

City of Sandy

Agenda

City Council Meeting

Meeting Location: City Hall- Council Chambers, 39250
Pioneer Blvd., Sandy, Oregon 97055

Meeting Date: Monday, November 4, 2019

Meeting Time: 6:00 PM



	Page
1. WORK SESSION - 6:00 PM	
1.1. Roll Call	
1.2. ODOT Presentation on Buffered Bike Lanes <u>ODOT Presentation on Buffered Bike Lanes - Pdf Presentation</u>	3 - 12
2. REGULAR MEETING - 6:30 PM	
3. PLEDGE OF ALLEGIANCE	
4. ROLL CALL	
5. CHANGES TO THE AGENDA	
6. PUBLIC COMMENT	
7. PRESENTATION	
7.1. Sandy Helping Hands - Community Quilt	
8. CONSENT AGENDA	
8.1. City Council Minutes <u>City Council Work Session and Regular Meeting - 21 Oct 2019 - Minutes - Pdf</u>	13 - 17
9. ORDINANCES	

9.1. Amendment to Municipal Code 5.05 18 - 22
AN ORDINANCE AMENDING CHAPTER 5.05 OF THE SANDY MUNICIPAL CODE - Pdf

9.2. Amendment to Municipal Code 12.16 23 - 29
Changes to Municipal Code Governing Conduct On Transit Property - Pdf

10. NEW BUSINESS

10.1. Award Contract for Energy Savings Performance Contract 30 - 169
Award Contract for Energy Savings Performance Contract - Pdf

10.2. PGE Variance For Night Work On Proctor Blvd 170
PGE Night Work Variance - Pdf

11. REPORT FROM THE CITY MANAGER

12. COMMITTEE /COUNCIL REPORTS

13. STAFF UPDATES

13.1. Monthly Reports

14. ADJOURN

15. EXECUTIVE SESSION

15.1. ORS 192.660 (2) (d) - To conduct deliberations with persons designated by the governing body to carry on labor negotiations.



Staff Report

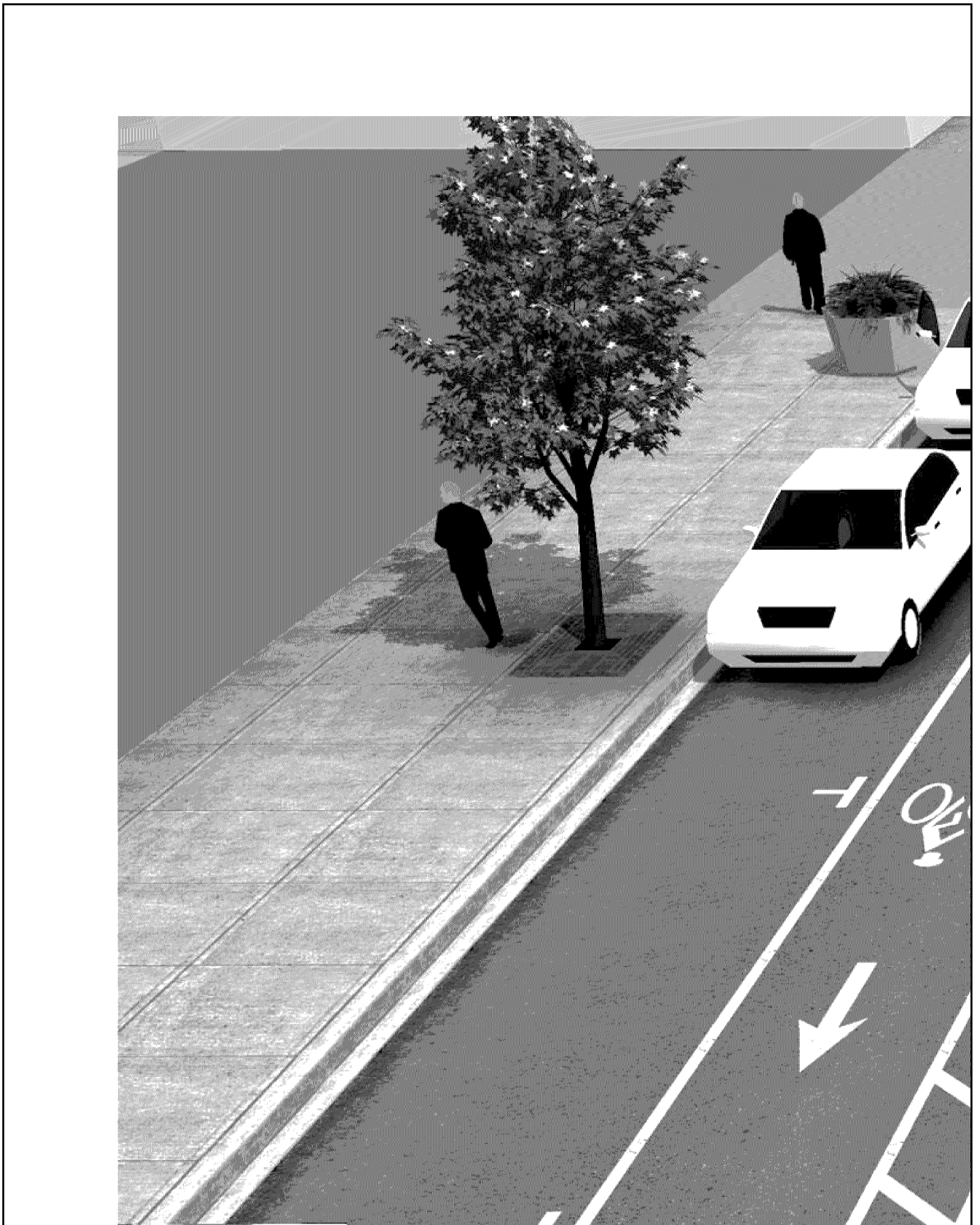
Meeting Date: November 4, 2019

From Mike Walker, Public Works Director

SUBJECT: ODOT Presentation on Buffered Bike Lanes

Background:

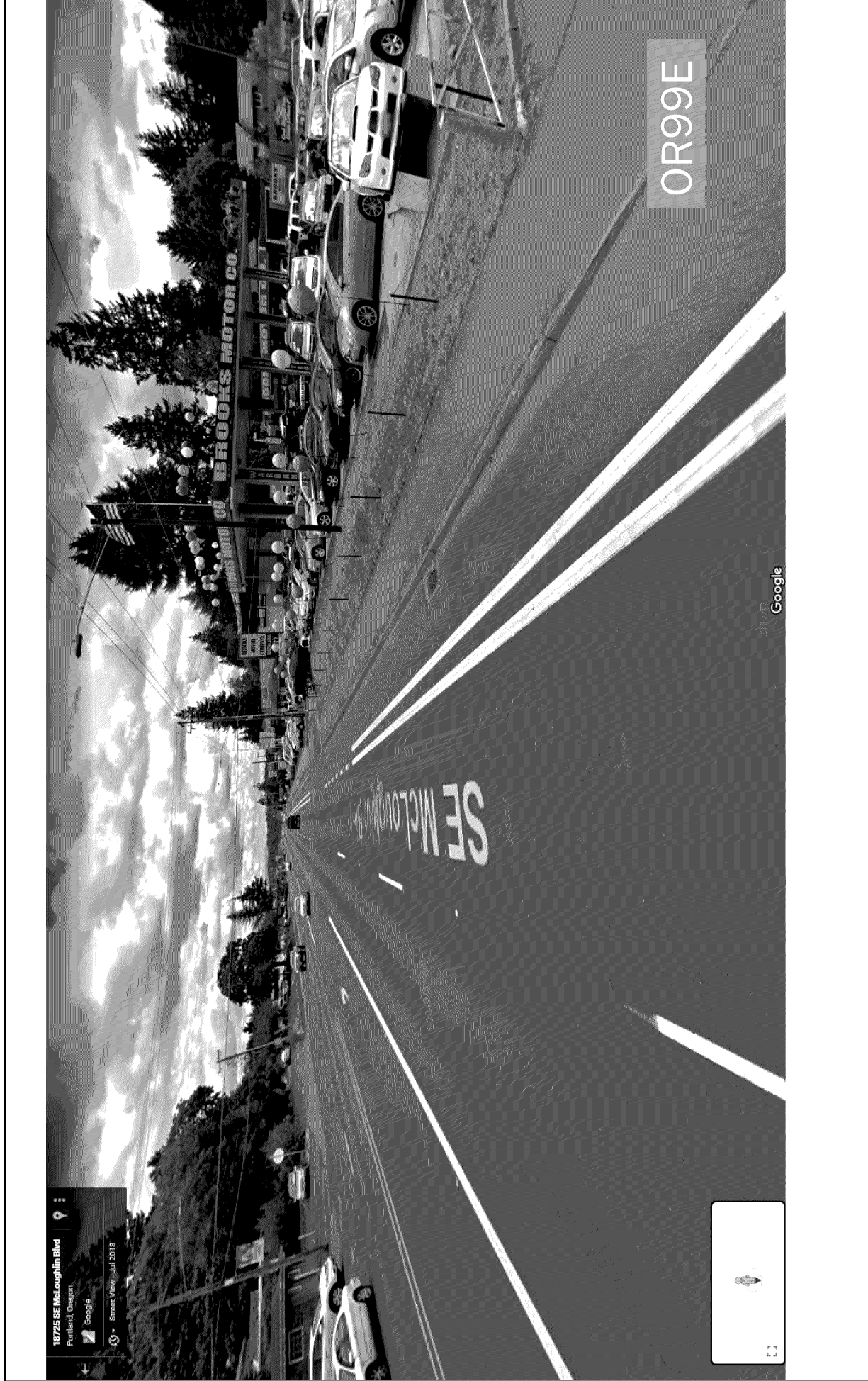
ODOT is considering installing buffered bike lanes (see urban example below) on US 26 in Sandy between 362nd and Bluff Rd. Marty Jensvold and Basil Christopher from the ODOT Bike/Ped Program will provide details on the project.



US26 Restriping Buffered Bike Lanes

Sandy City Council | November 4, 2019

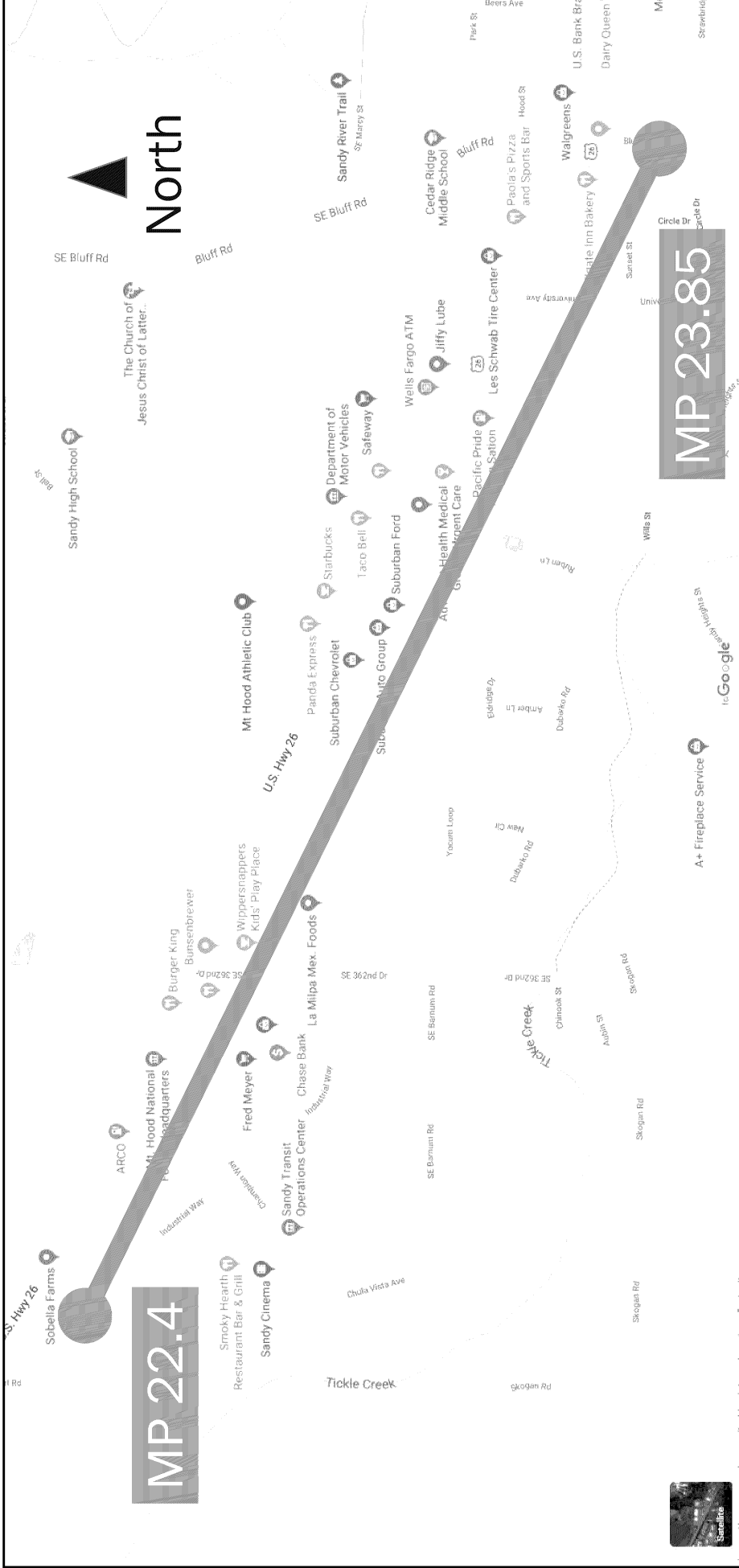




OR99E

Google

18725 SE McLoughlin Blvd
Portland, Oregon
Google
Street View - Jul 2018



- US26 milepoint 22.4 to • About 1.5 miles
23.85 (Sobella Farms direction
area to Bluff Road)





Sobella Farms

Google



Ruben Lane

Google

Image Capture Sep 2018 © 2018 Google - Unite

Sandy, Oregon
Google
Street View - Sep 2018

Safetyway
Les Schwab

Goals of Restriping Project

- Meeting bike lane design standards
- Defining a better bike lane using available shoulder
- Reducing ambiguity/confusion
- Enforcing Oregon highways parking statute



Parking Statute: ORS 811.555(12)

- Places where stopping, standing and parking prohibited. Except as provided under an exemption in ORS 811.560, a person in violation of ORS 811.555 if a person parks, stops or leaves standing a vehicle:
 - (12) On a throughway.

Industrial Way

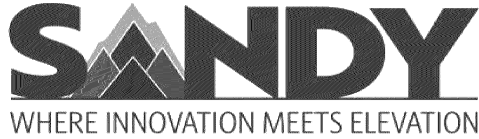
Google

Image capture: Sep 2018 © 2019 G

Contact ODOT Region 1

- Maria Sipin, Active Transportation Liaison
 - Maria.G.SIPIN@odot.state.or.us
- Basil Christopher, Bike Ped Coordinator
 - Basil.R.CHRISTOPHER@odot.state.or.us
- Marty Jensvold, Traffic Investigations Engineer
 - Martin.R.JENSVOLD@odot.state.or.us
- Seth Brumley, Planning, Clackamas County
 - Seth.A.BRUMLEY@odot.state.or.us





MINUTES
City Council Meeting
Monday, October 21, 2019 City Hall- Council Chambers, 39250
Pioneer Blvd., Sandy, Oregon 97055 6:00 PM

COUNCIL PRESENT: Stan Pulliam, Mayor, Jeremy Pietzold, Council President, John Hamblin, Councilor, Laurie Smallwood, Councilor, Jan Lee, Councilor, Carl Exner, Councilor, and Bethany Shultz, Councilor

COUNCIL ABSENT:

STAFF PRESENT: Jordan Wheeler, City Manager, Mike Walker, Public Works Director, Tanya Richardson, Community Services Director, Tyler Deems, Finance Director, and Emily Meharg, Associate Planner

MEDIA PRESENT:

1. Work Session - 6:00 pm

- 1.1. Roll Call
- 1.2. Sandy Style Design Standards Overview

Staff Report - 0194

Kelly O'Neill Jr., Development Services Director, provided Council with a history for the Sandy Style Design Standards. Discussion between staff and Council occurred.

2. Regular Meeting - 7:00 pm

3. Pledge of Allegiance

4. Roll Call

5. Changes to the Agenda

6. Public Comment

None.

7. Consent Agenda

- 7.1. City Council Minutes

Moved by Bethany Shultz, seconded by Jan Lee

Motion to approve the October 7, 2019 Council Minutes as written.

CARRIED.

7.2. Parks and Trails Advisory Board Member Appointment

Staff Report - 0189

Moved by Bethany Shultz, seconded by Jan Lee

Motion to appoint Makoto Lane to the Parks & Trails Advisory Board for a four year term.

CARRIED.

8. Ordinances

8.1. 19-021 ZC FSH Overlay map update

Staff Report - 0188

Mayor Pulliam opened the Public Hearing at 7:08 pm.

Emily Meharg, Associate Planner, delivered the staff report related to the Flood & Slope Hazard overlay. Council asked minimal clarifying questions.

Motion to close the Public Hearing moved by Councilor Peitzold, seconded by Councilor Smallwood.

Moved by Carl Exner, seconded by Laurie Smallwood

Motion to approve the FSH Overlay map update.

CARRIED.

8.2. Development Code Modification to Chapter 17.44

Staff Report - 0190

Mayor Pulliam opened the Public Hearing.

Kelly O'Neill Jr., Development Services Director, provided Council with

information on modifying Chapter 17 of the Development Code to allow for mixed-use development in the C-2 area.

Motion to close the Public Hearing moved by Councilor Peitzold, seconded by Councilor Lee.

Moved by Bethany Shultz, seconded by John Hamblin

Motion to approve Ordinance 2019-21.

CARRIED.

9. Resolutions

- 9.1. Continuation of Hearing on Wastewater SDCs Resolutions 2019-17 and 2019-18

Staff Report - 0192

Mike Walker, Public Works Director, addressed Council with a recap of the previous meeting. Staff is seeking direction from Council as to when the effective date of the new System Development Charges (SDCs) would be. Discussion occurred around when to make this resolution effective.

Mayor Pulliam opened the Public Hearing.

Levi Levassa, Stafford Development Company 8840 SW Holly Lane, Wilsonville, OR, addressed Council regarding the SDC increase. Mr. Levassa also questioned the SDC methodology related to expansion of the current system.

Jim Raze, Raze Custom Homes 4020 NE 216th Ave, Fairview, OR, provided Council with feedback which was similar to Mr. Levassa's. He asked Council to view his organization as a partner in building the city. Additionally, he provided information on current housing prices within Sandy. He indicated that he would have six permits impacted by the proposed change.

Director Walker provided a recap, and recommended that the methodology be updated tonight. Additionally, he reiterated the question related to the effect date.

Council asked clarifying questions related to the effective date of the SDCs.

Motion to close the Public Hearing moved by Councilor Hamblin, seconded by Councilor Exner.

Discussion among Council occurred. Council determined that the effect date of January 6, 2020 seemed appropriate.

effective resolution - as amended with an effective date of January 6 moved by exner, second by smallwood.

Moved by Laurie Smallwood, seconded by Jan Lee

Motion to approve Resolution 2019-17 adopting the new methodology for calculating wastewater SDCs.

CARRIED.

Moved by Carl Exner, seconded by Laurie Smallwood

Motion to approve Resolution 2019-18 amending the Master Fee Resolution to include the new Wastewater SDC effective for all permits received on or after January 6, 2019.

CARRIED.

10. Report from the City Manager

Jordan Wheeler, City Manager, provided an update on the community survey. The initial post card was mailed out today, and includes 1,000 surveys for Estacada. Additional information was provided, which included:

- Green Infrastructure Lab on October 22, 2019 at the Fire Annex
- Clackamas Cities Dinner on October 24, 2019 at Red She Public House
- Chamber Luncheon on October 23, 2019 regarding the Wastewater System Improvements

Manager Wheeler asked Councilor for a minor change to the agenda, to make a motion to designate the City Manager as an authorized person to negotiate real property transactions.

Motion to designate the City Manager as authorized to negotiate real property transactions moved by Councilor Pietzold, seconded by Councilor Hamblin. The motion passed unanimously.

11. Committee /Council Reports

Councilor Exner recapped information he obtained today from city staff related to smoke tests. Also provided was an update on the Roger Thomas mural restoration and the Library Haunt.

Councilor Hamblin recapped the most recent Oregon Trail School District Board Meeting that occurred last week. The meeting began with a formal complaint and then discussion surrounding a facility assessment, which was specifically geared toward capacity issues.

Councilor Pietzold provided an update on the recent Economic Development ad hoc Committee meeting last week. He also provided Council with a personal story related to an Emergency Department visit and the lack of 24 hour care in the Sandy area. He also noted that he was looking forward to the upcoming Community Campus tour, which will take place in November.

Mayor Pulliam provided update on the recently formed Rural Communities in Clackamas County Alliance, which includes Canby, Molalla, Estacada, and Sandy. The Economic Development ad hoc Committee met, and it is shaping up nicely. A reminder of the upcoming Trick-or-Treat Trail this Saturday at 1:00 pm was provided. Again, the Library Haunt is still going on, and has so far had a great turn out. The City received notice that we will not be awarded the WIFIA loan this time around. We can re-apply next year. Also mentioned was the possibility of a dual meeting with the School Board to discuss community needs.

12. Staff updates

12.1. Monthly Reports

13. Adjourn

14. EXECUTIVE SESSION



Mayor, Stan Pulliam



City Recorder, Karey Milne



Staff Report

Meeting Date: November 4, 2019

From Andi Howell, Transit Director

SUBJECT: AN ORDINANCE AMENDING CHAPTER 5.05 OF THE SANDY MUNICIPAL CODE

Background:

City of Sandy collects a payroll tax in support of Sandy Area Metro (SAM), the local public transit service operated by the city. Per current Municipal Code 5.05.160, "If any tax imposed upon employers by wages paid to employees or any portion of such tax is not paid within thirty days after it becomes due (or within five days, in the case of the termination of the tax quarter by the collector under the provisions of Section 13 5.05.150) and no provision is made to secure the payment of this by bond, deposit or otherwise pursuant to regulations promulgated by the collector, the collector, pursuant to ORS 267.385 and/or the City Charter and the City Code of the city of Sandy shall: forward a copy of the past due notice (including the business name, address and owner information) to the Police Department. B. The chief or his/her designee shall, within five days after the receipt of the past due notice; issue a citation to the owner of the business charging the owner with a Class A Violation. The citation will include a court date and time. Business owners charged with failure to pay the transit tax will have the option of paying the fine and back taxes with the court clerk or attending court. C. Without limiting any other rights or remedies available to the city to collect payroll and self-employment taxes, in accordance with SMC 3.30, the city may refuse to issue or renew a business license or other permit to any taxpayer who owes back taxes to the city under this chapter."

Since implementing this code compliance, 63 businesses have been issued citations, 15 of those have been issued 2 or more citations. Of the citations issued, 39 made arrangements with the Transit Department dismissing the need for a court appearance, 2 requested a hearing, 14 failed to appear in court and 13 are currently pending an outcome. At least two of these businesses also did not have a business license.

Due to the high number of businesses who fail to appear, the Transit Department recommends that the city broaden the options available to collect delinquent taxes. The recommendation, provided by the City attorney, is to replace Chapter 5.05.160. The new language will allow the City to transfer the the delinquent amount to a collection agency.

Recommendation:

Approve the new language for Municipal Code 5.05.160 as presented in Ordinance 2019-22.

Budgetary Impact:

None.

5.05.160 Penalty for failure to file tax report and remit taxes due.

~~A. If any tax imposed upon employers by wages paid to employees or any portion of such tax is not paid within thirty days after it becomes due (or within five days, in the case of the termination of the tax quarter by the collector under the provisions of Section 13 5.05.150) and no provision is made to secure the payment of this by bond, deposit or otherwise pursuant to regulations promulgated by the collector, the collector, pursuant to ORS 267.385 and/or the City Charter and the City Code of the city of Sandy shall: forward a copy of the past due notice (including the business name, address and owner information) to the Police Department.~~

~~B. The chief or his/her designee shall, within five days after the receipt of the past due notice; issue a citation to the owner of the business charging the owner with a Class A Violation. The citation will include a court date and time. Business owners charged with failure to pay the transit tax will have the option of paying the fine and back taxes with the court clerk or attending court.~~

~~C. Without limiting any other rights or remedies available to the city to collect payroll and self-employment taxes, in accordance with SMC 3.30, the city may refuse to issue or renew a business license or other permit to any taxpayer who owes back taxes to the city under this chapter.~~

5.05.160 Actions to Collect Delinquencies

- A. Any tax that is not paid within 30 days after it is due, or within five days, in the case of taxes that may be immediately due pursuant to Section 5.05.150, is delinquent, unless the taxpayer has secured the payment of the amount due by bond, deposit or otherwise and the collector, in its sole discretion, has approved the security for the payment.
- B. The city may seek any and all remedies available to it Oregon law, or the city's charter or ordinances, to collect delinquencies under this chapter.
- C. Without limiting the remedies available to the city, the city may: (1) issue a citation to the delinquent taxpayer in accordance with Sandy Municipal Code Chapter 1.18; (2) submit any delinquent amount to a collection agency; or (3) in accordance with Sandy Municipal Code Chapter 3.30, refuse to issue or renew a business license or other permit to any delinquent taxpayer. If the city submits the delinquent amount to a collection agency, the city may add a reasonable fee to the delinquent amount to compensate the city for any collection agency fees the city may incur, but only in accordance with ORS 697.105.



An amendment to the Sandy Municipal Code replacing Chapter 5.05. Section 5.05.160 "Penalty for failure to file tax report and remit taxes due" is replaced with Section 5.05.160 "Actions to Collect Delinquencies".

AN ORDINANCE AMENDING CHAPTER 5.05 OF THE SANDY MUNICIPAL CODE

Whereas, Transit Municipal Code 5.05 created a business tax known as a "public transportation and self employment tax" and

Whereas, Sandy Municipal Code chapter 5.05 imposes a business tax known as a "public transportation and self-employment tax";

Whereas, this tax supports the local transit system which provides commuter services to and from Gresham and Estacada, an in-town Shopper Shuttle, a local dial-a-ride service and an out-of-town medical rides program;

Whereas, businesses who fail to file a tax report and remit taxes due are charged with failure to pay the transit tax and issued a Class A Violation;

Whereas, the city would like to broaden the options available to it collect delinquent taxes.

NOW, THEREFORE, THE CITY OF SANDY ORDAINS AS FOLLOWS:

Section 1. Section 5.05.160 of the Sandy Municipal Code is repealed in its entirety.

Section 2. A new Section 5.05.160 of the Sandy Municipal Code is adopted as follows:

5.05.160 Actions to Collect Delinquencies

- A. Any tax that is not paid within 30 days after it is due, or within five days, in the case of taxes that may be immediately due pursuant to Section 5.05.150, is delinquent, unless the taxpayer has secured the payment of the amount due by bond, deposit or otherwise and the collector, in its sole discretion, has approved the security for the payment.
- B. The city may seek any and all remedies available to it Oregon law, or the city's charter or ordinances, to collect delinquencies under this chapter.

- C. Without limiting the remedies available to the city, the city may: (1) issue a citation to the delinquent taxpayer in accordance with Sandy Municipal Code Chapter 1.18; (2) submit any delinquent amount to a collection agency; or (3) in accordance with Sandy Municipal Code Chapter 3.30, refuse to issue or renew a business license or other permit to any delinquent taxpayer. If the city submits the delinquent amount to a collection agency, the city may add a reasonable fee to the delinquent amount to compensate the city for any collection agency fees the city may incur, but only in accordance with ORS 697.105.

This ordinance is adopted by the Common Council of the City of Sandy and approved by the Mayor this 04 day of November 2019

Stan Pulliam, Mayor

ATTEST:

Karey Milne, City Recorder

#Ordinance No. 2019-22



Staff Report

Meeting Date: November 4, 2019

From Andi Howell, Transit Director

SUBJECT: Changes to Municipal Code Governing Conduct On Transit Property

Background:

This March, the Transit Department received a site review of the years 2015-2018. RLS, a consulting firm out of Washington D.C. hired on behalf of the Oregon Department of Transportation (ODOT), visited the Sandy Transit Facilities including the Operations Center, bus shelters and vehicles. The overall goal of the review is to improve Sandy Transit's compliance with applicable regulations while strengthening the management's abilities to comply with Federal and state laws, rules, requirements and regulations.

Sandy Transit had a compliance observation based on Sandy Municipal Code Chapter 12.16, REGULATIONS GOVERNING CONDUCT ON CITY OF SANDY PUBLIC TRANSIT. Specifically, 12.16.080 states "Any person who violates any of the provisions of this chapter shall be punished for each offense, upon conviction thereof, by a fine of not more than three hundred dollars (\$300), or by exclusion from transit facilities not to exceed 30 days, or by both such fine and exclusion".

The compliance observation states that "the ADA provides no avenues wherein a covered entity can impose financial penalties for customer violations of the code of conduct." The finding recommends that Sandy must consider removal of the fine from the municipal code to ensure its customer service policies include no financial penalties for customer violations of the code of conduct". Additionally the findings recommend creating a simplified transit system policy that includes the following steps: (a) Notify the individual in writing that the transit system proposes to suspend service, citing with specificity the basis of the proposed suspension and setting forth the proposed sanction; (b) Provide the individual an opportunity to be heard and to present information and arguments; and (c) Provide the individual with written notification and the decision and the reasons for it.

Sandy Transit has updated the internal Disorderly Conduct Policy which was approved by Council in 2010, to clearly reflect the recommendations above and highlight the incremental steps taken administratively to correct disorderly conduct. The corrective steps, including the updated policy, has been reviewed by RLS and have been approved as corrective measures for this finding.

Recommendation:

Amend the Sandy Municipal Code 12.16.080 to read "Any person who violates any of the provisions of this chapter shall be punished for each offense, upon conviction thereof, by exclusion from transit facilities not to exceed 30 days". Also approve the updated Sandy Transit Disorderly Conduct Policy.

Budgetary Impact:

None.

12.16.075 Appeal

A. Appeal of an exclusion notice shall be to the municipal judge.

B. Initiation of an appeal of an exclusion notice shall be filed within five (5) days from the date of the exclusion notice with the municipal court clerk. The municipal judge may waive this requirement for good cause shown.

C. The request for an appeal hearing shall be in writing and shall contain either a copy or a full and complete description of the notice of exclusion and a statement of the grounds upon which it is contended that the decision to exclude is invalid, unauthorized or otherwise improper.

D. Upon receipt of a request for an appeal hearing, the municipal court clerk shall schedule a hearing before the judge within 14 days of receipt of the request. Notice of the hearing time and date shall be given to the person requesting the hearing and to the person issuing the exclusion notice.

E. At the hearing, the judge may determine the matter upon the record. The judge may sustain, reverse or modify the exclusion notice appealed from in his or her judgment. If the appeal concerns an allegation that the excluded person is transit dependent, and the judge finds that the appellant is transit dependent or did not engage in an act that warrants a complete exclusion from transit facilities, the judge shall order a qualified exclusion to permit a transit dependent individual to use the transit system for trips of necessity, including travel to and from medical and legal appointments, school or training classes, places of employment, obtaining food, clothing and necessary household items, or for accessing any other critical services.

F. The determination of the municipal judge is a quasi-judicial decision and is not appealable to the City Council. Appeals from any determination by the municipal judge shall be by writ of review to the Circuit Court of Clackamas County, Oregon as provided in ORS 34.010 through 34.100.


12.16.080 Violation-Penalty

Any person who violates any of the provisions of this chapter shall be punished for each offense, upon conviction thereof, by a fine of not more than three hundred dollars

~~(\$300), or by exclusion from transit facilities not to exceed 30 days, or by both such fine and exclusion.~~

12.16.090 Criminal Trespass

A person who knowingly violates an order of exclusion from transit facilities commits the

 <p>City of Sandy Transit</p> <p>POLICY</p>	NUMBER	SUPERSEDES
	0003	06/07/2010
	EFFECTIVE DATE	PAGE NUMBER
	10/21/2019	01 OF 03
	VALIDATION DATE	
	10/21/2019	
	REFERENCE	
	City of Sandy Ordinance No. 2019-14	
SUBJECT	APPROVED SIGNATURE	
DISORDERLY OR ABUSIVE PASSENGER		

Purpose:

This policy governs the procedure for dealing with unruly passengers affecting the safe operation of Sandy Transit vehicles.

Policy:

Passengers governed by this policy are those who affect the safe operation of a Sandy Transit vehicle, engage in violent, seriously disruptive, or illegal conduct while being transported on a Sandy Transit vehicle. Passengers violating the safe operation of a Sandy Transit vehicle may be denied rides, requested to leave the vehicle, banned from further ridership or, as a last resort, arrested and charged. The following behaviors are covered by this policy:

Intoxicated, disorderly, disturbing other passengers or the operator, creating a safety hazard, yelling, slapping or hitting other passengers or operator, engaging in arguments with other passengers or operator, or otherwise creating a disruption, which could affect the safe operation of the vehicle.

Steps should be taken as follows:

- ◆ Remain calm and professional in manner.
- ◆ Stop the vehicle in a safe area and request that the passenger cease and desist.
- ◆ Inform dispatch of the specific passenger and/or problem and the location.
- ◆ Inform the passenger that his or her behavior could result in the loss of service.
- ◆ If the behavior continues, request the passenger leave the vehicle.
- ◆ The passenger will be informed, in writing, that he or she will be ineligible to use Sandy Transit services for a period of time not to exceed two weeks. The notice will include specificity of disorderly conduct, dates and places of exclusion, consequences for failure to comply with conclusion (which will be extended suspensions, not to exceed 2 weeks each failure) and be signed by the Transit Director.

