

WHEREAS, the 83rd Regular Session of the Texas Legislature enacted the Property Assessed Clean Energy Act, Texas Local Government Code Chapter 399 (the "PACE Act"), which allows the governing body of a local government to designate an area of the territory of the local government (or the whole territory of the local government) as a region within which an authorized local government official and the record owners of commercial, industrial, agricultural, and large multi-family residential (5 or more dwelling units) real property may enter into written contracts to impose assessments on the property to repay the financing by the owners of permanent improvements fixed to the property intended to decrease water or energy consumption or demand; and

WHEREAS, the installation or modification by property owners of qualified water or energy saving improvements to commercial, industrial, agricultural, and large multi-family residential real property in the City of Dallas will further the goals of water and energy conservation without cost to the public; and

WHEREAS, the City finds that facilitating the financing of water and energy conserving projects through contractual assessments ("PACE financing") furthers essential government purposes, including but not limited to, economic development, reducing energy consumption and costs, conserving water resources, and reducing greenhouse gas emissions; and

WHEREAS, the City Council, pursuant to Texas Local Government Code Section 399.008(a)(2), is required to hold a public hearing as provided below, at which the public may comment on the proposed Dallas PACE program, including the report required by Section 399.009, which was published on August 19, 2015 and is available for public inspection on the website of the City of Dallas at <http://www.dallas-ecodev.org/incentives/pace/> and in the Office of Economic Development, Dallas City Hall, 1500 Marilla Street, Room 5C South, Dallas, Texas, 75201.

NOW, THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

Section 1. That the City Council will hold a public hearing on the proposed Dallas PACE program, including the report required by Section 399.009, on Wednesday, October 14, 2015 at 1:30 p.m. in the Council Chambers at Dallas City Hall, 1500 Marilla Street, Dallas, Texas, 75201.

Section 2. That this resolution shall take effect immediately from and after its passage in accordance with the provisions of the Charter of the City of Dallas, and it is accordingly so resolved.

APPROVED BY
CITY COUNCIL

SEP 22 2015


City Secretary

September 22, 2015

WHEREAS, the 83rd Regular Session of the Texas Legislature enacted the Property Assessed Clean Energy Act, Texas Local Government Code Chapter 399 (the "PACE Act"), which allows the governing body of a local government to designate an area of the territory of the local government (or the whole territory of the local government) as a region within which an authorized local government official and the record owners of commercial, industrial, agricultural, and large multi-family residential (5 or more dwelling units) real property may enter into written contracts to impose assessments on the property to repay the financing by the owners of permanent improvements fixed to the property intended to decrease water or energy consumption or demand; and

WHEREAS, the installation or modification by property owners of qualified water or energy saving improvements to commercial, industrial, agricultural, and large multi-family residential real property in the City of Dallas will further the goals of water and energy conservation without cost to the public; and

WHEREAS, the City finds that facilitating the financing of water and energy conserving projects through contractual assessments ("PACE financing") furthers essential government purposes, including but not limited to, economic development, reducing energy consumption and costs, conserving water resources, and reducing greenhouse gas emissions; and

WHEREAS, the City Council, subject to the public hearing scheduled as provided below, at which the public may comment on the proposed PACE program and the report recently published pursuant to Texas Local Government Code Section 399.009, finds that it is convenient and advantageous to establish a program under the PACE Act and designate the entire geographic area within the City of Dallas as a region within which a designated City official and the record owners of qualified real property may enter into PACE financing arrangements; and

WHEREAS, pursuant to Section 399.008(d), the City may contract for professional services necessary to administer a PACE program on behalf of the City of Dallas.

NOW, THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

Section 1. That the City hereby adopts this resolution of intent to create a program called Dallas Property Assessed Clean Energy ("Dallas PACE") and finds that facilitating the financing of qualified projects through contractual assessments pursuant to the PACE Act is a valid public purpose.

Section 2. That the City intends to make contractual assessments to repay PACE financing for qualified water or energy conserving projects available to owners of commercial, industrial, agricultural, and large multi-family residential real property.

Section 3. That the following types of projects are qualified projects for PACE financing that may be subject to such contractual assessments:

Projects that (a) involve the installation or modification of a permanent improvement fixed to privately owned commercial, industrial, or agricultural real property or residential real property with five (5) or more dwelling units, and (b) are intended to decrease water or energy consumption or demand, including a product, device, or interacting group of products or devices on the customer's side of the meter that uses energy technology to generate electricity, provide thermal energy, or regulate temperature.

An assessment may not be imposed to repay the financing of facilities for undeveloped lots or lots undergoing development at the time of the assessment or the purchase or installation of products or devices not permanently fixed to real property. Improvements to undeveloped land and government-owned properties in the City of Dallas are ineligible.

Section 4. That the boundaries of the entire geographic area within the City of Dallas are the boundaries of the region where PACE financing and assessments can occur under the Dallas PACE program.

Section 5. That financing for qualified projects under the Dallas PACE program will be provided by qualified third-party lenders chosen by the owners. Such lenders will execute written contracts with the City of Dallas to service the assessments, as required by the PACE Act. The City Manager (and/or his designee) is designated as the authorized City representative to sign the contracts with property owners and lenders. The contracts will provide for the lenders to determine the financial ability of owners to fulfill the financial obligations to be repaid through assessments, advance the funds to owners on such terms as are agreed between the lenders and the owners for the installation or modification of qualified projects, and service the debt secured by the assessments, directly or through a servicer, by collecting payments from the owners pursuant to contracts executed between the lenders and the owners. The lender contracts will provide that the City of Dallas will maintain and continue the assessments for the benefit of such lenders and enforce the assessment lien for the benefit of a lender in the event of a default by an owner. The City of Dallas will not, at this time, provide financing of any sort for the Dallas PACE program.

Section 6. That the City will use a competitive procurement process to select a qualified independent third-party entity to serve as the Program Administrator for the Dallas PACE program.

Section 7. That the report on the proposed Dallas PACE program prepared as provided by Texas Local Government Code Section 399.009 is available for public inspection on the website of the City of Dallas at <http://www.dallas-ecodev.org/incentives/pace/> and in the Office of Economic Development, Dallas City Hall, 1500 Marilla Street, Room 5C South, Dallas, Texas, 75201 and is attached hereto as Exhibit A.

Section 8. That the City Manager of the City of Dallas (and/or his designee) is designated as the appropriate local government representative for purposes of consulting regarding collecting the proposed contractual assessments.

Section 9. That the City Council will hold a public hearing on the proposed Dallas PACE program, including the report required by Section 399.009, on Wednesday, October 14, 2015 at 1:30 p.m. in the Council Chambers at Dallas City Hall, 1500 Marilla Street, Dallas, Texas, 75201.

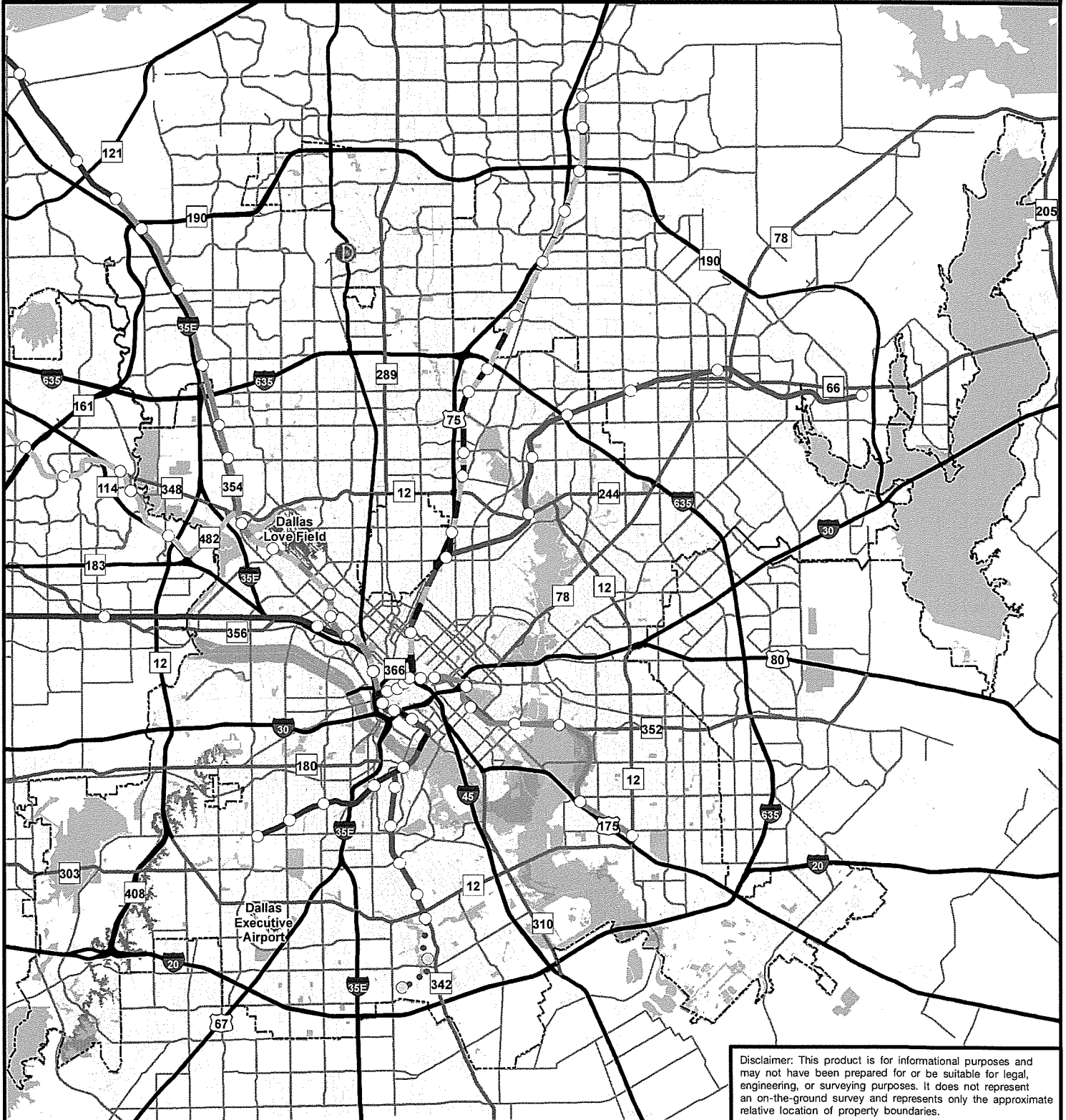
Section 10. That this resolution shall take effect immediately from and after its passage in accordance with the provisions of the Charter of the City of Dallas, and it is accordingly so resolved.

APPROVED BY
CITY COUNCIL

SEP 22 2015


City Secretary

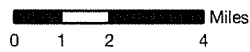
Proposed City of Dallas PACE Region



Disclaimer: This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

Legend

- Rail Station
- Future Station
- DART Red Line
- DART Blue Line
- DART Green Line
- DART Orange Line
- Commuter Rail
- DART Blue Line to UNT-Dallas (2016)
- Freeway or Tollway
- Highway
- Arterial
- Local Road
- Lakes & Rivers
- Parks
- Escarpment
- Flood Plain
- Airport
- - - Proposed City of Dallas PACE Region



DALLAS ECONOMIC DEVELOPMENT

Research & Information Division
214.670.1685
dallas-ecodev.org

PROPOSED
CITY OF DALLAS
PROPERTY ASSESSED CLEAN ENERGY (PACE) PROGRAM
REPORT REQUIRED BY TEX. LOCAL GOV'T CODE SEC. 399.009

BACKGROUND

This report is adopted by the Dallas City Council for the proposed City of Dallas Property Assessed Clean Energy ("Dallas PACE") program (the "Program"), as required by Tex. Local Gov't Code Sec. 399.009 (the "PACE Act").

A City of Dallas PACE program would further the goals of the City's Sustainability Plan which focuses on five areas: Air Quality; Land Use; Water Quality; Materials Management; and Energy Management. The City hopes to reduce non-renewable energy use by establishing a program to enhance sustainability for the private sector, and the PACE program can be part of this program. Additionally, reducing water usage among the City's multi-family housing stock is one of the primary goals of the City's most recent Five Year Water Conservation Program. City staff estimates there are over 21,000 commercial, industrial or multi-family housing properties within the City of Dallas that may eligible for PACE financing based on building condition (good, average, fair or poor).

The City of Dallas and its constituents benefit when privately-owned commercial and industrial properties and multi-family residential properties with five or more than units are retrofitted with equipment that reduces demand for electric power and water. To encourage private sector investment in water and energy conservation within the City of Dallas, the creation of a voluntary program is being proposed that requires no use of taxpayer funds or risk to the local treasury.

The Property Assessed Clean Energy Program

The Dallas PACE program is an innovative financing program that enables owners of privately owned commercial and industrial properties and residential properties with five or more units to obtain low-cost, long-term loans for water conservation, energy-efficiency improvements, and renewable retrofits.

Passed and signed into Texas state law during the 2013 legislative session, the PACE statute, SB 385 (now Tex. Local Gov't Code Chap. 399), authorizes municipalities and counties in Texas to work with private sector lenders and property owners to finance qualified improvements ("improvements") using contractual assessments **voluntarily** imposed on the property by the owner. In exchange for funds provided by a private lender to pay for the improvement, the property owner voluntarily requests that the local government place an assessment secured with a senior lien on the property until the assessment is paid in full.

The term of an assessment may extend up to the projected life of the improvement, which can result in utility cost savings that exceed the amount of the assessment payment. As a result, improvements financed through a PACE program may generate positive cash flow upon completion without up-front, out-of-pocket cost to the property owner.

PACE enables property owners to overcome market barriers, such as lack of access to capital and the extended time period it takes for utility savings to pay back the cost of a retrofit, which discourage investment in energy efficiency and water conservation improvements. PACE provides the property owner with upfront financing for up to 100% of the cost of a qualified improvement and allows the property owner to amortize the debt over the useful life of the improvement.

