MASTER SERVICES CONTRACT
BETWEEN
THE SCHOOL BOARD OF BROWARD COUNTY, FLORIDA
AND
JOHNSON CONTROLS, INC.
FOR
GUARANTEED ENERGY PERFORMANCE CONTRACTING SERVICES

THIS MASTER SERVICES CONTRACT FOR GUARANTEED ENERGY PERFORMANCE CONTRACTING SERVICES ("Contract") is made and entered into this ___ day of _____, 2020 (the "Effective Date"), by and between the SCHOOL BOARD OF BROWARD COUNTY, FLORIDA (the "CUSTOMER" or "SBBC"), an educational agency existing under the Constitution and the laws of the State of Florida, and JOHNSON CONTROLS, INC. (the "CONTRACTOR" or "JCI"), a Wisconsin corporation authorized to transact business in Florida and with an office at 15901 SW 29th St., Ste. #801, Miramar, FL 33027.

WHEREAS, the Legislature finds that investment in energy conservation measures in educational facilities can reduce the amount of energy consumed and produce immediate and long-term savings; and

WHEREAS, it is the policy of the state of Florida to encourage school districts to invest in energy conservation measures that reduce energy consumption, produce a cost savings, and improve the quality of indoor air in facilities, and, when economically feasible, to build, operate, maintain, or renovate educational facilities in such a manner so as to minimize energy consumption and maximize energy savings; and

WHEREAS, it is further the policy of the state of Florida to encourage school districts to reinvest any energy savings resulting from energy conservation measures into additional energy conservation efforts; and

WHEREAS, the Florida Legislature enacted Section 1013.23, Florida Statures to identify processes by which school districts may conduct energy efficiency contracting; and

WHEREAS, on January 14, 2020, in accordance with and pursuant to Section, 1013.23, Florida Statutes, Customer and JCI entered into a Project Development Agreement (the "PDA") pursuant to which JCI agreed to provide a Detailed Development Summary (the "Report") for energy cost savings in the form of this Agreement; and

WHEREAS, as authorized in the PDA, Customer desires to retain JCI to perform the work specified in Article 1 (Scope of Work) hereto (the "Work") relating to the installation of the improvement measures (the "Improvement Measures") described therein; and

WHEREAS, Customer is authorized and empowered under Section, 1013.23, Florida Statutes, to enter into this Agreement, and has taken all necessary action under all other applicable Laws to enter into this Agreement; and

WHEREAS, Customer has selected JCI to perform the Work in accordance with Chapter Section, 1013.23, Florida Statutes , and all other applicable procurement and other Laws.

NOW, THEREFORE, in consideration of the mutual promises set forth herein, the parties agree as follows:

1. RECITALS. The parties agree that the foregoing recitals are true and correct and that such recitals are incorporated herein by reference

2. TERM OF AGREEMENT. Pursuant to Section 1013.23(3)(g), Florida Statutes, the term of this Agreement shall expire at the end of each fiscal year and may be automatically renewed annually up to 20 years, subject to the SBBC making sufficient annual appropriations based upon continued realized energy cost savings.

3. SCOPE OF THE AGREEMENT. JCI shall perform the Work set forth in Article 1. After the Work is Substantially Complete (as defined below) and the Certificate of Substantial Completion is executed by Customer and JCI, JCI shall provide the assured performance guarantee (the "Assured Performance Guarantee") and the measurement and verification services (the "M&V Services") set forth in Article 2 (Assured Performance Guarantee), as applicable. Customer shall make payments to JCI for the Work and the M&V Services in accordance with Article 4 (Price and Payment Terms).

4. AGREEMENT DOCUMENTS: The following documents are hereby incorporated into and shall be deemed an integral part of this Agreement:

a. Article 1 – Scope of Work

b. Article 2 – Assured Performance Guarantee

c. Article 3 – Customer Responsibilities

d. Article 4 – Price and Payment Terms

e. Appendix (Electronic)

f. ECM 1 Appendix

g. ECM 2 Appendix

5. ORDER OF PRECEDENCE AMONG AGREEMENT DOCUMENTS. In the event of any conflict or omitted terms between provisions of the Project Development Agreement (the "PDA") dated January 14, 2020 and the provisions of this Agreement, the provisions of the following documents shall take precedence in this order:

a. The PDA; then

b. This Agreement.

The priority of documents shall be the Project Development Agreement, then this Agreement. Should any terms and conditions of the Project Development Agreement and this Agreement conflict with Section 1013.23, F.S., the provisions of Section 1013.23, F.S. shall prevail.

6. NOTICE TO PROCEED; SUBSTANTIAL COMPLETION; M&V SERVICES. This Agreement shall become effective on the date of the last signature on the signature page below. JCI shall commence performance of the Work within ten (10) business days of receipt of Customer's Notice to Proceed, a form of which is attached hereto as Attachment 1, and shall achieve Substantial Completion of the Work by the Substantial Completion date, which shall be the date on which Customer executes a Certificate of Substantial Completion substantially in the form attached hereto as Attachment 3.

For purposes of this Agreement, "Substantial Completion" means that JCI has provided sufficient materials and services to permit Customer to operate the Improvement Measures. The M&V Services shall commence on the first day of the month following the month in which Customer executes a Certificate of Substantial Completion and shall continue throughout the Guarantee Term, subject to earlier termination of the Assured Performance Guarantee as provided herein. Customer acknowledges and agrees that if, for any reason, it (i) cancels or terminates receipt of M&V Services, (ii) fails to pay for M&V Services in accordance with Article 4, (iii) fails to fulfill any of Customer's responsibilities necessary to enable JCI to complete the Work and provide the M&V Services, or (iv) otherwise cancels, terminates or materially breaches this Agreement, the Assured Performance Guarantee shall automatically terminate and JCI shall have no liability thereunder.

7. DELAYS AND IMPACTS. If JCI is delayed in the commencement, performance, or completion of the Work and/or M&V Services by causes beyond its control and without its fault, including but not limited to inability to access property; concealed or unknown conditions encountered at the project, differing from the conditions represented by Customer in the bid documents or otherwise disclosed by Customer to JCI prior to the commencement of the Work; a Force Majeure (as defined below) condition; failure by Customer to perform its obligations under this Agreement; or failure by Customer to cooperate with JCI in the timely completion of the Work, JCI shall provide written notice to Customer of the existence, extent of, and reason for such delays and impacts. Under such circumstances, an equitable adjustment in the time for performance, price and payment terms, and the Assured Performance Guarantee shall be made.

8. ACCESS. Customer shall provide JCI, its subcontractors, and its agents reasonable and safe access to all facilities and properties in Customer's control that are subject to the Work and M&V Services. Customer further agrees to assist JCI, its subcontractors, and its agents to gain access to facilities and properties that are not controlled by Customer but are necessary for JCI to complete the Work and provide the M&V Services. An equitable adjustment in the time for performance, price and payment terms, and Assured Performance Guarantee shall be made as a result of any failure to grant or delay in granting such access.

9. PERMITS, TAXES, AND FEES. Unless otherwise specified in Article 3 (Customer Responsibilities), JCI shall be responsible for obtaining all building permits required for it to perform the Work. Unless otherwise specified in Article 1 (Scope of Work), Customer shall be responsible for obtaining all other permits, licenses, approvals, permissions and certifications, including but not limited to, all zoning and land use changes or exceptions required for the provision of the Work or the ownership and use of the Improvement Measures. JCI shall not be obligated to provide any changes to or improvement of the facilities or any portion thereof

required under any applicable building, fire, safety, sprinkler or other applicable code, standard, law, regulation, ordinance or other requirement unless the same expressly regulates the installation of the Improvement Measures. Without limiting the foregoing, JCI's obligations with respect to the Work is not intended to encompass any changes or improvements that relate to any compliance matters (whether known or unknown) that are not directly related to the installation of the Improvement Measures or which have been imposed or enforced because of the occasion or opportunity of review by any governmental authority. Customer shall be responsible for and shall pay when due all assessments, charges and sales, use, property, excise, or other taxes now or hereafter imposed by any governmental body or agency upon the provision of the Work or the M&V Services, implementation or presence of the Improvement Measures, the use of the Improvement Measures or payments due to JCI under this Agreement, other than taxes upon the net income of JCI. Customer shall also be responsible for real or personal property taxes relating to equipment or material included in the Improvement Measures. Any fees, taxes, or other lawful charges paid by JCI on account of Customer shall become immediately due from Customer to JCI.

10. WARRANTY. JCI will perform the Work in a professional, workman-like manner. JCI will promptly re-perform any non-conforming Work for no charge, as long as Customer provides written notice to JCI within one (1) year following Substantial Completion or such other period identified in Article 1. If JCI installs or furnishes goods or equipment under this Agreement, and such goods or equipment are covered by an end-user warranty from their manufacturer, JCI will transfer the benefits of such warranty to Customer. The foregoing remedy with respect to the Work, together with any remedy provided by goods or equipment manufacturers, shall be Customer's sole and exclusive remedies for warranty claims. Customer agrees that the one (1) year period following Substantial Completion, or such other period identified in Article 1, shall be a reasonable time for purposes of submitting valid warranty claims with respect to the Work. These exclusive remedies shall not have failed of their essential purpose so long as JCI transfers the benefits of any goods or equipment end-user warranty to Customer and remains willing to re-perform any non-conforming Work for no charge within the one (1) year period described above or such other period identified in Article 1. NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE PROVIDED BY JCI. This warranty does not extend to any Work that has been abused, altered, or misused, or repaired by Customer or third parties without the supervision or prior written approval of JCI. Except with respect to goods or equipment manufactured by JCI and furnished to Customer hereunder, for which JCI shall provide its express written manufacturer's warranty, JCI shall not be considered a merchant or vendor of goods or equipment.

11. CLEANUP. JCI shall keep the premises and the surrounding area free from accumulation of waste materials or rubbish caused by the Work and, upon completion of the Work, JCI shall remove all waste materials, rubbish, tools, construction equipment, machinery, and surplus materials.

12. SAFETY; COMPLIANCE WITH LAWS. JCI shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work and M&V Services. Each of JCI and Customer shall comply with all

applicable laws, ordinances, rules, regulations, and lawful orders of public authorities (collectively, "Laws") in connection with its performance hereunder.

13. ASBESTOS-CONTAINING MATERIALS AND OTHER HAZARDOUS MATERIALS.

Asbestos-Containing Materials: Neither party desires to or is licensed to undertake direct obligations relating to the identification, abatement, cleanup, control, removal or disposal of asbestos-containing materials ("ACM"). Consistent with applicable Laws, Customer shall supply JCI with any information in its possession relating to the presence of ACM in areas where JCI undertakes any Work or M&V Services that may result in the disturbance of ACM. It is JCI's policy to seek certification for facilities constructed prior to 1982 that no ACM is present, and Customer shall provide such certification for buildings it owns, or aid JCI in obtaining such certification from facility owners in the case of buildings that Customer does not own, if JCI will undertake Work or M&V Services in the facility that could disturb ACM. If either Customer or JCI becomes aware of or suspects the presence of ACM that may be disturbed by JCI's Work or M&V Services, it shall promptly stop the Work or M&V Services in the affected area and notify the other. As between Customer and JCI, Customer shall be responsible at its sole expense for addressing the potential for or the presence of ACM in conformance with all applicable Laws and addressing the impact of its disturbance before JCI continues with its Work or M&V Services, unless JCI had actual knowledge that ACM was present and acted with intentional disregard of that knowledge, in which case (i) JCI shall be responsible at is sole expense for remediating areas impacted by the disturbance of the ACM, and (ii) Customer shall resume its responsibilities for the ACM after JCI's remediation has been completed.

Other Hazardous Materials: JCI shall be responsible for removing or disposing of any Hazardous Materials (as defined below) that it uses in providing Work or M&V Services ("JCI Hazardous Materials") and for the remediation of any areas impacted by the release of JCI Hazardous Materials. For other Hazardous Materials that may be otherwise present at Customer's facilities ("Non-JCI Hazardous Materials"), Customer shall supply JCI with any information in its possession relating to the presence of such materials if their presence may affect JCI's performance of the Work or M&V Services. If either Customer or JCI becomes aware of or suspects the presence of Non-JCI Hazardous Materials that may interfere with JCI's Work or M&V Services, it shall promptly stop the Work or M&V Services in the affected area and notify the other. As between Customer and JCI, Customer shall be responsible at its sole expense for removing and disposing of Non-JCI Hazardous Materials from its facilities and the remediation of any areas impacted by the release of Non-JCI Hazardous Materials, unless JCI had actual knowledge that Non-JCI Hazardous Materials were present and acted with intentional disregard of that knowledge, in which case (i) JCI shall be responsible at its sole expense for the remediation of any areas impacted by its release of such Non-JCI Hazardous Materials, and (ii) Customer shall remain responsible at its sole expense for the removal of Non-JCI Hazardous Materials that have not been released and for releases not resulting from JCI's performance of the Work or M&V Services. For purposes of this Agreement, "Hazardous Materials" means any material or substance that, whether by its nature or use, is now or hereafter defined or regulated as a hazardous waste, hazardous substance, pollutant or contaminant under applicable Law relating to or addressing public or

employee health and safety and protection of the environment, or which is toxic, explosive, corrosive, flammable, radioactive, carcinogenic, mutagenic or otherwise hazardous or which is or contains petroleum, gasoline, diesel, fuel, another petroleum hydrocarbon product, or polychlorinated biphenyls. "Hazardous Materials" specifically includes mold and lead-based paint and specifically excludes ACM. JCI shall have no obligations relating to the identification, abatement, cleanup, control, removal, or disposal of mold, regardless of the cause of the mold.

