate, Good Condition	ESR-2017-14957 In Progress	Adequate, Good Condition	Lighting Replacement In Progress - Implement Local Law 88 Project	Replacement in Progress	Working Condition	
	TLC	Replace Generator	Life Safety Loads Only, Good Condition	Adequate, Good Condition	Adequate, Good Condition	Original Lighting except for newly renovated basement - Implement Local Law 88 Project	FA System Replacement Completed - Approval Pending Inspection	None	Facility Manager indicates a lighting energy study was conducted a few years back by Facility Engineering

		<u>Generator(s)</u>	<u>Emergency Power Distribution Equipment</u>	<u>Service Entrance Equipment</u>	<u>Normal Power Distribution Equipment</u>	<u>Lighting Systems (Local Law 88)</u>	<u>Fire Alarm Systems</u>	<u>Voicecom System</u>	<u>Notes</u>
	VAN DAMM	None	None	Adequate, Worn Condition	Adequate, Worn Condition	Original Lighting - T8 Bulbs in Industrial Fixtures	Sprinkler Alarm System - Approved	Working Condition	Operating Supervisor request lighting replacement project be implemented.
BRONX	BRUCKER BLVD	Generator Replacement - In Progress	Adequate, Working Condition	Rewire Main Switchboard	Replace Garage Circuits	Lighting Replacement In Progress - Implement Local Law 88 Project	Sprinkler Alarm System Installation in Progress - Building 3	Working Condition	Operating Supervisor request lighting replacement project to be implement slowly. Ordering of fixtures in progress.
	VAN NEST	Adequate, Good Condition	Adequate, Good Condition	Adequate, Working Condition	Replace Panelboards Replace Electrical Equipment in Boiler Room Replacement of Building #1 South Bus in Progress	Replace Parking Lot Lights Replace Lighting Throughout Various Buildings - Implement Local Law 88 Project	Replacement in Progress	None	
STATEN ISLAND	DAVIS AVE	Old Building - Replace Existing Generator	Old Building - Replace	Adequate, Good Condition	Adequate, Good Condition	Old Building - Lighting Replacement in Progress - Implement Local Law 88 Project	Replace FA System	Working Condition	FA system is an Alison analog system with manual break glass stations, strobes, and automatic detection. There is also a voicecom emergency annuciation system with break glass stations in good working condition.
	VICTORY BLVD	Install 100KW Generator For Transportation Garage	New Building - Adequate, Good Condition Install for Transportation Garage	Adequate, Good Condition	Adequate, Good Condition	New Building - Implement Local Law 88 Project Lighting Replacement in Progress	Replace FA System Sprinkler Alarm System Approved - September 2011	Working Condition	FA system is an old Siemens FS-250 System Operating Supervisor request 100KW generator be installed to support transoportation garage emergency loads.
WESTCHESTER	EASTVIEW	Adequate, Good Condition	Adequate, Good Condition	Adequate, Good Condition	Adequate, Good Condition	Lighting Replacement In Progress	Replace FA System	None	FA system is an Alison analog system with manual break glass stations, strobes, and automatic detection.
	RYE HQ	Generator Replacement Completed	Adequate, Good Condition	Adequate, Good Condition	Install new distribution panel on 2nd & 3rd floors	Replace Lobby & Corridor Lights	Working Condition	None	Facility operator request new distribution panels for each floor for additional small receptacle loads. FA System in an adressable Notifier system.
	RYE SC	Generator Replacement Completed, Note: Inquire if old generator is still operational	Adequate, Working Condition Except for ATS switch which needs to be replaced	Poor Condition - Replacement needed	Poor Condition - Replacement Needed	Replace Lighting	Replace FA System	Working Condition	All electrical equipment is very old and should be replaced. FA System is an old FireLite/Honeywell System with automatic/manual detection and horn/strobe devices.
YONKERS	WORTH ST	None	None	Adequate, Old Equipment	Adequate, Old Equipment	Lighing Being Replaces with Overall Building Renovation	FA System Replacement In Progress as part of Blgd #1 Gut Renovation	Working Condition	

- 2019 Selected Projects
- 2020 Selected Projects
- 2021 Selected Projects
- 2022 Selected Projects
- 2023 Selected Projects

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input checked="" type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Facilities Buildings and Yards - (Safety Environmental Regulatory)	
Project/Program Manager: Leo Palmer	Project/Program Number (Level 1): 21384630
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: Various Project within the Program	
Estimated Start Date: Ongoing	Estimated Date In Service: Ongoing
A. Total Funding Request (\$000) Capital: \$42,010 O&M:	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>The capital exhibit lists all projects planned in the category. These projects address potentially unsafe conditions and environmental issues as well as local, state, and federal regulatory requirements, and are generally required for compliance with OSHA, the NYSDEC, the NYCDOB and other regulatory agencies. They include:</p> <p><u>Irving Place Local Law 11 - Cycle 9 Façade Rehabilitation Work</u> - The Local Law 11 (“LL11”) Cycle 9 engineering façade inspection report for Irving Place is scheduled to be completed and submitted to the New York City Department of Buildings (“NYCDOB”) by the due date of February 2023. As did the Cycle 8 it is anticipated that the Cycle 9 inspection report will depict a large number of Safe With a Repair and Maintenance Program (“SWARMP”) conditions. The Cycle 8 inspection produced approximately \$8.7 million of capital repair/rehabilitation work, with \$5.6 million of associated expense work, and was based on the LL11 inspection requirements at the time; two scaffold inspection drops per façade and a binocular-type inspection from the street level. The LL11 inspection requirements have been revised and Cycle 9 requires a scaffold inspection drop every 60 ft. It is therefore anticipated that Cycle 9 will uncover a large or equivalent number of SWARMP conditions as Cycle 8. The subsequent project will restore the defects identified in the Cycle 9 inspection and will be executed in 2024/2025.</p> <p>The LL11 project mentioned above is an example of larger type job in this category. There will be other previously identified and emerging projects that will result from future environmental, local law and safety regulations (typical recent examples include LL87 for retro-commissioning of Facilities HVAC equipment, and fire alarm improvements). Other currently identified projects are:</p> <ul style="list-style-type: none"> <li>• 28th Street - Water Treatment Plant Effluent Quality Analyzer</li> </ul>	

<ul style="list-style-type: none"> <li>• Astoria Site - Installation of Backflow Preventers for Campus Buildings</li> <li>• Cleveland Street - Parking Lot Study/Improvements</li> <li>• Irving Place - Cooling Tower Fall Protection and Miscellaneous Area Roof Fall Protection Upgrades</li> <li>• Irving Place - Sports Club Evaporative Cooler Replacement – to address potential Legionella Issue</li> <li>• Various Sites - Facilities Cooling Towers Conductivity Monitoring Sensors, Automatic Blowdown - Irving Pl, West End Avenue (WEA), 16th St, The Learning Center, Davis Ave, Eastview</li> <li>• Van Nest Building 1 - Compressed Gas Cylinder Storage Area Upgrades</li> </ul>
<p><b>Justification Summary:</b></p> <p>This category of projects addresses safety, environmental, and regulatory compliance concerns for Con Edison. They are required to address potentially unsafe conditions and environmental issues and to facilitate Facilities compliance with the latest local, state, or federal regulatory requirements and building codes. These projects may also be needed to respond to various Company audits.</p>
<p><b>Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)</b></p> <p>In the long-term plan, it is the intent of the Facilities Capital Improvement Program to address and mitigate issues and concerns associated with projects identified as "Safety Environmental Regulatory" as early as possible and reasonable.</p>

## 2. Supplemental Information

<p><b>Alternatives</b></p> <p>None. Not correcting such issues may lead to potentially unsafe conditions, environmental concerns, fines, violation orders, and regulatory non-compliance.</p>
<p><b>Risk of No Action</b></p> <p>To stay out of compliance, risking violation orders, fines, and unsafe conditions for Con Edison employees.</p>
<p><b>Non-Financial Benefits</b></p> <p>These projects address safety, environmental, and regulatory issues.</p>
<p><b>Summary of Financial Benefits and Costs (attach backup)</b></p> <p>These projects address safety, environmental, and regulatory issues.</p> <p>Total cost \$42,010,000</p> <p>Basis for estimate Engineering estimates/Engineering Support Requests.</p>

<p>Conclusion These projects address safety, environmental, and regulatory issues.</p> <p>For LL11 – Cycle 8 see the attached detailed photos and plot plans for additional information:</p>
<p><b>Project Risks and Mitigation Plan</b></p> <p>Being out of compliance, risking violation orders, fines, and unsafe conditions for Con Edison employees.</p>
<p><b>Technical Evaluation / Analysis</b></p> <p>See above and projects in capital exhibit.</p>
<p><b>Project Relationships (if applicable)</b> N/A</p>

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
<b>Capital</b>	3,583	3,259	7,595	14,721		5,085
<b>O&amp;M</b>						
<b>Regulatory Asset</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>	1,014	4,974	10,008	13,010	13,004
<b>O&amp;M*</b>					
<b>Regulatory Asset</b>					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	81	398	801	1,041	1,040

M&S	51	249	500	651	650
Contract Services	608	2,984	6,505	8,456	8,453
Other	20	99	200	260	260
Overheads	254	1,244	2,002	2,602	2,601
<b>Total</b>	<b>1,014</b>	<b>4,974</b>	<b>10,008</b>	<b>13,010</b>	<b>13,004</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation – New project, not authorized yet
- Planning – Project authorized, not started yet
- Executing – Project in-flight
- On-going – Annual program

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P001

Date 9/25/2017

▪ Condition: Displaced limestone

▪ Classification: UNSAFE



Photo: P002

Date 9/25/2017

▪ Condition: Cracked limestone

▪ Classification: UNSAFE

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P003

Date 9/25/2017

- **Condition:** Cracked limestone
- **Classification:** SWARMP



Photo: P004

Date 9/25/2017

- **Condition:** Cracked limestone
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

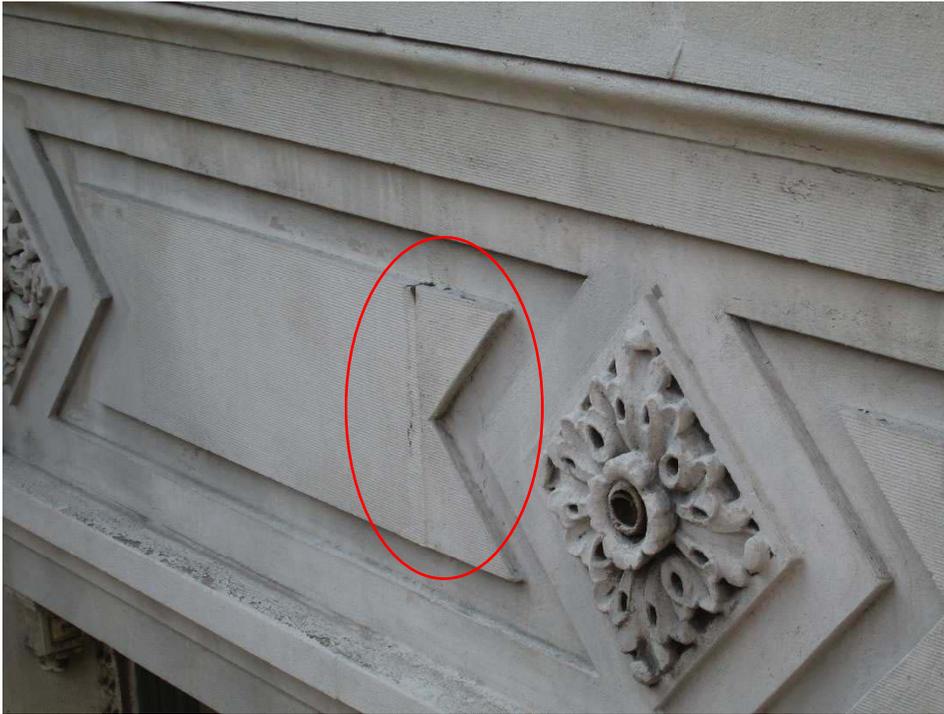


Photo: P005

Date 9/25/2017

▪ **Condition:** Cracked limestone

▪ **Classification:** SWARMP



Photo: P006

Date 9/25/2017

▪ **Condition:** Cracked limestone

▪ **Classification:** UNSAFE

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

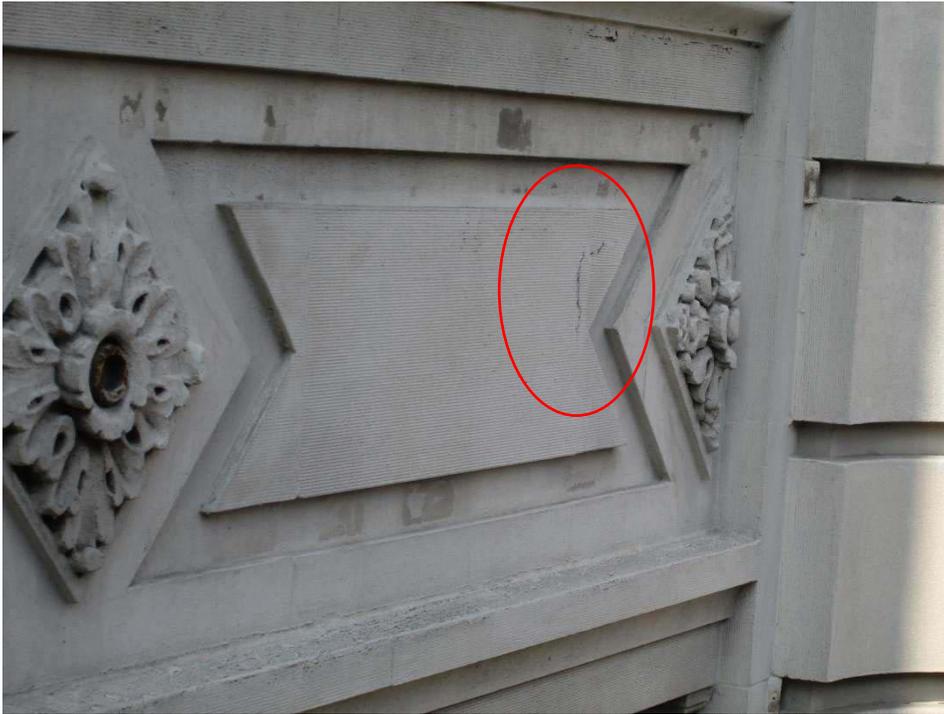


Photo: P007

Date 9/25/2017

- **Condition:** Cracked limestone
- **Classification:** SWARMP

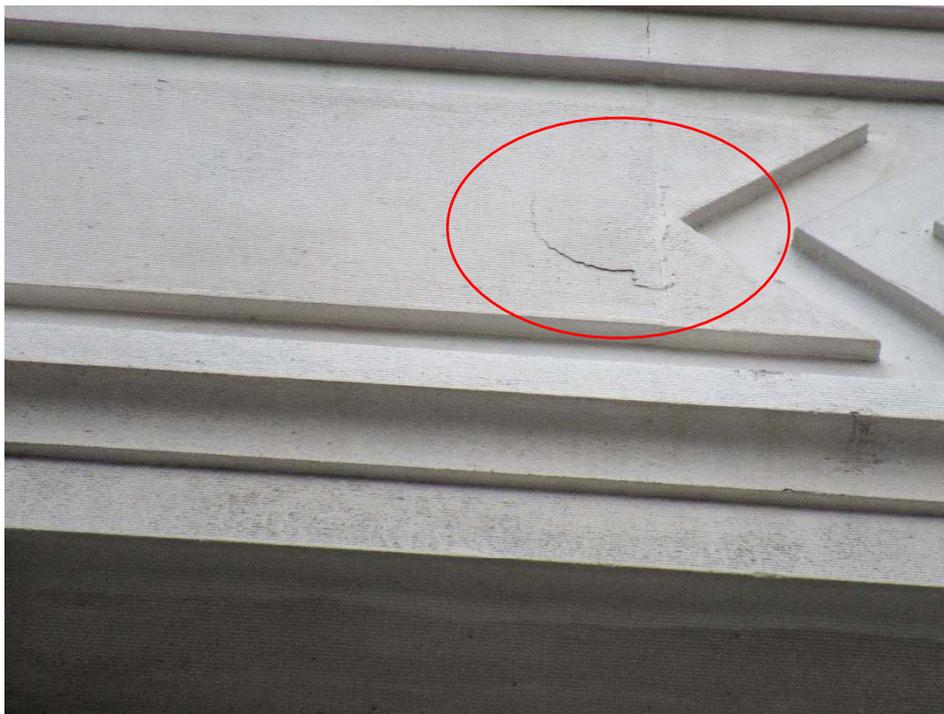


Photo: P008

Date 9/25/2017

- **Condition:** Spalled limestone
- **Classification:** UNSAFE

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P009

Date 9/25/2017

▪ Condition: Cracked limestone

▪ Classification: UNSAFE



Photo: P010

Date 9/25/2017

▪ Condition: Cracked limestone

▪ Classification: UNSAFE

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P011

Date 9/25/2017

▪ **Condition:** Cracked limestone

▪ **Classification:** UNSAFE

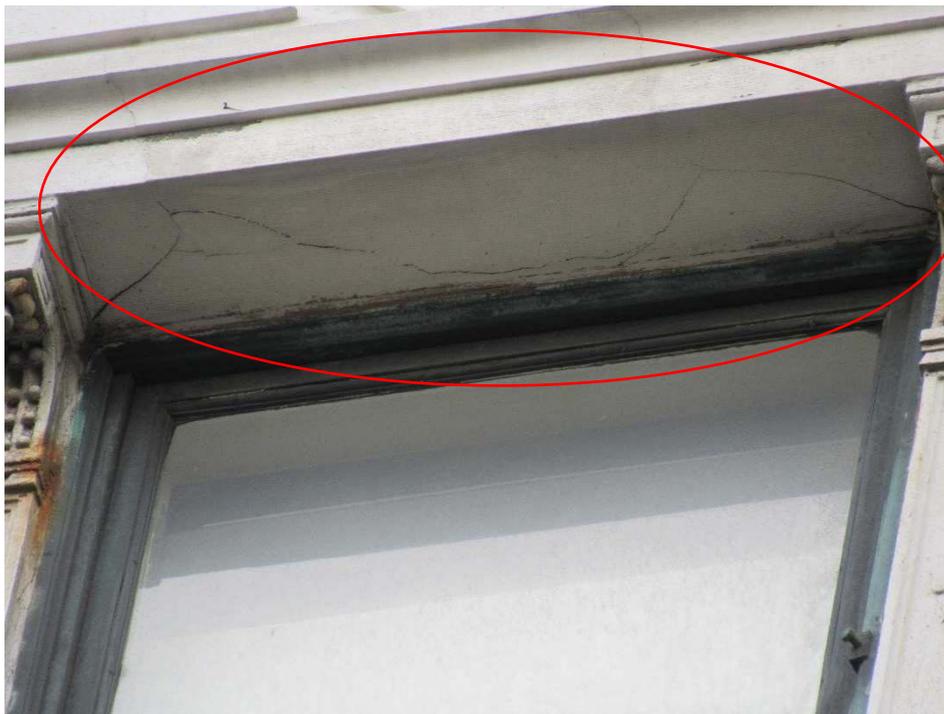


Photo: P012

Date 9/25/2017

▪ **Condition:** Cracked limestone

▪ **Classification:** UNSAFE

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P013

Date 9/25/2017

- **Condition:** Cracked limestone
- **Classification:** SWARMP



Photo: P014

Date 9/25/2017

- **Condition:** Cracked limestone
- **Classification:** UNSAFE

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P015

Date 9/25/2017

▪ Condition: Cracked limestone

▪ Classification: UNSAFE

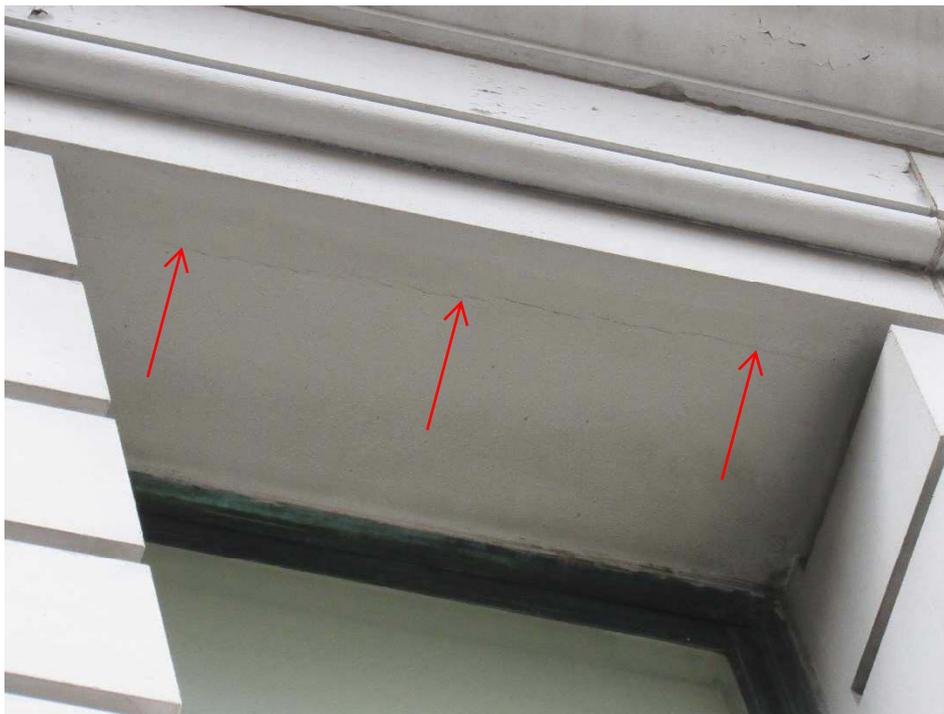


Photo: P016

Date 9/25/2017

▪ Condition: Cracked limestone

▪ Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P017

Date 9/25/2017

▪ Condition: Spalled limestone

▪ Classification: SWARMP



Photo: P018

Date 9/25/2017

▪ Condition: Cracked limestone

▪ Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P019

Date 9/25/2017

- **Condition:** Spalled limestone
- **Classification:** SWARMP



Photo: P020

Date 9/25/2017

- **Condition:** Cracked limestone
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P021

Date 9/25/2017

▪ Condition: Open limestone joint

▪ Classification: SWARMP



Photo: P022

Date 9/25/2017

▪ Condition: Open limestone joint

▪ Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

Photo: P023

Date 9/25/2017

▪ **Condition:** Cracked limestone

▪ **Classification:** UNSAFE



Photo: P024

Date 9/25/2017

▪ **Condition:** Open limestone joint

▪ **Classification:** SWAMP



CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

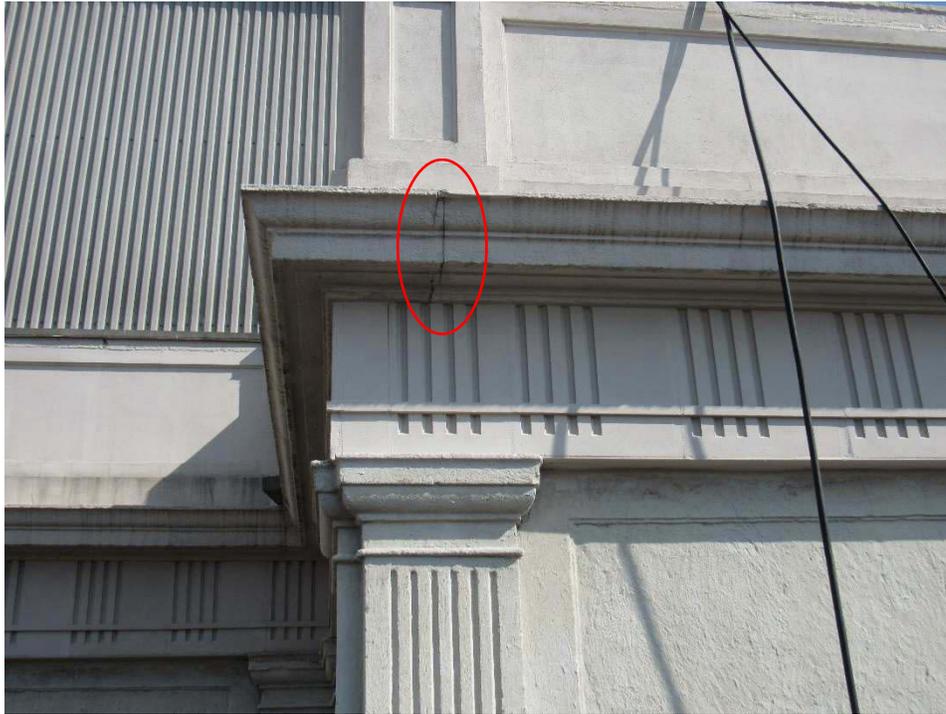


Photo: P025

Date 9/25/2017

- **Condition:** Open limestone joint
- **Classification:** SWARMP



Photo: P026

Date 9/25/2017

- **Condition:** Deteriorated cornice limestone
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P027

Date 9/25/2017

- **Condition:** Open limestone joint
- **Classification:** SWARMP



Photo: P028

Date 9/25/2017

- **Condition:** Cracked limestone
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P029

Date 9/25/2017

- Condition: Open joint
- Classification: SWARMP

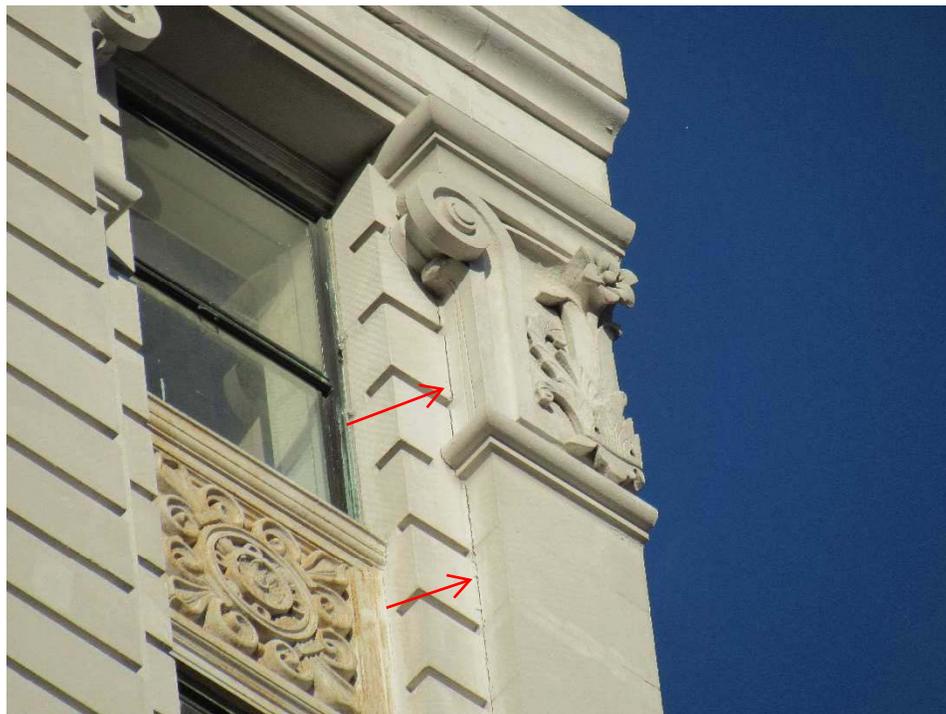


Photo: P030

Date 9/25/2017

- Condition: Open joint
- Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

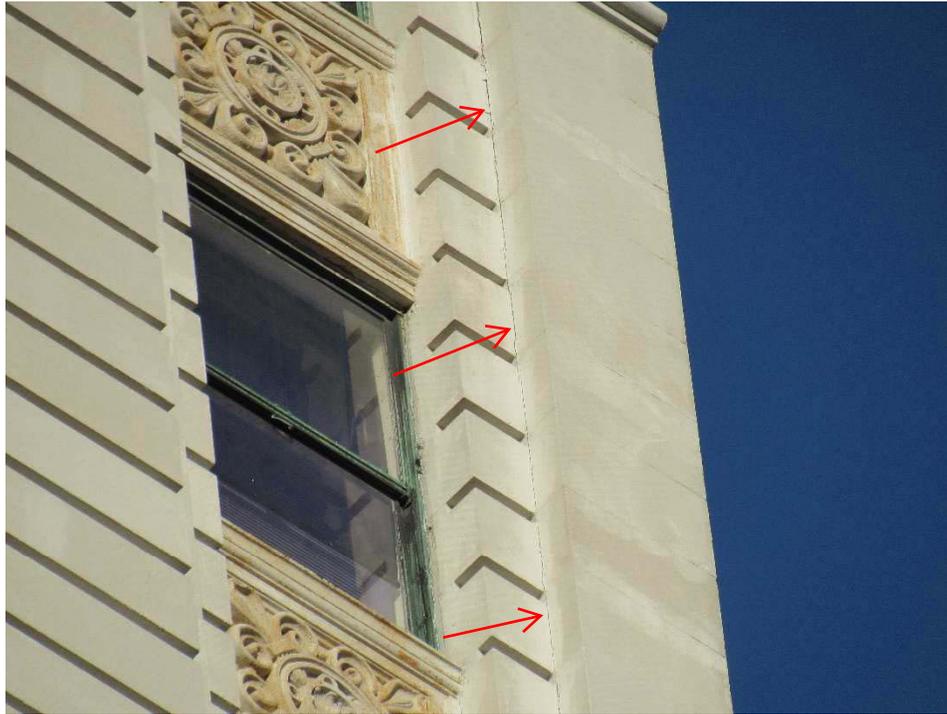


Photo: P031

Date 9/25/2017

- **Condition:** Open joint
- **Classification:** SWARMP



Photo: P032

Date 9/25/2017

- **Condition:** Continuous crack at brick/limestone connection at building corner
- **Classification:** UNSAFE

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P033

Date 9/25/2017

- **Condition:** Continuous crack at brick/limestone connection at building corner

- **Classification:** UNSAFE



Photo: P034

Date 9/25/2017

- **Condition:** Continuous crack at brick/limestone connection at building corner

- **Classification:** UNSAFE

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P035

Date 9/25/2017

▪ **Condition:** Continuous crack at brick/limestone connection at building corner

▪ **Classification:** UNSAFE



Photo: P036

Date 9/25/2017

▪ **Condition:** Crack at masonry

▪ **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P037

Date 9/25/2017

- **Condition:** Crack at masonry
- **Classification:** SWARMP



Photo: P038

Date 9/25/2017

- **Condition:** Cracked stone lintel
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P039

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP



Photo: P040

Date 9/25/2017

▪ Condition: Cracked brick at lintel anchor

▪ Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P041

Date 9/25/2017

- **Condition:** Open window frame
- **Classification:** SWARMP



Photo: P042

Date 9/25/2017

- **Condition:** Cracked stone lintel
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P043

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP



Photo: P044

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P045

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP



Photo: P046

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

Photo: P047

Date 9/25/2017

▪ **Condition:** Cracked stone lintel

▪ **Classification:** SWARMP



Photo: P048

Date 9/25/2017

▪ **Condition:** Cracked stone lintel

▪ **Classification:** SWARMP



CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P049

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP



Photo: P050

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P051

Date 9/25/2017

▪ **Condition:** Cracked masonry

▪ **Classification:** SWARMP



Photo: P052

Date

▪ **Condition:** Cracked stone lintel

▪ **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P053

Date 9/25/2017

▪ **Condition:** Cracked stone lintel

▪ **Classification:** SWARMP

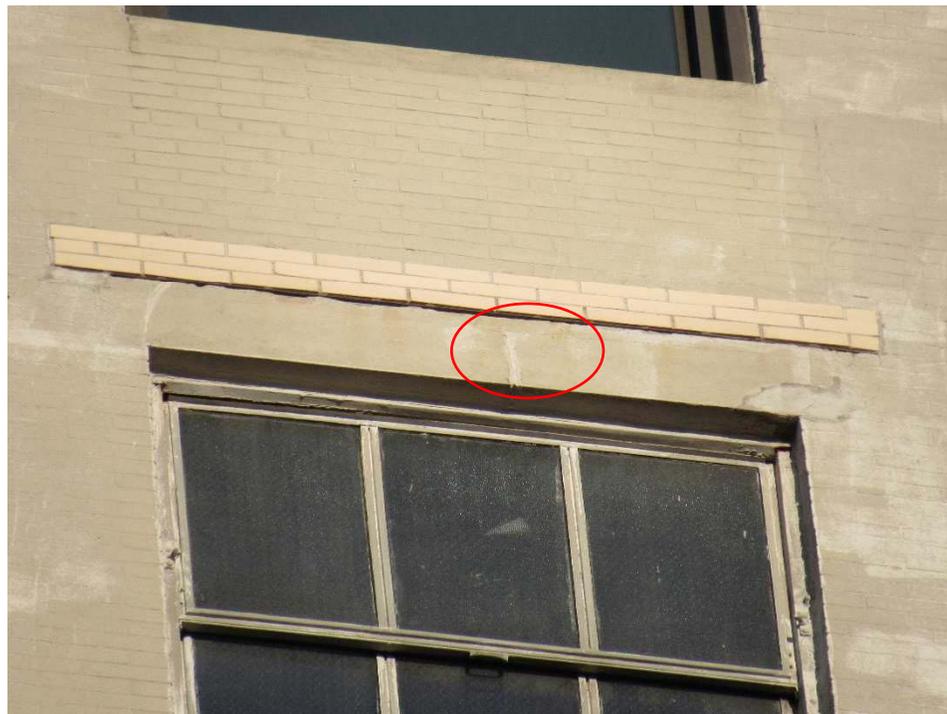


Photo: P054

Date 9/25/2017

▪ **Condition:** Cracked stone lintel

▪ **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P055 Date 9/25/2017

- Condition: Cracked stone lintel
- Classification: SWARMP



Photo: P056 Date 9/25/2017

- Condition: Cracked stone lintel
- Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P057

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP

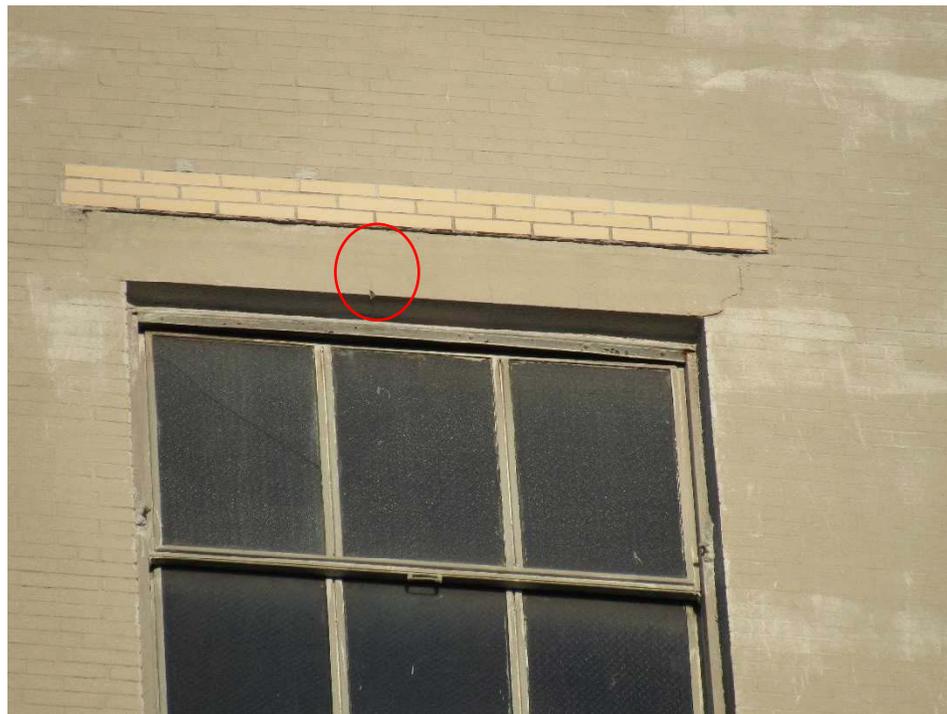


Photo: P058

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P059 Date 9/25/2017

- Condition: Cracked stone lintel
- Classification: SWARMP



Photo: P060  
Date 9/25/2017

- Condition: Cracked stone lintel
- Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P061

Date 9/25/2017

- **Condition:** Cracked masonry
- **Classification:** SWARMP



Photo: P062

Date 9/25/2017

- **Condition:** Cracked masonry
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P063

Date 9/25/2017

▪ **Condition:** Cracked masonry

▪ **Classification:** SWARMP



Photo: P064

Date 9/25/2017

▪ **Condition:** Open brick joint at wall corner

▪ **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P065

Date 9/25/2017

▪ Condition: Cracked masonry

▪ Classification: SWARMP



Photo: P066

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P067

Date 9/25/2017

▪ **Condition:** Cracked stone lintel

▪ **Classification:** SWARMP



Photo: P068

Date 9/25/2017

▪ **Condition:** Cracked masonry

▪ **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

Photo: P069

Date 9/25/2017

▪ **Condition:** Cracked masonry

▪ **Classification:** SWARMP

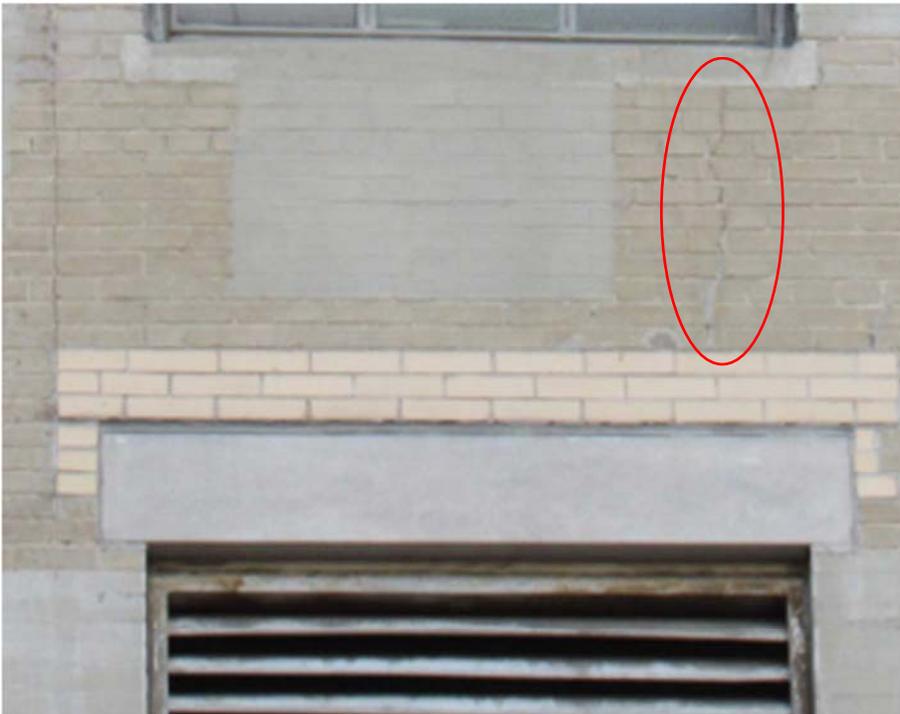


Photo: P070

Date 9/25/2017

▪ **Condition:** Cracked masonry

▪ **Classification:** SWARMP



CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P071

Date 9/25/2017

- **Condition:** Cracked masonry
- **Classification:** SWARMP



Photo: P072

Date 9/25/2017

- **Condition:** Broken brick at the corner of window wall
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P073

Date 9/25/2017

▪ **Condition:** Cracked masonry

▪ **Classification:** SWARMP



Photo: P074

Date 9/25/2017

▪ **Condition:** Continuous crack at brick/limestone connection at building corner

▪ **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P075

Date 9/25/2017

- **Condition:** Continuous crack at brick/limestone connection at building corner

- **Classification:** SWARMP



Photo: P076

Date 9/25/2017

- **Condition:** Continuous crack at brick/limestone connection at building corner

- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P077

Date 9/25/2017

▪ **Condition:** Continuous crack at brick/limestone connection at building corner

▪ **Classification:** SWARMP



Photo: P078

Date 9/25/2017

▪ **Condition:** Continuous crack at brick/limestone connection at building corner

▪ **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P079 Date 9/25/2017

- **Condition:** Continuous crack at brick/limestone connection at building corner
- **Classification:** SWARMP

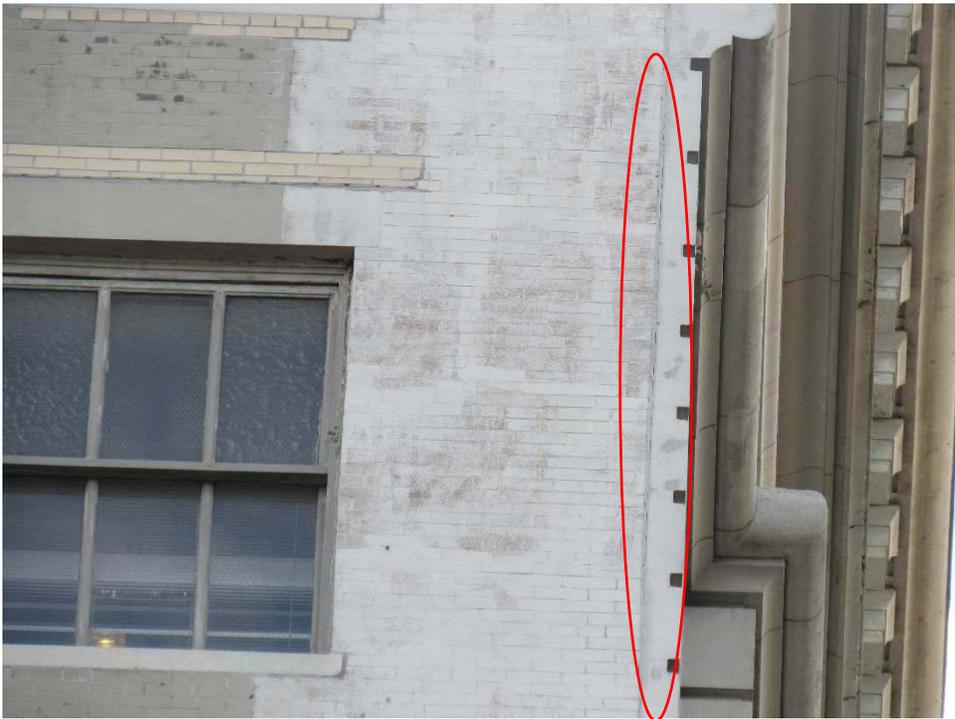


Photo: P080 Date 9/25/2017

- **Condition:** Continuous crack at brick/limestone connection at building corner
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P081

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP



Photo: P082

Date 9/25/2017

▪ Condition: Cracked stone lintel

▪ Classification: SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

Photo: P083

Date 9/25/2017

▪ **Condition:** Cracked stone lintel

▪ **Classification:** SWARMP

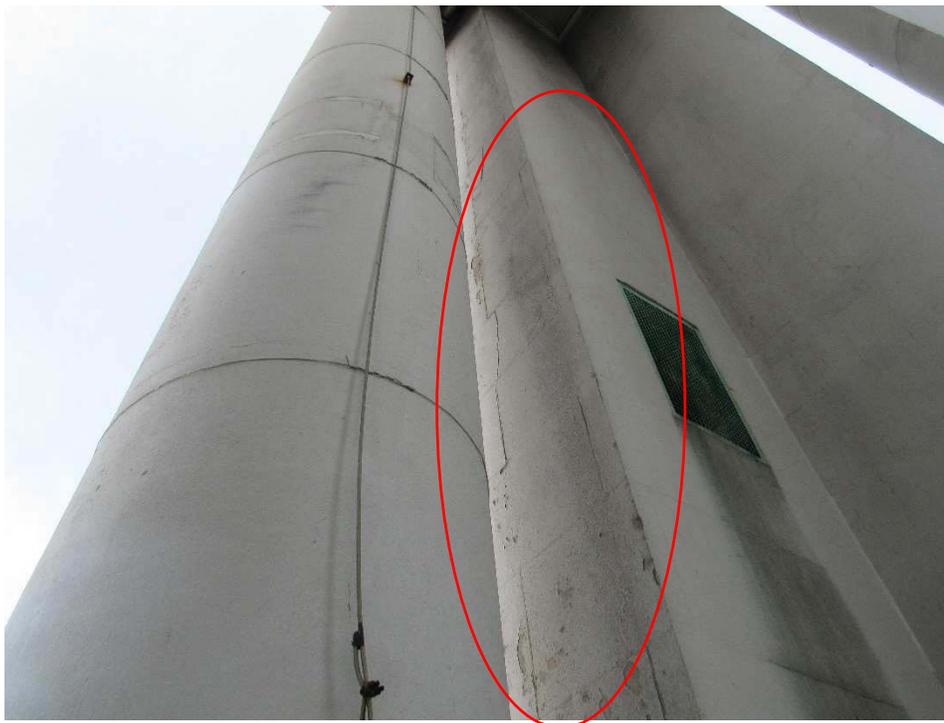


Photo: P084

Date 9/25/2017

▪ **Condition:** Cracked and/or open joint limestone

▪ **Classification:** SWARMP



CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

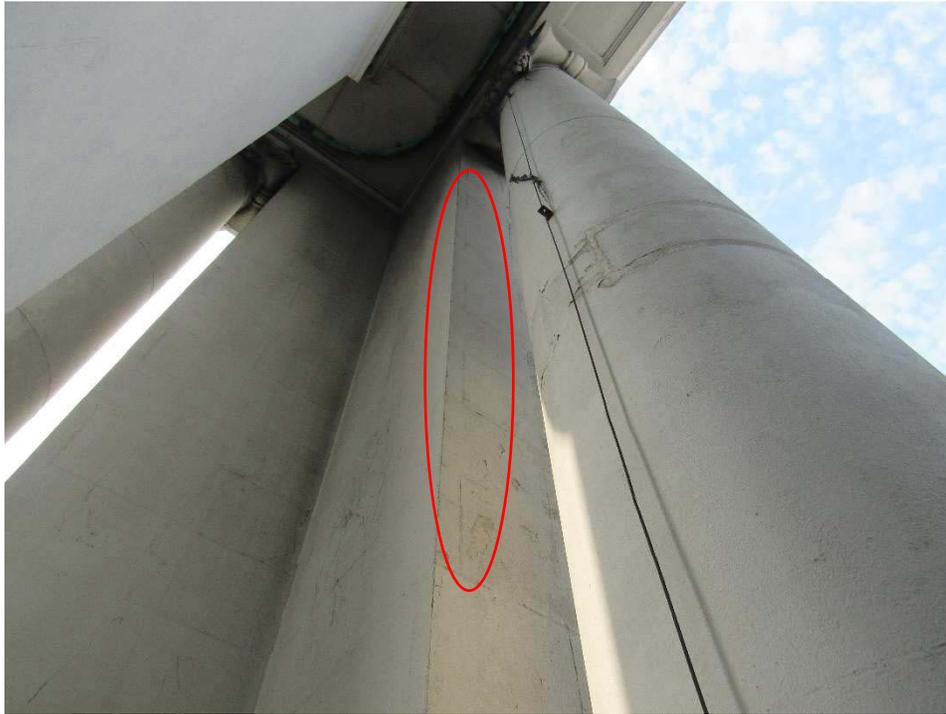


Photo: P085

Date 9/25/2017

- **Condition:** Cracked and/or open joint limestone
- **Classification:** SWARMP



Photo: P086

Date 9/25/2017

- **Condition:** Open stone joint
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P087

Date 9/25/2017

- **Condition:** Cracked and/or open joint limestone
- **Classification:** SWARMP



Photo: P088

Date 9/25/2017

- **Condition:** Spalled limestone
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

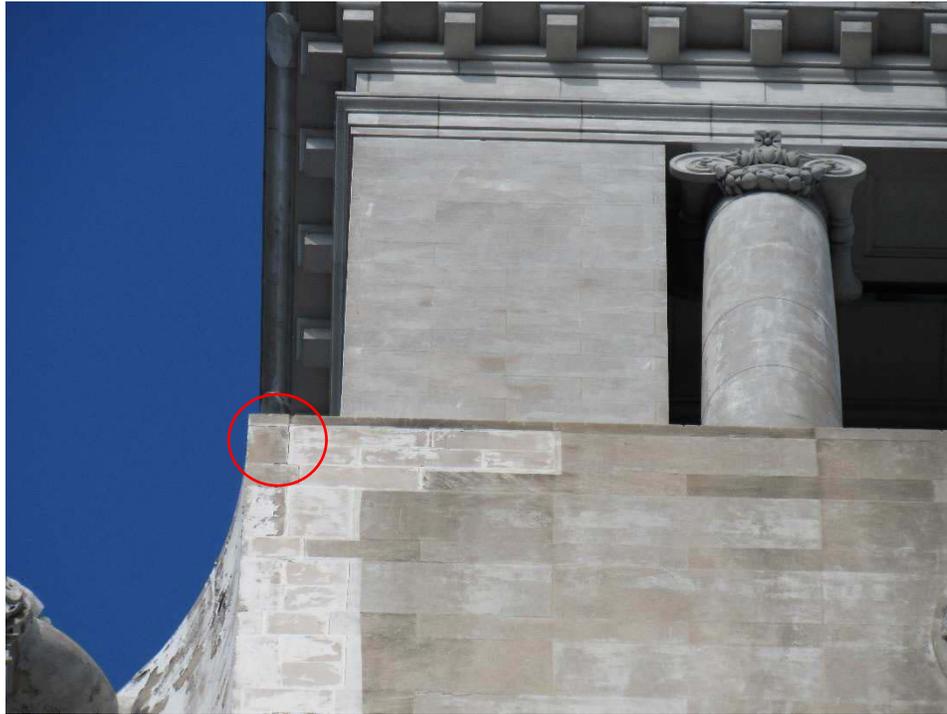


Photo: P089

Date 9/25/2017

- **Condition:** Open mortar joint
- **Classification:** UNSAFE



Photo: P090

Date 9/25/2017

- **Condition:** Cracked stone
- **Classification:** UNSAFE

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P091

Date 9/25/2017

▪ **Condition:** Spalled stone cornice

▪ **Classification:** SWARMP



Photo: P092

Date 9/25/2017

▪ **Condition:** Cracked and/or open joint limestone

▪ **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P093

Date 9/25/2017

- **Condition:** Cracked and/or open joint limestone
- **Classification:** SWARMP