If a property is sold before the full amount of the PACE loan is repaid, the remaining repayment obligation automatically transfers to the next owner because the lien securing the PACE assessment follows the title to the property without recourse for subsequent payments on the previous owner, the lender, the City, the County, or the Program Administrator. Successive property owners assume the lien.

What are the Benefits of PACE?

The benefits of PACE are multi-faceted. Improvements financed with PACE loans will enable commercial, industrial, agricultural, and multifamily properties with five or more units to achieve greater energy efficiency and help conserve the area's water resources.

Among other things, these improvements can:

- Save substantial amounts in utility costs;
- Promote local job creation;
- Reduce demand on the energy grid;
- Support the state's water plan;
- Enhance the value and efficiency of existing buildings, enabling some buildings to become LEED certified;
- Reduce greenhouse gas emissions;
- Mitigate split incentive issues between landlords and tenants related to investments in energy efficiency and water conservation improvements; and
- Establish significant business opportunities for engineers, energy and water conservation consultants, construction contractors, commercial lenders, and investors.

PACE is tax neutral and does not impose a burden on the City's general fund. In the aggregate, PACE improvements will promote long-term economic development in Texas by helping the state obtain energy and water security.

Who Can Participate in PACE?

PACE is a voluntary program. Any owner of commercial, industrial, agricultural, or multi-family¹ residential property located within the City of Dallas will be eligible to participate in PACE financing. PACE financing will not be available for facilities for undeveloped lots or lots undergoing development at the time of the assessment, products or devices not permanently fixed to real property, or undeveloped land in the City of Dallas.

What Types of Improvements Qualify for PACE Financing?

PACE financing may be used to pay for permanent improvements to privately owned commercial, industrial, agricultural, or eligible multi-family real property that are intended to decrease water or energy consumption or demand, including a product, device, or interacting group of products or devices on the customer's side of the meter that use energy technology to generate electricity, provide thermal energy, or regulate temperature.

Typical examples of qualified improvements include:

- HVAC upgrades;
- High efficiency chillers, boilers, and furnaces;
- High efficiency water heating systems;
- Energy management systems and controls;
- Renewable energy systems;
- Mechanical system modernization;
- High efficiency lighting upgrades;
- Building enclosure/envelope improvements;
- Water conservation systems;
- Combustion and burner upgrades;
- Fuel switching;
- Heat recovery and steam traps;
- Wastewater recovery and reuse systems;
- Systems to capture and use alternate, on-site sources of water (A/C condensate, rainwater, reverse osmosis reject water, foundation drain water, etc.);
- On-site improvements to accommodate the use of municipally reclaimed water;
- Water management systems and controls (indoor and outdoor);
- Switching from water cooled systems to air or geothermal cooled systems; and
- High efficiency irrigation equipment

Who Will Administer the Program?

The City of Dallas will use the procurement process to select a qualified, third party entity to serve as the Program Administrator.

¹ Residential property consisting of five or more units is eligible for PACE financing

The Benefits of PACE to Property Owners

PACE assessments enable property owners to overcome traditional barriers to capital investments in commercial, industrial, or multi-family real property. Owners who use PACE financing can instead capitalize the money previously spent on utilities; the utility cost savings achieved by a retrofit can help to pay for the retrofit itself. Property owners end up with more energy efficient property and access to recurring utility savings and pay only for the assessment installments that are due while they own the property.

The Benefits of PACE to the City of Dallas

By creating new investment opportunities, PACE will stimulate economic growth and development as well as energy efficiency in Dallas. Improvements financed through PACE will reduce energy and water consumption, thereby helping the community achieve critical energy and water conservation goals. For Dallas as a community facing potential non-attainment levels under the Clean Air Act, PACE provides a very real opportunity to dramatically reduce building energy consumption and the emissions associated with energy generation. PACE programs will also improve the quality of the systems within the City's commercial and industrial building stock. Importantly, the benefits of PACE for Dallas can be realized with minimal financial support from the local government and, once established, can be self-sustaining.

The Benefits of PACE to Lenders

PACE loans are attractive to lenders because they are secure investments. Like a property tax lien, the assessment lien securing the PACE loan has priority over other liens on the property. Therefore, the risk of loss from non-payment of a PACE loan is low compared to most other types of loans. PACE assessments provide lenders with an attractive new product to assist existing and new customers in addressing an almost universal pent-up demand for needed commercial and industrial property equipment modernization. In order to protect the interests of holders of existing mortgage loans on the property, the PACE Act requires their prior written consent as a condition to participation in the PACE program.

The Benefits of PACE to Contractors, Engineers, Consultants, and Manufacturers

PACE loans provide attractive sources of financing for water and energy saving retrofits and upgrades, thereby encouraging property owners to make substantial investments in existing commercial and industrial buildings. As a result, PACE will open business opportunities for contractors, engineers, consultants, and manufacturers throughout the commercial and industrial sectors in Dallas.

COMPONENTS OF THE PROGRAM

1) Map of Region

A map of the boundaries of the proposed region to be included in the program is attached to this report as **Exhibit 1**. The region encompasses the entire territorial jurisdiction of the City of Dallas.

2) Form Contract with Owner

A proposed form contract between the City of Dallas and the record owner of qualified real property, specifying the terms of the assessment under the Program and the financing to be provided by a qualified third-party lender of the property owner's choosing, is attached to this report as **Exhibit 2**.

3) Form Contract with Lender

A proposed form contract between the City of Dallas and a qualified third-party lender chosen by a property owner regarding providing the financing and servicing of the debt through assessments is attached to this report as **Exhibit 3**.

4) Eligibility

Lenders

Eligible third-party lenders may include:

- Any federally insured depository institution such as a bank, savings bank, savings and loan association and federal or state credit union;
- Any insurance company authorized to conduct business in one or more states;
- Any registered investment company, registered business development company, or a Small Business Administration small business investment company;
- Any publicly traded entity; or
- Any private entity that:
 - Has a minimum net worth of \$5 million;
 - Has at least three years' experience in business or industrial lending or commercial real estate lending (including multifamily lending), or has a lending officer that has at least three years' experience in business or industrial lending or commercial real estate lending;
 - Can provide independent certification as to availability of funds; and
 - Has the ability to carry out, either directly or through a servicer, the bookkeeping and customer service work necessary to manage the assessment accounts.

Any eligible lender can participate in the PACE program. Nothing in this section is intended to prohibit a property owner from identifying and selecting its own source of funding, whether or not from the eligible list, so long as the lender is a financially stable entity with the ability to carry out, either directly or through a servicer, the bookkeeping and customer service work necessary to manage the assessment accounts.

Property Owners

To be eligible for PACE financing, properties must be privately owned (the PACE Act does not apply to government buildings) and must be within the boundaries of the City of Dallas. The property can be commercial real property, including non-profit real property including private schools, private medical facilities, religious property, etc., industrial property and residential real property with five or more dwelling units.

Project Types

The following types of projects are qualified projects that may be subject to contractual assessments under the Program, as provided in the PACE Act, Tex. Local Gov't. Code Chapter 399:

Projects that (a) involve the installation or modification of a permanent improvement fixed to privately owned commercial or industrial real property or residential real property with five (5) or more dwelling units, and (b) are intended to decrease energy or water consumption or demand, including a product, device, or interacting group of products or devices on the customer's side of the meter that uses energy technology to generate electricity, provide thermal energy, or regulate temperature. An assessment may not be imposed to repay the financing of facilities for undeveloped lots or lots undergoing development at the time of the assessment or the purchase or installation of products or devices not permanently fixed to real property.

Additionally, improvements to government property are ineligible. Examples of types of projects can be found on page three of this document.

5) Authorized City Representative

The City of Dallas designates the City Manager as the authorized local government representative for the PACE program. The City Manager may delegate the authority as necessary.

6) Plans for Ensuring Sufficient Capital

Sufficient capital for third-party financing of qualified projects will be provided by third-party capital providers. Such financing will be repaid by collections from property owners through financing documents executed between the owners and the lenders, enabling those capital providers to fund additional qualified projects. The Program Administrator's website will offer a list of interested qualified capital providers to assist property owners interested in funding PACE projects; however, property owners can use any qualified lender who wishes to participate in the program. Information available about interested, qualified lenders will include contact information, previous PACE experience, and preferred project size/scope. The lenders will ensure that property owners requesting to participate in the PACE program demonstrate the financial ability to fulfill the financial obligations to be repaid through contractual assessments.

7) Role of the PACE Program Administrator

The City of Dallas will select a PACE Program Administrator through a competitive procurement process. The PACE Program Administrator will be responsible for overseeing the PACE program and coordinating efforts between the property owners and lenders throughout the application process, verifying financial ability of the applicants, gathering reporting data to comply with the statute and maintaining the Dallas PACE website.

The PACE Program Administrator will not guarantee or imply that funding will be automatically provided from a third-party lender; imply or create any approval, endorsement or certification of, or responsibility for, any lender; or create any type of express or implied favoritism for any eligible lenders.

The PACE Program Administrator will not guarantee or imply that a favorable energy review will be automatically provided from an independent third-party reviewer; imply or create any approval, endorsement or certification of, or responsibility for, any reviewer; or create any type of express or implied favoritism for any third-party reviewer.

Application

The PACE Program Administrator will draft and distribute the PACE application, as well as accept and review the property owner's completed application. If the project meets eligibility requirements, the PACE Program Administrator will provide written indication that the project meets PACE standards at this stage (subject to verification of all requirements at closing). The PACE Program Administrator will inform the property owner of his or her responsibilities in the process, including hiring a third-party reviewer, obtaining a lender, obtaining all necessary permits, determining final project scope and completing and submitting a closing verification package.

The PACE Program Administrator will conduct a Pre-Closing Verification, which will confirm the statutorily required eligibility requirements of the owner including:

- Is the legal property owner of the benefited property, and;
- Is current on mortgage and tax payments, and;
- Is not insolvent or the subject of bankruptcy proceedings, and;
- Holds a title to the property to be subject to a PACE assessment that is not in dispute; and
- Has consent of any pre-existing mortgagee to the proposed PACE assessment through a written contract.

Ensuring Financial Ability of Applicants

The PACE Program Administrator will review verification by the property owner, lender and mortgage holder (if any) that the property owner:

- Has not been delinquent in the payment of its ad valorem taxes in the previous three years;
- Is in good financial standing;
- Has not been the subject of bankruptcy proceedings in the previous five years;
- Is not subject to any outstanding, unsatisfied final judgment;
- Has not had any property sold at foreclosure in the previous five years;
- Has provided a Certificate of Status from the Secretary of State of Texas;
- Has provided a Certificate of Account Status from the Texas Comptroller of Public Accounts;
- Has provided a current credit report or, if not available, a reasonable alternative;
- Has provided a current title report and verified that the property is not subject to any liens, including mechanics liens;
- Has provided notice to any preexisting mortgagee and has provided the written consent of the mortgagee; and
- Grants consent for the PACE Program Administrator to pull credit information

Prior to construction, the PACE Program Administrator will also review and verify copies of permits and other verifications that plans are in compliance with City regulations.

Reporting Data

The PACE Program Administrator will compile and provide to the City quarterly progress reports with basic performance statistics, similar to the information requested by EPA's Portfolio Manager. The PACE Program Administrator will also compile information to be used in an annual report, which shall include

aggregated program information, best practices, lessons learned and recommendations for improvements.

Website

The PACE Program Administrator is responsible for creating the content and providing updates for a Dallas PACE program website which will, at a minimum, contain the following information: list of eligible lenders, list of qualified third-party reviewers, application form/instructions, the PACE Technical Standards Manual (**Exhibit 5**) and this document.

8) No Use of Bonds or Public Funds

The City of Dallas does not, at this time, intend to use bonds or other public funds to capitalize PACE projects. All financing will be provided to property owners by qualified third-party lenders chosen by the property owners.

9) Ensuring Measure Life Exceeds Payment Period

Assurance that the period of each contractual assessment does not exceed the useful life of the qualified project that is the basis for the assessment will be determined by the PACE Program Administrator based on a report conducted by an independent third-party reviewer (a qualified engineer) chosen by the property owner as well as the term provided by the lender. The PACE administrator shall be responsible for ensuring that in all PACE financing submittals to the City the term provided by the lender does not exceed the useful life of the qualified improvements.

10) Application Process

The Program Administrator will accept written applications from property owners seeking to finance qualified projects to be repaid through contractual assessments under the Program. Each application must be accompanied by the required application fee and must include (1) a description of the specific qualified improvements to be installed or modified on the property, (2) a legal description of the specific real property to which the qualified improvements will be permanently fixed, and (3) the total amount of financing requested to be repaid through assessments. The application fee may be expressed as a set amount, a percentage of the amount of assessment or in any other manner.

Based on this information, the Program Administrator may issue a preliminary letter indicating that, subject to verification of all requirements at closing, the proposed project appears to meet Program requirements.

Based on this preliminary letter, the property owner may engage an independent third-party review of the project under the PACE Technical Standards Manual (**Exhibit 5**) and submit the project to third-party capital providers for approval of financing.

Once these processes are completed, the property owner may submit a complete application packet to the Program Administrator as part of the closing verification review, including (1) the report conducted by a qualified independent third-party reviewer of water or energy baseline conditions and the projected water or energy savings attributable to the project, (2) such financial information about the owner and the property as the lender chosen by the owner deems necessary to determine that the owner has demonstrated the financial ability to fulfill the financial obligations to be paid through assessments and (3) all other information required by the Program Administrator.

A project may be scheduled for closing once appropriate City approvals have been obtained.