- ◆ If, after the period has expired the behavior continues, the passenger will be ineligible to use Sandy Transit services for a longer period of suspension (2-3 weeks).
- ◆ If after multiple suspensions the behavior continues, Sandy Transit can request (per Municipal Code 12.12.080, Code of Conduct) that a peace officer exclude the person for a period of not more than 30 days. This exclusion will include the appeal process to the City Manager as well as the Municipal Court Judge.
- ◆ If, after this exclusion the behavior continues, Sandy Transit may request the passenger use the service only with the assistance of an aide.
- ◆ If the aide is unable to control the behavior, the passenger will be ruled ineligible to use Sandy Transit services in the future.

The bus operator is required to complete a detailed incident report as soon as reasonably possible after the incident.



NO. Ordinance 2019-14

An ordinance amending the Sandy Municipal Code 12.16.080

Whereas, the city of Sandy needs to be in compliance with Federal regulations (49 CFR 37.125(h)) which allow an entity to establish a process to suspend service to a individuals for a "reasonable period of time".

Whereas, the Sandy Municipal Code 12.16.080 states "Any person who violates any of the provisions of this chapter shall be punished for each offense, upon conviction thereof, by a fine of not more than three hundred dollars (\$300), or by exclusion from transit facilities not to exceed 30 days, or by both such fine and exclusion."

Whereas, the Transit Department policy for disorderly conduct does not include a fine, but rather an incremental system of exclusion from transit facilities.

NOW, THEREFORE, THE CITY OF SANDY ORDAINS AS FOLLOWS,

Section 1: Sandy City Code 12.16.080 Violation-Penalty is amended to read "Any person who violates any of the provisions of this chapter shall be punished for each offense, upon conviction thereof, by exclusion from transit facilities not to exceed 30 days".

This ordinance is adopted by the Common Council of the City of Sandy and approved by the Mayor this 04 day of November 2019

Stan Pulliam, Mayor

ATTEST:

Karey Milne, City Recorder

#Ordinance 2019-14



Staff Report

Meeting Date: November 4, 2019

From Mike Walker, Public Works Director

SUBJECT: Award Contract for Energy Savings Performance Contract

Background:

At the September 3rd workshop meeting, the City Council reviewed a presentation from McKinstry on the LED streetlight conversion and Automated Meter Reading (AMR) projects.

Based on interest from the Council, McKinstry prepared Project Development plans for both projects and submitted a proposed Design and Construction Contract.

The Plans define the type and number of streetlights and meters to be replaced; the expected energy savings and water and sewer revenue increases resulting from the replacements and estimated costs for design, materials, labor, one year of performance measurement and overhead and profit.

The Contract is the binding document that commits the City and McKinstry to the project. The contract specifies the guaranteed maximum price and the guaranteed energy savings (for the streetlight project), guaranteed water meter accuracy (for the meter replacement project), and project contingency amounts.

The project financials in the Plan and Contract and are summarized in the tables below:

Project Costs – Streetlight Conversion

Design, CM, PM, Startup	Contingency and Verification	Construction and bonding	Profit and Overhead	Misc.	Total
\$95,522	\$43,882	\$874,984	\$157,497	\$10,512	\$1,182,397.00

Project Costs – Water Meter AMR/AMI

Design, CM, PM, Startup	Contingency and Verification	Construction and bonding	Profit and Overhead	Misc.	Total
\$312,465	\$102,228	\$1,963,086	\$353,355	\$15,567	\$2,746,701.00

The first column includes costs for engineering design (9%), construction management, project management, (5.93%) startup and training (1%).

The second column is a project contingency (5% of construction) and a lump sum for the first-year cost for measurement and verification to demonstrate that the project is

meeting its energy saving and water revenue goals. A five-year measurement and verification period is recommended but only one year is required to secure any guaranteed savings.

The third column is the estimated construction cost plus the cost for performance bonds to ensure project completion and a one-year warranty.

The fourth column is McKinstry's profit (8%) and overhead (10%) as a percentage of the construction cost.

The fifth column is the sum of the Oregon Bureau of Labor and Industries (BOLI) prevailing wage compliance fee and pass-through of the new Corporate Activity Tax (0.57% of construction cost) from HB 3427 passed during the last legislative session.

Project savings are tabulated below for each project:

Project Savings

Project	Guarantee Multiplier	Energy Savings (\$)	Increased Water & Sewer Revenue**	Operational Cost Savings***	Total Annual Savings	Incentives
Water Meters	75%*	N/A	\$141,469	\$29,900	\$171,369	\$0
Streetlights	95%	\$49,964	N/A	\$17,720	\$67,684	\$39,708****

*The water meter replacement project does not guarantee the projected revenue increases, it only guarantees a meter accuracy percentage (98.5%).

**The increased revenue is a result of replacing older, less accurate meters with new, more accurate meters and assumes increased sewer revenue because sewer bills are based on water consumption. These savings are not guaranteed.

***Operational cost savings include elimination of meter reading contract and reduced pole and streetlight maintenance costs.

****Rebate (estimated) from PGE through Energy Trust of Oregon

Ongoing Project Costs (annual)

Project	Cellular Backhaul	Software / Hosting	Collector maintenance	Programmer Maintenance	Total per year
Water Meters	\$2,580	\$12,362	\$5,994	\$978	\$21,914.00
Streetlights	\$0 - included in node cost for first 10 years	\$0 - included in node cost for first 10 years	N/A	N/A	\$0 for first 10 years

The guaranteed annual savings for the streetlight conversion is \$67,684 resulting in a simple payback of 16.8 years (net of the Energy Trust of Oregon rebate) if funded internally. If we borrowed money (3% interest and 15-year term) to fund the streetlight

conversion our annual debt service would be about \$96,000 leaving about \$28,300 additional to come from the Street Fund operating budget to make up the difference.

There are no guaranteed savings for the water meter project. McKinstry is guaranteeing 98.5% meter accuracy (the average accuracy of the existing meters is about 93%) which would translate to increased revenue. The projected increase in annual revenue (both sewer and water) from more accurate water meters is \$141,469 plus an additional \$30,000 annual operating cost savings by eliminating our meter reading contract for a total savings of \$171,000/year. Net of the annual ongoing costs listed in the table above the projected increase in revenue plus operating cost savings available for debt service is \$149,000/year. Based on a \$2,746,701 project cost, the simple payback is 18.4 years.

We would have to borrow money to finance this project. Assuming 3% interest and a 20-year term the water operating fund would have to 'subsidize' the project with a \$35,621 annual contribution, (\$184,621 annual debt service less \$149,000 increased revenue).

With borrowing costs added in, the water meter project does not entirely pay for itself over the 20-year service life of a typical water meter. The average age of the existing water meters in the system is 20 years so we will incur the expense to replace many existing meters in the near future regardless. The ESPC project is one way to pay for most of the cost of replacement.

It should be noted that the increased revenue projections are conservative by nature and the actual increase in revenue should be greater than projected. There is some risk with the upcoming water and sewer rate increases that water consumption may drop over the short term and depress system revenues. The conservative approach to the revenue projections could dampen the effect of increased water conservation.

The assumed borrowing costs are conservative as well. The actual interest rate could be as low as 2.375% which would reduce the 'subsidy' by about \$10,000.

The Water Fund is looking at some significant capital costs in the next 7 years including a connection to the new Portland Water Bureau treatment plant or construction of our own treatment plant to eliminate *cryptosporidium* from the Bull Run source plus the cost of a new water reservoir in the SE quadrant of the City. The Water Master Plan update will also identify more capital projects to comply with new Federal requirements for water system resiliency and other regulations in the future.

Recommendation:

Staff recommends that the City Council authorize the City Manager to enter into an agreement with McKinstry for the Streetlight LED Conversion Project, subject to review of the Design and Construction Contract by the City Attorney. Staff recommends that

the Council reviews the information on the AMR/AMI project, ask questions, and consider the costs, benefits, payback period, and other factors before committing to the project.

Budgetary Impact:

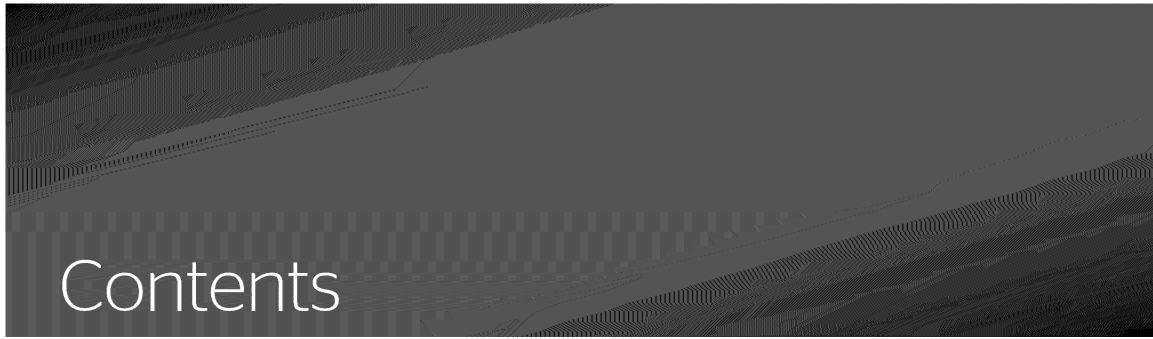
Approval of the Streetlight LED Conversion project would require an additional contribution from the Street Operating Fund of about \$28,300 annually to make up the difference between the guaranteed savings and the debt service payment. Approval of the Water Meter AMR/AMI contract would require an additional contribution of \$35,621 annually to close the gap between the projected water and sewer revenue increase and the debt service payment. There are sufficient funds in the Street Fund and Water Fund operating budgets to cover these additional contributions.



City of Sandy, Oregon Project Development Plan

STREET LIGHT LED CONVERSION & WATER METER AMR/AMI PROJECT
10/25/19





SECTION 1. EXECUTIVE SUMMARY	1
1.1 Overview	
1.2 Project Description	
1.3 Summary of Benefits	
1.4 Conclusion	
SECTION 2. SCOPE OF WORK	3
2.1 ESPC Summary	
2.2 ESCO Services	
2.3 Extent of Subcontracting	
2.4 Project Schedule	
2.5 Facility Improvement Measure Scope of Work	
SECTION 3. ENERGY SAVINGS GUARANTEE	11
3.1 Guarantee Overview	
3.2 FIM Specific Performance Assurance Methodology	
3.3 Utility Rates	
3.4 Standards of Comfort Service	
3.5 Referenced Tables	
Table 3.1 – Energy Savings Summary	
Table 3.2 – M&V Plan Outline	
SECTION 4. PROJECT FINANCIALS	15
4.1 Guaranteed Maximum Project Cost	
4.2 Project Cost Table	
4.3 Items Included in Maximum Project Cost	
4.4 Construction Contingency	
4.5 Allowances	
4.6 On-Going Services	
4.7 Accounting Records	
4.8 Reconciliation of Labor & Material Costs	
4.9 ESCO Compensation	
4.10 Terms and Conditions	
Table 4.2 – Facility Improvement Measure (FIM) Summary	
SECTION 5. EXHIBITS	22
5.1 Schedule 1 – Equipment to Be Installed By ESCO	23
5.2 Schedule 2 – Calculation of Energy Cost Savings Guarantee	95
5.3 Schedule 3 – Compensation to ESCO	96
5.4 Schedule 4 – Baseline Energy Consumption	98
5.5 Schedule 5 – Savings Calculations Formulae	101
5.6 Schedule 6 – M&V Plan and Guaranteed Savings Provisions	103
5.7 Draft Schedule 7 – Start-up & Commissioning	108
5.8 Draft Schedule 8 – ESCO Training Responsibilities	129
5.9 Draft Schedule 9 – City’s Maintenance Responsibilities	130
5.10 Draft Schedule 10 – Incentives and Grants	131



TABLE OF
CONTENTS

SECTION 6. APPENDIX

6.1	Appendix A – Street Lighting Audit	132
6.2	Appendix B – Portland General Electric Rate Tariffs	137
6.3	Appendix C – Water Meter Test Results	151



TABLE OF
CONTENTS

Executive Summary

1.1 Overview

McKinstry Essention (herein after as McKinstry) is pleased to present this proposal for the implementation of energy efficiency measures for the City of Sandy, Oregon.

This Proposal describes the scope, costs, guarantees, and other aspects of the project.

The services included in this Proposal include design, construction, and system verification. Although the City will operate and maintain the new equipment, McKinstry will provide an initial commissioning of the systems installed and will provide commissioning documentation of system operation and performance, proving the ability to realize the necessary savings.

1.2 Project Description

This project includes:

- Installation of a fixed Advanced Metering Infrastructure (AMI) and Automatic Meter Reading (AMR) Network.
- Replacement of the existing water meters with new water meters and wireless radios for connection to the AMI/AMR network.
- Conversion of the Portland General Electric (PGE) Option B street lighting fixtures to Light Emitting Diode (LED) technology.
- Conversion of the PGE Option C street lighting fixtures to LED technology.
- Conversion of the direct metered street lighting fixtures to LED technology.
- Installation of a wireless control network for the City owned street lighting equipment.

1.3 Summary of Benefits

FINANCIAL BENEFITS

Section 4 of the Project Development Plan report provides information related to specific project financials related to this project. The guaranteed maximum project allowable cost is \$3,929,098. A breakdown of this cost between the roadway and water utility portions of this project is provided in Section 4. The estimated Energy Trust of Oregon incentives are \$39,708.

The improvements are projected to produce over \$67,684 of annual energy savings along with annual increased water and sewer revenue of over \$141,469 to the City of Sandy.

ENVIRONMENTAL SUMMARY

The energy savings produced will directly reduce the amount of power produced by the Utility. To compute the environmental impact, McKinstry uses factors from the work developed in 2008 by the NW Power and Conservation Council (www.nwcouncil.org) in their report entitled "Marginal Carbon Dioxide Production Rates of the Northwest Power System" (<http://www.nwcouncil.org/library/2008/2008-08.pdf>).

On average, one car produces 189,678 pounds of CO₂ annually and one acre of trees absorbs 7,333 pounds of CO₂ annually. By implementing this project, CO₂ emissions will be reduced by 571,964 pounds annually, which is equivalent to removing 50 cars from the road or planting 71 acres of trees.



Executive Summary

1.4 Conclusion

This project represents an excellent opportunity for the City of Sandy to address aging water utility infrastructure while saving energy. McKinstry looks forward to working with the City of Sandy in making this project a success.



Scope of Work

2.1 ESPC Summary

In May 2017, the City of Sandy issued a Request for Qualifications (RFQ) for Energy Savings Performance Contract (ESPC) services. The RFQ identified the scope of work as:

Upgrade all City-Owned (Option B and Option C) street lights from high pressure sodium (HPS) and mercury vapor (MV) to light emitting diode (LED). The RFQ identified there to be a total of 899 Street Lights.

Investigate the accuracy and efficiency of a representative sample of domestic, commercial and industrial water meters in the water system. The purpose of the investigation is to determine if additional revenue gained by replacing older, less accurate meters with newer, more accurate meters will cover the cost of replacement. The RFQ identified there to be 3,752 total meters within the water system.

In November 2017, The City of Sandy selected McKinstry as their Energy Services Company (ESCO).

A complete GIS audit of the existing street lighting was performed in January 2019. Historical water billing information was obtained from Tyler Industries in April 2019 and the Technical Energy Audit findings were presented to the City of Sandy in May 2019.

In June 2019, the City of Sandy authorized the project to proceed to the Project Development Plan phase. The project continues to be broken into two measures. The first measure is the implementation of an AMR/AMI system with installation of new water meters and the second measure is the conversion of the existing Option B and Option C street lights to LED with the installation of a wireless control system that will primarily be used for asset management efforts but will provide the City with the ability to implement more complex control and dimming strategies in the future. Section 2.5 outlines the basis of design scope of work and represents the scope of work that was used to develop the guaranteed savings and the guaranteed maximum price.

2.2 ESCO Services

As part of the future Design-Build Agreement, McKinstry will provide the following services for the ESPC Project:

TECHNICAL ENERGY AUDIT & PROJECT DEVELOPMENT PLAN

No additional work. The work associated with the Technical Energy Audit and Project Development Plan has been completed as part of the earlier Phase I Part A and B agreement executed November 12, 2018.

DESIGN SERVICES

Water Meter AMR/AMI

A final propagation study and site survey will be performed to finalize the location of the network devices as well as determine the electrical installation requirements to power the devices. In addition, McKinstry will work with the City of Sandy and Tyler Industries to set up the automatic meter reading interface and alarming requirements for the project.

Street Lighting LED Conversion

A photometric analysis of the existing conditions associated with the ~90 post top fixtures that are being converted to cobra head fixtures will be performed to develop a baseline for the existing lighting associated with these fixtures. The baseline photometric analysis will then be updated using the proposed LED fixtures to determine the appropriate fixture selection. The goal is to meet the IES standards for these locations, however since additional poles are not planned for installation the minimum acceptable light level will meet or exceed the baseline light levels and IES will be achieved as the existing pole spacing allows. The analysis will include any adjacent existing fixtures that are close enough to affect the illumination area under consideration.

For the remaining light fixtures where a lumen equivalent retrofit is being proposed, six (6) model templates / general details will be developed to address existing roadway and pavement classifications.

The design does not include any pedestrian conflict analysis. Upon completion of the above referenced design services, a detailed submittal package will be created and sent to the City for approval. Once the submittal package is approved the fixtures will be ordered and the design fixed fee will be billed in full.



Scope of Work

CONSTRUCTION

McKinstry will provide, or cause to be provided, all material, labor, and equipment, including paying for permits, fees, bonds, and insurance, required for the complete and working installation of the FIMs.

- McKinstry will provide a part time site superintendent who will be responsible for the onsite coordination of trades and subcontractors. This individual's responsibilities will also include regular work observations, quality control, site security, enforcement of the site-specific safety plan, as well as coordinating any impact upon City Public Works personnel or residents. Site superintendent will only communicate with City personnel and any communications, other than "courtesy knocks" during water meter replacements, required to residents will be the responsibility of the City.
- McKinstry intends to subcontract the work to qualified firms, however may perform portions of the construction work if necessary, to meet project schedules. In either case, McKinstry will share information regarding actual costs of the work with the City.
- When McKinstry has completed the installation of the Equipment, including start-up, McKinstry will provide to City a "Notice of Substantial Completion". At the end of the project, once operation verification, commissioning, and training are complete McKinstry will provide to the City a "Notice of Commencement of Energy Savings".

CONSTRUCTION MANAGEMENT

McKinstry will provide a construction manager who will provide contract administration services for the project. The City is expected to coordinate communications with residents.

OPERATION TRAINING

McKinstry will provide training of Public Works personnel during construction. The proposed training will include 5.5 hours for the LightGrid and lighting fixtures and 24 hours for the water meter AMR/AMI system.

EQUIPMENT MAINTENANCE

McKinstry will not provide equipment maintenance or repairs. Following the completion of the installation and City acceptance of the Equipment, City shall provide all necessary service, repairs, and adjustments to the Equipment so that the Equipment will perform in the manner and to the extent set forth in the PDP. McKinstry shall have no obligation to service or maintain the Equipment beyond the limits of the warranty. A service program can be arranged under a separate agreement.

WARRANTY

McKinstry will warrant equipment for one year following Notice of Substantial Completion. Specific information regarding equipment warranty will be passed on to owner. All manufacturer's warranties beyond the first year, will be passed through to the City. The City will be required to manage all remaining warranty activities after the one-year warranty period has been completed.

HAZARDOUS WASTE OTHER THAN PCB LIGHTING BALLASTS

Should the project require removal or disposal of hazardous material, McKinstry will notify the City and stop work until any necessary testing has been completed and the hazardous material has either been deemed to not be hazardous or has been removed. McKinstry will not assume ownership of the material but may act on behalf of the City to properly remove and dispose of the material. The City shall pay McKinstry for the cost of such work and agrees and acknowledges that it has not relied on or employed McKinstry to analyze or identify the presence of any hazardous substance within the City's right of ways or premises. The cost of hazardous material abatement and disposal is not included in this proposal.

MEASUREMENT AND VERIFICATION

McKinstry will provide engineering staff who will provide measurement and verification responsibilities as outlined in Schedule 6 (see Section 5 for details).

2.3 Extent Of Subcontracting

McKinstry intends to subcontract the work associated with this Contract to qualified firms upon review and approval by the



Scope of Work

City. Construction subcontracts will be awarded competitively unless previously identified in Schedule 3 (see Section 5 for details). McKinstry does not have a goal for DMWESB involvement with this project. However, McKinstry will endeavor to solicit proposals from DMWESB subcontractors when able.

2.4 Project Schedule

The following information lists several milestone dates for the project. McKinstry will develop a detailed schedule outlining all the various design, pre-construction, construction, and closeout tasks associated with the project within 45 days of Design-Build Agreement Notice to Proceed.

	Start	Finish
PDP Review and Approval Process	10/08/19	10/25/19
Design-Build Agreement Negotiations	10/28/19	11/12/19
Engineering/Pre-Construction	11/13/19	12/31/19
Procurement	01/02/20	02/28/20
Construction	03/02/20	08/14/20
Measurement & Verification	09/01/20	08/31/21
Project Closeout	08/17/20	09/30/20

2.5 Facility Improvement Measure Scope of Work

The information in this section outlines the scope of work that is the basis of the Cost of Work associated with the Guaranteed Maximum Price.

CLARIFICATIONS AND EXCLUSIONS

1. McKinstry Essention, LLC does not execute subcontracts for survey and/or abatement of asbestos, lead paint, or other hazardous materials. At this time, there isn't any known hazardous material abatement required for this project. Abatement of hazardous materials shall be the responsibility of the City who shall contract directly with qualified abatement specialists. Discovery of any amount of hazardous materials once work commences will result in work being stopped until the material has been tested and removed. City will be notified and shall remove and remediate equipment/area prior to restart of any work.
2. Structural or electrical repairs to existing street light poles, electrical circuits, existing LED street light fixtures, demarcation points, curb stops, valve boxes, and water/sewer piping not explicitly noted in this scope are not included and will be priced separately for consideration by the City. This includes but is not limited to installation of missing pole caps, hand hole covers, and pole base escutcheons.
3. Upgrades to, or modification of electrical service, streetlighting pole grounding, switch gear, streetlighting circuit disconnects, distribution systems, and electrical code violations are excluded unless specifically stated in this document.
4. Pole foundation removal, replacement, and/or repairs are not included in the Guaranteed Maximum price unless expressly listed in the measure specific scope of work.
5. If unseen, unknown, or undisclosed conditions of any of the systems are discovered during design and construction that will impact cost or schedule for the project as outlined in this scope of work, a time and material change order will be provided by McKinstry for addressing the issue. It will be the City's discretion to perform the necessary work themselves or to contract with McKinstry for the work. Any schedule impacts will be addressed at the time of discovery of the existing condition.
6. Patching, landscape replacement, and painting are excluded except as directly related to scope defined in this document.
7. Existing code compliance issues are not in the base scope to correct. McKinstry will work with the City to price solutions as requested if they come up.
8. The City is responsible to coordinate maintenance transition related to the underground streetlight circuit and



Scope of Work

future demarcation points with Portland General Electric (PGE) for all fixtures that are being converted from Option B to Option C. The City is responsible to notify PGE when they are no longer responsible for any maintenance of the streetlighting and poles once the conversion is completed. Installation of demarcation points is not included in the scope of work except as specifically noted in this document.

9. The Guaranteed Maximum Price is based on free and clear access to the equipment that is being retrofit. Clear access to all work spaces will be required before work commences. This includes trimming of trees that block access to the lighting fixtures from a standard bucket truck. Tree trimming for the twelve locations identified during the street lighting audit has been included (see Appendix for map of known locations). Additional tree trimming has not been included in the GMP and will be the responsibility of the City or billed against contingency as needed.
10. Existing Pole/Valve Box repair, replacement, upgrades, and painting are not included in the Guaranteed Maximum Price unless expressly identified in the measure specific scope of work description.
11. Installation of meter re-setters or risers with the new meters is excluded.
12. Repair of existing water service leaks that are located outside of the meter pits is excluded.
13. Repair of line breaks beyond 2-feet upstream and 2-feet downstream of the replaced meters is excluded.
14. Installation of check valves or other backflow prevention devices with the new meters is excluded.

2.5.1 FIM 07.00 Water Meter AMR/AMI Scope of Work

The Advanced Metering Infrastructure (AMI) fixed wireless network will allow the City to remotely read all the existing water meters and export the information to Tyler Industries for customer billing. The installation of an AMI fixed wireless network will also allow the City to identify potential leaks after the meter that will minimize customer complaints and credits paid back to the customers. The City produces water from the Alder Creek site and the Brownell Springs site. The City also purchases water from Portland Water Bureau. In 2018, the City produced roughly 64% of the water and purchased the remaining 36% from the Portland Water Bureau. Unaccounted for water is the difference between the water produced and the water billed to customers. Based on historical billing and production information the City typically has between 16.5% and 18.5% of unaccounted for water. A portion of the unaccounted-for water is associated with meters that are not accurately measuring the amount of water that the customers are consuming. The existing water meters have an average age of 19.1 years. The typical life expectancy of a water meter is 20 years. In addition to the installation of the AMI fixed wireless network, this measure will replace all of the existing meters with new water meters.

Guaranteed Savings are based on increased revenue associated with improved accuracy of the water metering along with savings associated with no longer procuring meter reading services.

The description below provides a high-level summary of the work that will be completed.

1. Advanced Metering Infrastructure (AMI)
 - a. Install a two-way radio frequency (RF) data collection device on each of the three City owned communication towers. Devices are to be installed at an approximate height of 100 FT.
 - a. Installation of antenna and amplifier/filter on tower and running coax from amplifier to collector down the tower. Collector device to be installed at the base of the tower.
 - b. Extend existing available electric circuit roughly 3 feet to the collector device.
 - c. Utilize existing tower grounding to ground existing devices.
 - b. Install a two-way RF data collection device on three City owned streetlighting poles. Devices are to be installed at an approximate height of 30 FT.
 - a. Device to be clamped to the existing pole using hardware provided with the device
 - b. Extend electrical circuit for street light to the repeater (3 FT or less). Connect power to the device.
 - c. Install six (6) signal repeater devices on City owned streetlighting poles. Devices are to be installed at an approximate height of 30 FT.



Scope of Work

- a. Device to be clamped to the existing pole using hardware provided with the device
 - b. Extend electrical circuit for street light to the repeater (3 FT or less). Connect power to the device.
 - d. Develop CIS file interface between new AMI system and Tyler Industries billing system. Deploy interface and confirm that the interface works prior to going live with automatic meter reading with billing.
 - e. Provide two handheld devices for user interface to AMI software.
 - f. Existing electrical will be removed back to panel on first floor.
2. Meter Replacements
- a. Courtesy knock at each account's door prior to the start of work. If nobody answers leave a notice sign.
 - b. Shut off water using the existing curb stop.
 - c. Document register reading of existing meter and remove the meter from service. Document meter number and account number prior to disposal of meter.
 - d. Document new meter number. Install new meter and meter gaskets.
 - a. Includes 3,663 of the 5/8" x 3/4" bronze bodied SSR 420 positive displacement meters
 - b. Includes 98 of the 1" bronze bodied SSR 452 positive displacement meters
 - c. Includes 45 of the 1-1/2" SSR FLG 562 positive displacement meters
 - d. Includes 63 of the 2" SSR 572 positive displacement meters
 - e. Includes 7 of the 3" HBMAG meters with integral register with 25 ft connector. Includes 14 of the 3" grounding rings
 - f. Includes 4 of the 4" FLG HB Mag meters with (8) 4" grounding ring and 25 ft connector.
 - g. Includes 2 of the 6" HBMAG meters with integral register and 25 ft connector. Includes (4) 6" grounding rings.
 - e. Install new radio node on new meter registers
 - a. Includes 3,882 RF nodes with 5 ft connector.
 - b. Includes 82 through the lid antenna assemblies and antenna hangers for non-plastic valve box cover installations.
 - f. Turn on water using existing curb stop. Open valve on exterior hose bib and run until air is removed from the line. Document new meter register reading.
 - g. Clean up work area.

2.5.2 FIM 09.03 Street Lighting Conversion Scope of Work

Street lighting is primarily billed by Portland General Electric (PGE) based on one of three categories. Option A lighting is owned and maintained by PGE. Option B is lighting that is owned by the City but maintained by PGE. Option C lighting is owned and maintained by the City. A small quantity of fixtures is direct metered by building circuits. The scope of work defined below is associated with the existing PGE Option B, PGE Option C, and City owned direct metered fixtures.

Based on the street lighting audit (See Appendix 1), the City has 187 fixtures that are classified as Option A and will remain "as-is" with no work being performed at these locations. The City has 899 fixtures that are classified as Option B and 29 fixtures that are classified as Option C. The City has 56 fixtures that are direct metered.

The work associated with this measure will replace the Option B, Option C, and Direct Metered High-Pressure Sodium (HPS) and Mercury Vapor (MV) fixtures with new Light Emitting Diode (LED) fixtures. Existing Option B, Option C, and Direct Metered LED fixtures will remain but will have the existing photocell control replaced with a wireless control node.

The City has 90 post-top, lantern style fixtures that are mounted on laminated wood poles. These wood poles have exceeded their useful life and will also be replaced. The City currently has roughly 50 new fiberglass poles on hand that will



Scope of Work

be transmitted to McKinstry for installation. McKinstry will purchase the same pole for replacement of the remaining poles. New LED cobra head fixtures will be installed on the new poles. The image below shows the location of these fixtures and is color coded by roadway classification.

CITY OF SANDY, OREGON: EXISTING POST TOP FIXTURES BEING CONVERTED TO COBRA HEAD FIXTURES



The City also has 32 pendent style fixtures. Most of these fixtures are direct metered fixtures with six being PGE Option B. The pendent style fixtures will remain, and an LED retrofit kit will be used to convert to LED technology. The six PGE Option B fixtures retrofits will also include the installation of a NEMA socket on the existing pole in preparation for the lighting controls installation. The City also has five bollard fixtures, the bollard fixtures will remain "as-is" and will not be converted to LED.

The remaining PGE Option B, Option C, and direct metered fixtures are either "shoebox" or cobra head style. These fixtures will each be replaced with a new LED cobra head fixture.

A wireless control node will be installed on each of the existing Option B, Option C, and Direct Metered fixture circuits. When possible, a new control node will be installed on each new fixture. The control node will communicate to the cloud via a cellular based gateway. The City will be able to schedule the fixtures on/off and dim where dimming drivers are present. The project will schedule the fixtures to turn on at astronomical sunset and turn off at astronomical sunrise. There will not be a dimming schedule implemented.

The description below provides a high-level summary of the work that will be completed.

1. Existing Shoebox and Cobra Head Fixtures
 - a. Disconnect power from the luminaire following NFPA 70e requirements. Lock out and tag out circuits.
 - b. Remove existing fixture properly dispose of all components.
 - c. Install GE control node, using NEMA 7-pin receptacle, on new fixture.
 - d. Install new cobra head fixture, with GE control node on existing pole/mast arm.
 - e. Reconnect fixture to existing wire/circuit.



Scope of Work

- f. Confirm fixture and control node are functioning properly before moving on to the next location.
 - g. Install City furnished ID tag on pole. Tag to be installed on the roadway side of the pole at the location of the existing PGE ID tag.
 - h. Daily progress reports documenting which fixtures have been installed and any issues identified during the installation that impact proper operation of the street lighting will be issued.
2. Existing Pendant Acorn Fixtures:
- a. Disconnect power from the luminaire following NFPA 70e requirements. Lock out and tag out circuits.
 - b. Remove internal components within the fixture housing required to make ready for the LED retrofit conversion kit. Properly dispose of all components.
 - c. Install pole top mounted GE control node, using existing NEMA receptacle. If existing poles does not have pole top NEMA receptacle, install a new NEMA 7-pin receptacle on the pole top and install wiring between new receptacle location and fixture housing.
 - d. Install new LED retrofit conversion kit and GE control node.
 - e. Reconnect fixture to existing wire/circuit.
 - f. Confirm fixture and control node are functioning properly before moving on to the next location.
 - g. Install City furnished ID tag on pole. Tag to be installed on the roadway side of the pole at the location of the existing PGE ID tag.
 - h. Daily progress reports documenting which fixtures have been installed and any issues identified during the installation that impact proper operation of the street lighting will be issued.
3. Existing Post Top (Town & Country) Fixtures on Wood Poles:
- a. Disconnect power from the luminaire following NFPA 70e requirements. Lock out and tag out circuits. Pull wire from existing pole.
 - b. Cut/remove concrete/soil around wood pole.
 - c. Remove existing fixture and pole. Properly dispose of all components.
 - d. Dig hole for new fiberglass pole, rework underground conductors and conduit as needed.
 - e. Install new Shakespeare 20 ft fiberglass pole with tenon. Compact soil and replace concrete.
 - f. Install conductors to the top of the pole.
 - g. Install GE control node, using NEMA 7-pin receptacle, on new fixture.
 - h. Install new cobra head fixture, with GE control node on new pole and tenon.
 - i. Reconnect fixture to existing wire/circuit.
 - j. Confirm fixture and control node are functioning properly before moving on to the next location.
 - k. Install City furnished ID tag on pole. Tag to be installed on the roadway side of the pole at the location of the existing PGE ID tag.
 - l. Daily progress reports documenting which fixtures have been installed and any issues identified during the installation that impact proper operation of the street lighting will be issued.
4. Existing Post Top (Town & Country) Fixtures on Fiberglass Poles:
- a. Disconnect power from the luminaire following NFPA 70e requirements. Lock out and tag out circuits.
 - b. Remove existing fixture. Properly dispose of all components.
 - c. Install new 8" tenon on existing pole.
 - d. Extend conductors to the allow for connection of new fixture.
 - e. Install GE control node, using NEMA 7-pin receptacle, on new fixture.
 - f. Install new cobra head fixture, with GE control node on new tenon arm.
 - g. Reconnect fixture to existing wire/circuit.
 - h. Confirm fixture and control node are functioning properly before moving on to the next location.
 - i. Install City furnished ID tag on pole. Tag to be installed on the roadway side of the pole at the location of the existing PGE ID tag.
 - j. Daily progress reports documenting which fixtures have been installed and any issues identified during the installation that impact proper operation of the street lighting will be issued.
5. PGE Option A Fixtures (all fixture types) and Existing Bollard Fixtures:
- a. No work proposed.