14. CHANGE ORDERS. The parties, without invalidating this Agreement, may request changes in the Work to be performed under this Agreement, consisting of additions, deletions, or other revisions to the Work ("Change Orders"). The price and payment terms, time for performance and, if necessary, the Assured Performance Guarantee, shall be equitably adjusted in accordance with the Change Order. Such adjustments shall be determined by mutual agreement of the parties. JCI may delay performance until adjustments arising out of the Change Order are clarified and agreed upon. Any Change Order must be signed by an authorized representative of each party. If concealed or unknown conditions are encountered at the project, differing from the conditions represented by Customer in the bid documents or otherwise disclosed by Customer to JCI prior to the commencement of the Work, price and payment terms, time for performance and, if necessary, the Assured Performance Guarantee, shall be equitably adjusted. Claims for equitable adjustment may be asserted in writing within a reasonable time from the date a party becomes aware of a change to the Work by written notification. Failure to promptly assert a request for equitable adjustment, however, shall not constitute a waiver of any rights to seek any equitable adjustment with respect to such change.

15. CUSTOMER FINANCING; TREATMENT; TAXES. With the exception of the specific terms set forth in Section 1013.23(4)(a), Florida Statutes as set forth herein in Article 34, the parties acknowledge and agree that JCI is not making any representation or warranty to Customer with respect to matters not expressly addressed in this Agreement, including, but not limited to:

(a) Customer's ability to obtain or make payments on any financing associated with paying for the Improvement Measures, related services, or otherwise;

(b) Customer's proper legal, tax, accounting, or credit rating agency treatment relating to this Agreement; and

(c) the necessity of Customer to raise taxes or seek additional funding for any purpose.

Customer is solely responsible for its obligations and determinations with respect to the foregoing matters. In addition, the parties acknowledge and agree that Customer shall be responsible to comply, at its cost and expense, with all Laws that may be applicable to it relating to performance contracting, including, without limitation, any requirements relating to the procurement of goods and/or services and any legal, accounting, or engineering opinions or reviews required or obtained in connection with this Agreement.

16. INSURANCE. JCI shall maintain insurance in amounts no less than those set forth below in full force and effect at all times until the Work has been completed, and shall provide a certificate evidencing such coverage promptly following Customer's request therefor.

COVERAGES	LIMITS OF LIABILITY
Workmen's Compensation Insurance or self-insurance, including Employer's Liability	Statutory
Commercial General Liability Insurance	$5,000,000 Per Occurrence $5,000,000 Aggregate
Comprehensive Automobile Liability Insurance	$5,000,000 Combined Single Limit

The above limits may be obtained through primary and excess policies, and may be subject to self-insured retentions.

Customer shall be responsible for obtaining builder's risk insurance coverage for the Improvement Measures and shall at all times be responsible for any loss or casualty to the Improvement Measures. Customer shall also maintain insurance coverage, of the types and in the amounts customary for the conduct of its business, throughout the term of this Agreement.

17. INDEMNIFICATION. To the fullest extent permitted by applicable Law, each party shall indemnify the other with respect to any third party claim alleging bodily injury, including death, or property damage to the extent such injury or damage is caused by the negligence or willful misconduct of the indemnifying party. A condition precedent to any obligation of a party to indemnify the other pursuant to this Section 17 shall be for the indemnified party to promptly advise the indemnifying party of the claim pursuant to the notice provision of this Agreement.

18. LIMITATION OF LIABILITY. Neither JCI nor Customer will be responsible to the other for any special, indirect, consequential, remote, punitive, exemplary, loss of profits or revenue, loss of use, or similar damages, regardless of how characterized and regardless of a party having been advised of the possibility of such potential losses or relief, arising in any manner from this Agreement, the Work, the Improvement Measures, the premises, the M&V Services, or otherwise. WITHOUT LIMITING JCI'S EXPRESS OBLIGATIONS UNDER THE ASSURED PERFORMANCE GUARANTEE, JCI'S LIABILITY UNDER THIS AGREEMENT, REGARDLESS OF THE FORM OF ACTION, SHALL IN NO EVENT EXCEED THE AMOUNT OF THE PAYMENTS ACTUALLY RECEIVED BY JCI UNDER ARTICLE 4. If this Agreement covers fire safety or security equipment, Customer understands that JCI is not an insurer regarding those services, and that JCI shall not be responsible for any damage or loss that

may result from fire safety or security equipment that fails to prevent a casualty loss. The foregoing waivers and limitations are fundamental elements of the basis for this Agreement between JCI and Customer, and each party acknowledges that JCI would not be able to provide the work and services contemplated by this Agreement on an economic basis in the absence of such waivers and limitations, and would not have entered into this Agreement without such waivers and limitations.

19. FORCE MAJEURE. Neither party will be responsible to the other for damages, loss, injury, or delay caused by conditions that are beyond the reasonable control, and without the intentional misconduct or negligence of that party, whether foreseeable or unforeseeable. Such conditions (each, a "Force Majeure") include, but are not limited to: acts of God; acts or omissions of Customer; acts of government agencies; quarantines; epidemics; pandemics; disease; viruses; strikes; labor disputes; fires; explosions or other casualties; thefts; vandalism; riots or war; acts of terrorism; electrical power outages; interruptions or degradations in telecommunications, computer, or electronic communications systems; changes in Laws; or unavailability of parts, materials or supplies.

20. JCI'S PROPERTY. All materials furnished or used by JCI personnel and/or JCI subcontractors or agents at the installation site, including documentation, schematics, test equipment, software and associated media remain the exclusive property of JCI or such other third party. Customer agrees not to use such materials for any purpose at any time without the express authorization of JCI. Customer agrees to allow JCI personnel and/or JCI subcontractors or agents to retrieve and to remove all such materials remaining after installation or maintenance operations have been completed. Customer acknowledges that any software furnished in connection with the Work and/or M&V Services is proprietary and subject to the provisions of any software license agreement associated with such software.

21. DISPUTES. JCI and Customer will attempt to settle any controversy, dispute, difference, or claim between them concerning the performance, enforcement, or interpretation of this Agreement (collectively, "Dispute") through direct discussion in good faith, but if unsuccessful, will submit any Dispute to non-binding mediation in the nearest major metropolitan area of the state where the project is performed. If the parties are unable to agree on a mediator or a date for mediation, either party may request JAMS, Inc. to appoint a mediator and designate the time and procedure for mediation. Such mediator shall be knowledgeable, to each party's reasonable satisfaction, with respect to matters concerning construction law. Neither JCI nor Customer will file a lawsuit against the other until not less than sixty (60) days after the mediation referred to herein has occurred, unless one or both parties is genuinely and reasonably concerned that any applicable statute of limitations is on the verge of expiring. JCI AND CUSTOMER HEREBY WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL AS TO ANY CLAIM OR CAUSE OF ACTION BASED UPON, ARISING OUT OF OR DIRECTLY OR INDIRECTLY RELATED TO THIS AGREEMENT, INCLUDING CONTRACT, TORT AND STATUTORY CLAIMS, AND EACH OF THE PARTIES HERETO ACKNOWLEDGES THAT THIS WAIVER IS A MATERIAL INDUCEMENT TO ENTER INTO A BUSINESS RELATIONSHIP, THAT EACH HAS RELIED ON THIS WAIVER IN ENTERING INTO THIS

AGREEMENT, AND THAT EACH WILL CONTINUE TO RELY ON THIS WAIVER IN THEIR RELATED FUTURE DEALINGS UNDER THIS AGREEMENT.

22. GOVERNING LAW. This Agreement and the construction and enforceability thereof shall be interpreted in accordance with the laws of the state where the Work is conducted.

23. CONSENTS; APPROVALS; COOPERATION. Whenever Customer's consent, approval, satisfaction or determination shall be required or permitted under this Agreement, and this Agreement does not expressly state that Customer may act in its sole discretion, such consent, approval, satisfaction or determination shall not be unreasonably withheld, qualified, conditioned or delayed, whether or not such a "reasonableness" standard is expressly stated in this Agreement. Whenever Customer's cooperation is required by JCI in order to carry out JCI's obligations hereunder, Customer agrees that it shall act in good faith and reasonably in so cooperating with JCI and/or JCI's designated representatives or assignees or subcontractors. Customer shall furnish decisions, information, and approvals required by this Agreement in a timely manner so as not to delay the performance of the Work or M&V Services.

24. FURTHER ASSURANCES. The parties shall execute and deliver all documents and perform all further acts that may be reasonably necessary to effectuate the provisions of this Agreement.

25. INDEPENDENT CONTRACTOR. The relationship of the parties hereunder shall be that of independent contractors. Nothing in this Agreement shall be deemed to create a partnership, joint venture, fiduciary, or similar relationship between the parties.

26. POWER AND AUTHORITY. Each party represents and warrants to the other that (i) it has all requisite power and authority to execute and deliver this Agreement and perform its obligations hereunder, (ii) all corporate, board, body politic, or other approvals necessary for its execution, delivery, and performance of this Agreement have been or will be obtained, and (iii) this Agreement constitutes its legal, valid, and binding obligation.

27. SEVERABILITY. In the event that any clause, provision, or portion of this Agreement or any part thereof shall be declared invalid, void, or unenforceable by any court having jurisdiction, such invalidity shall not affect the validity or enforceability of the remaining portions of this Agreement unless the result would be manifestly inequitable or materially impair the benefits intended to inure to either party under this Agreement.

Should any terms and conditions of this Agreement conflict with Section 1013.23, F.S., the provisions of Section 1013.23, F.S. shall prevail.

28. COMPLETE AGREEMENT. It is understood and agreed that this Agreement contains the entire agreement between the parties relating to all issues involving the subject matter of this Agreement. No binding understandings, statements, promises or inducements contrary to this Agreement exist. This Agreement supersedes and cancels all previous agreements, negotiations, communications, commitments and understandings with respect to the subject matter hereof, whether made orally or in writing. Each of the parties to this Agreement expressly warrants and represents to the other that no promise or agreement which is not herein expressed has been made to the other, and that neither party is relying upon any statement or representation of the

other that is not expressly set forth in this Agreement. Each party hereto is relying exclusively on the terms of this Agreement, its own judgment, and the advice of its own legal counsel and/or other advisors in entering into this Agreement. Customer acknowledges and agrees that any purchase order issued by Customer associated with this Agreement is intended only to establish payment authority for Customer's internal accounting purposes. No purchase order shall be considered a counteroffer, amendment, modification, or other revision to the terms of this Agreement.

29. HEADINGS. The captions and titles in this Agreement are for convenience only and shall not affect the interpretation or meaning of this Agreement.

30. COUNTERPARTS. This Agreement may be executed in any number of counterparts, all of which when taken together shall constitute one single agreement between the parties.

31. NOTICES. All notices or communications related to this Agreement shall be in writing and shall be **deemed** served if and when sent by facsimile or mailed by certified or registered mail: to Johnson Controls, Inc. at the address listed on the first page of this Agreement, ATTN: Regional Solutions Manager, with a copy to Johnson Controls, Inc., ATTN: General Counsel – Building Efficiency Americas, 507 East Michigan Street, Milwaukee, Wisconsin, 53202: and to Customer at the address listed on the first page of this Agreement.

32. OTHER AGENCIES. The parties mutually agree that this Agreement to form may be utilized by the SBBC or any other "Agency", as defined by F.S. 489.145 or F.S. 1013.23, to enter their own Project Development Agreement with JCI. Other agencies electing to utilize this agreement shall negotiate their specific scope, terms, conditions, and additional Articles, directly with JCI in all respects. SBBC will in no way be liable for the other agency's agreement.

33. MODIFICATIONS. Additions, deletions, and modifications to this Agreement may be made upon the mutual agreement of the Parties in writing. The Parties contemplate that such modifications may include, but are not limited to, the installation of additional improvement measures, energy conservation measures, facility improvement measures, infrastructure improvements and operational efficiency improvements or the furnishing of additional services within the identified infrastructures, as well as other infrastructures owned, operated or maintained by the Customer. These modifications may take the form of additional phases of work or modifications to the original Scope of Work or Services.

34. ADDITIONAL TERMS REQUIRED PURSUANT TO SECTION 1013.23, FLORIDA STATUTES.

a. The term of this Agreement shall expire at the end of each fiscal year and may be automatically renewed annually up to 20 years, subject to the SBBC making sufficient annual appropriations based upon continued realized energy cost savings.

b. JCI and SBBC stipulate that this Agreement does not constitute a debt, liability, or obligation of the SBBC, or a pledge of the faith and credit of the SBBC.

c. JCI guarantees that annual energy cost savings will meet or exceed the amortized cost of energy conservation measures.

d. All payments, except obligations on termination of the contract before its expiration, are to be made over time, but shall not exceed 20 years from the date of complete installation and acceptance by the SBBC, and that the annual savings are guaranteed to the extent necessary to make annual payments to satisfy the contract.

e. JCI shall provide a 100-percent public construction bond to the SBBC for its faithful performance, as required by Section 255.05, Florida Statutes.

f. JCI shall provide the SBBC an annual reconciliation of the guaranteed energy cost savings as set forth in Article 2. JCI shall be liable for any annual savings shortfall which may occur in any year in which JCI is providing M&V Services. In the event that such reconciliation reveals an excess in annual energy cost savings, such excess savings shall not be used to cover potential energy cost savings shortages in subsequent contract years.

(Remainder of page intentionally left blank. Signature pages to follow)

FOR CUSTOMER

(Corporate Seal)

THE SCHOOL BOARD OF BROWARD COUNTY, FLORIDA

By_____
Donna P. Korn, Chair

ATTEST:

_____
Robert W. Runcie, Superintendent of Schools

Approved as to Form and Legal Content:

_____
Office of the General Counsel

(Remainder of page intentionally left blank. Signature page follows)

FOR JCI

(Corporate Seal)

ATTEST:

JOHNSON CONTROLS, INC.

By _____
Paul Angersbach, SE General Manager

_____

-or-

_____
Witness

_____
Witness

STATE OF FLORIDA

COUNTY OF COLLIER

The foregoing instrument was acknowledged before me, by means of ☒ physical presence or ☐ online notarization, this 8th day of April, 2020, by Paul Angersbach of Johnson Controls, Inc. on behalf of the corporation or agency.

He/she is personally ~~known to me~~ or produced as Identification and did/did not first take an oath.

My commission expires: 9/7/22

_____
Signature, Notary Public

_____
Printed Name of Notary

(SEAL)

KEVIN BOWE
MY COMMISSION # GG 253175
EXPIRES: September 7, 2022
Bonded Thru Notary Public Underwriters

_____
Notary's Commission No.

Article 1. SCOPE OF WORK.