11) Financial and Project Verification Requirements

The Program Administrator will determine from the written application of a property owner and such other information as may be requested from the owner or obtained from other sources whether the owner, the property, and project are eligible for the financing of qualified improvements under the Program. Once verification has been made, it is conclusively established that the improvement is a qualified improvement and the project is a qualified project. The Program Administrator will determine on the basis of the report of a qualified independent third-party reviewer whether the proposed improvements are reasonably likely to decrease energy or water consumption or demand and whether the period of the requested assessment does not exceed the useful life of the project. The lender chosen by the owner will determine whether the owner has demonstrated the financial ability to fulfill the financial obligations to be repaid through contractual assessments. Ensuring such a demonstration of financial ability must be based on appropriate underwriting factors, including verification that the person requesting to participate in the program is the legal record owner of the benefitted property, is current on mortgage and property tax payments, and is not insolvent or in bankruptcy proceedings, that the title of the benefitted property is not in dispute, and that there is an appropriate ratio of the amount of the assessment to the assessed value of the property.

The PACE statute requires that the method for ensuring a demonstration of financial ability must be based on appropriate underwriting factors, including requiring an appropriate ratio of the amount of the assessment to the assessed value of the property. Additional guidance regarding the appropriate underwriting standards can be found in the PACE in a box document (see <http://www.keepingpaceintexas.org/pace-in-a-box/>) and includes the following:

Savings to Investment Ratio

The Savings to Investment Ratio (SIR) is the ratio of anticipated monetary utility savings to a participating property owner compared to the total cost invested in the property conservation improvements. The SIR is expressed as the estimated savings over the life of the assessment divided by the amount financed through the voluntary PACE assessment. As an underwriting standard, a positive SIR will provide a lender greater assurance that a participating owner/borrower will realize a positive cash flow under the terms of the project and can service the debt at presumably no net cost or impact to normal cash flow from operations.

The responsibility for achieving the projected savings lies with the property owner. One method owners may use in evaluating improvement measures is to calculate and compare the SIR for each conservation measure. To ensure a $SIR > 1$ over the life of the assessment, the City of Dallas PACE Program and project participants may:

- Use energy auditing and modeling to identify measures that will yield a $SIR > 1$;
- Calculate SIR based on an entire project rather than on each individual measure; and
- Incorporate normal elements of generally accepted business calculations, such as depreciation and reasonable projections of changes in utility prices.

PACE Assessment Cost to Assessed Building Value Ratio

The PACE statute in Texas requires a PACE program to establish an appropriate threshold for the ratio of the amount of the PACE loan to the assessed value of the property as determined by the Appraisal District having jurisdiction over the property. The lower the ratio of new debt (the PACE assessment) to the value of the property, the less risk that the additional debt burden of a PACE assessment becomes a burden to the overall economic function of the property. The amount financed using a PACE assessment should not exceed twenty percent (20%) of the assessed value of the property.

12) Mortgage Holder Notice and Consent

Before the Authorized City Representative may enter into a written contract with the owner of real property to impose an assessment to repay the financing of a qualified project under the Program, the holder of any mortgage lien on the property must be given notice of the owner's intention to participate in the Program on or before the 30th day before the date the contract is executed and the written consent of the mortgage holder must be obtained by the owner.

Applicants will be required to demonstrate notice to and consent of an existing mortgage lien holder by providing a form signed by the mortgagee with the PACE program application. The Program Administrator will make the consent form available to the applicant.

13) Imposition of Assessment

Upon (a) notification to the Program Administrator of the written consent of any mortgage lien holder, (b) a determination by the Program Administrator that the owner and the property are eligible to participate in the program, that the proposed improvements are reasonably likely to decrease energy or water consumption or demand, and that the period of the requested assessment does not exceed the useful life of the project, and (c) notification to the Program Administrator by the lender that the owner has demonstrated the financial ability to fulfill the financial obligations to be repaid through contractual assessments, the Authorized City Representative will enter into a written contract with the owner on the form attached hereto as **Exhibit 2**, imposing a contractual assessment on the owner's property to repay the owner's financing of the qualified project. A Notice of Contractual Assessment Lien, in the form attached hereto as **Exhibit 4**, will be filed by the City for recording in the Official Public Records of the appropriate county as notice to the public of the assessment from the date of filing. The contract and the Notice of Contractual Assessment Lien must contain the amount of the assessment, the legal description of the property, the name of the property owner, and a reference to the statutory assessment lien provided under the PACE Act. After the notice of contractual assessment is recorded, the lien may not be contested on the basis that the improvement is not a qualified improvement or the project is not a qualified project. The assessment will include the costs and fees permitted in the statute.

14) Collection of Assessments.

Upon the execution of the written contract between the Authorized City Representative and the property owner and recording of the Notice of Contractual Assessment Lien, the owner will be authorized to purchase directly the equipment and materials for the qualified improvement and contract directly, including through lease, power purchase agreement, or other service contract, for the installation or modification of the qualified improvements; and the owner will be authorized to execute financing documents with the lender to repay the financing secured by the assessment. The financing will be

advanced by the third-party lender to the owner, and the terms for repayment will be such terms as are agreed between the lender and the owner. Under the form lender contract attached hereto as **Exhibit 3**, the lender or a designated servicer will agree to service the debt secured by the assessment. The lender will retain the owner's payments to repay the debt and remit to the Program Administrator any administration fees. The lender will have the right to assign or transfer the right to receive the installments of the debt secured by the assessment, provided all of the following conditions are met:

- (a) The assignment or transfer is made to a qualified lender, as defined above; and
- (b) The property owner, Program Administrator, and City of Dallas are notified in writing of the assignment or transfer and the address to which payment of the future installments should be mailed at least 30 days before the next installment is due according to the schedule for repayment of the debt; and
- (c) The assignee or transferee of the right to receive the payments executes an explicit written assumption of all of lender's obligations under the lender contract.

15) Verification Review

As a precondition to closing, the PACE Program Administrator will ensure receipt of certification from an independent third-party reviewer that each proposed qualified project has undergone a review of water or energy baseline conditions and the projected water or energy savings to establish that the projected water or energy savings meet the PACE Technical Standards Manual.

After a qualified project is completed, the Program Administrator will require the property owner to provide verification by a qualified independent third-party reviewer that the qualified project was properly completed and is operating as intended.

16) Quality Assurance and Antifraud Measures

Quality assurance and anti-fraud measures will be instituted for the Program by the Program Administrator with consultation with the City. The Program Administrator will review each PACE application for completeness and verify the supporting documents through independent review and verification procedures. The application and required attachments will identify and supply the information necessary to ensure that the property owner, the property itself, and the proposed project all satisfy Program underwriting and technical standards requirements. The property owner or the owner's contractor will be required to provide copies of all required permits and releases of lien and a statement that the project was constructed in accordance with the PACE Program guidelines and has complied with all applicable local, state, and federal laws. Measures will be put in place to provide safeguards, including a review of the energy/water savings baseline and certification of compliance with the Technical Standards Manual from an independent third-party reviewer (ITPR) who must be a registered professional engineer, before the project can proceed. This review will include a site visit, report, and a letter from the ITPR certifying that he/she has no financial interest in the project and is an independent reviewer. After the construction of the project is complete, there will be a final site inspection by an ITPR who will determine whether the project was completed and is operating properly. The reviewer's certification will also include a statement that the reviewer/inspector is qualified and has no financial interest in the project.

17) Delinquency

Under the terms of the form lender contract attached hereto as **Exhibit 3**, if a property owner fails to pay an agreed installment to repay the financing secured by PACE assessments under the program, the lender will agree to take at least the following steps to collect the delinquent installment:

- (a) Mail a written notice of delinquency and demand for payment to the owner by both certified mail, return receipt requested, and first class mail and
- (b) Mail a second notice of delinquency to the owner by both certified mail, return receipt requested, and first class mail at least 30 days after the date of the first notice if the delinquency is continuing.

If the owner fails to cure the delinquency under the promissory note or contract within 30 days after the mailing of the second notice of delinquency, the lender may notify the Authorized City Representative, of a default by the owner, and pursuant to Tex. Local Gov't Code Sec. 399.014(c), the Authorized City Representative will enforce the assessment lien in the same manner as a property tax lien against real property may be enforced, to the extent the enforcement is consistent with Section 50, Article XVI, Texas Constitution. Delinquent installments will incur penalties and interest in the same manner and at the same rate as delinquent property taxes, according to Tex. Local Gov't Code Sec. 399.014(d), and such statutory penalties and interest will be due to the City of Dallas to offset the cost of collection. However, in no event will the total amount of interest on the assessment, including statutory interest payable to the City of Dallas and contractual interest payable to lender under the financing documents, exceed the maximum amount or rate of nonusurious interest that may be contracted for, charged, or collected under Texas law (the "usury limit"). If the total amount of interest payable to City of Dallas and lender exceeds the usury limit, the interest payable to City of Dallas will be reduced and any interest in excess of the usury limit will be credited to the amount payable to the City of Dallas or refunded. If a suit to enforce collection is filed, the Authorized City Representative may also recover costs and expenses, including attorney's fees, in a suit to collect a delinquent installment of an assessment in the same manner and at the same rate as in suit to collect a delinquent property tax. If a delinquent installment of an assessment is collected after the filing of a suit, the Authorized City Representative will remit to the lender the net amount of the delinquent installments and contractual interest collected and remit to the Program Administrator the amount of any administration fees collected and will retain any statutory penalties, interest, and attorney's fees collected.

18) Joint Implementation

Any combination of local governments may agree to jointly implement or administer a PACE program. If two or more local governments implement a program jointly, a single public hearing held jointly by the cooperating local governments is sufficient to satisfy the public hearing requirements. In addition, one or more local governments may contract with a third party, including another local government, to administer the program. An interlocal agreement is needed for any joint PACE program.

19) No Personal Liability

As established by the PACE statute, the members of the governing body of a local government, employees of a local government, and board members, executives, employees and contractors of a third party who enter into a contract with a local government to provide administrative service for a program under Section 399.003 of the Local Government Code establishing a PACE program are not personally liable as a result of exercising any rights or responsibilities granted under the PACE program.

20) Marketing and Education Services

Marketing and participant education services for the Program will be provided either directly by the City of Dallas, by the PACE Program Administrator, or under agreements that the City may subsequently enter into with organizations that promote energy and water conservation, or economic development, or other marketing or utility provider entities.

Exhibit 1
MAP OF THE REGION

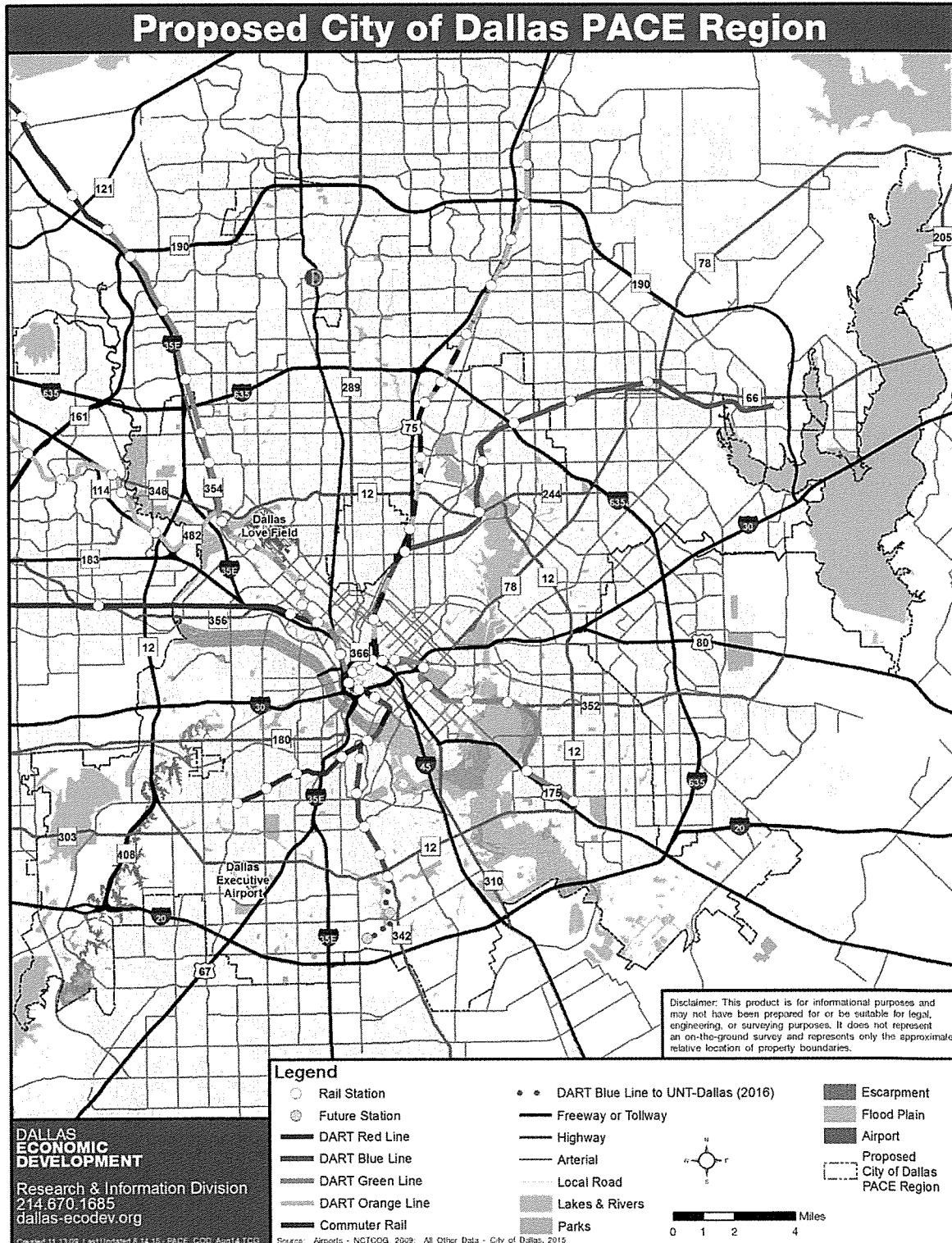


Exhibit 2
FORM OWNER CONTRACT



THIS PACE OWNER CONTRACT (“**Owner Contract**”) is made as of the ____ day of _____, 20__, by and between _____, Texas (“**Local Government**”) and _____ (“**Property Owner**”).