The table below outlines the basis of design fixture wattages that were used to develop the Guaranteed Maximum Price:



Scope of Work

Existing Fixture Watts	Existing Fixture Type	Existing Pole Type	Qty	Proposed Fixture Model	Proposed Fixture Watts
70	Cobra Head	All Types	3	Cree Model RSWA-A-HT-3ME-5L-30K7-UL-XX-N-X2	36
	Post Top	Fiberglass	1		
		Laminated Wood	30		
100	Cobra Head	All Types	82	Cree Model RSWM-A-HT-3ME-9L-30K7-UL-XX-N-X4	65
	Pendant Acorn	All Types	6	Vega Model P7-D-80-30K-T3M-CXXXX-DIM	80
		Post Top	Fiberglass	199	Cree Model RSWM-A-HT-3ME-9L-30K7-UL-XX-N-X4
	Laminated Wood		26		
	Shoobox	All Types	333		
150	Cobra Head	All Types	15	Cree Model RSWL-A-HT-3ME-14L-30K7-UL-XX-N-X2	81
	Shoobox	All Types	2		
175	Post Top	Fiberglass	4	Cree Model RSWM-A-HT-3ME-9L-30K7-UL-XX-N-X4	65
		Laminated Wood	34		
200	Cobra Head	All Types	154	Cree Model RSWL-A-HT-3ME-14L-30K7-UL-XX-N-X6	120
250	Cobra Head	All Types	1	Cree Model RSWX-A-HT-3ME-24L-30K7-UL-XX-N-X4	156
	Pendant Acorn	All Types	26	Vega Model P7-D-150-30K-T3M-CXXXX-DIM	150
400	Cobra Head	All Types	3	Cree Model RSWX-A-HT-3ME-32L-30K7-UL-XX-N-X7	217



CONFIDENTIAL AND PROPRIETARY

Energy Savings Guarantee

3.1 Guarantee Overview

The Guaranteed Utility Cost Avoided Savings (Guaranteed Savings) are summarized in Table 3.1 at the end of this Section 3 and outlined in detail through the Schedules in Section 5 of this Report. The Project consists of two different measures which are discussed in more detail below.

FIM 07.00-DPW addresses the installation of an Automatic Meter Reading (AMR) and Advanced Metering Infrastructure (AMI). As part of the AMR/AMI installation, McKinstry will be replacing the existing water meters, that have an average age of roughly 19 years, with new meters. The new meters will more accurately measure the water consumed by each of the City's customers allowing for increased revenue from billing for the water consumed. Unaccounted for water is the comparison between the gallons of water the City produces/purchases and the gallons of water the City bills its customers for. The City of Sandy currently has roughly 17% of unaccounted for water. The guaranteed savings are associated with the increase in billed water and sewer by 4.18% from improved meter accuracy and the cancelation of the City's manual meter reading subcontract.

The second measure is FIM 09.03-DPW which addresses the conversion of existing High Pressure Sodium (HPS) and Mercury Vapor (MV) street lighting fixtures to Light Emitting Diode (LED) technology. McKinstry performed an audit of the existing City owned street lighting in January 2019. Portland General Electric (PGE) bills the City for street lighting either through a flat monthly rate or based on direct metering. PGE breaks the flat monthly fee billing into three categories based on the ownership of the fixtures, maintenance responsibility of the fixtures, and energy consumption of the fixtures. Option A is for those fixtures and poles that are owned and maintained by PGE. Option B is for those fixtures and poles that are owned by the City and maintained by PGE. Option C is for those fixtures and poles that are owned and maintained by the City. This project will only apply to the Option B, Option C, and direct metered fixtures. The guaranteed savings are associated the differences in costs between the existing monthly flat rates that the City is being billed and the new monthly flat rates that the City will be billed for after the conversion. The City has 34 fixtures that are direct metered and the guaranteed savings for those fixtures will be based on the lower power consumption metered by the existing building meters.

3.2 FIM Specific Performance Assurance Methodology

The specific measurements, assumptions, and stipulated factors used to determine the Guaranteed Savings are outlined in Table 3.2 at the end of this Section 3. Additional measure specific measurement and verification items are outlined in the following Schedules that are in Section 5 of this report:

- Schedule 6 – Measurement and Verification Plan,
- Schedule 5 – Savings Calculations Formulae,
- Schedule 4 – Baseline Energy Consumption, and
- Schedule 2 – Calculation of Energy Cost Savings Guarantee.

3.3 Utility Rates

McKinstry does not have control over the rates that the utility providers will charge associated with the Guaranteed Savings. The dollar amounts shown for Guaranteed Savings in this report are based on the rates in effect at the time of this report, and have been included as Appendix 2. Specifics of how the rates will be applied during the Measurement and Verification Period are outlined in the Schedules in Section 5 of this report. The rates used are summarized below:

- Pole Replacements: Based on PGE Schedule 91 effective 04/10/2019.
- HPS and MV Flat Rate Fixtures: Based on PGE Schedule 91 effective 01/01/2019.
- LED Flat Rate Fixtures: Based on PGE Schedule 95 effective 04/10/2019.
- Metered Street Light Fixtures: Based on PGE Schedule 32 effective 01/01/2019
- Water Consumption Billing Rate: Blended rate based on billing data received from Tylor Industries of \$2.588561/CCF
- Sewer Consumption Billing Rate: Blended rate based on billing data received from Tylor Industries of \$2.862040/CCF.



Energy Savings Guarantee

3.4 Standards of Comfort Service

The following section provides the design standards upon which all energy calculations are based. It is important to note that the conditions defined herein and in Table 3.2 are those that allow for the Guaranteed Savings to be realized.

STREET LIGHTING DESIGN STANDARDS

Ordinance 2002-11 established regulations for outdoor lighting within the City of Sandy Municipal Code.

Section 15.04.060 A outlines the general standards for Area Lights (see exact language below).

"Area Lights: All area lights, including street lights and parking area lighting, shall be full cut-off fixtures and are encouraged to be eighty-five (85) degree full cut-off type fixtures. Street lights shall be high-pressure sodium, low-pressure sodium, or metal halide, unless otherwise determined by the city that another type is more efficient. Street lights along residential streets shall be limited to a 70-watt high-pressure sodium (hps) light. Street lights along nonresidential streets or at intersections shall be limited to 100 watts hps, except that lights at major intersections on state highways shall be limited to 200 watts hps. If the city permits a light type other than high-pressure sodium, then the equivalent output shall be the limit for the other light type."

The existing street lighting does not currently align with this standard. As this is an energy retrofit project the approach will be to replace the existing fixture with an equivalent output LED fixture. All new fixtures will have an up-light rating of 0 and retrofit fixtures will not be modified to meet this full cut-off standard.

Section 15.04.060 D outlines the illumination levels as *"Illumination levels and uniformity shall be in accordance with current recommended practices of the Illuminating Engineering Society. Recommended standards of the illumination engineering society shall not be exceeded."* As this is an energy retrofit project, the existing pole spacing will remain which will limit the ability of the project to potentially meet the Uniformity Ratio requirements. Reasonable attempts will be made to meet the requirements of RP-8, however no guarantees are being made that all locations will achieve these standards. The table below outlines the requirements of RP-8 which are considered a target and not a requirement for this project.

ROADWAY & PEDESTRIAN CONFLICT AREA		PAVEMENT CLASSIFICATION (MINIMUM MAINTAINED AVERAGE VALUES)			UNIFORMITY RATIO (E_{avg}/E_{min})
ROAD	PEDESTRIAN CONFLICT AREA	R1 (FC)	R2 & R3 (FC)	R4 (FC)	
MAJOR	HIGH	1.2	1.7	1.5	3.0
	MEDIUM	0.9	1.3	1.1	3.0
	LOW	0.6	0.9	0.8	3.0
COLLECTOR	HIGH	0.8	1.2	1.0	4.0
	MEDIUM	0.6	0.9	0.8	4.0
	LOW	0.4	0.6	0.5	4.0
LOCAL	HIGH	0.6	0.9	0.8	6.0
	MEDIUM	0.5	0.7	0.6	6.0
	LOW	0.3	0.4	0.4	6.0

3.5 Referenced Tables

The following tables are referenced throughout Section 3 of the Project Development Plan report. Below is a summary of what the information in each table is intended to represent.

- Table 3.1 – Provides the Guaranteed Savings water and energy units along with the expected dollar value of those units
- Table 3.2 – Provides the Key Performance Indicators and summarizes the activities associated with the measurement and verification of the Guaranteed Savings.





Table 3.1 - Energy Savings Summary

Project: City of Sandy, Oregon
 Scenario: PDP-Combined
 Date: 10/8/2019

Facility Improvement Measures	Facility	Net Effective Guarantee Multiplier *	Electricity			Water			Sewer	
			kWh	kWh (\$)	CCF	CCF (\$)	CCF	CCF (\$)	CCF	CCF (\$)
07.00-DPW Water Meter AMR/AMI	City of Sandy OR - Utilities	75.0%	0	\$0	20,254	\$55,049	15,691	\$86,419		
09.03-DPW Street Lighting Conversion	City of Sandy OR - Utilities	95.0%	336,870	\$49,964	0	\$0	0	\$0		
Totals ***			336,870	\$49,964	20,254	\$55,049	15,691	\$86,419		

* The savings shown in this table are less than the calculated savings unless a guarantee multiplier of 100% is shown.

** The guarantee is based on Key Performance Indicators (KPI's) shown in Table 3.2. Refer to Section 3.3 for the method of converting KPI's to dollars during the M&V period.

*** The guarantee is based on the aggregate savings for all FIMs, not on individual FIM savings.

Confidential and Proprietary



Table 3.2 - M&V Plan Outline

Project: City of Sandy, Oregon
 Scenario: PDP-Combined
 Date: 10/8/2019

FIM Name	Facility	IPMVP Option	KPI	Key Performance Indicators	Baseline Values	Proposed Values	Audit Stage (Baselining)	Post-Retrofit (Control)	Tasks
07.00-DPW Water Meter AMR/AMI	City of Sandy OR - Utilities	A	1.	Aggregate Meter Accuracy	93%	98.5%	Bench Test 160 Existing Meters	Bench Test 160 New Installations	Verify wattages by lighting control
09.03-DPW Street Lighting Conversion	City of Sandy OR - Utilities	A	1.	Installed Fixture Wattages by Fixture Type.	Total Installed = 124.6 kW for non-metered and 10.1 kW for metered fixtures.	Total Expected = 46.8 kW for non-metered and 5.4 kW for metered fixtures.	Detailed GIS Audit as documented in PDP Appendix	Verify wattages by lighting control	Verify installed fixture type and wattage by contractor's as-built
			2.	Installed Quantities by Fixture Type and Fixture Wattage	See detailed lighting audit.	See detailed lighting audit.	Detailed GIS Audit as documented in PDP Appendix		
			3.	Annual Hours of Operation.	4,296 Hours/year	4,296 Hours/year.	Based on annual hours between astronomical sunset and astronomical sunrise.		None

Confidential and Proprietary

Project Financials

4.1 Guaranteed Maximum Project Cost (GMP)

McKinstry guarantees that the Maximum Project Cost will not exceed \$3,929,098. BOLI fees are included in the cost of work estimates. For details associated with the development of the Guaranteed Maximum Price see Schedule 3 in Section 5 of this report. The GMP is broken down in Table 4.1 (located at the end of this Section 4).

4.2 Project Cost Table

A detailed breakdown of the project financial information is included in Table 4.2 (located at the end of this Section 4). Table 4.2 provides a breakdown of the GMP, Annual Guaranteed Utility Cost Avoided Savings, Annual Guaranteed Operational Savings, Potential Incentives and simple payback by FIM. It is important to note that the Design Fixed Fee, Construction Management Fixed Fee, Measurement and Verification Fixed Fee, Project Contingency, ESCO Fixed Fee, and Site Supervision Costs are distributed across all measures and Table 4.2 does not represent the specific actual costs associated with each measure.

4.3 Items Included in Maximum Project Cost

Maximum project costs include the following:

1. Engineering and design.
2. Construction management services.
3. Installation of McKinstry equipment including the following costs as specified in the scope of work:
 - All costs paid by McKinstry for the installation of the equipment. This includes costs paid to subcontractors or directly to McKinstry personnel, when related to installation or system verification of McKinstry equipment.
 - The portion of reasonable travel, lodging, and meal expenses of officers or employees incurred while traveling in discharge of duties connected with the Work.
 - Cost of all equipment, materials, supplies, and equipment incorporated in the Work, including costs of transportation thereof.
 - Cost or rental charges, including transportation and maintenance, of all materials, supplies, equipment, temporary facilities, and hand tools not owned by the workers, which are consumed in the performance of the Work and cost less salvage value on such items used but not consumed which remain the property of the McKinstry.
 - Cost of premiums for all bonds and insurance, which McKinstry is required to purchase and maintain.
 - Sales, use or similar taxes as applicable related to the Work and for which McKinstry is liable and as imposed by a governmental authority.
 - Permit fees, royalties, and deposits lost for causes other than McKinstry's negligence.
 - Losses and expenses not compensated by insurance or otherwise, sustained by McKinstry in connection with the Work, provided they have resulted from causes other than the fault or neglect of McKinstry. Such losses shall include settlements made with the written consent and approval of the Owner. If, however, such loss requires reconstruction and McKinstry is placed in charge thereof, he shall be paid for these services a fee.
 - Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, express mail services, and similar petty cash items.
 - Demolition cost and cost of removal of all debris.
 - Costs incurred due to an emergency affecting the safety of persons and property.
 - Other costs incurred in the performance of the Work if and to the extent approved in advance in writing by the Owner.
 - The cost of contingency and an allowance for Owner initiated scope improvements.
 - Cost of equipment startup, training, system verification and balancing performed by the McKinstry.
4. Construction Bonds (including Performance & Payment and Retention bonds), Liability Insurance, and Builder's Risk Insurance.
5. McKinstry fee. This includes McKinstry's remuneration for compensation of personnel, expenses, risks related to the project, overhead, and profit.



Project Financials

6. McKinstry shall provide a Schedule of Values within 30 calendar days of notice to proceed for the Design-Build Agreement. The schedule of values will include all costs related to the installation of the Scope of Work as outlined in Section 2 of this report.

4.4 Construction Contingency

A construction contingency as a percentage of the direct construction costs has been established for this project.

ESCO mark-ups on contingency funds will be addressed as follows:

- ESCO requested changes outside of scope– Design to be discussed dependent upon scope of the change
- ESCO requested changes inside of scope – design to be discussed dependent upon scope of the change
- Unforeseen or latent conditions – OH&P, CM, and applicable design
- Owner directed changes – All applicable mark-ups
- All unused construction contingency funds shall reduce the overall project cost to the City. The City and McKinstry will jointly manage any contingency left after the project scope is completed.

4.5 Allowances

McKinstry may set aside allowances for specific areas of work that have been or may be identified as a potential cost impact but cannot be determined at the time when direction must be provided. Should the allowance not be adequate, The City will be advised and McKinstry will be compensated for any additional costs.

4.6 Ongoing Services

No Ongoing Services beyond the 1st year of Measurement and Verification are included in the GMP. Future years of M&V are outlined in Schedule 6 (see Section 5 of this report for further details).

4.7 Accounting Records

McKinstry shall check all material, equipment, and labor entering into the Work and shall keep account as may be necessary for proper financial management under this Agreement. The City shall be afforded access to all the ESCO's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to this Contract, and the Contract shall preserve all such records for a period of three years, or for such longer period as may be required by law, after the final payment.

4.8 Reconciliation of Labor & Material Costs

The GMP is based on firm and estimated labor and material costs. In recognition that actual Labor & Material costs may vary from the estimate, the following procedures are established to reconcile this difference:

- If the total project cost at completion exceeds the estimated amount (plus contingency), the additional costs will be borne by McKinstry at their expense.
- If the total project costs at completion are less than the estimated proposal amount (less contingency), the savings will be retained by the City.
- There shall be no cost savings split between the City and McKinstry

The following table outlines whether the Labor and Material costs are Estimated or Firm in this Project Development Plan. It further defines the method for providing firm costs during the pre-construction period (after authorization of this Design-Build Agreement). The table also clearly identifies which items are subject to reconciliation at the end of the project. As a rule, those costs that are estimated in the proposal and bid or quoted during the pre-construction phase are reconciled at the end of the project. Those items that are firm in the proposal will be firm throughout the project, and not reconciled at the end of the project. End of Project reconcile shall be through subcontractor invoice substantiation.



Project Financials

L&M Costs	As Proposed In PDP	Pre-Construction Costing	End of Project - Reconciled
Controls Systems	Estimated	Proposal	Yes
Major Equipment	Estimated	Proposal	Yes
Mechanical	Estimated	Proposal	Yes
Electrical	Estimated	Proposal	Yes
Site Supervision	Estimated	Estimated	Yes
Commissioning	Proposal	Proposal	Yes
ESCO Fees	Firm – Fee	Firm - Fee	No
Contingency	Estimated	Estimated	Yes

4.9 ESCO Compensation

1. Terms: Net 30 days from the date of invoice, monthly billing as the job progresses.
2. Payments: At a minimum, payments will be made in the amount of 100%, less retention of five percent per the contract, and the Schedule of Values.
3. Finance Charges on Unpaid balances: Payments due and unpaid shall be subject to interest charges per Oregon Law.
4. Construction Period Finance: McKinstry may charge construction period finance for projects whereby the anticipated billing lags the earned schedule of values by more than 90 days. Construction period finance will be calculated on the un-billed balance in excess of three months at the rate of Prime plus 2% per annum. Charges accrue until balances are paid in full. Interest charges will be calculated daily, compounded monthly.
5. Substantiation: McKinstry will do an accounting of finance charges progressively through the project, and at contract completion submit a change request itemizing the summary of additional costs for implementation. The contract will then be increased to reflect the same and finance charges will be paid within thirty days of the date of approved substantiation.

4.10 Terms and Conditions

TERMS OF AGREEMENT

The Contract shall be effective and binding upon the parties immediately upon its execution and the period from contract execution until the Commencement Date shall be known as the "Interim Period". All energy savings achieved during the interim period will be fully credited to the City, and may be used to offset any loss of energy savings; as mutually agreed to by the City and McKinstry.

INSURANCE AND BONDING

McKinstry shall provide a Payment and Performance bond, Retention bond and Builder's Risk Insurance.

For the purposes of this agreement, the "Sum Amount Of Bond" shall be:

1. The bond amount consists of Labor and Materials.
2. This bond does not include any construction contingencies.
3. Certificates of General Liability Insurance will be provided prior to Contract Signing.



Project Financials

McKinstry shall provide a payment and performance bond in the amount of 100% of the construction cost, as defined in the Design-Build Agreement. The amount shall include all authorized changes and state sales tax (if applicable). The Bond shall be in the form attached to the Conditions of the Design-Build Agreement. The Contract listed on the bond form shall be the Addendum No. and Agreement No. which incorporates the work and the "Contract Date" shall be the date of the Addendum. The full and just sum of the Bond shall be as defined above and shall include the actual cost of purchasing and installing McKinstry's Equipment. The Bond shall specifically exclude coverage for those portions of the Design-Build Agreement and/or Energy Services Agreement Addendum pertaining to design services, energy cost savings guarantee, maintenance guarantee, utility incentives, efficiency guarantees, and any other clauses which do not relate specifically to construction management and supervision of work for purchasing and installing of McKinstry's Equipment, or for work to be accomplished by the City. The Bond shall be with a Surety or Bonding Company that is registered with the State of Oregon Insurance Commissioner's Office.





Table 4.1 - Budget Summary

Project	City of Sandy, OR ESPC
Scenario	Street Lighting LED Conversion
Date	10/25/2019

A. Professional Services Costs									Total
Database ID	FIM Name	Mechanical	Electrical	EMCS	Lighting	General	Equipment	Other	Total
	Design	%	4.00%						\$ 34,999
	Const. Management & Proj. Admin	%	5.93%						\$ 51,877
	Commissioning	%	0.99%						\$ 8,646
Total Professional Services Cost									\$ 95,522
B. Construction Costs									Total
Database ID	FIM Name	Mechanical	Electrical	EMCS	Lighting	General	Equipment	Other	Total
41052	07.00-DPW Water Meter AMR/AMI	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
42046	09.03-DPW Street Lighting Conversion	\$ -	\$ 691,484	\$ 171,325	\$ -	\$ 1,800	\$ -	\$ -	\$ 864,609
Total Base FIM Cost		\$ -	\$ 691,484	\$ 171,325	\$ -	\$ 1,800	\$ -	\$ -	\$ 864,609
	Construction Bonds	%	1.07%	Percent of Subtotal (Total Base FIM Cost and Section A)					\$ 10,375
Total Construction Cost									\$ 874,984
C. Other Project Costs									Total
	Project Contingency	%	4.81%	Percent of Section B					\$ 42,067
	Performance Assurance (M&V)	Lump	\$ 1,816						\$ 1,816
Total Other Project Cost									\$ 43,882
D. Overhead Costs & Fees									Total
	Overhead	%	10.00%	Percent of Section B					\$ 87,498
	Profit (Fee)	%	8.00%	Percent of Section B					\$ 69,999
Total Overhead Cost & Fee									\$ 157,497
E. Total Guaranteed Construction & ESCO Services (A + B + C + D)									\$ 1,174,885
F. Non-Guaranteed Costs									Total
	BOLI Public Works Fee	Lump	\$ 4,606	Cost plus Section D Fees					\$ 4,606
	Corporate Activity Tax	%	0.50%	Percent of Section E minus contingency					\$ 5,907
Total Non-Guaranteed Cost									\$ 10,512
G. Total Maximum Project Cost (E + F)									\$ 1,182,397



Table 4.1 - Budget Summary

Project	City of Sandy, OR ESPC
Scenario	Water Meter AMR/AMI
Date	10/25/2019

A. Professional Services Costs		Design	Const. Management & Proj. Admin	Commissioning	Percent of Section B	Percent of Section B	Percent of Section B	Total Professional Services Cost
					9.00%			\$ 176,678
					5.93%			\$ 116,388
					0.99%			\$ 19,398
								\$ 312,465

B. Construction Costs		FIM Name	Mechanical	Electrical	EMCS	Lighting	General	Equipment	Other	Total	
41052	07.00-DPW Water Meter AMR/AMI		\$ 1,939,808	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,939,808	
42046	09.03-DPW Street Lighting Conversion		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Base FIM Cost			\$ 1,939,808	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,939,808	
Construction Bonds										\$ 23,278	
			Percent of Subtotal (Total Base FIM Cost and Section A)							Total Construction Cost	\$ 1,963,086

C. Other Project Costs		Project Contingency	Performance Assurance (M&V)	Total Other Project Cost
		5.00%	4,074	\$ 98,154
		Lump	\$ 4,074	\$ 4,074
				\$ 102,228

D. Overhead Costs & Fees		Overhead	Profit (Fee)	Total Overhead Cost & Fee
		10.00%		\$ 196,309
		8.00%		\$ 157,047
				\$ 353,356

E. Total Guaranteed Construction & ESCO Services (A + B + C + D)		Total
		\$ 2,731,133

F. Non-Guaranteed Costs		BOLI Public Works Fee	Corporate Activity Tax	Total Non-Guaranteed Cost
		Lump	\$ -	\$ -
		%	0.57%	\$ 15,567
				\$ 15,567

G. Total Maximum Project Cost (E + F)		Total
		\$ 2,746,701



Table 4.2 - Facility Improvement Measure (FIM) Summary

Project: City of Sandy, Oregon
 Scenario: PDP-Combined
 Date: October 25, 2019

Facility Improvement Measures	FIM Description	Facility	Budget *	Annual Utility Savings	Annual Operational Savings **
07.00-DPW Water Meter AMR/AMI	Install a Mueller Hersey AMR/AMI Network and replace the existing meters with Mueller Hersey meters.	City of Sandy OR - Utilities	\$2,746,701	\$141,469	\$29,900
09.03-DPW Street Lighting Conversion	Convert existing Street Lighting fixtures to LED technology. Measure also includes the replacement of Option B and Option C wood poles with existing lantern style fixtures installed. All converted fixtures will have a wireless control node installed. All existing Option A fixtures will remain "as-is" and are excluded from this measure.	City of Sandy OR - Utilities	\$1,182,397	\$49,964	\$17,720
Totals			\$3,929,098	\$191,433	\$47,620

* Since design cost, audit cost, etc. are distributed among the FIMs, the total project cost will not go up or down by exactly the amounts shown here if a FIM or FIMs are dropped.
 ** For non recurring operational savings, the values are averaged over the 20 year length of this analysis.
 *** Incentives are contingent on final approval and issuance of an incentive offer from the Energy Trust of Oregon and are not guaranteed. Funds are shown for reference only.

Confidential and Proprietary

Section 5 Exhibits

This section of the Project Development Plan Report provides the schedules required in the Energy Services Performance Contract Phase 1, Part B. The following schedules are provided for use in developing the design-build Phase 2 and Phase 3 agreement. The following sections are included in this Section:

- Section 5.01: Schedule 1 – Equipment To Be Installed by ESCO,
- Section 5.02: Schedule 2 – Calculation of Energy Cost Savings Guarantee,
- Section 5.03: Schedule 3 – Compensation to ESCO,
- Section 5.04: Schedule 4 – Baseline Energy Consumption,
- Section 5.05: Schedule 5 – Savings Calculations Formulae,
- Section 5.06: Schedule 6 – Measurement and Verification Plan,
- Section 5.07: Draft Schedule 7 – Start-up and Commissioning,
- Section 5.08: Draft Schedule 8 – ESCO Training Responsibilities,
- Section 5.09: Draft Schedule 9 – City’s Maintenance Responsibilities, and
- Section 5.10: Draft Schedule 10 – Incentives and Grants



Schedule 1 – Equipment to Be Installed By ESCO

5.01 Schedule 1 – Equipment to Be Installed By ESCO

5.01.1 Basis Of Design Overview

PURPOSE

The equipment shown in Schedule 1 is intended to represent the basis of design. The basis of design establishes the minimum equipment specifications but does not represent the final equipment that will be installed. The actual equipment selection will be based on the Approved Construction Documents and/or Approved Submittal Packages.

5.01.2 Basis of Design Equipment

Table 5 below shows the summary information for the equipment being used as the basis of design.

TABLE 5 – BASIS OF DESIGN EQUIPMENT							
FIM #	Description	Manufacturer	Model	Output Capacity	Input Power	Efficiency	Quantity
07.00	Positive Displacement Water Meters	Mueller / Hersey	5/8" x 3/4" SSR 420 Bronze	0.5 to 20 GPM	N/A	+/- 1.5%	3,663
			1" SSR 452 Bronze	2 to 50 GPM	N/A	+/- 1.5%	98
			1-1/2" SSR FLG 562 DI	5 to 100 GPM	N/A	+/- 1.5%	45
			2" SSR FLG 572 DI	8 to 160 GPM	N/A	+/- 1.5%	63
	HB Mag Water Meters		3" HB MAG	0.5 to 550 GPM	N/A	+/- 0.4%	7
			4" HB MAG	0.75 to 880 GPM	N/A	+/- 0.4%	4
			6" HB MAG	1.5 to 2,200 GPM	N/A	+/- 0.4%	2
	Radio Nodes		MSW-NODE6-1P-05	1 W, 902-928 Mhz	N/A	N/A	3,882
	Through the Lid Antenna			N/A	N/A	N/A	82
	Fixed Network Repeaters		MSW-NODE4-AC	1W, 915 Mhz	1 to 5 Watts	N/A	6
Fixed Network Collectors	MS-MNC-V4-AC-AT1	1W, 915 Mhz		N/A	6		
09.03	Cobra Head Fixtures	Cree	RSWS-A-HT-3ME-5L-30K7-UL-XX-N-X2	4,105 Lumens	36 W	N/A	34
			RSWM-A-HT-3ME-9L-30K7-UL-XX-N-X4	7,750 Lumens	65 W	N/A	678
			RSWL-A-HT-3ME-14L-30K7-UL-XX-N-X2	9,250 Lumens	81 W	N/A	17
			RSWL-A-HT-3ME-14L-30K7-UL-XX-N-X6	13,400 Lumens	120 W	N/A	154
			RSWX-A-HT-3ME-24L-30K7-UL-XX-N-X4	17,800 Lumens	156 W	N/A	1
			RSWX-A-HT-3ME-32L-30K7-UL-XX-N-X4	21,000 Lumens	217 W	N/A	3
	LED Retrofit Kit	VEGA	P7-D-80-D30K-T3M-CXXXX-DIM	10,030 Lumens	80 W	N/A	6
			P7-D-150-D30K-T3M-CXXXX-DIM	18,432 Lumens	150 W	N/A	26
Replacement Poles	Shakespeare	BH20-01S5BJ9901	N/A	N/A	N/A	90*	

Schedule 1 – Equipment to Be Installed By ESCO

TABLE 5 – BASIS OF DESIGN EQUIPMENT							
FIM #	Description	Manufacturer	Model	Output Capacity	Input Power	Efficiency	Quantity
	Tenon Mount Bracket	Composite Structures	OPAR-3T-0.7	N/A	N/A	N/A	90*
	Wireless Control Node	Current powered by GE	ELWN0A8UBAAXXAD	Up to 1,000 W	2 W	N/A	979
	Gateway	GE	ELWG0CXGMA	915 Mhz	4 W	N/A	TBD

* 90 total poles and tenon mounting brackets are required, the City has ~50 on hand that will be transmitted to McKinstry

5.01.3 Basis of Design Equipment Cut Sheets

The following pages are specification sheets for the equipment identified in Table 6. Cutsheets are organized in the order they appear in Table 6, note that not all line items will have specification sheets.

Schedule 5 – Savings Calculations Formulae

5.05 Savings Calculations Formulae

5.05.1 SAVINGS CALCULATION FORMULAE; METHODOLOGY TO ADJUST BASELINE OVERVIEW

PURPOSE

Schedule 5 outlines the Estimated Energy Cost Avoided Savings, interactive effects between FIMs, Estimated Utility Cost Savings, and identifies calculations that will be used for baseline adjustments including impact of weather and hours of operation.

PHILOSOPHY

McKinstry will guarantee the performance of a measure based on the variables that are within the direct control of the design, specification, installation, commissioning, and ongoing reliable automatic operation. These variables are items such as lighting fixture wattage, meter accuracy, and other variables outlined in Section 3, Table 3.2 of the PDP report. For variables where McKinstry does not have direct control (such as burn hours associated with lighting or water consumption of end users), we have worked with the City personnel or identified other means to estimate the values of those variables.

THE PROJECT

The guaranteed utility cost avoided savings are shown in Section 5.05.2 of this Schedule 5. The utility cost avoided savings have been derived by calculating the estimated post retrofit energy/water consumption, subtracting them from the energy baselines, and application of a guarantee factor. Based upon the stipulated conditions and key performance indicators as outlined in Section 3, Table 3.2 (of the PDP report) and the utility rates as described in Schedule 6. The guarantee is for the units of energy saved only. McKinstry has no control over the utility rate fluctuations and therefore cannot guarantee the energy cost savings associated with this project.

5.05.2 ESTIMATED UTILITY COST AVOIDED SAVINGS

The table below outlines the annual Estimated Utility Cost Avoided Savings.

Facility Improvement Measures	kW	kWh	CCF Water	CCF Sewer	(\$)
07.00 Water Meter AMR/AMI	0	0	20,254	15,691	\$141,469
09.03 Street Lighting Conversion	0	336,870	0	0	\$49,964
	0	336,870	20,254	15,691	\$191,433

5.05.3 INTERACTIVE EFFECTS BETWEEN FIMs

Due to the nature of the proposed retrofits for this project there are not any interactive effects between the FIMs.

5.05.4 BASELINE ADJUSTMENTS

An ESPC is a partnership between the City and McKinstry. In order to ensure project success, City shall provide the following assurances and related information. Should any of the following items be modified during the guarantee period, a baseline adjustment will be made, as necessary, to account for the impacts to the estimated utility cost avoided savings.

1. Maintain all equipment per manufacturer’s recommendations and maintenance schedules provided in the Operations and Maintenance Manuals (O&M’s). The O&M’s will be provided to the City during the closeout phase of the Design-Build Agreement.
2. Maintain all sequence of operations and performance criteria related to installed systems as proposed and designed.
3. Maintain the operations and performance of equipment as outlined in Section 3, Table 3.2 of the PDP report.
4. Provide McKinstry with copies of actual monthly utility billing information on a quarterly basis for the duration of the guarantee period. This includes electric, water, and sewer. The utility information shall include all meters providing direct or indirect service to systems included in this project.
5. Provide McKinstry all internal sub-meter data, including well logs, irrigation meters, and electric meters, providing direct or indirect service to all systems included in this project.