Scope of Work Summary	
ECM – 1	LED Lighting Upgrades
ECM – 2	Water Conservation

ECM–1: LED Lighting Upgrades

This Scope of Work includes materials and labor for the following:

Materials and Labor to perform the lighting system improvements as detailed in *ECM 1 Appendix*. Space generalizations are described below. These generalizations apply only to areas and fixtures specified in *ECM 1 Appendix.*

- Fluorescent T8 and T12 lamps will be eliminated and new LED technology T8 tubes, retrofit kits, or new fixtures will be installed. Existing incandescent and compact fluorescent lamps will be replaced with high efficiency LED lamps or replaced with new LED recessed can kits (only for existing specified recessed-can fixtures).
- Gym high bay fixtures not currently fitted with LED technology fixtures will be replaced with new high bay LED technology fixtures.
- Exterior metal halide wall pack fixtures will be replaced with new LED wall pack fixtures
- Exterior pole metal halide shoebox fixtures will be replaced with new LED shoebox or slip-fitter type fixtures
- Exterior metal halide can fixtures will be retrofitted with LED par lamps
- Wireless ceiling sensors or wall switch sensors will be installed based on room size and relative space usage. Gyms will have fixture mounted occupancy sensors. For complete sensor locations and type see *ECM 1 Appendix*

The following table provides a summary of the quantities of fixtures improved by these upgrades.

Proposed Solutions						
Row Labels	**New Fixture**	**Retrofit Kit**	**Relamp**	**No Retrofit**	**Retrofit**	**Grand Total**
Dillard Elementary School	**111**	**6**	**10**	**6**	**1642**	**1775**
FT12 - T12 and other Linear Fluorescent	1				1631	1632

Proposed Solutions						
Row Labels	**New Fixture**	**Retrofit Kit**	**Relamp**	**No Retrofit**	**Retrofit**	**Grand Total**
FT8 - T8 Linear Fluorescent	62				11	73
FU - U-Tube Fluorescent		6				6
H - Halogen Incandescent			5			5
I Standard Incandescent			5			5
LED				6		6
MH Metal Halide Fixtures	48					48
Dillard Elementary School - EXTERIOR	**43**			**1**		**44**
CF - Compact Fluorescent	10					10
FT12 - T12 and other Linear Fluorescent	9					9
FT8 - T8 Linear Fluorescent	14					14
LED				1		1
MH Metal Halide Fixtures	10					10
Maplewood Elementary School	**50**		**67**	**1**	**2007**	**2125**
FT12 - T12 and other Linear Fluorescent	40				1869	1909
FT8 - T8 Linear Fluorescent	9				138	147
H - Halogen Incandescent			6			6
HPS - High Pressure Sodium	1					1
I Standard Incandescent			61			61
LED				1		1
Maplewood Elementary School - EXTERIOR	**52**			**4**	**19**	**75**
FT12 - T12 and other Linear Fluorescent	11					11
FT8 - T8 Linear Fluorescent	3					3
HPS - High Pressure Sodium	30				19	49
LED				4		4
MH Metal Halide Fixtures	8					8
Mary M. Bethune Elementary School	**62**	**18**	**130**	**1**	**2064**	**2275**

Proposed Solutions						
Row Labels	**New Fixture**	**Retrofit Kit**	**Relamp**	**No Retrofit**	**Retrofit**	**Grand Total**
CF - Compact Fluorescent	9	18				27
FT12 - T12 and other Linear Fluorescent	6				1323	1329
FT8 - T8 Linear Fluorescent	9				741	750
H - Halogen Incandescent			129			129
HPS - High Pressure Sodium	38					38
I Standard Incandescent			1			1
LED				1		1
Mary M. Bethune Elementary School - EXTERIOR	**56**			**64**		**120**
CF - Compact Fluorescent	2					2
HPS - High Pressure Sodium	54					54
LED				64		64
Pines Lakes Elementary School	**116**	**19**	**51**	**3**	**2217**	**2406**
CF - Compact Fluorescent	49	19				68
FT12 - T12 and other Linear Fluorescent	20				1674	1694
FT8 - T8 Linear Fluorescent	47				543	590
H - Halogen Incandescent			6			6
I Standard Incandescent			45			45
LED				3		3
Pines Lakes Elementary School - EXTERIOR	**105**				**12**	**117**
CF - Compact Fluorescent	22					22
FT12 - T12 and other Linear Fluorescent					10	10
FT8 - T8 Linear Fluorescent	40					40
MH Metal Halide Fixtures	43				2	45
Pompano Beach Elementary School	**2**	**5**	**26**	**6**	**1883**	**1922**
CF - Compact Fluorescent			1			1
ECF - Exit Sign	2					2

Proposed Solutions						
Row Labels	**New Fixture**	**Retrofit Kit**	**Relamp**	**No Retrofit**	**Retrofit**	**Grand Total**
FT12 - T12 and other Linear Fluorescent		2			1424	1426
FT8 - T8 Linear Fluorescent					459	459
FU - U-Tube Fluorescent		3				3
I Standard Incandescent			25			25
LED				6		6
Pompano Beach Elementary School - EXTERIOR	**123**			**78**	**14**	**215**
CF - Compact Fluorescent	64					64
FT12 - T12 and other Linear Fluorescent	4				14	18
FT8 - T8 Linear Fluorescent	45					45
HPS - High Pressure Sodium	10					10
LED				78		78
Pompano Beach Middle School	**134**	**19**	**133**	**87**	**2465**	**2838**
CF - Compact Fluorescent	27	5	4			36
ECF - Exit Sign	1					1
FT12 - T12 and other Linear Fluorescent	60	8			1642	1710
FT8 - T8 Linear Fluorescent	7				823	830
FU - U-Tube Fluorescent		6				6
H - Halogen Incandescent	3		2			5
I Standard Incandescent	4		127			131
LED				87		87
MH Metal Halide Fixtures	32					32
Pompano Beach Middle School - EXTERIOR	**167**	**10**	**3**	**37**		**217**
CF - Compact Fluorescent	39	7				46
FT12 - T12 and other Linear Fluorescent	5	3				8
FT8 - T8 Linear Fluorescent	31					31
H - Halogen Incandescent			1			1

Proposed Solutions						
Row Labels	**New Fixture**	**Retrofit Kit**	**Relamp**	**No Retrofit**	**Retrofit**	**Grand Total**
HPS - High Pressure Sodium	28					28
I Standard Incandescent			2			2
LED				37		37
MH Metal Halide Fixtures	55					55
MV Mercury Vapor	9					9
Stranahan High School	**276**	**69**	**79**	**200**	**3720**	**4344**
Delamped Track Head				17		17
CF - Compact Fluorescent	39	28	12		1	80
ECF - Exit Sign				32		32
FT12 - T12 and other Linear Fluorescent	40				7	47
FT8 - T8 Linear Fluorescent	197				3706	3903
FU - U-Tube Fluorescent		41			6	47
H - Halogen Incandescent			3			3
I Standard Incandescent			64			64
LED				145		145
MH Metal Halide Fixtures				6		6
Stranahan High School - EXTERIOR	**247**		**1**	**17**	**12**	**277**
CF - Compact Fluorescent	6					6
FT12 - T12 and other Linear Fluorescent	11					11
FT8 - T8 Linear Fluorescent	74					74
HPS - High Pressure Sodium	109					109
LED				3		3
MH Metal Halide Fixtures	47		1	14	12	74
Tequesta Trace Middle School	**140**		**58**	**29**	**2735**	**2962**
CF - Compact Fluorescent			42			42
FT12 - T12 and other Linear Fluorescent	121				2580	2701
FT8 - T8 Linear Fluorescent					155	155
HPS - High Pressure Sodium	13					13

Proposed Solutions						
Row Labels	**New Fixture**	**Retrofit Kit**	**Relamp**	**No Retrofit**	**Retrofit**	**Grand Total**
I Standard Incandescent			16			16
LED				29		29
MH Metal Halide Fixtures	6					6
Tequesta Trace Middle School - EXTERIOR	**56**			**12**		**68**
CF - Compact Fluorescent	5					5
FT12 - T12 and other Linear Fluorescent	25					25
HPS - High Pressure Sodium	12					12
LED				12		12
MH Metal Halide Fixtures	14					14
William Dandy Middle School	**211**	**19**	**35**		**2507**	**2772**
CF - Compact Fluorescent	1	19	22			42
FT12 - T12 and other Linear Fluorescent					2466	2466
FT8 - T8 Linear Fluorescent	130				41	171
I Standard Incandescent			13			13
MH Metal Halide Fixtures	80					80
William Dandy Middle School - EXTERIOR	**30**			**19**		**49**
FT8 - T8 Linear Fluorescent	19					19
HPS - High Pressure Sodium	8					8
LED				19		19
MH Metal Halide Fixtures	3					3
Grand Total	**1981**	**165**	**593**	**565**	**21297**	**24601**

The table below list fixtures that will not be retrofitted because either they have been previously retrofitted with LED lamps or because they are specialty lighting.

Excluded from Scope	
Row Labels	**Total**
Dillard Elementary School	6
LED	6
4' Wrap Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	2
Jar Fixture, Light Emitting Diode (LED) Screw-in Lamp, 20W, with Integrated Driver Component - No Measure Recommended	4
Dillard Elementary School - EXTERIOR	1
LED	1
Exterior Wall Pack Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	1
Maplewood Elementary School	1
LED	1
3' Wrap Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 15W, with Separate or Integrated Driver Component - No Measure Recommended	1
Maplewood Elementary School - EXTERIOR	4
LED	4
Exterior Wall Pack Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 30W, with Separate or Integrated Driver Component - No Measure Recommended	4
Mary M. Bethune Elementary School	1
LED	1
Exterior Canopy Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 30W, with Separate or Integrated Driver Component - No Measure Recommended	1
Mary M. Bethune Elementary School - EXTERIOR	64
LED	64
Exterior Wall Pack Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	29
Exterior Wall Pack Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 30W, with Separate or Integrated Driver Component - No Measure Recommended	35
Pines Lakes Elementary School	3
LED	3
4' Vapor Proof Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	1
Drum Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 10W, with Separate or Integrated Driver Component - No Measure Recommended	2

Excluded from Scope	
Row Labels	**Total**
Pompano Beach Elementary School	6
LED	6
Explosion Proof Fixture, Light Emitting Diode (LED) Screw-in Lamp, 25W, with Integrated Driver Component - No Measure Recommended	2
Jar Fixture, Light Emitting Diode (LED) Screw-in Lamp, 8W, with Integrated Driver Component - No Measure Recommended	4
Pompano Beach Elementary School - EXTERIOR	78
LED	78
Exterior Canopy Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 50W, with Separate or Integrated Driver Component - No Measure Recommended	78
Pompano Beach Middle School	87
LED	87
2x4 Layin Parabolic Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 40W, with Separate or Integrated Driver Component - No Measure Recommended	63
2x4 Layin Prismatic Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 40W, with Separate or Integrated Driver Component - No Measure Recommended	5
4' Wrap Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	15
Highbay Fixture, Light Emitting Diode (LED) Screw-in Lamp, 100W, with Integrated Driver Component - No Measure Recommended	4
Pompano Beach Middle School - EXTERIOR	37
LED	37
4' Vapor Proof Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	25
Exterior Canopy Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 30W, with Separate or Integrated Driver Component - No Measure Recommended	4
Exterior Wall Pack Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 50W, with Separate or Integrated Driver Component - No Measure Recommended	6
Pole-Mounted Flood Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), (2) 140W, with Separate or Integrated Driver Component - No Measure Recommended	2
Stranahan High School	200
Delamped Track Head	17
Track Head Fixture, - No Measure Recommended	17
ECF - Exit Sign	32

Excluded from Scope	
Row Labels	**Total**
Exit Sign (Red), EXIT Light Emitting Diode, (1) 2W lamp, Single Sided - No Measure Recommended	32
LED	145
1x4 Surface Mount Prismatic Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	36
2x4 Layin Volumetric Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 30W, with Separate or Integrated Driver Component - No Measure Recommended	60
4' Vapor Proof Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	5
Highbay Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 160W, with Separate or Integrated Driver Component - No Measure Recommended	42
Jar Fixture, Light Emitting Diode (LED) Screw-in Lamp, 6W, with Integrated Driver Component - No Measure Recommended	2
MH Metal Halide Fixtures	6
Flood Fixture, Metal Halide, (1) 1000W lamp, Magnetic ballast - No Measure Recommended	6
Stranahan High School - EXTERIOR	17
LED	3
Pole-Mounted Cobrahead Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 70W, with Separate or Integrated Driver Component - No Measure Recommended	2
Pole-Mounted Flood Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), (2) 85W, with Separate or Integrated Driver Component - No Measure Recommended	1
MH Metal Halide Fixtures	14
Pole-Mounted Flood Fixture, Metal Halide, (1) 1000W lamp, Magnetic ballast - No Measure Recommended (Sports Lighting)	10
Pole-Mounted Flood Fixture, Metal Halide, (2) 1000W lamps, Magnetic ballasts - No Measure Recommended (Sports Lighting)	2
Pole-Mounted Flood Fixture, Metal Halide, (3) 1000W lamps, Magnetic ballasts - No Measure Recommended (Sports Lighting)	2
Tequesta Trace Middle School	29
LED	29
2' Vapor Proof Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	8

Excluded from Scope	
Row Labels	**Total**
6" Round Recessed Can Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 15W, with Separate or Integrated Driver Component - No Measure Recommended	4
Drum Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	1
Highbay Fixture, Light Emitting Diode (LED) Screw-in Lamp, 100W, with Integrated Driver Component - No Measure Recommended	16
Tequesta Trace Middle School - EXTERIOR	12
LED	12
Drum Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	1
Exterior Wall Pack Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 30W, with Separate or Integrated Driver Component - No Measure Recommended	11
William Dandy Middle School - EXTERIOR	19
LED	19
Exterior Wall Pack Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	1
Exterior Wall Pack Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 30W, with Separate or Integrated Driver Component - No Measure Recommended	6
Flood Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 160W, with Separate or Integrated Driver Component - No Measure Recommended	1
Light Emitting Diode (LED) Luminaire (Multiple LEDs), 20W, with Separate or Integrated Driver Component - No Measure Recommended	2
Shoebox Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), (2) 160W, with Separate or Integrated Driver Component - No Measure Recommended	2
Shoebox Fixture, Light Emitting Diode (LED) Luminaire (Multiple LEDs), 160W, with Separate or Integrated Driver Component - No Measure Recommended	7
Grand Total	**565**

Inclusions:

- Lenses and troffer pans of existing affected fixtures will be wiped down during installation. Fixtures that have been retrofitted with new TLEDs will receive a caution label identifying the fixture as a line voltage fixture.
- Repair or replacement of damaged, cracked, missing, or yellowed lenses (not to exceed 100 pieces) for fixtures affected by the Scope of Work.