RECITALS

- A. The Property Assessed Clean Energy Act (“**PACE Act**”), Texas Local Government Code Chapter 399, authorizes the governing body of a local government to establish a program and designate a region within the local government’s jurisdiction within which an authorized local government official may enter into written contracts with the record owners of commercial, industrial, agricultural, and large multifamily residential (5 or more dwelling units) real property to impose assessments on the property to finance the cost of permanent improvements fixed to the property intended to decrease water or energy consumption or demand.
- B. Local Government has established a program under the PACE Act pursuant to Ordinance/Resolution No. _____, dated _____ 20__, adopted by the _____ (the “**PACE Program**”), and has designated _____ (“**Representative**”) as the representative authorized to enter into and enforce the Assessment, Owner Contract and Lender Contract described herein, and has designated the entire territory within _____ jurisdiction as a region (“**Region**”) within which the Representative and the record owners of such real property may enter into written contracts to impose assessments to repay the financing by owners of qualified improvements on the owner’s property pursuant to the PACE Program.
- C. Property Owner is the legal and record owner of the qualified “real property,” as defined in Section 399.002 of the PACE Act, within the Region located at _____, _____, Texas (the “**Property**”).
- D. Pursuant to Application number _____, Property Owner has applied to Local Government to participate in the PACE Program by installing or modifying on the Property certain permanent improvements which are intended to decrease water or energy consumption or demand, and which are or will be fixed to the Property as “qualified improvements”, as defined in Section 399.002 of the PACE Act (the “**Qualified Improvements**”). The installation or modification of such Qualified Improvements on the Property will be a

EXHIBIT A

“qualified project” as defined in Section 399.002 of the PACE Act (the “**Project**”). Property Owner has requested that Local Government enter into this Owner Contract pursuant to the PACE Act and the PACE Program and has requested Local Government to impose an assessment (the “**Assessment**”) on the Property as set forth in the Notice Of Contractual Assessment Lien Pursuant To Property Assessed Clean Energy Act to be filed in the in the Official Public Records of _____ County, Texas (the “**Notice of Contractual Assessment Lien**”), a copy of which is attached hereto as Exhibit A and made a part hereof, to repay the financing of such Qualified Improvements. The Property, Qualified Improvements and Assessment are more fully described in the Notice of Contractual Assessment Lien.

- E. The financing of such Qualified Improvements will be provided to Property Owner by _____ (“**Lender**”), a qualified lender selected by Property Owner, pursuant to a written contract executed by Lender and Local Government as required by Section 399.006(c) of the PACE Act and by the PACE Program (the “**Lender Contract**”). The financing will include only those costs and fees for which an assessment may be imposed under the PACE Act. Local Government has agreed to maintain and continue the Assessment for the benefit of Lender until such financing is repaid in full and to release the Assessment upon notice from Lender of such payment, or foreclose the lien securing the Assessment for the benefit of Lender upon notice from Lender of a default by Property Owner.
- F. As required by Section 399.010 of the PACE Act, Property Owner notified the holder(s) of any mortgage liens on the Property at least thirty (30) days prior to the date of this Owner Contract of Property Owner’s intention to participate in the PACE Program. The written consent of each mortgage holder to the Assessment was obtained prior to the date of this Owner Contract and is attached hereto as Exhibit B and made a part hereof.

AGREEMENT

The parties agree as follows:

1. Imposition of Assessment. In consideration for the financing advanced or to be advanced to Property Owner by Lender for the Project under the PACE Program pursuant to the Lender Contract, Property Owner hereby requests and agrees to the imposition by Local Government of the Assessment as set forth in the Notice of Contractual Assessment Lien, including all interest, fees, penalties, costs, and other sums due under and/or authorized by the PACE Act, PACE Program and the financing documents between Property Owner and Lender (the “**Financing Documents**”) which are described or listed on Exhibit C attached hereto and made a part hereof by reference. Property Owner promises and agrees to pay such amount and interest to Local Government, in care of or as directed by Lender, in satisfaction of the Assessment imposed pursuant to this Owner Contract and the PACE Act. Accordingly, Local Government hereby imposes the Assessment on the Property to secure the payment of such amount, in accordance with the requirements of the PACE Program and the provisions of the PACE Act.

2. Maintenance and Enforcement of Assessment. In consideration for Lender's agreement to advance financing to Property Owner for the Project pursuant to the Financing Documents, Local Government agrees to maintain and continue the Assessment on the Property for the benefit of Lender until the Assessment, including all interest, fees, penalties, costs, and other sums due under and/or authorized by the PACE Act, PACE Program and the Financing Documents are paid in full, and to release the Assessment upon notice from Lender of such payment. Local Government agrees to enforce the Assessment against the Property for the benefit of Lender in the event of a default by Property Owner.
3. Installments. The Assessment, including the amount financed and contractual interest, is due and payable in installments as set forth in the Notice of Contractual Assessment Lien. As required by Section 399.009(a) (8) of the PACE Act, the period during which such installments are payable does not exceed the useful life of the Project. When the Assessment has been paid in full, Local Government's rights under this Owner Contract will cease and terminate, and upon notice from Lender, Local Government will execute and record a release of the Assessment and this Owner Contract.
4. Assignment of Right to Receive Installments. Lender will have the right to assign or transfer the right to receive the installments of the financing secured by the Assessment, provided all of the following conditions are met:
 - a) The assignment or transfer is made to a qualified lender as defined in the Lender Contract;
 - b) Property Owner and Representative are notified in writing of the assignment or transfer and the address to which payment of the future installments should be mailed at least 30 days before the next installment is due according to the payment schedule included in the Notice of Contractual Assessment Lien; and
 - c) The assignee or transferee of the right to receive the payments executes an explicit written assumption of all of Lender's obligations under Lender Contract.

Upon written notice to Property Owner and Representative of an assignment or transfer of the right to receive the installments that meets all of these conditions, the assignor shall be released of all of the obligations of the Lender under such Lender Contract accruing after the date of the assignment assumed by and transferred to such assignee or transferee. Any attempt to assign or transfer the right to receive the installments that does not meet all of these conditions is void.

5. Lien Priority and Enforcement. Pursuant to Section 399.014 of the PACE Act,
 - a) Delinquent installments of the Assessment will incur interest and penalties in the same manner and in the same amount as delinquent property taxes, viz., a delinquent installment incurs a penalty of 6% of the amount of the installment for the first calendar month it is delinquent plus 1% for each additional month

EXHIBIT A

or portion of a month the installment remains unpaid prior to July 1 of the year in which it becomes delinquent. However, an installment delinquent on July 1 incurs a total penalty of 12% of the amount of the delinquent installment without regard to the number of months it has been delinquent. A delinquent installment will also accrue interest at the rate of 1% for each month or portion of a month that the installment remains unpaid. [*Subject to the limitation set out in paragraph 13 below, penalties and interest payable under this paragraph will be retained by Local Government to compensate it for the cost of enforcing the Assessment. *]

- b) The Assessment, together with any penalties and interest thereon,
 - 1) is a first and prior lien against the Property from the date on which the Notice of Contractual Assessment Lien is filed in the Official Public Records of _____ County, as provided by Section 399.014 of the PACE Act, until the financing secured by the Assessment and any penalties and interest are paid; and
 - 2) such lien has the same priority status as a lien for any other ad valorem tax, pursuant to Section 399.014(a)(2) of the PACE Act.
 - c) The lien created by the Assessment runs with the land, and according to Section 399.014(b) of the PACE Act, any portion of the Assessment that has not yet become due is not eliminated by foreclosure of: (i) a property tax lien, or (ii) the lien for any past due portion of the Assessment. In the event of a sale or transfer of the Property by Property Owner, the obligation for the Assessment and the Property Owner's obligations under the Financing Documents will be transferred to the succeeding owner.
 - d) In the event of a default by Property Owner in payment of the installments called for by the Financing Documents, the lien created by the Assessment will be enforced by Local Government in the same manner according to Texas Tax Code Secs. 33.41 to 34.23 that a property tax lien against real property may be enforced by a local government, to the extent the enforcement is consistent with Section 50, Article XVI, Texas Constitution.
 - e) In a suit to collect a delinquent installment of the Assessment, Local Government will be entitled to recover costs and expenses, including attorney's fees in the amount of 15% of the total amount of the delinquent installment, penalties, and interest due, in the same manner according to Texas Tax Code Sec. 33.48 as in a suit to collect a delinquent property tax.
6. Written Contract Required by PACE Act. This Owner Contract constitutes a written contract for the Assessment between the Property Owner and Local Government as required by Section 399.005 of the PACE Act. The Notice of Contractual Assessment Lien will be recorded in the

Official Public Records of _____ County as notice of the contractual Assessment, in accordance with the requirements of Section 399.013 of the PACE Act.

7. Qualified Improvements. Property Owner agrees that all improvements purchased, constructed and/or installed through financing obtained pursuant to this Owner Contract shall be permanently affixed to the Property and will transfer with the Property to the transferee in the event of and sale or assignment of the Property.
8. Water or Energy Savings. For so long as the Assessment encumbers the Property, Property Owner agrees on or before January 31st of each year, to report to Representative the water or energy savings realized through the Project in accordance with the reporting requirements established by the Local Government.
9. Construction and Definitions. This Owner Contract is to be construed in accordance with and with reference to the PACE Program and PACE Act. Terms used herein, and not otherwise defined herein, shall have the meanings ascribed to them in: (1) the PACE Program, and/or (2) the PACE Act.
10. Binding Effect. This Owner Contract inures to the benefit of Local Government and is binding upon Property Owner, its heirs, successors, and assigns.
11. Notices. All notices and other communications required or permitted by this Owner Contract shall be in writing and mailed by certified mail, return receipt requested, addressed to the other party at its address shown below the signature of such party or at such other address as such party may from time to time designate in writing to the other party, and shall be effective from the date of receipt.
12. Governing Law. This Owner Contract shall in all respects be governed by and construed in accordance with the laws of the State of Texas.
13. Entire Agreement. This Owner Contract constitutes the entire agreement between Local Government and Property Owner with respect to the subject matter hereof and may not be amended or altered in any manner except by a document in writing executed by both parties.
14. Further Assurances. Property Owner further covenants and agrees to do, execute and deliver, or cause to be done, executed, and delivered all such further acts for implementing the intention of this Owner Contract as may be reasonably necessary or required.
15. Captions. Paragraph and section titles are for convenience of reference only and shall not be of any legal effect.
16. Counterparts. This Owner Contract may be executed in any number of counterparts, all of which when taken together shall constitute one agreement binding on the parties, notwithstanding that all parties are not signatories to the same counterpart.

17. Interest. Interest and penalties in the event of default, as provided above, are explicitly authorized by Section 399.014(d) of the PACE Act. However, in no event will the total amount of interest on the Assessment, including statutory interest payable to Local Government and contractual interest payable to Lender under the Financing Documents, exceed the maximum amount or rate of nonusurious interest that may be contracted for, charged, or collected under Texas law (the "usury limit"). If the total amount of interest payable to Local Government and Lender exceeds the usury limit, the interest payable to Local Government will be reduced and any interest in excess of the usury limit will be credited to the amount payable to Local Government or refunded. This provision overrides any conflicting provisions in this Owner Contract.
18. Indemnification. TO THE MAXIMUM EXTENT ALLOWED BY LAW, PROPERTY OWNER SHALL INDEMNIFY AND HOLD LOCAL GOVERNMENT, REPRESENTATIVE, AND EITHER OF THEIR AFFILIATES, SUCCESSORS AND ASSIGNS (EACH SUCH PERSON HEREIN REFERRED TO AS AN "INDEMNITEE") ABSOLUTELY HARMLESS FROM AND AGAINST ALL CLAIMS, LIABILITIES, LOSSES, DAMAGES, OBLIGATIONS OR RELATED EXPENSES INCURRED BY OR IMPOSED UPON OR ALLEGED TO BE DUE OF INDEMNITEE IN CONNECTION WITH THE EXECUTION OR DELIVERY OF THIS CONTRACT, THE NOTICE OF CONTRACTUAL ASSESSMENT LIEN, THE FINANCING DOCUMENTS, AND ANY OTHER DOCUMENT OR ANY OTHER AGREEMENT OR INSTRUMENT CONTEMPLATED HEREBY OR THEREBY, THE PERFORMANCE BY THE PARTIES HERETO OF THEIR RESPECTIVE OBLIGATIONS HEREUNDER OR THEREUNDER, THE CONSUMMATION OF THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY, OR, IN THE CASE OF ANY INDEMNITEE, THE ADMINISTRATION OF THIS CONTRACT AND ANY OTHER AGREEMENTS RELATED TO THE PROJECT.
19. Special Provisions. *(to be added as necessary)*

EXECUTED effective as of _____, 20__.

PROPERTY OWNER:

LOCAL GOVERNMENT:

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Address: _____

Address: _____

EXHIBIT A

NOTICE OF CONTRACTUAL ASSESSMENT LIEN
PURSUANT TO
PROPERTY ASSESSED CLEAN ENERGY ACT

EXHIBIT B
MORTGAGE HOLDER(S) CONSENT

Exhibit 3
FORM PACE LENDER CONTRACT



PACE LENDER CONTRACT

THIS PACE LENDER CONTRACT (the “**Lender Contract**”) is made as of the ____ day of _____, 20__, by and between _____, Texas (“**Local Government**”) and _____ (“**Lender**”).