CONFIDENTIAL AND PROPRIETARY

Schedule 5 – Savings Calculations Formulae

6. Provide McKinstry access to the lighting control system and the AMI network for the purpose of collecting and logging data over time as required for performance verification.
7. City shall notify McKinstry in writing with regards to any changes or alterations that will affect energy usage. This notification must be provided within two weeks of the change. This includes occupancy or use changes, scheduling changes, and sequence of operations changes, equipment additions, or system renovations.

Baseline adjustments will be required when changes to the key performance indicators are made during the guarantee period. The calculated impacts of these changes will be in the form of a baseline adjustment. The proposed operation will then be compared to the adjusted baseline to determine if the guaranteed utility cost avoided savings have been achieved. Should City completely remove any of the ESCO provided equipment from operation during the guarantee period, the guaranteed utility cost avoided savings will be deemed as achieved for those components.

5.05.5 CALCULATION FORMULAS

WATER AND SEWER REVENUE INCREASE

The increased water and sewer revenue is based on improved metering accuracy. During the PDP phase 70 existing meters were removed from service and bench tested. The results of the bench testing can be found in Appendix C.

The following calculations were used to determine the increased water revenue:

$$\text{Water revenue increase} = \text{Additional metered water (kGal)} \times \text{Water rate (\$/kGal)}.$$

$$\text{Additional metered water (kGal)} = \text{Baseline metered water (kGal)} \times (\text{Post retrofit meter accuracy} - \text{Baseline meter accuracy})$$

FLAT RATE STREET LIGHTING CONVERSION

The savings associated with the conversion of the flat rate street lighting fixtures to LED is a rate change savings. The savings are calculated by changing the rate in which each fixture is billed after the retrofit.

The following calculation was used to determine the energy savings:

$$\text{Street Lighting Savings} = \text{Flat rate per fixture before retrofit} - \text{Flat rate per fixture post retrofit}.$$

METERED STREET LIGHTING CONVERSION

The savings associated with the conversion of the flat rate street lighting fixtures to LED is a rate change savings. The savings are calculated by changing the rate in which each fixture is billed after the retrofit.

The following calculations were used to determine the energy savings:

$$\text{Street Lighting Savings} = \text{kWh savings} \times \text{\$/kWh}$$

$$\text{kWh savings} = \text{kWh baseline} - \text{kWh post retrofit}$$

$$\text{kWh baseline} = \text{Fixture quantity baseline} \times \text{Fixture kW baseline} \times \text{Hours of Operation}$$

$$\text{kWh post retrofit} = \text{Fixture quantity baseline} \times \text{Fixture kW post retrofit} \times \text{Hours of Operation}$$

$$\text{Fixture kW baseline} = \text{Baseline watts per fixture} / 1,000$$

$$\text{Fixture kW post retrofit} = \text{Post Retrofit watts per fixture} / 1,000$$



Schedule 6 – M&V Plan and Guaranteed Savings Provisions

5.06 Schedule 6 – M&V Plan and Guaranteed Savings Provisions

5.06.1 MEASUREMENT & VERIFICATION PLAN OVERVIEW

PURPOSE

Schedule 6 provides the Measurement & Verification (M&V) plan for the Project. Schedule 6 also establishes the terms and conditions for the Energy Savings Guarantee.

5.06.2 MEASUREMENT & VERIFICATION PLAN

5.06.2.1 Overview of FIMs Included in Project

FIM 07.00 – Water Meter AMR/AMI

A fixed network AMR/AMI will be installed within the City Limits. The existing water meters will be replaced with new water meters and radios for remote reading. The "savings" associated with this measure is increased revenue for the City from improved meter accuracy.

FIM 09.03 – Street Lighting Conversion

The existing high pressure sodium (HPS) and mercury vapor (MV) street lighting fixtures will be converted to light emitting diode (LED) technology. The pendant acorn style fixtures will remain and be retrofitted with a LED conversion kit. The remaining HPS and MV fixtures will be removed and new LED fixtures will be installed. The savings associated with this measure is based on reduced power consumption of the street lighting.

5.06.2.2 M&V Option Selected By FIM

FIM 07.00 – Water Meter AMR/AMI

McKinstry will utilize Option A-Retrofit Isolation with Key Parameter Measurement for this measure.

McKinstry does not guarantee the revenue increase from replacing the water meters. McKinstry will guarantee that the new water meters average accuracy is at least 98.5%.

The existing baseline water and sewer billing information will be used in conjunction with the pre-measurement meter accuracy data to determine the amount of water and sewer that should be billed to customers. During the PDP phase 80 existing water meters (73 of the 5/8"x3/4" and 7 of the 1" meters) were bench tested. An additional 80 existing meters will be removed and sent for 3rd party bench testing results. These measurements will constitute the scope of the pre-measurements.

160 new meters that align with the pre-measurement meter size, account type, and usage will be bench tested to confirm the post retrofit accuracy.

Measured Variables:

1. Average accuracy of existing water meters
2. Average accuracy of new water meters.

Stipulated Variables:

1. Water and sewer consumption of the end-users
2. Manual meter reading subcontract value
3. Meter annual O&M replacement cost savings.

FIM 09.03 –Street Lighting Conversion

McKinstry will utilize Option A-Retrofit Isolation with Key Parameter Measurement for this measure.

For the flat rate street lighting fixtures, McKinstry will review the first two months' PGE street lighting invoices following Substantial Completion of the project to confirm that the invoice accurately reflects the correct fixture quantities by lamp group and the correct tariff rates are being applied. Following each month's review, any discrepancies will be communicated to the City for delivery to PGE. Any corrections made by PGE will be verified with the second month's invoice review. Once McKinstry has verified that the second month's invoice is correct, McKinstry will calculate the monthly utility cost avoided savings (in dollars). This value will be compared to the baseline utility cost to determine the amount of utility cost avoided savings. The results of Cost Avoided Utility Bill Savings analysis will be presented in the Preliminary M&V Report. Once accepted by the City, the utility cost avoided savings will be carried forward for the remainder of the guarantee period.



Schedule 6 – M&V Plan and Guaranteed Savings Provisions

For the metered light fixtures. The post retrofit wattage will be measured using the new lighting control node to confirm the post retrofit wattage. The pre retrofit wattage will be stipulated per the information in the GIS audit that was completed in January 2019.

Measured Variables:

1. Quantity of existing flat rate fixture wattage.
2. Post Retrofit wattage of the metered fixtures.

Stipulated Variables:

1. Hours of Operation
2. Pre-retrofit wattage of the metered fixtures.

5.06.2.3 Measurements to Be Taken During M&V

For a complete breakdown of the key performance indicators, stipulated values, and timing of measurements see Section 3, Table 3.2 of the Project Development Plan Report.

Below is a summary table of the measurements to be taken. The final location and instruments to be used will be developed during the Design Phase of the Design-Build Agreement.

FIM Name	Key Performance Indicators	Pre Measurement	Post Measurement	Stipulated
07.00-Water Meter AMR/AMI	Existing Meter Accuracy (%)	✓		
	New Meter Accuracy (%)		✓	
	Total Annual Water Production			✓
09.06-Street Lighting Conversion	Astronomical Night Hrs/Yr (hrs)			✓
	Fixture Input Power by Fixture Type (W)	✓	✓	
	Number of Fixtures by Fixture Type (Qty)	✓	✓	

5.06.2.4 Quantities of Measurements to Be Taken During M&V

McKinstry proposes to measure a statistically relevant quantity of variables when the same component is being measured in quantities over 10. When determining the quantity to sample, the "Sampling for M&V: Reference Guide Version 1.0" published by Bonneville Power Administration in September 2011 will be used to determine the quantity of samples to be measured.

5.06.3 GUARANTEED SAVINGS CONTRACT PROVISIONS

5.06.3.1 Energy Savings Guarantee Term

The cost of the first year of Measurement & Verification is included in the Guaranteed Maximum Price. The cost of ongoing Measurement & Verification in years 2-20 is at the discretion of the City. McKinstry is prepared to continue the Energy Savings Guarantee for a period equal to the shortest of the following criteria:

1. City authorizes the continuation of the Energy Savings Guarantee Period via written direction and appropriate PO or contract extension that includes authorization for additional Measurement & Verification Fee. Authorization must be provided within 30 calendar days of the delivery of the previous periods Measurement & Verification Report. Should the City cancel and/or not renew the ongoing services, the Energy Savings Guarantee will also be terminated at the same point in time.
2. The term of any City obtained financing to pay for the associated work.
3. The expected useful life of the equipment installed and associated work.
4. The City is notified that the Owner's Responsibilities are not being met and does not take corrective action within 30 calendar days.

5.06.3.2 Energy Savings Guarantee Fee

The Table below outlines the Energy Savings Guarantee Fee for each of the first 5 years.

Energy Savings Guarantee Year	Energy Savings Guarantee Fee
Year 1	INCLUDED IN GMP
Year 2	\$6,066
Year 3	\$6,248



Schedule 6 – M&V Plan and Guaranteed Savings Provisions

Energy Savings Guarantee Year	Energy Savings Guarantee Fee
Year 4	\$6,435
Year 5	\$6,628
Future Years Beyond Year 5	To Be Negotiated Based on Current Rates & Scope

5.06.3.3 Bond Coverage Clarification

Subject to the requirements of ORS 279C.380, Contractor shall furnish performance and payment Bonds, each in an amount equal to the Construction Cost. The Bonds shall cover completion of the physical work per the approved design and shall not guarantee or warranty efficiency or system performance. The Bonds shall not cover any obligation of the contractor to ensure that the work as constructed will result in any particular level of energy savings. Any suit on the Bonds must be brought within the period of one (1) year after substantial completion, as defined in the contract; provided, however, that if this suit limitation is void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

CUSTOMER NAME: City of Sandy, Oregon

ATTACHMENT FOR THE SPECIFIC CONTRACT TITLED: ESPC Water Meter AMR/AMI and Street Lighting Conversion Project

By:

Printed Name: _____

Title:

Date: _____

5.06.3.4 FIM Specific Measurement & Verification Methodology

GUARANTEES

Schedule 5-Savings Calculations Formulae provides the specific energy consumption savings for each facility improvement measure and the guarantee that McKinstry will provide associated with that measure. Savings calculations are based upon both baseline operating characteristics and proposed operational criteria.

PROPOSED

The proposed operating criteria, including system performance and operational expenditures, which were used for savings calculations are provided in Section 3, Table 3.2 of the Project Development Plan. Systems must be operated per the proposed criteria to ensure energy cost savings are realized. McKinstry will provide the initial start-up, commissioning, and programming of the system to ensure that the systems operate per the proposed operating criteria. City acknowledges their responsibility to ensure that these criteria are maintained, and the associated energy savings are realized. Energy Savings Guarantees are predicated on City maintaining their responsibilities as provided below in Section 5.06.3.5 - Ongoing Owner Responsibilities.

REPORTING

Section 3, Table 3.2-M&V Plan Outline in the Project Development Plan provides the specific ongoing reporting tasks that McKinstry will perform to verify that the systems are performing as specified. The intent of the verification is to measure and verify leading indicators on which the energy savings are based. McKinstry has proposed measurement of these indicators as the Measurement & Verification for this project. The site-specific Measurement & Verification Program encompasses the following elements:

1. Closeout Commissioning Report: McKinstry will provide a closeout commissioning report. This report is released one month after all commissioning items are closed out. A major portion of the scope of this report consists of the tasks outlined under the "Post-Retrofit" stage in Section 3, Table 3.2 of the Project Development Plan.
2. First Year Reporting: The scope of this report consists of the tasks outlined under the "First Year" column of Section 3, Table 3.2 in the Project Development Plan. A Notice of Commencement of Energy Savings will be delivered 6-8 weeks after the Closeout Commissioning Report is delivered and approved by the City. The first report shall be provided no later than one year after the last date noted in the Notice of Commencement of Energy Savings. However, if additional phases of work are involved, a single Performance Assurance Report may be provided at regular interval(s) that reports across all relevant phases of work.
3. Years 2 – 5 Ongoing Reporting: Same as First Year Reporting. See also Sections 5.06.2.1 and Section 5.06.3.2 for additional details.

5.06.3.5 FIM Ongoing Owner Responsibilities

An ESPC is a partnership between City and McKinstry. To ensure project success, City shall provide the following services as part of Measurement & Verification. If these services are not provided, energy savings and associated guarantees will be modified to reflect the associated impact via baseline



CONFIDENTIAL AND PROPRIETARY

105

Schedule 6 – M&V Plan and Guaranteed Savings Provisions

adjustments.

1. Maintain all equipment per manufacturer’s recommendations and proposed maintenance schedule.
2. Maintain all sequence of operations and performance criteria related to installed systems as proposed and designed.
3. Provide other FIM specific ongoing responsibilities as provided in Section 3, Table 3.2 - M&V Plan Outline of the Project Development Plan.
4. Provide McKinstry with copies of actual monthly utility billing information on a minimum of a quarterly basis for the duration of the ongoing Energy Savings Guarantee Period. This includes electric, water, and sewer information. For this project, the ongoing Energy Savings Guarantee Period shall be one year, unless extended as outlined in Schedule 6.
5. Provide McKinstry all internal sub-meter data, including electric, water, and sewer meters, providing direct or indirect service to all equipment included in this project.
6. Provide McKinstry access to the lighting control system and the AMI network for the purpose of collecting and logging data over time as required for performance verification.
7. City shall notify McKinstry in writing with regards to any changes or alterations to the properties that will affect energy usage. This notification must be provided within two weeks of the change. This includes occupancy or use changes, load changes, scheduling changes, and sequence of operations changes, or equipment additions.

5.06.3.6 FIM Change of Use

If City chooses to make changes that effect the equipment installed in this project such as, set point adjustments, longer operating hours, or continuous equipment operation, City agrees that:

1. Savings deemed as met described above will continue to be deemed as met.
2. Additional cost of extended equipment operation is a cost of the change, not due to a failure of the McKinstry or their equipment.
3. McKinstry shall not be responsible for any increase in energy, maintenance, or any other costs incurred because of the extended equipment operation.
4. McKinstry at its option may make a baseline energy use adjustment to account for a change-of-use for any FIM. City will be allowed to review and approve any baseline adjustment, however City must in good faith approve said adjustments or provide specific changes to the variables used in the adjustment if rejecting the adjustment.

5.06.3.7 Utility Rates

Water and Sewer Rates

Water rates for the customer varies depending on the location (inside or outside city limits) as well as the meter/service size installed. Table 8d shows the water and sewer rates in effect February of 2019. The City is proposing increases to the water and sewer rates at the October 7th City Council meeting. The proposed increased rates are also shown in Table 8d. The proposed increased rates are the what has been used in the savings calculations.

Service Description	Service Type	February 2019 Rates (per kGal)	February 2019 Rates (per CCF)	October 2019 Proposed Rates (per kGal)	October 2019 Proposed Rates (per CCF)
Single Family	Water	\$3.56	\$2.66	\$3.73	\$2.79
	Sewer	\$3.37	\$2.52	\$6.67	\$4.99
Multifamily	Water	\$3.34	\$2.50	\$3.51	\$2.63
	Sewer	\$4.57	\$3.42	\$9.05	\$6.77
Commercial/Industrial	Water	\$3.06	\$2.29	\$3.21	\$2.40
	Sewer	\$4.57	\$3.42	\$9.05	\$6.77
Outside Single Family	Water	\$5.32	\$3.98	\$5.59	\$4.18
Outside Commercial/Industrial	Water	\$4.76	\$3.56	\$5.00	\$3.74
Laundry	Sewer	\$4.12	\$3.08	\$4.12	\$3.08
Metered	Sewer	\$4.18	\$3.13	\$4.18	\$3.13

Water and Sewer Rate Escalation

The performance period for this project is 20 years. To account for future rate changes, an escalation rate for water was used in the cash flow analysis. The escalation rate is calculated based on the October 7, 2019 proposed rates and proposed future increases. Table 8e shows the projected rates for future years.



Schedule 6 – M&V Plan and Guaranteed Savings Provisions

Rate Type	2019	2020	2021	2022	2023 - 2035
Water Consumption	Per Table 8d	5%	4%	3%	2%
Sewer Consumption	Per Table 8d	98%	16%	15%	10%

Street Lighting Rates

The rates used for both the flat rate street lighting and the metered lighting can be found in Appendix B of the Project Development Plan Report.

Floor Utility Rate

For calculation of savings, the utility rate shall never drop below the base utility rates described above. This shall be known as the Floor Utility Rate.

Rate Schedule Changes

When the utility company makes a change to the rate schedule, the new rate will be used for calculating savings realized during a given period. If a rate schedule change occurs partway through a period, an aggregate rate comprised of a weighted average between the old and the new rate will be used. The weighting will be based upon the portion of the period that each rate applied.

5.06.3.8 Non-Performance

In the event the equipment performance is not met, McKinstry accepts responsibility for additional energy used by the equipment because of the reduced performance. McKinstry may, at its option, execute any of the following options:

1. Repair or replace equipment as required to meet required performance. Should repair or replacement occur, McKinstry will also be responsible to cover the lost savings.
2. Make payments for the extra energy consumption to City. If McKinstry chooses the payment option, McKinstry reserves the right to select either an annual payment for the duration of the performance assurance period or a one-time lump-sum payment of the same amount. In either case, the payment will be calculated based upon the quantity of additional energy used and the Base Utility Rate as described above.



Draft Schedule 7 – Start-up & Commissioning

5.07 Draft Schedule 7 – Start-up & Commissioning

5.07.1 SYSTEM START-UP AND COMMISSIONING

PURPOSE

The DRAFT Schedule 7 details all start-up and commissioning services to be provided by ESCO along with a list of all normal operating parameters of the installed equipment.

DRAFT - GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Owner Program Requirements and Basis of Design.

1.02 GENERAL DESCRIPTION

- A. Commissioning is the process of verifying and validating that all building systems are installed and perform interactively according to the design intent; that systems are efficient and cost effective to operate and meet the Owner's operational needs; that the installation is adequately documented; and that Operators are adequately trained. It serves as a tool to minimize post-occupancy operational problems. It establishes testing and communication protocols in an effort to advance the building systems from installation to full dynamic operation and optimization.
- B. Commissioning Provider shall work with the Contractor and the Engineer to direct and oversee the Commissioning process.
 - 1. Utilize Autodesk BIM-360 collaboration software to maintain an observation log, equipment installation and start-up status.
 - 2. Contractors and subcontractors shall interface with the Cx process using BIM-360 web interface and/or an Apple iPad.
 - 3. Generate a commissioning plan including schedule.
 - 4. Integrate commissioning activities into the general construction schedule.
 - 5. Provide commissioning specifications
 - 6. Lead commissioning kick-off and coordination meetings.
 - 7. Verify that applicable equipment and systems are installed according to the contract documents, manufacturer's recommendation, and industry accepted minimum standards and that they receive adequate operational checkout by the installing contractors.
 - 8. Verify and document test, adjust and balance is complete and accurate.
 - 9. Verify and document proper performance of equipment and systems.
 - 10. Verify that operation and maintenance documentation left onsite is complete.
 - 11. Verify that the owner's operating personnel are adequately trained.
 - 12. Provide a Final Commissioning report.
- C. The Commissioning Plan details the commissioning process.
- D. The Commissioning process does not take away from or reduce the responsibility of the system designers or installing contractors to provide a finished and fully functional product as defined in the plans and specifications.



Draft Schedule 7 - Start-up & Commissioning

- E. This Section and other Sections of the specifications detail the Contractor's responsibilities relative to the Commissioning process. It expands on the Commissioning Plan, which covers the roles and responsibilities of all Parties. It also indicates the details of the Functional Performance Testing in which the Contractor must participate.

1.03 SUMMARY

- A. Section includes:
1. General requirements that apply to implementation of commissioning without regard to specific systems, assemblies, or components.
- B. Specific Equipment/systems to be utilized is "to be determined" (TBD) at this time. At minimum, the following general equipment/systems shall be commissioned:
1. HVAC system and controls.
 2. Lighting control system.
 3. Domestic hot water system.
 4. Metering.
- C. References:
1. ASHRAE Standard 202-2013, "The Commissioning Process for Building and Systems"
 2. ASHRAE Guideline 0-2013, "The Commissioning Process"
 3. ASHRAE Guideline 1.1-2007, "HVAC & R Technical Requirements for the Commissioning Process"
 4. ASHRAE Guideline 4-2008, "Preparation of Operating and Maintenance Documentation for HVAC&R Systems"
 5. American Society for Testing and Materials (ASTM)
 6. BCA - Building Commissioning Association
 7. Electronics Industry Association/Telecommunications Industry Association (EIA/TIA)
 8. International Building Code (IBC)
 9. Illuminating Engineering Society (IES)
 10. Institute of Electrical and Electronics Engineers (IEEE)
 11. International Electrical Testing Association (NETA)
 12. National Electrical Manufacturers Associates (NEMA)
 13. National Fire Protection Association (NFPA)
 14. NEBB - Procedural Standards for Building Systems Commissioning
 15. National Electric Code (NEC)
 16. NETA-ATS, Testing Standards
 17. Underwriters Laboratory, Inc. (UL)
 18. U.S. Green Building Council (USGBC)
 19. Washington State Energy Code (WSEC)
 20. Washington Sustainable Schools Protocol (WSSP) Fundamental Commissioning
 21. WSSP Enhanced Commissioning
- D. Related Sections:
1. Section 01 70 00 "Closeout Procedures".
 2. Section 20 00 00 "General Mechanical Requirements"
 3. Section 23 05 93 "Air System Testing and Balancing".
 4. Section 23 09 00 "Energy Management and Controls (DDC)"
 5. Section 23 09 10 "Addition to Existing Controls"



Draft Schedule 7 - Start-up & Commissioning

1.04 DEFINITIONS

1. Acceptance Phase: This is the phase of the project when the facility and its systems and equipment are inspected, tested, verified, and documented; and when most of the Functional Performance Testing and formal training occurs. This will generally occur after the Construction Phase is complete (start-up and checks have been accomplished). The Acceptance Phase typically begins with Substantial Completion and ends with Functional Completion.
2. A/E: General reference to the Architect/Engineer lead-design entity.
3. Building Automation System (BAS): The computer-based heating, ventilation and air-conditioning (HVAC) control or automation system.
4. BoD: Basis of Design. A document that records concepts, calculations, decisions, and product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.
5. Commissioning Plan: A document that outlines the organization, schedule, allocation of resources, and documentation requirements of the commissioning process.
6. Commissioning Provider (CP or CxP): The Party retained by the Owner who will oversee the Commissioning process as well as develop and stipulate many of the Commissioning requirements. They will also manage the Commissioning process, and ensure and validate that systems and equipment are designed, installed and tested to meet the Owner's requirements.
7. Commissioning Coordinator (CxC): This refers to the Individual within each of the various Parties that is designated the point of contact for that Party relative to Commissioning activities.
8. Commissioning Portal: This is an internet hub for the collaboration on Commissioning information. This portal will act as a hub for posting electronic information.
9. Commissioning Plan: The Commissioning Plan is a part of the Contract Documents and outlines many of responsibilities, procedures and tasks throughout the Commissioning process. It also describes the Functional Performance Tests that will be performed during the Acceptance Phase. The Contractor must have an understanding of commissioning process and the Contractor requirements within the plan.
10. Commissioning Team (CxT): The group of Parties involved in the commissioning process for any given system. The Commissioning Team will include a core group involved with all systems. This core group will typically include the CxP, the Construction Manager's Commissioning Coordinator (CM-CxC), the Owner's Commissioning Coordinator (O/O-CxC) and the General Contractor's Commissioning Coordinator (GC-CxC). On any given system, the Commissioning Team will also include the Commissioning Coordinator for the Contractor(s) responsible for the system or equipment.
11. Contractor: As used herein, 'Contractor' is a general reference to the installing Party and can therefore refer to the General Contractor, subcontractors, or vendors as inferred by its usage. The contractor generally refers to the person or entity who has agreed with the owner to perform work. Whereas the subcontractor is any person other than the contractor who agrees to furnish or furnishes any supplies, material, equipment, or services of any kind in connection with the work.

Draft Schedule 7 – Start-up & Commissioning

12. Construction Manager (CM): The Party retained by the Owner to represent the Owner and make decisions on the Owner's behalf throughout the design and construction process.
13. Construction Phase: Phase of the project during which the facility is constructed and/or systems and equipment are installed and started. Contractor and subcontractors complete the installation, complete start-up documentation, submit operation and maintenance information, establish trends, and perform any other applicable requirements to get systems started. Contractor and Vendors may also conduct equipment specific training. The Construction Phase will generally end upon completed start-up and test, adjust and balance of systems and equipment.
14. Deficiency: A condition in the installation or function of a component, piece of equipment or system that is not in compliance with the Contract Documents (that is, does not perform properly or is not complying with the design intent).
15. Engineer: Licensed Professional Engineer that designed and stamped the project reflecting his or her specific area of certification and expertise.
16. Factory Authorized Representative: An individual fully trained on the equipment and certified by the manufacturer to start-up equipment, perform the respective task, and make reports.
17. Factory Testing: Testing of equipment off-site at the manufacturer's facility. The testing may be witnessed by the members of the project team.
18. Factory Start-Up: Start-up of equipment by a Factory Authorized Representative.
19. Functional Performance Testing (FPT): The detailed and thorough testing of building systems and their interactions with building components and other building systems.
20. IAQ: Indoor Air Quality.
21. Installation, Operation and Maintenance (I,O&M) Documentation: This refers to Contractor-developed documentation designed to address the needs of facilities personnel and customized for the context of the specific facility and installation. The foundation of I,O&M Documentation is manufacturer's literature (including 'installation and operational and maintenance manual', parts lists, troubleshooting guides, etc.) as well as Contractor-developed instructions for start-up and shut-down, sequences, and other installation-specific information. I,O&M Documentation content is a subset of the Facility Manual, so it is common for only one or the other to be specified. All documentation shall be submitted to Owner in electronic format. See Division 1, Section 01785 for additional information.
22. Measurement and Verification (M&V): Period after commissioning where systems are trended and analyzed for proper operations and for hitting energy savings requirements. This is a separate service apart from commissioning.
23. Observation Log: This is a list that is maintained and updated by the commissioning provider that includes all Observation Items that relate to Commissioning activities and site observations requiring contractor action or response.
24. OPR: Owner's Project Requirements. A document that details the functional requirements of a project and the expectations of how it will be used and operated. These include Project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.
25. Opposite Season: The season opposite that when the majority of the testing occurs.
26. Installation verification: Preliminary testing accomplished during a scheduled system outage to verify system functionality prior to placing the system/equipment into preliminary service.



Draft Schedule 7 – Start-up & Commissioning

27. **Start-Up:** Refers to the quality control process whereby the Contractor verifies the proper installation of a device or piece of equipment, executes the manufacturer's starting procedures, completes the Start-Up Checklist, energizes the device, verifies that it is in proper working order and ready for dynamic testing, including Start-Up Tests.
28. **Systems, Subsystems, Equipment, and Components:** Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, equipment, and components.
29. **TAB:** Can refer to the test, adjust, and balance process or the Testing, Adjusting, and Balancing Contractor.
30. **Transition Period:** Time period after FPT completed to operate systems to purge the building and stabilize equipment operations. Time is also used by the CxP to test system performance.
31. **Trending:** Monitoring and recording a history of parameters typically using the BAS.
32. **Warranty Phase:** Includes the early occupancy of the building and can continue through the Warranty Period and at least into the opposite season from when it was initially tested.

1.05 COMMISSIONING TEAM

- A. **Members Appointed by Contractor(s):** Individuals, each having the authority to act on behalf of the entity he or she represents, explicitly organized to implement the commissioning process through coordinated action. The commissioning team shall consist of, but not be limited to, representatives of each Contractor, including Project superintendent and subcontractors, installers, suppliers, and specialists deemed appropriate by the CxP.
- B. **Members Appointed by Owner:**
 1. **CxP:** The designated person, company, or entity that plans, schedules, and coordinates the commissioning team to implement the commissioning process. Owner will engage the CxP under a separate contract.
 2. Representatives of the facility user and operation and maintenance personnel.
 3. Architect and engineering design professionals.

1.06 OWNER RESPONSIBILITIES

- A. Provide the OPR documentation to the CxP and Contractor for information and use.
- B. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities.
- C. Provide the BoD documentation, prepared by Architect and Engineer and approved by Owner, to the CxP and Contractor for use in developing the commissioning plan, systems manual, and operation and maintenance training plan.

1.07 COORDINATION MANAGEMENT PROTOCOL

- A. Coordination responsibilities and management protocols relative to Commissioning are initially defined below but will be refined and documented in the Commissioning Plan. Contractor shall have input in the protocols and all parties will commit to scheduled obligations. The CxP will record and distribute.
 1. **Submittals and Shop Drawings:** CM shall distribute the submittal log to the CxP. CxP shall review the submittal log and communicate which submittals need to be forwarded.



Draft Schedule 7 - Start-up & Commissioning

2. CxP Review Comments for Shop Drawings: An email reply is sent directly to the CM, A/E, and Owner by the CxP. The Owner and A/E will consider and incorporate at their discretion.
3. Deficiencies Identified by the Commissioning Provider: When the CxP identifies a deficiency the CxP shall make a good faith assessment of responsible parties. Those parties, as well as the Owner and CM shall be notified of the perceived deficiency. This communication is FOR INFORMATION ONLY and is not a direction to resolve the deficiency or to take any action. Contractor may elect to accept responsibility and resolve the deficiency. If the contractor contests either the deficiency or responsibility for that deficiency, Contractor shall respond to that deficiency indicating disagreement. If responsibility is not agreed to via the Commissioning dialogue, CM shall issue a work directive or RFI via the normal contractual channels to resolve the issue.
4. Requests for Meetings: In general request by the contractor for a meeting with the CxP shall be routed through Owner and CM who will then determine the validity. Note that every attempt should be made to deal with Commissioning issues at regularly scheduled Commissioning Meetings.
5. Control Sequence Modifications: CxP shall review the sequences during the design and submittal phases and address any known issues prior to the submittal approval. However, CxP and the contractor may incorporate minor changes to the sequence during testing when it is apparent that it improves the control of the equipment but does not fundamentally change the sequence, subject to the approval of the Owner and Engineer. Any and all changes must be thoroughly documented in the record documents.
6. Notification of Completion Milestones: Contractor shall notify the CxP, Owner and CM at least one week prior to any anticipated commissioning activity or commissioning milestone (such as FPT). The Owner or CM (as applicable) shall then coordinate the scheduling of the activity between all required parties. Notification shall be via email.
7. Observation Log: CxP maintains a categorized Observation Log which tracks the Commissioning related action items. Any party that is copied on an email resulting from an Observation Item posting may respond to it and contribute to the dialogue. CxP normally distributes a copy of the current open items on the action list with each site visit report.
8. Start-Up Checklist and Test Documents: Minimum start-up and documentation requirements are listed in the respective sections of the specifications for controls and mechanical commissioning. The Contractor then performs the reviewed and approved Start-Up procedures, completes the documentation and signs, and submits it. CxP subsequently spot checks the procedures and documentation during the FPT. They are then included in the Commissioning Record.

Draft Schedule 7 - Start-up & Commissioning

9. Functional Performance Test Documents: FPTs are witnessed and documented by the CxP but performed by the contractor. They are developed during the construction phase generally after completed submittals. CxP drafts and forwards the FPT procedures to the CM to be subsequently distributed to the subcontractors for review by the CM. Contractors review and comment on the procedures. Throughout the Commissioning process, CxP maintains a current record of the testing procedures and keeps the documentation up to date and accessible for all to access the current progress. Upon request, the CxP will provide an electronic copy of completed functional test procedures at any significant stage of Cx.
- B. Coordination Between Testing Parties
1. Factory Start-Ups: For many systems and equipment, Factory Start-Ups are specified. The Contractor is responsible for providing onsite support for the Factory representatives. These Factory Start-Ups will be reviewed and checked during FPT. All costs associated with the Factory Start-Ups are included with the bid unless otherwise noted. Contractor shall make notification of when Factory Start-Ups are occurring and coordinate these with witnessing Parties. The CxP and CxT members may witness Factory Start-Ups at their discretion. Aspects of FPT accomplished during the Factory Start-Ups may be accomplished and approved by the CxP if they meet the intent of the FPT. It is assumed that the Factory representatives budget the appropriate numbers of trips to support initial start-up, resolving equipment issues, TAB and training.
 2. Independent Testing Agencies and Special Inspectors: For systems where contractor's independent testing agencies or special inspectors are specified, the cost of this testing is included with the bid unless otherwise noted. Much of the testing performed by these independent agencies or special inspectors will cover aspects required in the Start-Up Procedures and FPTs.
 3. Contractor, testing agencies, and special inspectors shall coordinate with the CxP so that the CxP can support the testing (when necessary), witness the testing, and approve the applicable aspects of the FPTs. The Contractor should not start up equipment or systems without CxP approval.
 4. The CxP may independently spot-check work of the testing agencies or special inspector if the tests were not witnessed. However, it is not the intent for the CxP to re-accomplish testing by others that is specified in the construction specifications.
 5. Contractor is responsible for coordinating the efforts of testing agency or special inspector with that of the Cx process. Documentation shall be contiguous and seamless and duplication will be avoided. Testing agencies or special inspectors shall complete the documentation of the Cx process as required.

1.08 CONTRACTOR RESPONSIBILITIES

- A. Construction Phase: The following delineates the commissioning-related responsibilities of the Contractor (and their subcontractors) during the Construction Phase.
1. Include Commissioning requirements in price and plan for work.
 2. Designate a CxC from each major subcontractor with activities related to commissioning. These CxCs are to be the primary contacts for Commissioning activities.
 3. Attend Construction Phase Commissioning Kick Off Meeting. The CxC and Project Manager from each major subcontractor shall attend at a minimum.