- Maintenance stock of one and a half percent (1.5%) shall be provided for TLED tubes & LED lamps ONLY by JCI after completion of installation to help accommodate any warranty period failures. Manufacturer warranties of lamps, ballasts, and/or fixtures installed are covered by the individual manufacturers published policies and shall be transferred to the Customer. JCI shall provide contact information for each manufacturer. Alleged defective product may be required for return to factory for analysis.
- Workmanship is warranted for one (1) year from date of installation.
- Predominant types of tubular LED lamps (TLEDs) will have a five (5) year limited warranty.
- Predominant types of screw-in LED lamps are warranted for three (3) years.
- New fixtures warranties vary by manufacturer. Refer to *ECM 1 Appendix* cut sheets.
- In all cases, warranties shall be transferred to the Customer for customer to make warranty claims.
- Existing lamps, ballasts and other materials will be removed from the site by JCI in accordance with Federal, State, and Local regulations existing at the time of execution of the Agreement. Recycling of lamps and ballasts will comply with applicable regulations existing at the time of execution of the Agreement.
- JCI--acting as an agent for Customer--will ensure the proper disposal of hazardous waste generated during the installation of this ECM in accordance with the Federal, State, and Local laws and regulations existing at the time of execution of the Agreement.
- Design illumination levels: In the absence of code-mandated lighting requirements, industry standards have been used as a guide, primarily the 10th edition of the Lighting Handbook, published by the Illuminating Engineering Society of North America (IESNA), IESNA Recommended Practice documents and IESNA Design Guides.

Exclusions:

- Repair or replacement of defective electrical equipment, including the electrical distribution system, other than the equipment specifically described in the ECM description and Work. JCI will identify the location of defective equipment and notify Customer.
- Repair or upgrades required due to rectify existing code violations, including egress and emergency lighting, unless specifically described in this scope of Work.
- Repair, replacement, or calibration of damaged or defective motion sensors, time clocks, switches, breakers, and wiring unless otherwise noted in the Scope of Work
- Fixtures in areas not addressed on the detailed Scope of Work in the Appendix.
- Design and installation of emergency and egress lighting systems unless detailed in the Appendix.
- Fixtures in inaccessible areas.

- Existing task lighting and table-type light fixtures.
- Existing decorative light fixtures unless detailed in the Appendix.
- Existing fluorescent dimming systems will remain "as-is" unless noted otherwise. Fixture layout and spacing will remain "as-is" unless noted otherwise.
- Repair or replacement of electric system components (e.g., switches, breakers, wiring) unless the failure is a direct result of JCI action.
- Painting and patching of existing finished surfaces.
- The emergency and egress lighting unless noted to be replaced in the Appendix with a packaged LED battery backup unit.
- Existing faulty wiring or raceways providing power to lighting system. (JCI will bring such conditions to the attention of Customer, but it shall be the responsibility of Customer to address the identified deficiencies.)
- Engineered Drawings
- Existing affected light poles will be reused
    - Repair of wiring to poles, if required, is not included.
    - Customer is responsible for pole maintenance, repair and replacement throughout the term of the guarantee.
    - Lighting poles will be checked for contact voltage. If any hazardous voltage is noted, work on that pole will be stopped and the customer and/or the utility company will be notified immediately to correct the fault before any work will be performed.
- JCI shall communicate to customer any space that is under-lit due to existing inadequate spacing or quantity of fixtures which would require adding fixtures, adding circuits, reconfiguration or new construction. LED fixtures or components specified for the project are based on comparable original lumen outputs of existing equipment rather than depreciated light output values. Addition of fixtures and modification of spacing is excluded from the contract Scope.
- Vending Machines: Excluded from improvements in this contract.

ECM–2: Water Conservation

This Scope of Work includes materials and labor for the following:

- This ECM will replace or modify specified existing fixtures at the customer schools with new water-efficient fixtures and/or fixture components. The intent of this measure is to reduce water consumption and wastewater production, as well as reduce heating energy used to produce hot water. The scope of work includes the one-for-one replacement of select existing sanitary fixtures in restrooms, or the retrofit of inefficient existing fixtures and valves to decrease water usage. Water fixtures will operate as before, but consume less water.

- The Scope of Work summary table is presented below. For a by room fixture count please see *ECM 2 Appendix.*

Measure Description / School	Dillard Elementary	Maplewood Elementary	Mary M. Bethune Elementary	Pines Lakes Elementary	Pompano Beach Elementary	Pompano Beach Middle	Stranahan High	Tequesta Trace Middle	William Dandy Middle	TOTALS
Replace existing flush vale toilets with 1.1/1.6 gpf HE fixtures and valves	57	108	85	64	48	57	128	59	45	651
Replace existing urinals with new 0.125/1.0 gpf JEU fixtures and valves	1	14	9	5	2	11	55	24	23	144
Retrofit existing urinals with new 0.5 gpf valves	0	0	0	0	0	5	3	0	0	8
Retrofit existing lavatory faucets with 0.5 PCA spray flow restrictors	58	44	33	28	28	37	80	25	13	346
Retrofit existing general purpose sinks with 1.0 gpm laminar flow restrictors	30	24	52	27	15	16	64	24	31	283
Replace existing lavatory faucets with high efficiency lavatory faucets with 0.5 gpm flow controls	1	0	7	4	6	4	44	0	5	71
Replace existing lavatory faucets with new high efficiency faucets with 1.0 gpm flow controls	0	0	0	1	0	3	0	0	0	4
Replace Kitchen Faucet with 1.0 gpm Tamperproof Flow Control	0	0	0	0	0	1	0	0	0	1
Replace existing showerheads with new 1.5 gpm low-flow showerheads	3	1	0	0	2	24	48	66	64	208
Replace existing pre-rinse sprayers with new 0.6 gpm sprayers	1	0	2	1	2	2	0	1	1	10

Exclusions:

- Repair or replacement of defective piping, isolation valves, or plumbing fixtures is not included unless otherwise specified in the Scope of Work;

- Repair or replacement of inoperable or leaking cold water riser or isolation valves or repair or replacement of inoperable or leaking hot water circulating valves unless otherwise specified in the Scope of Work
- Tile work, flange repairs, wall mount broken carriers, commercial angle-stop replacement, and floor or wall repairs are not included unless otherwise specified in the Scope of Work
- Repair of existing damaged areas, such as re-tiling and painting
- Installation beyond the plumbing fixtures described in the scope of work contained herein
- Repair of existing faucets, sinks, shower handles, valves and sink basins or leaks
- Replacement of angle stops for valves being retrofit (not replaced)
- Replacement or modification of existing floor and wall coverings
- Any and all ADA bathroom partitions, grab bars, extensions, sink faucet actuators, piping insulation, or other ADA requirements are hereby excluded from this proposal. JCI does not take responsibility for any existing or future ADA compliance issues and if required to modify bathrooms or fixtures to meet an ADA code this will be completed for an additional cost.

Article 2. ASSURED PERFORMANCE GUARANTEE.

I. PROJECT BENEFITS

A. Certain Definitions. For purposes of this Agreement, the following terms have the meanings set forth below:

Annual Project Benefits are the portion of the projected Total Project Benefits to be achieved in any one year of the Guarantee Term.

Annual Project Benefits Realized are the Project Benefits actually realized for any one year of the Guarantee Term.

Annual Project Benefits Shortfall is the amount by which the Annual Project Benefits exceed the Annual Project Benefits Realized in any one year of the Guarantee Term.

Annual Project Benefits Surplus is the amount by which the Annual Project Benefits Realized exceed the Annual Project Benefits in any one year of the Guarantee Term.

Baseline is the mutually agreed upon data and/or usage amounts that reflect conditions prior to the installation of the Improvement Measures as set forth in Section IV below.

Guarantee Term will commence on the first day of the month next following the Substantial Completion date and will continue through the duration of the M&V Services, subject to earlier termination as provided in this Agreement.

Installation Period is the period beginning on JCI's receipt of Customer's Notice to Proceed and ending on the commencement of the Guarantee Term.

Measured Project Benefits are the utility savings and cost avoidance calculated in accordance with the methodologies set forth in Section III below.

Non-Measured Project Benefits are identified in Section II below. The Non-Measured Project Benefits have been agreed to by Customer and will be deemed achieved in accordance with the schedule set forth in the Total Project Benefits table below. Customer and JCI agree that: (i) the Non-Measured Project Benefits may include, but are not limited to, future capital and operational costs avoided as a result of the Work and implementation of the Improvement Measures, (ii) achievement of the Non-Measured Project Benefits is outside of JCI's control, and (iii) Customer has evaluated sufficient information to conclude that the Non-Measured Project Benefits will occur and bears sole responsibility for ensuring that the Non-Measured Project Benefits will be realized. Accordingly, the Non-Measured Project Benefits shall not be measured or monitored by JCI at any time during the Guarantee Term, but rather shall be deemed achieved in accordance with the schedule set forth in the Total Project Benefits table below.

Project Benefits are the Measured Project Benefits plus the Non-Measured Project Benefits to be achieved for a particular period during the term of this Agreement.

Total Project Benefits are the projected Project Benefits to be achieved during the entire term of this Agreement.

B. Project Benefits Summary. Subject to the terms and conditions of this Agreement, JCI and Customer agree that Customer will be deemed to achieve a total of $1,345,820 in Non-Measured Project Benefits and JCI guarantees that Customer will achieve a total of $4,868,586 in Measured Project Benefits during the term of this Agreement, for Total Project Benefits of $6,214,406 as set forth in the Total Project Benefits table below.

Total Project Benefits

Year	Measured Utility Cost Avoidance*	Non-Measured Utility Cost Avoidance*	Operations & Maintenance Cost Avoidance**	Annual Project Benefits
1	$343,051	$66,230	$35,405	$444,686
2	$353,342	$68,217	$36,467	$458,027

3	$363,943	$70,264	$37,561	$471,767
4	$374,861	$72,372	$38,688	$485,920
5	$386,107	$74,543	$39,849	$500,498
6	$397,690	$76,779	$41,044	$515,513
7	$409,621	$79,082	$42,275	$530,978
8	$421,909	$81,455	$43,544	$546,908
9	$434,566	$83,898	$44,850	$563,315
10	$447,603	$86,415	$46,195	$580,214
11	$461,032	$89,008	$-	$550,039
12	$474,862	$91,678	$-	$566,541
Total	**$4,868,586**	**$939,941**	**$405,879**	**$6,214,406**

* Utility Cost Avoidance figures in the table above are based on anticipated increases in unit energy costs as set forth in the table in Section IV below.

** Operations & Maintenance Cost Avoidance is a Non-Measured Project Benefit. Operations & Maintenance Cost Avoidance figures in the table above are based on a mutually agreed fixed annual escalation rate of three percent (3%).

NOTE: Escalated values in table above are only shown to the nearest dollar.

Within sixty (60) days of the commencement of the Guarantee Term, JCI will calculate the Measured Project Benefits achieved during the Installation Period plus any Non-Measured Project Benefits applicable to such period and advise Customer of same. Any Project Benefits achieved during the Installation Period may, at JCI's discretion, be allocated to the Annual Project Benefits for the first year of the Guarantee Term. Within sixty (60) days of each anniversary of the commencement of the Guarantee Term, JCI will calculate the Measured Project Benefits achieved for the applicable year plus any Non-Measured Project Benefits applicable to such period and advise Customer of same.

Customer acknowledges and agrees that if, for any reason, it (i) cancels or terminates receipt of M&V Services, (ii) fails to pay for M&V Services in accordance with Article 4, (iii) fails to fulfill any of its responsibilities necessary to enable JCI to complete the Work and provide the M&V Services, or (iv) otherwise cancels, terminates or materially breaches this Agreement, the Assured Performance Guarantee shall automatically terminate and JCI shall have no liability hereunder.

C. Project Benefits Shortfalls or Surpluses.

(i) *Project Benefits Shortfalls*. If an Annual Project Benefits Shortfall occurs for any one year of the Guarantee Term, JCI shall, at its discretion and in any combination, (a) set off the amount of such shortfall against any unpaid

balance Customer then owes to JCI, (b) where permitted by applicable law, increase the next year's amount of Annual Project Benefits by the amount of such shortfall, (c) pay to Customer the amount of such shortfall, or (d) subject to Customer's agreement, provide to Customer additional products or services, in the value of such shortfall, at no additional cost to Customer.

(ii) *Project Benefits Surpluses*. If an Annual Project Benefits Surplus occurs for any one year of the Guarantee Term, JCI may, at its discretion and in any combination, (a) apply the amount of such surplus to set off any subsequent Annual Project Benefit Shortfall during the Guarantee Term, or (b) bill Customer for the amount of payments made pursuant to Section C(i)(c) above and/or the value of the products or services provided pursuant to clause C(i)(d) above, in an amount not to exceed the amount of such surplus.

(iii) *Additional Improvements*. Where an Annual Project Benefits Shortfall has occurred, JCI may, subject to Customer's approval (which approval shall not be unreasonably withheld, conditioned, or delayed), implement additional Improvement Measures, at no cost to Customer, which may generate additional Project Benefits in future years of the Guarantee Term.