RECITALS

- A. The Property Assessed Clean Energy Act (“**PACE Act**”), Texas Local Government Code Chapter 399, authorizes the governing body of a local government to establish a program and designate a region within the local government’s jurisdiction within which an authorized local government official may enter into written contracts with the record owners of commercial, industrial, agricultural, and large multifamily residential (5 or more dwelling units) real property to impose assessments on the property to finance the cost of permanent improvements fixed to the property intended to decrease water or energy consumption or demand.
- B. Local Government has established a program under the PACE Act pursuant to Ordinance/Resolution No. _____, dated _____, 20__, adopted by the _____ (the “**PACE Program**”), and has designated _____ (“**Representative**”) as the representative authorized to enter into and enforce the Assessment, Owner Contract and Lender Contract described herein, and has designated the entire territory within _____ jurisdiction as a region (“**Region**”) within which the Representative and the record owners of such real property may enter into written contracts to impose assessments to repay the financing by owners of qualified improvements on the owner’s property pursuant to the PACE Program.
- C. Pursuant to Application number _____, _____ (“**Property Owner**”) has applied to Local Government to participate in the PACE Program with respect to certain real property located at _____, _____, Texas (the “**Property**”) by installing or modifying on the Property certain permanent improvements which are intended to decrease water or energy consumption or demand, and which are or will be fixed to the

EXHIBIT A

property as “qualified improvements”, as defined in Section 399.002 of the PACE Act (the “**Qualified Improvements**”). The installation or modification of such Qualified Improvements on the Property will be a “qualified project” as defined in Section 399.002 of the PACE Act (the “**Project**”).

- D. Property Owner and Local Government have entered into a written contract as required by Section 399.005 of the PACE Act, a copy of which is attached hereto as Exhibit A and made a part hereof (the “**Owner Contract**”), in which Property Owner has requested that Local Government impose an assessment (the “**Assessment**”) on the Property as set forth in the Notice Of Contractual Assessment Lien Pursuant To Property Assessed Clean Energy Act to be filed in the in the Official Public Records of _____ County, Texas (the “**Notice of Contractual Assessment Lien**”), a copy of which is attached to the Owner Contract as Exhibit A, to repay the financing of such Qualified Improvements. The Property, Qualified Improvements and Assessment are more fully described in the Notice of Contractual Assessment Lien.
- E. Financing for the Project (the “**Financing**”) will be provided to Property Owner by Lender in accordance with financing documents described in, or copies of which are included as, Exhibit B attached hereto and made a part hereof (the “**Financing Documents**”). Such Financing includes only those costs and fees for which an assessment may be imposed under the PACE Act. This Lender Contract is entered into between Local Government and Lender as required by Section 399.006(c) of the PACE Act to provide for repayment of the Financing secured by the Assessment.
- F. As required by Section 399.010 of the PACE Act, Property Owner notified the holder(s) of any mortgage liens on the Property at least thirty (30) days prior to the date of the Owner Contract of Property Owner’s intention to participate in the PACE Program. The written consent of each mortgage holder to the Assessment was obtained prior to the date of the Owner Contract, as shown by the copy of such consent attached as Exhibit B to the Owner Contract.

AGREEMENT

The parties agree as follows:

1. Maintenance and Enforcement of Assessment. Lender agrees to provide the Financing for the Project in the total amount of \$ _____, according to the terms set out in the Financing Documents attached hereto as Exhibit B. In consideration for the Financing provided or to be provided by Lender for the Project, and subject to the terms and conditions of this Lender Contract, Local Government agrees to maintain and continue the Assessment for the benefit of Lender until the Financing, all contractual interest according to the Financing Documents, and any statutory penalties, interest, attorney’s fees, or costs accrued in the event of default are paid in full, and to release the Assessment upon notice from Lender of such payment. Local Government agrees to enforce the assessment lien against the Property for the benefit of Lender in the event

of a default by Property Owner and following written notice to Local Government from Lender. Local Government shall have no liability to Lender should there be a default or an event of default in the payment thereof or should there be any other loss or expense suffered by Lender or under any other circumstances.

2. Installments. The Assessment, including the amount financed and contractual interest, is due and payable to Lender in installments as set forth in the Financing Documents and [*Notice of Contractual Assessment Lien*]. As required by Section 399.009(a)(8) of the PACE Act, the period during which such installments are payable does not exceed the useful life of the Project. When the Assessment has been paid in full, Local Government's rights under the Owner Contract will cease and terminate, and upon notice from Lender, Local Government will execute and record a release of the Assessment and the Owner Contract.
3. Assignment of Right to Receive Installments. Lender will have the right to assign or transfer the right to receive the installments of the Assessment, provided all of the following conditions are met:
 - a) The assignment or transfer is made to a qualified lender, which may be one of the following: [*REFER TO APPLICABLE PACE PROGRAM FOR QUALIFIED LENDERS. BELOW IS AN EXAMPLE.]
 - 1) Any federally insured depository institution such as a bank, savings bank, savings and loan association and federal or state credit union;
 - 2) Any insurance company authorized to conduct business in one or more states;
 - 3) Any registered investment company, registered business development company, or a Small Business Administration small business investment company;
 - 4) Any publicly traded entity; or
 - 5) Any private entity that:
 - i. Has a minimum net worth of \$5 million;
 - ii. Has at least three years' experience in business or industrial lending or commercial real estate lending (including multifamily lending), or has a lending officer that has at least three years' experience in business or industrial lending or commercial real estate lending;

EXHIBIT A

- iii. Can provide independent certification as to availability of funds; and
 - iv. Has the ability to carry out, either directly or through a servicer, the bookkeeping and customer service work necessary to manage the assessment accounts.
- b) Property Owner and Representative are notified in writing of the assignment or transfer and the address to which payment of the future installments should be mailed at least 30 days before the next installment is due according to the payment schedule included in the Financing Documents; and
 - c) The assignee or transferee of the right to receive the installments executes an explicit written assumption of all of Lender's obligations under this Lender Contract.

Upon written notice to Property Owner and Representative of an assignment or transfer of the right to receive the installments that meets all of these conditions, the assignor shall be released of all of the obligations of the Lender under this Lender Contract accruing after the date of the assignment. Any attempt to assign or transfer the right to receive the installments of the Assessment that does not meet all of these conditions is void.

- 4. Financing Responsibility. Lender assumes full responsibility for determining the financial ability of the Property Owner to repay the Financing and for advancing the funds as set forth in the Financing Documents and performing Lender's obligations and responsibilities thereunder.
- 5. Lien Priority and Enforcement. As provided in the Owner Contract and Section 399.014 of the PACE Act:
 - a) Delinquent installments of the Assessment incur interest and penalties in the same manner and in the same amount as delinquent property taxes, viz., a delinquent installment incurs a penalty of 6% of the amount of the installment for the first calendar month it is delinquent plus 1% for each additional month or portion of a month the installment remains unpaid prior to July 1 of the year in which it becomes delinquent. However, an installment delinquent on July 1 incurs a total penalty of 12% of the amount of the delinquent installment without regard to the number of months it has been delinquent. A delinquent installment also accrues interest at the rate of 1% for each month or portion of a month the installment remains unpaid. [*Subject to the limitation set out in paragraph 10 below, penalties and interest payable under this paragraph will be retained by Local Government to compensate it for the cost of enforcing the Assessment.]
 - b) The Assessment, together with any penalties and interest thereon,
 - 1) is a first and prior lien against the Property from the date on which the Notice of Contractual Assessment Lien is filed in the Official Public

EXHIBIT A

Records of _____ County, as provided by Section 399.014 of the PACE Act, until the Assessment and any penalties and interest are paid; and

- 2) such lien has the same priority status as a lien for any other ad valorem tax, pursuant to Section 399.014(a)(2) of the PACE Act.
- c) The lien created by the Assessment runs with the land, and any portion of the Assessment that has not yet become due is not eliminated by foreclosure of a property tax lien, according to Section 399.014(b) of the PACE Act. In the event of a sale or transfer of the Property by Property Owner, the obligation for the Assessment and the Property Owner's obligations under the Financing Documents will be transferred to the succeeding owner.
- d) In the event of a default by Property Owner in payment of the installments called for by the Financing Documents, the lien created by the Assessment will be enforced by Local Government in the same manner according to Texas Tax Code Secs. 33.41 to 34.23 that a property tax lien against real property may be enforced by a local government, to the extent the enforcement is consistent with Section 50, Article XVI, Texas Constitution.
- e) In a suit to collect a delinquent installment of the Assessment, Local Government will be entitled to recover costs and expenses, including attorney's fees in the amount of 15% of the total amount of the delinquent installment, penalties, and interest due, in the same manner according to Texas Tax Code Sec. 33.48 as in a suit to collect a delinquent property tax.

6. Servicing and Enforcement of Assessment.

- a) Servicing. The Assessment payments will be billed, collected, received, and disbursed in accordance with the procedures set out in the Financing Documents. Lender will be responsible for all servicing duties other than those specifically undertaken by Local Government in this Lender Contract.
- b) Remittances. Each of the parties covenants and agrees promptly to remit to the other party any payments incorrectly received by such party with respect to the Assessment after the execution of this Lender Contract.
- c) Default and Enforcement. In the event of a default in payment of any installment of the Assessment as specified in the Financing Documents, Lender agrees to take at least the following steps to collect the delinquent installment:
 - 1) Mail a written notice of delinquency and demand for payment to the Property Owner by both certified mail, return receipt requested, and first class mail; and

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- 2) Mail a second notice of delinquency to the Property Owner by both certified mail, return receipt requested, and first class mail at least 30 days after the date of the first notice if the delinquency is continuing.

If the Property Owner fails to cure the delinquency within 30 days after the mailing of the second notice of delinquency, the Lender or its designated servicer may notify Local Government in writing of a default by the Property Owner, and upon receipt of such notice, Local Government agrees that _____ will enforce the assessment lien for the benefit of Lender pursuant to Tex. Local Gov't Code Sec. 399.014(c), in the same manner as a property tax lien against real property may be enforced, to the extent the enforcement is consistent with Section 50, Article XVI, Texas Constitution.

- d) Final Payment and Release. When the Assessment has been satisfied and paid in full, together with all interest provided under the Financing Documents and all costs, fees, penalties, and interest applicable under the PACE Act and payable to Lender or Local Government, Local Government's rights under the Owner Contract will cease and terminate, and upon notice of such payment from Lender, Local Government will execute and record a release of the Assessment and the Owner Contract.
 - e) Limitations on Local Government's Actions. Without the prior written consent of Lender, Local Government will not enter into any amendment or modification of or deviation from the Owner Contract. Local Government will not institute any legal action with respect to the Owner Contract, the Assessment, or the assessment lien without the prior written request of Lender.
 - f) Limitations of Local Government's Obligations. Local Government undertakes to perform only such duties as are specifically set forth in this Lender Contract, and no implied duties on the part of Local Government are to be read into this Lender Contract. Local Government will not be deemed to have a fiduciary or other similar relationship with Lender. Local Government may request written instructions for action from Lender and refrain from taking action until it receives satisfactory written instructions. Local Government will have no liability to any person for following such instructions, regardless of whether they are to act or refrain from acting.
 - g) Costs. No provisions of this Lender Contract will require Local Government to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder.
7. Lender's Warranties and Representations. With respect to this Lender Contract, Lender hereby warrants and represents that on the date on which Lender executes this Lender Contract:

- a) Lender is a qualified lender under the PACE Program, as defined in paragraph 3(a) above, and is fully qualified under the PACE Program to enter into this Lender Contract and the Financing Documents;
 - b) Lender has independently and without reliance upon Local Government conducted its own credit evaluation, reviewed such information as it has deemed adequate and appropriate, and made its own analysis of the Owner Contract, the Project, and Property Owner's financial ability to perform the financial obligations set out in the Financing Documents;
 - c) Lender has not relied upon any investigation or analysis conducted by, advice or communication from, or any warranty or representation by Local Government or any agent or employee of Local Government, express or implied, concerning the financial condition of the Property Owner or the tax or economic benefits of an investment in the Assessment.
8. Written Contract Required by the PACE Act. This Lender Contract constitutes a written contract between Local Government and Lender, as required under Section 399.006 (c) of the PACE Act.
 9. Construction and Definitions. This Lender Contract is to be construed in accordance with and with reference to the PACE Program and PACE Act. Terms used herein, and not otherwise defined herein, shall have the meanings ascribed to them in: (1) the Notice of Contractual Assessment Lien, (2) the Owner Contract, (3) the PACE Program, and/or (4) the PACE Act.
 10. Binding Effect. This Lender Contract is binding upon and shall inure to the benefit of the parties hereto and their respective heirs, representatives, successors, and assigns.
 11. Notices. All notices and other communications required or permitted hereunder shall be in writing and mailed by certified mail, return receipt requested, addressed to the other party at the address stated below the signature of such party or at such other address as such party may from time to time designate in writing to the other party, and shall be effective from the date of receipt.
 12. Governing Law. This Owner Contract shall in all respects be governed by and construed in accordance with the laws of the State of Texas.
 13. Entire Agreement. This Lender Contract constitutes the entire agreement between the parties with respect to the subject matter hereof and shall not be amended or altered in any manner except by a document in writing executed by both parties.

14. Captions. Paragraph and section titles are for convenience of reference only and shall not be of any legal effect.
15. Counterparts. This Lender Contract may be executed in any number of counterparts, all of which when taken together shall constitute one agreement binding on the parties, notwithstanding that all parties are not signatories to the same counterpart.
16. Interest. Interest and penalties in the event of default, as provided above, are explicitly authorized by Section 399.014(d) of the PACE Act. However, in no event will the total amount of interest on the Assessment, including statutory interest payable to Local Government and contractual interest payable to Lender under the Financing Documents, exceed the maximum amount or rate of nonusurious interest that may be contracted for, charged, or collected under Texas law (the “usury limit”). If the total amount of interest payable to Local Government and Lender exceeds the usury limit, interest payable to Local Government will be reduced and any interest in excess of the usury limit will be credited to the amount payable to Local Government or refunded. This provision overrides any conflicting provisions in this Lender Contract.
17. Certification. Local Government certifies that the PACE Program has been duly adopted and is in full force and effect on the date of this Lender Contract. Property Owner has represented to Lender and Local Government that the Project is a “qualified project” as defined in the PACE Program and Section 399.002 of the PACE Act. The Assessment has been imposed on the Property as a lien in accordance with the PACE Owner Contract and the PACE Act. Local Government has not assigned or transferred any interest in the Assessment or the PACE Owner Contract.
18. Special Provisions. *(to be added as necessary)*

EXECUTED effective as of _____, 20__.