Draft Schedule 7 - Start-up & Commissioning

4. The CxC shall attend all Commissioning progress meetings unless otherwise agreed to by the CxP.
5. Remedy any deficiencies identified throughout construction.
6. Submit Start-Up Procedures along with the manufacturer's application, installation and start-up information to the CxP for review prior to implementation.
7. TAB shall submit sample balancing forms for approval prior to starting work.
8. Contractor shall incorporate the Commissioning process into the construction schedule outlining generic Commissioning tasks with precedents or prerequisites to each task. These tasks will apply to many systems and the Contractor shall incorporate as such. Examples of enumerated tasks include:
 - a. Contractor preparation of the Training Plan.
 - b. Independent Testing Agency activities.
 - c. Contractor documentation of pipe pressure testing, flushing, and cleaning of applicable systems.
 - d. Documentation of the Start-Up Procedures for equipment and systems
 - e. TAB of applicable system
 - f. Training Events
 - g. Preparation of the O&M Manual content
 - h. FPT and Acceptance
 - i. Observation Period and System Optimization
 - j. Occupant or other Regulatory Agency testing or approval process
9. Coordinate the work of subcontractors, vendors, manufacturers, Testing Agencies and Special Inspectors provided with the bid, and ensure that they are informed of and are adhering to the requirements of the Commissioning process specified throughout the contract documents. Particular reference is made to providing the required O&M Documentation; submittal of training materials and documentation of that training; collaboration with the overall start-up and testing process; developing comprehensive integrated procedures for scheduling and task notification and documenting them in a common format; and electronic delivery requirements if applicable.
10. Provide assistance to the CxP in preparation for the specific FPT procedures. Contractors, subcontractors and vendors shall review the FPTs to ensure feasibility, safety and equipment protection and provide necessary written alarm limits to be used during the tests. Damage caused to equipment performed in accordance with the approved procedures that is the result of malfunctioning equipment or contract deficiencies, shall be the responsibility of the Contractor.
11. Thoroughly complete and inspect installation of systems and equipment as detailed throughout Contract Documents, as required by reference or industry standards, and as specifically indicated elsewhere in this section. The Contractor (and subcontractors) shall record, in the form of photographs, compliance to and/or deviation from IAQ standards.
12. Contractor shall notify the CxP at least 7 days in advance of any tests, start-ups, or training. CxP shall witness selected tests and start-ups. Notification shall be accompanied by a schedule showing the coordinated start date and task duration and all open prerequisites



Draft Schedule 7 - Start-up & Commissioning

13. Start-up, TAB of systems and equipment prior to verification and FPT by the CxP. Start-up procedures shall be in accordance with Contract Documents, reference or industry standards, and Commissioning specs. Provide skilled technicians who are qualified to do the work required. Provide factory trained/authorized technicians where required by the contract documents and stated in the applicable technical section. Generally start-up and testing shall proceed from device checkout, to component checkout, to system checkout, to inter-system checkout.
 14. Record start-up and testing procedures on start-up forms or checklists and certify that the systems and equipment have been started and/or tested in accordance with the requirements specified above. Each task or item shall be indicated with the party actually performing the task or procedure.
 15. Demonstrate the operation of all systems as specified.
 16. Certify that systems have been installed and are operating per Contract Documents and OEM prior to FPT and acceptance.
 17. Support/Assist in the building flush-out per Construction Indoor Air Quality, Section 01561. If the flush-out is not performed or is incomplete then the Contractor shall coordinate an air quality test from an approved Industrial Hygienist after construction is complete to verify the chemical air contaminants are below the specified limits.
 18. Maintain an updated set of Record Documentation as required by the Contract Documents.
 19. Conduct and document Equipment and Systems Training events as required by this Section and by applicable sections of the Specifications pertaining to each piece of equipment or system and general training requirements.
 20. Operate systems under direction of the CxP during FPT's and other acceptance testing.
- B. Acceptance Phase: The following delineates the commissioning-related responsibilities of the Contractor (and their subcontractors) during the Acceptance Phase.
1. Will work in conjunction with CxP in FPT and will generally include the following:
 - a. Operate and Manipulate systems and equipment to facilitate testing (as dictated in this section, relevant technical sections and the Commissioning Plan).
 - b. Operate and Manipulate BAS and other control systems to facilitate FPT (as dictated in this section, relevant technical sections and the Commissioning Plan).
 2. Correct any work not in accordance with Contract Documents.
 3. Maintain record documentation and update and resubmit it after Functional Completion.
 4. Compensate the Owner for additional CxP fees and expenses incurred to retest equipment and systems following testing failures.
 5. Monitor systems, equipment and areas throughout the Transition Period. Log and diagnose all alarms during this period. Maintain trends and logs of all critical parameters. Forward the logs and trends on a weekly basis throughout all Transition Periods.
- C. Warranty Phase: The following delineates the commissioning-related responsibilities of the Contractor (and their subcontractors) during the Warranty Phase.
1. Provide warranty service.
 2. Conduct BAS Sequence Training.



Draft Schedule 7 - Start-up & Commissioning

3. Respond to and document Warranty issues.
4. Participate as required in the opposite season testing.
5. Correct any deficiencies identified throughout the Warranty Phase.
6. Update record documentation to reflect any changes made throughout the Warranty Phase and resubmit final Record Drawings and data records at the close of the Warranty period.

1.09 DESIGN REVIEW

- A. The A/E provides the CxP a design development (DD) set for review; the drawing set should be near 100% complete. The CxP reviews the design set for inconsistencies, misses, OPR & BOD compliance, and opportunities for improvement. The CxP documents their comments and provides them to the A/E for incorporation into the design set.
- B. The A/E provides a Construction Document (CD) set that is near 50% and/or 90% complete to the CxP for review. The CxP reviews the set to verify previous comments have been addressed and to identify any further misses or opportunities. The CxP documents their comments and provides them to the A/E for incorporation into the construction set.

1.10 COMMISSIONING PLAN

- A. The CxP will develop the Commissioning Plan and its elements shall be included in the project schedule when approved by the owner or construction manager. The following provides an overview of the Commissioning tasks discussed in the Commissioning Plan.
 1. Commissioning program overview - Goals & Objectives, general project information, system to be commissioned
 2. Commissioning team - Team members, roles & responsibilities, communications & protocols, meetings and management
 3. Commissioning process activities - Document owner's project requirements, review the basis of designs, review submittals, development of system functional performance testing, verify system performance, report deficiencies & the resolution process, accepting the building system and training
 4. Commissioning schedule - A commissioning schedule will typically include start and end dates for the following.
 - a. Design set review
 - b. CD set review
 - c. Bid packages released
 - d. Notice to proceed
 - e. Groundbreaking
 - f. Distributed power available
 - g. Distributed water available
 - h. Start-up tests
 - i. TAB
 - j. Functional performance testing

1.11 OBSERVATION LOG

- A. CxP shall maintain an Observation Log (required information, identified deficiencies, work required, etc.) that relates to Commissioning. Each item shall be tracked with the initiator, the parties responsible, due date, the date of closure, and a description of the resolution. Each item shall be categorized for sorting and tracking and for documentation on applicable forms.
- B. CxP will disseminate this list as appropriate to keep all parties informed.



Draft Schedule 7 - Start-up & Commissioning

- C. All parties indicated as responsible for an action item shall respond. The preferred response method is via e-mail. Response with a plan of action (either repair or plan to resolve) is expected within 48 hours.

1.12 SUBMITTAL

- A. The CxP will provide appropriate contractors with a specific request for the type of submittal documentation the CxP requires to facilitate the commissioning work. These requests will be integrated into the normal submittal process and protocol of the construction team. At minimum, the request will include the manufacturer and model number, the manufacturer's printed installation and detailed start-up procedures, full sequences of operation, O&M data, performance data, any performance test procedures, control drawings and details of owner contracted tests. In addition, the installation and checkout materials that are actually shipped inside the equipment and the actual field checkout sheet forms to be used by the factory or field technicians shall be submitted to the Commissioning Provider. All documentation requested by the CxP will be included by the Subs in their O&M manual contributions.
- B. The Commissioning Provider will review and provide comment on submittals related to the commissioned equipment for conformance to the Contract Documents as it relates to the commissioning process, to the functional performance of the equipment and adequacy for developing test procedures. This review is intended primarily to aid in the development of functional testing procedures and only secondarily to verify compliance with equipment specifications. The Commissioning Provider will notify the CM, Owner Representative, or A/E as requested, of items missing or areas that are not in conformance with Contract Documents and which require resubmission.
- C. The CxP may request additional design narrative from the A/E and Controls Contractor, depending on the completeness of the design intent documentation and sequences provided with the Specifications.
- D. These submittals to the CxP do not constitute compliance for O&M manual documentation. The O&M manuals are the responsibility of the Contractor, though the CxP will review and approve them.
- E. Contractor's responsibility for deviations in submittals from requirements of the Contract Documents is not relieved by the Commissioning Provider's review.

PART 2 - PRODUCTS

2.01 INSTRUMENTATION

- A. All test instruments described in this section shall be acceptable for any portion of the commissioning process herein described. All instruments shall conform to the standards specified in the most recent edition of "NEBB Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems" in regard to accuracy and calibration status. Current calibration certificates must be available to the CxP if requested.
- B. Test instrument accuracy and resolution must match or exceed that of the system component being verified or calibrated.
- C. Test instruments must be used within guidelines as recommended by instrument manufacturer. All measuring methods must be appropriate to the instrument application and measurements must be repeatable under equivalent conditions.



Draft Schedule 7 - Start-up & Commissioning

- D. Standard Testing Instrumentation: Standard instrumentation normally used for performance assessment and diagnosis will be provided by Cx/Contractor. These include:
1. Electronic Manometer (for Air and Flow Hood)
 2. Electronic Manometer (for Water)
 3. Temperature Instruments
 4. Humidity Instruments
 5. CO2 Instrument
 6. Sound Meter
 7. Electronic Multimeter
 8. Tachometer
 9. Ultrasonic Flow Meter
 10. Thermal Infrared Camera
 11. Others as required

PART 3 - EXECUTION

3.01 INSTALLATION VERIFICATION

- A. All equipment, components, and devices applicable to installation verification must be installed, and the installation verification must be documented and approved. This includes installation, identification labeling, insulation, and all other requirements for placing systems into dynamic operation.
- B. Required submittal documentation shall be present and located convenient to testing area. Validate that all required documentation has been submitted and is per the contract requirements.
- C. Contractor shall provide the completed installation verification procedures at the time of testing. CxP shall review the installation verification procedure documentation and spot-check at the beginning of Start-Up.
- D. Contractor shall demonstrate that access is sufficient to perform required maintenance.
- E. System and equipment configurations shall be compared against the contract documents.

3.02 START-UP CHECKS

- A. All equipment, components, and devices applicable to the FPT must be started, and the Start-Up must be documented and approved. This includes completion of Start-Up Procedures, pressure testing (of equipment, duct and piping), flushing/cleaning, identification labeling, insulation, and all other requirements for placing systems into dynamic operation.
- B. Unless specifically agreed to by the Owner and CxP, all support systems shall be complete prior to FPT. For instance, an air handler will require that:
 1. The electrical system serving it is completed and tested.
 2. The hydronic systems serving it have been pressure tested, flushed, and functional performance tested.
 3. Balancing has been completed.
 4. The control systems have been started and calibrated.
 5. The CxP shall determine the optimal sequence of testing.
- C. Required submittal documentation shall be present and located convenient to testing area. Validate that all required documentation has been submitted and is per the contract requirements.



Draft Schedule 7 - Start-up & Commissioning

- D. Contractor shall provide the completed Start-Up Procedures at the time of testing. CxP shall review the Start-Up Procedure documentation and spot-check at the beginning of FPT.
- E. Contractor shall demonstrate that access is sufficient to perform required maintenance.
- F. BAS trends shall have been established as required in the documents. These shall generally be reviewed prior to or during FPT.
- G. Capacities and adjusted/balanced conditions as applicable shall be subject to review.
- H. Sequencing Verification: For applicable systems and equipment, all modes of operation shall be verified for proper sequencing.
- I. System and equipment configurations shall be compared against the contract documents.
- J. Verify Modes (such as heating and cooling) are coordinated and do not overlap or 'fight'.
- K. All adjusted, balanced, controlled systems shall be assessed to determine the optimal setting for the system as applicable. The optimal settings should be determined to establish reliable, efficient, safe and stable operation.
- L. BAS or Local Panel Dynamic Graphics: The graphic displays for all components, systems, and areas required to be represented by a graphic shall be checked for adequacy and accuracy. Furthermore, when setpoints or other parameters are required to be adjustable, CxP shall verify that they can be adjusted directly from the graphic screen.

3.03 START-UP PROCEDURE

- A. Purpose: The Commissioning process requires that the normal quality control processes involved with preparing systems and equipment for operation are performed to a high standard of care and are thoroughly documented. The required commissioning-related Start-Up Procedures involve nothing additional over that which would be done for a proper installation. These procedures shall be performed on all installed systems and equipment and no sampling strategy is used for the start-up process. The Commissioning process requires all Parties to collaborate to establish the optimal standard of care for starting systems and equipment. After the procedures are established, the Contractor performs them and documents them with the Start-up Procedures that are developed by the Contractor.
- B. Start-Up Procedures: The content of these Start-Up Procedures shall provide the minimally acceptable content in accordance with the OEM field quality control requirements. These procedures and protocols will normally be common across different manufacturers.
- C. Content of Start-Up Procedures: Start-Up Procedures shall generally include the following for each item of equipment or system (as applicable):
 - 1. Project-specific designation, location and service.
 - 2. Indication of the Party performing and documenting the Start-Up Procedure.
 - 3. Clear explanation of the inspection, test, measurement, and outcome with a Pass/Fail indication and a record of measure parameters.
 - 4. A Start-up Checklist item indicating that proper maintenance clearances have been maintained.
- D. Recording and Documentation of Factory Start-Up: Manufacturer's start-up protocols shall be executed and forms shall be completed by a qualified/authorized technician.
- E. Recording and Documentation of non-Factory Start-Up: The start-up tests and checklists shall be completed by a qualified technician.



Draft Schedule 7 - Start-up & Commissioning

- F. Commissioning Provider Review: CxP will review and spot-check procedures during FPT.
- G. Documentation Completion: The individual executing the start-up must complete the start-up and pre-functional documentation for any given equipment and acknowledge acceptability with the indication of who did the associated task.
- H. Sampling and Final Submission: All (100% of) systems are started and documented per the approved procedures and NO sampling strategy is used. Completed Start-up and pre-functional checklists for all pieces of equipment associated with independent systems shall be submitted to CxP prior to any associated FPT. Any outstanding item shall be clearly indicated and an associated Action Item must be entered to track resolution.
- I. Owner Access: Contractor shall allow access by Owner representatives to inspect the equipment and ensure its proper operation.

3.04 POINT TO POINT VERIFICATION

- A. A documented, comprehensive point to point and basic function testing in the field is required on all installations. Factory calibration and bench tests are not acceptable alternates to onsite field-testing.
- B. Point-to-point (or calibration verification) scope of work consists of testing from all end field devices (any device that provides an input signal to, or receives an output signal from the control hardware) through proper input/output to the graphic and operator interface. Testing must be complete, detailed and documented on approved point to point verification forms. Point-to-point should be performed with a separate device from the installation sensor - "ringing out a sensor" alone is not an acceptable level point-to-point testing. Point-to-point testing forms will include all point database requirements (i.e. alarm priority, paging, email, device range, etc.).
- C. Submittal of the control provider's forms for approval must take place 3 weeks prior to commencement of field testing. The point-to-point report summary documentation must include the signature of the test technicians and date completed. The technician's signature certifies that the system has been tested and is fully ready for the commissioning lead's performance verification testing.
- D. The CxP will select up to 10% of the readings from the BAS Reports and spot check them, as part of the time allocations for the various systems. If subsequent failures are found, the Controls contractor will be required to justify noted failures or re-verify and re-document the system.
- E. The maximum failure rate for this sample is 10%. The readings selected by the CxP may include air temperature, fluid temperature, air flow rate, liquid flow rate, differential pressure, gage pressure, relative humidity, CO concentration, CO2 concentration, and refrigerant monitoring.
- F. For all readings a deviation of more than the below between the verification reading and reported data shall be considered as failing the FPT



Draft Schedule 7 - Start-up & Commissioning

Sensor Application	Accepted BAS Tolerance
Airflow (Pressurized Spaces)	± 3 %
Airflow (Measuring Stations)	± 5 %
Airflow (Terminal)	± 10 %
Air Pressure Differential (Space)	± .001 in wg
Air Pressure (Ducts)	± .01 in wg
Air Relative Humidity	± 2 % RH
Air Temperature (Ducted)	± 1 deg F
Air Temperature (Room, AC unit, TU, etc.)	± 1 deg F
Air Temperature (Outside)	± 2 deg F
Air Wet Bulb Temperature Outdoor (Dew point)	± 2 deg F
Air Wet Bulb Temperature Indoor (Dew point)	± 1 deg F
Air Temperature Differential	± .25 deg F
Carbon Dioxide Monitor	± 50 PPM (of mid-range)
Carbon Monoxide Monitor	± 5 % (of mid-range)
Oxygen Monitor	± 5 %
Refrigerant Monitor	± 5 % (at 50 PPM)
Fluid Flow	± 5 %
Fluid Pressure	± 2 % (of full-scale)
Fluid Temperature	± 1 deg F
Electrical	± 5 %
Thermal Energy	± 5 %
Steam Flow	± 5 %
Steam Temperature	± 2 deg F
Vibration	± 5 %

≡Notes:

Accepted calibration tolerances will vary according to measured medium and application of sensors. The tolerances listed are standard accepted criteria.

Not all sensors listed above may be in the project.



Draft Schedule 7 - Start-up & Commissioning

3.05 TEST, ADJUST, AND BALANCE

- A. CxP shall review TAB reports.
- B. The CxP will select up to 10% of the readings from the Balancing Reports and spot check them, as part of the time allocations for the various systems. If subsequent failures are found, the TAB contractor will be required to justify noted failures or rebalance and re-document the system.
- C. The maximum failure rate for this sample is 10%. The readings selected by the CxP may include supply air diffuser readings (both minimum and maximum readings for variable air volume boxes), main and branch supply duct traverse readings, outside/return air flow readings, exhaust air flow readings, water flow readings, amp readings, and water pressure drop readings through coils, heat exchangers, and other hydronic elements.
- D. For all readings a deviation of more than 10% between the verification reading and reported data shall be considered as failing the FPT.

3.06 FUNCTIONAL PERFORMANCE TESTING

- A. Objectives and Scope:
 - 1. The objective of FPT is to demonstrate that each system is operating according to the documented design intent and Contract Documents. Functional testing facilitates bringing the systems from a state of substantial completion to full dynamic operation. Additionally, during the testing process, areas of deficient performance are identified and corrected, thus improving the function and operation of the systems.
 - 2. Each system shall be operated through all modes of operation (seasonal, occupied, unoccupied, warm-up, cool-down, normal [**and emergency power**], fire alarm, part- and full-load) where there is a specified system response. Verifying each sequence in the sequences of operation is required. Proper responses to such modes and conditions as power failure, freeze condition, no flow, equipment failure, etc. shall also be tested.
- B. Development of Test Procedures:
 - 1. CxP shall develop specific test procedures and forms to verify and document proper operation of each piece of equipment and system. Prior to execution, the CxP shall provide a copy of the test procedures to the Contractor who shall review the tests for feasibility, safety, equipment and warranty protection, and scope. The CxP will also submit the tests to the A/E for review.
 - 2. Contractor shall review the FPTs in detail and submit edits and comments to the CxP for possible incorporation.
 - 3. The purpose of any given specific FPT is to verify and document compliance with the stated criteria of acceptance, modes of operation and performance.
- C. Scheduling: After Contractors' notification that systems are ready for testing and submittal and review of all the required submittals has occurred, CM shall schedule the testing. To the extent practical, tests shall be scheduled to allow efficient and contiguous testing of inter-related systems and equipment.
- D. Phasing: Non-interdependent segments of the project testing can be phased. Phasing of this project will be determined as the project progresses.



Draft Schedule 7 - Start-up & Commissioning

- E. Participation: CxP will direct, witness and document FPTs performed by the contractor after Start-Up Procedure documentation of systems and equipment has been reviewed and accepted. CxP will orchestrate the execution of the FPTs unless otherwise specified. Contractor shall perform the FPTs as described in section 3.6 with manipulation of the systems or equipment, provision of supporting equipment or materials (lifts, ladders, specialty test equipment, safety equipment), and on-the-spot remediation of minor identified deficiencies whenever possible.
1. Required participating Parties shall be indicated in the individual FPT. Typically, multiple Parties are required for any given test, yet participation for any given Party is only required for the respective portion of the test for which the Party is responsible.
 2. Frequently, on multiple samples where a given party does not directly perform the test, the participation of that party will only be required for an initial quantity of systems/equipment. Whenever practical and at the discretion of the CxP with the contractor's full approval, the CxP will continue with the remaining portion of the sample without assistance from the Contractor(s) not directly performing the test. However, the Contractor is allowed to be present for any or all FPTs conducted.
 3. The required parties shall be available on-site throughout the testing of any given system for which they are required participants. Therefore, time for which they are not directly involved can be spent performing other work (typically addressing identified punch list items or failed tests).
 4. No party involved with the project is prohibited from participation in or witnessing of any tests. Any Contractor may elect to witness all tests on their systems even if their involvement is not directly required (for instance, BAS Vendor involvement is sometimes required on the first few of a sample and not on the entire sample).
 5. CxP will endeavor to coordinate effectively with the individual Contractors throughout FPT and minimize their required involvement.
- F. Completeness: All systems must be completed and ready for FPT. All start up, factory authorized field testing, independent testing agency tests, and TAB procedures must be complete and the control systems must be tested and started for the respective system or component.
- G. Test Documentation: CxP will witness and document the tests. CxP will record all test results on the forms developed for the testing. CxP will 'Pass' or 'Fail' the testing and record the date and time of the test. Deficiencies shall clearly be indicated when the test is failed. When all related testing is completed successfully, CxP shall recommend acceptance of the system or component. In the case of specialized testing, witness (at CxP's discretion) and review the testing reports prepared by the Contractor.
- H. After functional testing is completed all settings adjusted to test the equipment/system will be returned to normal.
- I. FPT Acceptance:
1. The Acceptance Criteria shall be as follows unless specifically indicated within applicable individual specification sections or test procedures. CxP may exercise professional judgment to relax requirements and pass tests and recommend approval by the Owner and Engineer when appropriate.



Draft Schedule 7 - Start-up & Commissioning

2. Accuracy/repeatability on sensing devices will be as specified for the device. CxP and TAB will use calibrated gages for independent validation and use judgment in passing or failing the devices. In many cases, the coordination of multiple related sensors is more important than absolute accuracy.
 3. HVAC sequence-related criteria will be as explicitly specified in the documents and as interpreted by the CxP.
 4. Testing may be deferred due to seasonal or operational constraints. In either situation the testing will be coordinated and be governed by the specifications for the project.
- J. FPT Deficiencies:
1. Non-Conformance: Non-conformance deficiencies identified during FPT shall be resolved as follows:
 - a. The CxP will record the results of the functional test. All deficiencies or non-conformance issues shall be noted as Observation Log Items and reported to the Owner and CM.
 - b. Corrections of identified minor deficiencies may be made during the tests at the discretion of the CxP. In such cases the deficiency will be noted on the FPT documents.
 - c. Every effort will be made by the CxP to expedite the testing process and minimize unnecessary delays, while not compromising the integrity of the procedures.
 - d. As tests progress and deficiencies are identified, the CxP will discuss the issue with the executing Contractor.
 - e. When there is no dispute on the deficiency and the Contractor accepts responsibility to correct it:
 - 1) The CxP shall document the deficiency along with the Contractor's response and intentions, and they go on to another test or sequence. A copy/email of the deficiency shall be generated and provided to the Contractor and CxP. The Contractor corrects the deficiency, completes the Action Item response certifying that the issue is resolved and/or the equipment is ready to be retested, and sends it back to the CxP.
 - 2) The CxP reschedules the test and the test is repeated.
 - f. If there is a dispute about a deficiency, regarding whether it is a deficiency and/or who is responsible:
 - 1) The deficiency shall be documented as an Observation Log Item with the Contractor's response and the Owner and CM will be notified. The CM will track this issue under the construction contract dispute resolution provisions.
 - 2) Final interpretive authority is with the A/E. Final acceptance authority is with the Owner and CM.
 - 3) The CxP documents the resolution to the Observation Log Item.
 - 4) Once the interpretation and resolution have been decided, the appropriate party corrects the deficiency, and responds to the Action Item indicating completion. The CxP reschedules the test and the test is repeated until satisfactory performance is achieved. CxP then closes the Action Item.

Draft Schedule 7 - Start-up & Commissioning

- K. **Max Failure Limit and Sample Percentages:** A Maximum Failure Limit is indicated along with the Sampling Percentages. The Max Failure Limit indicates the maximum percentage of the tested devices that may have any test that fails before an entirely new sample must be tested. This is based on the concept that if many failures occur, it is a result of inadequate start-up by the Contractor. When the maximum number of failures is reached, testing on that sample will be terminated and re-testing will be scheduled.
1. If no Max Failure Limit is indicated, all tested samples must pass (Max Failure Limit 0%).
 2. Where sample tests involve multiple systems (i.e., checking strainers on different hydronic systems) the Maximum Failure Limit will apply per system.
 3. The responsible Contractors shall reimburse the Owner for the CxP's cost of that sample test, and redo the start-up and TAB for the applicable devices/systems.
 4. All work necessitated by sample failures shall be at no cost to the Owner.
- L. **Failure Due to Manufacturer's Defects:** If 10% of identical pieces of equipment fail to perform to the Contract Documents (mechanically or substantively) due to manufacturing defect, all identical units may be considered unacceptable by the CM. (For the purposes of defining 'identical equipment' for this Section, size or capacity alone does not constitute a difference.) In case of failure due to manufacturer's defects, the Contractor shall provide the Owner with the following:
1. Manufacturer's response in writing as to the cause of the failure and proposed resolution.
 2. Manufacturer shall implement their proposed resolution on a representative sample of the product.
 3. The CM will determine whether a replacement of all identical units or a repair is acceptable.
 4. Upon acceptance, the manufacturer shall replace or repair all identical items at their expense and shall extend the warranty accordingly (if the original equipment warranty had begun).
 5. Manufacturer shall pay the costs of all retesting necessitated by the failure.

3.07 ACCEPTANCE

- A. The CxP notes each satisfactorily demonstrated function on the test form. Formal approval of the functional test is made later after review by the CxP and by the CM, if necessary. The CxP recommends acceptance of each test to the CM using a standard form. The CM gives final approval on each test using the same form, providing a signed copy to the CxP and the Contractor.

3.08 CLOSEOUT

- A. **Commissioning Report:**
1. A final summary report (about four to six pages, not including backup documentation) by the CxP will be provided to the CM, focusing on evaluating commissioning process issues and identifying areas where the process could be improved.
 2. All acquired documentation, logs, minutes, reports, deficiency lists, communications, findings, unresolved issues, etc., will be compiled in appendices and provided with the summary report.
 3. Installation verification, Start Up checklists, TAB, functional tests and monitoring reports will not be part of the final report, but will be stored in the Commissioning Record in the I,O&M manuals.



Draft Schedule 7 - Start-up & Commissioning

4. Off season testing and additional factory start-ups shall clearly be identified and the designated test period noted for contractor and owner coordination. See Warranty Period.
- B. Code Required Reports:
 1. Provide Contractor with all commissioning reports required by state and local authorities for compliance with governing energy code and mechanical code.

3.09 TRAINING

- A. The CM shall be responsible for training coordination and scheduling and ultimately for ensuring that training is completed.
 1. A training plan shall be generated and include the following elements:
 - a. Equipment
 - b. Intended audience
 - c. Location of training
 - d. Objectives
 - e. Subject covered (description, duration of discussion and special methods)
 - f. Instructor for each subject
 - g. Method of instruction (classroom lecture, manufacturer video, site walk through, actual operational demonstration, written handouts)
 2. The controls contractor shall attend any training in which their system interfaces (minimally mechanical)
 3. Recommended training
 - a. Use printed installed ad O&M manuals
 - b. Review of O&M - include start-up, all modes of operation, shutdown, seasonal changes, and emergency operations (emphasis should be given on safety and proper operations).
 - c. Health and safety issues
 - d. Warranties and guarantees
 - e. Common troubleshooting
 - f. Peculiarities
 - g. Overrides
- B. The CxP shall be responsible for overseeing and approving the content and adequacy of the training of Owner personnel for commissioned equipment.

3.10 INSTALLATION, OPERATION AND MAINTENANCE

- A. Prior to substantial completion, the CxP shall review the I,O&M manuals, documentation and redline as-builds for systems that were commissioned to verify compliance with the Specifications. The CxP will communicate deficiencies in the manuals to the CM or A/E, as requested.
- B. Upon a successful review of the corrections, the CxP recommends approval and acceptance of these sections of the O&M manuals to the CM or A/E.
- C. The CxP also reviews each equipment warranty and verifies that all requirements to keep the warranty valid are clearly stated. This work does not supersede the A/E's review of the I,O&M manuals according to the A/E's contract.



Draft Schedule 7 - Start-up & Commissioning

3.11 WARRANTY REVIEW

- A. During the warranty period, seasonal testing (tests delayed until weather conditions are closer to the system's design) shall be completed as part of this contract. The CxP shall coordinate this activity. Tests will be executed, documented and deficiencies corrected by the appropriate Subs, with facilities staff and the CxP witnessing. Any final adjustments to the I,O&M manuals and as-builds due to the testing will be made.

5.07.2 POST RETROFIT PERFORMANCE METRICS

See Section 3, Table 3.2 of the Project Development Plan for detailed performance metrics.



Draft Schedule 8 – ESCO Training Responsibilities

5.08 Draft Schedule 8 – ESCO Training Responsibilities

5.08.1 ESCO TRAINING RESPONSIBILITIES OVERVIEW

PURPOSE

The DRAFT Schedule 8 details all City staff training services to be provided by ESCO.

5.08.2 ESCO TRAINING PLAN

The ESCO Construction Manager (CM) will be responsible for training coordination and scheduling. The CM will develop a draft agenda for each item for which training will be performed and submit it to the City Project Manager for review and approval at least 2 weeks prior to scheduling of training. City Project Manager will be responsible to provide the list of City staff to be trained to CM upon approval of the draft agenda.

A training plan shall be generated and include the following elements:

1. Equipment
2. Intended audience
3. Location of training
4. Objectives
5. Subject covered (description, duration of discussion and special methods)
6. Instructor for each subject
7. Method of instruction (classroom lecture, manufacturer video, site walk through, actual operational demonstration, written handouts)

The controls contractor shall attend any training in which their system interfaces (minimally mechanical)

Recommended training materials:

1. Use printed installed ad O&M manuals
2. Review of O&M - include start-up, all modes of operation, shutdown, seasonal changes, and emergency operations (emphasis should be given on safety and proper operations).
3. Health and safety issues
4. Warranties and guarantees
5. Common troubleshooting
6. Peculiarities
7. Overrides



Draft Schedule 9 – City’s Maintenance Responsibilities

5.09 Draft Schedule 9 – City’s Maintenance Responsibilities

5.09.1 CITY’S MAINTENANCE RESPONSIBILITIES OVERVIEW

PURPOSE

The DRAFT Schedule 9 details the City’s operations and maintenance responsibilities during the Measurement & Verification and Energy Savings Guarantee Phase.

5.09.2 CITY’S MAINTENANCE RESPONSIBILITIES

ROUTINE OPERATIONS TASKS AND LIMITATIONS

Starting from the point of beneficial use of each piece of equipment by the City, ongoing operations and maintenance will be the City’s sole responsibility. The City is expected to follow the manufacturer’s recommended operations and maintenance requirements and provide detailed logs identifying any work performed, City staff member who performed the work, date of service, and other information required to maintain the equipment manufacturer’s warranty.

City can make changes to set points and schedules as needed. City is responsible to notify ESCO as outlined in Schedule 6. Changes from the values listed in Section 3, Table 3.2 of the Project Development Plan will impact the performance and energy consumption of the equipment and should be reported to ESCO.



Draft Schedule 10 – Incentives and Grants

5.10 Draft Schedule 10 – Incentives and Grants

5.10.1 INCENTIVES AND GRANTS OVERVIEW

PURPOSE

The DRAFT Schedule 10 details all incentives and grants being pursued by ESCO on behalf of City.

ESCO is not currently pursuing any grants for the Project. ESCO will pursue Energy Trust of Oregon (ETO) incentives on behalf of the City for the Street Lighting LED Conversion.

5.10.2 INCENTIVES

FIM #09.03-STREET LIGHTING LED CONVERSION

ESCO will submit the “Lighting Tool” to ETO on behalf of the City to obtain incentives. Incentives are a combination of prescriptive and custom. City will be responsible to sign all ETO paperwork and incentive offers prior to equipment being ordered. ESCO will coordinate any site visits required by ETO.

ESCO will submit the “As Built Lighting Tool” to ETO on behalf of the City. City will be responsible to sign ETO’s form 140L to obtain the incentives. City will receive incentives direct from ETO.

Estimated Incentive Amount for the Project is \$39,708.