II. NON-MEASURED PROJECT BENEFITS

Operating and Maintenance Cost Avoidance Summary

Non-Measured Operational and Maintenance Benefits	ECM	Year 1 Benefits	Applicable Years	Annual Escalation
Lighting Material Savings	1	$31,390	1-10	3%
Domestic Plumbing O&M Savings	2	$4,015	1-10	3%
Total Non-Measured Operational Benefits		**$35,405**		

Non-Measured Utility Benefits	ECM	Year 1 Benefits	Applicable Years	Escalation
Exterior Lighting Savings (Multiple Sites)	1	$27,440	1-12	3%
Interior Lighting HVAC impact Savings (Multiple A/C Sites)	1	$38,791	1-12	3%
Total Non-Measured Utility Benefits =		**$66,231**		

Customer agrees that the Non-Measured Project Benefits are reasonable and that the installation of the Improvement Measures will enable Customer to take actions that will result in the achievement of such Non-Measured Project Benefits.

Non-Measured Operational and Maintenance Benefits Details

ECM 1 Lighting Material Savings

Customer shall see a reduction in the cost of lighting materials as a direct result of the implementation of ECM 1. O&M cost avoidance for lighting materials derive from the installation of new lighting equipment which include cost avoidance from reduced expenses for lamps and ballasts realized as a result of the replacement of existing fluorescent lamps with LED lamps and the elimination of existing ballast materials. LED lamps have longer rated lives with warranties as indicated in the warranty submittal.

Material savings were calculated by the following equations:

Material Savings (Project Term)
Lamp Unit Cost per Hour = Average Lamp Cost ÷ Average Lamp Life.
Ballast Unit Cost per Hour = Average Ballast Cost ÷ Average Ballast Life.
Existing Annual Lamp Material Cost = Existing Burn Hours × Quantity of Lamps × Lamp Unit Cost per Hour.
Existing Annual Ballast Material Cost = Existing Burn Hours × Quantity of Ballasts × Ballast Unit Cost per Hour.
Proposed Annual Lamp Material Cost = Existing Burn Hours × Quantity of Lamps × Lamp Unit Cost per Hour.
Proposed Annual Ballast Material Cost = Existing Burn Hours × Quantity of Ballasts × Ballast Unit Cost per Hour.
Proposed Annual Material Cost = Proposed Burn Hours × ((Quantity of Lamps × Lamp Unit Cost per Hour) + (Quantity of Ballasts × Ballast Unit Cost per Hour)).

Annualized Project Term Material Savings = ((Project Term × (Existing Annual Lamp Material Cost + Existing Annual Ballast Material Cost)) - ((Project Term - Proposed Lamp Warranty Period) × Proposed Annual Lamp Material Cost) + ((Project Term - Proposed Ballast Warranty Period) × Proposed Annual Ballast Material Cost))) ÷ Project Term.

Site/Building Name	Year 1 Annual Material Savings
Dillard Elementary School	$2,544
Dillard Elementary School - EXTERIOR	-$74
Maplewood Elementary School	$2,574
Maplewood Elementary School - EXTERIOR	$139
Mary M. Bethune Elementary School	$2,930
Mary M. Bethune Elementary School - EXTERIOR	$115
Pines Lakes Elementary School	$2,637
Pines Lakes Elementary School - EXTERIOR	$271
Pompano Beach Elementary School	$3,030
Pompano Beach Elementary School - EXTERIOR	$150
Pompano Beach Middle School	$4,340

Pompano Beach Middle School - EXTERIOR	$342
Stranahan High School	$3,591
Stranahan High School - EXTERIOR	$328
Tequesta Trace Middle School	$4,379
Tequesta Trace Middle School - EXTERIOR	-$45
William Dandy Middle School	$4,139
William Dandy Middle School - EXTERIOR	-$1
Total Year 1 ECM Lighting O&M Savings	**$31,390**

Applicable for Year 1 through Year 10, escalated annually 3%

ECM 2 Water Conservation - Plumbing O&M Savings

The customer shall see a reduction in the cost of repair materials as a direct result of the implementation of ECM 2. This O&M cost avoidance derives from a reduction of repair materials for the ECM 2 fixtures that are listed for replacement or upgrade. The new fixtures will have warranties as indicated in the warranty submittal.

These savings are determined based on the following:

Total # of toilet valve replacements	651
Annual savings per replacement	$5.00
Total Toilet O&M Savings	**$3,255**

Total # of urinal valve replacements	152
Annual savings per replacement	$5.00
Total Urinal O&M Savings	**$760**

Total Domestic Plumbing O&M Savings	**$4,015**

Applicable for Year 1 through Year 10, escalated annually 3%

Non-Measured Utility Benefits

The Project Benefits identified below were derived using engineering calculations based on industry standards and data provided by the Customer. These Project Benefits shall be Non-Measured Project Benefits (as defined above) under this Article 2.

Exterior Lighting Savings - ECM 1

Customer will have the following utility savings as effect of the installation on ECM 1.

Site/Building Name	Electric Demand Energy Savings (kW/month)	Electric Demand Rate ($/kW-month)	Electric Demand Energy Savings ($/yr.)	Electric Energy Savings Non Measured (kWh)	Electric Rate ($/kWh)	Electric Energy Savings ($/yr.)	Total Year 1 Electric Energy Savings Non Measured ($)
Dillard Elementary School - EXTERIOR	1.27	14.59	$223.13	55,820	0.0460	$2,568	$2,791
Maplewood Elementary School - EXTERIOR	1.24	12.15	$181.08	54,398	0.0506	$2,753	$2,934
Mary M. Bethune Elementary School - EXTERIOR	0.71	14.59	$124.10	31,045	0.0460	$1,428	$1,552
Pines Lakes Elementary School - EXTERIOR	1.31	14.59	$228.67	57,207	0.0426	$2,437	$2,666
Pompano Beach Elementary School - EXTERIOR	0.59	12.15	$85.58	25,710	0.0508	$1,306	$1,392
Pompano Beach Middle School - EXTERIOR	2.25	12.15	$327.70	98,444	0.0542	$5,336	$5,663
Stranahan High School - EXTERIOR	5.51	14.59	$964.30	140,465	0.0426	$5,984	$6,948
Tequesta Trace Middle School - EXTERIOR	1.97	14.59	$345.52	59,821	0.0462	$2,764	$3,109
William Dandy Middle School - EXTERIOR	0.16	14.59	$28.66	7,170	0.0498	$357	$386
Total	**15.01**		**$2,509**	**530,080**		**$24,932**	**$27,440**

Applicable for Year 1 through Year 12, escalated annually 3%

Equations for Calculating Lighting Retrofit Savings

Demand (kW)

$Connected\ kW\ Saving = \square_u [\ (kW/Fixture_{baseline} \times Quantity_{baseline} - kW/Fixture_{post} \times Quantity_{post})]_{t,u}$

$Actual\ kW\ Savings = \square_u [\ Connected\ kW\ Savings_u \times Coincident\ Factor_u]_{t,u}$

where:

$kW/fixture_{baseline}$ =	lighting baseline demand per fixture for usage group *u*
$kW/fixture_{post}$ =	lighting demand per fixture during post-installation period for usage group
$Quantity_{baseline}$ =	quantity of affected fixtures before the lighting retrofit for usage group *u*
$Quantity_{post}$ =	quantity of affected fixtures after the lighting retrofit for usage group *u*
$Coincident\ Factor_u$ =	*Coincident* Factor is a multiplier to account for Demand Diversity of each specific usage group *u*.

Energy (kWh)

$kWh\ Savings_{Lighting} = \square_u [Connected\ kW\ Savings_u \times Burn\ Hours]_{t,u}$

where:

$kW\ Savings_u$ =	kilowatt savings realized during the post-installation time for usage group *u*
Burn Hours =	number of operating hours during the time period *t* for the usage group *u*

Exterior existing Component Code	**Existing kW**
1X1000MH	1.08
1X100HPS	0.55
1X100INCA	0.20
1X100MH	0.13

Exterior existing Component Code	Existing kW
1X13PL2P	0.02
1X150HPS	0.19
1X150MH	0.37
1X160LEDF	0.16
1X175MH	0.22
1X175MV	0.21
1X20LEDF	0.02
1X250HPS	0.30
1X250MH	0.30
1X250MV	0.87
1X26CFL2P	0.06
1X26CFL4P	0.03
1X30LEDF	0.03
1X32CFL4P	0.25
1X32T8EBN	1.40
1X34T12MB	0.28
1X400HPS	0.47
1X400MH	0.45
1X42CFL4P	0.05
1X50LEDF	0.10
1X70HPS	0.10
1X70LEDF	0.14
1X70MH	0.10
2X1000MH	2.16
2X13CFL2P	0.03
2X140LEDF	0.28
2X160LEDF	0.64

Exterior existing Component Code	Existing kW
2X250HPS	0.59
2X250MH	0.59
2X26CFL2P	0.10
2X26CFL4P	0.05
2X28T8EBHEL	0.04
2X28T8EBN	0.05
2X32T8EBN	0.06
2X34T12MB	0.07
2X400HPS	0.93
2X400MH	0.89
2X42CFL4P	0.19
2X60T12SLMB	0.37
2X85LEDF	0.17
2X90HAL	0.18
3X1000MH	6.48
3X400MH	1.34
4X34T12MB2	0.43

Exterior Post-retrofit Component Code	Post-retrofit kW
1X113LEDF	0.08
1X135LEDF	0.68
1X161LEDF	0.16
1X18LEDF	0.09
1X21LEDF-M	0.03

Exterior existing Component Code	Existing kW
1X22LEDF	0.02
1X232LEDF	0.17
1X24LEDF	0.17
1X25LEDSI	0.03
1X27LEDF-D	0.02
1X30LEDF	0.03
1X31LEDF	0.03
1X34LEDSI	0.10
1X36LEDF	0.25
1X40LEDF	0.04
1X45LEDF	0.03
1X48LEDF	0.05
1X54LEDF	0.32
1X70LEDF	0.07
1X83LEDF	0.08
1X94LEDF	0.07
1X99LEDF	0.10
2X113LEDF	0.17
2X15.5LEDSI	0.03
2X161LEDF	0.32
2X232LEDF	0.35
2X271LEDF	0.54
2X4'LEDT	0.32
2X83LEDF	0.29
2X94LEDF	0.14
3X113LEDF	0.25
3X271LEDF	0.54

Exterior existing Component Code	Existing kW
4X4'LEDT	0.14

Exterior Room Type (Usage Group Description)	Pre-retrofit Annual Burn Hours	Post-retrofit Annual Burn Hours	Coincidence Factor
Exterior	4,380	4,380	10%
Exterior, Low Use	857	857	10%

HVAC Impact - Interior Lighting Savings - ECM 1

Additional electrical savings will be achieved because the reduced lighting load will in turn reduce cooling loads at the facilities. Heating loads will similarly increase. These impacts were calculated using Rundquist Method: (HVAC Impact: Cooling Benefit - Heating Penalty).

Fraction of Lighting Savings as Air Cooling Savings = A × B ÷ C.

Where: A = Fraction of Year of Cooling Season, Estimated at 0.96.

B = Fraction of the Lighting Load met by Mechanical Cooling (90%).

C = Cooling system's coefficient of Performance; Average of 2.7.

Extra Heat required (BTU) = D × E × F ÷ G

Where: D = Heating Season = 1 - A.

E = Fraction of the Lighting Reduction that has to be made up by heating. A portion of the lighting heat is released at night. Estimated at 20%.

F = Annual BTU Equivalent of Lighting Saved. Annual Saved kWh × 3414 = BTU.

G = Seasonal Heating Efficiency estimate of basic efficiency of heating system, assumed 80%.

Interactive HVAC Net Benefit/Penalty = Annual kWh Savings × Fraction of Lighting Savings as Air Cooling Savings) - (Extra Heat Required × Average Fuel Rate per BTU).

NOTE: The HVAC savings only applied to lighting retrofits in the conditioned spaces.

Total HVAC Lighting-impact Savings

Site/Building Name	**Annual HVAC Savings (Lighting)**
Dillard Elementary School	$3,436
Maplewood Elementary School	$3,203
Mary M. Bethune Elementary School	$3,639
Pines Lakes Elementary School	$2,752
Pompano Beach Elementary School	$3,620
Pompano Beach Middle School	$6,550
Stranahan High School	$3,180
Tequesta Trace Middle School	$6,009
William Dandy Middle School	$6,402
Total HVAC Lighting-impact Savings	**$38,791**

Applicable for Year 1 through Year 12, escalated annually 3%

Customer agrees that the Non-Measured Project Benefits are reasonable and that the installation of the Improvement Measures will enable Customer to take actions that will result in the achievement of such Non-Measured Project Benefits.

III. MEASUREMENT AND VERIFICATION METHODOLOGIES

The following is a brief overview of the measurement and verification methodologies applicable to the Improvement Measures set forth below. JCI shall apply these methodologies, as more fully detailed in the guidelines and standards of the International Measurement and Verification Protocol (IPMVP) in connection with the provision of M&V Services hereunder.

Option A

Retrofit Isolation: Key Parameter Measurement

Measured Project Benefits are determined by partial field measurement of the energy use of the system(s) to which an Improvement Measure was applied separate from the energy use of the rest of the facility.

Partial measurement means that some but not all parameters will be measured. Careful review of the design and installation of Improvement Measures is intended to demonstrate that the stipulated values fairly represent the probable actual values. Agreed-upon values will be shown in the measurement and verification plan. Engineering calculations using measurements and stipulations are used to calculate Measured Project Benefits for the duration of the Guarantee Term.

Measured Project Benefits from the following Improvement Measures will be calculated using Option A:

ECM 2 – Water Conservation

Option B

Retrofit Isolation: All Parameter Measurement

Measured Project Benefits are determined by field measurement of the energy use of the systems to which an Improvement Measure was applied separate from the energy use of the rest of the facility. Short-term, long-term or continuous measurements are taken throughout the pre and post-retrofit periods. Engineering calculations using short term, long-term or continuous pre and post-retrofit measurements are used to calculate the Measured Project Benefits for the duration of the Guarantee Term.

Measured Project Benefits from the following Improvement Measures will be calculated using Option B:

ECM 1 - LED Lighting Upgrades

Option C

Whole Facility

Option C involves use of utility meters or whole building sub-meters to assess the energy performance of a total building. Option C assesses the impact of any type of Improvement

Measure, but not individually if more than one is applied to an energy meter. This option determines the collective Measured Project Benefits of all Improvement Measures applied to the part of the facility monitored by the energy meter. Also, since whole building meters are used, Measured Project Benefits reported under Option C include the impact of any other change made in facility energy use (positive or negative).