Photo: P094

Date 9/25/2017

- **Condition:** Open mortar joint
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24

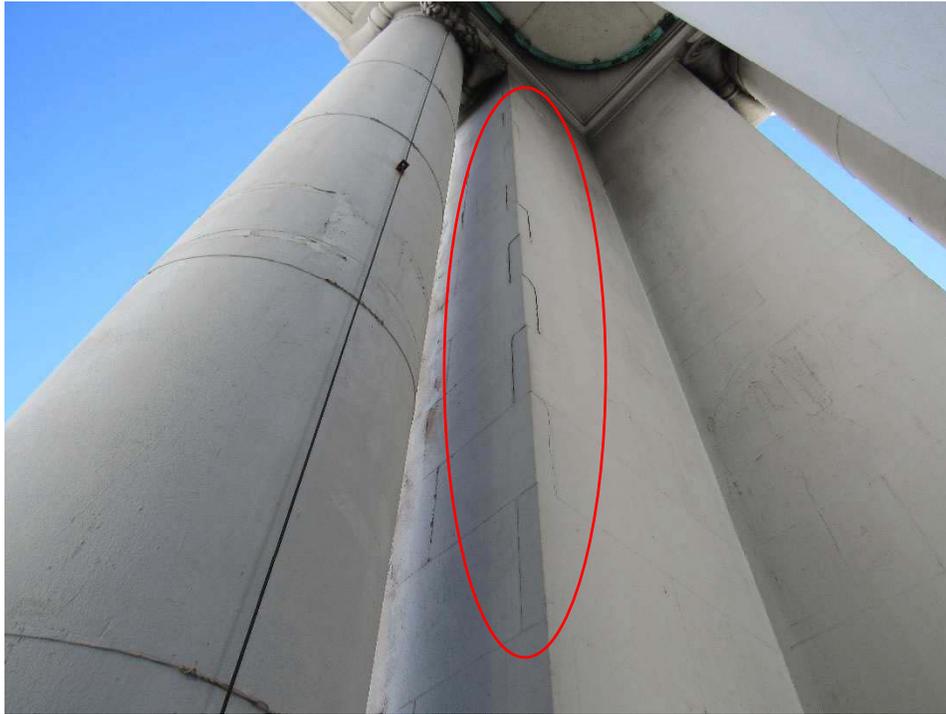


Photo: P095

Date 9/25/2017

- **Condition:** Displaced limestone veneer panel
- **Classification:** SWARMP



Photo: P096

Date 9/25/2017

- **Condition:** Cracked and/or open joint limestone
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



Photo: P097

Date 9/25/2017

- **Condition:** Spalled limestone at metal bar anchoring point
- **Classification:** SWARMP



Photo: P098

Date 9/25/2017

- **Condition:** Cracked parapet masonry
- **Classification:** SWARMP

CONEDISON - 4 Irving Place, New York, NY 10003

CYCLE 8

INITIAL REPORT

BIN: 1084936

Control #: 802541

Block: 870

Lot: 24



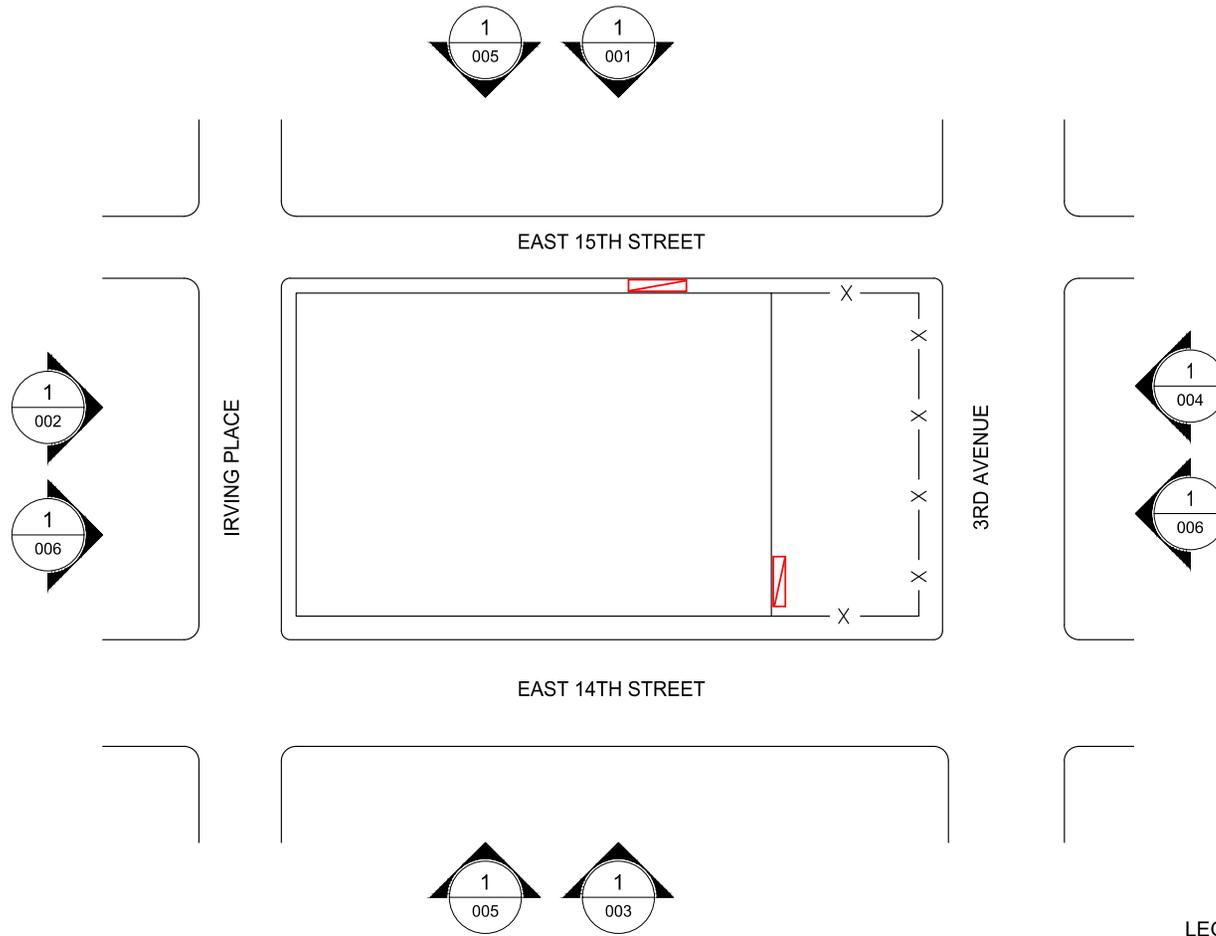
Photo: P099 Date 9/25/2017

- **Condition:** Deteriorated parapet cementitious stucco
  
- **Classification:** SWARMP



Photo: P100 Date 9/25/2017

- **Condition:** Deteriorated parapet cementitious stucco and open coping joint
  
- **Classification:** SWARMP

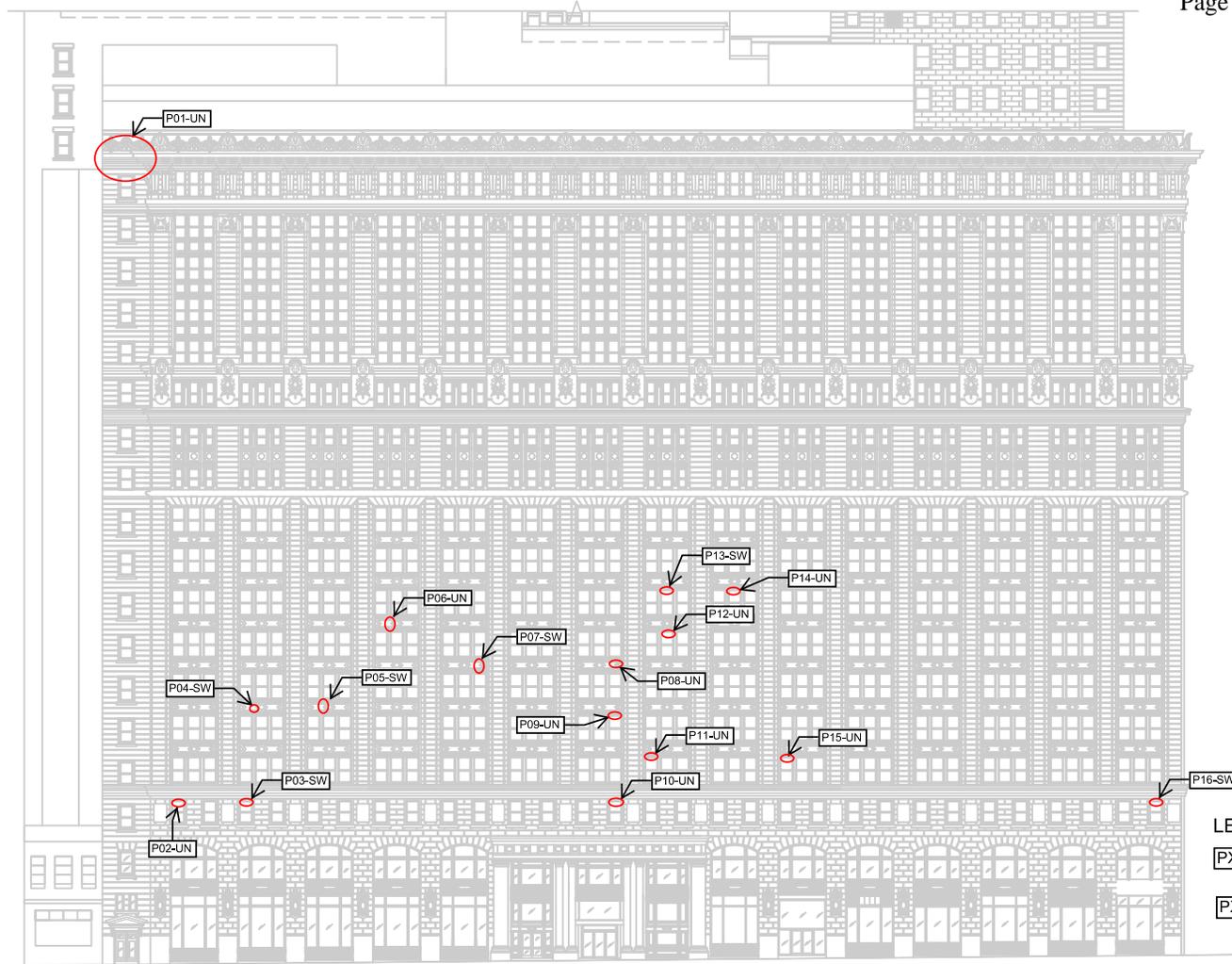


**SITE PLAN** BLOCK 870  
SCALE: 1" = 1000' LOT 24

**LEGEND:**  
 SCAFFOLDING DROP LOCATION

 <p><b>HAKS</b> ENGINEERS, ARCHITECTS &amp; LAND SURVEYORS, PC 40 WALL STREET, 11th FLOOR NEW YORK, NY 10005 Tel: 212.747.1997 Fax: 212.747.1947</p>	DRAWING TITLE: <b>SITE PLAN</b>		DRAWING SCALE: N.T.S. AS NOTED
	PROJECT: LOCAL LAW 11/98 REPORT	LOCATION INFORMATION 4 IRVING PLACE NEW YORK, NY 10003 BIN # : 1084936 BLOCK: 870 CONTROL # : 802541 LOT: 24	DRAWING NUMBER:  <b>000</b>
FOR: CON EDISON			

- ◆ 22ND FLOOR  
289'-0"
- ◆ 21ST FLOOR  
277'-6"
- ◆ 20TH FLOOR  
266'-0"
- ◆ 19TH FLOOR  
254'-6"
- ◆ 18TH FLOOR  
243'-0"
- ◆ 17TH FLOOR  
231'-6"
- ◆ 16TH FLOOR  
220'-0"
- ◆ 15TH FLOOR  
208'-6"
- ◆ 14TH FLOOR  
197'-0"
- ◆ 13TH FLOOR  
185'-6"
- ◆ 12TH FLOOR  
174'-0"
- ◆ 11TH FLOOR  
162'-6"
- ◆ 10TH FLOOR  
151'-0"
- ◆ 9TH FLOOR  
139'-6"
- ◆ 8TH FLOOR  
128'-0"
- ◆ 7TH FLOOR  
116'-6"
- ◆ 6TH FLOOR  
105'-0"
- ◆ 5TH FLOOR  
93'-6"
- ◆ 4TH FLOOR  
82'-0"
- ◆ 3RD FLOOR  
70'-6"
- ◆ 2ND FLOOR  
56'-6"
- ◆ 1ST FLOOR  
38'-6"



**LEGEND:**  
PXXXX-UN PHOTO#-UNSAFE CONDITION  
PXXXX-SW PHOTO#-SWAMP CONDITION

1 NORTH BLDG ELEV - EAST 15TH STREET  
SCALE: N.T.S.



ENGINEERS, ARCHITECTS & LAND SURVEYORS, PC  
40 WALL STREET, 11th FLOOR  
NEW YORK, NY 10005

Tel 212.747.1997 Fax 212.747.1947

DRAWING TITLE: NORTH BUILDING ELEVATION

PROJECT:  
LOCAL LAW 11/98 REPORT

FOR:  
CON EDISON

LOCATION INFORMATION

4 IRVING PLACE NEW YORK, NY 10003

BIN # : 1084936 BLOCK: 870  
CONTROL # : 802541 LOT: 24

DRAWING SCALE:  
N.T.S. AS NOTED

DRAWING NUMBER:

001



1 WEST BLDG ELEV - IRVING PLACE  
SCALE: N.T.S.

LEGEND:

- PXXXX-UN PHOTO#-UNSAFE CONDITION
- PXXXX-SW PHOTO#-SWAMP CONDITION



ENGINEERS, ARCHITECTS & LAND SURVEYORS, PC  
40 WALL STREET, 11th FLOOR  
NEW YORK, NY 10005

Tel: 212.747.1997 Fax: 212.747.1947

DRAWING TITLE: WEST BUILDING ELEVATION

PROJECT: LOCAL LAW 11/98 REPORT

FOR: CON EDISON

LOCATION INFORMATION

4 IRVING PLACE NEW YORK, NY 10003

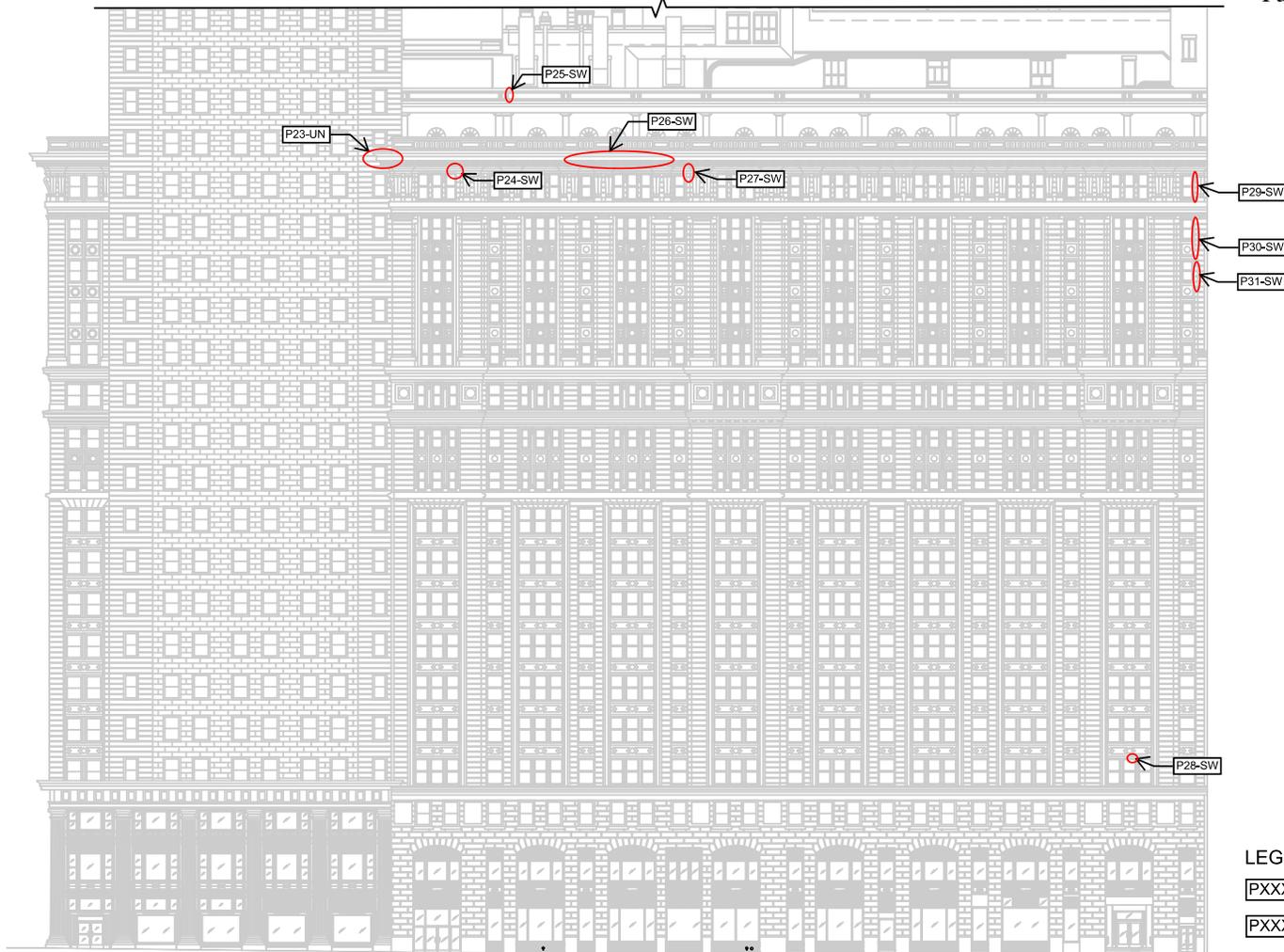
BIN # : 1084936 BLOCK: 870  
CONTROL # : 802541 LOT: 24

DRAWING SCALE: N.T.S. AS NOTED

DRAWING NUMBER:

002

- 22ND FLOOR  
289'-0"
- 21ST FLOOR  
277'-6"
- 20TH FLOOR  
266'-0"
- 19TH FLOOR  
254'-6"
- 18TH FLOOR  
243'-0"
- 17TH FLOOR  
231'-6"
- 16TH FLOOR  
220'-0"
- 15TH FLOOR  
208'-6"
- 14TH FLOOR  
197'-0"
- 13TH FLOOR  
185'-6"
- 12TH FLOOR  
174'-0"
- 11TH FLOOR  
162'-6"
- 10TH FLOOR  
151'-0"
- 9TH FLOOR  
139'-6"
- 8TH FLOOR  
128'-0"
- 7TH FLOOR  
116'-6"
- 6TH FLOOR  
105'-0"
- 5TH FLOOR  
93'-6"
- 4TH FLOOR  
82'-0"
- 3RD FLOOR  
70'-6"
- 2ND FLOOR  
58'-6"
- 1ST FLOOR  
38'-6"



- LEGEND:
- PXXXX-UN PHOTO#-UNSAFE CONDITION
  - PXXXX-SW PHOTO#-SWAMP CONDITION

1 SOUTH BLDG ELEV - EAST 14TH STREET  
SCALE: N.T.S.



DRAWING TITLE: SOUTH BUILDING ELEVATION

PROJECT:  
LOCAL LAW 11/98 REPORT

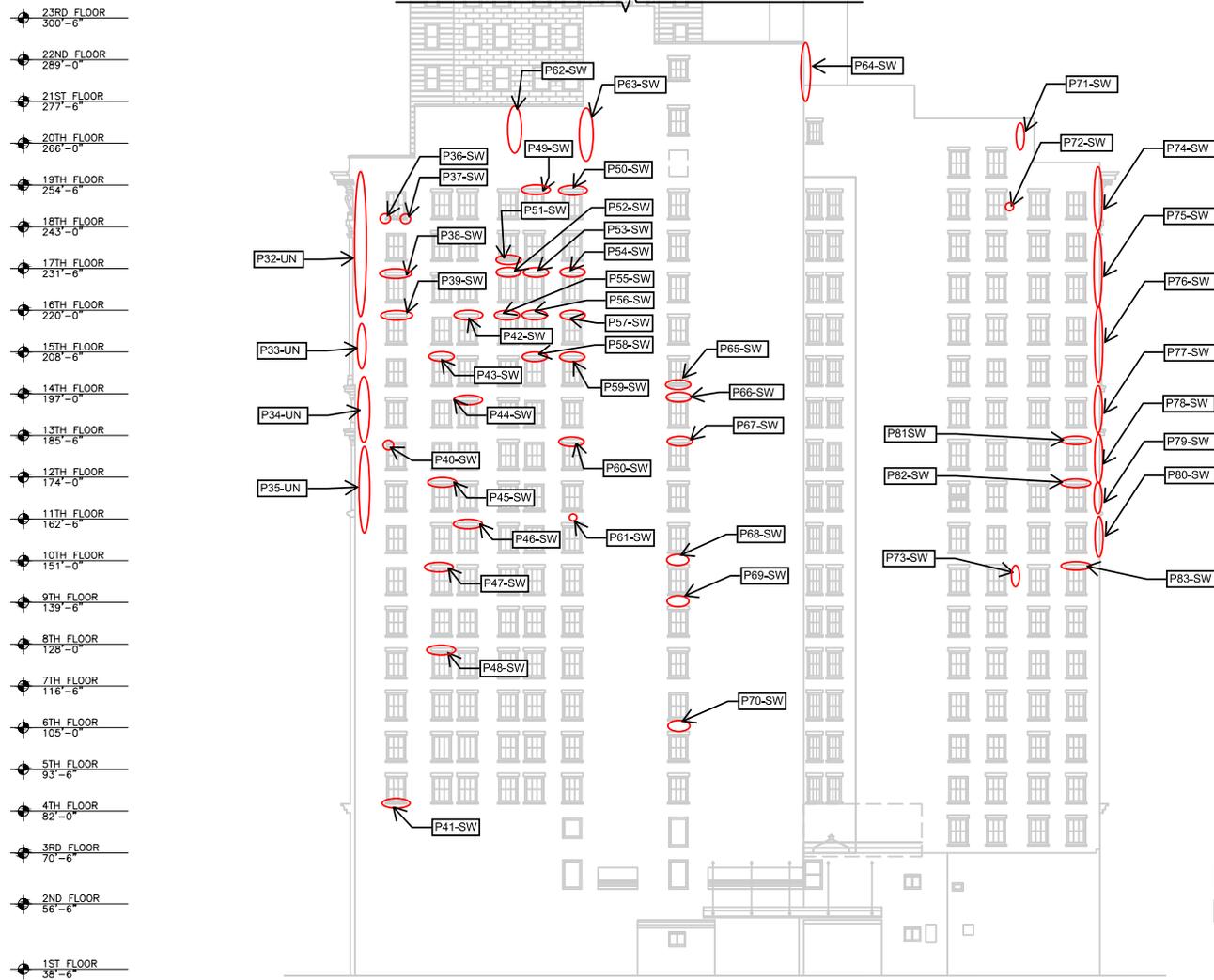
FOR:  
CON EDISON

LOCATION INFORMATION  
4 IRVING PLACE NEW YORK, NY 10003  
BIN # : 1084936 BLOCK: 870  
CONTROL #: 802541 LOT: 24

DRAWING SCALE:  
N.T.S. AS NOTED

DRAWING NUMBER:

003

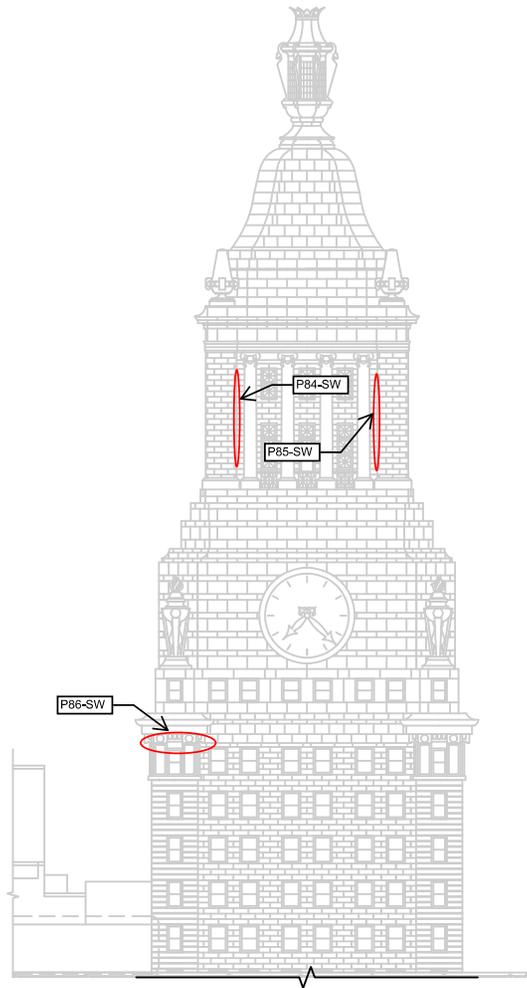


2 EAST BLDG ELEV - 3 AVE  
SCALE: N.T.S.

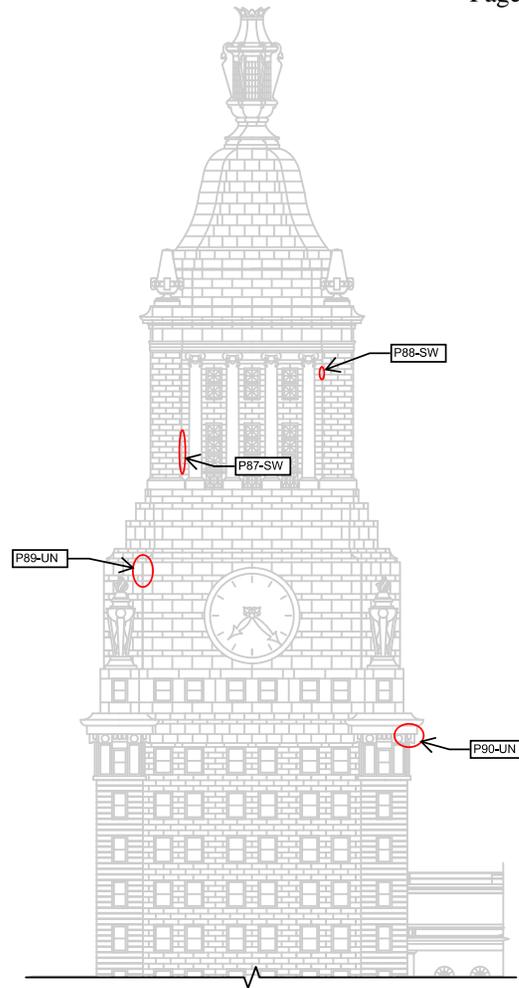
LEGEND:  
 PXXXX-UN PHOTO#-UNSAFE CONDITION  
 PXXXX-SW PHOTO#-SWAMP CONDITION

 <p><b>HAKS</b> ENGINEERS, ARCHITECTS &amp; LAND SURVEYORS, PC 40 WALL STREET, 11th FLOOR NEW YORK, NY 10005 Tel: 212.747.1997 Fax: 212.747.1947</p>	DRAWING TITLE: <b>EAST BUILDING ELEVATION</b>		DRAWING SCALE: N.T.S. AS NOTED
	PROJECT: LOCAL LAW 11/98 REPORT	LOCATION INFORMATION 4 IRVING PLACE NEW YORK, NY 10003 BIN # : 1084936 BLOCK: 870 CONTROL #: 802541 LOT: 24	
FOR: CON EDISON			

- ◆ TOP OF LANTERN  
513'-4"
- ◆ UPPER PLATFORM  
501'-10"
- ◆ REFLECTOR PLATFORM  
489'-10"
- ◆ FLOOR OF LANTERN  
478'-4"
- ◆ STAGE H LEVEL  
461'-7"
- ◆ STAGE G LEVEL  
428'-3"
- ◆ STAGE F LEVEL  
428'-3"
- ◆ STAGE E LEVEL  
410'-3"
- ◆ STAGE D LEVEL  
388'-7"
- ◆ STAGE C LEVEL  
377'-1"
- ◆ STAGE B LEVEL  
365'-7"
- ◆ STAGE A LEVEL  
354'-1"
- ◆ 27TH FLOOR CLOCK LEVEL  
342'-7"
- ◆ 26TH FLOOR  
331'-1"
- ◆ 25TH FLOOR  
323'-6"
- ◆ 24TH FLOOR  
312'-0"
- ◆ 23RD FLOOR  
300'-6"
- ◆ 22ND FLOOR  
289'-0"
- ◆ 21ST FLOOR  
277'-6"
- ◆ 20TH FLOOR  
266'-0"



① TOWER NORTH ELEV  
SCALE: N.T.S.



② TOWER SOUTH ELEV  
SCALE: N.T.S.

LEGEND:  
PXXXX-UN PHOTO#-UNSAFE CONDITION  
PXXXX-SW PHOTO#-SWAMP CONDITION



ENGINEERS, ARCHITECTS & LAND SURVEYORS, PC  
40 WALL STREET, 11th FLOOR  
NEW YORK, NY 10005

Tel: 212.747.1997 Fax: 212.747.1947

DRAWING TITLE: TOWER NORTH & SOUTH ELEVATIONS

PROJECT:  
LOCAL LAW 11/98 REPORT

FOR:  
CON EDISON

LOCATION INFORMATION

4 IRVING PLACE NEW YORK, NY 10003

BIN # : 1084936 BLOCK: 870

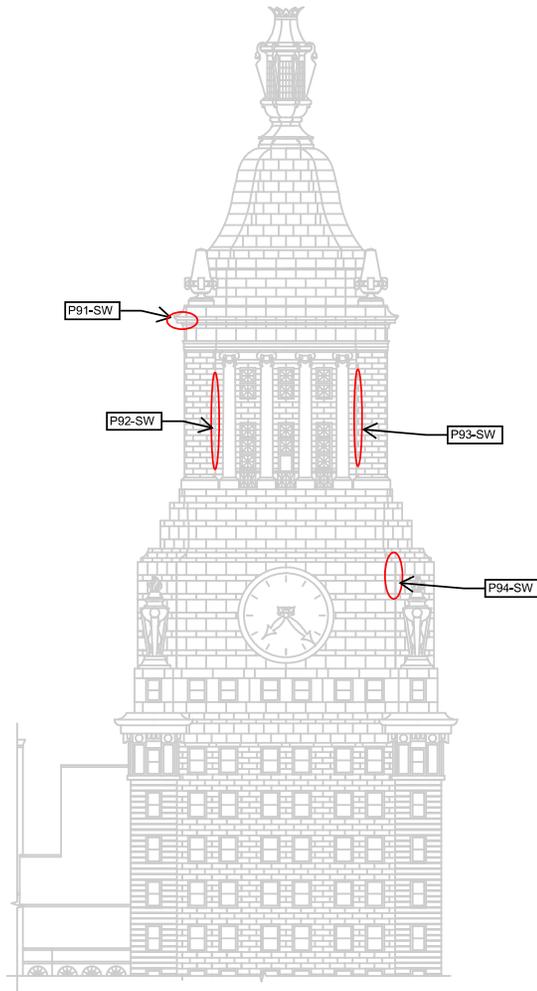
CONTROL #: 802541 LOT: 24

DRAWING SCALE:  
N.T.S. AS NOTED

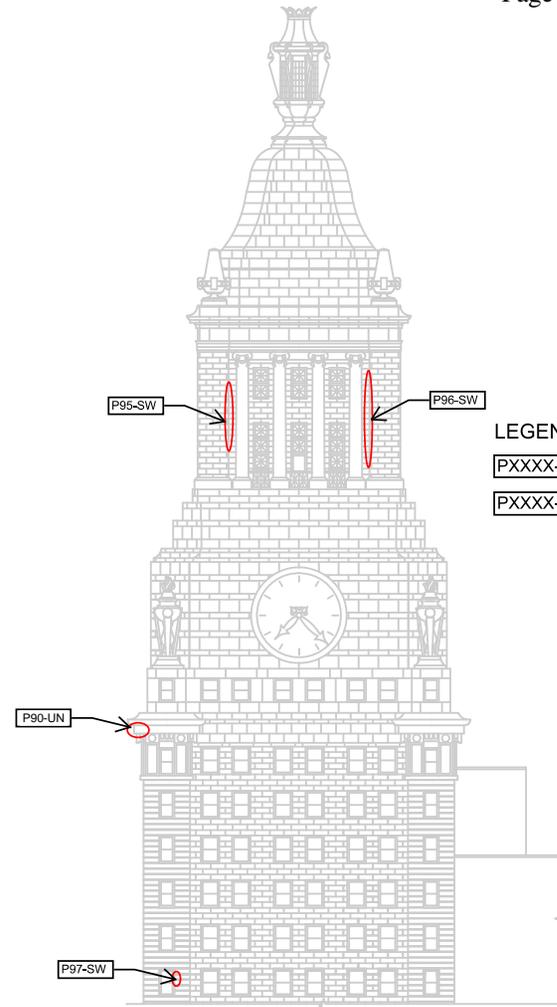
DRAWING NUMBER:

005

- ◆ TOP OF LANTERN  
513'-4"
- ◆ UPPER PLATFORM  
501'-10"
- ◆ REFLECTOR PLATFORM  
489'-10"
- ◆ FLOOR OF LANTERN  
478'-4"
- ◆ STAGE H LEVEL  
461'-7"
- ◆ STAGE G LEVEL  
428'-3"
- ◆ STAGE F LEVEL  
428'-3"
- ◆ STAGE E LEVEL  
410'-3"
- ◆ STAGE D LEVEL  
388'-7"
- ◆ STAGE C LEVEL  
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- ◆ STAGE B LEVEL  
365'-7"
- ◆ STAGE A LEVEL  
354'-1"
- ◆ 27TH FLOOR CLOCK LEVEL  
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- ◆ 26TH FLOOR  
331'-1"
- ◆ 25TH FLOOR  
323'-6"
- ◆ 24TH FLOOR  
312'-0"
- ◆ 23RD FLOOR  
300'-6"
- ◆ 22ND FLOOR  
289'-0"
- ◆ 21ST FLOOR  
277'-6"
- ◆ 20TH FLOOR  
266'-0"



① TOWER WEST ELEV  
SCALE: N.T.S.



② TOWER EAST ELEV  
SCALE: N.T.S.

LEGEND:  
 PXXXX-UN PHOTO#-UNSAFE CONDITION  
 PXXXX-SW PHOTO#-SWAMP CONDITION



ENGINEERS, ARCHITECTS & LAND SURVEYORS, P.C.  
40 WALL STREET, 11th FLOOR  
NEW YORK, NY 10005

Tel: 212.747.1987 Fax: 212.747.1947

DRAWING TITLE: TOWER WEST & EAST ELEVATIONS

PROJECT:  
LOCAL LAW 11/98 REPORT

FOR:  
CON EDISON

LOCATION INFORMATION  
4 IRVING PLACE NEW YORK, NY 10003  
BIN # : 1084936 BLOCK: 870  
CONTROL #: 802541 LOT: 24

DRAWING SCALE:  
N.T.S. AS NOTED

DRAWING NUMBER:

006



**LEGEND:**  
 [PXXXX-UN] PHOTO#-UNSAFE  
 CONDITION  
 [PXXXX-SW] PHOTO#-SWAMP  
 CONDITION

1 NORTH ELEVATION -- INTERIOR COURT 1  
 SCALE: N.T.S.

2 SOUTH ELEVATION -- INTERIOR COURT 1  
 SCALE: N.T.S.

3 WEST ELEVATION -- INTERIOR COURT 1  
 SCALE: N.T.S.

 <b>HAKS</b> ENGINEERS, ARCHITECTS & LAND SURVEYORS, P.C. 40 WALL STREET, 11th FLOOR NEW YORK, NY 10005 Tel: 212.747.1997 Fax: 212.747.1947	DRAWING TITLE: <b>COURT #1 ELEVATIONS</b>		DRAWING SCALE: N.T.S. AS NOTED
	PROJECT: LOCAL LAW 11/98 REPORT	LOCATION INFORMATION 4 IRVING PLACE NEW YORK, NY 10003 BIN # : 1084936 BLOCK: 870 CONTROL #: 802541 LOT: 24	
FOR: CON EDISON			



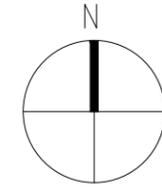
LEGEND:

- PXXXX-UN PHOTO#-UNSAFE CONDTION
- PXXXX-SW PHOTO#-SWAMP CONDITION

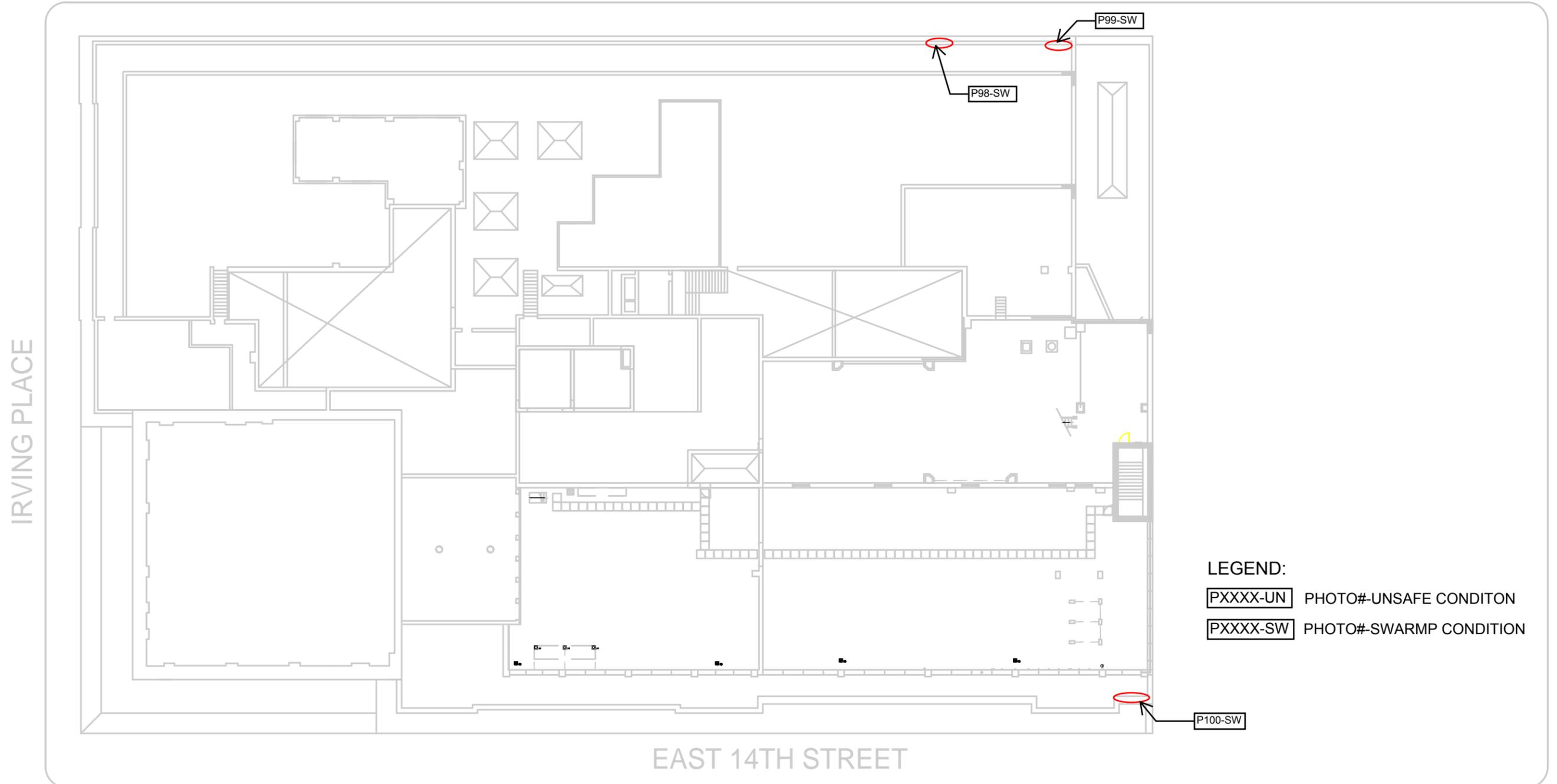
① NORTH ELEVATION - INTERIOR COURT 2  
SCALE: N.T.S.

② WEST ELEVATION - INTERIOR COURT 2  
SCALE: N.T.S.

 <p><b>HAKS</b> ENGINEERS, ARCHITECTS &amp; LAND SURVEYORS, P.C. 40 WALL STREET, 11th FLOOR NEW YORK, NY 10005 Tel: 212.747.1997 Fax: 212.747.1947</p>	<p>DRAWING TITLE: <b>COURT #2 ELEVATIONS</b></p> <p>PROJECT: LOCAL LAW 11/98 REPORT</p> <p>FOR: CON EDISON</p>		<p>LOCATION INFORMATION 4 IRVING PLACE NEW YORK, NY 10003</p> <p>BIN # : 1084936 BLOCK: 870 CONTROL #: 802541 LOT: 24</p>	<p>DRAWING SCALE: N.T.S. AS NOTED</p> <p>DRAWING NUMBER: <b>008</b></p>



EAST 15TH STREET



**LEGEND:**  
**PXXXX-UN** PHOTO#-UNSAFE CONDITON  
**PXXXX-SW** PHOTO#-SWAMP CONDITION

EAST 14TH STREET

**ROOF PLAN** BLOCK 870  
 SCALE: 1/32" = 1000' LOT 24

<p><b>HAKS</b>          ENGINEERS, ARCHITECTS &amp; LAND SURVEYORS, PC          40 WALL STREET, 11th FLOOR          NEW YORK, NY 10005          Tel: 212.747.1997 Fax: 212.747.1947</p>	DRAWING TITLE: <b>ROOF PLAN</b>		DRAWING SCALE: N.T.S. AS NOTED	
	PROJECT: LOCAL LAW 11/98 REPORT	LOCATION INFORMATION 4 IRVING PLACE NEW YORK, NY 10003 BIN # : 1084936 BLOCK: 870 CONTROL #: 802541 LOT: 24		DRAWING NUMBER: <p style="font-size: 2em; font-weight: bold;">009</p>
FOR: CON EDISON				

APPENDIX 1 - FAÇADE UNSAFE CONDITIONS

Condition Location	Photo #	Condition Description	Recommended Repair	Time Frame to Complete Repairs	DOB Permit Required (Y/N)	LPC Permit Required (Y/N)	Comments
North Elevation	P001	Displaced limestone	Remove and Replace with compatible material	01/04/18	Yes	Yes	N/A
North Elevation	P002	Cracked limestone	Repair with compatible material	01/04/18	Yes	Yes	N/A
North Elevation	P006	Cracked limestone	Repair with compatible material	01/04/18	Yes	Yes	N/A
North Elevation	P008	Spalled limestone	Remove loose material and repair	01/04/18	Yes	Yes	N/A
North Elevation	P009	Cracked limestone	Repair/Replace limestone	01/04/18	Yes	Yes	N/A
North Elevation	P010	Cracked limestone	Repair/Replace limestone	01/04/18	Yes	Yes	N/A
North Elevation	P011	Cracked limestone	Repair/Replace limestone	01/04/18	Yes	Yes	N/A
North Elevation	P012	Cracked limestone	Repair/Replace limestone	01/04/18	Yes	Yes	N/A
North Elevation	P014	Cracked limestone	Repair/Replace limestone	01/04/18	Yes	Yes	N/A
North Elevation	P015	Cracked limestone	Repair/Replace limestone	01/04/18	Yes	Yes	N/A
West Elevation	P023	Cracked limestone	Replace limestone	01/04/18	Yes	Yes	N/A
East Elevation	P032	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	01/04/18	Yes	Yes	This is one condition at South corner of East Façade represented with 4 photos. In cycle 7 there were 7 photos representing this condition. The condition was repaired 2 years ago and appeared again. See Appendix 3A for condition locations at various facades.
East Elevation	P033	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	01/04/18	Yes	Yes	This is one condition at South corner of East Façade represented with 4 photos. In cycle 7 there were 7 photos representing this condition. The condition was repaired 2 years ago and appeared again. See Appendix 3A for condition locations at various facades.
East Elevation	P034	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	01/04/18	Yes	Yes	This is one condition at South corner of East Façade represented with 4 photos. In cycle 7 there were 7 photos representing this condition. The condition was repaired 2 years ago and appeared again. See Appendix 3A for condition locations at various facades.
East Elevation	P035	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	01/04/18	Yes	Yes	This is one condition at South corner of East Façade represented with 4 photos. In cycle 7 there were 7 photos representing this condition. The condition was repaired 2 years ago and appeared again. See Appendix 3A for condition locations at various facades.
Tower - South	P089	Open mortar joint	Secure stone in place	01/04/18	Yes	Yes	This Condition was reported as SWARM in cycle 7
Tower - South/East Corner	P090	Cracked stone	Repair/Replace stone	01/04/18	Yes	Yes	This Condition was reported as SWARM in cycle 7

APPENDIX 2 - FAÇADE SWAMP CONDITIONS

Condition Location	Photo #	Condition Description	Recommended Repair	Time Frame to Complete Repairs	DOB Permit Required (Y/N)	LPC Permit Required (Y/N)	Comments
North Elevation	P003	Cracked limestone	Repair with compatible material	12/1/18	Yes	Yes	N/A
North Elevation	P004	Cracked limestone	Repair with compatible material	12/1/18	Yes	Yes	N/A
North Elevation	P005	Cracked limestone	Repair with compatible material	12/1/18	Yes	Yes	N/A
North Elevation	P007	Cracked limestone	Repair with compatible material	12/1/18	Yes	Yes	N/A
North Elevation	P013	Cracked limestone	Repair/Replace limestone	12/1/18	Yes	Yes	N/A
North Elevation	P016	Cracked limestone	Repair limestone	12/1/18	Yes	Yes	N/A
West Elevation	P017	Spalled limestone	Remove loose material and repair	12/1/18	Yes	Yes	N/A
West Elevation	P018	Cracked limestone	Repair/Replace limestone	12/1/18	Yes	Yes	N/A
West Elevation	P019	Spalled limestone	Remove loose material and repair	12/1/18	Yes	Yes	N/A
West Elevation	P020	Cracked limestone	Repair/Replace limestone	12/1/18	Yes	Yes	N/A
West Elevation	P021	Open limestone joint	Repair	12/1/18	Yes	Yes	N/A
West Elevation	P022	Open limestone joint	Repair	12/1/18	Yes	Yes	N/A
South Elevation	P024	Open limestone joint	Repair	12/1/18	Yes	Yes	N/A
South Elevation	P025	Open limestone joint	Repair	12/1/18	Yes	Yes	N/A
South Elevation	P026	Deteriorated cornice limestone	Re-tool the limestone surface	12/1/18	Yes	Yes	N/A
South Elevation	P027	Open limestone joint	Repair	12/1/18	Yes	Yes	N/A
South Elevation	P028	Cracked limestone	Repair/Replace limestone	12/1/18	Yes	Yes	N/A
South Elevation	P029	Open joint	Rake and seal the joint with compatible material.	12/1/18	Yes	Yes	N/A
South Elevation	P030	Open joint	Rake and seal the joint with compatible material.	12/1/18	Yes	Yes	N/A
South Elevation	P031	Open joint	Rake and seal the joint with compatible material.	12/1/18	Yes	Yes	N/A
East Elevation	P036	Crack at masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P037	Crack at masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P038	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P039	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P040	Cracked brick at lintel anchor	Repalace cracked bricks and re-anchor	12/1/18	Yes	Yes	N/A
East Elevation	P041	Open window frame	Repair window frame and seal the frame	12/1/18	Yes	Yes	N/A
East Elevation	P042	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P043	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P044	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P045	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P046	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P047	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A

Condition Location	Photo #	Condition Description	Recommended Repair	Time Frame to Complete Repairs	DOB Permit Required (Y/N)	LPC Permit Required (Y/N)	Comments
Elevation							
East Elevation	P048	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P049	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P050	Cracked stone lintel	Repair/Replace lintel	12/1/18	Yes	Yes	N/A
East Elevation	P051	Cracked masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P052	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P053	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P054	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P055	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P056	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P057	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P058	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P059	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P060	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P061	Cracked masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P062	Cracked masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P063	Cracked masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P064	Open brick joint at wall corner	Replace broken bricks, rake and clean the masonry joint	10/30/19	Yes	Yes	N/A
East Elevation	P065	Cracked masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P066	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P067	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P068	Cracked masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P069	Cracked masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P070	Cracked masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P071	Cracked masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P072	Broken brick at the corner of window wall	Replace broken bricks, rake and clean the masonry joint	10/30/19	Yes	Yes	N/A
East Elevation	P073	Cracked masonry	Replace masonry using compatible bricks.	10/30/19	Yes	Yes	N/A
East Elevation	P074	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	12/1/18	Yes	Yes	N/A
East Elevation	P075	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	12/1/18	Yes	Yes	N/A
East Elevation	P076	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	12/1/18	Yes	Yes	N/A
East Elevation	P077	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	12/1/18	Yes	Yes	N/A
East Elevation	P078	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	12/1/18	Yes	Yes	N/A