LENDER:

LOCAL GOVERNMENT:

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Address: _____

Address: _____

EXHIBIT A
OWNER CONTRACT

EXHIBIT B
FINANCING DOCUMENTS

Exhibit 4
FORM NOTICE OF CONTRACTUAL ASSESSMENT LIEN
PURSUANT TO PROPERTY ASSESSED CLEAN ENERGY ACT

**NOTICE OF CONTRACTUAL ASSESSMENT LIEN
PURSUANT TO
PROPERTY ASSESSED CLEAN ENERGY ACT**

STATE OF TEXAS §

COUNTY OF _____ §

RECITALS

The Property Assessed Clean Energy Act (“**PACE Act**”), Texas Local Government Code Chapter 399, authorizes the governing body of a local government to establish a program and designate a region within the local government’s jurisdiction within which an authorized local government official may enter into written contracts with the record owners of commercial, industrial, agricultural, and large multifamily residential (5 or more dwelling units) real property to impose assessments on the property to finance the cost of permanent improvements fixed to the property intended to decrease water or energy consumption or demand. Unless otherwise expressly provided herein, all terms used herein have the same meanings ascribed to them in the PACE Act.

_____ (“**Local Government**”) has established a program under the PACE Act pursuant to Ordinance/Resolution No. _____, dated _____ 20____, adopted by the _____ (the “**PACE Program**”), and has designated _____ (“**Representative**”) as the representative authorized to enter into and enforce the Assessment, Owner Contract and Lender Contract described herein, and has designated the entire territory within _____ jurisdiction as a region (“**Region**”) within which the Representative and the record owners of such real property may enter into written contracts to impose assessments to repay the financing by owners of qualified improvements on the owner’s property pursuant to the PACE Program.

_____ (“**Property Owner**”) is the legal and record owner of the qualified “real property,” as defined in Section 399.002 of the PACE Act, within the Region _____ located at _____, Texas, and more fully described in Exhibit A attached hereto and made a part hereof (the “**Property**”).

Property Owner has applied to Local Government to participate in the PACE Program by installing or modifying on the Property certain permanent improvements described in Exhibit B attached hereto and made a part hereof, which are intended to decrease water or energy

EXHIBIT A

consumption or demand, and which are or will be fixed to the Property as "qualified improvements", as defined in Section 399.002 of the PACE Act (the "Qualified Improvements"). The installation or modification of such Qualified Improvements on the Property will be a "qualified project" as defined in Section 399.002 of the PACE Act. Property Owner has entered into a written contract (the "Owner Contract") with Local Government pursuant to the PACE Act and the PACE Program and has requested Local Government to impose an assessment on the Property to repay the financing of such Qualified Improvements.

The financing of such Qualified Improvements will be provided to Property Owner by _____ ("Lender"), a lender selected by Property Owner, pursuant to a written contract executed by Lender and Local Government as required by Section 399.006(c) of the PACE Act and by the PACE Program (the "Lender Contract").

THEREFORE, Local Government hereby gives notice to the public pursuant to Section 399.013 of the PACE Act that it has imposed an assessment on the Property in the amount set forth on Exhibit C attached hereto, which together with all interest, fees, penalties, costs and other sums due under and/or authorized by the PACE Act, PACE Program and the financing documents between Property Owner and Lender (the "Financing Documents") is herein referred to as the "Assessment". Pursuant to Section 399.014 of the PACE Act, the Assessment, including interest and any penalties, costs, or fees accrued thereon, is a first and prior lien on the Property from the date that this Notice of Contractual Assessment Lien is recorded in the Official Public Records of _____ County, Texas, until such Assessment, interest, penalties, costs, and fees are paid in full. Such lien has the same priority status as a lien for any other ad valorem tax, pursuant to Section 399.014(a)(2) of the PACE Act. The lien created by the Assessment runs with the land, and according to Section 399.014(b) of the PACE Act, any portion of the Assessment that has not yet become due is not eliminated by foreclosure of: (i) a property tax lien, or (ii) the lien for any past due portion of the Assessment. In the event of a sale or transfer of the Property by Property Owner (including, without limitation, a foreclosure sale for a past due portion of the Assessment), the obligations under the Financing Documents (including, without limitation, the portion of the Assessment that has not yet become due) will be transferred to the succeeding owner.

EXECUTED on _____, 20_____.

LOCAL GOVERNMENT:

By: _____
Name: _____
Title: _____

AUTHORIZED OFFICIAL

ACKNOWLEDGEMENT

STATE OF TEXAS §

COUNTY OF _____ §

This Notice of Contractual Assessment Lien Pursuant to Property Assessed Clean Energy Act was acknowledged before me on _____, 20____ by _____, _____, on behalf of _____, Texas.

_____(print name)

NOTARY PUBLIC, STATE OF TEXAS

151748

EXHIBIT A

EXHIBIT A

PROPERTY DESCRIPTION

EXHIBIT B
QUALIFIED IMPROVEMENTS

Exhibit 5
PACE TECHNICAL STANDARDS MANUAL



**PACE in a Box
Technical Standards Manual**

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I. Overview

For any PACE program to succeed, its property owners, lenders, and community leaders must be able to confidently and objectively evaluate projected energy and water utility savings. The purpose of this technical standards manual is to outline the technical requirements necessary to qualify a project for the PACE in a Box program.

Once a project satisfies all underwriting requirements of PACE in a Box,¹ it must meet three technical requirements outlined in this manual. First, the property's current water and energy use is measured so that a *baseline* for comparison is established. Second, each potential energy or water conserving measure is evaluated to determine projected savings compared to the baseline in a technically sound, consistent and transparent manner. Findings from these two steps together are compiled in a document referred to as an energy /water assessment report. PACE law requires that each report is evaluated by an *independent third party reviewer (ITPR)*. Third, after the project retrofit activities are completed, the project must be reviewed by the ITPR to ensure that the project meets the intent of the energy/water assessment report, is properly completed, and is operating as intended. The purpose of performing *measurement and verification (M&V)* after installation is to validate that the measures are operating as expected and the energy/water savings are being realized.

On their own initiative, property owners are encouraged to undertake additional measures to ensure they receive the ongoing and full benefit of the improvements over time. These best practices are discussed further in the PACE Technical Standards Best Practices Guide for Property Owners.²



¹ See PACE in a Box Section 6.

² See PACE in a Box Section 8

Reference Materials

Accepted methods for data collection, measurement, and savings calculations should be used on proposed projects. This manual references several technical documents which will assist in determining pre-retrofit energy and water consumption, predicting retrofit energy and water savings, and measuring whether an installed measure or group of measures is performing as intended and saving energy and water resources as predicted.

The technical methodology incorporated into the review process relies primarily upon the Investor Confidence Project (ICP) - Energy Performance Protocols (EPP) for Standard and Large Commercial Facilities.³

The ICP EPP contain processes that form a framework for bringing together all aspects of project implementation from establishing a baseline and audit, through M&V. They have been created by a large stakeholder community of industry experts and are continuously reviewed and improved. PACE in a Box relies on the EPP because they are the result of a nationwide effort to standardize the technical review of energy efficiency projects to bring uniformity and reliability on a national scale. The EPP help ensure that conservation measures are evaluated consistently throughout the state and create a national standard for lender review of PACE projects.

The EPP technical processes are based on nationally accepted standards. The technical standards in EPP relating to baseline determination/calculation, performing energy assessments, and guidelines for performance measurement and verification of energy and water conservation measures respectively are:

- American Society for Testing and Materials (ASTM) E2797-11, Building Energy Performance Assessment (BEPA) Standard (data collection and baseline calculations for the energy audit, building asset data);
- International Performance Measurement and Verification Protocol (IPMVP) (latest edition);
- American National Standards Institute/Building Owners and Managers Association (ANSI/BOMA) Z65.3-2009 (gross floor area measurement);
- ASHRAE Guideline 14-2002 (measurement of energy and demand savings);
- ASHRAE Procedures for Commercial Building Energy Audits (latest edition);
- National Institute of Standards and Technology (NIST) Life-Cycle Costing Manual, NIST Handbook 135 (latest edition);
- ASHRAE Standard 202, Commissioning Process for Buildings and Systems (latest edition);
- ASHRAE Guideline 4, Preparation of Operating and Maintenance Documentation for Building Systems (latest edition);
- ASHRAE Guideline 1.4, The Systems Manual for Facilities; (latest edition);
- ASHRAE Handbook-2011, Fundamentals, Chapter 39 (Codes and Standards); and
- ASHRAE Guideline 14, Whole Building Performance Path (2002 edition).

Other acknowledged resources that may be considered are:

- The Alliance for Water Efficiency (AWE) Conservation Tracking Tool; and
- EPA WaterSense Product Guide.

³ <http://www.eepformance.org>

II. Independent Third Party Monitoring

The Texas PACE law requires an independent third party review of a baseline water/energy assessment report for each proposed qualified project. It is the responsibility of the Independent Third Party Reviewer (ITPR) to validate projected future energy or water savings. Additionally, after a qualified project is completed, the ITPR must verify that the qualified project was properly completed and is operating as intended.⁴ This includes review and validation of all M&V reports. This requirement provides assurances to the PACE in a Box program, the property owner, and the lender that due diligence has been executed, that a standard of consistency has been applied throughout the PACE process, and that a professional licensed engineer has validated the expected energy and water savings from the proposed project.

Third Party Review Process

Site Visit 1 / Reviewer's Certification

Once an engineer, contractor or installer has prepared an energy/water assessment report, a qualified ITPR selected by the property owner makes a site visit and reviews the energy/water assessment report using the EPP to determine if the report complies with PACE in a Box guidelines. When the project is deemed compliant with EPP guidelines, the ITPR prepares a Reviewer's Certification to the PACE program.

The Reviewer's Certification shall include:

- A statement that the ITPR has no financial interest in the project.
- A letter stating the savings (energy, demand, water, and cost) expected project life, and cost are reasonable and in compliance with PACE in a Box program guidelines.
- A Texas Professional Engineer signature and engineering seal.

An application for PACE financing will not be considered complete until Reviewer's Certification is submitted.

Site Visit 2 / Statement of Compliance

Once the project retrofit activities have been completed, the ITPR must revisit the site to confirm that the improvements were properly installed, meet EPP guidelines, and are operating as intended. The reviewer must submit a Statement of Compliance to the PACE program indicating that the project was properly completed and is operating in accordance with the PACE in a Box guidelines.

The Statement of Compliance shall include:

- A statement that the ITPR has no financial interest in the project;
- A project documentation review letter that covers the PACE Project Report, detailed engineering drawings, designs, and specifications, copies of mechanical, electrical, plumbing, and building permits, and copies of equipment test and balance commissioning reports as well as any change orders; and
- A Texas Professional Engineer signature and engineering seal.

Retainage funding for the qualified project will not be provided for progress beyond the construction phase, if applicable, until the Statement of Compliance is received by the PACE program.

The process described above is required by PACE in a Box. The PACE program does not guarantee projected savings, and it is the responsibility of the property owner to exercise best practices to protect his interests through a contract with the engineer, contractor or installer responsible for the project's success as recommended in the energy/water assessment report.⁵

⁴ Texas Local Government Code Chapter 399.011

⁵ See PACE in a Box Technical Best Practices Guide in Section 8

Independent Third Party Reviewer Qualifications

To be of value, the work of the ITPR must be both professionally qualified and without conflict or relationship to the project they are reviewing. An ITPR must be a licensed Professional Engineer with energy/water efficiency experience. Preferably, the Professional Engineer should have one of the following certifications:

- American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE)
 - Building Energy Assessment Professional (BEAP)
 - Building Energy Modeling Professional
- Association of Energy Engineers (AEE)
 - Certified Energy Manager (CEM)
 - Certified Measurement and Verification Professional (CMVP)
 - Certified Energy Auditor (CEA)
- Building Commissioning Association
 - Certified Commissioning Professional

Ideally, the same ITPR should follow a project from initial review to project completion.

III. FULL ASSESSMENT Protocol

A project satisfying the underwriting requirements in PACE in a Box must also satisfy the Technical Standards required in this manual. This section establishes the basic protocol for complying with PACE in a Box technical standards. A proposed project qualifying for a FAST TRACK Protocol established in Section IV, shall use the technical standards in that section.

The Full Assessment Protocol divides an energy/water conservation project into four basic tasks:

1. Establish energy and water baseline conditions (collecting utility provider information, consumption and cost data);
2. Create an Energy/Water Assessment Report (projecting savings of proposed projects when measured against the baseline data);
3. Implement the Project (installation of energy conservation measures (ECM) and/or water conservation measures (WCM)); and
4. Evaluate project performance (M&V).

Projects can range from installation of a single ECM or WCM, such as a new high efficiency boiler, installation of low-flow toilets, or a renewable energy system, to a whole building energy and water upgrade involving multiple, interactive ECMs and WCMs. Many projects will also achieve both energy and water savings, such as an energy efficiency measure that reduces heat load, thereby also reducing cooling tower water use.

Establishing a Baseline

A sound energy and water usage baseline consists of collecting the utility provider information and establishing the critical starting point for accurate projection of potential savings and measurement after implementing ECMs/WCMs. The baseline establishes how much fuel, electricity, and/or water a facility used over the previous 12-month period. It also factors in the impact of independent variables such as weather, occupancy, and operating hours on the property's energy/water use.

For the majority of energy projects, the requirements for establishing a baseline are outlined in the ICP EPP. These protocols currently target energy measures in commercial facilities, but are readily adapted to other projects including applicable areas of industrial and agricultural energy as well as water conservation. The EPP provide a roadmap for key elements in performing a successful energy/water retrofit project.

For water conservation projects, the requirements for establishing a baseline are outlined in Federal Energy Management Program's M&V Guidelines: *Measurement and Verification for Federal Energy Projects*, Version 2.2/3.0. The M&V Guidelines provide applied methodologies for baseline accomplishment. At this time, these protocols do not provide a high level of detail for baselining water efficiency projects. As future nationally recognized protocols are developed, the PACE Technical Standards will be updated for water projects.