Measured Project Benefits from the following Improvement Measures will be calculated using Option C:

None

Option D

Calibrated Simulation

Option D involves the use of computer simulation software to predict energy use. Such simulation model must be "calibrated" so that it predicts an energy use and demand pattern that reasonably matches actual utility consumption and demand data from either the base-year or a post-retrofit year.

Option D may be used to assess the performance of all Improvement Measures in a facility, akin to Option C. However, different from Option C, multiple runs of the simulation tool in Option D allow estimates of the Measured Project Benefits attributable to each Improvement Measure within a multiple Improvement Measure project.

Option D may also be used to assess just the performance of individual systems within a facility, akin to Options A and B. In this case, the system's energy use must be isolated from that of the rest of the facility by appropriate meters.

Measured Project Benefits from the following Improvement Measures will be calculated using Option D:

None

Changes in Use or Condition; Adjustment to Baseline and/or Annual Project Benefits

Customer agrees to notify JCI, within fourteen (14) days, of (i) any actual or intended change, whether before or during the Guarantee Term, in the use of any facility, equipment, or Improvement Measure to which this Article applies; (ii) any proposed or actual expansions or additions to the premises or any building or facility at the premises; (iii) a change to utility services to all or any portion of the premises; or (iv) any other change or condition arising before or during the Guarantee Term that reasonably could be expected to change the amount of Project Benefits realized under this Agreement.

Such a change, expansion, addition, or condition would include, but is not limited to: (a) changes in the primary use of any facility, Improvement Measure, or portion of the premises; (b) changes to the hours of operation of any facility, Improvement Measure, or portion of the premises; (c) changes or modifications to the Improvement Measures or any related equipment; (d) changes to

the M&V Services provided under this Agreement; (e) failure of any portion of the premises to meet building codes; (f) changes in utility suppliers, utility rates, method of utility billing, or method of utility purchasing; (g) insufficient or improper maintenance or unsound usage of the Improvement Measures or any related equipment at any facility or portion of the premises (other than by JCI); (h) changes to the Improvement Measures or any related equipment or to any facility or portion of the premises required by building codes or any governmental or quasi-governmental entity; or (i) additions or deletions of Improvement Measures or any related equipment at any facility or portion of the premises.

Such a change or condition need not be identified in the Baseline in order to permit JCI to make an adjustment to the Baseline and/or the Annual Project Benefits. If JCI does not receive the notice within the time period specified above or travels to either Customer's location or the project site to determine the nature and scope of such changes, Customer agrees to pay JCI, in addition to any other amounts due under this Agreement, the applicable hourly consulting rate for the time it took to determine the changes and to make any adjustments and/or corrections to the project as a result of the changes, plus all reasonable and documented out-of-pocket expenses, including travel costs. Upon receipt of such notice, or if JCI independently learns of any such change or condition, JCI shall calculate and send to Customer a notice of adjustment to the Baseline and/or Annual Project Benefits to reflect the impact of such change or condition, and the adjustment shall become effective as of the date the change or condition first arose. Should Customer fail to promptly provide JCI with notice of any such change or condition, JCI may make reasonable estimates as to the impact of such change or condition and as to the date on which such change or condition first arose in calculating the impact of such change or condition, and such estimates shall be conclusive.

Description of Measurement and Verification Methodologies by ECMs:

ECM 1 - LED Lighting Upgrades

Option B: Measurement and Verification Plan for Interior Lighting Improvements

The savings associated with this ECM will be verified using IPMVP Core Concepts, EVO 10000 -1:2016, Option B, Retrofit Isolation with All Parameter Measurement. The savings for this ECM are generated through a reduction in energy used by the lighting system; therefore, the measurement boundary is the lighting system itself.

Key Parameter	Measurement Frequency	Measurement Description
Pre- and Post-retrofit Fixture Power Draw (kW)	One-time	The pre-retrofit power draw on a sample of fixtures meeting the 80/20 sampling plan – assuming a coefficient of variance of 0.5 – has been measured using a true RMS meter (plan

Key Parameter	Measurement Frequency	Measurement Description
		initiated before covid-19 school closure, temporarily paused and will be completed before installation commences.) Fixtures with similar lamps and ballasts, counts and types were grouped together with a lamp/ballast code. Measured wattages were used when possible. In some situations, such as when a certain type of lighting fixture was not available by itself on a switch, typical wattages as published by ANSI (American National Standards Institute) were used. The post-retrofit wattage of the impacted fixtures will be measured one time on a sample of fixtures meeting the same sampling criteria. The savings will be updated.
Burn Hours	Short-term	The existing lighting burn hours for a sample of spaces meeting the 80/20 sampling plan – assuming a coefficient of variance of 0.5 were measured. Data loggers were installed from 02/17/20 through 03/06/20 It is agreed that this time period represents typical usage for the lighting systems. In some situations where occupancy loggers were not possible to deploy, auditing efforts support defined values with local customer interview as source of data. The measured burn hours were then extrapolated to annual burn hours by multiplying the measured hours by the ratio of weeks that school is in session to measured weeks. The hours were then averaged by space type. The table below shows the average annual baseline burn hours by space type. These values will not be measured again.
Coincident Factor	Short Term	The coincident factor is estimated based on the number of fixtures in a given space type that were estimated to be operating at the same time during the on peak period and is agreed to remain at the same value after the retrofit. The coincident

Key Parameter	Measurement Frequency	Measurement Description
		factors by room/space types are as listed in the table below with pre and post burn hours.

Following table summarizes existing fixture codes and corresponding average power draws.

Existing Component Code	Pre-retrofit kW
1X1000MH	1.08
1X100HPS	0.55
1X100INCA	0.10
1X100LEDSI	0.40
1X100MH	0.13
1X10LEDF	0.01
1X12CFLSI	0.12
1X13CFL2P	1.20
1X13CFLSI	0.01
1X13PL2P	0.02
1X150HAL	0.30
1X150HPS	0.19
1X150INCA	0.15
1X150MH	0.37
1X15LEDF	0.02
1X175MV	0.21
1X18CFL2P	0.02
1X18CFL4P	0.08
1X20LEDF	0.02

Existing Component Code	Pre-retrofit kW
1X20LEDSI	0.08
1X23CFLSI	0.02
1X250HPS	0.30
1X250MH	0.30
1X250MV	0.87
1X25INCA	0.03
1X25LEDSI	0.05
1X26CFL2P	0.06
1X26CFL4P	0.03
1X28T8EBHEL	0.02
1X28T8EBN	0.03
1X2LEDEXIT	0.01
1X300HAL	0.90
1X30LEDF	0.03
1X32CFL4P	0.18
1X32T8EBN	0.03
1X34T12MB	0.04
1X400HPS	0.47
1X400MH	0.45
1X40INCA	0.04
1X40LEDF	0.08
1X42CFL4P	0.05
1X43INCA	0.09
1X50LEDF	0.10
1X52INCA	0.05
1X54INCA	0.05
1X60INCA	0.06

Existing Component Code	Pre-retrofit kW
1X6LEDSI	0.01
1X70HPS	0.10
1X70LEDF	0.14
1X70MH	0.10
1X75HAL	0.08
1X75INCA	0.15
1X8LEDSI	0.03
1X90HAL	0.54
2X1000MH	2.16
2X13CFL2P	0.03
2X13CFL4P	0.03
2X13CFLSI	0.03
2X140LEDF	0.28
2X160LEDF	0.64
2X17T8EBHEN	0.03
2X18CFL2P	0.04
2X18CFL4P	0.36
2X250HPS	0.59
2X250MH	0.59
2X26CFL2P	0.10
2X26CFL4P	0.05
2X28T8EBHEL	0.04
2X28T8EBN	0.05
2X30T12MB	0.07
2X32T8EBN	0.06
2X32T8U6EBHEN	0.06
2X34T12MB	0.00

Existing Component Code	Pre-retrofit kW
2X34T12MB	0.07
2X34T12MB2	0.08
2X34T12U6EBN	0.06
2X34T12U6MB	0.08
2X400HPS	0.93
2X400MH	0.89
2X40INCA	0.08
2X42CFL4P	0.09
2X52INCA	0.10
2X54INCA	0.11
2X60INCA	0.12
2X60T12SLMB	0.25
2X85LEDF	0.17
2X90HAL	0.18
2X95T12HOMB	0.91
2X9CFLEXIT	0.04
3X1000MH	6.48
3X17T8EBN	0.05
3X28T8EBH	0.08
3X28T8EBN	0.15
3X32T8EBN	0.09
3X34T12MB2	0.11
3X400MH	1.34
4X28T8EBH	0.13
4X28T8EBN	0.10
4X32T8EBN	0.11
4X34T12MB2	0.14

Existing Component Code	Pre-retrofit kW
6X28T8EBHEL2	1.26
6X34T12MB3	0.42

Before construction commence, additional pre-retrofit sample measurements will be taken.

Following table summarizes average annual burn hours by room types and corresponding coincidence factors used for estimating savings for this ECM:

			Post-retrofit Annualized Burn Hours	
Space Type	**Space Code**	**Pre-retrofit Annualized Burn Hours**	**No Sensor / Already Sensored**	**Sensor Retrofit**
Break room	BR	2,860	2,860	2,107
Cafeteria	CF	3,313	3,313	2,621
Cafeteria, Already Sensored	CF-AS	2,527	2,527	
Cafeteria, High Use	CF-H	6,905	6,905	3,144
Classroom	CL	1,869	1,869	1,256
Classroom, Already Sensored	CL-AS	1,481	1,481	
Classroom, High Use	CL-H	6,905	6,905	1,752
Classroom, Low Use	CL-L	1,877	1,877	1,203
Conference Room	CR	1,715	1,715	1,485
Gymnasium	GYM	3,570	3,570	1,871
Gymnasium, Already Sensored	GYM-AS	2,258	2,258	
Hallway	HW	4,171	4,171	2,196
Hallway, High Use	HW-H	6,168	6,168	2,085
Kitchen	KT	2,255	2,255	2,100

			Post-retrofit Annualized Burn Hours	
Space Type	**Space Code**	**Pre-retrofit Annualized Burn Hours**	**No Sensor / Already Sensored**	**Sensor Retrofit**
Library	LI	2,890	2,890	2,287
Lobby/Entry Vestibule	LO	3,963	3,963	2,730
Multipurpose	MP	3,077	3,077	1,984
Open Office	OO	3,600	3,600	2,210
Open Office, High Use	OO-H	6,905	6,905	3,111
Private Office	PO	2,754	2,754	2,314
Private Office, Already Sensored	PO-AS	1,593	1,593	
Restroom	RR	3,645	3,645	672
Restroom, Already Sensored	RR-AS	2,468	2,468	
Restroom, High Use	RR-H	6,905	6,905	863

Description	**Usage Group Code**	**Space Type ID**	**Coincidence Factor**
24/7 Operation	24/7		100%
Auditorium/Stage	AU		90%
Break room	BR		90%
Cafeteria	CF		90%
Cafeteria, Already Sensored	CF-AS	1	90%
		2	100%
Cafeteria, High Use	CF-H		100%
Classroom	CL	1	90%
		2	100%

Description	Usage Group Code	Space Type ID	Coincidence Factor
Classroom, Already Sensored	CL-AS	1	50%
		2	90%
		3	100%
Classroom, High Use	CL-H		100%
Classroom	CL-L	1	50%
		2	100%
Conference Room	CR		90%
Conference Room, Already Sensored	CR-AS		50%
Elevator	EL		100%
Exam room	EXAM		90%
Gymnasium	GYM	1	90%
		2	100%
Gymnasium, Already Sensored	GYM-AS		90%
Hallway	HW	1	90%
		2	100%
Hallway, Already Sensored	HW-AS		90%
Hallway, High Use	HW-H		100%
Hallway, Low Use	HW-L		50%
Kitchen	KT		90%
Library	LI		90%
Library, Already Sensored	LI-AS	1	50%
		2	90%
		3	100%
Lobby/Entry Vestibule	LO	1	90%
		2	100%
Locker Room	LR	1	90%

Description	Usage Group Code	Space Type ID	Coincidence Factor
		2	100%
Mechanical/Electrical Rooms	ME	1	50%
		2	100%
Mechanical/Electrical Rooms, Already Sensored	ME-AS		50%
Multipurpose	MP	1	90%
		2	100%
Open Office	OO	1	90%
		2	100%
Open Office, Already Sensored	OO-AS		90%
Open Office, High Use	OO-H		100%
Office Support (copy room, coffee room, etc.)	OS		90%
Private Office	PO	1	90%
		2	100%
Private Office, Already Sensored	PO-AS		90%
Private Office, High Use	PO-H		100%
Restroom	RR	1	90%
		2	100%
Restroom, Already Sensored	RR-AS	1	50%
		2	90%
Restroom, High Use	RR-H		100%
Restroom, Low Use	RR-L		50%
Storage	ST	1	50%
		2	100%
Stage	STAGE		90%
Storage, Already Sensored	ST-AS		50%
Stairwell	SW		100%

Description	Usage Group Code	Space Type ID	Coincidence Factor
Stairwell, Already Sensored	SW-AS		100%
Utility/Janitor Closets	UT	1	50%
		2	100%
Utility/Janitor Closets, Already Sensored	UT-AS		50%
Exit Signs	X		100%

Performance Period M&V Activities:

- Onsite visual Inspections in random samples of max 5% approximately of FIM SoW annually in no more than five affected schools per year to verify operating conditions.
- Review and inspect O&M Records provided by customer during each performance year.
- Review and verify efficiency of products replaced in Purchasing Records provided by customer during each performance year.
- Update annual savings calculations and reconciliation in annual M&V value report.