Section 6 Appendix

Section 6.01 Appendix A – Street Lighting Audit



Section 6 Appendix

OPTION A & OPTION C STREET LIGHTING FIXTURES (NOT BEING RETROFIT)



Section 6 Appendix

OPTION B STREET LIGHTING FIXTURES



Section 6 Appendix

OPTION C AND DIRECT METERED STREET LIGHTING FIXTURES



Section 6 Appendix

LOCATIONS IDENTIFIED AS REQUIRING TREE TRIMMING



PROPRIETARY AND CONFIDENTIAL

Section 6 Appendix

Section 6.02 Appendix B – Portland General Electric Rate Tariffs



PROPRIETARY AND CONFIDENTIAL

137

POLE PRICES

Effective: 4/10/2019

PC	POLE DESCRIPTION	LENGTH	OWNER		PRICE
0	No Pole Charge, Distribution Pole	30-55	PGE	Standard	\$0.00
1	Wood, SLO	35 or less	PGE	Standard	\$5.32
2	Aluminum Post	30	PGE	Obsolete	\$6.52
3	Wood, SLO	40 to 55	PGE	Standard	\$6.32
6	Aluminum Davit	30	PGE	Custom	\$11.34
7	Steel, Painted Regular	25	Customer	Obsolete	\$0.34
8	Aluminum Regular	25	Customer	Custom	\$0.34
11	Wood, Painted Underground	35	PGE	Obsolete	\$5.32
12	Aluminum Davit	30	Customer	Custom	\$0.36
13	Aluminum Davit	25	Customer	Custom	\$0.34
14	Aluminum Double Davit	30	Customer	Custom	\$0.49
15	Ornamental w/Twin Luminaires	<i>(Maintenance Contracted at Customer's Expense)</i>			
16	Fiberglass, Anchor Base, Gray	35	PGE	Custom	\$13.12
17	Fiberglass, Anchor Base, Gray	35	Customer	Custom	\$0.42
18	Aluminum Davit	25	PGE	Custom	\$10.77
19	<i>Customer Owned & Maintained Pole</i>				
20	<i>Not Assigned</i>				
21	Steel, Unpainted, 6- foot Mast Arm	30	Customer	Obsolete	\$0.36
22	Wood, Painted SLO Pole	35	PGE	Obsolete	\$0.00
23	Wood, Laminated without Mast Arm	20	Customer	Obsolete	\$0.15
24	Wood, Laminated SLO Pole	20	PGE	Obsolete	\$4.83
25	Concrete, Ornamental Post	35 or less	Customer	Obsolete	\$0.34
26	Wood, Painted Underground	35	Customer	Obsolete	\$0.17
27	Aluminum Double Davit	30	PGE	Custom	\$15.47
28	Aluminum, Regular	35	PGE	Custom	\$12.80
29	Aluminum Davit	35	PGE	Custom	\$12.49
30	Concrete, Ornamental Post	35 or less	PGE	Obsolete	\$10.73
31	Aluminum, Regular, Post Top	16	PGE	Custom	\$6.52
32	Aluminum, Regular	25	PGE	Custom	\$10.73
33	Aluminum, Regular	30	PGE	Custom	\$11.52
34	Aluminum, Regular, Post Top	16	Customer	Custom	\$0.21
35	Fiberglass, Direct Bury with Shroud	18	PGE	Custom	\$7.65
36	Fiberglass, Direct Bury with Shroud	18	Customer	Custom	\$0.24
37	Steel, Painted Regular	25	PGE	Obsolete	\$10.73
38	Steel, Painted Regular	30	PGE	Obsolete	\$11.52
39	Wood, Laminated without Mast Arm	20	PGE	Obsolete	\$4.83
40	Steel, Unpainted 8-foot Mast Arm	35	Customer	Obsolete	\$0.40
41	Wood, Curved laminated	30	PGE	Obsolete	\$6.66
42	Steel, Unpainted 8-foot Davit Arm	35	Customer	Obsolete	\$0.40
43	Aluminum, Painted Ornamental	35	PGE	Custom	\$0.00
44	Aluminum, Painted Ornamental	35	Customer	Custom	\$0.97
45	Wood, Curved laminated	30	Customer	Obsolete	\$0.24
46	Wood, SLO	30 to 35	Customer	Standard	\$0.17
47	Wood, SLO	40 to 55	Customer	Standard	\$0.20
48	Aluminum, Regular	30	Customer	Custom	\$0.37
49	Steel, Painted Regular	30	Customer	Obsolete	\$0.37
51	Steel, Unpainted 6-foot Davit Arm	30	Customer	Obsolete	\$0.36
53	Aluminum Davit	35	Customer	Custom	\$0.40
54	Aluminum, Regular	35	Customer	Custom	\$0.41
55	Bronze Alloy GardCo	12	Customer	Obsolete	\$0.19
56	Aluminum, DOUBLE-ARM, Smooth, Ornamental, Westbrooke	18	PGE	Custom	\$14.15
57	Fiberglass, DB, Color may vary	20	PGE	Standard	\$4.83
58	Fiberglass, DB, Color may vary	20	Customer	Standard	\$0.15
59	Fiberglass, DB Bronze	30	PGE	Standard	\$7.48
60	Fiberglass, DB Bronze	30	Customer	Standard	\$0.24

POLE PRICES

Effective: 4/10/2019

PC	POLE DESCRIPTION	LENGTH	OWNER		PRICE
61	Fiberglass, DB Gray	30	PGE	Standard	\$8.11
62	Fiberglass, DB Gray	30	Customer	Standard	\$0.26
63	Fiberglass, HADCO, Fluted Ornamental Black, Post Top	14	PGE	Custom	\$11.18
64	Fiberglass, HADCO, Fluted Ornamental Black, Post Top	14	Customer	Custom	\$0.35
65	Aluminum, HADCO, Fluted Ornamental, Post Top	14	PGE	Custom	\$9.64
66	Aluminum, HADCO, Fluted Ornamental, Post Top	16	PGE	Custom	\$10.39
67	Fiberglass, Regular DB - Color may vary	22	PGE	Custom	\$4.24
68	Fiberglass, Regular DB - Color may vary	35	PGE	Custom	\$7.56
69	Aluminum, HADCO, Non-fluted Techtra Ornamental	18	PGE	Custom	\$19.96
70	Aluminum, Davit with 8-foot Arm	40	PGE	Custom	\$16.42
71	Aluminum, HADCO, Fluted Ornamental, Post Top	14	Customer	Custom	\$0.31
72	Aluminum, HADCO, Fluted Ornamental, Post Top	16	Customer	Custom	\$0.33
73	Fiberglass, Regular DB - Color may vary	22	Customer	Custom	\$0.13
74	Fiberglass, Regular DB - Color may vary	35	Customer	Custom	\$0.24
75	Aluminum, HADCO, Non-fluted Techtra Ornamental	18	Customer	Custom	\$0.63
76	Aluminum, Davit with 8-foot Arm	40	Customer	Custom	\$0.52
79	Aluminum, HADCO, Fluted Westbrooke	18	PGE	Custom	\$19.32
80	Aluminum, HADCO, Fluted Westbrooke	18	Customer	Custom	\$0.61
81	Aluminum, HADCO, Non-Fluted Ornamental, Westbrooke	18	PGE	Custom	\$19.91
82	Aluminum, HADCO, Non-Fluted Ornamental, Westbrooke	18	Customer	Custom	\$0.63
83	Fiberglass, Smooth	18	PGE	Custom	\$5.08
85	Fiberglass, ANCHOR BASE, COLOR MAY VARY, 25'	25	PGE	Custom	\$10.37
86	Fiberglass, ANCHOR BASE, COLOR MAY VARY, 30'	30	PGE	Custom	\$10.42
87	Aluminum, DOUBLE-ARM, Smooth, Ornamental, Westbrooke	18	Customer	Custom	\$0.45
88	Fiberglass, ANCHOR BASE, COLOR MAY VARY, 25'	25	Customer	Custom	\$0.33
89	Fiberglass, ANCHOR BASE, COLOR MAY VARY, 30'	30	Customer	Custom	\$0.33

Schedule 91 - effective for service on and after 01/01/2019

LAMP CODE	For Quotation Purposes Only			
	Effective Rates including PPC, EE and LIA			
	ESTIMATED LUMINAIRE RATE			
	OPTION - A	OPTION - B	OPTION - C	
NO LIGHT-CLEARANCE POLE ONLY	0	\$ -	\$ -	\$ -
165-W QL, SPECIAL ACORN, 12,000 LUMEN	1	0.00	8.25	7.39
85-W QL, SPECIAL ACORN FIXTURE 6,000 LUMEN	2	0.00	4.67	3.95
165-W QL, SPECIAL TECHTRA , 12,000 LUMEN	3	25.98	8.50	7.39
1000-L INCANDESCENT	5	0.00	0.00	3.82
2,500-L INCANDESCENT	6	0.00	0.00	7.65
28-W COMP FLOURESCENT BOLLARD	7	0.00	0.00	1.46
150W HPS COBRA MONGOOSE	9	16.81	9.71	7.65
250W HPS COBRA MONGOOSE	10	21.18	14.58	0.00
100W HPS HADCO TOWN & COUNTRY INDEPENDENCE	12	14.21	7.32	5.31
150W HPS HADCO TOWN & COUNTRY INDEPENDENCE	13	16.56	9.67	7.65
CUST MAINTAINED 100-W HPS ALL FIXTURE TYPES-9500-L	14	0.00	0.00	5.31
100-W HPS TWIN ORN-CORE COIL-BALLAST-9500-L	15	0.00	0.00	10.62
85W QL TWIN ORNAMENTAL ACORN, 9,600 LUMEN	18	0.00	0.00	7.89
100-W MV DELUXE WHITE COBRA HEAD-4000-L	19	0.00	0.00	4.81
55W QL ORNAMENTAL ACORN, 2,800 LUMEN	20	0.00	0.00	2.57
175-W MV DELUXE WHITE COBRA HEAD-7000-L (Obsolete)	21	13.10	9.65	8.13
250-W MV DELUXE WHITE COBRA HEAD-10000-L	22	0.00	0.00	11.59
400-W MV DELUXE WHITE COBRA HEAD-21000-L (Obsolete)	23	24.06	19.77	18.14
1000-W MV DELUXE WHITE COBRA HEAD-55000-L (Obsolete)	24	52.33	48.09	46.17
70-W HPS GE TOWN & COUNTRY POST TOP-6300-L	25	9.05	5.26	3.71
55W QL TWIN ORNAMENTAL ACORN, 5,600 LUMEN	26	0.00	0.00	5.19
70-W HPS FLOOD 6300-L	27	8.62	5.17	0.00
175-W MV TOWN & COUNTRY POST TOP-7000-L	29	13.48	9.69	8.13
100-W HPS FLOOD 9500L (Obsolete)	30	10.20	6.87	5.31
250-W HPS FLOOD 27500-L	31	18.68	14.24	12.59
400-W HPS FLOOD 50000-L	32	26.20	21.76	20.11
70-W HPS COBRA HEAD-6300-L	33	8.72	5.27	3.71
100-W HPS COBRA HEAD-9500-L	34	10.31	6.86	5.31
150-W HPS COBRA HEAD-16000-L	35	12.78	9.23	7.65
250-W HPS COBRA HEAD 27500-L	36	18.38	14.20	12.59
400-W HPS COBRA HEAD-50000-L	37	25.97	21.73	20.11
200-W HPS FLOOD 22000-L (Obsolete)	38	15.88	11.44	9.75
200-W HPS COBRA HEAD-22000-L	39	15.66	11.37	9.75
100-W HPS TOWN & COUNTRY POST TOP-9500-L	40	10.70	6.91	5.31
310-W HPS COBRA HEAD-POWER DOOR-37000-L	41	21.47	17.29	15.31
200-W HPS RECTANGULAR BOX-KIM ET-22000-L	43	0.00	0.00	9.75
140W COMPOSITE TWIN, 6,815 LUMEN	44	0.00	0.00	6.66
175W COMPOSITE TWIN, 9,815 LUMEN	45	0.00	0.00	8.13
175-W MV RECT ENC-SPACEGLOW TYPE-7000-L	46	14.10	9.75	8.13
750-W HPS FLOOD GE-110000-L	47	44.60	38.12	35.20
175-W MH COBRA HEAD-12000-L (Obsolete)	48	0.00	10.48	8.77
200-W HPS ACORN-HADCO VICTORIAN-22000-L	49	19.19	11.85	9.75
70-W HPS SPACE-GLO-6300-L	50	9.72	0.00	0.00
70-W HPS TWIN, ALL FIXTURE TYPES, OPTION C ONLY	51	0.00	0.00	7.39
70-W HPS, ALL FIXTURE TYPES, OPTION C ONLY	52	0.00	0.00	3.71
100-W HPS GARDCO HUB RECT-9500-L	53	0.00	7.26	5.31
150-W HPS GARDCO HUB RECT-16000-L	54	0.00	9.63	7.65
250-W HPS GARDCO HUB RECT-27500-L	55	0.00	0.00	12.59
400-W HPS GARDCO HUB RECT-50000-L	56	0.00	0.00	20.11
250-W METAL HALIDE-GARDCO HUB RECT-20500-L	58	0.00	13.51	12.22
400-W METAL HALIDE-GARDCO HUB RECT-40000-L	59	0.00	20.54	0.00
400-W METAL HALIDE FLOODLIGHT-40000-L	60	25.55	21.12	19.26
350W MH FLOOD	61	23.26	18.95	17.15
150W MH COBRA HEAD 10,000 LUMEN	62	12.94	9.24	7.39
100-W HPS HADCO CAPITOL ACORN	64	17.77	7.80	14.63

Schedule 91 - effective for service on and after 01/01/2019

	LAMP CODE	For Quotation Purposes Only		
		Effective Rates including PPC, EE and LIA		
		ESTIMATED LUMINAIRE RATE		
		OPTION - A	OPTION - B	OPTION - C
200-W HPS HADCO CAPITOL ACORN, 22,000 LUMEN	65	20.91	12.07	9.75
250-W HPS HADCO CAPITOL ACORN, 27,500 LUMEN	66	23.75	14.91	12.59
150-W HPS HADCO CAPITOL ACORN, 16,000 LUMEN	67	18.80	9.97	7.65
70-W/100-W HPS DUAL WATTAGE SET 100-W CORE COIL BALLAST	69	0.00	6.88	0.00
100-W/150-W HPS DUAL WATTAGE SET 100-W CORE COIL BALLAST	70	0.00	6.88	0.00
100-W/150-W HPS DUAL WATTAGE SET 150-W CORE COIL BALLAST	71	0.00	9.25	7.65
175-W MV GARDCO-FORM 5 POST TOP-42 IN-OCT-BRONZE-7000-L	72	0.00	0.00	8.13
70-W HPS GARDCO-FORM 5-42 IN-BRONZE AL-6300-L	73	0.00	0.00	3.71
70W HPS RECTANGULAR BOX, PGE APPROVED MANUFACTURERS ONLY	76	10.08	5.45	3.71
100-W HPS RECT BOX, 9,500 LUMEN	77	11.35	7.00	5.31
150-W HPS RECT BOX, 16000 LUMEN	78	14.02	9.39	7.65
70W HPS COBRA POWERDOOR, 6,300 LUMEN	79	0.00	5.04	3.71
70-W HPS ACORN TYPE-6300-L	80	12.50	5.75	0.00
100-W HPS ACORN TYPE-9500-L	81	14.06	7.31	5.31
150-W HPS ACORN TYPE-HADCO VICTORIAN-16000-L	82	16.40	9.66	7.65
250-W HPS ACORN TYPE-HADCO VICTORIAN-27500-L	83	22.04	14.70	12.59
100-W HPS COBRA HEAD-POWER DOOR-9500-L	84	0.00	6.62	5.31
150-W HPS COBRA HEAD-POWER DOOR-16000-L	85	0.00	8.98	7.65
250-W HPS COBRA HEAD-POWER DOOR-27500-L	86	0.00	13.93	12.59
400-W HPS COBRA HEAD-POWER DOOR-50000-L	87	0.00	21.49	20.11
250-W HPS ARCHITECTURAL-HADCO TECHTRA-27500-L	88	29.70	15.69	12.59
200-W HPS COBRA HEAD-POWER DOOR-22000-L	89	0.00	11.11	9.75
70-W HPS HADCO WESTBROOKE	90	15.09	6.06	0.00
100-W HPS HADCO WESTBROOKE	91	16.25	7.59	5.31
150-W HPS HADCO WESTBROOKE	92	23.28	10.54	7.65
200-W HPS HADCO WESTBROOKE	93	20.88	12.06	9.75
250-W HPS HADCO WESTBROOKE	94	24.32	14.98	12.59
150-W HPS ARCHITECTURAL BOX-KIM SBC-16000-L	95	0.00	10.11	7.65
250-W HPS ARCHITECTURAL BOX-KIM ARCHETYPE-27500-L	96	0.00	15.11	12.59
400-W HPS ARCHITECTURAL BOX-KIM ARCHETYPE-50000-L	97	0.00	22.30	20.11
100W HPS TECHTRA	98	22.82	8.46	5.31
150W HPS TECHTRA	99	24.93	10.77	7.65

Schedule 95 - effective for service on and after 4/10/2019

Effective Rates including PPC and LIA
For Quotation Purposes Only

	Rate sheet	LAMP CODE	ESTIMATED LUMINAIRE RATE		
			OPTION - A	OPTION - B	OPTION - C
E-18 Phase III (Estimated Net Rates)					
Luminaires:					
29W LED ROADWAY, 3,470 LUMENS, 3000K, 7 PIN	133	DD	3.50	1.60	0.00
35W-36W LED ROADWAY 2,530-2,665 LUMENS	100	AA	4.54	2.00	0.00
45W LED ROADWAY, 5,020 LUMENS, 3000K, 7 PIN	134	DE	4.35	2.24	0.00
47W-49W LED ROADWAY 3,391-3,730 LUMENS	101	AB	5.02	2.50	0.00
52W-53W LED ROADWAY 3,913-4,432 LUMENS	102	AC	5.49	2.61	0.00
66W-67W LED ROADWAY 5,220-5,921 LUMENS	103	AD	6.29	3.24	0.00
88W LED ROADWAY, 10,230 LUMENS, 3000K, 7 PIN	135	DF	6.89	4.11	0.00
100W-106W LED ROADWAY 8,195-8,766 LUMENS	104	AE	8.19	4.85	0.00
134W LED ROADWAY 14,200 LUMENS	105	AF	13.09	6.14	0.00
156W LED ROADWAY COBRA 16,300 LUMENS	106	AG	14.46	7.00	0.00
160W LED ROADWAY 18,700 LUMENS, 3000K, 7 PIN	132	DC	14.01	7.24	0.00
176W LED ROADWAY COBRA 18,300 LUMENS	107	AH	16.23	7.88	0.00
201W LED ROADWAY COBRA 21,400 LUMENS	108	AI	16.82	8.98	0.00
38W LED ACORN, 3000K, 7 PIN, GLOBELESS (HOLOPHANE)	137	DH	13.64	2.15	0.00
60W LED ACORN, 3000K, 7 PIN, GLOBELESS (YARMOUTH)	138	DI	15.30	3.15	0.00
75W LED ACORN, 3000K, 7 PIN, GLOBELESS, (YARMOUTH)	139	DJ	15.96	3.81	0.00
60W LED ACRYLIC WASHINGTON POSTLITE ACORN 5,489 LUMENS	110	BA	13.82	3.11	0.00
70W LED WASHINGTON POSTLITE FCO (GLOBELESS) 4,332 LUMENS	111	BB	15.17	3.52	0.00
70W LED HADCO ACORN 5,120 LUMENS	131	DB	18.93	3.61	0.00
36W LED WESTBROOKE (NON-FLARE) 3,369 LUMENS	127	CH	16.53	2.09	0.00
53W LED WESTBROOKE (NON-FLARE) 5,079 LUMENS	112	BC	18.60	2.87	0.00
69W LED WESTBROOKE (NON-FLARE) 6,661 LUMENS	113	BD	18.59	3.60	0.00
85W LED WESTBROOKE (NON-FLARE) 8,153 LUMENS	114	BE	19.86	4.25	0.00
136W LED WESTBROOKE (NON-FLARE) 12,687 LUMENS	115	BF	23.61	6.40	0.00
206W LED WESTBROOKE (NON-FLARE) 18,159 LUMENS	116	BG	26.27	9.33	0.00
36W LED WESTBROOKE (FLARE) 3,369 LUMENS	128	CI	16.90	2.10	0.00
53W LED WESTBROOKE (FLARE) 5,079 LUMENS	117	BH	19.16	2.88	0.00
69W LED WESTBROOKE (FLARE) 6,661 LUMENS	118	BI	20.08	3.64	0.00
85W LED WESTBROOKE (FLARE) 8,153 LUMENS	119	BJ	21.45	4.29	0.00
136W LED WESTBROOKE (FLARE) 12,687 LUMENS	120	CA	23.22	6.39	0.00
206W LED WESTBROOKE (FLARE) 18,159 LUMENS	121	CB	27.59	9.36	0.00
39W LED TOWN & COUNTRY POST-TOP 3,395 LUMENS (GLOBELESS)	129	CJ	8.97	2.29	0.00
72W LED TOWN & COUNTRY POST-TOP 4,409 LUMENS (GLOBELESS)	130	DA	9.69	3.53	0.00
85W LED FLOOD, DIRECTIONAL, BRONZE, 4000K, 7 PIN	144	ED	10.14	4.01	0.00
128W LED FLOOD, DIRECTIONAL, BRONZE, 4000K, 7 PIN	141	EA	12.60	5.87	0.00
184W LED FLOOD, DIRECTIONAL, BRONZE, 4000K, 7 PIN	142	EB	15.85	8.22	0.00
371W LED FLOOD, DIRECTIONAL, BRONZE, 4000K, 7 PIN	143	EC	28.57	16.26	0.00

SCHEDULE 32
SMALL NONRESIDENTIAL
STANDARD SERVICE

AVAILABLE

In all territory served by the Company.

APPLICABLE

To Small Nonresidential Customers. A Small Nonresidential Customer is a Customer that has not exceeded 30 kW more than once within the preceding 13 months, or with seven months or less of service has not exceeded 30 kW.

MONTHLY RATE

The sum of the following charges per Service Point (SP)*:

<u>Basic Charge</u>			
Single Phase Service	\$20.00		(I)
Three Phase Service	\$29.00		
<u>Transmission and Related Services Charge</u>			
	0.206	¢ per kWh	
<u>Distribution Charge</u>			
First 5,000 kWh	4.232	¢ per kWh	(I)
Over 5,000 kWh	1.487	¢ per kWh	(I)
<u>Energy Charge Options</u>			
Standard Service	5.842	¢ per kWh	(R)
or			
Time-of-Use (TOU) Portfolio (enrollment is necessary)			
On-Peak Period	10.378	¢ per kWh	
Mid-Peak Period	5.842	¢ per kWh	
Off-Peak Period	3.462	¢ per kWh	(R)

* See Schedule 100 for applicable adjustments.

Advice No. 18-26
Issued December 18, 2018
James F. Lobdell, Senior Vice President

Effective for service
on and after January 1, 2019

SCHEDULE 32 (Continued)

MONTHLY RATE (Continued)

Renewable Portfolio Options
(available upon enrollment in either
Energy Charge option)

Renewable Usage	0.800 ¢ per kWh in addition to Energy Charge
Renewable Fixed	\$2.50 per month per block
Renewable Solar	\$5.00 per unit in addition to Energy Charge
Renewable Habitat Adder(*)	\$2.50 per month

* Only Customers who are enrolled in a Renewable Portfolio Option (Renewable Usage or Renewable Fixed or Renewable Solar Portfolio Options described herein) may choose the Renewable Habitat Portfolio Option Adder.

RENEWABLE PORTFOLIO OPTIONS

The Customer will be charged for the Renewable Portfolio Option in addition to all other charges under this schedule for the term of enrollment in the Renewable Portfolio Option.

Renewable Fixed Option

The Company will purchase 200 kWhs of Renewable Energy Certificates (RECs) and/or renewable energy per block enrolled in the Fixed Renewable Option. All RECs purchased under this option will come from new renewable resources.

The Company will also place \$1.50 of the amount received from Customers enrolled in the Fixed Renewable Option in a new renewable resources development and demonstration fund (Renewable Development Fund or "RDF").

(C)

Amounts in the fund will be disbursed by the Company to public renewable resource demonstration projects or projects which commit to supply energy according to a contractually established timetable. The Company will report to the Commission annually by March 15th, pursuant to Order No. 16-156 on collections and disbursements for the preceding calendar year. The annual report will include a list of projects that received or were allocated RDF funding.

(C)

Amounts placed in the fund prior to July 6, 2016 will accrue interest at the Commission-authorized cost of capital until disbursed. Amounts placed in the fund on and after July 6, 2016 will accrue interest at the Commission-authorized rate for deferred accounts in amortization until disbursed. Amounts within the fund will be disbursed on a first-in-first-out basis. Once funds have been committed to projects, following the required OPUC review, they will be deemed disbursed. Funds deemed disbursed and still held by the Company, will accrue interest at the Commission authorized rate for deferred accounts in amortization.

(C)
(M)

Advice No. 17-04
Issued February 21, 2017
James F. Lobdell, Senior Vice President

Effective for service
on and after April 5, 2017

SCHEDULE 32 (Continued)

RENEWABLE PORTFOLIO OPTIONS (Continued)

Renewable Usage Option

All amounts received from the Customer under the Renewable Usage Option less administrative fees will be used to acquire RECs and/or renewable energy all of which will come from new renewable resources.

(M)

(M)

Renewable Solar Option

The Renewable Solar Option allows participating Customers, on a monthly basis, to support a PGE sponsored utility-scale solar power plant and its renewable attributes. The company will purchase 1 kW of the output and RECs from new solar facilities connected to the Company's electric grid per unit enrolled in the Renewable Solar Option.

In exchange for the Customer's payment of \$5.00 per unit per month, the Customer receives the environmental attributes from a local utility-scale solar project and the utility-scale solar project produces 1kW of energy which flows into the grid. Typical purchases may range to the equivalent of a 1, 2, or 3-kW solar panel array. At the end of each year, PGE will provide individual results to the Customer, reporting how much the Customer's energy usage was offset by solar power and the carbon footprint reduction benefit received. The RECs purchased by the Customer will be retired on behalf of the Customer.

Renewable Habitat Adder

The Company will distribute \$2.50 per month as received from each Customer enrolled in the Habitat Option to a nonprofit agency chosen by the Company who will use the funds for habitat restoration.

Energy or RECs supporting the Renewable Portfolio Options will be acquired by the Company such that by March 31 of the succeeding year, the Company will have received sufficient RECs or renewable energy to meet the purchases by Customers. For Renewable Fixed Option and Renewable Usage Option, the Company is not required to own renewables or to acquire energy from renewable resources simultaneously with Customer usage.

For purposes of these options, renewable resources include wind generation, solar, biomass, low impact hydro (as certified by the Low Impact Hydro Institute) and geothermal energy sources used to produce electric power. All RECs will be Green-e certified by the Western Renewable Energy Generation Information System (WREGIS) beginning January 1, 2009.

Advice No. 17-04
Issued February 21, 2017
James F. Lobdell, Senior Vice President

Effective for service
on and after April 5, 2017

SCHEDULE 32 (Continued)

TIME OF USE PORTFOLIO OPTION

On- and Off-Peak Hours*

Summer Months (begins May 1st of each year)

On-Peak	3:00 p.m. to 8:00 p.m. Monday-Friday
Mid-Peak	6:00 a.m. to 3:00 p.m. and 8:00 p.m. to 10:00 p.m. Monday-Friday; 6:00 a.m. to 10:00 p.m. Saturday
Off-Peak	10:00 p.m. to 6:00 a.m. all days; 6:00 a.m. to 10:00 p.m. Sunday and Holidays**

Winter Months (begins November 1st of each year)

On-Peak	6:00 a.m. to 10:00 a.m. and 5:00 p.m. to 8:00 p.m. Monday-Friday
Mid-Peak	10:00 a.m. to 5:00 p.m. and 8:00 p.m. to 10:00 p.m. Monday-Friday; 6:00 a.m. to 10:00 p.m. Saturday
Off-Peak	10:00 p.m. to 6:00 a.m. all days; 6:00 a.m. to 10:00 p.m. Sunday and Holidays**

* The time periods set forth above will begin and end one hour later for the period between the second Sunday in March and the first Sunday in April, and for the period between the last Sunday in October and the first Sunday in November. Customers with AMI meters will observe the regular daylight saving schedule.

** Holidays are New Year's Day (January 1), Memorial Day (last Monday in May), Independence Day (July 4), Labor Day (first Monday in September), Thanksgiving Day (fourth Thursday in November), and Christmas Day (December 25). If a holiday falls on Saturday, Friday is designated a TOU holiday. If a holiday falls on Sunday, the following Monday is designated a TOU holiday.

DAILY PRICE

The Daily Price, applicable with Direct Access Service, is available to those Customers who were served under Schedule 532 and subsequently returned to this schedule before meeting the minimum term requirement of Schedule 532. The Customer will be charged the Daily Price charge of this schedule until the term requirement of Schedule 532 is met.

The Daily Price will consist of:

- the Intercontinental Exchange Mid-Columbia Daily on- and off-peak Electricity Firm Price Index (ICE-Mid-C Firm Index)
- plus 0.307¢ per kWh for wheeling
- times a loss adjustment factor of 1.0685

(I)

If prices are not reported for a particular day or days, the average of the immediately preceding and following reported days' on- and off-peak prices will be used to determine the price for the non-reported period. Prices reported with no transaction volume or as "survey-based" will be considered reported.

Peak hours are between 6:00 a.m. and 10:00 p.m. Monday through Saturday. Off-peak hours are between 10:00 p.m. and 6:00 a.m. Monday through Saturday and all day Sunday.

Advice No. 17-34
Issued December 21, 2017
James F. Lobdell, Senior Vice President

Effective for service
on and after January 1, 2018

SCHEDULE 32 (Continued)

PLUG-IN ELECTRIC VEHICLE (EV) TOU OPTION

(M)

A small Nonresidential Customer wishing to charge EV's may do so either as part of an integrated service (Standard service or TOU service) or as a separately metered service billed under the TOU option. In such cases, the applicable Basic, Transmission and Related Services, and Distribution charges will apply to the separately metered service as will all other adjustments applied to this schedule. Renewable Portfolio Options are also available under this EV option.

If the Customer chooses separately metered service for EV charging, the service shall be used for the sole and exclusive purpose of all EV charging. The Customer, at its expense, will install all necessary and required equipment to accommodate the second metered service at the premises. Such service must be metered with a network meter as defined in Rule B (30) for the purpose of load research, and to collect and analyze data to characterize electric vehicle use in diverse geographic dynamics and evaluate the effectiveness of the charging station infrastructure.

ADJUSTMENTS

Service under this schedule is subject to adjustments approved by the Commission. Adjustments include those summarized in Schedule 100.

(M)

SPECIAL CONDITIONS

Pertaining to Direct Access

1. Customers served under this schedule may at any time notify the Company of their intent to choose Direct Access Service. Notification must conform to the requirements established in Rule K.
2. Customers must enroll to receive service under any portfolio option. Customers may initially enroll or make one portfolio change per year without incurring the Portfolio Enrollment Charge as specified in Schedule 300.

Pertaining to Renewable Portfolio Options

1. Service will become effective with the next regularly scheduled meter reading date provided the Customer has selected the option at least five days prior to their next scheduled meter read date. Absent the five-day notice, the change will become effective on the subsequent meter read date. Service may be terminated at the next regularly scheduled meter reading provided the Company has received notice two weeks prior to the meter read date. Absent the two-week notice, the termination will occur with the next subsequent meter reading date.

(M)

Advice No. 15-10
Issued April 3, 2015
James F. Lobdell, Senior Vice President

Effective for service
on and after August 3, 2015
147

SCHEDULE 32 (Continued)

SPECIAL CONDITIONS (Continued)

2. The Company, in its discretion, may accept enrollments on accounts that have a time payment agreement in effect, or have received two or more final disconnect notices. However, the Company will not accept enrollments on accounts that have been involuntarily disconnected in the last 12 months.
3. The Company will use reasonable efforts to acquire renewable energy, but does not guarantee the availability of renewable energy sources to serve Renewable Portfolio Options. The Company makes no representations as to the impact on the development of renewable resources or habitat restoration projects of Customer participation.
4. Enrollment into the Rewable Solar Option, the customer agrees to participate for no less than 12 months.

(M)

Pertaining to TOU Option

1. Service may be terminated at the next regularly scheduled meter reading provided the Company has received notice two weeks prior to the meter read date. Absent the two-week notice, the termination will occur with the next subsequent meter reading date.
2. Participation requires a one-year commitment by the Customer. Generally, if a Customer requests removal from the TOU Option, the Customer will be required to wait 12 months before re-enrolling. However, a Customer may request to reinstate service within 90 days of termination, in which case the Portfolio Enrollment Charge will be waived.
3. The Customer must take service at 120/240 volts or greater. Single phase 2-wire grounded service is not eligible because of special metering requirements.
4. The Customer must provide the Company access to the meter on a monthly basis.
5. At the end of the Customer's first 12 months of service under the TOU Option, the Company will calculate what the Customer would have paid under Standard Service and compare billings. If the Customer's Energy Charge billings (including all applicable supplemental adjustments) under the TOU Option exceeded the Standard Service Energy Charge (including all applicable supplemental adjustments) by more than 10%, the Company will issue the Customer a refund for the amount in excess of 10% either as a bill credit or refund check. No refund will be issued for Customers not meeting the 12-month requirement.