Condition Location	Photo #	Condition Description	Recommended Repair	Time Frame to Complete Repairs	DOB Permit Required (Y/N)	LPC Permit Required (Y/N)	Comments
Elevation							
East Elevation	P079	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	12/1/18	Yes	Yes	N/A
East Elevation	P080	Continuous crack at brick/limestone connection at building corner	Rebuild masonry corner wall using compatible bricks.	12/1/18	Yes	Yes	N/A
East Elevation	P081	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P082	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
East Elevation	P083	Cracked stone lintel	Repair/Replace lintel	10/30/19	Yes	Yes	N/A
Tower - NE Column, West Face of Column	P084	Cracked and/or open joint limestone	Sawcut the cracked stone, rake the joint and patch/seal with compatible material.	10/30/19	Yes	Yes	N/A
Tower - NW Column, East Face of Column	P085	Cracked and/or open joint limestone	Sawcut the cracked stone, rake the joint and patch/seal with compatible material.	10/30/19	Yes	Yes	N/A
Tower - North	P086	Open stone joint	Rake and seal the joint with compatible material.	10/30/19	Yes	Yes	N/A
Tower - SW Column, East Face of Column	P087	Cracked and/or open joint limestone	Sawcut the cracked stone, rake the joint and patch/seal with compatible material.	10/30/19	Yes	Yes	N/A
Tower - SE Column, West Face of Column	P088	Spalled limestone	Scrape rusted metal, apply anti corrosion paint and patch spalled stone with compatible material.	12/1/18	Yes	Yes	N/A
Tower - West	P091	Spalled stone cornice	Repair with compatible material	12/1/18	Yes	Yes	N/A
Tower - NW Column, South Face of Column	P092	Cracked and/or open joint limestone	Sawcut the cracked stone, rake the joint and patch/seal with compatible material.	10/30/19	Yes	Yes	N/A
Tower - SW Column, North Face of Column	P093	Cracked and/or open joint limestone	Sawcut the cracked stone, rake the joint and patch/seal with compatible material.	12/1/18	Yes	Yes	N/A
Tower - West	P094	Open mortar joint	Secure stone in place	12/1/18	Yes	Yes	N/A
Tower - SE Column, NW Corner of Column	P095	Displaced limestone veneer panel	Remove and re-install existing, or replace the limestone panel using compatible stone.	12/1/18	Yes	Yes	N/A
Tower - NE Column, South Face of Column	P096	Cracked and/or open joint limestone	Sawcut the cracked stone, rake the joint and patch/seal with compatible material.	10/30/19	Yes	Yes	N/A
Tower - East Elevation	P097	Spalled limestone at metal bar anchoring point	Repair the spalled stone with compatible material.	12/1/18	Yes	Yes	N/A
North Elevation - Parapet	P098	Cracked parapet masonry	Remove the steel plate and repair the crack	12/1/18	Yes	Yes	N/A
North Elevation - Parapet	P099	Deteriorated parapet cementitious stucco	Repair/Replace parapet cementitious stucco and seal coping and flashing	12/1/18	No	No	N/A
South Elevation - Parapet	P100	Deteriorated parapet cementitious stucco and open coping joint	Repair/Replace parapet cementitious stucco and seal the coping and flashing	12/1/18	No	No	N/A

APPENDIX 3 - CURRENT STATUS OF UNSAFE OR SWARMP CONDITIONS REPORTED IN PREVIOUS CYCLE

Condition Reported in Cycle 7 Filing			Current Observations		Comments
Total Number of Conditions	Condition Description	Condition Status	Condition Status	Permit # used for the repair work (if applicable)	
35	R.01 Spalled Limestone	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
111	R.02 Cracked Limestone	SWARMP	SAFE EXCEPT THE CONDITIONS NOTED IN APPENDIX 1	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
4	R.03 Disengaged bronze trim at window	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
1	R.04 Open seam at cast iron column	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
5	R.05 Crack at limestone lintel/soffit	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
1	R.06 Open morta joint at limestone	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
1	R.07 Displaced limestone panel	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
4	R.08 Crack and displaced parapet wall	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
29	R.09 Cracked brick	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
5	R.10 Spalling brick	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
8	R.11 Continuous cracked brick at corner	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
1	R.12 Cracked stucco	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
1	R.13 Bulging brick	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
1	R.14 Bent flagpole rod	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
1	R.15 Stucco repairs in progress	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
7	R.16 Bowed lintel	SWARMP	SAFE	Refer to Section J of the Report.	See Appendix 3A for condition locations at various facades.
7	R.02 Cracked Limestone	SWARMP	UNSAFE	Refer to Section J of the Report.	This is one condition at South corner of East Façade represented with 4 photos. In cycle 7 there were 7 photos representing this condition. The condition was repaired 2 years ago and appeared again. See Appendix 3A for condition locations at various facades.
7	R.02 Cracked Limestone	SWARMP	UNSAFE	Refer to Section J of the Report.	This is one condition at South corner of East Façade represented with 4 photos. In cycle 7 there were 7 photos representing this condition. The condition was repaired 2 years ago and appeared again. See Appendix 3A for condition locations at various facades.
7	R.02 Cracked Limestone	SWARMP	UNSAFE	Refer to Section J of the Report.	This is one condition at South corner of East Façade represented with 4 photos. In cycle 7 there were 7 photos representing this condition. The condition was repaired 2 years ago and appeared again. See Appendix 3A for condition locations at various facades.
7	R.02 Cracked Limestone	SWARMP	UNSAFE	Refer to Section J of the Report.	This is one condition at South corner of East Façade represented with 4 photos. In cycle 7 there were 7 photos representing this condition. The condition was repaired 2 years ago and appeared again. See Appendix 3A for condition locations at various facades.
1	R.06 Open morta joint at limestone	SWARMP	UNSAFE	Refer to Section J of the Report.	This Condition was reported as SWARMP in cycle 7
1	R.02 Cracked Limestone	SWARMP	UNSAFE	Refer to Section J of the Report.	This Condition was reported as SWARMP in cycle 7

APPENDIX 3A - SUMMARY OF CONDITIONS REPORTED IN CYCLE 7													
CONDITION TYPE	NORTH FAÇADE	SOUTH FAÇADE	EAST FAÇADE	WEST FAÇADE	NORTH COURT 1	SOUTH COURT 1	EAST COURT 1	WEST COURT 1	NORTH COURT 2	SOUTH COURT 2	EAST COURT 2	WEST COURT 2	TOTAL
R.01	8	6	21										35
R.02	20	21	51	6	4	10		4	1			1	118
R.03	3								1				4
R.04	1												1
R.05	5												5
R.06			1										1
R.07			1										1
R.08		2	2										4
R.09		4	3		4	1		12	4			1	29
R.10			4					1					5
R.11		3	4					1					8
R.12			1										1
R.13			1										1
R.14				1									1
R.15	1												1
R.16	1	4						2					7

## Utility Shared Services / Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input checked="" type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Astoria Southwest Storm Water System Corrective Action Plan	
Project/Program Manager: Leo Palmer	Project/Program Number (Level 1): 23317527
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 2021	Estimated Date In Service: 2023
A. Total Funding Request (\$000) Capital: 23,913 O&M:	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>The Company has retained the engineering and environmental professional services firm Kleinfelder, Inc. ("Kleinfelder") to investigate polychlorinated biphenyls ("PCBs") in the Southwest Stormwater System ("SWSS"), which is located in the southwestern portion of the Astoria Site ("Site"), along 18th Avenue, and which discharges into the East River via an outfall ("Outfall B").</p> <p>PCBs have continued to be identified in onsite stormwater, at concentrations sporadically exceeding the 200 parts per trillion ("ppt") threshold established by the New York State Department of Environmental Conservation's ("NYSDEC") in a 2010 Order on Consent. These exceedances have been documented through regular sampling of stormwater within the SWSS as required by the Order, and by supplemental sampling conducted by Kleinfelder during its investigations.</p> <p>Since the completion of the new Outfall B piping replacement project in May 2015, the Site has exceeded the 200 ppt action level 21 times. This includes a sample of 1,300 ppt. NYSDEC Staff has advised Con Edison that stormwater PCB sample results from Outfall B piping must consistently be below 200 ppt to comply State Pollutant Discharge Elimination System ("SPDES") requirements and to avoid potential SPDES violations and potential substantial penalties.</p> <p>Although the SWSS was reconstructed in 2015 with various controls to reduce the amount of total suspended solids ("TSS") and PCBs (e.g., oil/grit separators, sediment/silt filters, and oil separation devices), sampling of the stormwater discharge continues to show exceedances of both TSS and PCB regulatory action limits, albeit with less frequency than before the reconstruction.</p>	

Subsequently, the Kleinfelder investigations conducted in 2016 and 2017 identified the likely contributors of PCBs and TSS into the SWSS and made recommendations for two categories of additional system improvements: (1) Stormwater Collection and Conveyance Improvements – Actions that improve the functionality, maintenance, and efficiency of the stormwater collection and conveyance system - \$25 Million; and (2) Source Control – Actions targeting removal of PCBs at the source (i.e., field returned transformers) via operational controls, surficial sediment removal, and deposition prevention - \$10 Million.

In order to address “Source Control” issues, Kleinfelder recommended improving Field Returned Transformer (FRT) processing and storage practices since dirt and debris on the FRTs are suspected to be a primary source of PCBs that may enter the SWSS during rain events. This control looked to construct a new on-site FRT Wash-down Area/Canopy which would be an enclosed and/or covered structure for receiving and washing down dirt and debris from transformers before they are temporarily stored outside, where rainwater can wash PCB contaminated dirt/debris into the SWSS drainage system. It was decided to outsource this operation and therefore the “Source Control” work scope was eliminated from the project, reducing the cost by \$10 Million.

In order to address the “Stormwater Collection and Conveyance” issues and improve stormwater runoff from the Astoria East Storage Yard, which presently overwhelms downstream catch basins, Kleinfelder recommended to supplement the SWSS drainage collection system by adding catch basins and slot drains. Additional stormwater catch basins within the East Storage Yard would improve drainage and reduce the flow of runoff from this area to the North Storage Yard. This would also alleviate the bypassing and clogging of catch basins with high sediment loads and help to capture and treat runoff from the Site more effectively, reducing the frequency of inlet filter clogging across the site. Additional catch basins would also reduce stormwater runoff from flowing across the Site cover, which are anticipated to reduce PCB concentrations. It is also recommended that the existing concrete/asphalt system of the Astoria East Yard be completely removed and replaced with a new concrete system that includes proper drainage. Replacing the yard with new, properly graded pavement will enable more effective cleaning and source control compared to the currently degraded pavement in the Astoria East Yard.

In addition to improving Stormwater Collection and Conveyance, replacing the Astoria East Yard concrete slab and asphalt would address slips, trips, and fall safety hazards associated with the area. Note that the existing eight-inch heavy duty concrete slab, which makes up a majority of the yard, was installed approximately fifty years ago, and has suffered extensive damage from aging, freeze-thaw cycles, and the leaching of lime and salt contamination. In most locations, the top two inches of cover has eroded, exposing the wire mesh that absorbs shrinkage strains; embedded rebar have also rusted from exposure to the elements. The asphalt areas located between the concrete slabs have also deteriorated, exacerbating the hazard to personnel and causing the increased accumulation of debris that cannot be easily removed during cleanings. These uneven surfaces could result in forklift accidents that could potentially cause injuries, transformer damage, and transformer oil spills. The capital project to improve Stormwater Collection and Conveyance systems and replace the Astoria East Yard concrete slab is estimated at approximately \$22 million.

**Justification Summary:**

This project will improve the functionality, maintenance, and efficiency of the stormwater collection and conveyance system; it will completely remove the existing degraded concrete/asphalt pavement system of the Astoria East Yard and replace it with a new concrete pavement and drainage system. Stormwater runoff from the East Yard will collect into catch basins and be routed to discharge into the Outfall B storm sewer system, which was replaced with an improved system under a DEC Consent Order. Finally,

the project will help reduce the potential accumulation of PCB-containing debris that could overwhelm SWSS controls during heavy rain and cause exceedances of NYSDEC's PCB action level.

This project will be performed in conjunction with the remedial action plan for contaminated soil removal funded by Environmental Reserve.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

N/A

## 2. Supplemental Information

**Alternatives**

Alternative 1 description and reason for rejection

Perform repairs to the existing site pavement. These short-term repairs will only address the concrete deterioration temporarily and will not solve the storm water drainage issues at the yard. This alternative is not recommended.

Alternative 2 description and reason for rejection

Relocate transformers to a different facility. This option was discussed with the various user groups and it was determined that it is not operationally practical to eliminate storage of transformers within the yard. This alternative is not recommended.

**Risk of No Action**

The current condition creates localized flooding conditions and could result in discharges of pollutants into the East River, either via stormwater runoff or as a result of oil spills. This project will address these issues and will enhance SPCC measures to prevent oil spills from entering the East River, thereby helping to avert an ecological problem which threatens the public interest.

**Non-Financial Benefits**

In addition to mitigating the environmental effects of conveying pollutants to the East River, this project addresses a safety hazard to personnel, i.e., uneven/spalling concrete and exposed rebar which could result in forklift accidents that could potentially cause injuries.

**Summary of Financial Benefits and Costs (attach backup)**

N/A

Total cost

\$23,913,000

Basis for estimate

Project Appropriation Estimate.

Please see the Project Appropriation Estimate Attached.

<b>Project Risks and Mitigation Plan</b>	
<u>Risk</u>	<u>Mitigation plan</u>
Permit delays	Using experienced expeditors
<b>Technical Evaluation / Analysis</b>	
Engineering has analyzed the existing conditions of the concrete pavement and storm water drainage and concluded that both systems are degraded, short-term repairs are not cost effective, and both systems should be replaced. The Site will be restored with a 10-inch thick concrete slab. All storm water will be routed to discharge to Outfalls B, which includes filters and oil grit separators. After the stormwater management system is installed, the concrete surface will be restored to initial grade, to ensure proper drainage to Outfalls B.	
<b>Project Relationships (if applicable)</b>	
N/A	

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital				51.4		230.0
O&M						
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	9,300	14,613	0	0	0
O&M*					
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	744	1,169			
M&S	465	731			
Contract Services	5,580	8,768			
Other	186	292			
Overheads	2,325	3,653			

<b>Total</b>	<b>9,300</b>	<b>14,613</b>			
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**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

PROJECT NUMBER:  
27893-18

**BASIS OF ESTIMATE**

I.	Estimate + Revision	Status	Release Date
	21-0063-A-0	First Release	3/31/2021
	21-0063-A-1	Second Release Previous estimate was update to accommodate Team comments and also to take into consideration updated design requirements. Also at the request of team, the contingency was increased from 10 to 15%. Finally, this estimate took into account the Partial Appropriation estimate. All these are reflected in this Second Release Estimate	4/19/2021
	21-0063-A-2	Third Release On advice of team, this estimate reduced the contingency from 15% to 7% based on new risk assessment. The steel plates in the staging area were changed from rental to purchase. The plate coverage area was also reduced. The Jersey Barriers wre aso changed from rental to purchase. All these are reflected in the third estimate.	4/23/2021
	21-0063-A-2	Final Release	4/27/2021

**II. Background / Existing Condition**

Since completion of the new Outfall B piping replacement project in May 2015, the site has exceeded the action level numerous times. As per the DEC, Con Edison must stay under (or very close to) 200 ppt for 18-24 months to avoid a State Pollutant Discharge Elimination System ("SPDES") permit that will result in violations when we exceed the limit moving forward. Although the SWSS was reconstructed in 2015 with various controls to reduce the amount of total suspended solids ("TSS") and polychlorinated biphenyls ("PCBs") (e.g. oil/grit separators, sediment/silt filters, and oil separation devices), sampling of the stormwater discharge continues to show exceedances of both TSS and PCB regulatory action limits.

The Company has retained Kleinfelder, Inc. to investigate PCBs in the Southwest Stormwater System ("S WSS" ), which is located in the southwestern portion of the Astoria Site, along 18th Avenue, and which discharges into the East River via Outfall B. PCBs have continued to be identified in onsite stormwater, at concentrations sporadically exceeding the limit of 200 parts per trillion set by the New York State Department of Environmental Conservat ion ' s. The se exceedances have been documented through regular sampling of stormwater within the SWSS, and by supplemental sampling conducted by Kleinfelder during their investigations

**III. Project Resolution**

The Kleinfelder investigations , which were conducted in 2016 and 2017, identified the likely contribut ors of PCBs and TSS into the SWSS. One main category for system improvement was "Stormwater Collection and Conveyance" - Actions that imp rove the functionality, maintenance, and efficiency of the stormwater collection and conveyance system. In order to address the "Stormwater Collection and Conveyance" issues and improve stormwater runoff from the East Storage Yard, which presently overwhelms downstream catch basins, Kleinfelder recommended to supplement the SWSS drainage collection system by adding catch basins and slot drains. Additional stormwater catch basins within the East Storage Yard would improve drainage and reduce the flow of runoff from this area to the North Storage Yard. This would also alleviate the bypassing and clogging of catch basins with high sediment loads and help to capture and treat runoff from the Site more effectively reducing the frequency of inlet filter clogging across the site. Additional catch basins would also reduce stormwater runoff from flowing across the Site cover, which could reduce PCB concentrations. It is also recommended that the existing concrete/asphalt system of the Astoria East Yard be completely removed and replaced with a new concrete system that includes proper drainage.

In addition to improving Stormwater Collection and Conveyance, replacing the Astoria East Yard concrete slab and asphalt would address slips, trips, and fall safety hazards associated with the area. Note that the existing eight-inch heavy duty concrete slab, which makes up most of the yard, was installed approximately fifty years ago, and has suffered extensive damage from aging, freeze-thaw cycles, and the leaching of lime and salt contamination. In most locations, the top two inches of cover has eroded, exposing the wire mesh that absorbs shrinkage strains; embedded rebar have also rusted from exposure to the elements. The asphalt areas located between the concrete slabs have also deteriorated, exacerbating the hazard to personnel. These uneven surfaces could result in forklift accidents that could potentially cause injuries, transformer damage, and transformer oil spills. The retaining wall on three sides of the yard will be replaced as it is severely deteriorated with numerous cracks, spalls and exposed rebar throughout compromising both structural integrity and SPCC requirements.

**IV. Cost Estimate Class:**

Notes:

<b>V. Property Record:</b>	Capital	✓	Retirement	✓	Expense	✓
Ruling Ref:	CE-2020-AR-000056-R0					

**VI. Purchase Equipment**

Item	Reference
None	

**VII. Work Breakdown**

**BASIS OF ESTIMATE**

	Labor Group	BPA/Term	CEES	Productivity Past Proj	PO	Other
Civil/Structural Programming	Contract					
Testing	None					
Commissioning	None					
Other	None					
Transmission	Company					
Special Conditions	High Heat High Traffic Groundwater  Phasing and Equipment Relocation		Wind/Snow/Ice U/G Congestion Pump to Sewer		Confined Space Rock/Bedrock Treat on Site	

VIII. Materials and Supplies	Class & Stock	Past Proj	Online	Vendor/Eng	Other
N/A					

IX. Other Direct Costs	Included	Included
Permits		Scaffold
3rd Party Test	✓	Parking Vendor
3rd Party Inspection	✓	Traffic Safety
NDE (MT, RT, VT)		
Equipment Rental	✓	MPT Support
Support of Company Crane Operation (leveling, plating, etc).	✓	

X. Environmental	Included	Included
Soil Contamination	✓	Hazardous Material
ACM /Transite	✓	Remediation
Coal Tar		Air Monitoring
Spills (Land)		Vibration Monitoring
Spills (Water)		Dewatering
Lead Abatement		Noise

XI. Work Schedule (Contractor)	Mon-Fri	Saturday	Sunday/Holiday
Civil/Structural	Day (8)		

XII. Work Schedule (Company Forces)	Mon-Fri	Saturday	Sunday/Holiday
PM&I	Day (12)	Day (12)	
FACILITIES SURPPORT	Day (12)	Day (12)	
EHS- SURPPORT	Day (12)	Day (12)	
EHS -LAB SERVICES	Day (12)	Day (12)	
OS -OPERATIONS SUPPORT	Day (12)	Day (12)	

XIII. Design Basis / Input

The structural slab is designed based on the AASHTO H-25 & HS-25 loadings

XIV. Allowances

n/a

XV. Exclusions / Exceptions

n/a

XVI. Risks / Assumptions

PROJECT NUMBER:  
27893-18**BASIS OF ESTIMATE****XVII. Opportunities**

If the excavated soil is seperated from contaminated and reused in the construction there will be savings

**XVIII. Additional Notes**

The estimate has taken a conservative approach in making the following assumptions:

- \* Remediation soil recovered is presumed all contaminated and handled (storage & disposal)as such
- \* Water collected during dewatering is presumed contaminated and stored and disposed as such
- \* Sheetting & shoring have been allowed for all excavations beyond 5 ft

**CENG Estimating Contingency Report**  
(based on "EMPO Estimate Cost Contingency Guideline")

<b>Estimate No.</b>	21-0063-A-2
<b>Location</b>	ASTORIA YARD
<b>Description</b>	EAST STORAGE YARD CAPITAL IMPROVEMENT
<b>Est Class</b>	APPROP
<b>Date</b>	4/23/2021

		<b>Total Estimate Loaded Cost</b>						<b>Overall Contingency</b>	<b>7%</b>		
		<b>\$ 45,883,926</b>									
<b>Item</b>	<b>Title/Description</b>	<b>Loaded Cost</b>	<b>% Cost Distribution</b>	<b>SCOPE</b>		<b>COST</b>		<b>Average Contingency</b>	<b>Weighted Contingency</b>	<b>Notes</b>	
				<b>Confidence Grade</b>	<b>Contingency Score</b>	<b>Confidence Grade</b>	<b>Contingency Score</b>				
110	PM & I	\$ 32,092	0.07%	A	5%	A	5%	5.00%	0.0035%		
120	LEAD DESIGN ENGINEER	\$ 173,829	0.38%	A	5%	A	5%	5.00%	0.0189%		
130	ESTIMATING	\$ 21,394	0.05%	A	5%	A	5%	5.00%	0.0023%		
140	EHS	\$ 9,834	0.02%	A	5%	A	5%	5.00%	0.0011%		
150	PLANNING	\$ 16,046	0.03%	A	5%	A	5%	5.00%	0.0017%		
160	CONSTRUCTION MANAGER	\$ 16,046	0.03%	A	5%	A	5%	5.00%	0.0017%		
170	SECTION MANAGER	\$ 16,046	0.03%	A	5%	A	5%	5.00%	0.0017%		
180	ELECTRICAL ENGINEER	\$ 16,046	0.03%	A	5%	A	5%	5.00%	0.0017%		
190	ENGINEERING FEES	\$ 362,738	0.79%	A	5%	A	5%	5.00%	0.0395%		
1000	PM & I	\$ 1,170,704	2.55%	A	5%	A	5%	5.00%	0.1276%		
1200	FACILITIES SUPPORT	\$ 759,075	1.65%	A	5%	A	5%	5.00%	0.0827%		
1400	EHS	\$ 63,314	0.14%	A	5%	A	5%	5.00%	0.0069%		
1600	PLANNING SUPPORT	\$ 189,769	0.41%	A	5%	A	5%	5.00%	0.0207%		
1700	CONSTRUCTION SUPPORT	\$ 141,631	0.31%	A	5%	A	5%	5.00%	0.0154%		
1800	OPER TO REL T/FORMERS	\$ 302,316	0.66%	A	5%	A	5%	5.00%	0.0329%		
2000	GENERAL CONDITIONS	\$ 10,783,166	23.50%	A-	10%	A-	10%	10.00%	2.3501%		
2500	REMEDICATION	\$ 7,820,246	17.04%	A	5%	A	5%	5.00%	0.8522%		
3000	EARTHWORKS	\$ 4,046,054	8.82%	A	5%	A	5%	5.00%	0.4409%		
3100	SOIL STOCKPILE PAD	\$ 77,033	0.17%	A	5%	A	5%	5.00%	0.0084%		
3200	CONCRETE	\$ 13,777,591	30.03%	A	5%	A	5%	5.00%	1.5014%		
3700	PAVED ASPHALT	\$ 316,813	0.69%	A	5%	A	5%	5.00%	0.0345%		

**CENG Estimating Contingency Report**  
 (based on "EMPO Estimate Cost Contingency Guideline")

<b>Estimate No.</b>	21-0063-A-2
<b>Location</b>	ASTORIA YARD
<b>Description</b>	EAST STORAGE YARD CAPITAL IMPROVEMENT
<b>Est Class</b>	APPROP
<b>Date</b>	4/23/2021

		<b>Total Estimate Loaded Cost</b>						<b>Overall Contingency</b>	<b>7%</b>		
		<b>\$ 45,883,926</b>									
<b>Item</b>	<b>Title/Description</b>	<b>Loaded Cost</b>	<b>% Cost Distribution</b>	<b>SCOPE</b>		<b>COST</b>		<b>Average Contingency</b>	<b>Weighted Contingency</b>	<b>Notes</b>	
				<b>Confidence Grade</b>	<b>Contingency Score</b>	<b>Confidence Grade</b>	<b>Contingency Score</b>				
4000	STORM DRAINAGE	\$ 1,567,027	3.42%	A-	10%	A-	10%	10.00%	0.3415%		
5000	EROSION & SED. CONTROL	\$ 15,544	0.03%	A	5%	A	5%	5.00%	0.0017%		
5200	ENTRANCE/TRACKING PAD	\$ 939,349	2.05%	A-	10%	A-	10%	10.00%	0.2047%		
5500	STAGING	\$ 2,528,148	5.51%	A-	10%	A-	10%	10.00%	0.5510%		
6000	ELECTRICAL WORK	\$ 254,365	0.55%	A	5%	A	5%	5.00%	0.0277%		
7000	SECURITY FENCE & GATES	\$ 153,749	0.34%	A	5%	A	5%	5.00%	0.0168%		
9000	OTHER DIRECT COSTS	\$ 313,962	0.68%	A	5%	A	5%	5.00%	0.0342%		

**CENTRAL ENGINEERING**  
**APPROPRIATION ESTIMATE**

PROJECT NO: 27893-18  
ESTIMATE NO: 21-0063-A-2  
EST. DATE: 04/27/2021  
ENG REP: SAJNA VEETIL   
PROJ EST: EDWARD MUNOKO  4-27-21  
LOCATION: ASTORIA YARD  
DESCRIPTION: EAST STORAGE YARD CAPITAL IMPROVEMENT

START COMPLETION  
APPROP: 04/01/2021 04/30/2021  
ENG / DES: 10/16/2020 04/30/2021  
PROCUR: 05/01/2021 08/31/2021  
CONSTR: 09/01/2021 12/29/2023  
IN SERVICE DATE: 01/01/2024  
OUTAGE: NOT REQUIRED

ITEM	COMPANY			CONTRACT			TOTAL DIRECT	6.00% ESCAL	OH & AFDC	7.00% CONTING	TOTAL
	MHRS	LABOR \$	EQ / MAT \$	MHRS	LABOR \$	EQ / MAT \$					
<b>01 - LABOR</b>	<b>8,288</b>	<b>1,232,630</b>					<b>1,232,630</b>	<b>73,958</b>	<b>820,130</b>	<b>148,870</b>	<b>2,275,588</b>
PM & I	3,060	474,300					474,300	28,458	315,575	57,283	875,617
LEAD DESIGN ENGINEER	650	100,750					100,750	6,045	67,034	12,168	185,997
ESTIMATING	80	12,400					12,400	744	8,250	1,498	22,892
EHS	248	23,560					23,560	1,414	15,676	2,845	43,495
PLANNING	60	9,300					9,300	558	6,188	1,123	17,169
CONSTRUCTION MANAGER	60	9,300					9,300	558	6,188	1,123	17,169
SECTION MANAGER	60	9,300					9,300	558	6,188	1,123	17,169
ELECTRICAL ENGINEER	60	9,300					9,300	558	6,188	1,123	17,169
FACILITIES SUPPORT	1,880	291,400					291,400	17,484	193,883	35,194	537,961
PLANNING SUPPORT	470	72,850					72,850	4,371	48,471	8,798	134,490
CONSTRUCTION SUPPORT	290	44,950					44,950	2,697	29,907	5,429	82,983
OPER TO REL T/FORMERS	1,370	175,220					175,220	10,513	116,583	21,162	323,478
<b>03 - CONT SVCS</b>				<b>73,557</b>	<b>8,949,039</b>	<b>8,599,981</b>	<b>17,549,019</b>	<b>1,052,941</b>	<b>1,624,908</b>	<b>1,415,881</b>	<b>21,642,749</b>
GENERAL CONDITIONS				5,549	1,376,736	3,431,060	4,807,797	288,468	445,166	387,900	5,929,330
EARTHWORKS				14,360	1,581,622	510,151	2,091,773	125,506	193,682	168,767	2,579,729
SOIL STOCKPILE PAD				325	31,151	20,204	51,354	3,081	4,755	4,143	63,334
CONCRETE				33,521	3,775,600	3,101,175	6,876,775	412,607	636,738	554,828	8,480,948
PAVED ASPHALT				344	39,230	22,377	61,608	3,696	5,704	4,971	75,979
STORM DRAINAGE				6,490	675,014	349,119	1,024,133	61,448	94,827	82,629	1,263,037
EROSION & SED. CONTROL				68	7,056	2,925	9,980	599	924	805	12,308

**CENTRAL ENGINEERING**  
**APPROPRIATION ESTIMATE**

PROJECT NO: 27893-18  
ESTIMATE NO: 21-0063-A-2  
EST. DATE: 04/27/2021  
ENG REP: SAJNA VEETIL  
PROJ EST: EDWARD MUNOKO *[Signature]* 4-27-21  
LOCATION: ASTORIA YARD  
DESCRIPTION: EAST STORAGE YARD CAPITAL IMPROVEMENT

START COMPLETION  
APPROP: 04/01/2021 04/30/2021  
ENG / DES: 10/16/2020 04/30/2021  
PROCUR: 05/01/2021 08/31/2021  
CONSTR: 09/01/2021 12/29/2023  
IN SERVICE DATE: 01/01/2024  
OUTAGE: NOT REQUIRED

ITEM	COMPANY			CONTRACT			TOTAL DIRECT	6.00% ESCAL	OH & AFDC	7.00% CONTING	TOTAL
	MHRS	LABOR \$	EQ / MAT \$	MHRS	LABOR \$	EQ / MAT \$					
ENTRANCE/TRACKING PAD				4,813	496,016	72,487	568,503	34,110	52,639	45,868	701,120
STAGING				6,556	761,402	1,053,680	1,815,082	108,905	168,063	146,443	2,238,493
ELECTRICAL WORK				971	140,225	10,782	151,007	9,060	13,982	12,184	186,233
SECURITY FENCE & GATES				560	64,986	26,021	91,007	5,460	8,427	7,343	112,237
<b>09 - OTHER</b>			<b>212,316</b>	<b>1,168</b>	<b>210,240</b>		<b>422,556</b>	<b>25,353</b>	<b>39,126</b>	<b>34,092</b>	<b>521,127</b>
ENGINEERING FEES				1,168	210,240		210,240	12,614	19,467	16,962	259,284
OTHER DIRECT COSTS			212,316				212,316	12,739	19,659	17,130	261,844
	8,288	1,232,630	212,316	74,725	9,159,279	8,599,981	19,204,205	1,152,252	2,484,163	1,598,843	24,439,464

SAY 24,440,000  
LESS PREVIOUS PARTIAL(S) **565,000**  
THIS ESTIMATE 23,875,000

CAPITAL ESTIMATE TOTAL:	24,440,000	ASSOCIATED REMOVAL:	5,860,000	ASSOCIATED EXPENSE:	13,180,000
OVERHEADS	CENTRAL ENG: %	A&S: 2.59%	P 'ROLL TAX & PENS: 50.98%	TOTAL OH'S:	1,193,331
		527,232	666,098	5.99% AFDC:	1,290,832

CENTRAL ENGINEERING	PROJECT MANAGER OR USER ORGANIZATION	CONSTRUCTION REPRESENTATIVE
APPROVED: DONALD AZZOLINI	APPROVED: LEO PALMER	APPROVED: FRANK MANGIAMELE
DATE: 4/26/2021	DATE: 4/27/2021	DATE: 4/27/2021

**CENTRAL ENGINEERING**  
**RETIREMENT ESTIMATE**

PROJECT NO: 27893-18  
ESTIMATE NO: 21-0063-A-2  
EST. DATE: 04/27/2021  
ENG REP: SAJNA VEETIL   
PROJ EST: EDWARD MUNOKO  4-27-21  
LOCATION: ASTORIA YARD  
DESCRIPTION: EAST STORAGE YARD CAPITAL IMPROVEMENT

START COMPLETION  
APPROP: 04/01/2021 04/30/2021  
ENG / DES: 10/16/2020 04/30/2021  
PROCUR: 05/01/2021 08/31/2021  
CONSTR: 09/01/2021 12/29/2023  
IN SERVICE DATE: 01/01/2024  
OUTAGE: NOT REQUIRED

ITEM	COMPANY			CONTRACT			TOTAL DIRECT	6.00% ESCAL	OH & AFDC	7.00% CONTING	TOTAL
	MHRS	LABOR \$	EQ / MAT \$	MHRS	LABOR \$	EQ / MAT \$					
01 - LABOR	1,240	189,800					189,800	11,388		14,083	215,271
PM & I	600	93,000					93,000	5,580		6,901	105,481
FACILITIES SUPPORT	400	62,000					62,000	3,720		4,600	70,320
EHS	40	3,800					3,800	228		282	4,310
PLANNING SUPPORT	100	15,500					15,500	930		1,150	17,580
CONSTRUCTION SUPPORT	100	15,500					15,500	930		1,150	17,580
<b>03 - CONT SVCS</b>				16,532	1,525,569	3,410,403	4,935,972	296,158		366,249	5,598,379
GENERAL CONDITIONS				1,716	360,111	2,454,104	2,814,215	168,853		208,815	3,191,882
EARTHWORKS				3,499	370,583	317,348	687,931	41,276		51,044	780,251
CONCRETE				11,270	789,120	633,731	1,422,851	85,371		105,576	1,613,798
SECURITY FENCE & GATES				47	5,756	5,220	10,975	659		814	12,448
<b>09 - OTHER</b>			38,108				38,108	2,286		2,828	43,222
OTHER DIRECT COSTS			38,108				38,108	2,286		2,828	43,222
	1,240	189,800	38,108	16,532	1,525,569	3,410,403	5,163,880	309,833		383,160	5,856,872

SAY 5,860,000

CAPITAL ESTIMATE TOTAL: 24,440,000 ASSOCIATED REMOVAL: 5,860,000 ASSOCIATED EXPENSE: 13,180,000

CENTRAL ENGINEERING	PROJECT MANAGER OR USER ORGANIZATION	CONSTRUCTION REPRESENTATIVE
APPROVED: DONALD AZZOLINI	APPROVED: LEO PALMER	APPROVED: FRANK MANGIAMELE
DATE: 4/26/2021	DATE: 4/27/2021	DATE: 4/27/2021

**CENTRAL ENGINEERING**  
**EXPENSE ESTIMATE**

PROJECT NO: 27893-18  
ESTIMATE NO: 21-0063-A-2  
EST. DATE: 04/27/2021  
ENG REP: SAJNA VEETIL  
PROJ EST: EDWARD MUNOKO  
LOCATION: ASTORIA YARD  
DESCRIPTION: EAST STORAGE YARD CAPITAL IMPROVEMENT

  
4-27-21

START COMPLETION  
APPROP: 04/01/2021 04/30/2021  
ENG / DES: 10/16/2020 04/30/2021  
PROCUR: 05/01/2021 08/31/2021  
CONSTR: 09/01/2021 12/29/2023  
IN SERVICE DATE: 01/01/2024  
OUTAGE: NOT REQUIRED

ITEM	COMPANY			CONTRACT			TOTAL DIRECT	6.00% ESCAL	OH & AFDC	7.00% CONTING	TOTAL
	MHRS	LABOR \$	EQ / MAT \$	MHRS	LABOR \$	EQ / MAT \$					
01 - LABOR	3,756	566,260					566,260	33,976		42,016	642,252
PM & I	1,740	269,700					269,700	16,182		20,012	305,894
FACILITIES SUPPORT	1,160	179,800					179,800	10,788		13,341	203,929
EHS	276	26,860					26,860	1,612		1,993	30,465
PLANNING SUPPORT	290	44,950					44,950	2,697		3,335	50,982
CONSTRUCTION SUPPORT	290	44,950					44,950	2,697		3,335	50,982
<b>03 - CONT SVCS</b>				56,583	4,581,580	6,441,457	11,023,038	661,382		817,909	12,502,329
GENERAL CONDITIONS				2,448	706,141	671,304	1,377,445	82,647		102,206	1,562,299
REMEDIATION				45,143	2,858,999	4,518,591	7,377,590	442,655		547,417	8,367,663
CONCRETE				8,004	908,830	1,148,479	2,057,309	123,439		152,652	2,333,400
PAVED ASPHALT				988	107,610	103,083	210,693	12,642		15,633	238,968
<b>09 - OTHER</b>					27,220		27,220	1,633		2,020	30,873
OTHER DIRECT COSTS					27,220		27,220	1,633		2,020	30,873
	3,756	566,260	27,220	56,583	4,581,580	6,441,457	11,616,518	696,991		861,946	13,175,454

SAY 13,180,000

CAPITAL ESTIMATE TOTAL: 24,440,000      ASSOCIATED REMOVAL: 5,860,000      ASSOCIATED EXPENSE: 13,180,000

CENTRAL ENGINEERING	PROJECT MANAGER OR USER ORGANIZATION	CONSTRUCTION REPRESENTATIVE
APPROVED: DONALD AZZOLINI	APPROVED: KENNETH KAISER	APPROVED: FRANK MANGIAMELE
DATE: 4/26/2021	DATE: 4/27/2021	DATE: 4/27/2021

# Cost Report

Consolidated Edison Company of New York, Inc.  
21-0063-A-2

munokoe  
EAST STORAGE YARD CAPITAL IMPROVEMENT

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## Biditem - Parent

# 10

### DESIGN PHASE

Takeoff Qty: 1.000 LS  
Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	407,983.40	0.00	407,983.40	0.00	0.00	0.00	0.00	0.00	0.00	407,983.40
Total	407,983.40	0.00	407,983.40	0.00	0.00	0.00	0.00	0.00	0.00	407,983.40

	Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
	2,318.0000	0.0004	2,318.0000	176.0066	176.0066	176.0066	0.0000

## Biditem

# 110

### PM & I

Takeoff Qty: 1.000 LS  
Bid Qty: 1.000 LS

	Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
	120.0000	0.0083	120.0000	164.3000	164.3000	164.3000	0.0125

Activity: 1001 (Modified) PM&I (Unreviewed) Quantity: 1 Unit: LS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
19,716.0000	80.0000	0.0125	246.4500	10.0000	0.1000	10.0000	1,971.6000

	Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
	120.0000	0.0083	120.0000	164.3000	19,716.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: PM&I PMT & I CREW Prod: MU 120 Eff: 100.00 Crew Hrs: 80.00 Labor Pcs: 1.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.50	120.00	MH	155.00	100.00	164.30	19,716.00

## Biditem

# 120

### LEAD DESIGN ENGINEER

Takeoff Qty: 1.000 LS  
Bid Qty: 1.000 LS

	Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
	650.0000	0.0015	650.0000	164.3000	164.3000	164.3000	0.0015

Activity: 1201 LDE (Unreviewed) Quantity: 1 Unit: LS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
106,795.0000	650.0000	0.0015	164.3000	81.2500	0.0123	81.2500	1,314.4000

	Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
	650.0000	0.0015	650.0000	164.3000	106,795.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: LDEC LEAD DESIGN ENG CREW Prod: MU 650 Eff: 100.00 Crew Hrs: 650.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.00	650.00	MH	155.00	100.00	164.30	106,795.00

## Biditem

# 130

### ESTIMATING

Takeoff Qty: 1.000 LS  
Bid Qty: 1.000 LS

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
80.0000	0.0125	80.0000	164.3000	164.3000	164.3000	0.0125

Activity: 1301 ESTIMATING (Unreviewed) Quantity: 1 Unit: LS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
13,144.0000	80.0000	0.0125	164.3000	10.0000	0.1000	10.0000	1,314.4000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
80.0000	0.0125	80.0000	164.3000	13,144.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: SNOC NORTHERN FACILITIES SUPPORT Prod: MU 80 Eff: 100.00 Crew Hrs: 80.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.00	80.00	MH	155.00	100.00	164.30	13,144.00

**Biditem**

**140**

**EHS**

Takeoff Qty: 1.000 LS  
 Bid Qty: 1.000 LS

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
60.0000	0.0167	60.0000	100.7000	100.7000	100.7000	0.0167

Activity: 1401 (Modified) EHS (Unreviewed) Quantity: 1 Unit: LS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
6,042.0000	60.0000	0.0167	100.7000	7.5000	0.1333	7.5000	805.6000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
60.0000	0.0167	60.0000	100.7000	6,042.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: EHSC EHS CREW Prod: HU 60 Eff: 100.00 Crew Hrs: 60.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE-EHS100	EHS-SUPPORT	1.00	60.00	MH	95.00	100.00	100.70	6,042.00

**Biditem**

**150**

**PLANNING**

Takeoff Qty: 1.000 LS  
 Bid Qty: 1.000 LS

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
60.0000	0.0167	60.0000	164.3000	164.3000	164.3000	0.0167

Activity: 1501 PLANNER (Unreviewed) Quantity: 1 Unit: LS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9,858.0000	60.0000	0.0167	164.3000	7.5000	0.1333	7.5000	1,314.4000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
60.0000	0.0167	60.0000	164.3000	9,858.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: PLAN PLANNING TEAM Prod: MU 60 Eff: 100.00 Crew Hrs: 60.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.00	60.00	MH	155.00	100.00	164.30	9,858.00

**Biditem**

**CONSTRUCTION MANAGER**

# 160

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
60.0000	0.0167	60.0000	164.3000	164.3000	164.3000	0.0167

Activity: 1601 CM (Unreviewed) Quantity: 1 Unit: LS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9,858.0000	60.0000	0.0167	164.3000	7.5000	0.1333	7.5000	1,314.4000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
60.0000	0.0167	60.0000	164.3000	9,858.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: CMC CONSTRUCTION MANAGER Prod: MU 60 Eff: 100.00 Crew Hrs: 60.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.00	60.00	MH	155.00	100.00	164.30	9,858.00

## Biditem

### SECTION MANAGER

# 170

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
60.0000	0.0167	60.0000	164.3000	164.3000	164.3000	0.0167

Activity: 1701 SM (Unreviewed) Quantity: 1 Unit: LS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9,858.0000	60.0000	0.0167	164.3000	7.5000	0.1333	7.5000	1,314.4000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
60.0000	0.0167	60.0000	164.3000	9,858.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SMC SECTION MANAGER Prod: MU 60 Eff: 100.00 Crew Hrs: 60.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.00	60.00	MH	155.00	100.00	164.30	9,858.00

## Biditem

### ELECTRICAL ENGINEER

# 180

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
60.0000	0.0167	60.0000	164.3000	164.3000	164.3000	0.0167

Activity: 1801 EE (Unreviewed) Quantity: 1 Unit: LS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9,858.0000	60.0000	0.0167	164.3000	7.5000	0.1333	7.5000	1,314.4000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
60.0000	0.0167	60.0000	164.3000	9,858.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: EEC ELECTRICAL ENGINEER Prod: MU 60 Eff: 100.00 Crew Hrs: 60.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.00	60.00	MH	155.00	100.00	164.30	9,858.00

Biditem

190

ENGINEERING FEES

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	222,854.40	0.00	222,854.40	0.00	0.00	0.00	0.00	0.00	0.00	222,854.40
Total	222,854.40	0.00	222,854.40	0.00	0.00	0.00	0.00	0.00	0.00	222,854.40

	Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
	1,168.0000	0.0009	1,168.0000	190.8000	190.8000	190.8000	0.0022

Activity: 1901 KICK-OFF MEETING (Unreviewed) Quantity: 1 Unit: DAY

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
3,052.8000	8.0000	0.1250	381.6000	1.0000	1.0000	1.0000	3,052.8000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
16.0000	0.0625	16.0000	190.8000	3,052.8000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CEC CONSULTING ENGINEERING CREW Prod: MU 16 Eff: 100.00 Crew Hrs: 8.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Notes: M0100998S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
ENG200	CONSULTING ENGINEERS' ENGINEERS	2.00	16.00	MH	180.00	100.00	190.80	3,052.80

Activity: 1902 (Modified) 50% CONSTRUCTION DOCUMENTS (Unreviewed) Quantity: 32 Unit: DAYS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,526.4000	2.6667	0.3750	572.4002	10.6667	3.0000	0.3333	4,579.2018

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
256.0000	0.1250	8.0000	190.8000	1,526.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CEC CONSULTING ENGINEERING CREW Prod: MU 8 Eff: 100.00 Crew Hrs: 85.33 Labor Pcs: 3.00 Equipment Pcs: 0.00

Notes: M0122999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
ENG200	CONSULTING ENGINEERS' ENGINEERS	3.00	256.00	MH	180.00	100.00	190.80	48,844.80

Activity: 1903 (Modified) 90% CONSTRUCTION DOCUMENTS (Unreviewed) Quantity: 32 Unit: DAYS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,526.4000	2.6667	0.3750	572.4002	10.6667	3.0000	0.3333	4,579.2018

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
256.0000	0.1250	8.0000	190.8000	1,526.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CEC CONSULTING ENGINEERING CREW Prod: MU 8 Eff: 100.00 Crew Hrs: 85.33 Labor Pcs: 3.00 Equipment Pcs: 0.00

Notes: M0122999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
ENG200	CONSULTING ENGINEERS' ENGINEERS	3.00	256.00	MH	180.00	100.00	190.80	48,844.80

Activity: 1904 (Modified) 100% APPROVED CONSTRUCTION DOCUMENTS (Unreviewed) Quantity: 21 Unit: DAYS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,526.4000	2.6667	0.3750	572.4000	7.0000	3.0000	0.3333	4,579.2000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
168.0000	0.1250	8.0000	190.8000	1,526.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CEC CONSULTING ENGINEERING CREW Prod: MU 8 Eff: 100.00 Crew Hrs: 56.00 Labor Pcs: 3.00 Equipment Pcs: 0.00

Notes: M0122999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
ENG200	CONSULTING ENGINEERS' ENGINEERS	3.00	168.00	MH	180.00	100.00	190.80	32,054.40

**Activity: 1905 (Modified) PERMITS APPLICATIONS & APPROVALS (Unreviewed) Quantity: 10 Unit: DAYS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,526.4000	2.6667	0.3750	572.3993	3.3333	3.0000	0.3333	4,579.1943

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
80.0000	0.1250	8.0000	190.8000	1,526.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CEC CONSULTING ENGINEERING CREW Prod: MU 8 Eff: 100.00 Crew Hrs: 26.67 Labor Pcs: 3.00 Equipment Pcs: 0.00

Notes: M0148999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
ENG200	CONSULTING ENGINEERS' ENGINEERS	3.00	80.00	MH	180.00	100.00	190.80	15,264.00

**Activity: 1906 (Modified) CONSTRUCTION PHASE SUPPORT (Unreviewed) Quantity: 45 Unit: DAYS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,526.4000	4.0000	0.2500	381.6000	22.5000	2.0000	0.5000	3,052.8000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
360.0000	0.1250	8.0000	190.8000	1,526.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CEC CONSULTING ENGINEERING CREW Prod: MU 8 Eff: 100.00 Crew Hrs: 180.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Notes: M0152999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
ENG200	CONSULTING ENGINEERS' ENGINEERS	2.00	360.00	MH	180.00	100.00	190.80	68,688.00

**Activity: 1907 (Modified) LETTER OF COMPLETION (Unreviewed) Quantity: 2 Unit: DAYS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
3,052.8000	8.0000	0.1250	381.6000	2.0000	1.0000	1.0000	3,052.8000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
32.0000	0.0625	16.0000	190.8000	3,052.8000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CEC CONSULTING ENGINEERING CREW Prod: MU 16 Eff: 100.00 Crew Hrs: 16.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Notes: M0156998S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
ENG200	CONSULTING ENGINEERS' ENGINEERS	2.00	32.00	MH	180.00	100.00	190.80	6,105.60

# 1000

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	867,504.00	0.00	867,504.00	0.00	0.00	0.00	0.00	0.00	0.00	867,504.00
<b>Total</b>	<b>867,504.00</b>	<b>0.00</b>	<b>867,504.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>867,504.00</b>

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
5,280.0000	0.0002	5,280.0000	164.3000	164.3000	164.3000	0.0003

**Activity: 1010 (Modified) PM&I - CAPITAL (Unreviewed) Quantity: 47 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9,858.0000	40.0000	0.0250	246.4500	235.0000	0.2000	5.0000	1,971.6000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
2,820.0000	0.0167	60.0000	164.3000	9,858.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: PM&I PMT & I CREW Prod: MU 60 Eff: 100.00 Crew Hrs: 1880.00 Labor Pcs: 1.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.50	2,820.00	MH	155.00	100.00	164.30	463,326.00

**Activity: 1015 (Modified) PM&I - PRE/POST CONSTRUCTION PERIOD - CAPITAL (Unreviewed) Quantity: 2 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9,858.0000	40.0000	0.0250	246.4500	10.0000	0.2000	5.0000	1,971.6000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
120.0000	0.0167	60.0000	164.3000	9,858.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: PM&I PMT & I CREW Prod: MU 60 Eff: 100.00 Crew Hrs: 80.00 Labor Pcs: 1.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.50	120.00	MH	155.00	100.00	164.30	19,716.00

**Activity: 1020 (Modified) PM&I - RETIREMENT (Unreviewed) Quantity: 10 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9,858.0000	40.0000	0.0250	246.4500	50.0000	0.2000	5.0000	1,971.6000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
600.0000	0.0167	60.0000	164.3000	9,858.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: PM&I PMT & I CREW Prod: MU 60 Eff: 100.00 Crew Hrs: 400.00 Labor Pcs: 1.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.50	600.00	MH	155.00	100.00	164.30	98,580.00

**Activity: 1040 (Modified) PM&I - EXPENSE (Unreviewed) Quantity: 29 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9,858.0000	40.0000	0.0250	246.4500	145.0000	0.2000	5.0000	1,971.6000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,740.0000	0.0167	60.0000	164.3000	9,858.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: PM&I PMT & I CREW Prod: MU 60 Eff: 100.00 Crew Hrs: 1160.00 Labor Pcs: 1.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
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Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
504.0000	0.0020	504.0000	102.0460	102.0460	102.0460	0.0020