Equations for Calculating Lighting Retrofit Savings

Demand (kW)

$Connected\ kW\ Saving = \square_u [\ (kW/Fixture_{baseline} \times Quantity_{baseline} - kW/Fixture_{post} \times Quantity_{post})]_{t,u}$

$Actual\ kW\ Savings = \square_u [\ Connected\ kW\ Savings_u \times Coincident\ Factor_u]_{t,u}$

where:

$kW/fixture_{baseline}$ =	lighting baseline demand per fixture for usage group *u*
$kW/fixture_{post}$ =	lighting demand per fixture during post-installation period for usage group
$Quantity_{baseline}$ =	quantity of affected fixtures before the lighting retrofit for usage group *u*
$Quantity_{post}$ =	quantity of affected fixtures after the lighting retrofit for usage group *u*
$Coincident\ Factor_u$ =	*Coincident* Factor is a multiplier to account for Demand Diversity of each specific usage group *u*.

Energy (kWh)

$kWh\ Savings_{Lighting} = \square_u [Connected\ kW\ Savings_u \times Burn\ Hours]_{t,u}$

where:

kW Savings$_u$ = kilowatt savings realized during the post-installation time for usage group *u*

Burn Hours = number of operating hours during the time period *t* for the usage group *u*

The expected measured savings for this ECM are as follows, at the rates and escalations as noted in Article 2, Section IV.

ECM ID	Measured			
	Electric Consumption	Electric Demand	Natural Gas	Water
ECM 1	2,586,657 kWh	843 kW/month	0 Therms	0 kGal.

Refer to Appendix ECM 1 LED Lighting Upgrades (electronic attachment) for the detailed expected savings calculations for ECM-1.

ECM 2 –Water Conservation

Option A: Measurement and Verification Plan for Domestic Water Conservation

The savings for this ECM will be verified using IPMVP Core Concepts, EVO 10000 -1:2016, Option A, Retrofit Isolation with Key Parameter Measurement. The savings for this ECM are generated through a reduction in water used by the domestic water systems (and the associated water heating fuel for hot water savings), therefore, the measurement boundary is the domestic water systems.

Key Parameter	Measurement Frequency	Measurement Description
Pre- and Post-retrofit Fixture gallons/flush	One-Time	**Pre-retrofit & Post-retrofit** A statistically valid sampling of domestic plumbing fixtures under a 90/20 sampling plan – assuming a coefficient of variance of 0.5 s

gallons/minute		determined prior to conducting formal measurement and verification in both baseline and post-installation measurements as follow: **<u>TOILETS & URINALS</u>** <u>Wet-vac Method</u> – used for formal M&V documentation • This method involves plugging the toilet/urinal trap way with an inflatable rubber test ball and vacuuming existing water out of fixture to be discarded. The fixture is then flushed and again, water is vacuumed out of the fixture and transferred to a calibrated bucket to verify flush volume. The weight is then documented as well for an accurate determination of flush volume by utilizing the conversion factor of 8.33 lbs per gallon. **<u>FAUCETS & SHOWERHEADS</u>** <u>Calibrated Flow Bag Method</u> • A calibrated flow bag is used to determine the flow rate of a fixture. The bag is designed to capture a 5 second flow of water from an open source water end-use, with volumetric markings on the bag that essentially convert the volume collected in the bag over a 5 second sampling into a gallon per minute flow rate. <u>Volume Conversion Method</u> • A fixed volume sample of water is obtained, and a stopwatch is used to determine the amount of time required to fill the fixed volume. The flow rate is then obtained utilizing the following formula: Flow rate (gpm) = Fixed volume (gallons) / time to fill (s) X 60 (s/min) **PRE-RINSE SPRAYERS:**

		The post-installation fixture usages will be measured one time using the measurement procedure: Calibrated Flow Bag Method • A calibrated flow bag is used to determine the flow rate of a fixture. The bag is designed to capture a 5 second flow of water from an open source water end-use, with volumetric markings on the bag that essentially convert the volume collected in the bag over a 5 second sampling into a gallon per minute flow rate.

Estimated Parameters	**Assumed Value**	**Justification, Source and Description**
Population	Refer to the table below	The population is agreed to be as shown in the table below. The population counts are based on data provided by the Customer. These values will not be measured.
Usage Factors	Refer to Usage Parameters below	The usage factors are shown below.
Domestic Hot Water Equipment Efficiency	98% system efficiency at all sites, except: 78% system efficiency Pompano Beach Middle School, Stranahan High School, 82% system efficiency Mary M. Bethune Elementary School	The efficiency of the hot water heating equipment is based on typical boiler efficiencies and site surveys conducted and will not be measured.
Shower $Temp_{hot}$	106 F	The shower head hot water temperature is the estimated temperature used at this fixture type and will not be measured.

Estimated Parameters	Assumed Value	Justification, Source and Description
Sink (Faucet) $Temp_{hot}$	75 F	The lavatory hot water temperature is the estimated temperature used at this fixture type and will not be measured.
Kitchen $Temp_{hot}$	85 F	The kitchen sink/general purpose sink hot water temperature is the estimated temperature used at this fixture type and will not be measured.
Inlet Water $Temp_{cold}$	74 F	The cold water temperature is the estimated average annual ground water temperature.

The table below shows usage factors utilized:

	Pre-retrofit average Usage*
Toilet flowrate - gpf	2.37
Urinal flowrate - gpf	0.70
Lavatory flowrate - gpm	2.04
Kitchen/General Purpose Faucet flowrate - gpm	2.79
Shower flowrate - gpm	1.71
Pre-rinse sprayer flowrate - gpm	3.00

* Pre-retrofit average Usage reflect averages obtained from investment grade water audit inspections.

The table below shows the Population demographics and Usage factors by Site:

	Dillard Elementary School			
	Staff	**Students**	**After School**	**Visitors**
Average hourly population	85	800	200	30

Population % that is male	50%	50%	50%	50%
Female population	43	400	100	15
Male population	43	400	100	15
Average hours per day occupied	8	7	5	1
Average days per year occupied	200	180	180	180

	Maplewood Elementary School			
	Staff	**Students**	**After School**	**Visitors**
Average hourly population	100	750	50	25
Population % that is male	50%	50%	50%	50%
Female population	50	375	25	13
Male population	50	375	25	13
Average hours per day occupied	8	7	4	1
Average days per year occupied	200	180	180	180

	Mary M. Bethune Elementary School			
	Staff	**Students**	**After School**	**Visitors**
Average hourly population	75	415	90	35
Population % that is male	50%	50%	50%	50%
Female population	38	208	45	18
Male population	38	208	45	18

Average hours per day occupied	8	8	5	2
Average days per year occupied	200	180	180	180

	Pines Lakes Elementary School			
	Staff	**Students**	**After School**	**Visitors**
Average hourly population	85	565	210	20
Population % that is male	50%	50%	50%	50%
Female population	43	283	105	10
Male population	43	283	105	10
Average hours per day occupied	8	7	5	1
Average days per year occupied	200	180	180	180

	Pompano Beach Elementary School			
	Staff	**Students**	**After School**	**Visitors**
Average hourly population	80	500	100	35
Population % that is male	50%	50%	50%	50%
Female population	40	250	50	18
Male population	40	250	50	18
Average hours per day occupied	8	7	5	1

Average days per year occupied	200	180	180	180

	Pompano Beach Middle School			
	Staff	**Students**	**After School**	**Visitors**
Average hourly population	100	1030	100	10
Population % that is male	50%	50%	50%	50%
Female population	50	515	50	5
Male population	50	515	50	5
Average hours per day occupied	8	7	5	2
Average days per year occupied	200	180	180	180

	Stranahan High School				
	Staff	**Students**	**After School**	**Visitors**	**Athletic Event Occupants**
Average hourly population	125	1450	580	73	500
Population % that is male	50%	50%	50%	50%	50%
Female population	63	725	290	37	250
Male population	63	725	290	37	250
Average hours per day occupied	8	7	5	1	3
Average days per year occupied	200	180	180	180	45

	Tequesta Trace Middle School			
	Staff	**Students**	**After School**	**Visitors**
Average hourly population	110	1580	220	30
Population % that is male	50%	50%	50%	50%
Female population	55	790	110	15
Male population	55	790	110	15
Average hours per day occupied	8	7	5	1
Average days per year occupied	200	180	180	180

	William Dandy Middle School			
	Staff	**Students**	**After School**	**Visitors**
Average hourly population	89	893	200	10
Population % that is male	50%	50%	50%	50%
Female population	45	447	100	5
Male population	45	447	100	5
Average hours per day occupied	8	7	3	0.5
Average days per year occupied	200	180	180	180

Demographic male/female distribution shown above reflects typical school application audit references.

Usage Factor	Description	Value

Women - Toilet uses per hour	Once per 2 hours, per AWWARF publications	0.5
Men - Toilet/Urinal uses per hour	Once per 2 hours, per AWWARF publications	0.5
Women - Toilet uses per hour	Once per 2 hours, per AWWARF publications	0.5
Men - Toilet/Urinal uses per hour	Once per 2 hours, per AWWARF publications	0.5
Men - % of time toilets used	25%, per AWWARF publications	25%
Men - % of time urinals used	75%, per AWWARF publications	75%
Lavatory Use - Non Residential minutes used per flush	6 seconds per flush average, per AWWARF publications	0.1
Kitchen Faucet Use - Non Residential minutes used per day	2 minutes per day, per AWWARF publications	2
Shower Use - Non Residential minutes used per day	8 minutes per shower, per AWWARF publications	8

AWWARF – American Waters Works Association Research Foundation. 2000. Commercial and Institutional End Uses of Water. Denver, CO.

Complete Water workbook savings calculations can also be found in "Appendix- ECM 2 Domestic Water Conservation.xls".

Performance Period M&V Activities:

- Onsite visual Inspections in random samples of max 5% approximately of FIM SoW annually in no more than five affected schools per year to verify operating conditions.
- Review and inspect O&M Records provided by customer during each performance year.
- Review and verify efficiency of products replaced in Purchasing Records provided by customer during each performance year.
- Update annual savings calculations and reconciliation in annual M&V value report.

Equations for Calculating Savings

Spreadsheet based calculations were developed to simulate pre- and post-retrofit performance of this ECM. Equipment nameplate and manufacturer information, as well as short-term measurements, were used to calculate pre-retrofit system performance. Post-ECM manufacturer data and control parameters were input into the calculation to estimate post-ECM consumption.

The water and energy savings for this ECM are estimated by the following formulae:

Water Scope Savings Calculation

Water Savings

Water Reduction = $\square_{type}$ [(Usage $Rate_{baseline}$ - Usage $Rate_{post}$) x $AAUF_{type}$ x $Quantity_{type}$] / 1000

where:

Water Reduction =	water savings realized in kilogallons (kGal). These savings will result in water and sewer dollars saved.
Usage $Rate_{baseline}$ =	baseline fixture use rate in gpm or gpf
Usage $Rate_{post}$ =	post installation fixture use rate in gpm or gpf
AAUF =	average annual use per fixture; faucets or showers in minutes per year toilets or urinals in flushes per year
Quantity =	quantity of affected fixtures

Hot Water Heating Fuel Project Benefits

Energy Reduction = Water Reduction x ($Temp_{hot}$ - $Temp_{cold}$) x Specific Heat x 1,000 / Efficiency

where:

Energy Reduction =	fuel savings realized in BTUs
Water Reduction=	water savings in kGal
$Temp_{hot}$ =	average hot water usage temperature
$Temp_{cold}$ =	average cold water temperature
Specific Heat =	8.34 Btu / (kGal) (□F) for water
Efficiency =	Water heating efficiency expressed as a fraction

The expected savings for this ECM are as follows, at the rates and escalations as noted in Article 2, Section IV.

ECM ID	**Measured**				
	Electric Consumption	**Electric Demand**	**Natural Gas**	**Propane**	**Water**
ECM 2	40,713 kWh	0 kW	1,052 Therms	526 gal	9,566,760 gal.

Refer to Appendix-ECM 2 Water Conservation (electronic attachment) for the detailed expected savings calculations for ECM-2.

IV. BASELINE CALCULATIONS AND UTILITY RATES

The unit utility costs for the Baseline period are set forth below as "Base Utility Cost" and shall be used for all calculations made under this Article. The Base Utility Cost shall be escalated annually by the actual utility cost escalation, but such escalation shall be no less than the mutually agreed "floor" escalation rate of three percent (3.0%). Natural gas and propane Base Utility Cost are the average of the twelve (12) months during the period of January 2019 through December 2019. The Base Utility Cost for electric, water, and sewer type utility represents the utility billing rates for January 2020. Copies of the rate schedules and rate analysis are in the Appendix.

Service	School(s)	Provider
Electric	Dillard Elementary, Maplewood Elementary, Bethune Elementary, Pines Lakes Elementary, Pompano Beach Elementary, Pompano Beach Middle, Tequesta Trace Middle, William Dandy Middle, and Stranahan High	Florida Power and Light
Natural Gas	Pompano Beach Middle and Stranahan High	FPL/TECO Peoples Gas
Propane	Bethune Elementary	AmeriGas
Water and Sewer	Dillard Elementary, William Dandy Middle, and Stranahan High	City of Fort Lauderdale
Water and Sewer	Maplewood Elementary	Coral Springs ID
Water and Sewer	Bethune Elementary	City of Hollywood
Water and Sewer	Pines Lakes Elementary	City of Pembroke Pines
Water and Sewer	Pompano Beach Elementary and Pompano Beach Middle	City of Pompano Beach
Water and Sewer	Tequesta Trace Middle	City of Sunrise

	Electric*			Natural Gas	Propane	Water[1]	Sewer[1]
School	Energy ($/kWh)	Demand ($/kW)	Rate Schedule	$/Therm	$/Gal	$/kGal	$/kGal
Dillard Elementary	$0.04600	$14.59	SDTR-2A			$5.59	$7.39
Maplewood Elementary	$0.05056	$12.15	SDTR-1A			$2.89	$4.38
Mary M. Bethune Elementary	$0.04600	$14.59	SDTR-2A		$1.15	$6.68	$9.71
Pines Lakes Elementary	$0.04259	$14.59	SDTR-2A			$8.39	$6.75
Pompano Beach Elementary	$0.05075	$12.15	SDTR-1A			$3.67	$3.03
Pompano Beach Middle	$0.05422	$12.15	SDTR-1A	$0.776		$3.67	$3.03

Tequesta Trace Middle	$0.04621	$14.59	SDTR-2A			$4.54	$4.37
William Dandy Middle	$0.04983	$14.59	SDTR-2A			$5.59	$7.39
Stranahan High	$0.04259	$14.59	SDTR-2A	$0.527		$5.59	$7.39

*Electric energy rates based on hourly average effective rate during anticipated school hours' occupancy per site and monthly electric demand rates based on FPL 8.83 Electric Tariff Section effective January 1, 2020. These selected rates and hours were reviewed, discussed and approved by Customer representative during Baseline/M&V Workshop session for utilization in savings calculation. See *ECM 1 Appendix* for details.