(M)

(M)

Advice No. 15-10
Issued April 3, 2015
James F. Lobdell, Senior Vice President

Effective for service
on and after August 3, 2015
148

SCHEDULE 32 (Concluded)

Pertaining to TOU Option (Continued)

6. The Company will recover lost revenue from the TOU Option through Schedule 105.
7. Billing will begin for any Customer on the next regularly scheduled meter reading date following the initialization meter reading made on a regularly scheduled meter reading date.
8. The Company may choose to offer promotional incentives, including but not limited to rebates or coupons.

(M)

TERM

Service will be for not less than one year or as otherwise provided under this schedule.

(M)

Advice No. 15-10
Issued April 3, 2015
James F. Lobdell, Senior Vice President

Effective for service
on and after August 3, 2015

E-18 Phase III (Estimated Net Rates)

Luminaires:

	Rate sheet	LAMP CODE	OPTION - A	OPTION - B	OPTION - C
			\$ -		\$ -
>5W - 10W LED - ENERGY USE ONLY (OPTION C)	145	EF	0.00	0.00	0.36
>10W - 15W LED - ENERGY USE ONLY (OPTION C)	146	EG	0.00	0.00	0.49
>15W - 20W LED - ENERGY USE ONLY (OPTION C)	147	EH	0.00	0.00	0.73
>20W - 25W LED - ENERGY USE ONLY (OPTION C)	148	EI	0.00	0.00	0.98
>26W - 30W LED - ENERGY USE ONLY (OPTION C)	149	EJ	0.00	0.00	1.10
>30W - 35W LED - ENERGY USE ONLY (OPTION C)	150	FA	0.00	0.00	1.36
>36W - 40W LED - ENERGY USE ONLY (OPTION C)	151	FB	0.00	0.00	1.59
>41W - 45W LED - ENERGY USE ONLY (OPTION C)	152	FC	0.00	0.00	1.85
>46W - 50W LED - ENERGY USE ONLY (OPTION C)	153	FD	0.00	0.00	1.97
>51W - 55W LED - ENERGY USE ONLY (OPTION C)	154	FE	0.00	0.00	2.21
>56W - 60W LED - ENERGY USE ONLY (OPTION C)	155	FF	0.00	0.00	2.47
>61W - 65W LED - ENERGY USE ONLY (OPTION C)	156	FG	0.00	0.00	2.57
>66W - 70W LED - ENERGY USE ONLY (OPTION C)	157	FH	0.00	0.00	2.84
>71W - 75W LED - ENERGY USE ONLY (OPTION C)	158	FI	0.00	0.00	3.09
>76W - 80W LED - ENERGY USE ONLY (OPTION C)	159	FJ	0.00	0.00	3.23
>81W - 85W LED - ENERGY USE ONLY (OPTION C)	160	GA	0.00	0.00	3.46
>86W - 90W LED - ENERGY USE ONLY (OPTION C)	161	GB	0.00	0.00	3.71
>91W - 95W LED - ENERGY USE ONLY (OPTION C)	162	GC	0.00	0.00	3.95
>96W - 100W LED - ENERGY USE ONLY (OPTION C)	163	GD	0.00	0.00	4.08
>101W - 110W LED - ENERGY USE ONLY (OPTION C)	164	GE	0.00	0.00	4.44
>111W - 120W LED - ENERGY USE ONLY (OPTION C)	165	GF	0.00	0.00	4.81
>121W - 130W LED - ENERGY USE ONLY (OPTION C)	166	GG	0.00	0.00	5.31
>131W - 140W LED - ENERGY USE ONLY (OPTION C)	167	GH	0.00	0.00	5.70
>141W - 150W LED - ENERGY USE ONLY (OPTION C)	168	GI	0.00	0.00	6.16
>151W - 160W LED - ENERGY USE ONLY (OPTION C)	169	GJ	0.00	0.00	6.54
>161W - 170W LED - ENERGY USE ONLY (OPTION C)	170	HA	0.00	0.00	6.90
>171W - 180W LED - ENERGY USE ONLY (OPTION C)	171	HB	0.00	0.00	7.39
>181W - 190W LED - ENERGY USE ONLY (OPTION C)	172	HC	0.00	0.00	7.75
>191W - 200W LED - ENERGY USE ONLY (OPTION C)	173	HD	0.00	0.00	8.26
>201W - 210W LED - ENERGY USE ONLY (OPTION C)	174	HE	0.00	0.00	8.64
>211W - 220W LED - ENERGY USE ONLY (OPTION C)	175	HF	0.00	0.00	9.02
>221W - 230W LED - ENERGY USE ONLY (OPTION C)	176	HG	0.00	0.00	9.52
>231W - 240W LED - ENERGY USE ONLY (OPTION C)	177	HH	0.00	0.00	9.89
>241W - 250W LED - ENERGY USE ONLY (OPTION C)	178	HI	0.00	0.00	10.38
>251W - 260W LED - ENERGY USE ONLY (OPTION C)	179	HJ	0.00	0.00	10.74
>261W - 270W LED - ENERGY USE ONLY (OPTION C)	180	IA	0.00	0.00	11.23
>271W - 280W LED - ENERGY USE ONLY (OPTION C)	181	IB	0.00	0.00	11.59
>281W - 290W LED - ENERGY USE ONLY (OPTION C)	182	IC	0.00	0.00	12.00
>291W - 300W LED - ENERGY USE ONLY (OPTION C)	183	ID	0.00	0.00	12.46

If Converting from Option B to Option C, \$1.38 circuit charge will be added to rate. If converting from schedule 91 Option C to Schedule 95 Option C, \$1.38 circuit charge will continue if they are currently being charged under Schedule 91.

Section 6 Appendix

Section 6.03 Appendix C – Water Meter Test Results



PROPRIETARY AND CONFIDENTIAL

Section 6 Appendix

5/8" X 3/4" POSITIVE DISPLACEMENT METERS

Test Dates: 7/23/2019

Ref #	Manufacturer	Serial #	Minimum Flow		Intermediate Flow		High Flow		Weighted Average Accuracy
			Rate (gpm)	Accuracy	Rate (gpm)	Accuracy	Rate (gpm)	Accuracy	
1	BADGER	17661478	0.25	96.0%	2.00	98.0%	15.00	99.0%	97.9%
2	BADGER	17177303	0.25	96.0%	2.00	100.0%	15.00	99.0%	99.3%
3	BADGER	17813520	0.25	91.0%	2.00	101.0%	15.00	100.0%	99.4%
4	BADGER	18965473	0.25	93.0%	2.00	101.0%	15.00	100.0%	99.7%
5	BADGER	18120663	0.25	95.0%	2.00	100.0%	15.00	100.0%	99.3%
6	BADGER	16850796	0.25	92.0%	2.00	100.0%	15.00	99.0%	98.7%
7	BADGER	29465975	0.25	95.0%	2.00	99.0%	15.00	99.0%	98.4%
8	BADGER	34476655	0.25	92.0%	2.00	100.0%	15.00	100.0%	98.8%
9	BADGER	34476762	0.25	95.0%	2.00	100.0%	15.00	99.0%	99.1%
10	BADGER	36029399	0.25	93.0%	2.00	99.0%	15.00	99.0%	98.1%
11	BADGER	41844317	0.25	97.0%	2.00	100.0%	15.00	100.0%	99.6%
12	BADGER	96866222	0.25	91.0%	2.00	86.0%	15.00	97.0%	88.4%
13	BADGER	29466025	0.25	90.0%	2.00	101.0%	15.00	99.0%	99.1%
14	BADGER	98541770	0.25	95.0%	2.00	97.0%	15.00	99.0%	97.0%
15	BADGER	33392389	0.25	97.0%	2.00	99.0%	15.00	100.0%	98.9%
16	BADGER	34137184	0.25	95.0%	2.00	100.0%	15.00	100.0%	99.3%
17	BADGER	34812581	0.25	100.0%	2.00	100.0%	15.00	100.0%	100.0%
18	BADGER	34812560	0.25	96.0%	2.00	99.0%	15.00	99.0%	98.6%
19	BADGER	34812600	0.25	97.0%	2.00	100.0%	15.00	100.0%	99.6%
20	BADGER	29466095	0.25	91.0%	2.00	101.0%	15.00	99.0%	99.2%
21	BADGER	33392443	0.25	90.0%	2.00	100.0%	15.00	99.0%	98.4%
22	BADGER	32809615	0.25	93.0%	2.00	100.0%	15.00	99.0%	98.8%
23	BADGER	18965506	0.25	96.0%	2.00	99.0%	15.00	100.0%	98.7%
24	BADGER	33392504	0.25	94.0%	2.00	99.0%	15.00	99.0%	98.3%
25	BADGER	98866235	0.25	95.0%	2.00	100.0%	15.00	100.0%	99.3%
26	BADGER	33259829	0.25	90.0%	2.00	101.0%	15.00	100.0%	99.2%
27	BADGER	29466021	0.25	89.0%	2.00	99.0%	15.00	99.0%	97.5%
28	BADGER	33453983	0.25	91.0%	2.00	100.0%	15.00	99.0%	98.5%
29	BADGER	33392497	0.25	90.0%	2.00	100.0%	15.00	99.0%	98.4%
30	BADGER	96866194	0.25	93.0%	2.00	99.0%	15.00	100.0%	98.3%
31	BADGER	98541846	0.25	91.0%	2.00	100.0%	15.00	99.0%	98.5%
32	BADGER	35453989	0.25	92.0%	2.00	100.0%	15.00	99.0%	98.7%
33	BADGER	35898856	0.25	93.0%	2.00	99.0%	15.00	99.0%	98.1%
34	BADGER	17661379	0.25	90.0%	2.00	100.0%	15.00	99.0%	98.4%
35	BADGER	33392502	0.25	95.0%	2.00	100.0%	15.00	99.0%	99.1%
36	BADGER	33392409	0.25	92.0%	2.00	101.0%	15.00	99.0%	99.4%
37	BADGER	33392366	0.25	92.0%	2.00	101.0%	15.00	99.0%	99.4%
38	BADGER	96866189	0.25	0.0%	2.00	100.0%	15.00	99.0%	84.9%
39	BADGER	33392365	0.25	91.0%	2.00	100.0%	15.00	98.0%	98.4%
40	BADGER	34137176	0.25	92.0%	2.00	99.0%	15.00	99.0%	98.0%
41	BADGER	32440653	0.25	90.0%	2.00	98.0%	15.00	99.0%	97.0%
42	BADGER	98541812	0.25	92.0%	2.00	101.0%	15.00	100.0%	99.5%
43	BADGER	34137252	0.25	80.0%	2.00	100.0%	15.00	100.0%	97.0%
44	BADGER	17177422	0.25	100.0%	2.00	99.0%	15.00	99.0%	99.2%
45	BADGER	34137175	0.25	94.0%	2.00	100.0%	15.00	99.0%	99.0%
46	BADGER	18965421	0.25	99.0%	2.00	94.0%	15.00	100.0%	95.7%
47	BADGER	18238817	0.25	80.0%	2.00	101.0%	15.00	100.0%	97.7%
48	BADGER	18120619	0.25	95.0%	2.00	100.0%	15.00	99.0%	99.1%
49	BADGER	18120244	0.25	94.0%	2.00	100.0%	15.00	100.0%	99.1%
50	BADGER	34137258	0.25	93.0%	2.00	100.0%	15.00	100.0%	99.0%
51	BADGER	18966883	0.25	95.0%	2.00	98.0%	15.00	100.0%	97.9%



PROPRIETARY AND CONFIDENTIAL

Section 6 Appendix

Ref #	Manufacturer	Serial #	Minimum Flow		Intermediate Flow		High Flow		Weighted Average Accuracy
			Rate (gpm)	Accuracy	Rate (gpm)	Accuracy	Rate (gpm)	Accuracy	
52	BADGER	33259828	0.25	97.0%	2.00	99.0%	15.00	99.0%	98.7%
53	BADGER	29466003	0.25	94.0%	2.00	100.0%	15.00	99.0%	99.0%
54	BADGER	34812663	0.25	95.0%	2.00	100.0%	15.00	100.0%	99.3%
55	BADGER	18120622	0.25	91.0%	2.00	100.0%	15.00	99.0%	98.5%
56	BADGER	18238808	0.25	0.0%	2.00	100.0%	15.00	100.0%	85.0%
57	HERSEY	18148634	0.25	0.0%	2.00	0.0%	15.00	0.0%	0.0%
58	NEPTUNE	7314414	0.25	70.0%	2.00	99.0%	15.00	99.0%	94.7%



Section 6 Appendix

1" POSITIVE DISPLACEMENT METERS

Test Dates: 7/23/2019

Ref #	Manufacturer	Serial #	Minimum Flow		Intermediate Flow		High Flow		Weighted Average Accuracy
			Rate (gpm)	Accuracy	Rate (gpm)	Accuracy	Rate (gpm)	Accuracy	
1	BADGER	16306572	0.75	95.0%	4.00	100.0%	40.00	100.0%	99.3%
2	BADGER	95821884	0.75	0.0%	4.00	0.0%	40.00	95.0%	14.3%
3	BADGER	98502962	0.75	93.0%	4.00	99.0%	40.00	99.0%	98.1%



PROPRIETARY AND CONFIDENTIAL

Section 6 Appendix

5/8" X 3/4" MULTI JET METERS

Test Dates: 7/23/2019

Ref #	Manufacturer	Serial #	Minimum Flow		Intermediate Flow		High Flow		Weighted Average Accuracy
			Rate (gpm)	Accuracy	Rate (gpm)	Accuracy	Rate (gpm)	Accuracy	
1	PRECISION	D184885	0.25	100.0%	1.00	60.0%	15.00	100.0%	72.0%
2	PRECISION	D184652	0.25	88.0%	1.00	98.0%	15.00	100.0%	96.8%
3	PRECISION	E602289	0.25	99.0%	1.00	99.0%	15.00	99.0%	99.0%
4	PRECISION	B046528	0.25	98.0%	1.00	99.0%	15.00	93.0%	98.0%
5	PRECISION	527347	0.25	99.0%	1.00	99.0%	15.00	101.0%	99.3%
6	PRECISION	527255	0.25	95.0%	1.00	99.0%	15.00	100.0%	98.6%
7	PRECISION	6528730	0.25	96.0%	1.00	98.0%	15.00	100.0%	98.0%
8	PRECISION	V307414	0.25	80.0%	1.00	99.0%	15.00	92.0%	95.1%
9	PRECISION	527253	0.25	80.0%	1.00	99.0%	15.00	100.0%	96.3%
10	PRECISION	527315	0.25	95.0%	1.00	99.0%	15.00	101.0%	98.7%
11	PRECISION	527280	0.25	99.0%	1.00	99.0%	15.00	101.0%	99.3%
12	PRECISION	N/A	0.25	94.0%	1.00	98.0%	15.00	97.0%	97.3%
13	PRECISION	5528761	0.25	99.0%	1.00	100.0%	15.00	100.0%	99.9%
14	PRECISION	527349	0.25	97.0%	1.00	98.0%	15.00	100.0%	98.2%
15	HAYS	7644985	0.25	98.0%	1.00	98.0%	15.00	100.0%	98.3%



PROPRIETARY AND CONFIDENTIAL

Section 6 Appendix

1" MULTI JET METERS

Test Dates: 7/23/2019

Ref #	Manufacturer	Serial #	Minimum Flow		Intermediate Flow		High Flow		Weighted Average Accuracy
			Rate (gpm)	Accuracy	Rate (gpm)	Accuracy	Rate (gpm)	Accuracy	
1	HAYS	18455067	0.75	90.0%	3.00	98.0%	35.00	100.0%	97.1%
2	HAYS	38708198	0.75	99.0%	3.00	99.0%	35.00	102.0%	99.5%
3	HAYS	18455063	0.75	99.0%	3.00	99.0%	35.00	100.0%	99.2%
4	HAYS	347100905	0.75	90.0%	3.00	90.0%	35.00	90.0%	90.0%



PROPRIETARY AND CONFIDENTIAL

**ENERGY SAVINGS PERFORMANCE CONTRACT
PHASE 2: DESIGN AND CONSTRUCTION CONTRACT**

THIS **PHASE 2 DESIGN AND CONSTRUCTION CONTRACT** ("Contract") is between the City of Sandy, a Municipal corporation of the State of Oregon, (the "City", "Owner" or "Agency"), and McKinstry Essention, LLC,

Company	<u>McKinstry Essention, LLC</u>
Address	<u>16790 NE Mason St, Suite 100</u>
City, State Zip	<u>Portland, Oregon 97230</u>
Phone	<u>503.331.0234</u>

(the "ESCO" or "Consultant") (collectively Owner and Consultant are referred to as the "Parties"). This Contract is for all Services related to completion of the project more particularly described as follows (the "Project"): City of Sandy ESPC Project.

- **PHASE 2 CONSTRUCTION:** Furnish, install and commission energy efficiency improvements, as selected by City. Commissioning includes verification of system installation and operating parameters, training of operations and maintenance staff, providing equipment manuals, documentation and all warranty information as further specified in this Contract.
- **PHASE 3 MEASUREMENT & VERIFICATION:** Examine the installed FIMs as outlined in Schedule 6 of this Contract, to monitor and verify the operation of energy-using systems post-installation.

The Project extents will include the entire jurisdictional boundary of the City of Sandy.

This Contract shall become effective on the date that the Contract is fully executed by the Parties (the "Effective Date"). No Services shall be performed prior to the Effective Date. The Contract shall expire, unless otherwise terminated or extended, on March 31, 2022. The expiration or termination of the Contract shall not extinguish, prejudice, or limit either Party's right to enforce this Contract with respect to any default or defect in performance that has not been cured.

1. RESERVED.
2. **SUBSTANTIAL COMPLETION DATE:** December 31, 2020 or 415 calendar days after the Effective date, whichever is later. See requirements in Sections 18.2 and 18.3 of this Design and Construction Contract.
3. **DEFINITIONS.** The key, defined terms used in this Design and Construction Contract, are set forth at Section 1 of Division 1 of the Energy Savings Performance Contract between Owner and ESCO, with an Effective Date of November 12, 2018 (the "ESPC"). Exhibit 1A to this Contract (the "General Conditions"), unless defined in the body of this Contract, and in this Section 3 as follows:
 - 3.1. "Construction Work" means the providing of all work, services, construction management services, materials, equipment, transportation, tools, labor and incidentals necessary to complete the construction work described in and reasonably inferred from this Contract and the other Contract Documents, including but not limited to the services and work set forth in Sections 5.5 and 5.6 of this Design and Construction Contract.
 - 3.2. "Contract Time" means any incremental period of time allowed under the Design and Construction Contract to complete any portion of the Work as reflected in the project schedule.
 - 3.3. "Design Services" means all the design services and construction administration services to be performed by ESCO under this Design and Construction Contract and the other Contract Documents, including but not limited to Sections 5.3 and 5.4 of this Design and Construction Contract.

- 3.4. "Project Management Services" means the project management services that ESCO shall perform throughout the period of performance of this Design and Construction Contract, as more particularly described in Section 5.2.
- 3.5. "Work" means all Project Management Services, Design Services and Construction Work to be performed by ESCO under this Design and Construction Contract and the other Contract Documents for the Project.
4. CONTRACT DOCUMENTS. The Contract Documents listed at Section 4.1 below are intended to reflect the Parties' understanding of their respective rights and responsibilities concerning completion of the Work under the Design and Construction Contract.
- 4.1. Interpretation. In the event of any inconsistency, conflict, or ambiguity between or among the Contract Documents, the Contract Documents shall take precedence in the following order:
- 4.1.1. All written modifications, amendments and change orders to this Design and Construction Contract that have been executed by Owner;
 - 4.1.2. This Design and Construction Contract;
 - 4.1.3. Exhibit 3A Project Development Plan;
 - 4.1.4. Exhibits, Schedules and Attachments to this Contract and not listed elsewhere in this paragraph 4.1;
 - 4.1.5. All design and construction drawings, Plans, Specifications and documents prepared and approved for the Project;
 - 4.1.6. Exhibit 1A to this Contract: 2012 State of Oregon General Terms and Conditions for Public Improvements;
 - 4.1.7. Exhibit 2A supplemental terms and conditions to this contract
 - 4.1.8. The executed ESPC between the City and ESCO;
 - 4.1.9. City of Sandy RFQ, dated 5-31-2017;
 - 4.1.10. ESCO's Proposal submitted in response to the RFQ.
- 4.2. Ownership of Work Product. All drawings, Plans, Specifications, audits, reports, and other work product required to be delivered by ESCO under this Contract ("Work Product") shall be the exclusive property of Owner. Owner and ESCO intend that such Work Product be deemed "work made for hire." If for any reason the Work Product is not deemed "work made for hire," ESCO hereby irrevocably assigns to Owner all of its right, title and interest in and to any and all of the Work Product, whether arising from copyright, or any state or federal intellectual property law or doctrine. ESCO shall execute such further documents and instruments as Owner may reasonably request in order to fully vest such rights in Owner. ESCO forever waives any and all rights relating to the Work Product, including without limitation, any and all rights arising under 17 USC §106A or any other rights of identification of authorship or rights of approval, restriction or limitation on use or subsequent modifications.
- 4.2.1. ESCO, notwithstanding other conditions in this Section 4.2, shall have, with Owner's written permission, the right to utilize such Work Product on its brochures or other literature that it may utilize for marketing and sales, and in addition, ESCO may use standard line drawings, specifications and calculations on other unrelated projects.
 - 4.2.2. If Owner reuses or modifies the Work Product without ESCO's involvement or prior written consent, Owner shall to the extent permitted by Article XI, Section 7, of the Oregon Constitution and by the Oregon Tort Claims Act, indemnify ESCO against liability for damage to person or property arising from Owner's reuse or modification of the Work Product, provided Owner shall not be required to indemnify ESCO for any such liability arising out of or related to the wrongful or negligent acts of ESCO or ESCO's employees or agents.

5. ESCO's SERVICES

5.1. General.

- 5.1.1. ESCO agrees that the Project Development Plan package of Energy related items, Non-Energy-related items and water-saving measures, and the Design Development Documents approved by ESCO and Owner shall serve as the basis for the Statement of Work for Phase II (as described in Section 3 of Division 1 of the ESPC.)
- 5.1.2. As the Design-Builder for this Project, ESCO shall perform all Project Management Services, Design Services, and Construction Work necessary to complete the Project.
- 5.1.3. ESCO shall obtain at its own expense and shall maintain in effect for the duration of this Design and Construction Contract, the insurance coverage required both in Section G of the General Conditions and in Section 9 of Division 1 of the ESPC. Before execution of this Design and Construction Contract, ESCO shall provide to Owner certificates of insurance in compliance with the foregoing insurance provisions that demonstrate the required coverages are in effect and are being maintained for this Design and Construction Contract and the Work and services to be performed hereunder. In addition, before execution of this Design and Construction Contract, ESCO shall provide to Owner a performance bond and a payment bond, as required by Section G.2 of the General Conditions, on the bond forms furnished by Owner. Each bond shall be in the total amount of those elements of the Contract Price for this Design and Construction Contract as provided in Section 9.1.5 below. In addition, before beginning work, ESCO and all subcontractors shall file and maintain with the Construction Contractors Board the public works bond required by ORS 279C.836.
- 5.1.4. ESCO shall perform all services in good faith and shall perform all Work as expeditiously as is consistent with the highest professional skill, care and the orderly progress of the Work.
- 5.1.5. Within four weeks after execution of this Design and Construction Contract, ESCO shall submit for Owner's approval a schedule for the performance of the Work, which shall include allowances for periods of time required for Owner's review and for approval by authorities having jurisdiction over the Project. Time limits established by this schedule and approved by Owner shall not, except for reasonable cause, be exceeded by ESCO or Owner.
- 5.1.6. ESCO shall in good faith provide Owner with the necessary technical documentation for, and assist Owner in the procurement of, any utility rebates or incentives (the "Rebates") and tax credits (the "Tax Credits") that may be available for the Project. ESCO estimates the Rebates to be approximately \$ 39,708 and the Tax Credits to be approximately \$ 0. ESCO does not guarantee the specific availability or amount of the Rebates or the Tax Credits.
- 5.1.7. Under Section 6.4.3 of Division 3 of the ESPC, ESCO was required to provide drafts of Schedules 7 through 10 as provided in that Section. As part of the services under this Design and Construction Contract, ESCO is required to provide final versions of Schedules 7 through 10. ESCO shall provide proposed final versions of these Schedules for review by Owner, and ESCO shall then revise these Schedules as required by Owner or as negotiated between Owner and ESCO to arrive at final versions of Schedules 7 through 10. More than one version of one or more of these Schedules may be necessary in arriving at accepted final versions.

5.2. Project Management.

- 5.2.1. ESCO shall appoint an ESCO staff person as ESCO's Project Manager (the "EPM", who is identified in Section 6.3 of this Design and Construction Contract) who shall be reasonably available to Owner and who shall have the expertise and experience required to supervise the Work for the duration of the Project. EPM shall communicate regularly with Owner and shall have the authority to act on behalf of ESCO. EPM shall consult with Owner's Project Manager (the "OPM") on issues affecting design, construction, Contract performance, Project budget and Project schedule. The EPM may be replaced during the Project only with Owner's prior consent, consistent with the provisions of Section 6.3 and 6.5 of this Design and Construction Contract.
- 5.2.2. The EPM shall provide Owner with a status report every two weeks, in which it shall detail the progress of the Work including the following: 1) whether the Work is proceeding according to schedule; 2) any

discrepancies, conflicts, or ambiguities in the Contract Documents that require resolution; 3) any safety issues related to the Work; 4) any other matter that requires resolution to ensure timely and cost-effective completion of the Work. At least four working days prior to the scheduled meeting, ESCO shall submit to Owner a list of identified matters that require resolution; any matters that require Owner approvals, and any proposed deviations from the Project schedule.

5.2.3. The EPM shall be the principal contact between the OPM and all other ESCO representatives, and shall be responsible for all communications, including, but not limited to, conveying concerns, decisions and formal actions.

5.2.4. The EPM shall be responsible for maintaining thorough and complete project records and regular briefings to the OPM. The EPM shall coordinate the flow of information, communications and formal Documents so that Owner has the material required for its timely action on policy, design and budget matters. The EPM shall be responsible for transmission of Documentation required for Owner approval or actions.

5.2.5. Owner's review of, and response to, any of the matters presented above shall not relieve ESCO of its obligation to complete the Work within the Contract Time and shall not be construed as relieving ESCO of its complete and exclusive control over the means, methods, sequences and techniques for executing the Work.

5.3. Design.

Based on approved design development documents generated by ESCO and approved by Owner during the Project Development Plan, and any further adjustments in the scope or quality of the Project or in the construction budget authorized by Owner, ESCO shall prepare, for approval by Owner, Construction Documents.

5.3.1. The Construction Documents must meet the following requirements:

5.3.1.1. ESCO shall provide Owner with catalog cuts of all specified items, if different than design development documents.

5.3.1.3. ESCO shall provide Owner with in-progress Construction Documents as needed. At the completion of construction ESCO shall supply record drawings, and a copy of the final Construction Documents on a re-usable data storage device.

5.3.1.4. ESCO shall prepare 95% Construction Documents for review and approval by Owner, and shall continue with preparation of the final Construction Documents, including final Specifications for all authorized Work on the Project and shall incorporate into those final Construction Documents the comments and any modifications or changes desired by Owner, and any modifications required for compliance with applicable codes, regulations or standards. The resulting final Construction Documents shall be a complete, fully coordinated, integrated package, suitable for use in the construction of the Project, without significant addenda or further clarifications required. All submittals shall be made in accordance with the schedule made pursuant to Section 5.1.5 of this Design and Construction Contract.

5.3.1.5. ESCO shall file all documents required for the approval of governmental authorities having jurisdiction over the Project and shall obtain all necessary permits. In the event that Owner files any permits, ESCO shall assist Owner as Owner deems necessary.

5.3.2. All specified items shall be standard, cataloged, manufactured items or "off the shelf" items. No custom items are to be designed or specified without prior written authorization of Owner.

5.3.3. Recycled products shall be used where they are economically feasible. ESCO shall give preference to materials and supplies manufactured from recycled materials under the following conditions:

- The recycled product is available;
- The recycled product meets applicable standards;
- The recycled product can be substituted for a comparable non-recycled product; and
- Recycled product costs do not exceed the costs of non-recycled products by more than five percent.

5.4. Construction Administration Services

- 5.4.1. GENERAL OFFICE CONSTRUCTION ADMINISTRATION. ESCO shall process submittals, including without limitation, the receipt, review and disposition of shop drawings, product data, and samples. ESCO shall transmit any such submittals to Owner, as required and shall maintain a master file of submittal communications. ESCO shall keep a submittal log on a spreadsheet program and send a copy to Owner on a weekly basis.
- 5.4.2. INSPECTION COORDINATION. ESCO shall provide all necessary services relating to independent inspection and testing required by applicable regulatory agencies, or relating to other inspection, testing and commissioning of the systems and equipment installed on the Project site as part of the Work, including but not limited to the following: administration and coordination of field testing as required by the Contract Documents; establishing the scope, standards, procedures and frequency of testing and inspections required to complete the Work; arranging for testing and inspections; notifying inspection and testing agencies of status of any portion of the Work requiring testing and inspection; evaluating compliance by testing and inspection agencies with required scope, standards, procedures and frequency; review of reports on inspections and tests; notifying Owner of any observed deficiencies in the Work; and, providing copies of all reports on inspections and tests, as well as copies of all correspondence from the testing and inspection agencies, to Owner.
- 5.4.3. SUPPLEMENTAL DOCUMENTS. ESCO shall prepare, reproduce and distribute supplemental drawings, Plans and Specifications and shall issue interpretations in response to requests for clarification by Owner's Project Manager, or subcontractors or as required by construction exigencies. ESCO shall be responsible for notifying the appropriate parties of Owner's instructions and of changed requirements and schedule revisions.
- 5.4.4. CHANGE REQUESTS/CHANGE ORDERS, requested or approved by Owner: ESCO shall prepare, reproduce and distribute drawings, Plans and Specifications to describe Work to be added, deleted or modified; review proposals from subcontractor(s) for reasonableness of quantities and costs of labor and materials; review and recommend changes in time for substantial completion; assist in preparation of Owner approved modifications to the GMP; coordinate communications, approvals and notifications. ESCO shall keep a log of all change requests on a spreadsheet program and copy Owner bi-weekly.
- 5.4.5. PAYMENT REVIEW. ESCO shall evaluate and certify applications for payment and shall maintain detailed records supporting approved applications for payment.
- 5.4.6. PROJECT CLOSEOUT. ESCO shall verify that work is sufficiently complete, in accordance with the Contract Documents, to permit occupancy or utilization for the use for which it is intended. ESCO shall coordinate a detailed inspection with Owner's representative to ensure that the Work conforms to the Contract Documents; to verify the list submitted by the subcontractor(s) of items to be completed or corrected; to determine the amounts to be withheld until final completion; to issue Certificates of Substantial Completion; to perform inspection(s) upon notice by the sub-contractor(s) that the Work is ready for final inspection and acceptance; to notify Owner and subcontractor(s) of deficiencies found in follow-up inspection(s), if any; to perform final inspection with Owner's representative to verify final completion of the Work; receipt and transmittal of warranties, affidavits, receipts, releases and waivers of lien or bonds indemnifying Owner against liens; and issuance of Final Certificate(s) for Payment.
- 5.4.7. RECORD DRAWINGS services consisting of: Preparation of record drawings on reproducible Mylar, and on a re-recordable compact disk, based on information furnished by the subcontractors including significant changes in the work made during construction including modifying the floor plan layouts including partitions, furniture and equipment; transmittal of record drawings and general data, appropriately identified, to Owner and others as directed.
- 5.4.8. WARRANTY REVIEW: Prior to the expiration of the warranties of any subcontractors and manufacturers, ESCO and Owner's representative shall perform a warranty review, documenting defects or deficiencies in installation, materials, systems and equipment and preparing instructions to the sub-contractors and manufacturers for correction of noted defects. The ESCO shall then follow through to ensure that each defect or deficiency is appropriately addressed and verify that an

appropriate remedy has been accomplished. ESCO shall copy Owner on the correspondence related to these warranty issues.