**Activity: 1410 (Modified) EHS - CAPITAL (Unreviewed) Quantity: 47 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
402.8000	4.0000	0.2500	100.7000	23.5000	2.0000	0.5000	805.6000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
188.0000	0.2500	4.0000	100.7000	402.8000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: EHSC EHS CREW Prod: HU 4 Eff: 100.00 Crew Hrs: 188.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE-EHS100	EHS-SUPPORT	1.00	188.00	MH	95.00	100.00	100.70	18,931.60

**Activity: 1430 (Modified) EHS - RETIREMENT (Unreviewed) Quantity: 10 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
402.8000	4.0000	0.2500	100.7000	5.0000	2.0000	0.5000	805.6000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
40.0000	0.2500	4.0000	100.7000	402.8000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: EHSC EHS CREW Prod: HU 4 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE-EHS100	EHS-SUPPORT	1.00	40.00	MH	95.00	100.00	100.70	4,028.00

**Activity: 1440 (Modified) EHS - EXPENSE (Unreviewed) Quantity: 29 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
402.8000	4.0000	0.2500	100.7000	14.5000	2.0000	0.5000	805.6000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
116.0000	0.2500	4.0000	100.7000	402.8000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: EHSC EHS CREW Prod: HU 4 Eff: 100.00 Crew Hrs: 116.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE-EHS100	EHS-SUPPORT	1.00	116.00	MH	95.00	100.00	100.70	11,681.20

**Activity: 1450 EHS LAB SERVICES- EXPENSE (Unreviewed) Quantity: 4 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
4,197.6000	40.0000	0.0250	104.9400	20.0000	0.2000	5.0000	839.5200

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
160.0000	0.0250	40.0000	104.9400	4,197.6000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CLC CHEMICAL LAB CREW Prod: MU 40 Eff: 100.00 Crew Hrs: 160.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00924	EHS Lab Services	1.00	160.00	MH	99.00	100.00	104.94	16,790.40

**Biditem**

**1600**

**PLANNING SUPPORT**

Takeoff Qty: 1.000 LS  
 Bid Qty: 1.000 LS

Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
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U. Cost	141,298.00	0.00	141,298.00	0.00	0.00	0.00	0.00	0.00	0.00	141,298.00
<b>Total</b>	<b>141,298.00</b>	<b>0.00</b>	<b>141,298.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>141,298.00</b>

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>\$/MH</b>	<b>Base Labor/MH</b>	<b>Total Labor/MH</b>	<b>Unit/CH</b>
860.0000	0.0012	860.0000	164.3000	164.3000	164.3000	0.0012

**Activity: 1610 PLANNER SUPPORT - CAPITAL (Unreviewed) Quantity: 47 Unit: WKS**

<b>Crew \$/Unit</b>	<b>Crew Hrs/Unit</b>	<b>Units/Crew Hr</b>	<b>\$/Crew Hour</b>	<b>Shifts</b>	<b>Units/Shift</b>	<b>Shifts/Unit</b>	<b>\$/Shift</b>
1,643.0000	10.0000	0.1000	164.3000	58.7500	0.8000	1.2500	1,314.4000

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>Total Labor/MH</b>	<b>Base Labor/Unit</b>
470.0000	0.1000	10.0000	164.3000	1,643.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SNOC NORTHERN FACILITIES SUPPORT Prod: MU 10 Eff: 100.00 Crew Hrs: 470.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

<b>Resource</b>	<b>Description</b>	<b>Pcs/Wste</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Tax/OT %</b>	<b>Actual UC</b>	<b>Total</b>
CE00357	CONST Facilities North Region	1.00	470.00	MH	155.00	100.00	164.30	77,221.00

**Activity: 1620 PLANNER SUPPORT - RETIREMENT (Unreviewed) Quantity: 10 Unit: WKS**

<b>Crew \$/Unit</b>	<b>Crew Hrs/Unit</b>	<b>Units/Crew Hr</b>	<b>\$/Crew Hour</b>	<b>Shifts</b>	<b>Units/Shift</b>	<b>Shifts/Unit</b>	<b>\$/Shift</b>
1,643.0000	10.0000	0.1000	164.3000	12.5000	0.8000	1.2500	1,314.4000

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>Total Labor/MH</b>	<b>Base Labor/Unit</b>
100.0000	0.1000	10.0000	164.3000	1,643.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SNOC NORTHERN FACILITIES SUPPORT Prod: HU 10 Eff: 100.00 Crew Hrs: 100.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

<b>Resource</b>	<b>Description</b>	<b>Pcs/Wste</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Tax/OT %</b>	<b>Actual UC</b>	<b>Total</b>
CE00357	CONST Facilities North Region	1.00	100.00	MH	155.00	100.00	164.30	16,430.00

**Activity: 1630 PLANNER SUPPORT - EXPENSE (Unreviewed) Quantity: 29 Unit: WKS**

<b>Crew \$/Unit</b>	<b>Crew Hrs/Unit</b>	<b>Units/Crew Hr</b>	<b>\$/Crew Hour</b>	<b>Shifts</b>	<b>Units/Shift</b>	<b>Shifts/Unit</b>	<b>\$/Shift</b>
1,643.0000	10.0000	0.1000	164.3000	36.2500	0.8000	1.2500	1,314.4000

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>Total Labor/MH</b>	<b>Base Labor/Unit</b>
290.0000	0.1000	10.0000	164.3000	1,643.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SNOC NORTHERN FACILITIES SUPPORT Prod: HU 10 Eff: 100.00 Crew Hrs: 290.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

<b>Resource</b>	<b>Description</b>	<b>Pcs/Wste</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Tax/OT %</b>	<b>Actual UC</b>	<b>Total</b>
CE00357	CONST Facilities North Region	1.00	290.00	MH	155.00	100.00	164.30	47,647.00

**Biditem**

**1700**

**CONSTRUCTION SUPPORT**

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	<b>Base Labor</b>	<b>Burden</b>	<b>Total Labor</b>	<b>Equipment</b>	<b>Perm Matls</b>	<b>Const Matls</b>	<b>Sub</b>	<b>Comp Matl</b>	<b>BPA Rates</b>	<b>Total</b>
U. Cost	111,724.00	0.00	111,724.00	0.00	0.00	0.00	0.00	0.00	0.00	111,724.00
<b>Total</b>	<b>111,724.00</b>	<b>0.00</b>	<b>111,724.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>111,724.00</b>

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>\$/MH</b>	<b>Base Labor/MH</b>	<b>Total Labor/MH</b>	<b>Unit/CH</b>
680.0000	0.0015	680.0000	164.3000	164.3000	164.3000	0.0015

**Activity: 1710 CONSTRUCTION SUPPORT - CAPITAL (Unreviewed) Quantity: 29 Unit: WKS**

<b>Crew \$/Unit</b>	<b>Crew Hrs/Unit</b>	<b>Units/Crew Hr</b>	<b>\$/Crew Hour</b>	<b>Shifts</b>	<b>Units/Shift</b>	<b>Shifts/Unit</b>	<b>\$/Shift</b>
1,643.0000	10.0000	0.1000	164.3000	36.2500	0.8000	1.2500	1,314.4000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
290.0000	0.1000	10.0000	164.3000	1,643.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SNOO NORTHERN FACILITIES SUPPORT Prod: MU 10 Eff: 100.00 Crew Hrs: 290.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.00	290.00	MH	155.00	100.00	164.30	47,647.00

Activity: 1720 CONSTRUCTION SUPPORT - RETIREMENT (Unreviewed) Quantity: 10 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,643.0000	10.0000	0.1000	164.3000	12.5000	0.8000	1.2500	1,314.4000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
100.0000	0.1000	10.0000	164.3000	1,643.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SNOO NORTHERN FACILITIES SUPPORT Prod: HU 10 Eff: 100.00 Crew Hrs: 100.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.00	100.00	MH	155.00	100.00	164.30	16,430.00

Activity: 1730 CONSTRUCTION SUPPORT - EXPENSE (Unreviewed) Quantity: 29 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,643.0000	10.0000	0.1000	164.3000	36.2500	0.8000	1.2500	1,314.4000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
290.0000	0.1000	10.0000	164.3000	1,643.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SNOO NORTHERN FACILITIES SUPPORT Prod: HU 10 Eff: 100.00 Crew Hrs: 290.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00357	CONST Facilities North Region	1.00	290.00	MH	155.00	100.00	164.30	47,647.00

Biditem

1800

OPER TO REL T/FORMERS

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	185,733.20	0.00	185,733.20	0.00	0.00	0.00	0.00	0.00	0.00	185,733.20
Total	185,733.20	0.00	185,733.20	0.00	0.00	0.00	0.00	0.00	0.00	185,733.20

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
1,370.0000	0.0007	1,370.0000	135.5717	135.5717	135.5717	0.0019

Activity: 1810 (Modified) COORDINATION TO RELOCATE TRANSFORMERS - CAPITAL (Unreviewed) Quantity: 5 Unit: WKS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	9,964.00	0.00	9,964.00	0.00	0.00	0.00	0.00	0.00	0.00	9,964.00
Total	49,820.00	0.00	49,820.00	0.00	0.00	0.00	0.00	0.00	0.00	49,820.00

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9,964.0000	40.0000	0.0250	249.1000	25.0000	0.2000	5.0000	1,992.8000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
400.0000	0.0125	80.0000	124.5500	9,964.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: OPC OPERATIONS RELOCATE TRA CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 200.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00395	OPERATIONS MECHANIC	1.00	200.00	MH	85.00	100.00	90.10	18,020.00
CE00396	OPERATIONS SUPERVISOR	1.00	200.00	MH	150.00	100.00	159.00	31,800.00

Activity: 1820 (Modified) TRAILER & ELECTRICAL SUPPORT (CON./DISCON.) - CAPITAL (Unreviewed) Quantity: 4 Unit: WKS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	23,108.00	0.00	23,108.00	0.00	0.00	0.00	0.00	0.00	0.00	23,108.00
Total	92,432.00	0.00	92,432.00	0.00	0.00	0.00	0.00	0.00	0.00	92,432.00

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
23,108.0000	40.0000	0.0250	577.7000	20.0000	0.2000	5.0000	4,621.6000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
640.0000	0.0063	160.0000	144.4250	23,108.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: TESC TRAILER & ELECT SUPPORT CREW Prod: HU 40 Eff: 100.00 Crew Hrs: 160.00 Labor Pcs: 4.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00396	OPERATIONS SUPERVISOR	3.00	480.00	MH	150.00	100.00	159.00	76,320.00
CE00398	OPERATIONS ELECTRICAL SRVS	1.00	160.00	MH	95.00	100.00	100.70	16,112.00

Activity: 1830 OPERATIONS FOR SNOW REMOVAL SUPERVISION (Unreviewed) Quantity: 10 Unit: WKS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	1,696.00	0.00	1,696.00	0.00	0.00	0.00	0.00	0.00	0.00	1,696.00
Total	16,960.00	0.00	16,960.00	0.00	0.00	0.00	0.00	0.00	0.00	16,960.00

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,696.0000	10.0000	0.1000	169.6000	12.5000	0.8000	1.2500	1,356.8000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
150.0000	0.0667	15.0000	113.0667	1,696.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SRC SNOW REMOVAL SUPER CREW Prod: HU 10 Eff: 100.00 Crew Hrs: 100.00 Labor Pcs: 1.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00395	OPERATIONS MECHANIC	1.00	100.00	MH	85.00	100.00	90.10	9,010.00
CE00396	OPERATIONS SUPERVISOR	0.50	50.00	MH	150.00	100.00	159.00	7,950.00

Activity: 1840 (Modified) CCTV CON./DISCON (Unreviewed) Quantity: 2 Unit: WKS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	13,260.60	0.00	13,260.60	0.00	0.00	0.00	0.00	0.00	0.00	13,260.60
Total	26,521.20	0.00	26,521.20	0.00	0.00	0.00	0.00	0.00	0.00	26,521.20

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
13,260.6000	36.0000	0.0278	368.3500	9.0000	0.2222	4.5000	2,946.8000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
180.0000	0.0111	90.0000	147.3400	13,260.6000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: TESC TRAILER & ELECT SUPPORT CREW Prod: MU 90 Eff: 100.00 Crew Hrs: 72.00 Labor Pcs: 2.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
CE00396	OPERATIONS SUPERVISOR	2.00	144.00	MH	150.00	100.00	159.00	22,896.00
CE00398	OPERATIONS ELECTRICAL SRVS	0.50	36.00	MH	95.00	100.00	100.70	3,625.20

# 2000

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	1,270,989.80	1,318,577.76	2,589,567.56	0.00	6,609,896.49	350,000.85	0.00	0.00	0.00	9,549,464.90
<b>Total</b>	<b>1,270,989.80</b>	<b>1,318,577.76</b>	<b>2,589,567.56</b>	<b>0.00</b>	<b>6,609,896.49</b>	<b>350,000.85</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>9,549,464.90</b>

	Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
	9,712.4000	0.0001	9,712.4000	983.2240	130.8626	266.6249	0.0001

**Activity: 2001 SITE SAFETY - CAPITAL (Unreviewed) Quantity: 47 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
12,720.0000	40.0000	0.0250	318.0000	235.0000	0.2000	5.0000	2,544.0000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,880.0000	0.0250	40.0000	318.0000	6,360.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SSC SITE SUPER CREW Prod: HU 40 Eff: 100.00 Crew Hrs: 1880.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SUPER	SITE SUPER / SITE SAFETY	1.00	1,880.00	MH	150.00	100.00	318.00	597,840.00

**Activity: 2002 SITE SAFETY - RETIREMENT (Unreviewed) Quantity: 10 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
12,720.0000	40.0000	0.0250	318.0000	50.0000	0.2000	5.0000	2,544.0000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
400.0000	0.0250	40.0000	318.0000	6,360.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SSC SITE SUPER CREW Prod: HU 40 Eff: 100.00 Crew Hrs: 400.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SUPER	SITE SUPER / SITE SAFETY	1.00	400.00	MH	150.00	100.00	318.00	127,200.00

**Activity: 2003 SITE SAFETY - EXPENSE (Unreviewed) Quantity: 29 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
12,720.0000	40.0000	0.0250	318.0000	145.0000	0.2000	5.0000	2,544.0000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,160.0000	0.0250	40.0000	318.0000	6,360.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SSC SITE SUPER CREW Prod: HU 40 Eff: 100.00 Crew Hrs: 1160.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SUPER	SITE SUPER / SITE SAFETY	1.00	1,160.00	MH	150.00	100.00	318.00	368,880.00

**Activity: 2004 MOB/DEMOB - CAPITAL (Unreviewed) Quantity: 2 Unit: DAY**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
15,837.8500	48.0000	0.0208	329.9552	12.0000	0.1667	6.0000	2,639.6417

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
288.0000	0.0069	144.0000	109.9851	6,563.5200

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: MU 144 Eff: 100.00 Crew Hrs: 96.00 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	3.00	288.00	MH	43.00	100.00	109.99	31,675.70

**Activity: 2005 MOB/DEMOB - RETIREMENT (Unreviewed) Quantity: 2 Unit: DAY**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
7,918.9250	24.0000	0.0417	329.9552	6.0000	0.3333	3.0000	2,639.6417

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
144.0000	0.0139	72.0000	109.9851	3,281.7600

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: MU 72 Eff: 100.00 Crew Hrs: 48.00 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	3.00	144.00	MH	43.00	100.00	109.99	15,837.85

**Activity: 2006 MOB/DEMOB - EXPENSE (Unreviewed) Quantity: 2 Unit: DAY**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
7,918.9250	24.0000	0.0417	329.9552	6.0000	0.3333	3.0000	2,639.6417

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
144.0000	0.0139	72.0000	109.9851	3,281.7600

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: MU 72 Eff: 100.00 Crew Hrs: 48.00 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	3.00	144.00	MH	43.00	100.00	109.99	15,837.85

**Activity: 2008 SITE SUPER - CAPITAL (Unreviewed) Quantity: 47 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
12,720.0000	40.0000	0.0250	318.0000	235.0000	0.2000	5.0000	2,544.0000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,880.0000	0.0250	40.0000	318.0000	6,360.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: SSC SITE SUPER CREW Prod: HU 40 Eff: 100.00 Crew Hrs: 1880.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SUPER	SITE SUPER / SITE SAFETY	1.00	1,880.00	MH	150.00	100.00	318.00	597,840.00

**Activity: 2009 SITE SUPER - RETIREMENT (Unreviewed) Quantity: 10 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
12,720.0000	40.0000	0.0250	318.0000	50.0000	0.2000	5.0000	2,544.0000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
400.0000	0.0250	40.0000	318.0000	6,360.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: SSC SITE SUPER CREW Prod: HU 40 Eff: 100.00 Crew Hrs: 400.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SUPER	SITE SUPER / SITE SAFETY	1.00	400.00	MH	150.00	100.00	318.00	127,200.00

**Activity: 2010 SITE SUPER - EXPENSE (Unreviewed) Quantity: 27 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
12,720.0000	40.0000	0.0250	318.0000	135.0000	0.2000	5.0000	2,544.0000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,080.0000	0.0250	40.0000	318.0000	6,360.0000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: SSC SITE SUPER CREW Prod: HU 40 Eff: 100.00 Crew Hrs: 1080.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SUPER	SITE SUPER / SITE SAFETY	1.00	1,080.00	MH	150.00	100.00	318.00	343,440.00

**Activity: 2012 (Modified) EHASP/SUBMITTALS/WORKPLAN & PE STAMP - CAPITAL (Unreviewed) Quantity: 1 Unit: LS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
81,408.0000	256.0000	0.0039	318.0000	32.0000	0.0313	32.0000	2,544.0000
Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit			
256.0000	0.0039	256.0000	318.0000	40,704.0000			

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: EHSC EHS CREW Prod: HU 256 Eff: 100.00 Crew Hrs: 256.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SUB	EASP/SUBMITTAL /WORKPLAN	1.00	256.00	MH	150.00	100.00	318.00	81,408.00

**Activity: 2013 (Modified) EHASP/SUBMITTALS/WORKPLAN & PE STAMP - RETIREMENT (Unreviewed) Quantity: 1 Unit: LS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
40,704.0000	128.0000	0.0078	318.0000	16.0000	0.0625	16.0000	2,544.0000
Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit			
128.0000	0.0078	128.0000	318.0000	20,352.0000			

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: EHSC EHS CREW Prod: HU 128 Eff: 100.00 Crew Hrs: 128.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SUB	EASP/SUBMITTAL /WORKPLAN	1.00	128.00	MH	150.00	100.00	318.00	40,704.00

**Activity: 2014 (Modified) EHASP/SUBMITTALS/WORKPLAN & PE STAMP - EXPENSE (Unreviewed) Quantity: 1 Unit: LS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
20,352.0000	64.0000	0.0156	318.0000	8.0000	0.1250	8.0000	2,544.0000
Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit			
64.0000	0.0156	64.0000	318.0000	10,176.0000			

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: EHSC EHS CREW Prod: HU 64 Eff: 100.00 Crew Hrs: 64.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SUB	EASP/SUBMITTAL /WORKPLAN	1.00	64.00	MH	150.00	100.00	318.00	20,352.00

**Activity: 2019 ROUTINARY CLEANUP - CAPITAL (Unreviewed) Quantity: 235 Unit: DAY**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
362.9508	1.1000	0.9091	329.9552	32.3125	7.2727	0.1375	2,639.6419
Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit			
775.5000	0.3030	3.3000	109.9851	150.4140			

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: HU 1.1 Eff: 100.00 Crew Hrs: 258.50 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	3.00	775.50	MH	43.00	100.00	109.99	85,293.43

**Activity: 2020 ROUTINARY CLEANUP - RETIREMENT (Unreviewed) Quantity: 50 Unit: DAY**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
362.9508	1.1000	0.9091	329.9553	6.8750	7.2727	0.1375	2,639.6422

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
165.0000	0.3030	3.3000	109.9851	150.4140

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: HU 1.1 Eff: 100.00 Crew Hrs: 55.00 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	3.00	165.00	MH	43.00	100.00	109.99	18,147.54

**Activity: 2021 ROUTINARY CLEANUP - EXPENSE (Unreviewed) Quantity: 145 Unit: DAY**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
362.9508	1.1000	0.9091	329.9553	19.9375	7.2727	0.1375	2,639.6424

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
478.5000	0.3030	3.3000	109.9851	150.4140

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: HU 1.1 Eff: 100.00 Crew Hrs: 159.50 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	3.00	478.50	MH	43.00	100.00	109.99	52,627.87

**Activity: 2022 FINAL CLEANUP - CAPITAL (Unreviewed) Quantity: 1 Unit: DAY**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
3,233.5600	9.8000	0.1020	329.9551	1.2250	0.8163	1.2250	2,639.6408

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
29.4000	0.0340	29.4000	109.9850	1,340.0500

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: MU 29.4 Eff: 100.00 Crew Hrs: 9.80 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	3.00	29.40	MH	43.00	100.00	109.99	3,233.56

**Activity: 2030 CONTAINER FOR DEBRIS - CAPITAL (Unreviewed) Quantity: 47 Unit: PKUP**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: M0148999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3CCONT0020	CONTAINER,DEBRIS,20 CY	1.00	47.00	PKUP	950.00	108.88	1,096.42	51,531.82

**Activity: 2031 CONTAINER FOR DEBRIS - RETIREMENT (Unreviewed) Quantity: 10 Unit: PKUP**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: M0148999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3CCONT0020	CONTAINER,DEBRIS,20 CY	1.00	10.00	PKUP	950.00	108.88	1,096.42	10,964.22

**Activity: 2032 CONTAINER FOR DEBRIS - EXPENSE (Unreviewed) Quantity: 29 Unit: PKUP**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: M0148999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3CCONT0020	CONTAINER,DEBRIS,20 CY	1.00	29.00	PKUP	950.00	108.88	1,096.42	31,796.23

**Activity: 2039 TEMPORARY TOILET - CAPITAL (Unreviewed) Quantity: 47 Unit: WKS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3TEMPTOIL	SITE TEMPORARY TOILET	6.00	282.00	WKS	50.00	108.88	57.71	16,273.20

Activity: 2040 TEMPORARY TOILET - RETIREMENT (Unreviewed) Quantity: 10 Unit: WKS

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3TEMPTOIL	SITE TEMPORARY TOILET	6.00	60.00	WKS	50.00	108.88	57.71	3,462.38

Activity: 2041 TEMPORARY TOILET - EXPENSE (Unreviewed) Quantity: 29 Unit: WKS

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3TEMPTOIL	SITE TEMPORARY TOILET	6.00	174.00	WKS	50.00	108.88	57.71	10,040.91

Activity: 2042 (Modified) TEMPORARY CONSTRUCTION FENCE 10' HIGH - CAPITAL (Unreviewed) Quantity: 2200 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	11.95	16.26	28.20	0.00	0.00	18.24	0.00	0.00	0.00	46.44
Total	26,285.65	35,764.11	62,049.76	0.00	0.00	40,117.49	0.00	0.00	0.00	102,167.25

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
28.2044	0.0286	35.0000	987.1559	7.8571	280.0002	0.0036	13,003.1134

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
440.0000	5.0000	0.2000	141.0222	11.9480

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: TFC TEMPORARY FENCE CREW Prod: MU 0.2 Eff: 100.00 Crew Hrs: 62.86 Labor Pcs: 7.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3TEMPF	TEMPORARY CONSTRUCTION FENCE	1.00	2,200.00	LF	15.80	108.88	18.24	40,117.49
CRP101	Journeyman, Bldg, T&E, NYC, DC	6.00	377.14	MH	55.93	100.00	140.40	52,951.55
CRP102	Foreman, Bldg, T&E, NYC, DC	1.00	62.86	MH	58.93	100.00	144.74	9,098.21

Activity: 2050 SMALL TOOLS - CAPITAL (Unreviewed) Quantity: 1 Unit: LS

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3TOOLS	SMALL TOOLS	1.00	1.00	LS	1,500.00	108.88	1,731.19	1,731.19

Activity: 2051 SMALL TOOLS - RETIREMENT (Unreviewed) Quantity: 1 Unit: LS

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3TOOLS	SMALL TOOLS	1.00	1.00	LS	1,500.00	108.88	1,731.19	1,731.19

Activity: 2052 SMALL TOOLS - EXPENSE (Unreviewed) Quantity: 1 Unit: LS

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3TOOLS	SMALL TOOLS	1.00	1.00	LS	1,500.00	108.88	1,731.19	1,731.19

Activity: 2070 PROPERTY PROTECTION - CAPITAL (Unreviewed) Quantity: 1 Unit: LS

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: M0161999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3PROP-101	PROPERTY PROTECTION	1.00	1.00	LS	15,000.00	108.88	17,311.92	17,311.92

**Activity: 2071 PROPERTY PROTECTION - RETIREMENT (Unreviewed) Quantity: 1 Unit: LS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: M0161999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3PROP-101	PROPERTY PROTECTION	1.00	1.00	LS	15,000.00	108.88	17,311.92	17,311.92

**Activity: 2072 PROPERTY PROTECTION - EXPENSE (Unreviewed) Quantity: 1 Unit: LS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: M0161999S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3PROP-101	PROPERTY PROTECTION	1.00	1.00	LS	15,000.00	108.88	17,311.92	17,311.92

**Activity: 2073 EQUIPMENT RENTALS , RIGGING, DOWNTIME- CAPITAL (Unreviewed) Quantity: 1 Unit: EA**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: M0181054S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3ERS&A-104EQ	EQUIPMENT RENTALS DOWN TIME & RIGGING,	1.00	1.00	EA	30,000.00	108.88	34,623.84	34,623.84

**Activity: 2074 EQUIPMENT RENTALS , RIGGING, DOWNTIME- RETIREMENT (Unreviewed) Quantity: 1 Unit: EA**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: M0181054S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3ERS&A-104EQ	EQUIPMENT RENTALS DOWN TIME & RIGGING,	1.00	1.00	EA	30,000.00	108.88	34,623.84	34,623.84

**Activity: 2075 EQUIPMENT RENTALS , RIGGING, DOWNTIME - EXPENSE (Unreviewed) Quantity: 1 Unit: EA**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: M0181054S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3ERS&A-104EQ	EQUIPMENT RENTALS DOWN TIME & RIGGING,	1.00	1.00	EA	30,000.00	108.88	34,623.84	34,623.84

**Activity: 2076 OFFICE TRAILERS- CAPITAL (Unreviewed) Quantity: 47 Unit: WKS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3OFFTRAILER	OFFICE TRAILERS	1.00	47.00	WKS	250.00	108.88	288.53	13,561.00

**Activity: 2078 OFFICE TRAILERS - RETIREMENT (Unreviewed) Quantity: 10 Unit: WKS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3OFFTRAILER	OFFICE TRAILERS	1.00	10.00	WKS	250.00	108.88	288.53	2,885.32

**Activity: 2079 OFFICE TRAILERS - EXPENSE (Unreviewed) Quantity: 29 Unit: WKS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3OFFTRAILER	OFFICE TRAILERS	1.00	29.00	WKS	250.00	108.88	288.53	8,367.43

**Activity: 2080 GC OVERHEADS & PROFITS - CAPITAL (Unreviewed) Quantity: 1 Unit: LS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2GCOH&PCAP	GC OVERHEADS & PROFITS - CAPITAL	1.00	1.00	LS	2,999,471.00	108.88	3,461,773.46	3,461,773.46

**Activity: 2090 GC OVERHEADS & PROFITS - RETIREMENT (Unreviewed) Quantity: 1 Unit: LS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2GCOH&PCRET	GC OVERHEADS & PROFITS - EXPENSE	1.00	1.00	LS	2,192,453.00	108.88	2,530,371.40	2,530,371.40

**Activity: 2099 GC OVERHEADS & PROFITS - EXPENSE (Unreviewed) Quantity: 1 Unit: LS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2GCOH&PCEXP	GC OVERHEADS & PROFITS - RETIREMENT	1.00	1.00	LS	535,254.00	108.88	617,751.63	617,751.63

**Biditem**

**REMEDIATION**

**2500**

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	2,152,490.98	878,047.98	3,030,538.96	154,334.40	618,766.45	4,016,605.94	0.00	0.00	0.00	7,820,245.75
Total	2,152,490.98	878,047.98	3,030,538.96	154,334.40	618,766.45	4,016,605.94	0.00	0.00	0.00	7,820,245.75

	Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
	45,142.5800	0.0000	45,142.5800	173.2344	47.6821	67.1326	0.0001

**Activity: 021638C1540 (Modified) SAW CUT 10"THK INTO EXISTING PAVEMENT SLAB (Unreviewed) Quantity: 1000 Unit: LF**

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	4.04	4.97	9.02	0.00	0.00	0.07	0.00	0.00	0.00	9.08
Total	4,043.69	4,973.20	9,016.89	0.00	0.00	65.55	0.00	0.00	0.00	9,082.44

	Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
	9.0169	0.0400	25.0000	225.4223	5.0000	200.0000	0.0050	1,816.4880

	Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
	80.0000	12.5000	0.0800	112.7111	4.0437

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0179 SAW CUT SLAB Prod: MU 0.08 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Notes: C0211540S00 EQP. USED FOR ACTUAL CUT MAY DIFFER FROM THAT SHOWN ABOVE. ----- EQP. COSTS ARE JUDGED TO COVER APPLICABLE COSTS.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3CONC8090	CONCRETE SAW, 7.0 HP	1.00	40.00	HR	1.42	108.88	1.64	65.55
LAB101	Laborer, T&E, NYC, 731	1.00	40.00	MH	43.00	100.00	109.99	4,399.40
OPER117	GP.3.3-Cmpr,Wldg,T&E, NYC, 14	1.00	40.00	MH	52.37	100.00	115.44	4,617.49

**Activity: 022113S0001 CLEANUP PAD, MARK UP PAD, CENTER LINES (Unreviewed) Quantity: 1 Unit: LS**

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	4,798.49	5,796.95	10,595.44	0.00	0.00	0.00	0.00	0.00	0.00	10,595.44
Total	4,798.49	5,796.95	10,595.44	0.00	0.00	0.00	0.00	0.00	0.00	10,595.44

	Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
	10,595.4400	24.0000	0.0417	441.4767	3.0000	0.3333	3.0000	3,531.8133

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
96.0000	0.0104	96.0000	110.3692	4,798.4900

Calendar: 708 7 - 8 HR Days Hrs/Shift: 8 WC: Code not found.

Crew: SURC SURVEY CREW Prod: MU 96 Eff: 100.00 Crew Hrs: 24.00 Labor Pcs: 4.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SURV101	Party Chief. (BLDG CONS),T&E,NYC,15D	1.00	24.00	MH	67.94	100.00	140.13	3,363.03
SURV102	Instrument Man(BLDG CON),T&E,NYC,15D	1.00	24.00	MH	52.72	100.00	118.34	2,840.12
SURV103	Rodman(BLDG CON),T&E,NYC,15D	2.00	48.00	MH	33.98	100.00	91.51	4,392.29

Activity: 024113175400 (Modified) REM CONCRETE PAVEMENT & CURB (Unreviewed) Quantity: 1850 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	61.17	3.56	64.73	0.00	0.00	43.41	0.00	0.00	0.00	108.14
Total	113,156.21	6,592.79	119,749.00	0.00	0.00	80,302.38	0.00	0.00	0.00	200,051.38

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
64.7292	0.2424	4.1254	267.0346	56.0550	33.0033	0.0303	3,568.8410

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
2,242.2000	0.8251	1.2120	53.4069	61.1655

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B38 RSMans - B38 Crew Prod: US 33.0033 Eff: 100.00 Crew Hrs: 448.44 Labor Pcs: 5.00 Equipment Pcs: 0.00

Notes: Demolish, remove pavement & curb, remove concrete, plain, 7" to 24" thick, excludes hauling and disposal fees

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3RS-200450	BACKHOE LOADER, 48 H.P	1.00	448.43	HR	26.72	108.88	30.84	13,828.82
3RS-200486	HYDRAULIC HAMMER (1200 LB)	1.00	448.43	HR	21.89	108.88	25.26	11,329.08
3RS-204730	F.E LOADER, W..M., 48 H.P	1.00	448.43	HR	98.67	108.88	113.88	51,066.23
3RS-500740	PVMT. REM. BUCKET	1.00	448.43	HR	7.88	108.88	9.09	4,078.25
RS-CLAB	Common Building Laborers	2.00	896.88	MH	42.10	100.00	48.04	43,086.02
RS-CLABO	Labor Foreman (outside)	1.00	448.44	MH	44.10	100.00	50.32	22,566.42
RS-EQLT	Equipment Operators, Light Equipment	1.00	448.44	MH	53.00	100.00	60.48	27,120.65
RS-EQMD	Equipment Operators, Medium Equipment	1.00	448.44	MH	56.75	100.00	60.16	26,975.91

Activity: 024113175401 (Modified) DISPOSAL OF CONTAMINATED EXC.AVATED PAVEMENT MATRIALS (Unreviewed) Quantity: 2240 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	17.70	20.74	38.44	10.36	0.00	269.84	0.00	0.00	0.00	318.64
Total	39,642.30	46,458.14	86,100.44	23,204.44	0.00	604,448.11	0.00	0.00	0.00	713,752.99

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
38.4377	0.1429	7.0000	269.0639	40.0000	56.0000	0.0179	17,843.8248

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
672.0000	3.3333	0.3000	128.1257	17.6975

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0001 CLEANUP,1 MHR/DAY .....\* Prod: MU 0.3 Eff: 100.00 Crew Hrs: 320.00 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0222201S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DSPEARTHMAT	DISPOSAL OF CONTAMINATED EARTH MATERIALS	1.00	2,685.78	CY	195.00	108.88	225.05	604,448.11
8BKHOE48	→ BACKHOE LOADER, 3/4 CY CAPACITY, 48 HP	1.00	320.00	HR	62.83	108.88	72.51	23,204.44

LAB101	Laborer, T&E, NYC, 731	1.00	320.00	MH	43.00	100.00	109.99	35,195.22
LAB102	Labor Foreman, T&E, NYC, 731	0.10	32.00	MH	45.50	100.00	113.46	3,630.82
OPER213	UTLWLDREQ ONSFT, T&E, NYC, 15	1.00	320.00	MH	69.32	100.00	147.73	47,274.40

Activity: 025613100120 Containment of hazardous waste, secure burial cell, excavation of contaminated soil & waste, by hand (Unreviewed) Quantity: 8164 Unit: BCY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	99.11	7.58	106.69	0.00	10.62	0.00	0.00	0.00	0.00	117.31
Total	809,134.05	61,898.75	871,032.80	0.00	86,685.17	0.00	0.00	0.00	0.00	957,717.97

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
106.6919	0.4400	2.2727	242.4816	449.0200	18.1818	0.0550	2,132.9072

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
17,960.8000	0.4545	2.2000	48.4963	99.1100

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B2 RSMMeans - B2 Crew Prod: MU 2.2 Eff: 100.00 Crew Hrs: 3592.16 Labor Pcs: 5.00 Equipment Pcs: 0.00

Notes: Containment of hazardous waste, secure burial cell, excavation of contaminated soil & waste, by hand, to 6 feet deep, OSHA Hazard level C, includes 1 respirator filter & 2 disposable suits per work day

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-ONRAHP20	Containment of hazardous was	1.00	8,164.00	BCY	9.20	108.88	10.62	86,685.17
RS-CLAB	Common Building Laborers	4.00	14,368.64	MH	42.10	100.00	48.04	690,267.87
RS-CLABO	Labor Foreman (outside)	1.00	3,592.16	MH	44.10	100.00	50.32	180,764.93

Activity: 025613100130 Containment of hazardous waste, secure burial cell, excavation of contaminated soil & waste, by hand (Unreviewed) Quantity: 573 Unit: BCY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	150.15	11.49	161.64	0.00	16.85	0.00	0.00	0.00	0.00	178.49
Total	86,036.94	6,581.83	92,618.77	0.00	9,655.20	0.00	0.00	0.00	0.00	102,273.97

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
161.6383	0.6666	1.5002	242.4818	47.7452	12.0012	0.0833	2,142.0775

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,909.8100	0.3000	3.3330	48.4963	150.1517

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B2 RSMMeans - B2 Crew Prod: MU 3.333 Eff: 100.00 Crew Hrs: 381.96 Labor Pcs: 5.00 Equipment Pcs: 0.00

Notes: Containment of hazardous waste, secure burial cell, excavation of contaminated soil & waste, by hand, 6'-12' deep, OSHA Hazard level C, includes 1 respirator filter & 2 disposable suits per work day

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-ONRAHP32	Containment of hazardous was	1.00	573.00	BCY	14.60	108.88	16.85	9,655.20
RS-CLAB	Common Building Laborers	4.00	1,527.85	MH	42.10	100.00	48.04	73,397.75
RS-CLABO	Labor Foreman (outside)	1.00	381.96	MH	44.10	100.00	50.32	19,221.02

Activity: 025613100131 (Modified) DISPOSAL OF CONTAMINATED EXC. AVATED SOIL MATERIALS (Unreviewed) Quantity: 10484 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	17.70	20.74	38.44	10.36	0.00	269.84	0.00	0.00	0.00	318.64
Total	185,539.57	217,440.01	402,979.58	108,604.74	0.00	2,829,030.87	0.00	0.00	0.00	3,340,615.19

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
38.4376	0.1429	7.0000	269.0631	187.2143	56.0000	0.0179	17,843.8047

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
3,145.1900	3.3333	0.3000	128.1257	17.6974

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0001 CLEANUP,1 MHR/DAY .....\* Prod: MU 0.3 Eff: 100.00 Crew Hrs: 1497.71 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0222201S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DSPEARHMAT	DISPOSAL OF CONTAMINATED EARTH MATERIALS	1.00	12,570.40	CY	195.00	108.88	225.05	2,829,030.87
8BKHOE48	→ BACKHOE LOADER, 3/4 CY CAPACITY, 48 HP	1.00	1,497.71	HR	62.83	108.88	72.51	108,604.74
LAB101	Laborer, T&E, NYC, 731	1.00	1,497.71	MH	43.00	100.00	109.99	164,725.74
LAB102	Labor Foreman, T&E, NYC, 731	0.10	149.77	MH	45.50	100.00	113.46	16,993.39
OPER213	UTLWLDR/EQ ONSFT, T&E, NYC, 15	1.00	1,497.71	MH	69.32	100.00	147.73	221,260.45

Activity: 025613100132 TAKE LEVELS OF EXCAVATIONS TO ESTABLISH VOL. OF EXCAVATED MATERIALS (Unreviewed) Quantity: 1 Unit: LS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	4,798.49	5,796.95	10,595.44	0.00	0.00	0.00	0.00	0.00	0.00	10,595.44
Total	4,798.49	5,796.95	10,595.44	0.00	0.00	0.00	0.00	0.00	0.00	10,595.44

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
10,595.4400	24.0000	0.0417	441.4767	3.0000	0.3333	3.0000	3,531.8133

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
96.0000	0.0104	96.0000	110.3692	4,798.4900

Calendar: 708 7 - 8 HR Days Hrs/Shift: 8 WC: Code not found.

Crew: SURC SURVEY CREW Prod: MU 96 Eff: 100.00 Crew Hrs: 24.00 Labor Pcs: 4.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SURV101	Party Chief. (BLDG CONS), T&E, NYC, 15D	1.00	24.00	MH	67.94	100.00	140.13	3,363.03
SURV102	Instrument Man (BLDG CON), T&E, NYC, 15D	1.00	24.00	MH	52.72	100.00	118.34	2,840.12
SURV103	Rodman (BLDG CON), T&E, NYC, 15D	2.00	48.00	MH	33.98	100.00	91.51	4,392.29

Activity: 025613101110 (Modified) BACKFILL & COMPACT WITH SELECTED SOIL/BALLAST MATERIALS (Unreviewed) Quantity: 10484 Unit: LCY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	53.04	4.06	57.10	0.00	48.47	5.79	0.00	0.00	0.00	111.36
Total	556,056.47	42,538.32	598,594.79	0.00	508,194.88	60,680.06	0.00	0.00	0.00	1,167,469.73

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
57.0960	0.2260	4.4248	252.6373	296.1730	35.3982	0.0283	3,941.8506

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
11,846.9200	0.8850	1.1300	50.5275	53.0386

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B63 RSMeans - B63 Crew Prod: MU 1.13 Eff: 100.00 Crew Hrs: 2369.38 Labor Pcs: 5.00 Equipment Pcs: 0.00

Notes: Secure burial cell construction ballast material, ballast cover with mixed common borrow & topsoil

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-ONRAHQ1M	Secure burial cell construct	1.00	10,484.00	LCY	42.00	108.88	48.47	508,194.88
3RS-204880	LOADER, SKIDER STEER, 30 HP.	1.00	2,369.38	HR	22.19	108.88	25.61	60,680.06
RS-CLAB	Common Building Laborers	4.00	9,477.54	MH	42.10	100.00	48.04	455,299.97
RS-EQLT	Equipment Operators, Light Equipment	1.00	2,369.38	MH	53.00	100.00	60.48	143,294.82

Activity: 312213C1206 GRADING, ROUGH, MACHINE (Unreviewed) Quantity: 6670 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
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U. Cost	0.50	0.66	1.16	1.08	0.00	0.00	0.00	0.00	0.00	2.24
Total	3,363.49	4,405.51	7,769.00	7,194.91	0.00	0.00	0.00	0.00	0.00	14,963.91

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
2.2435	0.0082	121.9512	273.5933	6.8368	975.6098	0.0010	2,188.7461

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
66.7300	99.9550	0.0100	116.4244	0.5043

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0188 GRADING,ROUGH,MACHINE Prod: MU 0.01 Eff: 100.00 Crew Hrs: 54.69 Labor Pcs: 1.22 Equipment Pcs: 2.00

Notes: C0221206S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
8LOAD5070	LOADER,CAT,446B,95HP,1.52	2.00	109.39	HR	62.05	100.00	65.77	7,194.91
LAB101	Laborer, T&E,NYC,731	0.11	6.02	MH	43.00	100.00	109.99	662.11
LAB102	Labor Foreman,T&E,NYC,731	1.00	54.69	MH	45.50	100.00	113.46	6,205.30
OPER202	CRP2-CHPKR<20TON,T&E,NYC,15	0.11	6.02	MH	70.74	100.00	149.77	901.59

Activity: 312213C12071 GRADING,FINISH,MACHINE (Unreviewed) Quantity: 6670 Unit: SY

Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	2.15	2.24	4.39	1.13	0.00	0.00	0.00	0.00	5.52
Total	14,331.50	14,957.44	29,288.94	7,528.70	0.00	0.00	0.00	0.00	36,817.64

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
5.5199	0.0142	70.4225	388.7244	11.8393	563.3803	0.0018	3,109.7950

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
220.6800	30.2248	0.0331	132.7213	2.1487

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0189 GRADING,FINISH,MACHINE Prod: MU 0.0331 Eff: 100.00 Crew Hrs: 94.71 Labor Pcs: 2.33 Equipment Pcs: 2.22

Notes: C0221207N00\*

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
8DOZE7010	DOZER,CAT D-5B,105HP	2.00	189.43	HR	34.13	100.00	36.18	6,853.17
8ROLL1030	ROLLER,14TON	0.22	20.84	HR	30.58	100.00	32.42	675.53
LAB101	Laborer, T&E,NYC,731	0.22	20.84	MH	43.00	100.00	109.98	2,292.08
LAB102	Labor Foreman,T&E,NYC,731	1.00	94.71	MH	45.50	100.00	113.46	10,746.10
OPER112	Asphalt Roller,T&E,NYC,14	1.00	94.71	MH	80.01	100.00	155.11	14,690.20
OPER202	CRP2-CHPKR<20TON,T&E,NYC,15	0.11	10.42	MH	70.74	100.00	149.77	1,560.56

Activity: 314113C0101 SHORING,WOOD,5-12" (Unreviewed) Quantity: 2873 Unit: SF

Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	4.03	5.42	9.45	0.00	0.39	0.00	0.00	0.00	9.84
Total	11,576.04	15,564.56	27,140.60	0.00	1,128.04	0.00	0.00	0.00	28,268.64

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9.4468	0.0319	31.3480	296.1373	11.4561	250.7837	0.0040	2,467.5650

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
192.4600	14.9278	0.0670	141.0194	4.0293

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0034 SHORING,WOOD,5-8".....\* Prod: MU 0.067 Eff: 100.00 Crew Hrs: 91.65 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0240101S00 PER BOARD FT MAT QTY RELECTS 3 USES 11/7/84

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CLMBR0010	LUMBER,CONST GRD,AVG COST	1.00	1,206.66	BF	0.81	108.88	0.93	1,128.04

CRP101	Journeyman,Bldg,T&E,NYC,DC	1.00	91.65	MH	55.93	100.00	140.40	12,867.92
CRP102	Foreman,Bldg,T&E,NYC,DC	1.00	91.65	MH	58.93	100.00	144.74	13,265.21
LAB101	Laborer, T&E,NYC,731	0.10	9.16	MH	43.00	100.00	109.99	1,007.47

Activity: 314113C0102 SHEETING, WOOD, 5-12' (Unreviewed) Quantity: 2873 Unit: SF

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	8.36	11.24	19.60	0.00	1.01	0.00	0.00	0.00	0.00	20.61
Total	24,022.87	32,299.95	56,322.82	0.00	2,900.67	0.00	0.00	0.00	0.00	59,223.49

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
19.6042	0.0662	15.1057	296.1357	23.7741	120.8459	0.0083	2,491.0954

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
399.4000	7.1933	0.1390	141.0186	8.3616

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZB0034 SHORING, WOOD, 5-8'.....\* Prod: MU 0.139 Eff: 100.00 Crew Hrs: 190.19 Labor Pcs: 2.10 Equipment Pcs: 0.00  
 Notes: C0240102S00 PER BOARD FT MAT QTY REFLECTS 3 USES 11/7/84

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CLMBR0010	LUMBER, CONST GRD, AVG COST	1.00	3,102.84	BF	0.81	108.88	0.93	2,900.67
CRP101	Journeyman,Bldg,T&E,NYC,DC	1.00	190.19	MH	55.93	100.00	140.40	26,703.23
CRP102	Foreman,Bldg,T&E,NYC,DC	1.00	190.19	MH	58.93	100.00	144.74	27,527.67
LAB101	Laborer, T&E,NYC,731	0.10	19.02	MH	43.00	100.00	109.99	2,091.92

Activity: 314113C0109 (Modified) DEWATERING (INCLUDES RENTAL TANK, PUMP, OPERATIONAL, LABOR & OFF SITE DISPOSAL) (Unreviewed) Quantity: 25 Unit: WKS

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	2,317.15	3,197.38	5,514.54	0.00	0.00	17,513.66	0.00	0.00	0.00	23,028.20
Total	57,928.84	79,934.58	137,863.42	0.00	0.00	437,841.54	0.00	0.00	0.00	575,704.96

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
5,514.5368	22.2222	0.0450	248.1542	69.4444	0.3600	2.7778	8,290.1523

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,250.0100	0.0200	50.0004	110.2899	2,317.1536

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: DWC DEWATERING CREW Prod: MU 50 Eff: 100.00 Crew Hrs: 555.56 Labor Pcs: 2.25 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DISPFEE	DISPOSAL CHARGE FEE	1.00	400,000.00	GAL	0.60	108.88	0.69	276,990.72
3LQPKUP10000	LIQUID PICKUP 10000 GAL	1.00	50.00	PKUP	1,332.40	108.88	1,537.76	76,888.01
3TRANSPORT	TRANSPORTATION MAXIMUM 100 MILES ROUND TRIP	1.00	50.00	TRIP	1,145.00	108.88	1,321.48	66,073.83
3WRILER10000	WATER TANK TRAILER, 10, 000 GALLONS	1.00	25.00	WKS	620.00	108.88	715.56	17,888.98
GLA104	Driver/Journeyman, T&E, NYC, 1087	0.25	138.89	MH	46.84	100.00	120.45	16,728.79
LAB101	Laborer, T&E, NYC, 731	1.00	555.56	MH	43.00	100.00	109.99	61,103.30
OPE104	GRP4B-GEN, MIXERS, T&E, NYC, 15	1.00	555.56	MH	43.66	100.00	108.06	60,031.33

Activity: 316200C0101 PILE EQUIP, MOVE IN/OUT (Unreviewed) Quantity: 2 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	1,326.36	1,714.44	3,040.80	254.74	0.00	0.00	0.00	0.00	0.00	3,295.54
Total	2,652.72	3,428.88	6,081.60	509.47	0.00	0.00	0.00	0.00	0.00	6,591.07

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
3,295.5350	4.3636	0.2292	755.2331	1.0909	1.8333	0.5455	6,041.8645

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
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48.0000	0.0417	24.0000	126.7000	1,326.3600
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Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0030 PILE EQUIP, MOVE IN/OUT Prod: MU 23.9998 Eff: 100.00 Crew Hrs: 8.73 Labor Pcs: 5.50 Equipment Pcs: 2.50

Notes: C0230101S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
8TRAC0401	TRACTOR, 250HP, 4X2	2.00	17.45	HR	25.16	100.00	26.67	465.38
8TRAC0402	TRAILER, 40TON	0.50	4.36	HR	9.54	100.00	10.11	44.09
OPER104	GP. 1.5-PileDrvr, T&E, NYC, 14	0.50	4.36	MH	86.31	100.00	164.15	715.70
OPER206	GRP5A-APPR ENG, T&E, NYC, 15	1.00	8.73	MH	63.37	100.00	139.19	1,215.16
TEAM101	Auto Chaffeur, T&E, NYC, 282	4.00	34.91	MH	45.06	100.00	118.90	4,150.74

Activity: 316200C0102 PILE EQUIP, SETUP (Unreviewed) Quantity: 2 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	3,773.15	5,567.47	9,340.62	1,823.04	0.00	0.00	0.00	0.00	0.00	11,163.65
Total	7,546.30	11,134.93	18,681.23	3,646.07	0.00	0.00	0.00	0.00	0.00	22,327.30

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
11,163.6500	7.4667	0.1339	1,495.1250	1.8667	1.0714	0.9333	11,961.0002

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
112.0000	0.0179	56.0000	166.7967	3,773.1500

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0031 PILE EQUIP, SETUP Prod: MU 56.0003 Eff: 100.00 Crew Hrs: 14.93 Labor Pcs: 7.50 Equipment Pcs: 3.50