The following table outlines which protocols should be used for establishing a baseline based on facility, project type, and scope.

Facility Type	Full Assessment Requirements
Standard Commercial / Multifamily	Energy: <u>ICP EPP - Standard Commercial</u> (Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data) Water: <u>M&V Guidelines v2.2</u> (Sec VII, p203)*
Large Commercial / Multifamily	Energy: <u>ICP EPP - Large Commercial</u> (Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data) Water: <u>M&V Guidelines v2.2</u> (Sec VII, p203)*
Industrial (Facility)	Energy: <u>ICP EPP - Large Commercial</u> (Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data) Water: <u>ICP EPP - Large Commercial</u> (Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data)
Agricultural (Facility)	Energy: <u>ICP EPP - Standard Commercial, ICP EPP - Large Commercial</u> (Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data) Water: <u>ICP EPP - Standard Commercial, ICP EPP - Large Commercial</u> (Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data)
Distributed Generation ⁶	Energy: <u>IPMVP Concepts and Practices for Determining Energy Savings in Renewable Energy Technologies Applications</u> (Pages 4-6) Water: <u>IPMVP Concepts and Options for Determining Energy and Water Savings, 2012</u> (Section 4)

*M&V Guidelines: Measurement and Verification for Federal Energy Projects Version 2.2; Sec VII M&V for Water Projects. The protocols listed above are intended as minimum requirements for an energy and water assessment report to be considered for funding.

Energy and Water Audit

The EPP rely upon industry accepted ASHRAE Procedures for Commercial Building Energy Assessment as a technical reference. These procedures define the level of effort for energy audits and provide best practices for auditors and associated project deliverables. ASHRAE also provides necessary sample audit forms and templates for data collection during the audit process.

The level of audit selected is contingent on the complexity of the facility and its installed systems and components, as well as the number and types of anticipated energy and/or water saving opportunities. Information collected during the energy/water audit is integral in determining the facility energy/water baseline conditions. The auditor will also identify energy and water savings opportunities which meet threshold investment requirements and provide verifiable energy and water savings while conducting the audit.

Industrial and Agricultural Projects

For industrial and agricultural projects, an ECM/WCM may affect the facility, a process or equipment used within the facility, or a distinct area outside the facility. Depending on the project, a different protocol shall be used. See Exhibit A for Industrial Protocols and Exhibit B for Agricultural Protocols.

Distributed Generation (DG)

DG projects have no pre-retrofit conditions as typically encountered in an energy conservation project. Since DG delivers energy rather than conserves or reduces energy, establishing a pre-retrofit baseline is not a strict project requirement. Metering of delivered energy without a baseline is often recommended in the M&V approach. DG protocol requirements can be found in *IPMVP Concepts and Practices for Determining Energy Savings in Renewable Energy Technologies Applications Volume III; August 2003*. Other specific information relevant to DG

⁶⁶ For purposes of the **PACE in a Box** Technical Standards, the Term “Distributed Generation” includes energy generation technologies such as CHP, co-generation, small wind, solar, and biomass systems that generate electricity on the customer’s side of the retail electric meter and technologies such as solar water heating and geothermal heat pumps that utilize renewable energy resources to reduce electricity consumption and demand.

measurement and verification can be found in *IPMVP Concepts and Options for Determining Energy and Water Savings Volume I, January 2012*.

Prior Audit

A prior ASHRAE Level II or Level III energy/water audit may be used provided that it was completed within the last three (3) years and that:

- Specific ECMs/WCMs were detailed in the audit and are still viable;
- Energy / water savings were projected for each proposed ECM/WCM;
- Any major facility renovations and/or building additions that occurred after the last audit do not negate relevant findings of the prior audit; and
- Changes in facility equipment and/or facility end-use do not negate findings of the prior audit.

The level of effort associated with updating the project baseline is dependent on the date of prior audit. If the audit is older than six months, additional energy/water use data will be available, and must be included in the updated audit.

In the case where a previous audit was completed in the last six months, savings calculations may be taken directly from the report if applicable. For older energy/water audits, still within the three year allowable time frame, the following items must be verified and accounted for in updated savings calculations:

- Any change in energy/water and/or demand rates or billing structure;
- Any change to existing facility, system, or project area that significantly affects savings; and
- Any change in building use and/or occupancy that significantly affects savings.

Projected Savings

EPP provide processes that should be used in projecting energy and water conservation savings. Models, spreadsheets, and similar tools must be based on “open book” methodology with sufficient explanation and documentation that savings calculations are transparent and results are readily verifiable. The use of “closed book” calculation methods or proprietary software is prohibited unless all methodologies associated with their use are well documented by transparent savings calculations and readily verifiable results.

The following table outlines the protocols that should be used to determine projected savings.

Facility Type	Full Assessment Requirements
Standard Commercial / Multifamily	Energy: <u>ICP EPP - Standard Commercial</u> (Savings Calculation) Water: <u>M&V Guidelines v3.0</u> (Sec 11.6)*
Large Commercial / Multifamily	Energy: <u>ICP EPP - Large Commercial</u> (Savings Calculation) Water: <u>M&V Guidelines v3.0</u> (Sec 11.6)*
Industrial (Facility)	Energy: <u>ICP EPP - Large Commercial</u> (Savings Calculation) Water: <u>M&V Guidelines v3.0</u> (Sec 11.6)*
Agricultural (Facility)	Energy: <u>ICP EPP - Standard Commercial</u> , <u>ICP EPP - Large Commercial</u> Water: <u>M&V Guidelines v3.0</u> (Sec 11.6)*
Distributed Generation	Energy: <u>IPMVP Concepts and Practices for Determining Energy Savings in Renewable Energy Technologies Applications</u> (Page 5, Examples pgs. 9-17) Water: <u>IPMVP Concepts and Options for Determining Energy and Water Savings</u> , 2012 (Section 4)

*M&V Guidelines: Measurement and Verification for Federal Energy Projects Version 3.0.

The protocols listed above are intended as minimum requirements for an energy assessment report to be considered for funding.

Verifying Completion and Operation

The Texas PACE law states, “After a qualified project is completed, the local government shall obtain verification that the qualified project was properly completed and is operating as intended.”⁷ The following table outlines the protocols that should be used for verifying proper project completion and operation.

Facility Type	Full Assessment Requirements
Standard Commercial / Multifamily	Energy: <u>ICP EPP - Standard Commercial</u> (Operations, Maintenance, and Monitoring, Measurement and Verification) Water: <u>M&V Guidelines v3.0</u> (Sec 11.6)*
Large Commercial / Multifamily	Energy: <u>ICP EPP - Large Commercial</u> (Operations, Maintenance, and Monitoring, Measurement and Verification) Water: <u>M&V Guidelines v3.0</u> (Sec 11.6)*
Industrial (Facility)	Energy: <u>ICP EPP - Large Commercial</u> (Operations, Maintenance, and Monitoring, Measurement and Verification) Water: <u>M&V Guidelines v3.0</u> (Sec 11.6)*
Agricultural (Facility)	Energy: <u>ICP EPP - Standard Commercial</u> (pgs. 19-22), <u>ICP EPP - Large Commercial</u> (Operations, Maintenance, and Monitoring, Measurement and Verification) Water: <u>M&V Guidelines v3.0</u> (Sec 11.6)*
Distributed Generation	Energy: <u>IPMVP Concepts and Practices for Determining Energy Savings in Renewable Energy Technologies Applications</u> (Page 5, Examples pages 9-17) Water: <u>IPMVP Concepts and Options for Determining Energy and Water Savings</u> , 2012 (Section 4)

*M&V Guidelines: Measurement and Verification for Federal Energy Projects Version 3.0

Measurement and Verification (M&V)

M&V begins after an ECM/WCM is installed and operational (commissioned) and continues throughout the term of the assessment or as contractually specified in the M&V portion of the contract between the property owner and

⁷ Texas Local Government Code chapter §399.011(b)

the contractor. Savings verification is performed post-retrofit to determine whether installed equipment is operating as designed and expected savings predictions are being realized.

EPP incorporate ASHRAE Guideline 14, Whole Building Performance Path and the International Performance Measurement and Verification Protocol (IPMVP) as guidance documents to define common practices for measuring, computing, and reporting savings achieved by energy or water efficiency projects. IPMVP Options include Option A (Retrofit Isolation: Key Parameter Measurement), Option B (Retrofit Isolation: All Parameter Measurement), Option C (Whole Facility Measurement), and Option D (Calibrated Simulation Measurement). IPMVP includes guidance for the development of a project specific M&V plan that is technically sound and which ensures both baseline and post-retrofit calculations can be used as an accurate determinant of project energy or water savings.

Reporting

The property owner is required to provide a post-construction Annual Savings Reports to the PACE administrator. The annual report shall be submitted during the term of the assessment or throughout the term of the M&V. To ensure the success of the PACE program, the Annual Savings Reports shall be completed by the contractor and reviewed and validated by the ITPR. Section 5 of PACE in a Box outlines the reporting requirements of individual PACE projects.

IV. FAST TRACK Approach

The FAST TRACK approach allows for faster implementation of projects. These projects must meet specific eligibility criteria in order to utilize the FAST TRACK process. The FAST TRACK approach reduces project expenses associated with audit costs and, in some cases, the time required to review the proposed project. The property owner and contractor must decide whether the project qualifies for the FAST TRACK approach and whether this approach is applicable. For those projects that do not qualify under the FAST TRACK eligibility criteria, the FULL ASSESSMENT protocols are required. The qualifications for an ITPR under the FAST TRACK approach are the same as qualifications for a FULL ASSESSMENT.

The FAST TRACK approach is deemed relevant and appropriate for the three (3) project types specified below. The required procedures and documentation are unique to each project.

Type 1 – Like-for-Like Replacement. The FAST TRACK approach may be used for a project that involves like-for-like replacement of energy/water inefficient equipment with more energy/water efficient equipment. Examples may include a lighting retrofit or A/C unit upgrade.

Type 2 – Single-Measure Efficiency Projects. The FAST TRACK approach may be used for projects that install single efficiency measures such as window film, additional insulation, or reflective roof coating.

Type 3 - Distributed Renewable Generation. The FAST TRACK approach may be used for a project that involves only the installation of an industry accepted renewable energy system such as solar photovoltaic (PV).

Projects that fall within the above criteria do not qualify for the FAST TRACK approach if the project requires energy modeling or IPMVP (Option C or D) measurement and verification, or if the project value to building appraisal ratio exceeds 0.10 (10%).

Establishing a Baseline

The following information is required to establish a baseline for a FAST TRACK approach project.

Site Visit

- Confirm building characteristics and major components
- Records collection (equipment, systems, utilities)
- Staff/occupant interviews
- Walk-through inspection (written and photo documentation)
- Verification of all collected information by a third party reviewer

Records/Data Collection

- Building construction data
- Equipment data – HVAC, etc.
- Building operating data
- Energy consumption data
- Water consumption data
- Weather data
- Previous audit reports

Note: Not all items listed will be applicable. Data collected is at the discretion of the professional performing the baseline work and subject to third party review.

Pertinent Interviews (optional)

- Concerning general building characteristics
- Operations of major building systems/components
- Past building operational history (service call logs)

EXHIBIT A

Note: Verification of all collected information is required as part of the Site Visit to determine if there has been significant change; if verified, it is not necessary to conduct repeat interviews.

Review/Analysis of Collected Materials

- Data conversion and normalization
- Determine building energy and water consumption metrics
- Perform modeling and simulation as applicable
- Determine renewable energy system production as applicable

Preparation of Final Assessment Report

- Includes building energy/ water cost and performance
- Energy and use by area (HVAC, lighting), fuel (gas, electric), indoor v. outdoor water usage

If a unit of energy or water using equipment is beyond its useful service life, the work associated with the baseline analysis can be considerably reduced. Document the building's age, condition, operating parameters, and expected useful life based on manufacturer's warranty data or ASHRAE guidelines. If the project is a distributed renewable generation project, collect and document information on building structure and orientation relevant to installation, production and maintenance. For WCMs not all baseline data collection and analysis apply.

Projected Savings

The requirements in this section are derived in part from the EPP for commercial facilities and are applicable to multifamily units. For single component/system ECMs or WCMs, the contractor should provide appropriate annotations to assist in determining whether a listed requirement is necessary.

The following are considered the minimum requirements in determining savings from energy and water conservation measures under a FAST TRACK approach:

- Use of "open book" methodology, spreadsheet or software used in savings calculations;
- Detailed outline for savings calculation methodology; should be transparent and easily replicated by independent third party reviewer;
- Reasonable comparison of energy/water pre-retrofit estimates to historical end use data (for single measure/single component retrofits, use only necessary data set for calibration);
- Consideration of interactive effects of related loads or systems and potential for additional ECMs/WCMs which would affect the appropriate capacity or cost-effectiveness of equipment being replaced;
- Validation of return on investment (ROI) figures based on previous audit or newly incorporated data sets;
- Validation of ECM/WCM implementation costs including labor and materials estimates; and
- Validation of savings.

The following items are the minimum that must be verified and accounted for in savings calculations for projects that propose the installation of an industry accepted renewable energy system, e.g., solar photovoltaic (PV), approved for interconnection by local utility:

- Current energy and demand rates;
- Applicability of incentives, rebates, and local utility requirements;
- Current distributed renewable generation component pricing, including design and installation of systems;
- Current electrical and/or building code requirements; and
- Current zoning and emissions requirements as they impact the project.

Verifying Completion and Operation

The requirements in this section follow M&V as referenced in the EPP for standard and large commercial facilities in conjunction with *IPMVP Concepts and Options for Determining Energy and Water Savings Volume I, January 2012*. The requirements support projects with a single component replacement or multiple ECMs/WCMs or distributed renewable generation system, qualifying as a FAST TRACK project.