[1] Water and Sewer rates are based on assigned municipal rate schedules. These rate schedules are in *ECM 2 Appendix*.

Baseline Utility Data for Natural Gas and Propane

Mary M. Bethune Elementary - Propane

Month	Commodity gallon	Commodity Fuel Cost	$/gallon
Jan-19	871	$1,082	$1.24
Feb-19	1,094	$1,307	$1.19
Mar-19	972	$1,159	$1.19
Apr-19	751	$904	$1.20
May-19	1,269	$1,417	$1.12
Jun-19	900	$960	$1.07
Jul-19	381	$380	$1.00
Aug-19	8	$8	$0.97
Sep-19	61	$56	$0.92
Oct-19	80	$76	$0.95
Nov-19	37	$36	$0.98
Dec-19	91	$96	$1.05
Totals:	**6,515**	**$7,481**	**$1.15**

Pompano Beach Middle School – Natural Gas

Month	Commodity Therm	Commodity Fuel Cost	$/Therm
Jan-19	175	$133	$0.762
Feb-19	216	$146	$0.675
Mar-19	190	$132	$0.696
Apr-19	160	$120	$0.748
May-19	181	$128	$0.710
Jun-19	156	$117	$0.748
Jul-19	55	$71	$1.289
Aug-19	38	$64	$1.694
Sep-19	117	$98	$0.841
Oct-19	146	$112	$0.767
Nov-19	161	$121	$0.749
Dec-19	159	$119	$0.745
Totals:	**1754**	**$1,361**	**$0.776**

Stranahan High School – Natural Gas

Month	Commodity Therm	Commodity Fuel Cost	$/Therm
Jan-19	2,609	$1,338	$0.513
Feb-19	756	$407	$0.538
Mar-19	627	$342	$0.546
Apr-19	450	$261	$0.580
May-19	272	$175	$0.644
Jun-19	288	$183	$0.635

Jul-19	118	$104	$0.880
Aug-19	238	$152	$0.639
Sep-19	415	$214	$0.517
Oct-19	593	$382	$0.644
Nov-19	2,530	$1,385	$0.547
Dec-19	5,008	$2,379	$0.475
Totals:	**13,905**	**$7,323**	**$0.527**

V. PRIMARY OPERATIONS SCHEDULE PRE & POST RETROFIT

Pre-Retrofit Facility/Area and Post-Retrofit Facility/Area schedules (Burn Hours) are incorporated and documented in the LED Lighting Upgrades (electronic attachment) for the detailed expected savings calculations for ECM-1.

VI. MEASUREMENT & VERIFICATION SERVICES

JCI will provide the M&V Services set forth below in connection with the Assured Performance Guarantee.

1. During the Installation Period, a JCI Performance Assurance Specialist will track Measured Project Benefits. JCI will report the Measured Project Benefits achieved during the Installation Period, as well as any Non-Measured Project Benefits applicable to the Installation Period, to Customer within 60 days of the commencement of the Guarantee Term.
2. Within 60 days of each anniversary of the commencement of the Guarantee Term, JCI will provide Customer with an annual report containing:
    A. an executive overview of the project's performance and Project Benefits achieved to date;
    B. a summary analysis of the Measured Project Benefits accounting; and
    C. depending on the M&V Option, a detailed analysis of the Measured Project Benefits calculations.
3. During the Guarantee Term, a JCI Performance Assurance Specialist will monitor the on-going performance of the Improvement Measures, as specified in this Agreement, to determine whether anticipated Measured Project Benefits are being achieved. In this regard, the Performance Assurance Specialist will periodically assist Customer, on-site or remotely, with respect to the following activities:

A. advise Customer's designated personnel of any performance deficiencies based on such information;

B. coordinate with Customer's designated personnel to address any performance deficiencies that affect the realization of Measured Project Benefits; and

C. inform Customer of opportunities to further enhance project performance and of opportunities for the implementation of additional Improvement Measures.

4. For specified Improvement Measures, JCI will:

A. conduct pre and post installation measurements required under this Agreement;

B. confirm the building management system employs the control strategies and set points specified in this Agreement; and

C. analyze actual as-built information and adjust the Baseline and/or Measured Project Benefits to conform to actual installation conditions (e.g., final lighting and water benefits calculations will be determined from the as-built information to reflect the actual mix of retrofits encountered during installation).

D. confirm that the appropriate metering and data points required to track the variables associated with the applicable Improvement Measures' benefits calculation formulas are established; and

- Set up appropriate data capture systems (e.g., trend and totalization data on the facility management system) if necessary, to track and report Measured Project Benefits for the applicable Improvement Measure.

Article 3. CUSTOMER RESPONSIBILITIES

In order for JCI to perform its obligations under this Agreement with respect to the Work, the Assured Performance Guarantee, and the M&V Services, Customer shall be responsible for:

1. Providing JCI, its subcontractors, and its agents reasonable and safe access to all facilities and properties that are subject to the Work and/or M&V Services;

2. Providing for shut down and scheduling of affected locations during installation, including timely shutdowns of chilled water and hot water systems as needed to accomplish the Work and/or M&V Services;

3. Providing timely reviews and approvals of design submissions, proposed change orders, and other project documents;

4. Providing the following information with respect to the project and project site as soon as practicable following JCI's request:

a. surveys describing the property, boundaries, topography and reference points for use during construction, including existing service and utility lines;

b. geotechnical studies describing subsurface conditions, and other surveys describing other latent or concealed physical conditions at the project site;

c. temporary and permanent easements, zoning and other requirements and encumbrances affecting land use, or necessary to permit the proper design and construction of the project and enable JCI to perform the Work;

d. a legal description of the project site;

e. as-built and record drawings of any existing structures at the project site; and

f. environmental studies, reports and impact statement describing the environmental conditions, including hazardous conditions or materials, in existence at the project site.

5. Securing and executing all necessary agreements with adjacent land or property owners that are necessary to enable JCI to perform the Work;

6. Providing assistance to JCI in obtaining any permits, approvals, and licenses that are JCI's responsibility to obtain as set forth in Article 1;

7. Obtaining any permits, approvals, and licenses that are necessary for the performance of the Work and are not JCI's responsibility to obtain as set forth in Article 1;

8. Properly maintaining, and performing appropriate preventative maintenance on, all equipment and building systems affecting the Assured Performance Guarantee in accordance with manufacturers' standards and specifications;

9. Providing the utility bills, reports, and similar information reasonably necessary for administering JCI's obligations under the Assured Performance Guarantee within five (5) days of Customer receipt and/or generation or JCI's request therefor;

10. Providing all records relating to energy and/or water usage and related maintenance of the premises and relevant equipment requested by JCI;

11. Providing and installing utility sub-meters on all new construction and/or additions built during the Guarantee Term as recommended by JCI or, alternatively, paying JCI's applicable fees for calculating necessary adjustments to the Assured Performance Guarantee as a result of the new construction;

12. Providing and maintaining a dedicated telephone line and/or TCP/IP remote connection to facilitate remote monitoring of relevant equipment;

13. Promptly notifying JCI of any change in use or condition described in Section III of Article 2 or any other matter that may impact the Assured Performance Guarantee;

14. Taking all actions reasonably necessary to achieve the Non-Measured Project Benefits.

Article 4. PRICE AND PAYMENT TERMS

Customer shall make payments to JCI pursuant to this Article 4.

1. *Work*. The price to be paid by Customer for the Work shall be $4,543,100. Payments (including payment for materials delivered to JCI or the Customer's site and work performed on and off-site) shall be made to JCI pursuant to Section 218.735, Florida Statutes, also known as the Florida Prompt Law, in accordance with the draw schedule below.

Schedule		Total Draw
Construction Period	Down Payment	$2,271,550
	Month #1	$340,733
	Month #2	$340,733
	Month #3	$340,733
	Month #4	$340,733
	Month #5	$227,155
	Month #6	$227,155
	Month #7	$227,155
	Month #8	$113,578
	Month #9	$113,578

2. *M&V Services*. The total price for JCI's M&V Services, as detailed in Article 2, is $460,913 for the entire term. This amount will be paid to JCI in annual installments as indicated in the table below. These payments will be due and payable pursuant to Section 218.735, Florida Statutes, also known as the Florida Prompt Payment Law, when Customer receives JCI's invoice and in advance of the services JCI is to provide, and shall be made throughout the Guarantee Term.

Performance Year	**M&V Costs**
Year 1	$32,477
Year 2	$33,451
Year 3	$34,455
Year 4	$35,488
Year 5	$36,553
Year 6	$37,650

Year 7	$38,779
Year 8	$39,942
Year 9	$41,141
Year 10	$42,375
Year 11	$43,646
Year 12	$44,956

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NOTICE TO PROCEED **ATTACHMENT 1**

JOHNSON CONTROLS, INC. ("JCI")

Miami, FL Branch

15901 SW 29th St., Ste. #801

Miramar, FL 33027

ATTN: Paul Angersbach

Re: Notice to Proceed for School Board of Broward County

Dear Mr. Angersbach:

This Notice to Proceed is being issued by The School Board of Broward County, Florida ("Customer") to Johnson Controls, Inc. ("JCI") pursuant to that certain Performance Contract entered into between Customer and JCI for the purpose of notifying JCI to commence work under such contract.

In the event that this Notice to Proceed is delivered by Customer prior to the execution of the Performance Contract by Customer and JCI, Customer understands and expects JCI will incur significant costs and expenses in complying with this Notice to Proceed. In the event the Performance Contract is not executed by the parties, for any reason, Customer agrees to pay JCI for its costs and fees incurred in complying with this Notice to Proceed on a time and material basis. Customer also agrees JCI shall be entitled to a reasonable markup thereon for profit and overhead. Customer agrees to pay amounts billed by JCI no later than five (5) days after Customer receives JCI's payment application. JCI will continue to submit payment applications to Customer until the Performance Contract is executed. Once the Performance Contract is executed, JCI will begin submitting its payment applications to Customer in accordance with the terms and conditions set forth therein. Any amounts already paid by Customer will be credited towards the Performance Contract price.

By signing and dating this Notice to Proceed, the parties hereto agree to these terms and represent and warrant they have the authority to execute this Notice to Proceed on behalf of their respective organizations.

The School Board of Broward County, Florida

Signature:_____

Printed Name:_____

Title:_____

Date:_____

ACKNOWLEDGED & AGREED TO:

JOHNSON CONTROLS, INC.

Signature:_____

Printed Name: Paul Angersbach

Title: SE General Manager

Date: April 8, 2020

CHANGE ORDER **ATTACHMENT 2**

Performance Contract dated , 20 between Johnson Controls, Inc. and Customer	Change Order No.		Date (mo/day/yr)
Customer The School Board of Broward County, Florida			
The above referenced Performance Contract is hereby modified to the extent described below in accordance with the Terms and Conditions of the CHANGE ORDERS section thereof.			
Scope of Work changed as follows:			
Total amount of this Change Order			$
Total Performance Contract amount as revised by this Change Order			$
The time for completion is: ☐ increased, ☐ decreased, ☐ unchanged. The new completion date resulting from this Change Order is:			(mo, day, yr)
[check if applicable] Assured Performance Guarantee changed as follows:			

Unless specifically changed by this Change Order, all terms, conditions and provisions of the above referenced Performance Contract remain unchanged and in full effect.

JOHNSON CONTROLS, INC.	**CUSTOMER**
Signature:	Signature:
Printed Name:	Printed Name:
Title:	Title:

CERTIFICATE OF SUBSTANTIAL COMPLETION
ATTACHMENT 3

PARTIES: JOHNSON CONTROLS, INC. ("JCI")
15901 SW 29th St., Ste. #801
Miramar, FL 33027

The School Board of Broward County, Florida ("Customer")
600 Southeast Third Avenue
Fort Lauderdale, Florida 33301

PROJECT: Broward County Public Schools - PC; Performance Contract dated _____ __, 2020 between JCI and Customer

By executing this Certificate of Substantial Completion, Customer acknowledges the following:

a. The work set forth in the Performance Contract is substantially complete.

b. Customer has received the manuals, warranty information, and training required under the Performance Contract.

c. The following punch list items must be completed by JCI (check as applicable):

☐ punch list attached

☐ punch list complete

d. Upon completion of the punch list items, or if such punch list items are complete, JCI and Customer shall sign the Certificate of Final Completion attached hereto.

Dated , 20 .

CUSTOMER:	JOHNSON CONTROLS, INC.
Signature:_____	Signature:_____
Printed Name:_____	Printed Name:_____
Title:_____	Title:_____

CERTIFICATE OF FINAL COMPLETION
ATTACHMENT 4

PARTIES: JOHNSON CONTROLS, INC. ("JCI")
15901 SW 29th St., Ste. #801
Miramar, FL 33027

The School Board of Broward County, Florida ("Customer")
600 Southeast Third Avenue
Fort Lauderdale, Florida 33301

PROJECT: Broward County Public Schools - PC; Performance Contract dated _____ __, 20__ between JCI and Customer

By executing this Certificate of Final Completion, Customer acknowledges the following:

a. The work set forth in the Performance Contract has been reviewed and determined by Customer to be fully complete.

b. Customer accepts the work as complete and hereby releases JCI's obligations under any performance and payment bonds posted for the project as of the date set forth below.

Dated , 20 .

CUSTOMER:	JOHNSON CONTROLS, INC.
Signature:_____	Signature:_____
Printed Name:_____	Printed Name:_____
Title:_____	Title:_____

END

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