Notes: C0230102S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
8COMP2010	AIR COMPRESSOR, 450-600CFM, portable	1.00	14.93	HR	33.72	100.00	35.74	533.65
8CRAN0302	CRANE, 50T, CWLR, HYDR, 40'BM	0.50	7.47	HR	125.16	100.00	132.67	991.05
8PILE0302	PILEDRIVER, HAMMER, 161HP	2.00	29.87	HR	67.00	100.00	71.02	2,121.37
DOC101	Journeyman, T&E, NYC/West, 1456	0.50	7.47	MH	55.93	100.00	174.40	1,302.75
DOC103	Foreman, T&E, NYC/West, 1456	4.00	59.73	MH	58.93	100.00	180.31	10,769.99
OPER104	GP. 1.5-PileDrvr, T&E, NYC, 14	1.00	14.93	MH	86.31	100.00	164.15	2,450.77
OPER206	GRP5A-APPR ENG, T&E, NYC, 15	2.00	29.87	MH	63.37	100.00	139.19	4,157.72

Activity: 316200C0103 PILE EQUIP, DISMANTLE (Unreviewed) Quantity: 2 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	3,773.15	5,567.47	9,340.62	1,823.04	0.00	0.00	0.00	0.00	0.00	11,163.65
Total	7,546.30	11,134.93	18,681.23	3,646.07	0.00	0.00	0.00	0.00	0.00	22,327.30

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
11,163.6500	7.4667	0.1339	1,495.1250	1.8667	1.0714	0.9333	11,961.0002

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
112.0000	0.0179	56.0000	166.7967	3,773.1500

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0031 PILE EQUIP, SETUP Prod: MU 56.0003 Eff: 100.00 Crew Hrs: 14.93 Labor Pcs: 7.50 Equipment Pcs: 3.50

Notes: C0230103S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
8COMP2010	AIR COMPRESSOR, 450-600CFM, portable	1.00	14.93	HR	33.72	100.00	35.74	533.65
8CRAN0302	CRANE, 50T, CWLR, HYDR, 40'BM	0.50	7.47	HR	125.16	100.00	132.67	991.05
8PILE0302	PILEDRIVER, HAMMER, 161HP	2.00	29.87	HR	67.00	100.00	71.02	2,121.37

DOC101	Journeyman, T&E, NYC/West, 1456	0.50	7.47	MH	55.93	100.00	174.40	1,302.75
DOC103	Foreman, T&E, NYC/West, 1456	4.00	59.73	MH	58.93	100.00	180.31	10,769.99
OPER104	GP. 1.5-PileDrvr, T&E, NYC, 14	1.00	14.93	MH	86.31	100.00	164.15	2,450.77
OPER206	GRP5A-APPR ENG, T&E, NYC, 15	2.00	29.87	MH	63.37	100.00	139.19	4,157.72

Activity: 3371183T350 (Modified) FURNISH & INSTALL SHEET PILING (Unreviewed) Quantity: 2210 Unit: SF

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	7.29	8.41	15.70	0.00	4.62	1.92	0.00	0.00	0.00	22.23
Total	16,118.31	18,575.54	34,693.85	0.00	10,202.49	4,237.43	0.00	0.00	0.00	49,133.77

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
15.6986	0.0113	88.4495	1,388.5316	3.1233	707.5963	0.0014	15,731.6161

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
212.3800	10.4059	0.0961	163.3574	7.2934

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0032 PILE, WOOD, TREATED, 12"DIA. Prod: MU 0.0961 Eff: 100.00 Crew Hrs: 24.99 Labor Pcs: 8.50 Equipment Pcs: 0.00

Notes: TPL03500N00\* NOTE\$.39/LB STL SHEETS/ 3USES \$.13@ 35LB/SF= SAY \$4.84 667SF/DAY

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2ENONS0010	NON STD MAT, A @ \$1/NSMA	1.00	8,840.00	NSMA	1.00	108.88	1.15	10,202.49
3COMP2010	AIR COMPRESSOR, 450-600 CFM, portable	1.00	49.95	HR	33.72	108.88	38.92	1,943.91
3CRAN0302	CRANE, 50T, CWLR, HDDR, 40'BM	1.00	2.50	HR	125.16	108.88	144.45	361.13
3PILE0302	PIEDRIVER, HAMMER, 161HP	1.00	24.99	HR	67.00	108.88	77.33	1,932.39
DOC101	Journeyman, T&E, NYC/West, 1456	1.00	24.99	MH	55.93	100.00	174.40	4,358.18
DOC103	Foreman, T&E, NYC/West, 1456	2.00	49.97	MH	58.93	100.00	180.31	9,010.15
OPER104	GP. 1.5-PileDrvr, T&E, NYC, 14	4.00	99.94	MH	86.31	100.00	164.15	16,405.25
OPER117	GP. 3.3-Cmpr, Wldg, T&E, NYC, 14	0.50	12.49	MH	52.37	100.00	115.44	1,441.81
OPER206	GRP5A-APPR ENG, T&E, NYC, 15	1.00	24.99	MH	63.37	100.00	139.19	3,478.46

Activity: 3371183T353 (Modified) MATERIALS HANDLING (Unreviewed) Quantity: 28 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8057	40.0000	0.0250	219.9701	140.0000	0.2000	5.0000	1,759.7611

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
2,240.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 1120.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	2,240.00	MH	43.00	100.00	109.99	246,366.56

Activity: 3371183T355 (Modified) FLAGGERS (Unreviewed) Quantity: 28 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8057	40.0000	0.0250	219.9701	140.0000	0.2000	5.0000	1,759.7611

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
2,240.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 1120.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	2,240.00	MH	43.00	100.00	109.99	246,366.56

Biditem

**EARTHWORKS**

**3000**

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	899,926.36	1,169,410.74	2,069,337.10	12,577.52	418,164.09	446,406.95	0.00	0.00	0.00	2,946,485.66
<b>Total</b>	<b>899,926.36</b>	<b>1,169,410.74</b>	<b>2,069,337.10</b>	<b>12,577.52</b>	<b>418,164.09</b>	<b>446,406.95</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2,946,485.66</b>

	Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
	17,859.3100	0.0001	17,859.3100	164.9832	50.3898	115.8688	0.0002

Activity: 312316C2201 (Modified) EXCAVATE COLUMN BASES EARTH (Unreviewed) Quantity: 10 Unit: CY  
 EXC,HAND,TO 5 -10'D

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	194.61	228.07	422.69	25.02	0.00	269.84	0.00	0.00	0.00	717.55
<b>Total</b>	<b>1,946.14</b>	<b>2,280.73</b>	<b>4,226.87</b>	<b>250.17</b>	<b>0.00</b>	<b>2,698.41</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>7,175.45</b>

	Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
	422.6870	1.5714	0.6364	268.9824	1.9643	5.0909	0.1964	3,652.9530

	Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
	32.9900	0.3031	3.2990	128.1258	194.6140

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0001 CLEANUP,1 MHR/DAY .....\* Prod: MU 3.3 Eff: 100.00 Crew Hrs: 15.71 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0222201S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DSPEARTHMAT	DISPOSAL OF CONTAMINATED EARTH MATERIALS	1.00	11.99	CY	195.00	108.88	225.06	2,698.41
8BKHOE48	→ BACKHOE LOADER, 3/4 CY CAPACITY, 48 HP	0.22	3.45	HR	62.83	108.88	72.51	250.17
LAB101	Laborer, T&E,NYC,731	1.00	15.71	MH	43.00	100.00	109.98	1,727.86
LAB102	Labor Foreman,T&E,NYC,731	0.10	1.57	MH	45.50	100.00	113.46	178.13
OPER213	UTLWLDR/EQ ONSFT,T&E,NYC,15	1.00	15.71	MH	69.32	100.00	147.73	2,320.88

Activity: 312333C2297 EXCAVATE RETAINIG WALL BASES BY,HAND, (Unreviewed) Quantity: 1185 Unit: CY  
 TO 5 ' D

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	100.85	141.87	242.73	0.00	0.00	0.00	0.00	0.00	0.00	242.73
<b>Total</b>	<b>119,511.70</b>	<b>168,117.96</b>	<b>287,629.66</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>287,629.66</b>

	Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
	242.7255	0.9910	1.0091	244.9323	146.7904	8.0727	0.1239	1,959.4582

	Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
	2,607.0000	0.4545	2.2000	110.3298	100.8538

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0196 EARTH BACKFILL Prod: MU 2.2 Eff: 100.00 Crew Hrs: 1174.32 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: C0222301S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	2.00	2,348.65	MH	43.00	100.00	109.99	258,316.44
LAB102	Labor Foreman,T&E,NYC,731	0.22	258.35	MH	45.50	100.00	113.46	29,313.22

Activity: 312333C2298 (Modified) DISPOSAL OF CONTAMINATED (Unreviewed) Quantity: 1190 Unit: CY  
 EXC. AVATED SOIL MATRIALS

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
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U. Cost	17.70	20.74	38.44	10.36	0.00	269.84	0.00	0.00	0.00	318.64
Total	21,059.98	24,680.89	45,740.87	12,327.35	0.00	321,112.92	0.00	0.00	0.00	379,181.14

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
38.4377	0.1429	7.0000	269.0639	21.2500	56.0000	0.0179	17,843.8184

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
357.0000	3.3333	0.3000	128.1257	17.6975

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0001 CLEANUP,1 MHR/DAY .....\* Prod: MU 0.3 Eff: 100.00 Crew Hrs: 170.00 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0222201S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DSPEARTHMAT	DISPOSAL OF CONTAMINATED EARTH MATERIALS	1.00	1,426.82	CY	195.00	108.88	225.05	321,112.92
8BKHOE48	→ BACKHOE LOADER, 3/4 CY CAPACITY, 48 HP	1.00	170.00	HR	62.83	108.88	72.51	12,327.35
LAB101	Laborer, T&E, NYC, 731	1.00	170.00	MH	43.00	100.00	109.99	18,697.47
LAB102	Labor Foreman, T&E, NYC, 731	0.10	17.00	MH	45.50	100.00	113.46	1,928.87
OPER213	UTLWLDLDR/EQ ONSFT, T&E, NYC, 15	1.00	170.00	MH	69.32	100.00	147.73	25,114.53

Activity: 312333C2299 EARTH BACKFILL & COMPACT, BY HAND (Unreviewed) Quantity: 1425 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	51.80	72.87	124.67	0.00	48.47	0.00	0.00	0.00	0.00	173.15
Total	73,818.06	103,840.40	177,658.46	0.00	69,074.56	0.00	0.00	0.00	0.00	246,733.02

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
124.6726	0.5090	1.9646	244.9315	90.6674	15.7168	0.0636	2,721.2977

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,610.2500	0.8850	1.1300	110.3297	51.8021

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0196 EARTH BACKFILL Prod: MU 1.13 Eff: 100.00 Crew Hrs: 725.34 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: C0222301S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2SOIL-S-MAT	SELECTECTECTED SOIL MATERIALS	1.00	1,425.00	CY	42.00	108.88	48.47	69,074.56
LAB101	Laborer, T&E, NYC, 731	2.00	1,450.68	MH	43.00	100.00	109.99	159,553.14
LAB102	Labor Foreman, T&E, NYC, 731	0.22	159.57	MH	45.50	100.00	113.46	18,105.32

Activity: 312333C2300 EXCAVATE FENCE & GATE POST BASES BY HAND, TO 5 - 10'D (Unreviewed) Quantity: 10 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	100.85	141.87	242.73	0.00	0.00	0.00	0.00	0.00	0.00	242.73
Total	1,008.53	1,418.73	2,427.26	0.00	0.00	0.00	0.00	0.00	0.00	2,427.26

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
242.7260	0.9910	1.0091	244.9328	1.2387	8.0727	0.1239	1,959.4628

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
22.0000	0.4545	2.2000	110.3300	100.8530

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0196 EARTH BACKFILL Prod: MU 2.2 Eff: 100.00 Crew Hrs: 9.91 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: C0222301S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	19.82	MH	43.00	100.00	109.99	2,179.91

LAB102	Labor Foreman,T&E,NYC,731	0.22	2.18	MH	45.50	100.00	113.46	247.35
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**Activity: 312333C2301 EARTH BACKFILL & COMPACT BY,HAND (Unreviewed) Quantity: 475 Unit: CY**

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	51.80	72.87	124.67	0.00	0.00	0.00	0.00	0.00	0.00	124.67
Total	24,606.03	34,613.46	59,219.49	0.00	0.00	0.00	0.00	0.00	0.00	59,219.49

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
124.6726	0.5090	1.9646	244.9320	30.2224	15.7168	0.0636	1,959.4561

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
536.7500	0.8850	1.1300	110.3297	51.8022

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0196 EARTH BACKFILL Prod: MU 1.13 Eff: 100.00 Crew Hrs: 241.78 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: C0222301S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	2.00	483.56	MH	43.00	100.00	109.99	53,184.38
LAB102	Labor Foreman,T&E,NYC,731	0.22	53.19	MH	45.50	100.00	113.46	6,035.11

**Activity: 312333C2302 FURNISH , BACKFILL & COMPACT CRUSHED STONE 6" DEPTH (Unreviewed) Quantity: 32 Unit: CY**

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	59.60	83.83	143.43	0.00	59.65	0.00	0.00	0.00	0.00	203.08
Total	1,907.04	2,682.67	4,589.71	0.00	1,908.93	0.00	0.00	0.00	0.00	6,498.64

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
143.4284	0.5856	1.7077	244.9321	2.3423	13.6616	0.0732	2,774.4251

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
41.6000	0.7692	1.3000	110.3296	59.5950

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0196 EARTH BACKFILL Prod: MU 1.3 Eff: 100.00 Crew Hrs: 18.74 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: C0222301S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CONFILL	BACKFILL SELECTED SOIL MATERIAL	1.00	10.00	CY	31.00	108.88	35.78	357.78
2GRAVMAT	SELECTED GRAVEL BACKFILL MATERIAL	1.00	32.00	CY	42.00	108.88	48.47	1,551.15
LAB101	Laborer, T&E,NYC,731	2.00	37.48	MH	43.00	100.00	109.99	4,122.24
LAB102	Labor Foreman,T&E,NYC,731	0.22	4.12	MH	45.50	100.00	113.46	467.47

**Activity: 313219161550 GEOTEXTILE NON WOVEN FABRIC PLACED UNDER SUB-BASE MATERIAL (Unreviewed) Quantity: 29333 Unit: SY**

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	0.27	0.02	0.29	0.00	0.99	0.00	0.00	0.00	0.00	1.28
Total	7,854.18	600.84	8,455.02	0.00	29,114.47	0.00	0.00	0.00	0.00	37,569.49

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
176.0000	166.6648	0.0060	48.0399	0.2678

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: Geosynthetic soil stabilization, geotextile fabric, non-woven, 120 lb. tensile strength, includes scarifying and compaction

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-93ML27EE	Geosynthetic soil stabilizat	1.00	29,333.00	SY	0.86	108.88	0.99	29,114.47
RS-CLAB	→ Common Building Laborers	2.00	176.00	MH	42.10	100.00	48.04	8,455.02

**Activity:** 314113C0109 (Modified) DEWATERING (INCLUDES RENTAL TANK, PUMP, OPERATIONAL, LABOR & OFF SITE DISPOSAL) (Unreviewed) **Quantity:** 7 **Unit:** WKS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	2,317.20	3,197.45	5,514.65	0.00	0.00	17,513.66	0.00	0.00	0.00	23,028.31
<b>Total</b>	<b>16,220.42</b>	<b>22,382.13</b>	<b>38,602.55</b>	<b>0.00</b>	<b>0.00</b>	<b>122,595.62</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>161,198.17</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
5,514.6500	22.2222	0.0450	248.1593	19.4444	0.3600	2.7778	8,290.1946

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
350.0100	0.0200	50.0014	110.2898	2,317.2029

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: DWC DEWATERING CREW Prod: MU 50 Eff: 100.00 Crew Hrs: 155.56 Labor Pcs: 2.25 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DISPFEE	DISPOSAL CHARGE FEE	1.00	112,000.00	GAL	0.60	108.88	0.69	77,557.40
3LQPKUP10000	LIQUID PICKUP 10000 GAL	1.00	14.00	PKUP	1,332.40	108.88	1,537.76	21,528.64
3TRASPORT	TRANSPORTATION MAXIMUM 100 MILES ROUND TRIP	1.00	14.00	TRIP	1,145.00	108.88	1,321.48	18,500.67
3WRILER10000	WATER TANK TRAILER, 10, 000 GALLONS	1.00	7.00	WKS	620.00	108.88	715.56	5,008.91
GLA104	Driver/Journeyman, T&E, NYC, 1087	0.25	38.89	MH	46.84	100.00	120.45	4,684.16
LAB101	Laborer, T&E, NYC, 731	1.00	155.56	MH	43.00	100.00	109.99	17,109.27
OPE104	GRP4B-GEN, MIXERS, T&E, NYC, 15	1.00	155.56	MH	43.66	100.00	108.06	16,809.12

**Activity:** 3212109P0755 (Modified) FURNISH & PLACE CRSHD STN, FOR CONC. PAVT BASE, TO 8" (Unreviewed) **Quantity:** 8890 **Unit:** CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	60.43	75.91	136.34	0.00	35.78	0.00	0.00	0.00	0.00	172.11
<b>Total</b>	<b>537,187.88</b>	<b>674,830.37</b>	<b>1,212,018.25</b>	<b>0.00</b>	<b>318,066.13</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,530,084.38</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
136.3350	0.2825	3.5398	482.6018	313.9281	28.3186	0.0353	4,873.9959

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
10,045.7100	0.8850	1.1300	120.6503	60.4261

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZD0344 REMOVE CURB, STONE Prod: MU 1.13 Eff: 100.00 Crew Hrs: 2511.43 Labor Pcs: 4.00 Equipment Pcs: 0.00

Notes: P2000755S00 PRODUCT. 47 CY/ DAY

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2SESTMAT	CRCRASHED STONE MATERIAL	1.00	8,890.00	CY	31.00	108.88	35.78	318,066.13
LAB103	Utility Laborer, T&E, NYC, 731	2.00	5,022.85	MH	42.85	100.00	109.79	551,472.29
LAB104	Utility Laborer Foreman, T&E, NYC, 731	1.00	2,511.43	MH	45.35	100.00	113.25	284,418.52
OPER202	CRP2-CHPKR<20TON, T&E, NYC, 15	1.00	2,511.43	MH	70.74	100.00	149.77	376,127.44

**Activity:** 3371183T353 (Modified) MATERIALS HANDLING - CAPITAL (Unreviewed) **Quantity:** 10 **Unit:** WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8060	40.0000	0.0250	219.9702	50.0000	0.2000	5.0000	1,759.7612

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
800.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 400.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	800.00	MH	43.00	100.00	109.99	87,988.06

Activity: 3371183T354 (Modified) MATERIALS HANDLING - RETIREMENT (Unreviewed) Quantity: 3 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8067	40.0000	0.0250	219.9702	15.0000	0.2000	5.0000	1,759.7613

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
240.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 120.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	240.00	MH	43.00	100.00	109.99	26,396.42

Activity: 3371183T355 (Modified) FLAGGERS - CAPITAL (Unreviewed) Quantity: 10 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8060	40.0000	0.0250	219.9702	50.0000	0.2000	5.0000	1,759.7612

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
800.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 400.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	800.00	MH	43.00	100.00	109.99	87,988.06

Activity: 3371183T356 (Modified) FLAGGERS - RETIREMENT (Unreviewed) Quantity: 3 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8067	40.0000	0.0250	219.9702	15.0000	0.2000	5.0000	1,759.7613

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
240.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 120.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	240.00	MH	43.00	100.00	109.99	26,396.42

Biditem

SOIL STOCKPILE PAD

**3100**

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	16,226.95	16,792.96	33,019.91	0.00	13,974.19	7,441.67	0.00	0.00	0.00	54,435.77
Total	16,226.95	16,792.96	33,019.91	0.00	13,974.19	7,441.67	0.00	0.00	0.00	54,435.77

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
324.5300	0.0031	324.5300	167.7373	50.0014	101.7469	0.0172

Activity: 071213200700 (Modified) MEMBRANE WATERPROOFING ON TOP LAYER (Unreviewed) Quantity: 2000 Unit: SF

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	1.63	0.00	1.63	0.00	1.56	0.42	0.00	0.00	0.00	3.61
Total	3,267.39	0.00	3,267.39	0.00	3,116.15	834.30	0.00	0.00	0.00	7,217.84

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
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1.6337	0.0051	196.0784	320.3324	1.2750	1,568.6275	0.0006	5,661.0510
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Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
71.4000	28.0112	0.0357	45.7618	1.6337

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-G1 RSMans - G1 Crew Prod: US 1568.6275 Eff: 100.00 Crew Hrs: 10.20 Labor Pcs: 7.00 Equipment Pcs: 0.00

Notes: Membrane waterproofing, on slabs, glass fiber fabric, 3 ply, mopped

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-22AA6D9S	Membrane waterproofing, on s	1.00	2,000.00	SF	1.35	108.88	1.56	3,116.15
3RS-100900	APPLICATION EQUIPMENT	1.00	10.20	HR	24.11	108.88	27.83	283.83
3RS-406340	TAR KETTLE/POT	1.00	10.20	HR	25.98	108.88	29.98	305.84
3RS-407250	CREW TRUCK	1.00	10.20	HR	20.78	108.88	23.98	244.63
RS-ROFC	Roofers, Composition	4.00	40.80	MH	46.20	100.00	48.97	1,998.06
RS-ROFCO	Roofer Foreman (outside)	1.00	10.20	MH	48.20	100.00	51.09	521.14
RS-ROHE	Roofers, Helpers (Composition)	2.00	20.40	MH	34.60	100.00	36.68	748.19

Activity: 3212139P6201	(Modified) FURNISH, PLACE BACKFILL, & COMPACT SAND	(Unreviewed)	Quantity: 134	Unit: CY
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	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	60.43	75.91	136.34	0.00	48.47	45.99	0.00	0.00	0.00	230.81
Total	8,097.70	10,172.49	18,270.19	0.00	6,495.44	6,162.52	0.00	0.00	0.00	30,928.15

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
136.3447	0.2825	3.5398	482.6361	4.7319	28.3186	0.0353	6,536.1300

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
151.4300	0.8849	1.1301	120.6511	60.4306

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZD0344 REMOVE CURB,STONE Prod: MU 1.13 Eff: 100.00 Crew Hrs: 37.86 Labor Pcs: 4.00 Equipment Pcs: 0.00

Notes: P2006201S00 PRODUCT. 105 CY/ DAY

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2SELSAND	SELECTED SAND	1.00	134.00	CY	42.00	108.88	48.47	6,495.44
3LOAD5060	LOADER CAT, 4468, 95HP, 1.51	1.00	75.71	HR	61.05	108.88	70.46	5,334.49
3PICK0702	PICKUP, 1TON, 4X4 180 HP	1.00	37.86	HR	18.95	108.88	21.87	828.03
LAB103	Utility Laborer, T&E, NYC, 731	2.00	75.71	MH	42.85	100.00	109.79	8,312.40
LAB104	Utility Laborer Foreman, T&E, NYC, 731	1.00	37.86	MH	45.35	100.00	113.25	4,287.64
OPER202	CRP2-CHPKR<20TON, T&E, NYC, 15	1.00	37.86	MH	70.74	100.00	149.77	5,670.15

Activity: 3212139P6202	(Modified) FURNISH, PLACE BACKFILL, & COMPACT NYDOT AGGREGATE TYPE 1	(Unreviewed)	Quantity: 90	Unit: CY
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	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	54.02	73.56	127.58	0.00	48.47	4.94	0.00	0.00	0.00	181.00
Total	4,861.86	6,620.47	11,482.33	0.00	4,362.60	444.85	0.00	0.00	0.00	16,289.78

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
127.5814	0.1130	8.8496	1,129.0393	1.2713	70.7965	0.0141	12,813.9862

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
101.7000	0.8850	1.1300	112.9039	54.0207

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0090 DUCT, PRECAST CONCRETE, 4" Prod: MU 1.13 Eff: 100.00 Crew Hrs: 10.17 Labor Pcs: 10.00 Equipment Pcs: 0.00

Notes: P2006202S00 PRODUCT. 102 CY/ DAY

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
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2NYDOT-AGTY1	NYDOT TYPE 1 AGGREGATE	1.00	90.00	CY	42.00	108.88	48.47	4,362.60
3PICK0702	PICKUP, 1TON, 4X4 180 HP	1.00	20.34	HR	18.95	108.88	21.87	444.85
LAB103	Utility Laborer,T&E,NYC,731	1.00	10.17	MH	42.85	100.00	109.79	1,116.59
LAB104	Utility Laborer Foreman,T&E,NYC,731	9.00	91.53	MH	45.35	100.00	113.25	10,365.74

**Biditem**

**3200**

**CONCRETE**

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	2,652,644.09	3,149,319.34	5,801,963.43	926.83	4,503,705.71	671,754.90	0.00	0.00	0.00	10,978,350.87
<b>Total</b>	<b>2,652,644.09</b>	<b>3,149,319.34</b>	<b>5,801,963.43</b>	<b>926.83</b>	<b>4,503,705.71</b>	<b>671,754.90</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>10,978,350.87</b>

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
52,795.9100	0.0000	52,795.9100	207.9394	50.2434	109.8942	0.0001

Activity: 021612C1101 (Modified) REMOVE FDN & RETAINING WALLS, REINF CONCRETE (Unreviewed) Quantity: 580 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	226.76	268.85	495.61	0.00	0.00	55.49	0.00	0.00	0.00	551.10
<b>Total</b>	<b>131,522.05</b>	<b>155,934.14</b>	<b>287,456.19</b>	<b>0.00</b>	<b>0.00</b>	<b>32,183.35</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>319,639.54</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
495.6141	0.4939	2.0247	1,003.4601	35.8081	16.1974	0.0617	8,926.4529

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
2,354.7400	0.2463	4.0599	122.0756	226.7622

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0159 REMOVE FOUNDATION,CONC Prod: MU 4.0599 Eff: 100.00 Crew Hrs: 286.47 Labor Pcs: 8.22 Equipment Pcs: 0.00

Notes: C0211101S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3COMP2010	AIR COMPRESSOOR, 450-600 CFM, portable	1.00	63.02	HR	33.72	108.88	38.92	2,452.56
3DISPCONCMAT	DISPOSAL OF CONCRETE MATERIALS	1.00	23.00	PKUP	950.00	108.88	1,096.42	25,217.70
3LOAD5070	LOADER, CAT, 446B, 95HP, 1.52	1.00	63.02	HR	62.05	108.88	71.61	4,513.09
LAB101	Laborer, T&E,NYC,731	2.00	572.93	MH	43.00	100.00	109.99	63,013.75
LAB102	Labor Foreman,T&E,NYC,731	2.00	572.93	MH	45.50	100.00	113.46	65,006.48
OPER117	GP.3.3-Cmpr,Wldg,T&E,NYC,14	2.00	572.93	MH	52.37	100.00	115.44	66,137.42
OPER202	CRP2-CHPKR<20TON,T&E,NYC,15	2.00	572.93	MH	70.74	100.00	149.77	85,805.57
TEAM101	Auto Chaffeur,T&E,NYC,282	0.22	63.02	MH	45.06	100.00	118.90	7,492.97

Activity: 021638C1540 (Modified) SAW CUT 10"THK INTO EXISTING PAVEMENT SLAB (Unreviewed) Quantity: 2000 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	4.04	4.97	9.02	0.00	0.00	0.07	0.00	0.00	0.00	9.08
<b>Total</b>	<b>8,087.37</b>	<b>9,946.41</b>	<b>18,033.78</b>	<b>0.00</b>	<b>0.00</b>	<b>131.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>18,164.89</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9.0169	0.0400	25.0000	225.4223	10.0000	200.0000	0.0050	1,816.4890

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
160.0000	12.5000	0.0800	112.7111	4.0437

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0179 SAW CUT SLAB Prod: MU 0.08 Eff: 100.00 Crew Hrs: 80.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Notes: C0211540S00 EQP.USED FOR ACTUAL CUT MAY DIFFER FROM THAT SHOWN ABOVE. ----- EQP. COSTS ARE JUDGED TO COVER APPLICABLE COSTS.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3CONC8090	CONCRETE SAW, 7.0 HP	1.00	80.00	HR	1.42	108.88	1.64	131.11
LAB101	Laborer, T&E, NYC, 731	1.00	80.00	MH	43.00	100.00	109.99	8,798.87
OPER117	GP.3.3-Cmpr,Wldg,T&E, NYC, 14	1.00	80.00	MH	52.37	100.00	115.44	9,234.97

Activity: 024113175400 (Modified) REM CONCRETE PAVEMENT & CURB (Unreviewed) Quantity: 6300 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	61.17	3.56	64.73	0.00	0.00	43.41	0.00	0.00	0.00	108.14
Total	385,342.76	22,451.14	407,793.90	0.00	0.00	273,466.45	0.00	0.00	0.00	681,260.35

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
64.7292	0.2424	4.1254	267.0346	190.8900	33.0033	0.0303	3,568.8635

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
7,635.6000	0.8251	1.2120	53.4069	61.1655

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B38 RSMans - B38 Crew Prod: US 33.0033 Eff: 100.00 Crew Hrs: 1527.12 Labor Pcs: 5.00 Equipment Pcs: 0.00

Notes: Demolish, remove pavement & curb, remove concrete, plain, 7" to 24" thick, excludes hauling and disposal fees

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3RS-200450	BACKHOE LOADER, 48 H.P	1.00	1,527.11	HR	26.72	108.88	30.84	47,093.48
3RS-200486	HYDRAULIC HAMMER (1200 LB)	1.00	1,527.11	HR	21.89	108.88	25.26	38,580.69
3RS-204730	F.E LOADER, W..M., 48 H.P	1.00	1,527.11	HR	98.67	108.88	113.88	173,903.94
3RS-500740	PVMT. REM. BUCKET	1.00	1,527.11	HR	7.88	108.88	9.09	13,888.34
RS-CLAB	Common Building Laborers	2.00	3,054.24	MH	42.10	100.00	48.04	146,725.35
RS-CLABO	Labor Foreman (outside)	1.00	1,527.12	MH	44.10	100.00	50.32	76,847.84
RS-EQLT	Equipment Operators, Light Equipment	1.00	1,527.12	MH	53.00	100.00	60.48	92,356.81
RS-EQMD	Equipment Operators, Medium Equipment	1.00	1,527.12	MH	56.75	100.00	60.15	91,863.90

Activity: 024113175501 DISPOSAL OF CONCRETE MATERIALS (Unreviewed) Quantity: 7550 Unit: CY

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DISPMAT-101	DISPOSAL OF DEBRIS MATERIALS	1.00	7,550.00	CY	42.00	108.88	48.47	365,973.99

Activity: 031110C0001 FORM, FOOTING, CONTINUOUS (Unreviewed) Quantity: 2000 Unit: SF

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	4.88	6.63	11.51	0.00	1.15	0.00	0.00	0.00	0.00	12.66
Total	9,761.02	13,256.94	23,017.96	0.00	2,308.26	0.00	0.00	0.00	0.00	25,326.22

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
11.5090	0.0213	46.9484	540.3277	5.3250	375.5869	0.0027	4,756.0977

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
179.7700	11.1253	0.0899	128.0412	4.8805

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0231 FORM, FOOTING, CONTINUOUS Prod: MU 0.0899 Eff: 100.00 Crew Hrs: 42.60 Labor Pcs: 4.22 Equipment Pcs: 0.00

Notes: C0310001S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CFMW0010	FORMWORK, AVG. MAT, 2 USES	1.00	2,000.00	SF	1.00	108.88	1.15	2,308.26
CRP101	Journeyman, Bldg, T&E, NYC, DC	0.22	9.37	MH	55.93	100.00	140.40	1,315.57
CRP102	Foreman, Bldg, T&E, NYC, DC	2.00	85.20	MH	58.93	100.00	144.74	12,331.66

LAB101	Laborer, T&E, NYC, 731	2.00	85.20	MH	43.00	100.00	109.99	9,370.73
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**Activity: 031110C0011 FORM, WALL, TO 8'H (Unreviewed) Quantity: 7260 Unit: SF**

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	4.23	5.74	9.97	0.00	1.15	0.00	0.00	0.00	0.00	11.13
<b>Total</b>	<b>30,698.70</b>	<b>41,691.93</b>	<b>72,390.63</b>	<b>0.00</b>	<b>8,378.97</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>80,769.60</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9.9712	0.0371	26.9542	268.7645	33.6683	215.6334	0.0046	2,398.9842

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
565.6300	12.8352	0.0779	127.9823	4.2285

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0037 FORM, FTG, SPREAD AND PIER\* Prod: MU 0.0779 Eff: 100.00 Crew Hrs: 269.35 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0310011S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CFMW0010	FORMWORK, AVG. MAT, 2 USES	1.00	7,260.00	SF	1.00	108.88	1.15	8,378.97
CRP101	Journeyman, Bldg, T&E, NYC, DC	0.10	26.93	MH	55.93	100.00	140.40	3,781.04
CRP102	Foreman, Bldg, T&E, NYC, DC	1.00	269.35	MH	58.93	100.00	144.74	38,985.11
LAB101	Laborer, T&E, NYC, 731	1.00	269.35	MH	43.00	100.00	109.99	29,624.48

**Activity: 031110C0026 FORM, SLAB, ON GRADE, EDGE (Unreviewed) Quantity: 3000 Unit: SF**

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	3.26	4.43	7.69	0.00	1.15	0.00	0.00	0.00	0.00	8.84
<b>Total</b>	<b>9,778.99</b>	<b>13,280.88</b>	<b>23,059.87</b>	<b>0.00</b>	<b>3,462.38</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>26,522.25</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
7.6866	0.0286	34.9650	268.7631	10.7250	279.7203	0.0036	2,472.9371

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
180.1800	16.6500	0.0601	127.9824	3.2597

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0037 FORM, FTG, SPREAD AND PIER\* Prod: MU 0.0601 Eff: 100.00 Crew Hrs: 85.80 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0310026S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CFMW0010	FORMWORK, AVG. MAT, 2 USES	1.00	3,000.00	SF	1.00	108.88	1.15	3,462.38
CRP101	Journeyman, Bldg, T&E, NYC, DC	0.10	8.58	MH	55.93	100.00	140.40	1,204.66
CRP102	Foreman, Bldg, T&E, NYC, DC	1.00	85.80	MH	58.93	100.00	144.74	12,418.49
LAB101	Laborer, T&E, NYC, 731	1.00	85.80	MH	43.00	100.00	109.99	9,436.72

**Activity: 031110C00311 FORM, FOOTING, CONTINUOUS (Unreviewed) Quantity: 2365 Unit: SF**

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	1.08	1.47	2.55	0.00	1.15	0.00	0.00	0.00	0.00	3.71
<b>Total</b>	<b>2,561.18</b>	<b>3,478.36</b>	<b>6,039.54</b>	<b>0.00</b>	<b>2,729.51</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>8,769.05</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
2.5537	0.0095	105.2632	268.8123	2.8084	842.1053	0.0012	3,122.3946

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
47.1900	50.1166	0.0200	127.9835	1.0830

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0037 FORM, FTG, SPREAD AND PIER\* Prod: MU 0.02 Eff: 100.00 Crew Hrs: 22.47 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0310031N00\*

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
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2CFMW0010	FORMWORK,AVG.MAT,2 USES	1.00	2,365.00	SF	1.00	108.88	1.15	2,729.51
CRP101	Journeyman,Bldg,T&E,NYC,DC	0.10	2.25	MH	55.93	100.00	140.40	315.91
CRP102	Foreman,Bldg,T&E,NYC,DC	1.00	22.47	MH	58.93	100.00	144.74	3,252.26
LAB101	Laborer, T&E,NYC,731	1.00	22.47	MH	43.00	100.00	109.99	2,471.37

**Activity: 032100C0101 REBAR (EPOXY COATED), FOOTING,CONTINUOUS (Unreviewed) Quantity: 42 Unit: TON**

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	502.24	721.01	1,223.25	0.00	1,477.28	0.00	0.00	0.00	0.00	2,700.53
<b>Total</b>	<b>21,094.06</b>	<b>30,282.31</b>	<b>51,376.37</b>	<b>0.00</b>	<b>62,045.92</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>113,422.29</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,223.2469	3.1250	0.3200	391.4390	16.4063	2.5600	0.3906	6,913.3586

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
420.0000	0.1000	10.0000	122.3247	502.2395

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0038 REBAR,FOOT,SPREAD/PIER.\* Prod: MU 10 Eff: 100.00 Crew Hrs: 131.25 Labor Pcs: 3.20 Equipment Pcs: 0.00

Notes: C0320101S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CRBR0010	REBAR EPOXY COATED ,ASTM A615, GRADE 60	1.00	42.00	TON	1,280.00	108.88	1,477.28	62,045.92
LAB101	Laborer, T&E,NYC,731	1.00	131.25	MH	43.00	100.00	109.99	14,435.55
LAT101	Journeyman,T&E,NYC,46	0.20	26.25	MH	44.65	106.25	125.25	3,287.75
LAT102	Journeyman - Alone,T&E,NYC,46	2.00	262.50	MH	46.65	106.25	128.20	33,653.07

**Activity: 032100C01011 REBAR (EPOXY COATED) ,FURNISH & INSTALL IN POST BASES (Unreviewed) Quantity: 45.6 Unit: TON**

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	1,180.14	1,688.66	2,868.80	0.00	1,477.28	0.00	0.00	0.00	0.00	4,346.08
<b>Total</b>	<b>53,814.59</b>	<b>77,002.72</b>	<b>130,817.31</b>	<b>0.00</b>	<b>67,364.14</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>198,181.45</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
2,868.8007	11.3858	0.0878	251.9631	64.8990	0.7026	1.4232	3,053.6886

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,095.4900	0.0416	24.0239	119.4144	1,180.1445

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0235 REBAR,FURNISH AND INSTALL Prod: MU 24.024 Eff: 100.00 Crew Hrs: 519.19 Labor Pcs: 2.11 Equipment Pcs: 0.00

Notes: C0320101N01\*

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CRBR0010	REBAR EPOXY COATED ,ASTM A615, GRADE 60	1.00	45.60	TON	1,280.00	108.88	1,477.28	67,364.14
LAB101	Laborer, T&E,NYC,731	1.00	519.19	MH	43.00	100.00	109.99	57,103.15
LAT101	Journeyman,T&E,NYC,46	0.11	57.11	MH	44.65	106.25	125.25	7,152.87
LAT102	Journeyman - Alone,T&E,NYC,46	1.00	519.19	MH	46.65	106.25	128.20	66,561.29

**Activity: 032100C0106 REBAR (EPOXY COATED) ,WALL (Unreviewed) Quantity: 18 Unit: TON**

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	904.84	1,298.98	2,203.81	0.00	1,477.28	0.00	0.00	0.00	0.00	3,681.10
<b>Total</b>	<b>16,287.10</b>	<b>23,381.55</b>	<b>39,668.65</b>	<b>0.00</b>	<b>26,591.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>66,259.76</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
2,203.8139	5.6300	0.1776	391.4412	12.6675	1.4210	0.7038	5,230.6896

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
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324.2900	0.0555	18.0161	122.3246	904.8389
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Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0038 REBAR,FOOT,SPREAD/PIER.\* Prod: MU 18.016 Eff: 100.00 Crew Hrs: 101.34 Labor Pcs: 3.20 Equipment Pcs: 0.00

Notes: C0320106S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CRBR0010	REBAR EPOXY COATED ,ASTM A615, GRADE 60	1.00	18.00	TON	1,280.00	108.88	1,477.28	26,591.11
LAB101	Laborer, T&E, NYC, 731	1.00	101.34	MH	43.00	100.00	109.99	11,145.89
LAT101	Journeyman, T&E, NYC, 46	0.20	20.27	MH	44.65	106.25	125.25	2,538.75
LAT102	Journeyman - Alone, T&E, NYC, 46	2.00	202.68	MH	46.65	106.25	128.20	25,984.01

Activity: 032100C0114 REBAR (EPOXY COATED) ,SLAB ON GRADE - CAPITAL (Unreviewed) Quantity: 1035 Unit: TON

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	452.47	649.55	1,102.02	0.00	1,477.28	0.00	0.00	0.00	0.00	2,579.30
Total	468,301.85	672,287.35	1,140,589.20	0.00	1,528,988.77	0.00	0.00	0.00	0.00	2,669,577.97

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,102.0186	2.8153	0.3552	391.4391	364.2294	2.8416	0.3519	7,329.3855

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
9,324.2800	0.1110	9.0090	122.3246	452.4656

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0038 REBAR,FOOT,SPREAD/PIER.\* Prod: MU 9.009 Eff: 100.00 Crew Hrs: 2913.84 Labor Pcs: 3.20 Equipment Pcs: 0.00

Notes: C0320114S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CRBR0010	REBAR EPOXY COATED ,ASTM A615, GRADE 60	1.00	1,035.00	TON	1,280.00	108.88	1,477.28	1,528,988.77
LAB101	Laborer, T&E, NYC, 731	1.00	2,913.84	MH	43.00	100.00	109.99	320,478.89
LAT101	Journeyman, T&E, NYC, 46	0.20	582.77	MH	44.65	106.25	125.25	72,990.39
LAT102	Journeyman - Alone, T&E, NYC, 46	2.00	5,827.67	MH	46.65	106.25	128.20	747,119.92

Activity: 032100C0115 REBAR (EPOXY COATED) ,SLAB ON GRADE- EXPENSE (Unreviewed) Quantity: 345 Unit: TON

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	452.47	649.55	1,102.02	0.00	1,477.28	0.00	0.00	0.00	0.00	2,579.30
Total	156,100.97	224,096.28	380,197.25	0.00	509,662.92	0.00	0.00	0.00	0.00	889,860.17

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,102.0210	2.8153	0.3552	391.4400	121.4098	2.8416	0.3519	7,329.3925

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
3,108.1000	0.1110	9.0090	122.3247	452.4666

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0038 REBAR,FOOT,SPREAD/PIER.\* Prod: MU 9.009 Eff: 100.00 Crew Hrs: 971.28 Labor Pcs: 3.20 Equipment Pcs: 0.00

Notes: C0320114S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CRBR0010	REBAR EPOXY COATED ,ASTM A615, GRADE 60	1.00	345.00	TON	1,280.00	108.88	1,477.28	509,662.92
LAB101	Laborer, T&E, NYC, 731	1.00	971.28	MH	43.00	100.00	109.99	106,826.30
LAT101	Journeyman, T&E, NYC, 46	0.20	194.26	MH	44.65	106.25	125.25	24,330.55
LAT102	Journeyman - Alone, T&E, NYC, 46	2.00	1,942.56	MH	46.65	106.25	128.20	249,040.40

**Activity: 033200C0102 (Modified) CAST IN PLACE CONCRETE FOR FOUNDATIONS & RETAINING WALL (Unreviewed) Quantity: 585 Unit: CY**

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	89.91	124.49	214.40	0.00	260.19	0.00	0.00	0.00	0.00	474.59
<b>Total</b>	<b>52,595.02</b>	<b>72,828.77</b>	<b>125,423.79</b>	<b>0.00</b>	<b>152,212.81</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>277,636.60</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
214.3996	0.2571	3.8889	833.7762	18.8036	31.1111	0.0321	14,765.0965

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,053.0100	0.5556	1.8000	119.1098	89.9060

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0039 CONCFGTG/PILECAP/PIER(DC.\* Prod: MU 1.8 Eff: 100.00 Crew Hrs: 150.43 Labor Pcs: 7.00 Equipment Pcs: 0.00

Notes: C0330102S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CONCCO5000	CONCRETE 5000 PSI	1.00	585.00	CY	225.00	108.88	259.68	151,912.10
2CONCCVIBG	GAS CONCRETE VIBRATOR	2.00	63.24	HR	4.12	108.88	4.76	300.71
CMT101	Cement Mason Journeyman, T&E, NYC, 780	1.00	150.43	MH	51.97	100.00	124.70	18,758.58
CRP101	Journeyman, Bldg, T&E, NYC, DC	1.00	150.43	MH	55.93	100.00	140.40	21,120.81
LAB101	Laborer, T&E, NYC, 731	3.00	451.29	MH	43.00	100.00	109.99	49,635.17
LAB102	Labor Foreman, T&E, NYC, 731	1.00	150.43	MH	45.50	100.00	113.46	17,068.28
LAT101	Journeyman, T&E, NYC, 46	1.00	150.43	MH	44.65	106.25	125.25	18,840.95

**Activity: 033200C0103 (Modified) CAST IN PLACE CONCRETE FOR PAVEMENT & CURBS - CAPITAL (Unreviewed) Quantity: 5430 Unit: CY**

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	89.91	124.49	214.40	0.00	260.19	0.00	0.00	0.00	0.00	474.59
<b>Total</b>	<b>488,185.91</b>	<b>675,995.34</b>	<b>1,164,181.25</b>	<b>0.00</b>	<b>1,412,847.07</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2,577,028.32</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
214.3980	0.2571	3.8889	833.7699	174.5358	31.1111	0.0321	14,765.0457

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
9,774.0200	0.5556	1.8000	119.1098	89.9053

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0039 CONCFGTG/PILECAP/PIER(DC.\* Prod: MU 1.8 Eff: 100.00 Crew Hrs: 1396.29 Labor Pcs: 7.00 Equipment Pcs: 0.00

Notes: C0330102S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CONCCO5000	CONCRETE 5000 PSI	1.00	5,430.00	CY	225.00	108.88	259.68	1,410,055.88
2CONCCVIBG	GAS CONCRETE VIBRATOR	2.00	587.00	HR	4.12	108.88	4.76	2,791.19
CMT101	Cement Mason Journeyman, T&E, NYC, 780	1.00	1,396.29	MH	51.97	100.00	124.70	174,116.91
CRP101	Journeyman, Bldg, T&E, NYC, DC	1.00	1,396.29	MH	55.93	100.00	140.40	196,043.13
LAB101	Laborer, T&E, NYC, 731	3.00	4,188.86	MH	43.00	100.00	109.99	460,712.05
LAB102	Labor Foreman, T&E, NYC, 731	1.00	1,396.29	MH	45.50	100.00	113.46	158,427.54
LAT101	Journeyman, T&E, NYC, 46	1.00	1,396.29	MH	44.65	106.25	125.25	174,881.62

**Activity: 033200C0104 (Modified) CAST IN PLACE CONCRETE FOR PAVEMENT & CURBS- EXPENSE (Unreviewed) Quantity: 2720 Unit: CY**

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	89.91	124.49	214.40	0.00	260.19	0.00	0.00	0.00	0.00	474.59
<b>Total</b>	<b>244,542.46</b>	<b>338,620.12</b>	<b>583,162.58</b>	<b>0.00</b>	<b>707,724.50</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,290,887.08</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
214.3980	0.2571	3.8889	833.7700	87.4286	31.1111	0.0321	14,765.0477

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
4,896.0100	0.5556	1.8000	119.1098	89.9053

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0039 CONCFGTG/PILECAP/PIER(DC.\* Prod: MU 1.8 Eff: 100.00 Crew Hrs: 699.43 Labor Pcs: 7.00 Equipment Pcs: 0.00

Notes: C0330102S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CONCCO5000	CONCRETE 5000 PSI	1.00	2,720.00	CY	225.00	108.88	259.68	706,326.34
2CONCCVIBG	GAS CONCRETE VIBRATOR	2.00	294.04	HR	4.12	108.88	4.75	1,398.16
CMT101	Cement Mason Journeyman, T&E, NYC, 780	1.00	699.43	MH	51.97	100.00	124.70	87,218.70
CRP101	Journeyman, Bldg, T&E, NYC, DC	1.00	699.43	MH	55.93	100.00	140.40	98,201.98
LAB101	Laborer, T&E, NYC, 731	3.00	2,098.29	MH	43.00	100.00	109.99	230,780.57
LAB102	Labor Foreman, T&E, NYC, 731	1.00	699.43	MH	45.50	100.00	113.46	79,359.57
LAT101	Journeyman, T&E, NYC, 46	1.00	699.43	MH	44.65	106.25	125.25	87,601.76

Activity: 033500C3501 FINISH, MONOLITHIC, MACH (Unreviewed) Quantity: 240000 Unit: SF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	0.99	1.25	2.24	0.00	0.00	0.00	0.00	0.00	0.00	2.25
Total	237,981.02	300,721.59	538,702.61	926.83	0.00	0.00	0.00	0.00	0.00	539,629.44

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
2.2485	0.0090	111.1111	249.8284	270.0000	888.8889	0.0011	1,998.6276

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
4,320.0000	55.5556	0.0180	124.6997	0.9916

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0248 FINISH, MONOLITHIC, MACH Prod: MU 0.018 Eff: 100.00 Crew Hrs: 2160.00 Labor Pcs: 2.00 Equipment Pcs: 0.22

Notes: C0333501S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
8CONC8130	CONCRETE TROWEL, 5HP, 36"DI	0.22	475.20	HR	1.84	100.00	1.95	926.83
CMT101	Cement Mason Journeyman, T&E, NYC, 780	2.00	4,320.00	MH	51.97	100.00	124.70	538,702.61

Activity: 033500C3511 CURE & PROTECT, CONCRETE (Unreviewed) Quantity: 240000 Unit: SF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	0.46	0.64	1.10	0.00	0.08	0.00	0.00	0.00	0.00	1.18
Total	109,912.24	154,614.37	264,526.61	0.00	19,389.35	0.00	0.00	0.00	0.00	283,915.96

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1.1022	0.0045	222.2222	244.9320	135.0000	1,777.7778	0.0006	2,103.0812

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
2,397.6000	100.1001	0.0100	110.3298	0.4580

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0249 CURE & PROTECT, CONCRETE Prod: MU 0.01 Eff: 100.00 Crew Hrs: 1080.00 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: C0333511S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CCURIO010	CURING PAPER, 2 PLY, REINF	1.00	240,000.00	SF	0.07	108.88	0.08	19,389.35
LAB101	Laborer, T&E, NYC, 731	2.00	2,160.00	MH	43.00	100.00	109.99	237,567.75
LAB102	Labor Foreman, T&E, NYC, 731	0.22	237.60	MH	45.50	100.00	113.46	26,958.86

Activity: 3371183T353 (Modified) MATERIALS HANDLING - CAPITAL (Unreviewed) Quantity: 24 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8054	40.0000	0.0250	219.9701	120.0000	0.2000	5.0000	1,759.7611