For projects that incorporate multiple measures or have identified interactive effects, and whose design, installation and operation are compatible with original audit findings and calculations, the following are considered the minimum requirements:

- Implementation of appropriate IPMVP protocols by a qualified third party M&V professional:
 - Following *IPMVP Concepts and Options for Determining Energy and Water Savings Volume I, January 2012 Section 4, Figure 4 Option Selection Process (Simplified)*, and *Table 3 Suggested Options – Marked by X*; and
 - Following *IPMVP Concepts and Options for Determining Energy and Water Savings Volume I, January 2012 Section 4.5 Savings Verifications* as applied to the established baseline and post-retrofit measures, i.e., routine and non-routine adjustments; and
- Use of Option A (*Retrofit Isolation: Key Parameter Measurement*) must indicate stipulated parameters or estimates compatible with those used in previous audit savings calculations.

For single component/system conservation measures, the following are the minimum requirements in verifying completion and operation of installed measures under the FAST TRACK method:

- ITPR review of the installation of the required number and type of ECMs/WCMs as specified in the audit and project design/construction documents; and
- ITPR review of the proper installation and operation of all ECMs/WCMs as specified in the audit and project design/construction documents:
 - Ensure that operation and function meet design intent of the project;
 - Determine that installed ECMs/WCMs will provide savings as estimated in original audit findings and commensurate with baseline analysis; and
 - Determine that installed ECMs/WCMs will meet or exceed service life estimates based on observed operation.

For distributed renewable generation projects, the following are the minimum requirements in verifying completion and operation of installed measures under the FAST TRACK method:

- ITPR review of the installation of the required number and type of system components as specified in the audit and project design/construction documents; and
- ITPR review of the proper installation and operation of all components as specified in the audit and project design/construction documents:
 - Ensure that operation and function meet design intent of the project;
 - Determine that the installed system will provide savings as estimated in original audit findings and commensurate with baseline analysis; and
 - Determine that the installed system will meet or exceed service life estimates based on observed operation.

Reporting

The property owner is required to provide a post-construction Annual Savings Reports to the PACE administrator. The annual report shall be submitted during the term of the assessment or throughout the term of the M&V. To ensure the success of the PACE program, the Annual Savings Reports shall be completed by the contractor and reviewed and validated by the ITPR. Section 5 of PACE in a Box outlines the reporting requirements of individual PACE projects.

V. Exhibits A, B & C

Exhibit A INDUSTRIAL PROTOCOL

Industrial energy/water conservation projects can impact 1) the facility, 2) a process inside the facility, or 3) a combination of the facility and process inside the facility. It will be necessary to determine the affected area of the facility or the site before moving forward with the auditing and baseline determination process. This protocol serves as a general guideline for the facility owner.

Industrial Energy/Water Protocol (Facility)

For ECMs/WCMs considered to affect, conserve or reduce energy/water resources in the facility and are not directly linked to any process application, the EPP for Standard and Large Commercial will be followed as applicable. The sections below reference the appropriate EPP and indicate the minimum procedures and documentation required. Since all targeted measures or combination of measures are not known at this time, applicable portions of the EPP will be followed as necessary.

Establishing a Baseline

Document	Section Reference
<u>ICP EPP Standard Commercial</u>	Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data
<u>ICP EPP Large Commercial</u>	Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data

Savings Calculation

Document	Section Reference
<u>ICP EPP Standard Commercial</u>	Savings Calculation
<u>ICP EPP Large Commercial</u>	Savings Calculation

Verifying Completion and Operation

Document	Section Reference
<u>ICP EPP Standard Commercial</u>	Operations, Maintenance, and Monitoring, Measurement and Verification
<u>ICP EPP Large Commercial</u>	Operations, Maintenance, and Monitoring, Measurement and Verification

Industrial Energy/Water Protocol (Process)

For ECMs/WCMs considered to affect, conserve or reduce energy/water resources for a selected process in an industrial facility, it is expected that most measures will conform to appropriate *IPMVP Concepts and Options for Determining Energy and Water Savings Volume I, January 2012*. In particular, Option A – Retrofit Isolation: Key Parameter Measurement or Option B – Retrofit Isolation: All Parameter Measurement will provide the necessary requirements for savings verification, while other sections of the IPMVP document will be pertinent to establishing the baseline.

EXHIBIT A

Establishing a Baseline

Document	Section Reference
<u>ICP EPP Standard Commercial</u>	Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data
<u>ICP EPP Large Commercial</u>	Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data

Savings Calculation

Document	Section Reference
<u>ICP EPP Standard Commercial</u>	Savings Calculation
<u>ICP EPP Large Commercial</u>	Savings Calculation

Verifying Completion and Operation

Document	Section Reference
<u>ICP EPP Standard Commercial</u>	Operations, Maintenance, and Monitoring, Measurement and Verification
<u>ICP EPP Large Commercial</u>	Operations, Maintenance, and Monitoring, Measurement and Verification

Measurement and Verification

Water-efficiency M&V is analogous to energy efficiency M&V; therefore, it uses similar techniques. It is necessary to define whether the water retrofit is a building-wide measure or specific to an industrial process within the building. For water-consuming equipment related to the facility (offices, break room, landscape irrigation systems, etc.), the building occupants and facility managers are normally in control, while for process equipment and manufacturing operations, the production manager is generally responsible.

Verifying Completion and Operation

M&V begins after an ECM/WCM is installed and operational (commissioned) and continues throughout the term of the assessment or as specified in the M&V plan established in the contract between the property owner and the contractor. Savings verification is performed post-retrofit to determine whether installed equipment is operating as designed and expected savings predictions were accurate. These “actual savings,” if substantially different from pre-retrofit estimates, affect the projects’ return on investment.

EPP incorporate ASHRAE Guideline 14, Whole Building Performance Path and the International Performance Measurement and Verification Protocol (IPMVP) as guidance documents describing common practice in measuring, computing, and reporting savings achieved by energy or water efficiency projects at end-user facilities. IPMVP Options include Option A (Retrofit Isolation, Key Parameter Measurement), Option B (Retrofit Isolation: All Parameter Measurement), Option C (Whole Facility measurement), and Option D (Calibrated Simulation measurement).

IPMVP includes guidance for the development of a project specific M&V plan that is technically sound and which ensures both baseline and post retrofit calculations can be used as an accurate determinant of project energy or water savings.

Reporting

The property owner is required to provide a post-construction Annual Savings Report to the PACE administrator. The annual report shall be submitted at least one year after the ITPR certifies that the project was properly installed and is operating correctly. To ensure the success of the PACE program, the Annual Savings Report shall be completed by the contractor. Section 5 of PACE in a Box outlines the reporting requirements of individual PACE projects.

Exhibit B AGRICULTURAL PROTOCOL

For agricultural conservation projects, it is necessary to determine the affected area of the facility, site, or property. In general, a proposed project for agricultural energy/water conservation may affect 1) a facility related to agricultural operations, 2) an isolated equipment component or system (pumps, motors, etc.), or 3) a distinct water use area (i.e., irrigation). This protocol serves as a general guideline to direct the facility owner towards actions which have a basis in proven engineering concepts.

Agricultural activities outside the facility differ from those normally encountered in commercial and/or industrial areas in that water use and the energy associated with delivery of water may account for a larger percentage of costs relative to the overall energy/water budget. This may be especially true in the farming sector including greenhouse operations.

Agricultural Energy Protocol (Facility)

For ECMs/WCMs considered to affect, conserve or reduce energy/water resources in an agricultural facility and that are not directly linked to agricultural irrigation or any process application outside the facility, the EPP for Standard and Large Commercial should be followed as applicable. The sections below reference the appropriate EPP and indicate the minimum required items as listed in the document. Since all targeted measures or combination of measures are not known at this time, applicable portions of the EPP should be followed as necessary.

Establishing a Baseline

Document	Section Reference
<u>ICP EPP Standard Commercial</u>	Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data
<u>ICP EPP Large Commercial</u>	Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data

Savings Calculation

Document	Section Reference
<u>ICP EPP Standard Commercial</u>	Savings Calculation
<u>ICP EPP Large Commercial</u>	Savings Calculation

Verifying Completion and Operation

Document	Section Reference
<u>ICP EPP Standard Commercial</u>	Operations, Maintenance, and Monitoring, Measurement and Verification
<u>ICP EPP Large Commercial</u>	Operations, Maintenance, and Monitoring, Measurement and Verification

Agricultural Energy Protocol (Equipment/Systems)

Implementing water-efficiency in the agricultural sector where the majority of water and energy are consumed in irrigation most often use IPMVP Option A (Retrofit Isolation: Key Parameter Measurement) although Option B (Retrofit Isolation: All Parameter Measurement) is also viable depending on the specific measure and the affected equipment or system. The sections below reference the appropriate IPMVP protocols and indicate the minimum required items as listed in the document. Since all targeted measures or combination of measures are not known at this time, applicable portions of the IPMVP should be followed as necessary.

EXHIBIT A

Establishing a Baseline

Document	Reference
<u>IPMVP Concepts and Options for Determining Energy and Water Savings Volume I</u>	Chapter 4 (as applicable); selection criteria Fig. 4 p. 33 and Table 3 p. 34

Savings Calculation

Document	Reference
<u>IPMVP Concepts and Options for Determining Energy and Water Savings Volume I</u>	Chapter 4 (as applicable); selection criteria Fig. 4 p. 33 and Table 3 p. 34

Verifying Completion and Operation

Document	Reference
<u>IPMVP Concepts and Options for Determining Energy and Water Savings Volume I</u>	Chapter 4 (as applicable); selection criteria Fig. 4 p. 33 and Table 3 p. 34

Agricultural Water Protocol

Water conservation projects are intended to provide savings through reduced water consumption as a result of improved performance of water consuming equipment, fixtures, or controls. Savings can also result from reduced water supply charges, sewer charges, and/or energy costs depending on the conservation measure implemented. Energy savings are commonly achieved from reduced water heating, and additional savings may be realized for facilities that use pumps to boost water pressure or to irrigate with groundwater, or at facilities with on-site water treatment systems. The performance of many common water conservation projects can be accounted for through short-term measurements and usage factors can be estimated, water savings are most often verified using IPMVP Option A (Retrofit Isolation: Key Parameter Measurement).

Key issues related to water conservation projects which should be observed are:

- Determining equipment inventory for baseline and post-installation;
- Establishing existing equipment performance for each type of device/system;
- Determining usage characteristics of each type of device/system;
- Determining post-installation equipment performance for each type of device/system; and
- Accounting for any known or observed interactive effects.

The sections below reference the appropriate IPMVP protocols and indicate the minimum required items as listed in the document. Since all targeted measures or combination of measures are not known at this time, applicable portions of the IPMVP should be followed as necessary.

Establishing a Baseline

Document	Reference
<u>IPMVP Concepts and Options for Determining Energy and Water Savings Volume I</u>	Chapter 4 (as applicable); selection criteria Fig. 4 p. 33 and Table 3 p. 34

Savings Calculation

Document	Reference
<u>IPMVP Concepts and Options for Determining Energy and Water Savings Volume I</u>	Chapter 4 (as applicable); selection criteria Fig 4 pp. and Table 3 p. 34

Verifying Completion and Operation

Document	Reference
<u>IPMVP Concepts and Options for Determining Energy and Water Savings Volume I</u>	Chapter 4 (as applicable); selection criteria Fig. 4 p. 33 and Table 3 p. 34

Verifying Completion and Operation

M&V begins after an ECM/WCM is installed and operational (commissioned) and continues throughout the term of the assessment or as specified in the M&V plan established in the contract between the property owner and the contractor. Savings verification is performed post-retrofit to determine whether installed equipment is operating as designed and expected savings predictions were accurate. These “actual savings”, if substantially different from pre-retrofit estimates, affect the projects’ return on investment.

EPP incorporate IPMVP as a guidance document describing common practice in measuring, computing, and reporting savings achieved by energy or water efficiency projects at end-user facilities. IPMVP Options include Option A (Retrofit Isolation, Key Parameter Measurement), Option B (Retrofit Isolation: All Parameter Measurement), Option C (Whole Facility measurement), and Option D (Calibrated Simulation measurement).

Measurement and Verification

Water conservation M&V in agricultural facilities is typically addressed in the same manner as energy conservation. In the case where multiple facility WCMs have been implemented, it is less difficult to invoke IPMVP Option C – Whole Facility approach since a “calibrated” utility service meter will generally provide sufficient resolution to identify overall savings. This is provided that pre and post facility activity has been normalized, operations have remained relatively constant, and that the useful meter does not serve outlying areas or non-facility related operations. In that case, sub-metering of the facility area is an option. Sub-metering may be necessary if whole facility measures were not implemented, but rather targeted areas or a select number of equipment items within the facility were retrofitted.

IPMVP includes guidance for the development of a project specific M&V plan that is technically sound and which ensures both baseline and post retrofit calculations can be used as an accurate determinant of project energy or water savings.

Reporting

The property owner is required to provide a post-construction Annual Savings Reports to the PACE administrator. The annual report shall be submitted during the term of the assessment or throughout the term of the M&V. To ensure the success of the PACE program, the Annual Savings Reports shall be completed by the contractor and reviewed and validated by the ITPR. Section 5 of PACE in a Box outlines the reporting requirements of individual PACE projects.

Exhibit C: INDEPENDENT THIRD PARTY CERTIFICATION

The undersigned certifies that the report has been conducted in accordance with the requirements of the PACE in a Box Technical Standards Manual by the independent third party reviewer's (ITPR).

By signing this document, I certify that:

- The data and the cost reduction estimates presented are factual, accurate, reasonable and in accordance with generally accepted engineering practices to the best of knowledge and that this knowledge is based on the on-site investigation of the facilities involved.
- There are no undisclosed, conflicting financial interests in the recommendations of this report.
- If a recommendation of this report is implemented, that no company or association that I own or have financial interest in, will provide products or construction for the project.
- I am a professionally qualified and licensed as a professional engineer with energy/water efficiency experience.

ITPR's Signature

Date

Title

Company/Firm

Email Address

Texas P.E. Registration No.