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,920.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 960.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	2.00	1,920.00	MH	43.00	100.00	109.99	211,171.33

Activity: 3371183T354 (Modified) MATERIALS HANDLING - RETIREMENT (Unreviewed) Quantity: 7 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8057	40.0000	0.0250	219.9701	35.0000	0.2000	5.0000	1,759.7611

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
560.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 280.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	2.00	560.00	MH	43.00	100.00	109.99	61,591.64

Activity: 3371183T355 (Modified) FLAGGERS - CAPITAL (Unreviewed) Quantity: 24 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8054	40.0000	0.0250	219.9701	120.0000	0.2000	5.0000	1,759.7611

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,920.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 960.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	2.00	1,920.00	MH	43.00	100.00	109.99	211,171.33

Activity: 3371183T356 (Modified) FLAGGERS - RETIREMENT (Unreviewed) Quantity: 7 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8057	40.0000	0.0250	219.9701	35.0000	0.2000	5.0000	1,759.7611

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
560.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 280.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	2.00	560.00	MH	43.00	100.00	109.99	61,591.64

Biditem

**3700**

PAVED ASPHALT

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	67,388.46	88,261.81	155,650.27	13,596.51	16,992.03	102,400.01	0.00	0.00	0.00	288,638.82
Total	67,388.46	88,261.81	155,650.27	13,596.51	16,992.03	102,400.01	0.00	0.00	0.00	288,638.82

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
1,332.2400	0.0008	1,332.2400	216.6568	50.5828	116.8335	0.0017

Activity: 312316C22009 CUT PVMT, ASPH, NB, VM, 9"AVG (Unreviewed) Quantity: 300 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	1.88	1.98	3.87	1.66	0.00	0.00	0.00	0.00	0.00	5.52
<b>Total</b>	<b>565.48</b>	<b>594.06</b>	<b>1,159.54</b>	<b>497.23</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,656.77</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
5.5226	0.0048	208.3333	1,150.5347	0.1800	1,666.6667	0.0006	9,204.2778

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
8.6400	34.7222	0.0288	134.2060	1.8849

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZD0338 CUT PVMT, ASPH, NB, VM, 9\*AVG Prod: MU 0.0288 Eff: 100.00 Crew Hrs: 1.44 Labor Pcs: 6.00 Equipment Pcs: 3.00

Notes: P2000025S00 PRODUCT. 889 LF/ DAY

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
8PICK0702	PICKUP, 1TON, 4X4 180HP	1.00	1.44	HR	18.95	100.00	20.09	28.93
8VERM0150	VERMEER CUTTER, T-600	2.00	2.88	HR	153.40	100.00	162.60	468.30
LAB103	Utility Laborer, T&E, NYC, 731	2.00	2.88	MH	42.85	100.00	109.80	316.21
LAB104	Utility Laborer Foreman, T&E, NYC, 731	1.00	1.44	MH	45.35	100.00	113.25	163.08
OPER103	GP. 1.4-Gradealls, T&E, NYC, 14	2.00	2.88	MH	88.02	100.00	166.60	479.81
OPER206	GRP5A-APPR ENG, T&E, NYC, 15	1.00	1.44	MH	63.37	100.00	139.19	200.44

Activity: 312316C22010 (Modified) REM PAVED ASPHALT (Unreviewed) Quantity: 125 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	129.78	152.10	281.88	50.97	0.00	225.05	0.00	0.00	0.00	557.90
<b>Total</b>	<b>16,222.60</b>	<b>19,011.89</b>	<b>35,234.49</b>	<b>6,371.25</b>	<b>0.00</b>	<b>28,131.87</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>69,737.61</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
332.8459	1.0476	0.9545	317.7165	16.3691	7.6364	0.1310	4,260.3334

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
275.0000	0.4545	2.2000	128.1254	129.7808

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0001 CLEANUP, 1 MHR/DAY .....\* Prod: MU 2.2 Eff: 100.00 Crew Hrs: 130.95 Labor Pcs: 2.10 Equipment Pcs: 1.00

Notes: C0222201S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DISPASP MAT	DISPOSAL OF ASPHALT MATERIALS	1.00	125.00	CY	195.00	108.88	225.05	28,131.87
8LOAD5160	LOADER, CAT, 966D, 4CY	1.00	130.95	HR	45.90	100.00	48.65	6,371.25
LAB101	Laborer, T&E, NYC, 731	1.00	130.95	MH	43.00	100.00	109.99	14,402.55
LAB102	Labor Foreman, T&E, NYC, 731	0.10	13.10	MH	45.50	100.00	113.46	1,486.37
OPER213	UTLWLD R/EQ ONSFT, T&E, NYC, 15	1.00	130.95	MH	69.32	100.00	147.73	19,345.57

Activity: 312333C2201 REM PAVING, ASPHALT BASE BY, HAND (Unreviewed) Quantity: 165 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	151.28	212.81	364.09	0.00	0.00	0.00	0.00	0.00	0.00	364.09
<b>Total</b>	<b>24,961.31</b>	<b>35,113.24</b>	<b>60,074.55</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>60,074.55</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
364.0882	1.4865	0.6727	244.9322	30.6588	5.3818	0.1858	1,959.4578

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
544.5000	0.3030	3.3000	110.3298	151.2807

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0196 EARTH BACKFILL Prod: MU 3.3 Eff: 100.00 Crew Hrs: 245.27 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: C0222301S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	490.54	MH	43.00	100.00	109.99	53,952.07
LAB102	Labor Foreman, T&E, NYC, 731	0.22	53.96	MH	45.50	100.00	113.46	6,122.48

Activity: 3212109P0754 DISPOSAL OF ASPHALT MATERIALS (Unreviewed) Quantity: 330 Unit: CY

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Notes: P2000755S00 PRODUCT. 47 CY/ DAY

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DISPASPMT	DISPOSAL OF ASPHALT MATERIALS	1.00	330.00	CY	195.00	108.88	225.05	74,268.14

Activity: 321210C0099 AGGREGATE BASE 8" TH (Unreviewed) Quantity: 450 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	8.02	9.25	17.27	4.68	6.96	0.00	0.00	0.00	0.00	28.91
Total	3,610.20	4,161.98	7,772.18	2,107.12	3,129.85	0.00	0.00	0.00	0.00	13,009.15

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
21.9540	0.0571	17.5131	384.4834	3.2119	140.1051	0.0071	4,050.3289

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
59.8900	7.5138	0.1331	129.7743	8.0227

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0213 AGGREGATE BASE 8" TH Prod: MU 0.133 Eff: 100.00 Crew Hrs: 25.70 Labor Pcs: 2.33 Equipment Pcs: 2.11

Notes: C0260115N00\*

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CSTN0010	STONE, CRUSHED, .75"	1.00	121.50	CY	22.32	108.88	25.76	3,129.85
8DUMP0102	DUMP TRUCK, 10CY, 6X4 HWY	0.11	2.83	HR	32.67	100.00	34.63	98.01
8LOAD5160	LOADER, CAT, 966D, 4CY	1.00	25.70	HR	45.90	100.00	48.65	1,250.41
8ROLL1010	ROLLER, 12TON	1.00	25.70	HR	27.85	100.00	29.52	758.70
LAB101	Laborer, T&E, NYC, 731	1.00	25.70	MH	43.00	100.00	109.99	2,826.62
LAB102	Labor Foreman, T&E, NYC, 731	0.11	2.83	MH	45.50	100.00	113.47	321.11
OPER112	Asphalt Roller, T&E, NYC, 14	0.11	2.83	MH	80.01	100.00	155.11	438.96
OPER202	CRP2-CHPKR<20TON, T&E, NYC, 15	1.00	25.70	MH	70.74	100.00	149.77	3,849.00
TEAM101	Auto Chauffeur, T&E, NYC, 282	0.11	2.83	MH	45.06	100.00	118.90	336.49

Activity: 321210C0100 PAVING, GRANULAR BASE, 3" TH (Unreviewed) Quantity: 450 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	8.31	8.57	16.88	3.92	2.58	0.00	0.00	0.00	0.00	23.37
Total	3,739.31	3,855.26	7,594.57	1,764.12	1,159.21	0.00	0.00	0.00	0.00	10,517.90

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
20.7971	0.0284	35.2113	732.2919	1.5975	281.6901	0.0036	6,583.9750

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
56.7400	7.9309	0.1261	133.8486	8.3096

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0210 PAVING, GRANULAR BASE, 8" TH Prod: MU 0.1261 Eff: 100.00 Crew Hrs: 12.78 Labor Pcs: 4.44 Equipment Pcs: 2.22

Notes: C0260113S00 CUBIC YDS

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CSTN0010	STONE, CRUSHED, .75"	1.00	45.00	CY	22.32	108.88	25.76	1,159.21
8LOAD5070	LOADER, CAT, 446B, 95HP, 1.52	2.00	25.56	HR	62.05	100.00	65.77	1,681.16
8ROLL1010	ROLLER, 12TON	0.22	2.81	HR	27.85	100.00	29.52	82.96
LAB101	Laborer, T&E, NYC, 731	0.22	2.81	MH	43.00	100.00	109.98	309.05
LAB102	Labor Foreman, T&E, NYC, 731	2.00	25.56	MH	45.50	100.00	113.46	2,900.12

OPER112	Asphalt Roller, T&E, NYC, 14	2.00	25.56	MH	80.01	100.00	155.11	3,964.55
OPER202	CRP2- CHPKR<20TON, T&E, NYC, 15	0.22	2.81	MH	70.74	100.00	149.77	420.85

Activity: 321210C0101 PAVING, ASPHALT BASE, 4"TH (Unreviewed) Quantity: 450 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	4.41	6.61	11.02	1.29	20.94	0.00	0.00	0.00	0.00	33.25
Total	1,985.16	2,972.37	4,957.53	578.92	9,424.78	0.00	0.00	0.00	0.00	14,961.23

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
12.3032	0.0193	51.8135	637.4727	1.0856	414.5078	0.0024	13,781.2136

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
40.4700	11.1193	0.0899	122.4989	4.4115

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0205 PAVING, ASPHALT BASE, 4"TH Prod: MU 0.0899 Eff: 100.00 Crew Hrs: 8.69 Labor Pcs: 4.66 Equipment Pcs: 2.22

Notes: C0260101S00 PER TON

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CASPH0010	ASPHALT HOT MIX	1.00	103.50	TON	78.90	108.88	91.06	9,424.78
8DUMP0102	DUMP TRUCK, 10CY, 6X4 HWY	0.22	1.91	HR	32.67	100.00	34.63	66.14
8ROLL1010	ROLLER, 12TON	2.00	17.37	HR	27.85	100.00	29.52	512.78
ASP101	Asphalt Foreman, T&E, NY, 1010	0.22	1.91	MH	47.95	100.00	127.98	244.45
ASP102	Asphalt Operator, T&E, NY, 1010	2.00	17.37	MH	43.48	100.00	121.36	2,107.95
ASP103	Asphalt Raker, T&E, NY, 1010	0.22	1.91	MH	47.35	100.00	127.54	243.61
OPER112	Asphalt Roller, T&E, NYC, 14	0.22	1.91	MH	80.01	100.00	155.11	296.26
TEAM101	Auto Chauffeur, T&E, NYC, 282	2.00	17.37	MH	45.06	100.00	118.90	2,065.26

Activity: 321210C0102 PAVING, ASPHLT BINDER, 1.5" (Unreviewed) Quantity: 450 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	3.82	4.32	8.14	5.06	7.28	0.00	0.00	0.00	0.00	20.48
Total	1,718.80	1,943.37	3,662.17	2,277.87	3,278.19	0.00	0.00	0.00	0.00	9,218.23

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
13.2001	0.0120	83.3333	1,100.0074	0.6750	666.6667	0.0015	13,656.6370

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
27.0000	16.6667	0.0600	135.6359	3.8196

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0109 8"RCCP CL4 O RING 0-5' Prod: MU 0.06 Eff: 100.00 Crew Hrs: 5.40 Labor Pcs: 5.00 Equipment Pcs: 6.00

Notes: C0260102S00 PER TON

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CASPH0010	ASPHALT HOT MIX	1.00	36.00	TON	78.90	108.88	91.06	3,278.19
8DUMP0106	DUMP TRUCK, 20CY, 6X4	1.00	5.40	HR	100.71	100.00	106.75	576.46
8EXCA0106	EXCAVATOR, CAT, 235, 195HP	1.00	5.40	HR	113.64	100.00	120.46	650.48
8LOAD5160	LOADER, CAT, 966D, 4CY	4.00	21.60	HR	45.90	100.00	48.65	1,050.93
LAB101	Laborer, T&E, NYC, 731	1.00	5.40	MH	43.00	100.00	109.99	593.92
OPER202	CRP2- CHPKR<20TON, T&E, NYC, 15	3.00	16.20	MH	70.74	100.00	149.77	2,426.21
TEAM101	Auto Chauffeur, T&E, NYC, 282	1.00	5.40	MH	45.06	100.00	118.90	642.04

Activity: 3371183T353 (Modified) MATERIALS HANDLING - CAPITAL (Unreviewed) Quantity: 1 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8100	40.0000	0.0250	219.9703	5.0000	0.2000	5.0000	1,759.7620

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
80.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	80.00	MH	43.00	100.00	109.99	8,798.81

Activity: 3371183T355 (Modified) FLAGGERS - CAPITAL (Unreviewed) Quantity: 1 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8100	40.0000	0.0250	219.9703	5.0000	0.2000	5.0000	1,759.7620

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
80.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	80.00	MH	43.00	100.00	109.99	8,798.81

Activity: 3371183T357 (Modified) MATERIALS HANDLING - EXPENXE (Unreviewed) Quantity: 1 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8100	40.0000	0.0250	219.9703	5.0000	0.2000	5.0000	1,759.7620

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
80.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	80.00	MH	43.00	100.00	109.99	8,798.81

Activity: 3371183T358 (Modified) FLAGGERS - EXPENSE (Unreviewed) Quantity: 1 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8100	40.0000	0.0250	219.9703	5.0000	0.2000	5.0000	1,759.7620

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
80.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	80.00	MH	43.00	100.00	109.99	8,798.81

Biditem

STORM DRAINAGE

**4000**

Takeoff Qty: 1.000 LS  
Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	314,779.49	400,735.55	715,515.04	19,506.62	159,956.97	190,602.28	0.00	0.00	0.00	1,085,580.91
Total	314,779.49	400,735.55	715,515.04	19,506.62	159,956.97	190,602.28	0.00	0.00	0.00	1,085,580.91

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
6,490.4300	0.0002	6,490.4300	167.2587	48.4990	110.2415	0.0003

Activity: 021616C1122 (Modified) PROTECTION AROUND TRENCHING - PLASTIC MESH (Unreviewed) Quantity: 1870 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
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U. Cost	0.35	0.49	0.84	0.00	0.00	1.73	0.00	0.00	0.00	2.57
Total	651.44	916.37	1,567.81	0.00	0.00	3,237.32	0.00	0.00	0.00	4,805.13

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
0.8384	0.0034	292.1145	244.9091	0.8002	2,336.9158	0.0004	6,004.9113

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
14.2100	131.5975	0.0076	110.3315	0.3484

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0164 SAWCUT EXIST. PAV. TO 1.5 Prod: MU 0.0076 Eff: 100.00 Crew Hrs: 6.40 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: C0211122N00\*

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3PLASTICMESH	PROTECTION WITH PLASTIC MESH	1.00	1,870.00	LF	1.50	108.88	1.73	3,237.32
LAB101	Laborer, T&E,NYC,731	2.00	12.80	MH	43.00	100.00	109.99	1,407.82
LAB102	Labor Foreman,T&E,NYC,731	0.22	1.41	MH	45.50	100.00	113.47	159.99

Activity: 230953107230 Control component, valves, motor controlled, electric motor actuated, brass, two way, screwed, 1" pi (Unreviewed) Quantity: 1 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	28.92	0.00	28.92	0.00	715.56	0.00	0.00	0.00	0.00	744.48
Total	28.92	0.00	28.92	0.00	715.56	0.00	0.00	0.00	0.00	744.48

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
28.9200	0.2857	3.5002	101.2251	0.0357	28.0014	0.0357	20,846.4823

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
0.4300	2.3256	0.4300	67.2558	28.9200

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-L6 RSMMeans - L6 Crew Prod: US 28.0014 Eff: 100.00 Crew Hrs: 0.29 Labor Pcs: 1.50 Equipment Pcs: 0.00

Notes: Control component, valves, motor controlled, electric motor actuated, brass, two way, screwed, 1" pipe size

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-6N2U1FOU	Control component, valves, m	1.00	1.00	EA	620.00	108.88	715.56	715.56
RS-ELEC	Electricians	0.50	0.14	MH	61.35	100.00	65.07	9.11
RS-PLUM	Plumbers	1.00	0.29	MH	64.45	100.00	68.31	19.81

Activity: 230953108550 VALVE ACTUATOR (Unreviewed) Quantity: 1 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	510.06	0.00	510.06	0.00	3,808.62	0.00	0.00	0.00	0.00	4,318.68
Total	510.06	0.00	510.06	0.00	3,808.62	0.00	0.00	0.00	0.00	4,318.68

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
510.0600	2.6666	0.3750	191.2773	0.3333	3.0001	0.3333	12,956.3639

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
8.0000	0.1250	8.0000	63.7575	510.0600

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-Q2 RSMMeans - Q2 Crew Prod: US 3.0001 Eff: 100.00 Crew Hrs: 2.67 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-6N2U1H26	Control component, burner so	1.00	1.00	EA	3,300.00	108.88	3,808.62	3,808.62
RS-PLUM	Plumbers	2.00	5.33	MH	64.45	100.00	68.32	364.13
RS-PLUMA	Plumber Apprentice	1.00	2.67	MH	51.56	100.00	54.66	145.93

Activity: 314113C0091 EXCAVATE FOR NEW MANHOLES/CATCH BASINS (BY HAND) (Unreviewed) Quantity: 65 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	151.21	212.79	363.99	0.00	0.00	0.00	0.00	0.00	0.00	363.99
<b>Total</b>	<b>9,828.59</b>	<b>13,831.03</b>	<b>23,659.62</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>23,659.62</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
363.9942	3.0000	0.3333	121.3314	24.3750	2.6667	0.3750	970.6511

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
214.5000	0.3030	3.3000	110.3013	151.2091

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0001 CLEANUP,1 MHR/DAY .....\* Prod: MU 3.3 Eff: 100.00 Crew Hrs: 195.00 Labor Pcs: 1.10 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	1.00	195.00	MH	43.00	100.00	109.99	21,447.09
LAB102	Labor Foreman, T&E, NYC, 731	0.10	19.50	MH	45.50	100.00	113.46	2,212.53

Activity: 314113C0092 (Modified) DISPOSAL MH/CB EXC. AVATED SOIL MATRIALS (Unreviewed) Quantity: 78 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	17.69	20.73	38.42	10.36	0.00	48.47	0.00	0.00	0.00	97.25
<b>Total</b>	<b>1,379.85</b>	<b>1,617.07</b>	<b>2,996.92</b>	<b>807.80</b>	<b>0.00</b>	<b>3,780.92</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>7,585.64</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
38.4221	0.1429	6.9999	268.9509	1.3929	55.9993	0.0179	5,446.0307

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
23.3900	3.3348	0.2999	128.1283	17.6904

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0001 CLEANUP,1 MHR/DAY .....\* Prod: MU 0.3 Eff: 100.00 Crew Hrs: 11.14 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0222201S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DIPTRMAT	DISPOSAL TRENCH EXC. AVATED SOIL MATRIALS	1.00	78.00	CY	42.00	108.88	48.47	3,780.92
8BKHOE48	→ BACKHOE LOADER, 3/4 CY CAPACITY, 48 HP	1.00	11.14	HR	62.83	108.88	72.51	807.80
LAB101	Laborer, T&E, NYC, 731	1.00	11.14	MH	43.00	100.00	109.99	1,225.24
LAB102	Labor Foreman, T&E, NYC, 731	0.10	1.11	MH	45.50	100.00	113.47	125.95
OPER213	UTLWLDR/EQ ONSFT, T&E, NYC, 15	1.00	11.14	MH	69.32	100.00	147.73	1,645.73

Activity: 314113C0093 SUBGRADE COMPACTION FOR MH/CB (Unreviewed) Quantity: 140 Unit: SF

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
12.5383	0.0380	26.3158	329.9549	0.6650	210.5263	0.0048	2,639.6391

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
15.9600	8.7719	0.1140	109.9850	5.1961

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: MU 0.114 Eff: 100.00 Crew Hrs: 5.32 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	3.00	15.96	MH	43.00	100.00	109.98	1,755.36

Activity: 314113C0094 GRANULAR STONE BASE OVER COMPACTED SUBGRADE FOR MH/CB (Unreviewed) Quantity: 3 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	24.61	34.78	59.39	0.00	0.00	85.40	0.00	0.00	0.00	144.80
<b>Total</b>	<b>73.84</b>	<b>104.34</b>	<b>178.18</b>	<b>0.00</b>	<b>0.00</b>	<b>256.21</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>434.39</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
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59.3933	0.1800	5.5556	329.9630	0.0675	44.4444	0.0225	6,435.4074
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Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1.6200	1.8519	0.5400	109.9877	24.6133

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: MU 0.54 Eff: 100.00 Crew Hrs: 0.54 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3GRANSTONE	GRANULAR STONE	1.00	3.00	CY	32.00	108.88	36.93	110.79
3SELCOILMAT	SELECTETED SOIL BACKFILL MATERIAL	1.00	3.00	CY	42.00	108.88	48.47	145.42
LAB101	Laborer, T&E, NYC, 731	3.00	1.62	MH	43.00	100.00	109.99	178.18

Activity: 314113C0095 BACKFILL & COMPACT AROUND MH/CB (Unreviewed) Quantity: 18 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	51.51	72.78	124.28	0.00	0.00	48.47	0.00	0.00	0.00	172.76
Total	927.10	1,310.00	2,237.10	0.00	0.00	872.52	0.00	0.00	0.00	3,109.62

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
124.2833	0.3767	2.6549	329.9558	0.8475	21.2389	0.0471	3,669.1681

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
20.3400	0.8850	1.1300	109.9853	51.5056

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: MU 1.13 Eff: 100.00 Crew Hrs: 6.78 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3SELCOILMAT	SELECTETED SOIL BACKFILL MATERIAL	1.00	18.00	CY	42.00	108.88	48.47	872.52
LAB101	Laborer, T&E, NYC, 731	3.00	20.34	MH	43.00	100.00	109.99	2,237.10

Activity: 314113C0096 EXCAVATE FOR NEW PIPE TRENCH DRAINAGE (BY HAND) (Unreviewed) Quantity: 698 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	151.21	212.79	363.99	0.00	0.00	0.00	0.00	0.00	0.00	363.99
Total	105,543.88	148,524.04	254,067.92	0.00	0.00	0.00	0.00	0.00	0.00	254,067.92

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
363.9942	3.0000	0.3333	121.3314	261.7500	2.6667	0.3750	970.6511

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
2,303.4000	0.3030	3.3000	110.3013	151.2090

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0001 CLEANUP, 1 MHR/DAY .....\* Prod: MU 3.3 Eff: 100.00 Crew Hrs: 2094.00 Labor Pcs: 1.10 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	1.00	2,094.00	MH	43.00	100.00	109.99	230,308.73
LAB102	Labor Foreman, T&E, NYC, 731	0.10	209.40	MH	45.50	100.00	113.46	23,759.19

Activity: 314113C0097 (Modified) DISPOSAL TRENCH EXC. AVATED SOIL MATERIALS (Unreviewed) Quantity: 840 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	17.70	20.74	38.44	10.36	0.00	48.47	0.00	0.00	0.00	97.27
Total	14,865.87	17,421.81	32,287.68	8,700.94	0.00	40,717.63	0.00	0.00	0.00	81,706.25

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
38.4377	0.1429	7.0000	269.0640	15.0000	56.0000	0.0179	5,447.0833

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
252.0000	3.3333	0.3000	128.1257	17.6975

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZA0001 CLEANUP,1 MHR/DAY .....\* Prod: MU 0.3 Eff: 100.00 Crew Hrs: 120.00 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0222201S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DIPTRMAT	DISPOSAL TRENCH EXC. AVATED SOIL MATERIALS	1.00	840.00	CY	42.00	108.88	48.47	40,717.63
8BKHOE48	→ BACKHOE LOADER, 3/4 CY CAPACITY, 48 HP	1.00	119.99	HR	62.83	108.88	72.51	8,700.94
LAB101	Laborer, T&E, NYC, 731	1.00	120.00	MH	43.00	100.00	109.99	13,198.21
LAB102	Labor Foreman, T&E, NYC, 731	0.10	12.00	MH	45.50	100.00	113.46	1,361.56
OPER213	UTLWLDR/EQ ONSFT, T&E, NYC, 15	1.00	120.00	MH	69.32	100.00	147.73	17,727.91

Activity: 314113C0098 SUBGRADE COMPACTION FOR DRAIN TRENCH (Unreviewed) Quantity: 3800 Unit: SF

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
12.5383	0.0380	26.3158	329.9552	18.0500	210.5263	0.0048	2,639.6416

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
433.2000	8.7719	0.1140	109.9851	5.1961

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: MU 0.114 Eff: 100.00 Crew Hrs: 144.40 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	3.00	433.20	MH	43.00	100.00	109.99	47,645.53

Activity: 314113C0099 GRANULAR STONE BASE OVER COMPACTED SUBGRADE (Unreviewed) Quantity: 21 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	24.61	34.78	59.39	0.00	0.00	85.41	0.00	0.00	0.00	144.80
Total	516.88	730.35	1,247.23	0.00	0.00	1,793.51	0.00	0.00	0.00	3,040.74

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
59.3919	0.1800	5.5556	329.9550	0.4725	44.4444	0.0225	6,435.4286

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
11.3400	1.8519	0.5400	109.9850	24.6133

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: MU 0.54 Eff: 100.00 Crew Hrs: 3.78 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3GRANSTONE	GRANULAR STONE	1.00	21.00	CY	32.00	108.88	36.93	775.57
3SELCSOILMAT	SELECTETED SOIL BACKFILL MATERIAL	1.00	21.00	CY	42.00	108.88	48.47	1,017.94
LAB101	Laborer, T&E, NYC, 731	3.00	11.34	MH	43.00	100.00	109.99	1,247.23

Activity: 314113C0100 BACKFILL & COMPACT AROUND TRENCH DRAIN & MANHOLES Quantity: 910 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	51.51	72.78	124.28	0.00	0.00	48.47	0.00	0.00	0.00	172.76
Total	46,869.91	66,227.73	113,097.64	0.00	0.00	44,110.78	0.00	0.00	0.00	157,208.42

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
124.2831	0.3767	2.6549	329.9552	42.8458	21.2389	0.0471	3,669.1644

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
1,028.3000	0.8850	1.1300	109.9851	51.5054

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: CCC CONSTRUCTION CONTRACTS CREW Prod: MU 1.13 Eff: 100.00 Crew Hrs: 342.77 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3SELCOILMAT	SELECTED SOIL BACKFILL MATERIAL	1.00	910.00	CY	42.00	108.88	48.47	44,110.78
LAB101	Laborer, T&E,NYC,731	3.00	1,028.30	MH	43.00	100.00	109.99	113,097.64

Activity: 314113C0101 SHORING,WOOD,5-8' (Unreviewed) Quantity: 7220 Unit: SF

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	4.03	5.42	9.45	0.00	0.39	0.00	0.00	0.00	0.00	9.84
Total	29,091.53	39,115.02	68,206.55	0.00	2,834.82	0.00	0.00	0.00	0.00	71,041.37

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
9.4469	0.0319	31.3480	296.1408	28.7898	250.7837	0.0040	2,467.5925

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
483.6700	14.9275	0.0670	141.0188	4.0293

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0034 SHORING,WOOD,5-8'.....\* Prod: MU 0.067 Eff: 100.00 Crew Hrs: 230.32 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0240101S00 PER BOARD FT MAT QTY REFLECTS 3 USES 11/7/84

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CLMBR0010	LUMBER,CONST GRD,AVG COST	1.00	3,032.40	BF	0.81	108.88	0.93	2,834.82
CRP101	Journeyman,Bldg,T&E,NYC,DC	1.00	230.32	MH	55.93	100.00	140.40	32,337.60
CRP102	Foreman,Bldg,T&E,NYC,DC	1.00	230.32	MH	58.93	100.00	144.74	33,336.00
LAB101	Laborer, T&E,NYC,731	0.10	23.03	MH	43.00	100.00	109.98	2,532.95

Activity: 314113C01021 WOOD TRENCH SHEETING 6.7' (Unreviewed) Quantity: 7220 Unit: SF

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	0.30	0.41	0.71	0.00	1.01	0.00	0.00	0.00	0.00	1.72
Total	2,188.82	2,942.95	5,131.77	0.00	7,289.54	0.00	0.00	0.00	0.00	12,421.31

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
0.7108	0.0024	416.6667	296.1548	2.1660	3,333.3333	0.0003	5,734.6768

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
36.3900	198.4062	0.0050	141.0214	0.3032

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0034 SHORING,WOOD,5-8'.....\* Prod: MU 0.005 Eff: 100.00 Crew Hrs: 17.33 Labor Pcs: 2.10 Equipment Pcs: 0.00

Notes: C0240102N00\*PER BOARD FT MAT QTY REFLECTS 3 USES 11/7/84 - SHEETING FOR ALL TRENCHES IN EXCESS OF 4'. AV 6.73'(HGT) 2319 LF

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CLMBR0010	LUMBER,CONST GRD,AVG COST	1.00	7,797.60	BF	0.81	108.88	0.93	7,289.54
CRP101	Journeyman,Bldg,T&E,NYC,DC	1.00	17.33	MH	55.93	100.00	140.40	2,433.19
CRP102	Foreman,Bldg,T&E,NYC,DC	1.00	17.33	MH	58.93	100.00	144.74	2,508.31
LAB101	Laborer, T&E,NYC,731	0.10	1.73	MH	43.00	100.00	109.98	190.27

Activity: 330561101130 (Modified) STORM DRAINAGE MANHOLES, FRAMES COVERS, CONC, PRECAST, 4' ID, 8' DEEP, EXCLUDES FOOTING EXCAVATION (Unreviewed) Quantity: 4 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	786.31	27.96	814.27	0.00	1,384.95	163.63	0.00	0.00	0.00	2,362.85
Total	3,145.23	111.84	3,257.07	0.00	5,539.81	654.53	0.00	0.00	0.00	9,451.41

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
814.2675	4.0000	0.2500	203.5669	2.0000	2.0000	0.5000	4,725.7050

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
60.0000	0.0667	15.0000	54.2845	786.3075

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B22 RSMMeans - B22 Crew Prod: US 2 Eff: 100.00 Crew Hrs: 16.00 Labor Pcs: 3.75 Equipment Pcs: 0.00

Notes: Storm drainage manholes, frames and covers, concrete, precast, 4' ID, 8' deep, excludes footing, excavation, backfill, frame and cover

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-9JRFK7AA	Storm drainage manholes, fra	1.00	4.00	EA	1,200.00	108.88	1,384.95	5,539.81
3RS-602800	S.P CRANE 4 x 4, 5 TON	1.00	12.00	HR	47.26	108.88	54.54	654.53
RS-CLAB	Common Building Laborers	1.00	16.00	MH	42.10	100.00	48.04	768.64
RS-CLABO	Labor Foreman (outside)	1.00	16.00	MH	44.10	100.00	50.32	805.15
RS-EQHV	Equipment Operators, Crane or Shovel	0.75	12.00	MH	59.20	100.00	62.75	753.02
RS-SKWK	Skilled Workers Average (35 trades)	1.00	16.00	MH	54.85	100.00	58.14	930.26

Activity: 330561101140 (Modified) STORM DRAINAGE MANHOLES, FRAMES COVERS, CONC, PRECAST, 4' ID, EXCLUDES FOOTING EXCAVATION (Unreviewed) Quantity: 75 Unit: VLF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	98.29	3.49	101.79	0.00	154.65	20.46	0.00	0.00	0.00	276.90
Total	7,371.96	262.12	7,634.08	0.00	11,598.99	1,534.33	0.00	0.00	0.00	20,767.40

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
101.7877	0.5000	2.0000	203.5755	4.6875	16.0000	0.0625	4,430.3787

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
140.6300	0.5333	1.8751	54.2849	98.2928

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B22 RSMMeans - B22 Crew Prod: US 16 Eff: 100.00 Crew Hrs: 37.50 Labor Pcs: 3.75 Equipment Pcs: 0.00

Notes: Storm drainage manholes, frames and covers, concrete, precast, 4' ID, excludes footing, excavation, backfill, frame and cover, add for depths over 8'

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-9JRFK7AK	Storm drainage manholes, fra	1.00	75.00	VLF	134.00	108.88	154.65	11,598.99
3RS-602800	S.P CRANE 4 x 4, 5 TON	1.00	28.13	HR	47.26	108.88	54.54	1,534.33
RS-CLAB	Common Building Laborers	1.00	37.50	MH	42.10	100.00	48.04	1,801.49
RS-CLABO	Labor Foreman (outside)	1.00	37.50	MH	44.10	100.00	50.32	1,887.08
RS-EQHV	Equipment Operators, Crane or Shovel	0.75	28.13	MH	59.20	100.00	62.75	1,765.22
RS-SKWK	Skilled Workers Average (35 trades)	1.00	37.50	MH	54.85	100.00	58.14	2,180.29

Activity: 334000C00241 REPLACE EXISTING SLOT DRAIN W/ 18" DIAM CS PIPE TRENCH DRAIN (Unreviewed) Quantity: 225 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	46.51	50.11	96.62	44.44	8.69	22.37	0.00	0.00	0.00	172.11
Total	10,464.39	11,274.82	21,739.21	9,997.88	1,955.64	5,032.57	0.00	0.00	0.00	38,725.30

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
141.0537	0.2548	3.9246	553.5861	7.1663	31.3972	0.0319	5,403.8444

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
154.7900	1.4536	0.6880	140.4432	46.5084

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0120 18" RCCP CL4 O RING 11-14' Prod: MU 0.688 Eff: 100.00 Crew Hrs: 57.33 Labor Pcs: 2.70 Equipment Pcs: 1.80

Notes: C0110024N00\*

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CSND0020	SAND, WASHED MASONRY (BULK)	1.00	76.50	CY	22.15	108.88	25.56	1,955.64
3DISPMATC&S	DISPOSAL OF REMOVED DRAIN MATERIALS	1.00	4.59	PKUP	950.00	108.88	1,096.42	5,032.57
8DUMP0106	DUMP TRUCK, 20CY, 6X4	1.00	57.33	HR	100.71	100.00	106.75	6,120.12

8EXCA0106	EXCAVATOR, CAT ,235, 195HP	0.40	22.93	HR	113.64	100.00	120.46	2,762.12
8LOAD5160	LOADER, CAT, 966D, 4CY	0.40	22.93	HR	45.90	100.00	48.65	1,115.64
LAB101	Laborer, T&E, NYC, 731	0.40	22.93	MH	43.00	100.00	109.99	2,521.96
OPER202	CRP2- CHPKR<20TON, T&E, NYC, 15	2.00	114.66	MH	70.74	100.00	149.77	17,172.20
TEAM101	Auto Chauffeur, T&E, NYC, 282	0.30	17.20	MH	45.06	100.00	118.90	2,045.05

Activity: 334211402120 (Modified) NEW STORM DRAINAGE PIPING W/ FRAME & GRATES (Unreviewed) Quantity: 225 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	11.85	0.91	12.75	0.00	460.27	1.30	0.00	0.00	0.00	474.32
Total	2,665.59	203.92	2,869.51	0.00	103,559.90	292.04	0.00	0.00	0.00	106,721.45

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
12.7534	0.0421	23.7530	302.9306	1.1841	190.0238	0.0053	90,131.6020

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
56.8300	3.9592	0.2526	50.4929	11.8471

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B14 RSMMeans - B14 Crew Prod: US 190.0238 Eff: 100.00 Crew Hrs: 9.47 Labor Pcs: 6.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2GRATE&FRAME	CS GRATE & FRAME	1.00	225.00	LF	380.00	108.88	438.57	98,677.94
2RS-9N88QIC8	Public storm utility drainag	1.00	225.00	LF	18.80	108.88	21.70	4,881.96
3RS-200450	BACKHOE LOADER, 48 H.P	1.00	9.47	HR	26.72	108.88	30.84	292.04
RS-CLAB	Common Building Laborers	4.00	37.89	MH	42.10	100.00	48.04	1,820.23
RS-CLABO	Labor Foreman (outside)	1.00	9.47	MH	44.10	100.00	50.32	476.55
RS-EQLT	Equipment Operators, Light Equipment	1.00	9.47	MH	53.00	100.00	60.48	572.73

Activity: 334211501060 (Modified) STORM DRAIN PIPING CORRUGATED HDPE 18" DIAM. (Unreviewed) Quantity: 950 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	5.25	0.20	5.45	0.00	19.62	0.79	0.00	0.00	0.00	25.86
Total	4,983.83	192.57	5,176.40	0.00	18,639.17	751.61	0.00	0.00	0.00	24,567.18

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
5.4488	0.0290	34.4828	187.8911	3.4438	275.8621	0.0036	7,133.8454

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
96.4300	9.8517	0.1015	53.6804	5.2461

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B21 RSMMeans - B21 Crew Prod: MU 0.1015 Eff: 100.00 Crew Hrs: 27.55 Labor Pcs: 3.50 Equipment Pcs: 0.00

Notes: Public storm utility drainage piping, drainage and sewage, corrugated HDPE, type S, bell and spigot, with gaskets, 18" diameter, excludes excavation and backfill

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-9N88TJ04	Public storm utility drainage	1.00	950.00	LF	17.00	108.88	19.62	18,639.17
3RS-602800	S.P CRANE 4 x 4, 5 TON	1.00	13.78	HR	47.26	108.88	54.54	751.61
RS-CLAB	Common Building Laborers	1.00	27.55	MH	42.10	100.00	48.04	1,323.51
RS-CLABO	Labor Foreman (outside)	1.00	27.55	MH	44.10	100.00	50.32	1,386.37
RS-EQHV	Equipment Operators, Crane or Shovel	0.50	13.78	MH	59.20	100.00	62.75	864.73
RS-SKWK	Skilled Workers Average (35 trades)	1.00	27.55	MH	54.85	100.00	58.14	1,601.79

Activity: 334211501061 (Modified) ALLOW FOR ADJUSTMENT OF INLETS (Unreviewed) Quantity: 11 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
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U. Cost	361.78	13.98	375.76	0.00	0.00	0.00	0.00	0.00	0.00	375.76
Total	3,979.56	153.77	4,133.33	0.00	0.00	0.00	0.00	0.00	0.00	4,133.33

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
375.7573	2.0000	0.5000	187.8786	2.7500	4.0000	0.2500	1,503.0291

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
77.0000	0.1429	7.0000	53.6796	361.7782

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B21 RSMans - B21 Crew Prod: MU 7 Eff: 100.00 Crew Hrs: 22.00 Labor Pcs: 3.50 Equipment Pcs: 0.00

Notes: Public storm utility drainage piping, drainage and sewage, corrugated HDPE, type S, bell and spigot, with gaskets, 18" diameter, excludes excavation and backfill

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
RS-CLAB	Common Building Laborers	1.00	22.00	MH	42.10	100.00	48.04	1,056.87
RS-CLABO	Labor Foreman (outside)	1.00	22.00	MH	44.10	100.00	50.32	1,107.09
RS-EQHV	Equipment Operators, Crane or Shovel	0.50	11.00	MH	59.20	100.00	62.75	690.27
RS-SKWK	Skilled Workers Average (35 trades)	1.00	22.00	MH	54.85	100.00	58.14	1,279.10

Activity: 334211501062 (Modified) DEWATERING (INCLUDES RENTAL TANK, PUMP, OPERATIONAL, LABOR & OFF SITE DISPOSAL) (Unreviewed) Quantity: 5 Unit: WKS

Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
2,317.14	3,197.36	5,514.50	0.00	0.00	17,513.66	0.00	0.00	0.00	23,028.16
11,585.69	15,986.80	27,572.49	0.00	0.00	87,568.31	0.00	0.00	0.00	115,140.80

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
5,514.4980	22.2222	0.0450	248.1524	13.8889	0.3600	2.7778	8,290.1384

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
250.0000	0.0200	50.0000	110.2900	2,317.1380

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: DWC DEWATERING CREW Prod: MU 50 Eff: 100.00 Crew Hrs: 111.11 Labor Pcs: 2.25 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DISPFEE	DISPOSAL CHARGE FEE	1.00	80,000.00	GAL	0.60	108.88	0.69	55,398.14
3LOPKUP10000	LIQUID PICKUP 10000 GAL	1.00	10.00	PKUP	1,332.40	108.88	1,537.76	15,377.60
3TRANSPORT	TRANSPORTATION MAXIMUM 100 MILES ROUND TRIP	1.00	10.00	TRIP	1,145.00	108.88	1,321.48	13,214.77
3WRILER10000	WATER TANK TRAILER, 10, 000 GALLONS	1.00	5.00	WKS	620.00	108.88	715.56	3,577.80
GLA104	Driver/Journeyman, T&E, NYC, 1087	0.25	27.78	MH	46.84	100.00	120.45	3,346.00
LAB101	Laborer, T&E, NYC, 731	1.00	111.11	MH	43.00	100.00	109.99	12,220.44
OPE104	GRP4B-GEN, MIXERS, T&E, NYC, 15	1.00	111.11	MH	43.66	100.00	108.06	12,006.05

Activity: 334211501063 STORM DRAIN SURVEY (4 MAN CREW) Quantity: 5 Unit: DAYS

Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
1,599.50	1,932.32	3,531.82	0.00	0.00	0.00	0.00	0.00	0.00	3,531.82
7,997.50	9,661.59	17,659.09	0.00	0.00	0.00	0.00	0.00	0.00	17,659.09

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
3,531.8180	8.0000	0.1250	441.4773	5.0000	1.0000	1.0000	3,531.8180

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
160.0000	0.0313	32.0000	110.3693	1,599.5000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SURC SURVEY CREW Prod: MU 32 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 4.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
SURV101	Party Chief.(BLDG CONS),T&E,NYC,15D	1.00	40.00	MH	67.94	100.00	140.13	5,605.05
SURV102	Instrument Man(BLDG CON),T&E,NYC,15D	1.00	40.00	MH	52.72	100.00	118.34	4,733.54
SURV103	Rodman(BLDG CON),T&E,NYC,15D	2.00	80.00	MH	33.98	100.00	91.51	7,320.50

Activity: 334211501064 STORM DRAIN SEDIMENT CB/MH ADJUSTABLE FRAME FILTRATION INSERT SYSTEM (Unreviewed) Quantity: 11 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	42.28	0.00	42.28	0.00	364.99	0.00	0.00	0.00	0.00	407.28
Total	465.13	0.00	465.13	0.00	4,014.92	0.00	0.00	0.00	0.00	4,480.05

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
42.2845	0.7270	1.3755	58.1631	0.9996	11.0041	0.0909	4,481.7306

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
8.0000	1.3750	0.7273	58.1413	42.2845

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: SSFC STORM SEDIMENT FILTER CREW Prod: MU 0.727 Eff: 100.00 Crew Hrs: 8.00 Labor Pcs: 1.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2STDRAJ24-32	STORM DRAIN SEDIMENT FIL 24"-32" FRAME ADJUSTABLE	1.00	11.00	EA	316.25	108.88	364.99	4,014.92
RS-SKWK	Skilled Workers Average (35 trades)	1.00	8.00	MH	54.85	100.00	58.14	465.13

Activity: 3371183T353 (Modified) MATERIALS HANDLING - CAPITAL (Unreviewed) Quantity: 4 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8050	40.0000	0.0250	219.9701	20.0000	0.2000	5.0000	1,759.7610

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
320.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 160.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	2.00	320.00	MH	43.00	100.00	109.99	35,195.22

Activity: 3371183T355 (Modified) FLAGGERS - CAPITAL (Unreviewed) Quantity: 4 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8050	40.0000	0.0250	219.9701	20.0000	0.2000	5.0000	1,759.7610

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
320.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 160.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E,NYC,731	2.00	320.00	MH	43.00	100.00	109.99	35,195.22

Biditem

**5000**

EROSION & SED. CONTROL

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
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U. Cost	3,099.44	4,379.55	7,478.99	0.00	3,099.99	0.00	0.00	0.00	0.00	10,578.98
<b>Total</b>	<b>3,099.44</b>	<b>4,379.55</b>	<b>7,478.99</b>	<b>0.00</b>	<b>3,099.99</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>10,578.98</b>

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>\$/MH</b>	<b>Base Labor/MH</b>	<b>Total Labor/MH</b>	<b>Unit/CH</b>
68.0000	0.0147	68.0000	155.5732	45.5800	109.9851	0.0294

Activity: 312514161400 (Modified) SYTHENTIC EROSION CONTROL, BARRIERS W/DEGRADABLE COMPONENTt, 3' HIGH, IINCLUDES WOOD STAKES (Unreviewed) Quantity: 3400 Unit: LF

	<b>Base Labor</b>	<b>Burden</b>	<b>Total Labor</b>	<b>Equipment</b>	<b>Perm Matls</b>	<b>Const Matls</b>	<b>Sub</b>	<b>Comp Matl</b>	<b>BPA Rates</b>	<b>Total</b>
U. Cost	0.91	1.29	2.20	0.00	0.91	0.00	0.00	0.00	0.00	3.11
<b>Total</b>	<b>3,099.44</b>	<b>4,379.55</b>	<b>7,478.99</b>	<b>0.00</b>	<b>3,099.99</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>10,578.98</b>

<b>Crew \$/Unit</b>	<b>Crew Hrs/Unit</b>	<b>Units/Crew Hr</b>	<b>\$/Crew Hour</b>	<b>Shifts</b>	<b>Units/Shift</b>	<b>Shifts/Unit</b>	<b>\$/Shift</b>
2.1997	0.0100	100.0000	219.9703	4.2500	800.0000	0.0013	2,489.1718

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>Total Labor/MH</b>	<b>Base Labor/Unit</b>
68.0000	50.0000	0.0200	109.9851	0.9116

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 0.02 Eff: 100.00 Crew Hrs: 34.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Notes: Synthetic erosion control, barriers w/degradable component, 3' high, includes wood stakes

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-931K NANO	Synthetic erosion control, b	1.00	3,400.00	LF	0.79	108.88	0.91	3,099.99
LAB101	Laborer, T&E,NYC,731	2.00	68.00	MH	43.00	100.00	109.99	7,478.99

**Biditem ENTRANCE/TRACKING PAD**

**5200**

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	<b>Base Labor</b>	<b>Burden</b>	<b>Total Labor</b>	<b>Equipment</b>	<b>Perm Matls</b>	<b>Const Matls</b>	<b>Sub</b>	<b>Comp Matl</b>	<b>BPA Rates</b>	<b>Total</b>
U. Cost	219,513.87	306,262.76	525,776.63	0.00	3,930.74	72,905.81	0.00	0.00	0.00	602,613.18
<b>Total</b>	<b>219,513.87</b>	<b>306,262.76</b>	<b>525,776.63</b>	<b>0.00</b>	<b>3,930.74</b>	<b>72,905.81</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>602,613.18</b>

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>\$/MH</b>	<b>Base Labor/MH</b>	<b>Total Labor/MH</b>	<b>Unit/CH</b>
4,812.7600	0.0002	4,812.7600	125.2116	45.6108	109.2464	0.0004

Activity: 071213200700 (Modified) MEMBRANE WATERPROOFING ON TOP LAYER (Unreviewed) Quantity: 1125 Unit: SF

	<b>Base Labor</b>	<b>Burden</b>	<b>Total Labor</b>	<b>Equipment</b>	<b>Perm Matls</b>	<b>Const Matls</b>	<b>Sub</b>	<b>Comp Matl</b>	<b>BPA Rates</b>	<b>Total</b>
U. Cost	1.63	0.00	1.63	0.00	1.56	0.42	0.00	0.00	0.00	3.61
<b>Total</b>	<b>1,838.22</b>	<b>0.00</b>	<b>1,838.22</b>	<b>0.00</b>	<b>1,752.84</b>	<b>469.49</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4,060.55</b>

<b>Crew \$/Unit</b>	<b>Crew Hrs/Unit</b>	<b>Units/Crew Hr</b>	<b>\$/Crew Hour</b>	<b>Shifts</b>	<b>Units/Shift</b>	<b>Shifts/Unit</b>	<b>\$/Shift</b>
1.6340	0.0051	196.0784	320.3869	0.7172	1,568.6275	0.0006	5,661.7691

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>Total Labor/MH</b>	<b>Base Labor/Unit</b>
40.1700	28.0060	0.0357	45.7610	1.6340

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-G1 RSMMeans - G1 Crew Prod: US 1568.6275 Eff: 100.00 Crew Hrs: 5.74 Labor Pcs: 7.00 Equipment Pcs: 0.00

Notes: Membrane waterproofing, on slabs, glass fiber fabric, 3 ply, mopped

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2RS-22AA6D9S	Membrane waterproofing, on s	1.00	1,125.00	SF	1.35	108.88	1.56	1,752.84
3RS-100900	APPLICATION EQUIPMENT	1.00	5.74	HR	24.11	108.88	27.83	159.72
3RS-406340	TAR KETTLE/POT	1.00	5.74	HR	25.98	108.88	29.98	172.11
3RS-407250	CREW TRUCK	1.00	5.74	HR	20.78	108.88	23.98	137.66
RS-ROFC	Roofers, Composition	4.00	22.95	MH	46.20	100.00	48.97	1,123.91

RS-ROFCO	Roofer Foreman (outside)	1.00	5.74	MH	48.20	100.00	51.09	293.27
RS-ROHE	Roofers, Helpers (Composition)	2.00	11.48	MH	34.60	100.00	36.68	421.04

Activity: 312213200130 (Modified) ROUGH GRADING ENTRANCE 1,120 S.F., SKID STEER & LABOR (Unreviewed) Quantity: 1 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	775.60	59.33	834.93	0.00	0.00	136.51	0.00	0.00	0.00	971.44
Total	775.60	59.33	834.93	0.00	0.00	136.51	0.00	0.00	0.00	971.44

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
834.9300	5.3333	0.1875	156.5504	0.6667	1.5000	0.6667	1,457.1691

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
16.0000	0.0625	16.0000	52.1831	775.6000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: RS-B62 RSMMeans - B62 Crew Prod: US 1.5 Eff: 100.00 Crew Hrs: 5.33 Labor Pcs: 3.00 Equipment Pcs: 0.00

Notes: Rough grading sites, 1,100-3,000 S.F., skid steer & labor

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3RS-204880	LOADER, SKIDER STEER, 30 HP.	1.00	5.33	HR	22.19	108.88	25.61	136.51
RS-CLAB	Common Building Laborers	2.00	10.67	MH	42.10	100.00	48.04	512.58
RS-EQLT	Equipment Operators, Light Equipment	1.00	5.33	MH	53.00	100.00	60.48	322.35

Activity: 312216101050 (Modified) FINE GRADING, SELECT GRAVEL, 4" DEEP, ENTRANCE/TRACKING AREA FORSTORM DRAINING (Unreviewed) Quantity: 112 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	1.27	0.04	1.31	0.00	6.46	1.62	0.00	0.00	0.00	9.39
Total	141.82	4.68	146.50	0.00	723.70	181.95	0.00	0.00	0.00	1,052.15

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1.3080	0.0040	250.0000	327.0089	0.0560	2,000.0000	0.0005	18,788.3929

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
2.6900	41.6357	0.0240	54.4610	1.2663

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: RS-B32 RSMMeans - B32C Crew Prod: US 2000 Eff: 100.00 Crew Hrs: 0.45 Labor Pcs: 6.00 Equipment Pcs: 0.00

Notes: Fine grading, fine grade for small irregular areas, to 15,000 S.Y.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2SELGRAVEL	SELECT GRAVEL	1.00	14.93	CY	42.00	108.88	48.47	723.70
3RS-201910	GRADER, 30,000 LBS	1.00	0.45	HR	132.75	108.88	153.20	68.94
3RS-203050	TANDEM ROLLER, 10 TON	1.00	0.45	HR	29.59	108.88	34.16	15.37
3RS-204260	DOZER 200 HP	1.00	0.45	HR	188.00	108.88	216.98	97.64
RS-CLAB	Common Building Laborers	2.00	0.90	MH	42.10	100.00	48.04	43.24
RS-CLABO	Labor Foreman (outside)	1.00	0.45	MH	44.10	100.00	50.33	22.65
RS-EQMD	Equipment Operators, Medium Equipment	3.00	1.34	MH	56.75	100.00	60.16	80.61

Activity: 3212139P6202 (Modified) FURNISH, PLACE BACKFILL, & COMPACT 8" NYDOT AGGREGATE TYPE 2 (Unreviewed) Quantity: 30 Unit: CY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	54.02	73.56	127.58	0.00	48.47	4.94	0.00	0.00	0.00	181.00
Total	1,620.63	2,206.82	3,827.45	0.00	1,454.20	148.28	0.00	0.00	0.00	5,429.93

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
127.5817	0.1130	8.8496	1,129.0413	0.4238	70.7965	0.0141	12,813.9941

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
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33.9000	0.8850	1.1300	112.9041	54.0210
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Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0090 DUCT,PRECAST CONCRETE,4" Prod: MU 1.13 Eff: 100.00 Crew Hrs: 3.39 Labor Pcs: 10.00 Equipment Pcs: 0.00

Notes: P2006202S00 PRODUCT. 102 CY/ DAY

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2NYDOT-AGTY1	NYDOT TYPE 1 AGGREGATE	1.00	30.00	CY	42.00	108.88	48.47	1,454.20
3PICK0702	PICKUP, 1TON, 4X4 180 HP	1.00	6.78	HR	18.95	108.88	21.87	148.28
LAB103	Utility Laborer,T&E,NYC,731	1.00	3.39	MH	42.85	100.00	109.79	372.20
LAB104	Utility Laborer Foreman,T&E,NYC,731	9.00	30.51	MH	45.35	100.00	113.25	3,455.25

Activity: 3371183T353 (Modified) ENTRANCE PAD MAINTAINANCE (Unreviewed) Quantity: 5 Unit: WKS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	3,646.40	5,152.41	8,798.81	0.00	0.00	2,308.26	0.00	0.00	0.00	11,107.06
Total	18,232.00	25,762.03	43,994.03	0.00	0.00	11,541.28	0.00	0.00	0.00	55,535.31

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8060	40.0000	0.0250	219.9702	25.0000	0.2000	5.0000	2,221.4124

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
400.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 200.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3MSCMAT	MSC MAINTENANCE MATERIALS	1.00	1.00	LS	10,000.00	108.88	11,541.28	11,541.28
LAB101	Laborer, T&E,NYC,731	2.00	400.00	MH	43.00	100.00	109.99	43,994.03

Activity: 3371183T358 (Modified) TRACK WHEELS WASHING (Unreviewed) Quantity: 54 Unit: WKS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	3,646.40	5,152.41	8,798.81	0.00	0.00	1,119.04	0.00	0.00	0.00	9,917.85
Total	196,905.60	278,229.90	475,135.50	0.00	0.00	60,428.30	0.00	0.00	0.00	535,563.80

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8056	40.0000	0.0250	219.9701	270.0000	0.2000	5.0000	1,983.5696

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
4,320.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 2160.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3RS-405450	PRESSURE WASH	2.00	4,320.00	HR	12.12	108.88	13.99	60,428.30
LAB101	Laborer, T&E,NYC,731	2.00	4,320.00	MH	43.00	100.00	109.99	475,135.50

Biditem

STAGING

5500

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	361,499.60	445,586.18	807,085.78	0.00	1,012,850.50	104,050.60	0.00	0.00	0.00	1,923,986.88
Total	361,499.60	445,586.18	807,085.78	0.00	1,012,850.50	104,050.60	0.00	0.00	0.00	1,923,986.88

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
6,555.5400	0.0002	6,555.5400	293.4902	55.1441	123.1151	0.0007

**Activity:** 312213200230 (Modified) ROUGH GRADE STAGING AREA (Unreviewed) **Quantity:** 1 **Unit:** EA  
 25,000 S.F., GRADER

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	838.24	27.32	865.56	0.00	0.00	1,225.69	0.00	0.00	0.00	2,091.25
<b>Total</b>	<b>838.24</b>	<b>27.32</b>	<b>865.56</b>	<b>0.00</b>	<b>0.00</b>	<b>1,225.69</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2,091.25</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
865.5600	8.0000	0.1250	108.1950	1.0000	1.0000	1.0000	2,091.2500

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
16.0000	0.0625	16.0000	54.0975	838.2400

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B11 RSMMeans - B11L Crew Prod: US 1 Eff: 100.00 Crew Hrs: 8.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Notes: Rough grading sites, open, 30,100-35,000 S.F., grader

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3RS-201910	GRADER, 30,000 LBS	1.00	8.00	HR	132.75	108.88	153.21	1,225.69
RS-CLAB	Common Building Laborers	1.00	8.00	MH	42.10	100.00	48.04	384.32
RS-EQMD	Equipment Operators, Medium Equipment	1.00	8.00	MH	56.75	100.00	60.16	481.24

**Activity:** 312216101050 (Modified) FINE GRADING, SELECT GRAVEL, 4" (Unreviewed) **Quantity:** 2780 **Unit:** SY  
 DEEP, STAGING AREA BY MACHINE TO PREPARE LAYING STEEL PLATES

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	1.27	0.04	1.31	0.00	6.46	1.62	0.00	0.00	0.00	9.39
<b>Total</b>	<b>3,519.06</b>	<b>115.69</b>	<b>3,634.75</b>	<b>0.00</b>	<b>17,967.63</b>	<b>4,496.23</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>26,098.61</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1.3075	0.0040	250.0000	326.8660	1.3900	2,000.0000	0.0005	18,775.9784

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
66.7200	41.6667	0.0240	54.4777	1.2658

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RS-B32 RSMMeans - B32C Crew Prod: US 2000 Eff: 100.00 Crew Hrs: 11.12 Labor Pcs: 6.00 Equipment Pcs: 0.00

Notes: Fine grading, fine grade for small irregular areas, to 15,000 S.Y.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2SELGRAVEL	SELECT GRAVEL	1.00	370.67	CY	42.00	108.88	48.47	17,967.63
3RS-201910	GRADER, 30,000 LBS	1.00	11.12	HR	132.75	108.88	153.21	1,703.70
3RS-203050	TANDEM ROLLER, 10 TON	1.00	11.12	HR	29.59	108.88	34.15	379.76
3RS-204260	DOZER 200 HP	1.00	11.12	HR	188.00	108.88	216.98	2,412.77
RS-CLAB	Common Building Laborers	2.00	22.24	MH	42.10	100.00	48.04	1,068.41
RS-CLABO	Labor Foreman (outside)	1.00	11.12	MH	44.10	100.00	50.32	559.57
RS-EQMD	Equipment Operators, Medium Equipment	3.00	33.36	MH	56.75	100.00	60.15	2,006.77

**Activity:** 312216101051 (Modified) FURNISH, DEL, SETUP, & REMOVE (Unreviewed) **Quantity:** 510 **Unit:** TON  
 STEEL PLATES - 4 x 8 Ft x 1" TO COVER-UP 25000 SF OF STAGING AREA

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	346.17	439.69	785.86	0.00	1,384.95	4.30	0.00	0.00	0.00	2,175.11
<b>Total</b>	<b>176,547.11</b>	<b>224,240.00</b>	<b>400,787.11</b>	<b>0.00</b>	<b>706,326.34</b>	<b>2,194.30</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,109,307.75</b>

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
785.8571	0.7975	1.2539	985.4007	50.8406	10.0313	0.0997	21,819.3177

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
3,253.8000	0.1567	6.3800	123.1751	346.1708

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZD0353 PLATE,STEEL,UNLD&RLD Prod: MU 6.38 Eff: 100.00 Crew Hrs: 406.73 Labor Pcs: 8.00 Equipment Pcs: 0.00

Notes: P2000667S00 NOTE: 32 SF OF PLT @ \$.25/ SF/DAY = \$8.0 /PLT/ DAY OF PLATE COVERAGE. THE PLATES ARE PRESUMED TO BE RENTED FOR 3 YEARS TO COVER 31,000 SF. COST PER SF = .25\*1095= \$273.75 /SF PER PROJECT DURATION OF 3 YEARS.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2PLATE5X10	STEEL PLATE 1" THICK 5X10 FT	1.00	510.00	TON	1,200.00	108.88	1,384.95	706,326.34
3LOAD5060	LOADER CAT, 4468, 95HP, 1.51	1.00	14.02	HR	61.05	108.88	70.46	987.85
3PICK0702	PICKUP, 1TON, 4X4 180 HP	1.00	14.02	HR	18.95	108.88	21.87	306.63
3TRAC0502	FLATBED, 5 TON, 6X4	1.00	14.02	HR	55.61	108.88	64.18	899.82
LAB103	Utility Laborer, T&E, NYC, 731	2.00	813.45	MH	42.85	100.00	109.79	89,310.87
LAB104	Utility Laborer Foreman, T&E, NYC, 731	2.00	813.45	MH	45.35	100.00	113.25	92,122.91
OPER202	CRP2-CHPKR<20TON, T&E, NYC, 15	2.00	813.45	MH	70.74	100.00	149.77	121,827.35
TEAM103	6-Whl Trct Trlr, T&E, NYC, 282	2.00	813.45	MH	45.81	100.00	119.89	97,525.98

Activity: 312216101052 (Modified) RENT, SETUP, MAINT., MOVE & REMOVE CONCRETE JERSEY BARRIERS (115 EA) (Unreviewed) Quantity: 115 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	90.59	115.06	205.65	0.00	721.33	65.33	0.00	0.00	0.00	992.31
Total	10,417.68	13,231.95	23,649.63	0.00	82,952.95	7,512.54	0.00	0.00	0.00	114,115.12

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
205.6490	0.2087	4.7918	985.4382	2.9999	38.3348	0.0261	38,039.7998

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
192.0000	0.5990	1.6696	123.1752	90.5885

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZD0353 PLATE,STEEL,UNLD&RLD Prod: MU 1.6695 Eff: 100.00 Crew Hrs: 24.00 Labor Pcs: 8.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2JERSBAR12'L	NEW JERSEY PRECAST CONC BARRIERS 12' L	1.00	115.00	EA	625.00	108.88	721.33	82,952.95
3LOAD5060	LOADER CAT, 4468, 95HP, 1.51	1.00	48.00	HR	61.05	108.88	70.46	3,382.06
3PICK0702	PICKUP, 1TON, 4X4 180 HP	1.00	48.00	HR	18.95	108.88	21.87	1,049.79
3TRAC0502	FLATBED, 5 TON, 6X4	1.00	48.00	HR	55.61	108.88	64.18	3,080.69
LAB103	Utility Laborer, T&E, NYC, 731	2.00	48.00	MH	42.85	100.00	109.79	5,270.06
LAB104	Utility Laborer Foreman, T&E, NYC, 731	2.00	48.00	MH	45.35	100.00	113.25	5,435.99
OPER202	CRP2-CHPKR<20TON, T&E, NYC, 15	2.00	48.00	MH	70.74	100.00	149.77	7,188.78
TEAM103	6-Whl Trct Trlr, T&E, NYC, 282	2.00	48.00	MH	45.81	100.00	119.89	5,754.80

Activity: 321210C0099 (Modified) AGGREGATE BASE 8" TH (Unreviewed) Quantity: 5445 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	8.02	9.24	17.26	0.00	6.96	5.10	0.00	0.00	0.00	29.31
Total	43,654.32	50,326.54	93,980.86	0.00	37,871.27	27,744.72	0.00	0.00	0.00	159,596.85

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
17.2600	0.0571	17.5188	302.3750	38.8511	140.1504	0.0071	4,107.9081

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
724.1900	7.5187	0.1330	129.7738	8.0173

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZC0213 AGGREGATE BASE 8" TH Prod: MU 0.133 Eff: 100.00 Crew Hrs: 310.81 Labor Pcs: 2.33 Equipment Pcs: 0.00

Notes: C0260115N00\*

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
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2CSTN0010	STONE, CRUSHED, .75"	1.00	1,470.15	CY	22.32	108.88	25.76	37,871.27
3DUMP0102	DUMP TRUCK, 10 CY, 6X4 HWY	1.00	34.20	HR	32.67	108.88	37.71	1,289.52
3LOAD5160	LOADER, CAT, CAT, 966D, 4CY	1.00	310.81	HR	45.90	108.88	52.97	16,465.00
3ROLL1010	ROLLER, 12TON	1.00	310.81	HR	27.85	108.88	32.14	9,990.20
LAB101	Laborer, T&E, NYC, 731	1.00	310.81	MH	43.00	100.00	109.99	34,184.46
LAB102	Labor Foreman, T&E, NYC, 731	0.11	34.19	MH	45.50	100.00	113.46	3,879.31
OPER112	Asphalt Roller, T&E, NYC, 14	0.11	34.19	MH	80.01	100.00	155.11	5,303.12
OPER202	CRP2-CHPKR<20TON, T&E, NYC, 15	1.00	310.81	MH	70.74	100.00	149.77	46,548.84
TEAM101	Auto Chauffeur, T&E, NYC, 282	0.11	34.19	MH	45.06	100.00	118.90	4,065.13

Activity: 321210C0100 (Modified) PAVING, GRANULAR BASE, 3"TH (Unreviewed) Quantity: 5445 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	8.31	8.57	16.88	0.00	2.58	4.27	0.00	0.00	0.00	23.72
Total	45,249.73	46,653.12	91,902.85	0.00	14,026.40	23,242.87	0.00	0.00	0.00	129,172.12

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
16.8784	0.0284	35.2102	594.2908	19.3304	281.6812	0.0036	6,682.3434

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
686.6200	7.9302	0.1261	133.8482	8.3103

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0210 PAVING, GRANULAR BASE, 8"TH Prod: MU 0.1261 Eff: 100.00 Crew Hrs: 154.64 Labor Pcs: 4.44 Equipment Pcs: 0.00

Notes: C0260113S00 CUBIC YDS

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CSTN0010	STONE, CRUSHED, .75"	1.00	544.50	CY	22.32	108.88	25.76	14,026.40
3LOAD5070	LOADER, CAT, 446B, 95HP, 1.52	1.00	309.29	HR	62.05	108.88	71.61	22,149.38
3ROLL1010	ROLLER, 12TON	1.00	34.02	HR	27.85	108.88	32.14	1,093.49
LAB101	Laborer, T&E, NYC, 731	0.22	34.02	MH	43.00	100.00	109.99	3,741.69
LAB102	Labor Foreman, T&E, NYC, 731	2.00	309.29	MH	45.50	100.00	113.46	35,093.04
OPER112	Asphalt Roller, T&E, NYC, 14	2.00	309.29	MH	80.01	100.00	155.11	47,973.08
OPER202	CRP2-CHPKR<20TON, T&E, NYC, 15	0.22	34.02	MH	70.74	100.00	149.77	5,095.04

Activity: 321210C0101 (Modified) PAVING, ASPHALT BASE, 4"TH (Unreviewed) Quantity: 5445 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	4.41	6.60	11.01	0.00	20.94	1.40	0.00	0.00	0.00	33.36
Total	24,011.95	35,952.61	59,964.56	0.00	114,039.87	7,624.55	0.00	0.00	0.00	181,628.98

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
11.0128	0.0193	51.8354	570.8513	13.1305	414.6830	0.0024	13,832.5888

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
489.5100	11.1234	0.0899	122.4992	4.4099

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0205 PAVING, ASPHALT BASE, 4"TH Prod: MU 0.0899 Eff: 100.00 Crew Hrs: 105.04 Labor Pcs: 4.66 Equipment Pcs: 0.00

Notes: C0260101S00 PER TON

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CASP0010	ASPHALT HOT MIX	1.00	1,252.35	TON	78.90	108.88	91.06	114,039.87
3DUMP0102	DUMP TRUCK, 10 CY, 6X4 HWY	1.00	23.12	HR	32.67	108.88	37.71	871.74
3ROLL1010	ROLLER, 12TON	1.00	210.09	HR	27.85	108.88	32.14	6,752.81
ASP101	Asphalt Foreman, T&E, NY, 1010	0.22	23.11	MH	47.95	100.00	127.98	2,957.67
ASP102	Asphalt Operator, T&E, NY, 1010	2.00	210.09	MH	43.48	100.00	121.36	25,495.55
ASP103	Asphalt Raker, T&E, NY, 1010	0.22	23.11	MH	47.35	100.00	127.54	2,947.49
OPER112	Asphalt Roller, T&E, NYC, 14	0.22	23.11	MH	80.01	100.00	155.11	3,584.53

TEAM101	Auto Chaffeur, T&E, NYC, 282	2.00	210.09	MH	45.06	100.00	118.90	24,979.32
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Activity: 321210C0102 (Modified) PAVING, ASPHLT BINDER, 1.5" (Unreviewed) Quantity: 5445 Unit: SY

	Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
U. Cost	3.82	4.32	8.14	0.00	7.28	5.51	0.00	0.00	0.00	20.93
Total	20,797.51	23,514.89	44,312.40	0.00	39,666.04	30,009.70	0.00	0.00	0.00	113,988.14

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8.1382	0.0120	83.3333	678.1818	8.1675	666.6667	0.0015	13,956.3073

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
326.7000	16.6667	0.0600	135.6364	3.8196

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZC0109 8"RCCP CL4 O RING 0-5' Prod: MU 0.06 Eff: 100.00 Crew Hrs: 65.34 Labor Pcs: 5.00 Equipment Pcs: 0.00

Notes: C0260102S00 PER TON

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CASPH0010	ASPHALT HOT MIX	1.00	435.60	TON	78.90	108.88	91.06	39,666.04
3DUMP0106	DUMP TRUCK 20 CY, 6X4	1.00	65.34	HR	100.71	108.88	116.23	7,594.61
3EXCA0106	EXCAVATOR, CAT 235, 195HP	1.00	65.34	HR	113.64	108.88	131.16	8,569.68
3LOAD5160	LOADER, CAT, CAT, 966D, 4CY	1.00	261.36	HR	45.90	108.88	52.97	13,845.41
LAB101	Laborer, T&E, NYC, 731	1.00	65.34	MH	43.00	100.00	109.99	7,186.43
OPER202	CRP2-CHPKR<20TON, T&E, NYC, 15	3.00	196.02	MH	70.74	100.00	149.77	29,357.17
TEAM101	Auto Chaffeur, T&E, NYC, 282	1.00	65.34	MH	45.06	100.00	118.90	7,768.80

Activity: 3371183T353 (Modified) MATERIALS HANDLING - CAPITAL (Unreviewed) Quantity: 5 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8060	40.0000	0.0250	219.9702	25.0000	0.2000	5.0000	1,759.7612

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
400.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 200.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	400.00	MH	43.00	100.00	109.99	43,994.03

Activity: 3371183T355 (Modified) FLAGGERS - CAPITAL (Unreviewed) Quantity: 5 Unit: WKS

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8060	40.0000	0.0250	219.9702	25.0000	0.2000	5.0000	1,759.7612

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
400.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 200.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	400.00	MH	43.00	100.00	109.99	43,994.03

Biditem

6000

ELECTRICAL WORK

Takeoff Qty: 1.000 LS

Bid Qty: 1.000 LS

Base Labor	Burden	Total Labor	Equipment	Perm Mats	Const Mats	Sub	Comp Matl	BPA Rates	Total
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U. Cost	65,086.64	83,551.94	148,638.58	479.37	10,949.83	0.00	0.00	0.00	0.00	160,067.78
<b>Total</b>	<b>65,086.64</b>	<b>83,551.94</b>	<b>148,638.58</b>	<b>479.37</b>	<b>10,949.83</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>160,067.78</b>

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>\$/MH</b>	<b>Base Labor/MH</b>	<b>Total Labor/MH</b>	<b>Unit/CH</b>
970.8000	0.0010	970.8000	164.8823	67.0443	153.1094	0.0024

Activity: 260511E1399 DISCONNECT & MAKE SAFE POWER TO THE PROJECT AREA (Unreviewed) Quantity: 1 Unit: LS

	<b>Base Labor</b>	<b>Burden</b>	<b>Total Labor</b>	<b>Equipment</b>	<b>Perm Matls</b>	<b>Const Matls</b>	<b>Sub</b>	<b>Comp Matl</b>	<b>BPA Rates</b>	<b>Total</b>
U. Cost	263.09	331.10	594.19	0.00	0.00	0.00	0.00	0.00	0.00	594.19
<b>Total</b>	<b>263.09</b>	<b>331.10</b>	<b>594.19</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>594.19</b>

<b>Crew \$/Unit</b>	<b>Crew Hrs/Unit</b>	<b>Units/Crew Hr</b>	<b>\$/Crew Hour</b>	<b>Shifts</b>	<b>Units/Shift</b>	<b>Shifts/Unit</b>	<b>\$/Shift</b>
594.1900	1.8018	0.5550	329.7758	0.2252	4.4400	0.2252	2,638.2062

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>Total Labor/MH</b>	<b>Base Labor/Unit</b>
4.0000	0.2500	4.0000	148.5475	263.0900

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZA0002 ELB,TRAY,AL,90/60,6X30..\* Prod: MU 4 Eff: 100.00 Crew Hrs: 1.80 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: E0101402S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
ELE201	Journeyman, Class A, T&E, NYC, 3	2.00	3.60	MH	58.00	106.25	147.53	531.12
ELE202	Foreman, 3-5Men, T&E, NYC, 3	0.22	0.40	MH	62.00	106.25	157.68	63.07

Activity: 260511E1400 REM POWER & COMMUNICATIONS TO EXSTING BLDG 1/2 BACK TO SOURCE INCLUDING HANGERS & SPPORTS (Unreviewed) Quantity: 1 Unit: WK

	<b>Base Labor</b>	<b>Burden</b>	<b>Total Labor</b>	<b>Equipment</b>	<b>Perm Matls</b>	<b>Const Matls</b>	<b>Sub</b>	<b>Comp Matl</b>	<b>BPA Rates</b>	<b>Total</b>
U. Cost	5,840.28	7,350.00	13,190.28	0.00	0.00	0.00	0.00	0.00	0.00	13,190.28
<b>Total</b>	<b>5,840.28</b>	<b>7,350.00</b>	<b>13,190.28</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>13,190.28</b>

<b>Crew \$/Unit</b>	<b>Crew Hrs/Unit</b>	<b>Units/Crew Hr</b>	<b>\$/Crew Hour</b>	<b>Shifts</b>	<b>Units/Shift</b>	<b>Shifts/Unit</b>	<b>\$/Shift</b>
13,190.2800	40.0000	0.0250	329.7570	5.0000	0.2000	5.0000	2,638.0560

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>Total Labor/MH</b>	<b>Base Labor/Unit</b>
88.8000	0.0113	88.8000	148.5392	5,840.2800

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZA0002 ELB,TRAY,AL,90/60,6X30..\* Prod: MU 88.8 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: E0101402S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
ELE201	Journeyman, Class A, T&E, NYC, 3	2.00	80.00	MH	58.00	106.25	147.54	11,802.89
ELE202	Foreman, 3-5Men, T&E, NYC, 3	0.22	8.80	MH	62.00	106.25	157.66	1,387.39

Activity: 260511E1401 INSTALL ELECTRICAL LIGHTING FIXTURE, & EQUIPMENT SUPPLIED BY OTHERS (Unreviewed) Quantity: 4 Unit: WKS

	<b>Base Labor</b>	<b>Burden</b>	<b>Total Labor</b>	<b>Equipment</b>	<b>Perm Matls</b>	<b>Const Matls</b>	<b>Sub</b>	<b>Comp Matl</b>	<b>BPA Rates</b>	<b>Total</b>
U. Cost	5,840.28	7,349.99	13,190.28	0.00	0.00	0.00	0.00	0.00	0.00	13,190.28
<b>Total</b>	<b>23,361.13</b>	<b>29,399.97</b>	<b>52,761.10</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>52,761.10</b>

<b>Crew \$/Unit</b>	<b>Crew Hrs/Unit</b>	<b>Units/Crew Hr</b>	<b>\$/Crew Hour</b>	<b>Shifts</b>	<b>Units/Shift</b>	<b>Shifts/Unit</b>	<b>\$/Shift</b>
13,190.2750	40.0000	0.0250	329.7569	20.0000	0.2000	5.0000	2,638.0550

<b>Manhours</b>	<b>Unit/MH</b>	<b>MH/Unit</b>	<b>Total Labor/MH</b>	<b>Base Labor/Unit</b>
355.2000	0.0113	88.8000	148.5391	5,840.2825

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZA0002 ELB,TRAY,AL,90/60,6X30..\* Prod: MU 88.8 Eff: 100.00 Crew Hrs: 160.00 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: E0101402S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
ELE201	Journeyman, Class A, T&E, NYC, 3	2.00	320.00	MH	58.00	106.25	147.54	47,211.54
ELE202	Foreman, 3-5Men, T&E, NYC, 3	0.22	35.20	MH	62.00	106.25	157.66	5,549.56

Activity: 260511E1402 CONDUIT, RGS, UNDER GR, .75" (Unreviewed) Quantity: 800 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	7.30	9.19	16.49	0.00	1.11	0.00	0.00	0.00	0.00	17.60
Total	5,840.28	7,350.00	13,190.28	0.00	886.37	0.00	0.00	0.00	0.00	14,076.65

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
16.4879	0.0500	20.0000	329.7570	5.0000	160.0000	0.0063	2,815.3300

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
88.8000	9.0090	0.1110	148.5392	7.3004

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0002 ELB, TRAY, AL, 90/60, 6X30..\* Prod: MU 0.111 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: E0101402S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2ECOND1620	CONDUIT, RGS, .75"	1.00	800.00	LF	0.96	108.88	1.11	886.37
ELE201	Journeyman, Class A, T&E, NYC, 3	2.00	80.00	MH	58.00	106.25	147.54	11,802.89
ELE202	Foreman, 3-5Men, T&E, NYC, 3	0.22	8.80	MH	62.00	106.25	157.66	1,387.39

Activity: 260538E9420 (Modified) CABLE, 600V, 6 #14 (Unreviewed) Quantity: 960 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	2.63	3.31	5.94	0.00	1.18	0.00	0.00	0.00	0.00	7.12
Total	2,525.54	3,178.40	5,703.94	0.00	1,130.12	0.00	0.00	0.00	0.00	6,834.06

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
5.9416	0.0180	55.5000	329.7590	2.1622	443.9999	0.0023	3,160.7523

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
38.4000	25.0000	0.0400	148.5401	2.6308

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0002 ELB, TRAY, AL, 90/60, 6X30..\* Prod: MU 0.04 Eff: 100.00 Crew Hrs: 17.30 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: E0209422S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2ECAB0612	CABLE, 600V, 6#14	1.00	960.00	LF	1.02	108.88	1.18	1,130.12
ELE201	Journeyman, Class A, T&E, NYC, 3	2.00	34.59	MH	58.00	106.25	147.54	5,103.27
ELE202	Foreman, 3-5Men, T&E, NYC, 3	0.22	3.81	MH	62.00	106.25	157.66	600.67

Activity: 260538E9421 (Modified) CABLE, 600V, 4 #14 (Unreviewed) Quantity: 960 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	2.63	3.31	5.94	0.00	0.78	0.00	0.00	0.00	0.00	6.73
Total	2,525.54	3,178.40	5,703.94	0.00	753.42	0.00	0.00	0.00	0.00	6,457.36

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
5.9416	0.0180	55.5000	329.7590	2.1622	443.9999	0.0023	2,986.5285

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
38.4000	25.0000	0.0400	148.5401	2.6308

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0002 ELB, TRAY, AL, 90/60, 6X30..\* Prod: MU 0.04 Eff: 100.00 Crew Hrs: 17.30 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: E0209422S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2ECAB0320	CABLE,600V,3 #12 + 1 #12 G	1.00	960.00	LF	0.68	108.88	0.78	753.42
ELE201	Journeyman,Class A,T&E,NYC,3	2.00	34.59	MH	58.00	106.25	147.54	5,103.27
ELE202	Foreman,3-5Men,T&E,NYC,3	0.22	3.81	MH	62.00	106.25	157.66	600.67

Activity: 260538E9422 (Modified) CABLE,600V,3 #12 + 1 #12 G (Unreviewed) Quantity: 1980 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	2.63	3.31	5.94	0.00	0.78	0.00	0.00	0.00	0.00	6.73
Total	5,208.90	6,555.41	11,764.31	0.00	1,553.92	0.00	0.00	0.00	0.00	13,318.23

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
5.9416	0.0180	55.5000	329.7569	4.4595	443.9997	0.0023	2,986.5101

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
79.2000	25.0000	0.0400	148.5393	2.6308

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0002 ELB,TRAY,AL,90/60,6X30..\* Prod: MU 0.04 Eff: 100.00 Crew Hrs: 35.68 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: E0209422S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2ECAB0320	CABLE,600V,3 #12 + 1 #12 G	1.00	1,980.00	LF	0.68	108.88	0.78	1,553.92
ELE201	Journeyman,Class A,T&E,NYC,3	2.00	71.35	MH	58.00	106.25	147.54	10,526.70
ELE202	Foreman,3-5Men,T&E,NYC,3	0.22	7.85	MH	62.00	106.25	157.66	1,237.61

Activity: 260538E9434 CABLE 1 #2 AWG (Unreviewed) Quantity: 800 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	2.63	3.31	5.94	0.00	3.27	0.00	0.00	0.00	0.00	9.21
Total	2,104.60	2,648.64	4,753.24	0.00	2,612.94	0.00	0.00	0.00	0.00	7,366.18

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
5.9416	0.0180	55.5004	329.7586	1.8018	444.0035	0.0023	4,088.2624

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
32.0000	25.0000	0.0400	148.5388	2.6308

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZA0002 ELB,TRAY,AL,90/60,6X30..\* Prod: MU 0.04 Eff: 100.00 Crew Hrs: 14.41 Labor Pcs: 2.22 Equipment Pcs: 0.00

Notes: E0209431S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2ECAB026004	CABLE 1 # 3/O	1.00	800.00	LF	2.83	108.88	3.27	2,612.94
ELE201	Journeyman,Class A,T&E,NYC,3	2.00	28.83	MH	58.00	106.25	147.54	4,253.46
ELE202	Foreman,3-5Men,T&E,NYC,3	0.22	3.17	MH	62.00	106.25	157.66	499.78

Activity: 260538E9435 WIRE TERMINATIONS (Unreviewed) Quantity: 28 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	298.92	402.50	701.41	0.00	1.59	0.00	0.00	0.00	0.00	703.01
Total	8,369.64	11,269.93	19,639.57	0.00	44.59	0.00	0.00	0.00	0.00	19,684.16

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
701.4132	1.6000	0.6250	438.3833	5.6000	5.0000	0.2000	3,515.0286

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
112.0000	0.2500	4.0000	175.3533	298.9157

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ACC ACCESS CONTROL CREW Prod: MU 4 Eff: 100.00 Crew Hrs: 44.80 Labor Pcs: 2.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2TEMIN	TERMINATIONS	1.00	28.00	EA	1.38	108.88	1.59	44.59
ELE103	FOREMAN,Outside,T&E,NYC,3	2.00	89.60	MH	65.54	106.25	173.21	15,519.70
ELE105	GENERAL FOREMAN,Outside,T&E,NYC,3	0.50	22.40	MH	69.60	106.25	183.92	4,119.87

Activity: 3007 (Modified) OUT-DOOR RATED 208V,3PH, 4W+G ,100 A PANEL BOARD (Unreviewed) Quantity: 1 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	2,619.46	3,634.35	6,253.81	479.37	1,384.95	0.00	0.00	0.00	0.00	8,118.13
Total	2,619.46	3,634.35	6,253.81	479.37	1,384.95	0.00	0.00	0.00	0.00	8,118.13

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
6,253.8100	8.7273	0.1146	716.5802	1.0909	0.9167	1.0909	7,441.5959

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
48.0000	0.0208	48.0000	130.2877	2,619.4600

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ACC ACCESS CONTROL CREW Prod: MU 48.0002 Eff: 100.00 Crew Hrs: 8.73 Labor Pcs: 5.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2DRPB100	OUT-DOOR RATED 208V, 3PH, 4W+G, 100A PANEL BOARD	1.00	1.00	EA	1,200.00	108.88	1,384.95	1,384.95
8FOLKLIFT	→ FOLK LIFT 5000 LB, 12' LIFT, GAS	1.00	8.00	HR	51.92	108.88	59.92	479.37
ELE103	FOREMAN,Outside,T&E,NYC,3	1.00	8.73	MH	65.54	106.25	173.21	1,512.13
ELE105	GENERAL FOREMAN,Outside,T&E,NYC,3	0.50	4.36	MH	69.60	106.25	183.92	801.90
GLA103	Man Lifts,T&E,NYC,1087	1.00	8.73	MH	47.55	100.00	121.46	1,060.37
LAB101	Laborer, T&E,NYC,731	3.00	26.18	MH	43.00	100.00	109.99	2,879.41

Activity: 3011 (Modified) 20A -3PH CIRCUIT BREAKERS (Unreviewed) Quantity: 1 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	188.32	253.60	441.92	0.00	634.77	0.00	0.00	0.00	0.00	1,076.69
Total	188.32	253.60	441.92	0.00	634.77	0.00	0.00	0.00	0.00	1,076.69

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
441.9200	1.6667	0.6000	265.1467	0.2083	4.7999	0.2083	5,168.0086

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
2.5000	0.4000	2.5000	176.7680	188.3200

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ACC ACCESS CONTROL CREW Prod: MU 2.5001 Eff: 100.00 Crew Hrs: 1.67 Labor Pcs: 1.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CIBK3P20A	20 A - 3PH CIRCUIT BREAKER	1.00	1.00	EA	550.00	108.88	634.77	634.77
ELE103	FOREMAN,Outside,T&E,NYC,3	1.00	1.67	MH	65.54	106.25	173.21	289.26
ELE105	GENERAL FOREMAN,Outside,T&E,NYC,3	0.50	0.83	MH	69.60	106.25	183.93	152.66

Activity: 3012 TERMINATION BOXES (Unreviewed) Quantity: 27 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	186.82	251.56	438.38	0.00	29.43	0.00	0.00	0.00	0.00	467.81
Total	5,044.21	6,792.14	11,836.35	0.00	794.62	0.00	0.00	0.00	0.00	12,630.97

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
438.3833	1.0000	1.0000	438.3833	3.3750	8.0000	0.1250	3,742.5096

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
67.5000	0.4000	2.5000	175.3533	186.8226

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ACC ACCESS CONTROL CREW Prod: MU 2.5 Eff: 100.00 Crew Hrs: 27.00 Labor Pcs: 2.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2TERMBOXES	TERMINATION BOXES	1.00	27.00	EA	25.50	108.88	29.43	794.62
ELE103	FOREMAN,Outside,T&E,NYC,3	2.00	54.00	MH	65.54	106.25	173.21	9,353.40
ELE105	GENERAL FOREMAN,Outside,T&E,NYC,3	0.50	13.50	MH	69.60	106.25	183.92	2,482.95

Activity: 3013 MSC : CONNECTIONS, FITTINGS (Unreviewed) Quantity: 1 Unit: LS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	1,195.65	1,610.00	2,805.65	0.00	1,154.13	0.00	0.00	0.00	0.00	3,959.78
Total	1,195.65	1,610.00	2,805.65	0.00	1,154.13	0.00	0.00	0.00	0.00	3,959.78

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
2,805.6500	6.4000	0.1563	438.3828	0.8000	1.2500	0.8000	4,949.7250

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
16.0000	0.0625	16.0000	175.3531	1,195.6500

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ACC ACCESS CONTROL CREW Prod: MU 16 Eff: 100.00 Crew Hrs: 6.40 Labor Pcs: 2.50 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2MSCMAT	ALLOW FOR MSC MATERIALS	1.00	1.00	LS	1,000.00	108.88	1,154.13	1,154.13
ELE103	FOREMAN,Outside,T&E,NYC,3	2.00	12.80	MH	65.54	106.25	173.21	2,217.10
ELE105	GENERAL FOREMAN,Outside,T&E,NYC,3	0.50	3.20	MH	69.60	106.25	183.92	588.55

Biditem

SECURITY FENCE & GATES

7000

Takeoff Qty: 1.000 LS  
 Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	29,650.39	45,336.19	74,986.58	1,147.17	27,582.15	4,385.68	0.00	0.00	0.00	108,101.58
Total	29,650.39	45,336.19	74,986.58	1,147.17	27,582.15	4,385.68	0.00	0.00	0.00	108,101.58

Manhours	Unit/MH	MH/Unit	\$/MH	Base Labor/MH	Total Labor/MH	Unit/CH
607.5000	0.0016	607.5000	177.9450	48.8072	123.4347	0.0034

Activity: 323100C0100 REMOVAL & DISPOSAL OF CHAIN LINK POSTS & FABRIC 10' H (Unreviewed) Quantity: 790 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	3.31	3.63	6.94	1.31	0.00	4.16	0.00	0.00	0.00	12.41
Total	2,613.56	2,870.56	5,484.12	1,031.15	0.00	3,289.26	0.00	0.00	0.00	9,804.53

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
6.9419	0.0180	55.5556	385.6624	1.7775	444.4444	0.0023	5,515.9100

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
42.6600	18.5185	0.0540	128.5541	3.3083

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: RFPC REMOVAL OF CHAIN LINK FENCE Prod: MU 0.054 Eff: 100.00 Crew Hrs: 14.22 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DISPMAT	DISPOSAL OF FENCING MATERIALS	1.00	3.00	PKUP	950.00	108.88	1,096.42	3,289.26
8BKHOE48	→ BACKHOE LOADER, 3/4 CY CAPACITY, 48 HP	1.00	14.22	HR	62.83	108.88	72.51	1,031.15
LAB101	Laborer, T&E,NYC,731	2.00	28.44	MH	43.00	100.00	109.99	3,127.98

OPER101	GP.1.2-Bckh,Shvl,T&E,NYC,14	1.00	14.22	MH	87.39	100.00	165.69	2,356.14
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Activity: 323100C0101 REMOVAL & DISPOSAL OF CHAIN LINK GATES (Unreviewed) Quantity: 2 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	147.03	161.50	308.53	58.01	0.00	548.21	0.00	0.00	0.00	914.75
Total	294.06	323.00	617.06	116.02	0.00	1,096.42	0.00	0.00	0.00	1,829.50

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
308.5300	0.8000	1.2500	385.6625	0.2000	10.0000	0.1000	9,147.5000

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
4.8000	0.4167	2.4000	128.5542	147.0300

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: RFPC REMOVAL OF CHAIN LINK FENCE Prod: MU 2.4 Eff: 100.00 Crew Hrs: 1.60 Labor Pcs: 3.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
3DISPMAT	DISPOSAL OF FENCING MATERIALS	1.00	1.00	PKUP	950.00	108.88	1,096.42	1,096.42
8BKHOE48	→ BACKHOE LOADER, 3/4 CY CAPACITY, 48 HP	1.00	1.60	HR	62.83	108.88	72.51	116.02
LAB101	Laborer, T&E,NYC,731	2.00	3.20	MH	43.00	100.00	109.98	351.95
OPER101	GP.1.2-Bckh,Shvl,T&E,NYC,14	1.00	1.60	MH	87.39	100.00	165.69	265.11

Activity: 323100C0102 FENCE,CHAINLNK,10',W/BARB (Unreviewed) Quantity: 790 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	12.90	21.03	33.92	0.00	18.73	0.00	0.00	0.00	0.00	52.65
Total	10,187.29	16,612.88	26,800.17	0.00	14,795.15	0.00	0.00	0.00	0.00	41,595.32

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
33.9243	0.0660	15.1515	514.0040	6.5175	121.2121	0.0083	6,382.0974

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
208.5600	3.7879	0.2640	128.5010	12.8953

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Crew: ZB0036 FENCE,CHAINLINK,8'W/BARB\* Prod: MU 0.264 Eff: 100.00 Crew Hrs: 52.14 Labor Pcs: 4.00 Equipment Pcs: 0.00

Notes: C0270102S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CCONCC0020	CONCRETE,3000#,AVG	1.00	7.90	CY	170.00	108.88	196.20	1,550.00
2CFNCE0010	FENCE FABRIC,GALV,6GA/9GA	1.00	7,900.00	SF	0.67	108.88	0.77	6,108.80
2CFNCE0020	FENCE BARB WIRE	1.00	2,370.00	LF	0.04	108.88	0.05	109.41
2CFNCE0030	FENCE BARB WIRE EXTEN ARM	1.00	79.00	EA	2.57	108.88	2.97	234.32
2CFNCE0040	FENCE POST,2.5"DIA	1.00	1,027.00	LF	2.65	108.88	3.06	3,141.01
2CFNCE0090	FENCE RAIL,1.25"DIA	1.00	2,370.00	LF	1.12	108.88	1.29	3,063.52
2CFNCE0100	FENCE TRUSS ROD,.375"X11'	1.00	79.00	EA	6.45	108.88	7.44	588.09
IRONW101	Ornamental, Finisher,T&E,NYC,580	2.00	104.28	MH	45.40	100.00	127.56	13,301.92
IRONW102	Ornamental, Foreman,T&E,NYC,580	2.00	104.28	MH	46.76	100.00	129.44	13,498.25

Activity: 323100C0107 FENCE TERMINAL POST,10'H (Unreviewed) Quantity: 10 Unit: EA

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	60.08	97.98	158.06	0.00	88.45	0.00	0.00	0.00	0.00	246.51
Total	600.81	979.76	1,580.57	0.00	884.53	0.00	0.00	0.00	0.00	2,465.10

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
158.0570	0.3075	3.2520	514.0065	0.3844	26.0163	0.0384	6,413.2683

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
12.3000	0.8130	1.2300	128.5016	60.0810

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZB0036 FENCE,CHAINLINK,8"W/BARB\* Prod: MU 1.23 Eff: 100.00 Crew Hrs: 3.08 Labor Pcs: 4.00 Equipment Pcs: 0.00

Notes: C0270107S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CCONCC0020	CONCRETE,3000#,AVG	1.00	1.00	CY	170.00	108.88	196.21	196.21
2CFNCE0050	FENCE POST,3.0"DIA	1.00	140.00	LF	4.26	108.88	4.92	688.32
IRONW101	Ornamental, Finisher,T&E,NYC,580	2.00	6.15	MH	45.40	100.00	127.56	784.50
IRONW102	Ornamental, Foreman,T&E,NYC,580	2.00	6.15	MH	46.76	100.00	129.44	796.07

Activity: 323100C01111 FENCE ATOP RETAINING WALL (Unreviewed) Quantity: 390 Unit: LF

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	19.31	31.80	51.11	0.00	16.13	0.00	0.00	0.00	0.00	67.24
Total	7,530.61	12,400.34	19,930.95	0.00	6,292.53	0.00	0.00	0.00	0.00	26,223.48

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
51.1050	0.3604	2.7747	141.8008	17.5695	22.1976	0.0451	1,492.5570

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
156.0200	2.4997	0.4001	127.7461	19.3093

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZC0226 FENCE ATOP RETAINING WALL Prod: MU 0.4 Eff: 100.00 Crew Hrs: 140.56 Labor Pcs: 1.11 Equipment Pcs: 0.00

Notes: C0270111N00\*

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CCONCC0020	CONCRETE,3000#,AVG	1.00	3.90	CY	170.00	108.88	196.20	765.18
2CFNCE0010	FENCE FABRIC,GALV,6GA/9GA	1.00	3,120.00	SF	0.67	108.88	0.77	2,412.59
2CFNCE0040	FENCE POST,2.5"DIA	1.00	429.00	LF	2.65	108.88	3.06	1,312.07
2CFNCE0090	FENCE RAIL,1.25"DIA	1.00	1,170.00	LF	1.12	108.88	1.29	1,512.37
2CFNCE0100	FENCE TRUSS ROD,.375"X11'	1.00	39.00	EA	6.45	108.88	7.44	290.32
IRONW101	Ornamental, Finisher,T&E,NYC,580	1.00	140.56	MH	45.40	100.00	127.56	17,929.78
IRONW102	Ornamental, Foreman,T&E,NYC,580	0.11	15.46	MH	46.76	100.00	129.44	2,001.17

Activity: 323100C0128 GATE,DOUBLE,24"WX10'H OPG (Unreviewed) Quantity: 2 Unit: PR

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	565.63	922.42	1,488.05	0.00	2,804.97	0.00	0.00	0.00	0.00	4,293.02
Total	1,131.26	1,844.83	2,976.09	0.00	5,609.94	0.00	0.00	0.00	0.00	8,586.03

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
1,488.0450	2.8958	0.3453	513.8632	0.7240	2.7626	0.3620	11,859.9765

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
23.1600	0.0864	11.5800	128.5013	565.6300

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: ZB0036 FENCE,CHAINLINK,8"W/BARB\* Prod: MU 11.5832 Eff: 100.00 Crew Hrs: 5.79 Labor Pcs: 4.00 Equipment Pcs: 0.00

Notes: C0270128S00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
2CCONCC0020	CONCRETE,3000#,AVG	1.00	0.96	CY	170.00	108.88	196.20	188.35
2CFNCE0070	FENCE POST,8"DIA(SCH80A53	1.00	52.00	LF	26.86	108.88	31.00	1,612.00
2CFNCG0080	FENCE GATE,10'X24'OPENING	1.00	2.00	PR	1,650.42	108.88	1,904.80	3,809.59
IRONW101	Ornamental, Finisher,T&E,NYC,580	2.00	11.58	MH	45.40	100.00	127.56	1,477.14

IRONW102	Ornamental, Foreman, T&E, NYC, 580	2.00	11.58	MH	46.76	100.00	129.44	1,498.95
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**Activity: 3371183T353 (Modified) MATERIALS HANDLING - CAPITAL (Unreviewed) Quantity: 1 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8100	40.0000	0.0250	219.9703	5.0000	0.2000	5.0000	1,759.7620

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
80.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	80.00	MH	43.00	100.00	109.99	8,798.81

**Activity: 3371183T355 (Modified) FLAGGERS - CAPITAL (Unreviewed) Quantity: 1 Unit: WKS**

Crew \$/Unit	Crew Hrs/Unit	Units/Crew Hr	\$/Crew Hour	Shifts	Units/Shift	Shifts/Unit	\$/Shift
8,798.8100	40.0000	0.0250	219.9703	5.0000	0.2000	5.0000	1,759.7620

Manhours	Unit/MH	MH/Unit	Total Labor/MH	Base Labor/Unit
80.0000	0.0125	80.0000	109.9851	3,646.4000

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.  
 Crew: MHC MATERIALS HANDLING CREW Prod: MU 80 Eff: 100.00 Crew Hrs: 40.00 Labor Pcs: 2.00 Equipment Pcs: 0.00

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
LAB101	Laborer, T&E, NYC, 731	2.00	80.00	MH	43.00	100.00	109.99	8,798.81

**Biditem**

**9000**

**OTHER DIRECT COSTS**

Takeoff Qty: 1.000 LS  
 Bid Qty: 1.000 LS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	0.00	0.00	0.00	0.00	0.00	0.00	0.00	294,302.64	0.00	294,302.64
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	294,302.64	0.00	294,302.64

**Activity: 9010 INSPECTIONS (Unreviewed) Quantity: 1 Unit: LS**

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	0.00	0.00	0.00	0.00	0.00	0.00	0.00	207,743.04	0.00	207,743.04
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	207,743.04	0.00	207,743.04

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
1ASWPP	ASWPP PLAN	1.00	1.00	LS	15,000.00	108.88	17,311.92	17,311.92
1CONCINSPECT	CONCRETE INSPECTION	1.00	1.00	LS	75,000.00	108.88	86,559.60	86,559.60
1DRAINAGE	STORM DRAIN INSPECTION/TESTING/COMMISSIONING	1.00	1.00	LS	15,000.00	108.88	17,311.92	17,311.92
1SOILCOMPACT	SOIL COMPACTION	1.00	1.00	LS	75,000.00	108.88	86,559.60	86,559.60

**Activity: 9020 TESTS & COMMISSIONING (Unreviewed) Quantity: 1 Unit: LS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
1TEST&COMM	TESTING & COMMISSIONING	1.00	1.00	LS	10,000.00	108.88	11,541.28	11,541.28

**Activity: 9025 AIR MONITORING (Unreviewed) Quantity: 1 Unit: LS**

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
1AIRMONITOR	AIR MONITORING	1.00	1.00	LS	25,000.00	108.88	28,853.20	28,853.20

Activity: 9030 SPCC PLAN MODIFICATION (Unreviewed) Quantity: 1 Unit: LS

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
1SPCCPLANMOD	SPCC PLAN MODIFICATION	1.00	1.00	LS	5,000.00	108.88	5,770.64	5,770.64

Activity: 9040 ASBESTOS/LEAD SURVEY (Unreviewed) Quantity: 1 Unit: LS

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
U. Cost	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40,394.48	0.00	40,394.48
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40,394.48	0.00	40,394.48

Calendar: 508 5 - 8 Hr Work Week Hrs/Shift: 8 WC: Code not found.

Resource	Description	Pcs/Wste	Quantity	Unit	Unit Cost	Tax/OT %	Actual UC	Total
1AT100	ASBESTOS/LEAD TESTING	1.00	1.00	LS	25,000.00	108.88	28,853.20	28,853.20
1HYDRTESTS	HYRDAULIC, TESTS & COMMISSIONING	1.00	1.00	LS	10,000.00	108.88	11,541.28	11,541.28

Report Summary

	Base Labor	Burden	Total Labor	Equipment	Perm Matls	Const Matls	Sub	Comp Matl	BPA Rates	Total
Total	10,384,162	7,906,263	18,290,425	202,568	13,399,869	5,966,555	0	294,303	0	38,153,720

Job Notes

Estimate created on: 10/26/2020 by User#: 16 - macdonalds  
 Source estimate used: F:\CENTRAL\EST\CTLMSTT&E19

\*\*\*\*\*Estimate created on: 02/18/2021 by User#: 74 - nazarenoi  
 Source estimate used: F:\CENTRAL\EST\CTLMSTT&E20

\*\*\*\*\*Estimate created on: 04/19/2021 by User#: 77 - munokoe  
 Source estimate used: F:\CENTRAL\EST\21-0063-A-0

\*\*\*\*\*Estimate created on: 04/22/2021 by User#: 77 - munokoe  
 Source estimate used: F:\CENTRAL\EST\21-0063-A-1

Calendars Used In Estimate

508 5 - 8 Hr Work Week  
 708 7 - 8 HR Days

## Utility Shared Services/Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic	
Project/Program Title: Fuel Station Upgrade - Liquid Fuel Station Replacement Program	
Project/Program Manager: Leo Palmer	Project/Program Number (Level 1): 10079272
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: June 2023	Estimated Date In Service: December 2025
A. Total Funding Request (000s) Capital: 8,789 O&M:	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)
<p><b>Work Description:</b></p> <p>Transportation Operations operates and maintains the Company’s twelve in-house vehicle fueling stations. However, as the equipment degrades and becomes obsolete, the Company has seen an increase in maintenance to these stations. These components are reaching the end of their life cycle and need to be replaced. This project funds the replacement of aging fueling stations at the Company’s Neptune Avenue and College Point workout locations.</p> <p>The scope of the project includes the replacement of the fueling island, gas and diesel dispensing equipment, several steel tanks, new card reader systems and associated electrical hardware/conduits and the addition of a Urea dispenser to meet the needs of current vehicle diesel emissions.</p>	
<p><b>Justification Summary:</b></p> <p>The fuel station provides fuel for the daily operation of the Company’s fleet of cars, trucks and equipment. Replacement parts are becoming obsolete and difficult to obtain. If a major failure were to occur at a station, it is possible the station would be out of service for a considerable amount of time until repairs could be made. This would impact the ability to fuel Company vehicles at the site, resulting in the use of potentially more costly fueling sites. In addition, there are environmental concerns because of the potential for system leaks, which may be higher due to the age of the equipment. The Neptune Avenue fuel station was installed in 1988, and was designed to fuel our gas and diesel fleet vehicles. A past engineering study recommended that aging equipment and tanks, be replaced with new double-wall fiberglass underground storage tanks that meet current fuel station regulations. This will also reduce the potential for an environmental incident resulting from a tank/component failure.</p>	

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

N/A

## 2. Supplemental Information

**Alternatives**

Utilize vendor fueling sites at a volatile fuel price. Vendor fuel cost (per gallon) can typically fluctuate more than internal costs. In addition, the inability to utilize bio-diesel fuel in our fleet due to lack of fueling stations with this option.

**Risk of No Action**

If the upgrade to the fueling stations does not occur, the Company would maintain the existing stations at an increased cost, recognizing that the potential for system and component failure increases. In the event of a failure, redirecting fleet fueling to outside fueling stations decreases control of fuel tracking and reconciliation, and reduces the ability to utilize Bio-Diesel (B-20). The Company has a regulatory commitment to use alternate fuels, such as bio-diesel, in its medium/heavy duty fleet in accordance with the Department of Energy (DOE) Energy Policy Act (EPA) of 1992. The use of Bio-Diesel (B-20) ensures the Company's ability to meet and maintain the EPA alternative compliance. Failure to comply with this EPA mandate could result in penalties being imposed on the Company. Furthermore, the potential for an environmental incident also increases due to fuel leaking from aged equipment.

**Non-Financial Benefits**

The upgrade to these stations will continue to help reduce petroleum consumption by using Bio-Diesel fuel to maintain the EPA compliance. It provides a large percentage of Con Edison's long range strategy. Continued use of bio-diesel will help to enhance and promote the Company's commitment to environmental excellence.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

The estimated total cost of the project is \$8.8 million. The equipment at Neputne and College Point are over 30 years old and these upgrades will extend the life of the capital assets and lower operating and maintenance costs associated with outdated equipment that is at the end of its useful life.

2. Major financial benefits

N/A

3. Total cost

\$8.8 million

Complete replacement of existing underground storage, piping, dispensers, monitoring, fueling islands and mats, Urea dispenser, all safety and fire protection systems. Current sites include operational Gasoline/Diesel/BioDiesel motor fueling systems. Funding is per facility.

Initiation: \$20,000

Planning: \$120,000

Execution: \$8,420,000 (includes estimated environmental activities)

On-Going: \$40,000/year
<p><u>4. Basis for estimate</u> The use of an engineering vendor report factored into an order of magnitude capital estimating template was used to provide a basis for this estimate.</p>
<p><u>5. Conclusion</u> This project should be completed to ensure Con Ed’s commitment to environmental excellence</p>
<p><b>Project Risks and Mitigation Plan</b> N/A</p>
<p><b>Technical Evaluation / Analysis</b> N/A</p>
<p><b>Project Relationships (if applicable)</b>  When possible this project will be in conjunction with the EV Charging Station Expansion Project to minimize the outages to the fuel stations and reduce yard interruptions for the tenants.</p>

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital						
O&M						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital		808	2,014	5,967	
O&M*					

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor		65	161	477	
M&S		40	101	298	
Contract Services		485	1,208	3,879	
Other		16	40	119	
Overheads		202	504	1,194	
<b>Total</b>		<b>808</b>	<b>2,014</b>	<b>5,967</b>	

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services/Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Third Ave Yard Transportation Garage Demolition - Capital Work	
Project/Program Manager: Leo Palmer	Project/Program Number (Level 1): 30215-19
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 1/2023	Estimated Date In Service: 12/2024
<b>A. Total Funding Request (\$000)</b> Capital: 11,800 O&M: 1,450	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  This project will demolish and remove the entire 3rd Avenue Yard 42,400 SF single-story Flush/Transportation Garage and 800 SF single-story Splice Room building structures, along with the associated perimeter foundation walls/piles, which will be removed to 12 inches below grade. The project will install clean fill over the entire demolished area, a four-inch top layer of ¾" bluestone, graded to surrounding area and a new chain-link fence with gates for security and personnel protection.  <u><b>Capital and O&amp;M Portion of Work</b></u> Existing electrical, mechanical, fire protection and gas infrastructure serving the adjacent office building, flush facility, storeroom, electrical vehicle charging stations and CNG station will be relocated/installed and made operational before the buildings are demolished. Corporate Security equipment will also be constructed prior to the demolition with minimal disruption to the site as the yard will be fully functional and operational for the duration of project.	
<b>Justification Summary:</b>  The facility is designated for demolition due to structural stability issues with the main timber bow-string truss system, which is the primary support structure for the garage roof. The 3rd Avenue Yard Flush/Transportation Garage Building is a 42,400 SF single-story structure that utilizes a timber bow-string roof truss support system and is constructed with a concrete slab/flooring, brick pilasters and a	

brick exterior and includes service pits for truck maintenance and office space. The Splice Room is a 800 SF single-story brick structure with a brick veneer facade.

The garage building is located adjacent to the existing office building which will remain in place. The major infrastructure serving the flush pit, warehouse sprinkler system, charging station and CNG is integrally connected to the existing transportation garage which will need to be disconnected and reconnected for service ahead of the demolition allowing the full operation/function of the yard for the duration of demolition.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The facility is designated for demolition due to structural stability issues with the main timber bow-string truss system, which is the primary support structure for the garage roof. The bow-string truss system is currently supported by temporary stanchions, which must remain in place and be inspected every six months for stability, until the garage is demolished. Once services are relocated the building will be demolished. Long term plans are to install a new transportation garage at 3<sup>rd</sup> Ave Yard.

## 2. Supplemental Information

**Alternatives**

Leave the temporary stanchions in place and perform periodic inspections indefinitely. The last inspection showed that some stanchions had loosened up and wood support members had cracked requiring emergency repairs. This is not recommended as a long-term alternative.

**Risk of No Action**

Risk 1

Continued use of the temporary support system will require periodic inspections, which if not performed, can lead to system failure and potentially a roof collapse.

**Non-Financial Benefits**

Employee and site safety.

**Summary of Financial Benefits and Costs**

The transportation building needs to be demolished and removed.

Total cost  
\$8,200,000

Basis for estimate  
Detailed estimate based on 90% drawings.

**Conclusion**

It is recommended that this project be executed.

<p><b>Project Risks and Mitigation Plan</b> Drawings are completed and estimate is prepared. Only the availability of capital funds will extend the project timeline. Measure are being planned to minimize the impact on Operations during project execution.</p>
<p><i>Technical Evaluation/ Analysis</i></p> <p>Engineering performed a structural analysis of the wood truss system that supports the roof of the north and south transportation garages at 3rd Avenue Yard Service Center. Diagonal, vertical, top and bottom chord members of the existing wood trusses system that supports the roof of the north and south garages were determined to be structurally compromised by splits, cracks and other deficiencies that have caused stress conditions that require shoring to stabilize the structure. A shoring system was installed as a result to address stress deficiencies.</p>
<p><b>Project Relationships (if applicable)</b> N/A</p>

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
<b>Capital</b>						
<b>O&amp;M</b>						
<b>Regulatory Asset</b>						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>		8,850	2,950		
<b>O&amp;M*</b>		1,754	585		
<b>Regulatory Asset</b>					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	-	496	165	-	-
M&S	-	443	148	-	-
Contract Services	-	4,868	1,623	-	-
Other	-	566	189	-	-
Overheads	-	2,478	826	-	-
<b>Total</b>	-	<b>8,850</b>	<b>2,950</b>	-	-

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services/Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Third Avenue New Transportation Building	
Project/Program Manager: Fortunato Gulino	Project/Program Number (Level 1): 24107656
Status: <input checked="" type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: 10/1/2021	Estimated Date In Service: 12/31/2025
<b>A. Total Funding Request (\$000)</b> Capital: 16,921 O&M:	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period:</b> (Years/months) (If applicable)
<b>Work Description:</b>  The Transportation Operations' Third Avenue vehicle repair facility has been closed indefinitely due to structural issues with the roof and associated building components since October 2019. Because of this closure, all vehicles and equipment assigned to the Third Avenue facility are being maintained/ repaired at the Neptune Avenue repair facility in Coney Island. There are currently 520 vehicles assigned to the Third Avenue facility and 212 vehicles assigned to the Neptune Avenue facility. Because of the closure of Third Avenue, there has been a 245% increase in workload at the Neptune Avenue repair garage, which is untenable in terms of work space, human resources, and logistical difficulties in transporting, staging, and maneuvering the additional vehicles. The logistical issues also present increased costs due to the use of towing vendors and compound the potential for motor vehicle accidents because of the increased number of vehicles on the road. Additionally, the increase in workload suppresses the garages' ability to timely complete mandated New York State inspections, as well as other required safety inspections/repairs of aerial equipment (e.g., bucket trucks, digger derricks and material handlers).  This project proposes to construct a new, 10,000 square-foot vehicle repair facility on the Third Avenue property over a four-year period (2022-2025). The new construction could support work on six to eight vehicles within its confines, and is estimated to cost \$11M (there is already \$1M allocated for engineering/consultants in 2021). The new construction would be loosely modeled after the Spring Valley repair facility, including additional overhead clearance to permit "flying" of bucket truck boom apparatus, which would otherwise need to be done outdoors. The new construction would also include drive-through work bays, which would allow vehicles to be driven/pushed into the garage, and allow them to exit in the same direction on the other side, removing the necessity to back out and cause potential accidents.	

**Justification Summary:**

Maintenance of the fleet is operationally required and mandatory in respect to keeping with safety and environmental requirements. The current situation at Neptune Avenue is not tenable as the facility was never designed to support the maintenance and repair of 732 vehicles. The increased workload and vehicle activity at Neptune Avenue poses an undue burden on human resources, vehicle traffic flow at the facility and the surrounding area, and presents potential safety concerns for both employees and the public.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

N/A

## 2. Supplemental Information

**Alternatives**

Alternative 1 description and reason for rejection

The only other alternative is to demolish the existing Third Avenue repair facility, and reconstruct a new building in its place. This alternative is not acceptable due to the delay in new construction caused by the additional time necessary for demolition, clean-up, and any potential remediation. Additionally, the current location of the existing structure would not allow for a drive through configuration, which would require vehicle backing (either in or out of the garage), which increases potential for accidents/injuries.

**Risk of No Action**

Risk 1

Increased risk of employee injuries and accidents attempting to service over 700 vehicles in the Neptune garage that was never designed to accommodate such a large workload/activity. The physical confines of the current Neptune garage facility can only fit three vehicles, forcing garage Mechanics to perform diagnosis and repairs outside of the garage, risking injury as well as creating environmental impact incidents (uncontrolled spills and fluid leaks) beyond the normal environmental barriers in place inside the garage (pads, booms, secondary containment).

Risk 2

Increased risk of injuries and accidents with members of the public directly related to increased reliance of both towing and transporting commercial class vehicles from the 3<sup>rd</sup> Avenue location to alternate garages for repairs and/or services. The minimum distance of 10 miles between the Neptune Ave and 3<sup>rd</sup> Avenue garage increased the possibility of a motor vehicle accident with members of the public

Risk 3

Increased costs directly related to the overflow of vehicles from the 3<sup>rd</sup> avenue garage and the increased workload via employee overtime, vendor services (tow and service charges)

**Non-Financial Benefits**

N/A

<p><b>Summary of Financial Benefits and Costs (attach backup)</b></p> <p><u>1. Cost-benefit analysis (if required)</u> N/A</p> <p><u>2. Major financial benefits</u> Reduction in operating costs to continue to service and maintain a fleet of over 700 vehicle by reducing reliance (and cost ) on vendor tow services, vendor repair services, lost productivity to transport vehicles to either alternate garages or, vendor locations.</p> <p><u>3. Total cost</u> Total estimated cost is \$11 million.</p> <p><u>4. Basis for estimate</u> The anticipated structure/layout to replace the existing 3<sup>rd</sup> Avenue garage will be a total of 10, square feet at an estimated cost of \$1,000 per foot to construct</p>
<p><b>Project Risks and Mitigation Plan</b></p> <p><u>Risk 1</u> As the environmental risk evaluation is still in its discovery phase, it is too early to define any type of mitigation plan. The 3<sup>rd</sup> Avenue yard is currently considered a Brown Field/Superfund site with the potential to present significant remediation costs as boring samples are collected and analyzed prior to demolition.</p>
<p><b>Technical Evaluation / Analysis</b></p> <p>N/A</p>
<p><b>Project Relationships (if applicable)</b></p> <p>N/A</p>

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital						
O&M						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital		991	3,976	6,966	4,988
O&M*					

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor		79	318	557	399
M&S		50	199	348	249
Contract Services		594	2,584	4,529	3,242
Other		20	80	139	100
Overheads		248	795	1,393	998
<b>Total</b>		<b>991</b>	<b>3,976</b>	<b>6,966</b>	<b>4,988</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation – New project, not authorized yet
- Planning – Project authorized, not started yet
- Executing – Project in-flight
- On-going – Annual program

## Utility Shared Services/Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input checked="" type="checkbox"/> Capital <input type="checkbox"/> O&M						
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic							
Project/Program Title: Electric Vehicle Charging Infrastructure - EV Charging Expansion							
Project/Program Manager: Fortunato Gulino	Project/Program Number (Level 1): 21173081						
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____							
Estimated Start Date: January 2022	Estimated Date In Service: December 2026						
A. Total Funding Request (\$000) Capital: \$10,673 O&M: \$1,650	B. <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:						
C. 5-Year Ongoing Maintenance Expense (\$000) O&M: Capital:	D. Investment Payback Period: (Years/months) (If applicable)						
<p><b>Work Description:</b></p> <p>In order to continue Con Edison’s vision of a 100% plug-in electric light duty fleet by the year 2040, the Company will need to continue expanding it’s electric vehicle charging infrastructure to accommodate the growing number of fleet vehicles. The Company is committed to purchasing only plug-in electric light duty vehicles moving forward. Con Edison has 161 plug-in vehicles and 120 stations (11 DCFC, 109 Level 2) as of Dec 2021, the fleet will outgrow the existing infrastructure in coming years with an anticipated 74 vehicles added in 2022, 114 vehicles added in 2023, 217 vehicles added in 2024 and 160 vehicles added in 2025. Expansion of electric charging infrastructure will enable the Company to deploy more plug-in electric vehicles over time.</p> <p>This project aims to fund the design and construction of 75 Dual-Level 2 vehicle charging stations and 30 DCFC vehicle charging stations to support the fleet at the Fifteen (15) Con Edison workout locations below:</p> <table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top; width: 33%;"> <u>Manhattan:</u>  E. 16th St  W. 28th St  E. 110th St  4 Irving Place </td> <td style="vertical-align: top; width: 33%;"> <u>Queens:</u>  *College Point  *Astoria </td> <td style="vertical-align: top; width: 33%;"> <u>Westchester:</u>  Eastview  *Rye (178 Theo Fremd) </td> </tr> <tr> <td style="vertical-align: top;"> <u>Brooklyn:</u>  3rd Ave  Neptune Ave </td> <td style="vertical-align: top;"> <u>Bronx:</u>  *Van Nest  *Bruckner Blvd </td> <td style="vertical-align: top;"> <u>Staten Island</u>  *Victory Blvd  *Davis Ave </td> </tr> </table>		<u>Manhattan:</u> E. 16th St W. 28th St E. 110th St 4 Irving Place	<u>Queens:</u> *College Point *Astoria	<u>Westchester:</u> Eastview *Rye (178 Theo Fremd)	<u>Brooklyn:</u> 3rd Ave Neptune Ave	<u>Bronx:</u> *Van Nest *Bruckner Blvd	<u>Staten Island</u> *Victory Blvd *Davis Ave
<u>Manhattan:</u> E. 16th St W. 28th St E. 110th St 4 Irving Place	<u>Queens:</u> *College Point *Astoria	<u>Westchester:</u> Eastview *Rye (178 Theo Fremd)					
<u>Brooklyn:</u> 3rd Ave Neptune Ave	<u>Bronx:</u> *Van Nest *Bruckner Blvd	<u>Staten Island</u> *Victory Blvd *Davis Ave					

Cleveland St

Con Edison's charging stations currently operate on the ChargePoint network. These additional stations will also operate on this network. The level 2 station will be a dual port station, meaning for every station there are two plugs and the DCFC will be able to fast charge one vehicle within an hour. This proposed configuration will create a total of 180 charging ports to support growth of the plug-in electric fleet in coming years.

At each site a walkthrough will be required involving Transportation, Facilities and Central Engineering to identify groupings of twenty spaces where the new chargers can be located. This project cost of \$7.5M will provide 105 physical EV stations (75 Dual-Level 2 stations and 30 DCFC).

\* NOTE: In addition to expanding the current fleet EV chargers, this project will also explore using some of these installations for workplace chargers for employees. The indicated work-out locations have been identified as separate employee parking area, with up to two dual chargers.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

This project will help achieve the Corporate Clean Energy Commitment/Vision, by supporting the 2040 electrification of the light duty fleet.

**2. Supplemental Information**

**Alternatives**

Rather than installing internal charging stations for fleet use, Con Edison could seek out external charging stations available to the general public. These stations are scattered throughout the five Boroughs and Westchester in parking lots and parking garages (some which require an additional fee to park). The use of external charging stations will cost more per kWh to charge and these stations are not necessarily going to be available when needed or located within reasonable distance from each workout location. Additionally, travelling to the nearest charging stations would compromise employee productivity.

**Risk of No Action**

The Company has a regulatory commitment to use alternate fuels, such as electric, in its fleet. The use of electric vehicles enhances our ability to meet EPAct compliance. Failure to comply with this EPAct mandate could result in penalties being imposed on the Company.

**Non-Financial Benefits**

Clean Alternative Fueled Vehicles (AFVs) produce lower to no air emissions and fewer toxic contaminants than gasoline and diesel powered vehicles. Evaporative and start-up emissions are also significantly lower. As a result, clean AFVs reduce impacts on the environment, air quality, climate change and public health. The use of AFVs in the fleet also reduces the Company's carbon footprint by approximately 4 metric tons per vehicle yearly, which supports one of Con Edison's Sustainability Initiatives.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

The estimated total cost of the project is approximately \$9.3 million. There are New York State alternative fueling infrastructure tax credit programs. Workplace Charging Station New York State Tax Credits – Income tax credits of up to \$5,000 for investments in alternative fuels and electric vehicle recharging stations.

2. Major financial benefits

3. Total cost

The estimated total cost of the project is \$7.5 million.

**30 DCFC chargers**

Per Unit implementation costs:

Initiation: \$5,000

Planning: \$5,000

Execution: \$150,000

On-Going: \$25,000/unit for 5 years

Contingency (Electric Upgrades): \$500,000

[(30) CPE250 charging units serving (1) vehicle: \$4,800,000 plus maintenance]

**75 Dual-Level 2 chargers**

Equipment: ChargePoint CT4000 Charging Station for (2) vehicle charging.

Per Unit implementation costs:

Initiation: \$5,000

Planning: \$5,000

Execution: \$30,000

On-Going: \$12,000/unit for 5 years

[(75) CT4000 charging units serving (2) vehicle: \$2,260,000]

4. Basis for estimate: The use of an engineering vendor report factored into an order of magnitude capital estimating template was used to provide a basis for this estimate.

5. Conclusion

Based on the tax benefits and the reduction of Con Edison’s reduced carbon imprint the EV charger expansion should continue.

**Project Risks and Mitigation Plan**

N/A

**Technical Evaluation / Analysis**

An engineering study was performed to investigate the necessary technical requirements and associated budgetary construction costs to install EV charging stations

**Project Relationships (if applicable)**

When possible this project will be in conjunction with the “Fuel Station Upgrades” to minimize the outages to the fuel stations and reduce yard interruptions for the tenants.

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Actual 2021</u>
Capital	5,211	1,373	600	92		0
O&M						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital	150	2,006	2,501	3,008	3,008
O&M*	330	330	330	330	330

**Capital Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	12	160	200	241	241
M&S	8	100	125	150	150
Contract Services	90	1,204	1,626	1,955	1,955
Other	3	40	50	60	60
Overheads	37	502	500	602	602
<b>Total</b>	<b>150</b>	<b>2,006</b>	<b>2,501</b>	<b>3,008</b>	<b>3,008</b>

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

### 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

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**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/ maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services/Facilities and Field Services 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input checked="" type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Prevailing Wage	
Project/Program Manager:	Project/Program Number (Level 1):
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date: October 2020	Estimated Date In Service:
<b>A. Total Funding Request (\$000)</b> Capital: O&M: \$25,000	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  <u><i>Background:</i></u>  In early April 2020, the NY Legislature passed, and the Governor signed, an amendment to Public Service Law §42-a, which requires that “building service workers” who work at certain critical infrastructure facilities of utilities such as Con Edison to be paid at least the prevailing wage, as determined by the New York State Department of Labor or the New York City Comptroller. The Company’s electric and gas base rates reflect amounts for Janitorial, Guard Service and Landscaping wages and benefits. The wage changes were anticipated and introduced in the current Joint Proposal.  With the passing of the Prevailing Wage, the Company has experienced incremental expenditures. Specifically, at the critical infrastructure locations identified by the Company, vendors have modified service contracts to reflect the required prevailing wage retroactive to October 1, 2020.  Expenditures associated with the State Prevailing Wage can increase substantially if the scope of the new wage requirements are determined to go beyond those locations presently identified by the Company or to job classifications beyond guards and cleaners. In this instance, the Company will defer annually the revenue requirement associated with incremental expenditures required to comply with any new State Prevailing Wage rates for future recovery from customers.	
<b>Justification Summary:</b>  The new Prevailing Wage requirement reflects a regulatory change that impacts our business and requires compliance. Although Company employees are not directly impacted, the services provided	

by building service workers, i.e., janitorial and guard services, under current contracts resulted in significant financial impacts. In some instances, the new wage requirements have more than doubled the cost; these costs are unavoidable.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

N/A

## 2. Supplemental Information

**Alternatives**

There are no alternatives to complying with the new State Prevailing Wage requirement.

**Risk of No Action**

Risk 1

Failing to adhere to the State Prevailing Wage in our vendor contracts/pricing, can result in non-compliance and potential penalties for the company.

Risk 2

The company could face both financial and reputational penalties for failing to adhere with Prevailing Wage requirements.

**Non-Financial Benefits**

Stronger relationships with vendors, regulators, and community.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)

2. Major financial benefits

3. Total cost

Prevailing Wage total cost of \$25M represents expected expenditures at the East River and West End Avenue locations associated with Guard Service and Janitorial services.

4. Basis for estimate

Estimates based on new Prevailing wage rates (NY legislation change) that went into effect in October 2020 –and will remain in effect for perpetuity.

**Project Risks and Mitigation Plan**

**Technical Evaluation/ Analysis**

N/A

Project Relationships (if applicable) N/A
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### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Forecast 2021</u>
Capital						
O&M	\$2,212	\$2,314	\$2,757	\$2,867	\$3,133	\$5,229
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital					
O&M*	\$4,706	\$4,853	\$4,997	\$5,147	\$5,301
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor					
M&S					
Contract Services					
Other					
Overheads					
<b>Total</b>					

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

# **Shared Services Panel**

## **Supply Chain**

### **Exhibit SSP-7**

Shared Services Panel (SSP-7) Supply Chain - O&M	Year Total			
	Current Budget			
	Total Dollars (\$000)			
	RY1	RY2	RY3	3 Yr. Total
Third-Party Risk Management	\$ 1,000	\$ 1,350	\$ 1,550	\$ 3,900

## Utility Shared Services/Supply Chain 2022

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Third Party Risk Management Program	
Project/Program Manager: Kara Kennedy	Project/Program Number (Level 1): 247345160001
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Execution <input type="checkbox"/> On-going <input type="checkbox"/> Other:	
Estimated Start Date: Q4 2020	Estimated Date In Service: Q1 2023
A. Total Funding Request (\$000) O&M: 7,000	B. <input type="checkbox"/> 5-Year Gross Cost Savings (N/A) <input type="checkbox"/> 5-Year Gross Cost Avoidance (N/A)
C. 5-Year Ongoing Maintenance Expense (\$000) O&M:	D. Investment Payback Period: (Years/months) (If applicable) - N/A
<p><b>Work Description:</b></p> <p><b>Objectives:</b></p> <p>Con Edison is building a program for Supply Chain Third Party Risk Management (TPRM) with a targeted roll-out in the first quarter of 2023 to drive efficiencies and enhance its ability to identify, monitor, and manage the risks of doing business with third parties.</p> <p>Through this program, Con Edison will expand its current third party risk assessment review to include additional risk categories including: business resiliency, fourth party management, fraud, geopolitical, human capital, physical security, compliance, reputational, and operational risks. The program will also enhance the Company’s risk program by automating and aggregating all third party risk review information for ease of understanding and use.</p> <p>Assessments completed by third parties will be reviewed and evaluated by the Company’s new TPRM employees. If the Company identifies risks, it will develop a risk treatment plan that will be tracked, managed, and approved by the appropriate internal party (e.g. the contract end-user) as part of Con Edison’s third-party selection management.</p> <p>During contract negotiations, the Company will also consider risk profile information to determine whether to negotiate special contract terms, including regarding onboarding.</p> <p>The enhancements that result from the TPRM program will also inform contract reassessment and monitoring cycles. In addition, the Company will establish more robust vendor performance reviews (scorecards) which will provide increased insight into third-party vendor risk to the Company.</p>	

In 2021, Supply Chain and the consulting firm KPMG LLP completed a rapid assessment to determine the level of effort and cost estimates to support the program design. The assessment estimates the resource hours needed to support the program’s expansion to all of our risk domains.

Forecasted budget needs will address the following:

- Supply Chain Resources
  - Program oversight
  - Business support
  - Reporting
  - Training
  - Continuous improvement and program scalability
- Technology Maintenance
  - Ongoing support, maintenance, and licensing
- TPRM Program Activities
  - Risk assessments across 12 risk areas
  - Work with business units to manage risk and associated treatment plans

**Costs to sustain TPRM technology, enhance due diligence processes, investments into internal resources, and advance program maturity by calendar year:**

Calendar Year	Activity	Expense Details
2022	Supply Chain resource(s)	Flat rate \$200K for 2 new FTEs (grows TPRM team to 3)
	Technology and training costs	\$250K
	TPRM program activities (risk subject matter experts)	\$480K (Risk assessments for Critical + High Vendors and new engagements); \$70K (2021-22 assessment risk treatment support + new vendor & engagement support + technology support)
	<b>Subtotal:</b>	<b>\$800K (Program) + \$200K (FTEs) = \$1M</b>
2023	Supply Chain resource(s)	Flat rate \$150K for 3 new FTEs hired mid-year (grows TPRM team to 5); flat rate \$100K/2
	Technology and training costs	\$620K
	TPRM program activities (3 risk subject matter experts)	\$220K (annual critical assessment reviews, new engagements, and medium risk vendor assessments); \$160K (for technology support, potential expansion needs for CMDB/ Archer integration)
	<b>Subtotal:</b>	<b>\$1M (Program) + 350K (3 mid-year hires and 2022's 2 FTEs) = \$1.35M</b>
2024	Supply Chain resource(s)	\$200K increase to support prior mid-year FTE hires
	Technology and training costs	\$675K
	TPRM program activities (3.5 FTEs which includes potential external support)	\$325K (re-assessment of critical vendors, assessment of medium risk vendors, and new engagements)
	<b>Subtotal:</b>	<b>\$1M (Program) + \$550K (Resources) = \$1.55M</b>
	Supply Chain resource(s)	No change
	Technology and training costs	\$780K

2025	TPRM program activities (3 risk subject matter experts which includes potential external support)	\$220K
	<b>Subtotal:</b>	<b>\$1M (Program) + \$550K (Resources) = \$1.55M</b>
2026	Supply Chain resource(s)	No change
	Technology and training costs	\$477K
	TPRM program activities (5 risk subject matter experts which includes potential external support)	\$523K
	<b>Subtotal:</b>	<b>\$1M (Program) + \$550K (Resources) = \$1.55M</b>

**Justification Summary:**

**Background:**

In February 2020, Con Edison hired a program manager to develop the business case and project manage its TPRM program. The TPRM program charter was developed to meet the Company’s priority to provide a direct line of sight into risks of its third parties. The Company’s TPRM Steering Committee approved the charter in Q1 2020. Capital funding for this program was approved in Q4 2020.

In December 2020, Supply Chain onboarded KPMG LLP to partner in driving a, complex, cross-functional project with over 70 stakeholders from across the Company to design, build, and deploy a TPRM program. An investment into the Company’s existing on-premises Governance, Risk, and Compliance (GRC) platform, RSA Archer, was selected as part of the Company’s strategic initiative to build functionality with IT partners already used by the company, rather than increasing our portfolio of software partners.

**Implementation (2022-2026):**

As described in the Objectives above, the Company is developing its third party risk management program for new vendor activities, ongoing due diligence (vendor risk assessments and risk intelligence information), and ongoing monitoring (risk treatment and follow-up). This requires a team to support the business in understanding and managing risk-based processes and controls, continued development and understanding of an evolving regulatory landscape, reporting and audit support, new risk intelligence identification and management, development of formal TPRM governance and oversight committees to manage and report on key risks and issues of critical and high risk vendors.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

This program will improve the Company’s ability to develop risk treatment plans.

**Non-Financial Benefits**

Benefit Category	Expected Benefit
<b>Enhanced Data &amp; System Security</b>	<ul style="list-style-type: none"> <li>• Technology maintenance and management of third-party information and the Company’s on-premises platform of third party risk information</li> </ul>
<b>Improved Agility</b>	<ul style="list-style-type: none"> <li>• Reduce and manage risks</li> </ul>
<b>Enable use of current technology</b>	<ul style="list-style-type: none"> <li>• Training</li> <li>• Continuous improvement and alignment with the Governance, Risk, Compliance (GRC) platform connectivity with Compliance and Enterprise Risk Management</li> </ul>
<b>User Experience</b>	<ul style="list-style-type: none"> <li>• Continuous improvement through enhancements and other integrations to the system</li> </ul>
<b>Scalability</b>	<ul style="list-style-type: none"> <li>• Continue expansion of the platform to other areas outside of Supply Chain and non-procurement transaction relationships</li> </ul>
<b>Operational Excellence</b>	<ul style="list-style-type: none"> <li>• Automation of processes</li> <li>• Centralized view of third party risk profile information, open issues and risk treatment plans by risk ratings</li> </ul>
<b>Increase Standardization Data, Processes and Systems</b>	<ul style="list-style-type: none"> <li>• Adoption of common taxonomies for risk and reporting</li> <li>• Streamlined current state and enhanced processes</li> </ul>
<b>Reduced Compliance Reporting Risks</b>	<ul style="list-style-type: none"> <li>• Reduce compliance reporting risks due to increased accuracy and completeness of data sourced from an integrated system.</li> <li>• Compiling periodic compliance reports will reduce manual efforts due to greater integration, automation, standardization, and the ability to use pre-built reports and dashboards.</li> <li>• Faster production of key management reports due to fewer integrations and decreased reliance on multiple disparate systems.</li> </ul>

**Summary of Financial Benefits and Costs**  
N/A

**3. Funding Detail**

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year (O&amp;M only)</u>	<u>Actual 2021</u>
Capital						
O&M						200

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital					0
O&M	1,000	1,350	1,550	1,550	1,550

**Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor					
M&S					
Contract Services					
Other					
Overheads					
<b>Total</b>					

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

# **Shared Services Panel**

## **Emergency Preparedness**

### **Exhibit SSP-8**

Shared Services Panel (SSP-8) Emergency Preparedness - O&M	Year Total			
	Current Budget			
	Total Dollars (\$000)			
	RY1	RY2	RY3	3 Yr. Total
Weather Monitoring Stations (NYC Micronet)	\$ 400	\$ 400	\$ 400	\$ 1,200
Additional Support Personnel	\$ 200	\$ 200	\$ 200	\$ 600
<b>Total Emergency Preparedness</b>	<b>\$ 600</b>	<b>\$ 600</b>	<b>\$ 600</b>	<b>\$ 1,800</b>

## Utility Shared Services/Emergency Preparedness 2022

### 1. Project / Program Summary

Type: <input checked="" type="checkbox"/> Project <input type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset																										
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input type="checkbox"/> Operationally Required <input checked="" type="checkbox"/> Strategic																											
Project/Program Title: Weather Monitoring Stations (NYC Micronet)																											
Project/Program Manager: Matthew Leszak	Project/Program Number (Level 1):																										
Status: <input type="checkbox"/> Initiation <input type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____																											
Estimated Start Date: 1/1/2022	Estimated Date In Service: 10/20/2020																										
<b>A. Total Funding Request (\$000)</b> Capital: O&M: 2,000 (400/year)	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:																										
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>																										
<b>Work Description:</b>  In the Joint Proposal approved by the Commission in Case 19-E-0065 Con Edison committed to a weather data sensor and river temperature sensor pilot program ("Weather Sensor Pilot"). The Weather Sensor Pilot involved the installation of weather stations and river temperature sensors across NYC to assess climate change locally. These stations were fully installed and operating by Fall 2020. Emergency Preparedness will be responsible for ongoing Operating and Maintenance expenditures. Maintenance schedule ranges from every few months to five years and will be handled by skilled technicians from the University of Albany (who originally installed the weather stations and sensors). Please refer to the table below for approximate maintenance schedule:																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%; text-align: center;">Task</th> <th style="width: 40%; text-align: center;">Frequency</th> </tr> </thead> <tbody> <tr> <td>Site cleaning and inspection</td> <td>Two to three times per year</td> </tr> <tr> <td>Temperature sensor rotations for calibration</td> <td>Every 2 years</td> </tr> <tr> <td>Relative humidity sensor rotations for calibration</td> <td>Every 18 months</td> </tr> <tr> <td>Pressure sensor rotation for calibration</td> <td>Every 5 years</td> </tr> <tr> <td>Pyranometer sensor rotation for calibration</td> <td>Every 2 years</td> </tr> <tr> <td>Snow depth: Replacement of transducers</td> <td>Every 2 years</td> </tr> <tr> <td>Wind monitor: Replacement of vertical flange</td> <td>Every 5 years</td> </tr> <tr> <td>Wind monitor: Replacement of horizontal flange</td> <td>Every 5+ years</td> </tr> <tr> <td>Test wind monitor speed and direction</td> <td>Every 3 years</td> </tr> <tr> <td>Precipitation gauge: Filling with antifreeze</td> <td>Every fall</td> </tr> <tr> <td>Precipitation gauge: Empty antifreeze/ water mix</td> <td>Every spring</td> </tr> <tr> <td>Test precipitation weight</td> <td>Every 3 years</td> </tr> </tbody> </table>		Task	Frequency	Site cleaning and inspection	Two to three times per year	Temperature sensor rotations for calibration	Every 2 years	Relative humidity sensor rotations for calibration	Every 18 months	Pressure sensor rotation for calibration	Every 5 years	Pyranometer sensor rotation for calibration	Every 2 years	Snow depth: Replacement of transducers	Every 2 years	Wind monitor: Replacement of vertical flange	Every 5 years	Wind monitor: Replacement of horizontal flange	Every 5+ years	Test wind monitor speed and direction	Every 3 years	Precipitation gauge: Filling with antifreeze	Every fall	Precipitation gauge: Empty antifreeze/ water mix	Every spring	Test precipitation weight	Every 3 years
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**Justification Summary:**

In order to better understand the local climatic conditions and trends and how it may adversely affect Con Edison, it is necessary that we continue to operate and maintain the existing weather sensors. In addition to the maintenance schedule, Con Edison will require one additional full-time equivalent to assist with compiling and providing data visualization tools to help all impacted stakeholders. In the long-term, the data obtained will help Con Edison better understand and assess climate change locally.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

The weather stations continuously monitor some or all these weather variables: temperature, dew point, relative humidity, precipitation, snow depth, wind speed and direction, wind gust, soil moisture, and solar radiation. In the long-term, with the data obtained, Con Edison will be able to better assess climate change on a more local scale. The density of the weather stations may also shed light into micro-scale weather phenomena, such as urban heat islands.

## 2. Supplemental Information

**Alternatives**

In order to better understand the local climatic conditions and trends and how it may adversely affect Con Edison, it is necessary that we continue to operate and maintain the existing weather sensors. If we forgo routine maintenance and oversight, the weather sensor equipment will begin to degrade, and quality of the associated data outputs will begin to diminish. When assessing climate change, it is prudent that data be of the highest quality.

**Risk of No Action**

Risk 1

The Company misses an opportunity to better understand the impacts of weather and climate change on the Con Edison system. This applies to short-term situations, where such weather data could improve forecasting and enhance the Company in a way that could reduce customer outages or improve restoration times. It also applies to the long-term, where such data could inform infrastructure planning and investments in a way that addresses future climate change expectations to better avoid far reaching impacts to the system such as what was experienced during Super Storm Sandy and Tropical Storm Isaias.

Risk 2

The Company does not satisfy requirements outlined in the Joint Proposal. This could lead to some action by the regulator, such as a fine or penalty. Not meeting the requirement would certainly have an adverse effect on the Company's relationship with external stakeholders that supported this effort.

**Non-Financial Benefits**

This project will provide the benefits of improved relationships with NYC Mayor's Office of Resiliency, ensuring regulatory compliance and improved data for future climate change adaptation decisions.

The project also provides an opportunity for a strategic partnership with the State University of New York (SUNY) at Albany. The Company will be supporting a state university through this partnership, as

well as contributing to the NYS Mesonet by integrating the new weather monitoring stations under this project into the state-wide network that currently lacks a strong presence in Con Edison's territory. In return, the Company will benefit from their already-established expertise in this field and vast array of resources in future research and analytics to properly digest the data that will be gathered.

**Summary of Financial Benefits and Costs (attach backup)**

1. Cost-benefit analysis (if required)  
N/A

2. Major financial benefits  
N/A

3. Total cost  
\$2 million

4. Basis for estimate  
University of Albany provided an itemized operating and maintenance schedule to Con Edison detailing the costs for the next 5 years, plus costs incurred for one additional full-time equivalent to assist with compiling and providing data visualization tools to help all impacted stakeholders

5. Conclusion  
Please see Project Justification section.

**Project Risks and Mitigation Plan**

Risk 1  
COVID-19 Pandemic, which may delay availability of skilled technicians from the University of Albany to complete routine or emergency maintenance on the weather stations. The risk is not in additional costs for Con Edison, but rather possible extended down periods of weather stations or data streams.

**Technical Evaluation/ Analysis**

N/A

**Project Relationships (if applicable)**

N/A

**3. Funding Detail**

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital						
O&M						
Regulatory Asset						

**Total Request (\$000)**

Total Request by Year:

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
<b>Capital</b>					
<b>O&amp;M*</b>	400	400	400	400	400
<b>Regulatory Asset</b>					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor	100	100	100	100	1,00
M&S					
Contract Services	300	300	300	300	300
Other					
Overheads					
<b>Total</b>					

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M Savings</b>					
<b>O&amp;M Avoidance</b>					
<b>Capital Savings</b>					
<b>Capital Avoidance</b>					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>O&amp;M</b>					
<b>Capital</b>					

\*If whitepaper is supporting a capital project/program this refers to implementation O&M

## 4. Definitions

**Total Funding Request:** All funding requested for program or project over program/project lifecycle or for on-going programs the five-year requested amount, including all capital, O&M, retirement.

**Cost Savings:** Reductions in costs that are currently being incurred (e.g., reduced annual maintenance cost relative to today)

**Cost Avoidance:** Reductions in anticipated future costs that don't occur today (e.g., anticipated short-term fixes/maintenance if capital isn't deployed)

Project Status:

- Initiation - New project, not authorized yet
- Planning - Project authorized, not started yet
- Executing - Project in-flight
- On-going - Annual program

## Utility Shared Services/Emergency Preparedness 2022

### 1. Project / Program Summary

Type: <input type="checkbox"/> Project <input checked="" type="checkbox"/> Program	Category: <input type="checkbox"/> Capital <input checked="" type="checkbox"/> O&M <input type="checkbox"/> Regulatory Asset
Work Plan Category: <input type="checkbox"/> Regulatory Mandated <input checked="" type="checkbox"/> Operationally Required <input type="checkbox"/> Strategic	
Project/Program Title: Emergency Preparedness – Additional Support Personnel	
Project/Program Manager: Don Higgins	Project/Program Number (Level 1):
Status: <input type="checkbox"/> Initiation <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Execution <input checked="" type="checkbox"/> On-going <input type="checkbox"/> Other: _____	
Estimated Start Date:	Estimated Date In Service:
<b>A. Total Funding Request (\$000)</b> Capital: O&M: 800 (200/year)	<b>B.</b> <input type="checkbox"/> 5-Year Gross Cost Savings (\$000) <input type="checkbox"/> 5-Year Gross Cost Avoidance (\$000) O&M: Capital:
<b>C. 5-Year Ongoing Maintenance Expense (\$000)</b> O&M: Capital:	<b>D. Investment Payback Period: (Years/months) (If applicable)</b>
<b>Work Description:</b>  These two positions one Project Specialist (2H) and one Entry Professional (EP) will support the Emergency Preparedness of the company, creating and improving Emergency Response Plans along with other guiding documents. Continually evaluate the impacts of climate change and weather volatility to strategically shift preparation planning. Support the development and execution of exercises and drills as corporate risks evolve and continue to be identified (cybersecurity, electric, gas, etc.). Evaluate overall business resiliency around all commodities and work toward long term plans while mitigating short term impacts. Establish controls around compliance with regulatory and internal procedures and protocols associated with emergency response, including interrogatories, discovery, and audits.  In addition, this position will support emergency operational needs such as mutual aid support, communications, and logistics.	
<b>Justification Summary:</b>  The mission of the Emergency Preparedness organization is to use a proactive, risk-informed, and comprehensive approach to help the Company prepare for various emergency events and remain resilient to the various hazards and threats that can affect the safe restoration of our services.  Emergency Preparedness strives to effectively manage the Company’s emergency preparedness, response, and recovery efforts. The increasing needs and expectations of customers (both internal and	

external), regulators, and agency partners, as well as increased regulatory oversight, as it pertains to electric safety and compliance presents, and will continue to present, a challenge with limited staffing. Emergency Preparedness' efforts and programs support all organizations/commodities within the Company as it relates to emergency preparedness, response, and recovery efforts.

Due to climate change, weather volatility has increased creating more extreme weather events. Over the past three years, we have significantly increased levels of mutual assistance, with significant increased mobilization frequency. This impact requires emergency preparedness to scale up resources.

These positions will help the Company continue to prepare for extreme weather events, developing additional protocols and procedures while establishing reviews and controls of current measures. Since weather impact events have increased, the Company also needs to scale up the resources for review and compliance.

More extreme weather events also require more resource to train, drill, exercise potential scenarios. These positions will assist in that effort, working through preparedness as well as actual support of a major event. The positions will have a direct impact on updates to the Company's various commodity-based and support organizations' emergency response plans (e.g., Electric, Gas); guidelines and procedures; and reasonably assures that the Company is in compliance with all regulatory guidelines, commission orders and/or filings related to emergency events and preparedness

More extreme weather events also require more resource to train, drill, exercise potential scenarios. These positions will assist in that effort, working through preparedness as well as actual support of a major event.

**Relationship to Broader Company Plans and Initiatives (e.g. Long-Range Plans, CLCPA Initiatives, Risk Mitigation)**

Overall Emergency Preparedness remains one of the cornerstones of our Risk Management Strategy, which includes major storms, gas outages, and cyber threats. This team will continue to manage those risks while recognizing the need to "keep the lights on" while moving to a Clean Energy Future required by the CLCPA.

## 2. Supplemental Information

**Alternatives**

Orange and Rockland EP personnel have been used on an as-needed basis to assist with the increased workload, especially during weather events and field emergencies. However, availability of this resource is contingent upon the needs of Orange and Rockland EP being met by other department personnel. Historically, Con Edison's support needs occur simultaneously with Orange and Rockland's, reducing the practicality of this alternative. Given the high level of specialization associated with the execution of the Company's emergency management philosophy and processes, there are no other viable alternatives under consideration.

**Risk of No Action**

Given the significant number of recommendations and anticipated revisions made to the Emergency Response Plan, along with the additional workload associated with these initiatives, and a continued

<p>focus on the need to enhance emergency preparedness, the process may not be performed at the historically high levels consistent with the expectations of the department from its constituents. Without additional staffing, the Emergency Preparedness group will be challenged to maintain, and, more importantly, enhance the identified risk mitigation efforts for Con Edison.</p>
<p><b>Non-Financial Benefits</b> The additional positions will allow the Emergency Preparedness group to build stronger relationships with county and state emergency operating centers allowing EP to participate in the conversations around climate change. In addition, it will allow for more interaction with internal stakeholders improving the communication among the departments and building stronger relationships through collaboration.</p>
<p><b>Summary of Financial Benefits and Costs (attach backup)</b></p> <p>1. Cost-benefit analysis (if required) N/A</p> <p>2. Major financial benefits N/A</p> <p>3. Total cost \$800,000</p> <p>4. Basis for estimate N/A</p> <p>5. Conclusion N/A</p>
<p><b>Project Risks and Mitigation Plan</b> N/A</p>
<p><b>Technical Evaluation / Analysis</b> N/A</p>
<p><b>Project Relationships (if applicable)</b> N/A</p>

### 3. Funding Detail

**Historical Spend**

	<u>Actual 2017</u>	<u>Actual 2018</u>	<u>Actual 2019</u>	<u>Actual 2020</u>	<u>Historic Year</u> (O&M only)	<u>Forecast 2021</u>
Capital						
O&M					0	0
Regulatory Asset						

**Total Request (\$000):**

**Total Request by Year:**

	<u>Request 2022</u>	<u>Request 2023</u>	<u>Request 2024</u>	<u>Request 2025</u>	<u>Request 2026</u>
Capital					
O&M*		200	200	200	200
Regulatory Asset					

**Capital/Regulatory Asset Request by Elements of Expense:**

<u>EOE</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Labor					
M&S					
Contract Services					
Other					
Overheads					
<b>Total</b>					

**Total Gross Cost Savings / Avoidance by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M Savings					
O&M Avoidance					
Capital Savings					
Capital Avoidance					

**Total Ongoing Maintenance Expense by Year:**

	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
O&M					
Capital					

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Project Status:

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- On-going - Annual program