5.5. Construction Services/Construction Management Services.

- 5.5.1. ESCO shall have complete control over and charge of and shall be responsible for construction means, methods, techniques, sequences or procedures, and for safety precautions and programs in connection with the Work on the Project, so that, upon completion of the Work, the Project shall be structurally sound and shall be a complete, fully-functioning facility suitable for the purposes for which it is intended. These roles are solely ESCO's responsibility under this Design and Construction Contract. ESCO shall be fully responsible for maintaining construction schedules and for any failure to carry out the Work in accordance with the Contract Documents. ESCO shall be deemed to have complete control over or charge of acts or omissions of all ESCO employees, agents, design professionals, and construction managers, as well as subcontractors, or their agents or employees, or of any other persons performing portions of the Work.
- 5.5.2. ESCO's responsibility to provide the Work under this Design and Construction Contract commences with the execution of this Design and Construction Contract and terminates upon ESCO's satisfaction of all obligations set forth in this Design and Construction Contract including those enumerated at Section K of the General Conditions.
- 5.5.3. ESCO shall provide, supervise and administer all Construction Work as set forth in this Design and Construction Contract and in the General Conditions unless otherwise provided in this Design and Construction Contract.
- 5.5.4. ESCO's duties, responsibilities and limitations of authority shall not be modified or extended without the express written agreement of the Parties and any required governmental approvals.
- 5.5.5. Except as may otherwise be provided in the Contract Documents or when direct communications have otherwise been specifically authorized, Owner shall conduct all communications concerning the Work through the EPM.
- 5.5.6. Subject to the right to suspend and terminate as provided in Section J of the General Conditions, in no event shall the existence of any claim, dispute or question constitute a justification for either party to suspend or terminate the progress of the Work, and both parties, in such event, shall continue to prosecute the Work and perform under this Design and Construction Contract diligently, and shall resolve the claim, dispute or question by agreement, mediation or other means.
- 5.5.7. At its own expense, ESCO shall correct Construction Work which does not conform to the Construction Documents.
- 5.5.8. ESCO warrants to Owner that materials and equipment incorporated in the Construction Work shall be new unless otherwise specified, and that the Construction Work shall be of good quality, free from faults and defects, and in conformance with the Contract Documents.
- 5.5.9. ESCO shall pay all sales, consumer, use and similar taxes and shall secure and pay for building and other permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Construction Work which are either customarily secured or are legally required. Owner shall compensate ESCO for the actual cost of approved changes in the Construction Work including the cost of permits, licenses, inspections or governmental fees incurred by ESCO as a direct result of this Project; provided, however, ESCO shall pay all costs of this Project that result from errors or defects in the design of the Project or in the Construction Work.
- 5.5.10. ESCO shall give notices and comply with all laws, ordinances, rules, regulations and lawful orders of public authorities relating to the Project, including but not limited to compliance with energy conservation design measures required under ORS 276.900 to 276.915 and rules adopted pursuant to those statutes.
- 5.5.11. ESCO shall be responsible to Owner for the completion of the Construction Work in accordance with this Design and Construction Contract.
- 5.5.12. ESCO shall keep the premises free from accumulation of waste materials or rubbish caused by ESCO's operations. At the completion of the Construction Work, ESCO shall remove from and about the Project all of ESCO's tools, construction equipment, machinery, surplus materials, waste materials and rubbish.
- 5.5.13. ESCO shall prepare Change Orders for Owner's approval and execution and shall have authority to make

minor changes in the design of the Project and Construction Work consistent with the intent of the Project, not involving an adjustment in the contract sum or an extension of the contract time. ESCO shall promptly inform Owner, in writing, of all minor changes in the design of the Project and the Construction Work.

5.5.14. ESCO shall notify Owner when the Construction Work or an agreed upon portion thereof is substantially completed by issuing a Certificate of Substantial Completion which shall establish the date of Substantial Completion; state the responsibility for each party for security, maintenance, heat, utilities, and damage to the Construction Work; include a list of items to be completed or corrected; and fix the time within which ESCO shall complete items listed

5.5.15. ESCO shall maintain in good order at the site one true and correct record copy of the drawings, Plans, Specifications, product data, samples, shop drawings, Change Orders, and other modifications, marked currently to record changes made during construction. ESCO shall deliver in-progress construction drawings and Plans to Owner upon completion of the design and construction of the Project, and prior to final payment. The record copy shall be based solely on information obtained by ESCO.

5.5.16. For this Project, the provisions of ORS 279C.800 to 279C.870, relative to prevailing wage rates, shall apply, and ESCO and all subcontractors shall comply with the foregoing requirements and the related requirements as provided in Section C of the General Conditions, including but not limited to the requirement to pay workers at not less than the specified minimum hourly rate of wage. A copy of the Oregon Bureau of Labor and Industries (BOLI) current prevailing wage rate publication applicable to this Project is appended to this Contract as Exhibit 4A and is incorporated herein by this reference. The ESCO's signature on this Design and Construction Contract constitutes a certification that ESCO agrees to be bound by such rates and the foregoing requirements for this Project, and that ESCO agrees to the attachment of a copy of the applicable BOLI publication. (A copy of the then applicable BOLI prevailing wage rates was referenced in the RFP and incorporated into the RFP, together with the BOLI web address where they were available. However, Owner reserves the right to require that the applicable BOLI wage rates current at the time this Design and Construction Contract is executed be attached to, or incorporated into, and apply to this Design and Construction Contract).

5.5.17. Pursuant to ORS 279C.825, the PWR fee shall be paid by ESCO according to the administrative rules of the Commissioner of BOLI.

5.6. Protection of Persons and Property.

5.6.1. ESCO shall be fully responsible for initiating, maintaining and providing supervision of safety precautions and programs in connection with the Work.

5.6.2. ESCO shall take reasonable precautions to ensure the safety of and shall provide reasonable protection to prevent damage, injury or loss to: 1) employees of Owner present on the Work site, employees of ESCO, and other persons who may be affected; 2) the Work and materials and equipment to be incorporated therein; and 3) other property at, or adjacent to the Work site.

5.6.3. ESCO shall be liable for damage or loss to property at the site caused by the negligence of ESCO, or anyone directly or indirectly employed by ESCO, or by anyone for whose acts it may be liable, except to the extent that damage or loss is attributable to the acts or omissions of Owner. This subparagraph shall in no way affect the applicability or coverage of the insurance required in Section G of the General Conditions.

5.7. Additional Services. All other services requested by Owner and mutually agreed to in writing by Owner and ESCO, including, among others, changes in the Work exceeding that described in Section 5 of this Design and Construction Contract, shall constitute additional services and shall be paid by Owner as provided in the written agreement applicable thereto.

6. RELATIONSHIP BETWEEN AND ROLES OF THE PARTIES

6.1. Owner Responsibilities.

6.1.1. Owner shall designate a representative authorized to act on Owner's behalf with respect to the

Project. Owner or such authorized representative shall examine documents submitted by ESCO and shall promptly render decisions pertain thereto to avoid delay in the orderly progress of the Work. Owner shall render approval of formal submittals on the Schedule of Performance within ten (10) calendar days after receipt of submittals from ESCO.

- 6.1.2. If Owner observes or otherwise becomes aware of a fault or defect in the Work or nonconformity with the design documents or Construction Documents, Owner shall give prompt written notice thereof to ESCO.
- 6.1.3. Owner shall furnish required information and services and shall promptly render decisions pertaining thereto to avoid delay in the orderly progress of the design and construction.
- 6.1.4. No approval or acceptance of Construction Documents or changes herein given by or on behalf of Owner shall establish any warranty or representation on the part of Owner that such Construction Documents or changes are technically sound, complete or correct.
- 6.1.5. Owner shall communicate with the design professionals only through ESCO's Representative except in matters of public safety.

6.2. Independent Contractor. ESCO is an independent contractor and not an officer, employee, or agent of Owner as those terms are used in ORS 30.265.

6.3. ESCO's Key Personnel. ESCO's project staff shall consist of the following personnel. ESCO's personnel identified herein shall be considered unique, key personnel, and shall not be replaced during the Project without the written permission of Owner, which shall not be unreasonably withheld.

6.3.1. Michael S. Johnson, PE shall be the ESCO's Principal-in-Charge

6.3.2. ESCO shall assign the EPM upon contract execution. EPM shall participate in all meetings throughout the Project term.

6.3.3. The design professional for the street lighting conversion, namely Robert E. Rippee, PE, shall be ESCO's design professional that shall provide all design services provided for in this Design and Construction Contract for street lighting.

6.4. Design Builder's Consultants/Subcontractors. ESCO shall be assisted by the consultants and/ or subcontractors set forth in Exhibit 5A hereto. The Parties acknowledge and agree that the consultants have been reviewed and approved by Owner, prior to the execution of this Design and Construction Contract.

6.5. Replacement of ESCO's Project Team. If ESCO intends to substitute key personnel, consultants, or subcontractors, a request must be given to Owner at least 10 days prior to the intended time of substitution. When Owner has approved replacements, ESCO shall provide a transition period of at least 10 working days during which the original and replacement personnel shall be working on the Project concurrently, if feasible. Once a replacement for any key personnel, consultants or subcontractors is authorized, further replacement shall not occur without the written permission of Owner.

7. PAYMENT OF COMPENSATION

Owner shall make payments to ESCO for those portions of the Contract Price (as defined in Section 9 herein) pertaining to the Construction Work in the manner set forth at Section E "Payments" of the General Conditions. Owner shall compensate ESCO for design, engineering and all other contracted Work pursuant to the terms of Section 9 herein.

8. TERMINATION

8.1. Parties' Right to Terminate by Mutual Agreement. This Design and Construction Contract may be terminated by written agreement of the Parties.

8.2. Owner's Right to Terminate for Convenience. Owner may, in its sole discretion, terminate this Design and Construction Contract by written notice to ESCO specifying the date of termination. If Owner, during Phase II terminates this Design and Construction Contract for convenience by providing 15 days advance written notice thereof to ESCO, Owner shall pay to ESCO that sum equal to the percentage of the Work that is completed and accepted by Owner.

8.3. Owner's Right to Terminate for Cause. Owner may terminate this Design and Construction Contract, in whole or in part, immediately upon notice to ESCO, or such later date as Owner may establish in such notice, upon the occurrence of any of the following events:

8.3.1. Owner fails to receive funding, or appropriations, limitations or other expenditure authority at levels sufficient to pay for ESCO's services;

8.3.2. Federal, state or local laws, regulations or guidelines are modified or interpreted in such a way that either the services under this Contract are prohibited or Owner is prohibited from paying for such services from the planned funding source;

8.3.3. ESCO no longer holds a license or certificate that is required to perform the services;

8.3.4. ESCO commits any material breach or default of any covenant, warranty, obligation or agreement under this Design and Construction Contract, fails to perform the work under this Design and Construction Contract within the time specified herein or any extension thereof, or so fails to perform as to endanger ESCO's performance under this Design and Construction Contract in accordance with its terms, and such breach, default or failure is not cured within 10 calendar days after delivery of Owner's notice, or such longer period of cure as Owner may specify in such notice.

8.4. Cessation of Work. Upon receiving a notice of termination, and except as otherwise directed in writing by Owner, ESCO shall immediately cease all activities related to this Design and Construction Contract.

8.5. ESCO's Right to Terminate for Cause.

8.5.1. ESCO may terminate this Design and Construction Contract if Owner fails to pay ESCO pursuant to the terms of this Design and Construction Contract, if Owner does not cure its failure to make payment to ESCO within 15 calendar days after receiving written notice from ESCO of such failure to make payment.

8.5.2. ESCO may terminate this Design and Construction Contract, for reasons other than non-payment, if Owner commits any other material breach or default of this Contract and fails to cure such breach or default within 30 calendar days after delivery of ESCO's notice, or such longer period as ESCO may specify in such notice.

9. CONTRACT PRICE

The "Contract Price," is the maximum, not-to-exceed, total amount payable under this Design and Construction Contract unless it is increased or decreased by the price of approved change orders, is \$3,929,098, as established by ESCO as part of the Project Development Plan and is detailed in Schedule 3.

9.1. Guaranteed Maximum Price for Construction Work. ESCO agrees that the portion of the Contract Price attributable to the Construction Work shall not exceed the guaranteed maximum price of \$3,929,098 (the "GMP"), that amount having been proposed by ESCO as part of the Project Development Plan. The GMP is composed of the following parts and/or includes the following parts:

- 9.1.1. Cost of Work as that term is defined in Section 11 herein.
- 9.1.2. Not to Exceed Contingency. The GMP includes a contingency amount which is available for ESCO's exclusive use for costs that are incurred in performing the Construction Work that are not included in a specific line item of the Cost of the Work, or the basis for a Change Order under the Contract Documents (the "Contingency"). By way of example, and not as a limitation, such costs include trade buy-out differentials, overtime, unforeseen conditions, acceleration, costs in correcting damaged Work that are not covered by insurance, or Subcontractor defaults. The Contingency is not available to Owner for any reason, including changes in scope or any other item, which would enable ESCO to increase the GMP under the Contract Documents. ESCO shall provide Owner with notice of all anticipated charges against the Contingency; Owner will notify ESCO, within ten (10) days of Owner's receipt of ESCO's notice of anticipated charges against the Contingency, of any objection of Owner to any ESCO-proposed charges against the Contingency.
- 9.1.3. Project Management, Construction Management, and Construction Administration Services shall be included in the GMP.
- 9.1.4. Acceptance of GMP. The execution of this Design and Construction Contract signifies the acceptance of the GMP by Owner. The full performance bond and payment bond security required by the RFP and General Conditions shall each be equal to the GMP.
- 9.1.5. GMP Savings. In the event that the actual and final Cost of the Work, plus ESCO Fixed Fees is less than the GMP as amended, the difference shall accrue to Owner.
- 9.2. Design Services Fee. This fee shall be a firm fixed price, to provide those services defined in Sections 5.3 and 5.4 of this Design and Construction Contract. A portion of this amount is payable with each application for payment during the design phase, as a percentage of the completed design services.
- 9.3. Systems Start-up and Commissioning Fee shall be a firm fixed price, to provide those services as agreed upon by ESCO and Owner, based on the Proposal presented by ESCO in the Project Development Plan. A portion of this amount is payable with each application for payment, as a percentage of the completed systems start-up and commissioning services/work.
- 9.4. Training of Owner's Operations & Maintenance Personnel Fee. This fee shall be a firm fixed price, to provide those services as agreed upon by ESCO and Owner, based on the proposal presented by ESCO in the Project Development Plan. A portion of this amount is payable with each application for payment, as a percentage of the completed training services/work.
- 9.5. Measurement and Verification ("M & V") Services Fee. This fee shall be a an annual fee to be paid upon completion and delivery of the M & V annual report immediately following the M&V Commencement Date (defined in as the first day of the month following both the signed certificate of final completion and ESCO's receipt of the Contract Price), as agreed upon by ESCO and Owner, pursuant to Schedules 1 through 6 of the Project Development Plan. The M & V services shall run parallel with the energy savings guarantee contract provisions (the "Savings Contract") (See Section 9.6 below) and shall terminate when the Savings Contract ends.
- 9.5.1. If at the end of any twelve (12) month period the guaranteed savings have not been achieved, ESCO shall pay to Owner the difference between the actual amount saved and the guaranteed amount, upon receipt of Owner's written request for payment. Owner also has the option of withholding payments otherwise due ESCO (if any) in the amount of the difference between the actual amount saved and the guaranteed amount.
- 9.5.2. The Savings Contract term shall commence on the date Owner issues its certificate of final completion for Phase 2 and shall be for one (1) year, unless renewed as detailed in Schedule 6. The Owner may terminate the Savings Contract at the end of any twelve (12) month period following payment to ESCO for the preceding twelve (12) month period

10. CHANGES IN THE WORK. Adjustments to the GMP required by changes in the Work beyond the stated scope may be determined by any of the methods listed in Section D of the General Conditions, except that the overhead and profit markup for ESCO shall be limited to the Cost of Work Fee percentage as noted in Section 9.1.1 of this Design and Construction Contract.
11. COST OF THE WORK. (Covered in the GMP, to be reimbursed) The term "Cost of the Work" shall mean costs necessarily incurred by ESCO in the proper performance of the Construction Work; provided, however, the Cost of the Work shall include only the items specifically identified in this Section 11 and must be directly related to the construction of the Project.
 - 11.1. Labor Costs.
 - 11.1.1. Wages of construction workers directly employed by ESCO to perform the Construction Work at the site.
 - 11.1.2. Wages and salaries of ESCO's supervisory and administrative personnel stationed at the site, and for such personnel off the site when specifically related to the Project and with Owner's agreement after review of any information and Documents required by Owner.
 - 11.1.3. Wages and salaries of ESCO's supervisory or administrative personnel engaged at factories, workshops or on the road, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time directly required for the Construction Work.
 - 11.1.4. Fringe benefit costs paid or incurred by ESCO for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Sections 11.1 through 11.3 of this Design and Construction Contract.
 - 11.2. Subcontract Costs.
 - 11.2.1. Payments made by ESCO to Subcontractors in accordance with the requirements of the subcontracts toward completion of the Construction Work.
 - 11.2.2. Costs, including transportation, of materials and equipment incorporated or to be incorporated into the completed Construction Work.
 - 11.2.3. Costs of materials in excess of those actually installed but required to provide reasonable allowance for waste and for spoilage. Unused excess materials, if any, shall be delivered to Owner at the completion of the Work or, at Owner's option, shall be sold by ESCO. Any sale shall be commercially reasonable and ESCO shall provide an accounting for such a sale within 15 days of the transaction. Net amounts realized if any, from such sales shall be credited to Owner as a deduction from the Cost of the Work
 - 11.3. Costs of Other Materials and Equipment, and Related Items.
 - 11.3.1. Costs, including transportation, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment, and hand tools not customarily owned by the construction workers, which are provided by ESCO at the site and fully consumed in the performance of the Construction Work; and cost less salvage value on such items if not fully consumed, whether sold to others or retained by ESCO. Cost for items previously used by ESCO shall mean fair market value.

- 11.3.2. Rental charges for temporary facilities, machinery, and equipment and hand tools not customarily owned by the construction workers, which are provided by ESCO at the site, whether rented from ESCO or others, and costs of transportation, installation, minor repairs and replacements, dismantling and removal thereof. Rates and quantities of equipment rented shall be according to industry standards, shall not exceed acquisition costs, and for individual items exceeding \$10,000, shall be subject to Owner's prior approval.
- 11.3.3. Costs of removal of debris from the site.
- 11.3.4. Cost of telegrams and long-distance telephone calls, postage and parcel delivery charges, telephone service at the site and reasonable petty cash expenses of the site office, which are solely for the benefit of the Construction Work.
- 11.3.5. That portion of the reasonable travel and subsistence expenses of ESCO's personnel, at Owner approved rates, but not in excess of the rates allowed Owner's employees, incurred while traveling in discharge of duties connected with the Construction Work. Main office staff travel shall not be reimbursed unless approved in advance by Owner.
- 11.4. Miscellaneous Costs.
 - 11.4.1. That portion of premiums for insurance directly attributable to this Design and Construction Contract, including deductible for builders all/risk insurance (but excluding premiums for comprehensive/commercial general liability, automobile liability, professional liability/errors & omissions, and worker's compensation coverage), and payment and performance bonds as required by Section G of the General Conditions (but excluding premiums for Subcontractor bonds unless authorized by Owner), Section 9.3 of Division 1 of the Contract, and Section 9.1.5 this Design and Construction Contract.
 - 11.4.2. Sales use or similar excise taxes imposed by a governmental authority which are directly related to the Construction Work and for which ESCO is liable.
 - 11.4.3. Fees and assessments for the building permit and for other permits, licenses and inspections for which ESCO is required by the Contract Documents to pay.
 - 11.4.4. Direct costs associated with ESCO's job site safety program.
 - 11.4.5. ESCO deposits lost for causes other than ESCO's fault or negligence.
- 11.5. Other Costs.
 - 11.5.1. Costs of drawings, Plans, Specifications and other Documents required to complete the Construction Work, except as provided by Owner.
 - 11.5.2. Other costs incurred in the performance of the Construction Work if and to the extent approved in advance in writing by Owner.
- 11.6. Repairs to Damaged, Defective or Nonconforming Construction Work. The Cost of the Work shall also include costs, which are incurred by ESCO in taking action to prevent threatened damage, injury or loss in case of an emergency affecting the safety of persons and property.
- 12. COSTS INCLUDED IN ESCO FIXED FEE (Not to be reimbursed). The Cost of Work Fee shall include all costs for overhead and profit that are not directly attributable to the Construction Work as defined in Section 11 of this Design and Construction Contract. Generally, the Cost of Work Fee shall include the following:
 - 12.1. Salaries and other compensation of ESCO's personnel stationed at ESCO's principal office or offices other than the site office except as otherwise allowed under the Contract.
 - 12.2. Expenses of ESCO's principal office and offices other than the site office.

- 12.3. Any overhead and general expenses, except as may be expressly included in Section 11 of this Design and Construction Contract.
- 12.4. ESCO's capital expenses, including interest on ESCO's capital employed for the Construction Work.
- 12.5. Any cost associated with the Project not specifically and expressly described in Section 11 of this Design and Construction Contract.
- 12.6. Costs due to the fault or negligence of ESCO, subcontractors, anyone directly or indirectly employed by any of them, or for whose acts any of them may be liable, including but not limited to costs for the correction of damaged, defective or nonconforming Construction Work, disposal and replacement of materials and equipment incorrectly ordered or supplied, and making good damage to property not forming part of the Construction Work.
- 12.7. Any costs which would exceed the GMP.

13. DISCOUNTS, REBATES AND REFUNDS

- 13.1. Discounts, Rebates and Refunds. Cash discounts obtained on payments made by ESCO shall accrue to Owner. Trade discounts, rebates, refunds and net amounts received from sales of surplus materials and equipment shall accrue to Owner, and ESCO shall use its best efforts to obtain such discounts, refunds and net amounts.
- 13.2. Amounts Credited to Owner. Amounts, which accrue to Owner in accordance with the provisions of Section 13.1 of this Design and Construction Contract, shall be credited to Owner as a deduction from the Cost of the Work.

14. ESCO'S OBLIGATIONS UNDER SUBCONTRACTS.

- 14.1. No use of a subcontractor shall relieve ESCO of any of its obligations or liabilities under this Design and Construction Contract. ESCO shall be fully responsible and liable for the acts or omissions of all subcontractors and suppliers including persons directly or indirectly employed by them. ESCO shall have sole responsibility for managing and coordinating the operations of its subcontractors and suppliers, including the settlement of disputes with or between ESCO and any such subcontractor.
- 14.2. ESCO shall include in each subcontract and require each subcontractor to include in any lower tier subcontract, any provisions necessary to make all of the provisions of the General Conditions fully effective as applied to subcontractors. The ESCO shall provide all necessary Plans, Specifications, and instructions to its suppliers and subcontractors to enable them to properly perform their work.

15. SUBCONTRACTOR SELECTION.

- 15.1. The selection of all subcontractors shall be the sole responsibility of ESCO. ESCO shall pre-qualify subcontractors through a scoring system and interview process. Qualified subcontractors shall then be invited to bid. Subcontracts shall be awarded to the lowest responsive, responsible offeror. The pre-qualification and bidding process shall not encourage favoritism or substantially diminish competition. The process shall conform to the following procedures, in general compliance with the open and competitive nature of the Attorney General's Model Public Contract Rules, taking into account industry subcontracting practices:
 - 15.1.1. All bids or quotes shall be written and submitted to a specific location at a specific time. Subcontractors must be registered with the Construction Contractors Board.
 - 15.1.2. Bids or quotes shall be awarded to the lowest responsive and responsible offeror.
 - 15.1.3. The State of Oregon Bureau of Labor & Industries prevailing wage rates in effect on the effective date of this Design and Construction Contract shall apply.
- 15.2. Under the following circumstances, Construction Work may be subcontracted on other than a low bid or quote basis: single fabricators of materials; special packaging requirements for subcontractor work; or, where ESCO demonstrates that an alternative contracting method can clearly benefit Owner.

16. MISCELLANEOUS LABOR.

- 16.1. ESCO may provide normal layout, clean up, and other "pick-up" work required to complete the Project with its own forces, without the necessity of subcontracting.
- 16.2. If ESCO desires to perform any other Construction Work through third-party subcontractors or other entities, that Construction Work shall be bid according to the provisions of Section 16 of this Design and Construction Contract.

17. ACCOUNTING; AUDIT ACCESS. ESCO shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management under this Design and Construction Contract; the accounting and control systems shall be satisfactory to Owner. Owner and Owner's representatives, and auditors, shall be afforded reasonable and regular access to ESCO's records, books, correspondence, instructions, drawings, Plans, Specifications, receipts, subcontracts, purchase orders, vouchers, memoranda and other data relating to this Agreement, and ESCO shall preserve these for a period of three years after final payment, or for such longer period as may be required by law. Owner may, at its discretion, perform periodic audits of the Cost of the Work and any other reimbursable costs associated with the Project. Owner intends to conduct a final audit of reimbursable costs prior to the Agreement closeout. The ESCO shall cooperate fully with Owner in the performance of such audits.

18. CONTRACT TIME

- 18.1. Commencement of Work. The Work shall commence on the date ESCO receives Owner's Notice to Proceed, unless the parties mutually agree otherwise in writing. Owner's Notice to Proceed shall be issued on or after the effective date of this Design and Construction Contract. Time is of the essence with respect to this Agreement.
- 18.2. Substantial Completion. Substantial Completion for the entire Construction Work shall be achieved no later than 180 calendar days after the Date of Commencement ("Scheduled Substantial Completion Date").
- 18.3. Acceptance of Work. A prerequisite to Owner's acceptance is that ESCO must first warrant, by written notice to Owner's authorized representative, that ESCO has substantially completed the Statement of Work as follows: Phase II, The Energy Related and Non-Energy related items are substantially complete, commissioning has been performed, and the FIMs are producing savings equal to or greater than the Guaranteed Savings.
- 18.4. Final Completion of the Construction Work. Final Completion of the Construction Work, or identified portions of the Construction Work, shall be achieved as expeditiously as practicable. All of the dates set forth in this Section 18 shall be subject to adjustment in accordance with the General Conditions.
- 18.5. Project Schedule and Work Time Limitations. ESCO shall comply with the "Project Schedule" and "Work Time Limitations" for the Project negotiated by Owner and ESCO as provided in Sections 3.4 and 3.5 of Division 1 of the ESPC. Changes, if any, to the Project Schedule and Work Time Limitations, including changes for the Work under this Design and Construction Contract, must be agreed to in writing by Owner and ESCO.

19. LIQUIDATED DAMAGES FOR DELAY. Liquidated damages due to contractor-caused delays shall be limited to cost of lost energy savings for the same time-period as the delay, for each day after the contract substantial completion date until and including the actual date.

20. STANDARD OF CARE; DRAWINGS, PLANS & SPECIFICATIONS. ESCO hereby represents and warrants that all drawings, Plans, Specifications, and other Documents prepared pursuant to this Design and Construction Contract shall be completed in a manner consistent with the highest professional standard of care, and shall function for the purposes intended, and that the Project, if constructed in accordance with such drawings, Plans, Specifications, and other Documents, shall be structurally sound and a complete and properly functioning and suitable for the purposes for which it is intended.

21. CORRECTION OF DRAWINGS, PLANS & SPECIFICATIONS. ESCO shall be responsible for correcting any inconsistencies, errors or omissions in the drawings, Plans, Specifications, and other documents. ESCO shall

correct, at no additional cost to Owner, any and all inconsistencies, errors and omissions in the drawings, Plans and Specifications.

22. FUNDS AVAILABLE AND AUTHORIZED; PAYMENTS. Owner reasonably believes that sufficient funds are anticipated to pay all amounts due hereunder and hereby covenants and agrees that it will use its best efforts to obtain and properly request and pursue funds from which payments hereunder may be made, including making provisions for such payments to the extent necessary in the budget submitted for the purpose of obtaining funds and using its best efforts to have such budget approved. It is Owner's intention to make all payments due hereunder if funds are legally available for this Project and in that regard, Owner represents and warrants to ESCO that this Design and Construction Contract is important to Owner's efficient and economic operation. If, despite the above, Owner is not allotted sufficient funds for the next succeeding fiscal period by appropriation, appropriation limitation, grant, or other funds source lawfully available to it for such purposes to continue the Project and make payments hereunder, Owner may terminate this Agreement, by notice to ESCO, without penalty, effective at the end of the current fiscal period for which funds have been allocated and if not so terminated Owner will remain fully obligated for all amounts owing hereunder. Such termination shall not constitute an event of default under any other provision of the Design and Construction Contract, but Owner shall be obligated to pay all charges incurred through the end of such fiscal period. Owner shall give ESCO notice of such non-availability of funds within thirty (30) days after it received notice of such non-availability.

23. MISCELLANEOUS.

23.1. Governing Law; Jurisdiction; Venue. This Design and Construction Contract shall be governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflicts of law. Any claim, action, suit or proceeding (collectively "Claim") between Owner and ESCO that arises from or relates to this Design and Construction Contract shall be brought and conducted solely and exclusively within the Circuit Court of Clackamas County for the State of Oregon; provided, however, if a Claim must be brought in a federal forum, the it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon, Portland Division. In no event shall this Subsection be construed as a waiver by Owner or the State of Oregon of any form of defense or immunity, whether based on sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the United States Constitution or otherwise. ESCO, BY EXECUTION OF THIS DESIGN AND CONSTRUCTION CONTRACT, HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF SAID COURTS.

23.2. Foreign Contractor. If ESCO is not domiciled in or registered to do business in the State of Oregon, ESCO shall promptly provide to the Oregon Department of Revenue and the Secretary of State Corporation Division all information required by those agencies relative to this Design and Construction Contract. ESCO shall demonstrate its legal capacity to perform the work under this Design and Construction Contract in the State of Oregon prior to entering into this Design and Construction Contract.

23.3. Notices. Except as otherwise expressly provided in this Design and Construction Contract, any notices to be given hereunder shall be given in writing by personal delivery, facsimile, or mailing the same, postage prepaid, to ESCO or Owner at the addresses or numbers as either party may hereafter indicate pursuant to this Section. Any notice so addressed and mailed shall be deemed to be given five (5) calendar days after the date of mailing. Any notice delivered by facsimile shall be deemed to be given when receipt of the transmission is generated by the transmitting machine. To be effective against Owner, such facsimile transmission must be confirmed by telephone notice to Owner's Representative for the Project. Any notice by personal delivery shall be deemed to be given when actually delivered.

23.4. Disclosure of Tax Identification Number. ESCO must provide its federal tax ID number to Owner. This number is required pursuant to ORS 305.385. The Tax Identification Number provided pursuant to this authority will be used for the administration of state, federal and local tax laws.

23.5. Compliance with Applicable Law. ESCO agrees to comply with all federal, state, county, and local laws, ordinances, and regulations applicable to the Services to be provided under this Design and

Construction Contract. ESCO specifically agrees to comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations. ESCO also shall comply with the Americans with Disabilities Act of 1990 (Pub. L. No. 101-336), ORS 659A.142, and all regulations and administrative rules established pursuant to those laws. Failure or neglect on the part of ESCO to comply with any or all such laws, ordinances, rules, and regulations shall not relieve ESCO of these obligations nor of the requirements of this Design and Construction Contract. ESCO further agrees to make payments promptly when due, to all persons supplying to such ESCO labor or materials for the performance of the Services to be provided under this Design and Construction Contract; pay all contributions or amounts due the Industrial Accident Fund from such contractor incurred in the performance of this Design and Construction Contract; not permit any lien or claim to be filed or prosecuted against the Owner on account of any labor or material furnished; and pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167. If ESCO fails or refuses to make any such payments required herein, the appropriate Institution official may pay such claim. Any payment of a claim in the manner authorized in this Section shall not relieve ESCO from obligation with respect to any unpaid claims.

Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act and the Oregon Building Codes require all new construction to be totally accessible to people with physical limitations. Owner expects that all spaces in designs for new facilities and in remodel projects shall be accessible to people with physical limitations.

- 23.6. Tax Compliance Certification. By signature on this Design and Construction Contract, the undersigned hereby swears or affirms under penalty of perjury that the undersigned is authorized to act on behalf of ESCO and has authority and knowledge regarding the payment of taxes, and that ESCO is, to the best of the undersigned's knowledge, not in violation of any Oregon Tax Laws. For purposes of this certification, "Oregon Tax Laws" means those programs listed in ORS 305.380(4), namely any state tax imposed by ORS chapters 118, 314, 316, 317, 318, 321 and 323 and sections 10 to 20, chapter 533, Oregon Laws 1981, as amended by chapter 16, Oregon Laws 1982 (first special session); the elderly rental assistance program under ORS 310.630 to 310.706; and local taxes administered by the Department of Revenue under ORS 305.620.
- 23.7. Severability. If any term or provision of this Design and Construction Contract is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the Parties shall be construed and enforced as if the Design and Construction Contract did not contain the particular term or provision held to be invalid.
- 23.8. Waiver. The failure of Owner to enforce any provision of this Design and Construction Contract shall not constitute a waiver by Owner of that provision or any other provision.
- 23.9. Media Contacts; Confidentiality. ESCO shall provide no news release, press release, or any other statement to a member of the news media regarding this Project, without Owner's prior written authorization. Furthermore, except in the case where Owner specifically authorizes disclosure of Owner's confidential information in writing, ESCO shall maintain the confidentiality of Owner's information pertaining to the Project, unless withholding such information would violate the law, create the risk of significant harm to the public or prevent ESCO from establishing a claim or defense in an adjudicatory proceeding. ESCO shall require of its subcontractors similar agreements to maintain the confidentiality of Owner's information.
- 23.10. Conflict of Interest. Except with Owner's prior written consent, ESCO shall not engage in any activity, or accept any employment, interest or contribution that would, or would reasonably appear, to compromise ESCO's professional judgment with respect to this Project, including, without limitation, concurrent employment on any project in direct competition with the Project.

Exhibit List:

- Exhibit 1A – State of Oregon General Conditions for Public Improvement Projects, January 1, 2012 Edition (included by reference only).
- Exhibit 2A – Supplemental Terms and Conditions

- Exhibit 3A – Project Development Plan dated 10/9/2019
- Schedule 3 – Compensation to ESCO
- Schedule 6 – Measurement and Verification Plan

THIS DESIGN AND CONSTRUCTION CONTRACT CONSTITUTES THE ENTIRE AGREEMENT BETWEEN THE PARTIES ON THE SUBJECT MATTER ADDRESSED HEREIN. THE TERMS OF THIS DESIGN AND CONSTRUCTION CONTRACT CAN NOT BE WAIVED, ALTERED, MODIFIED, SUPPLEMENTED, OR AMENDED, IN ANY MANNER WHATSOEVER, EXCEPT BY WRITTEN INSTRUMENT SIGNED BY THE PARTIES AND CONTAINING ALL REQUIRED STATE OF OREGON APPROVALS. ANY SUCH WAIVER, ALTERATION, MODIFICATION, SUPPLEMENTATION, OR AMENDMENT, IF MADE, SHALL BE EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, REGARDING THIS DESIGN AND CONSTRUCTION CONTRACT EXCEPT AS CONTAINED, INCORPORATED OR REFERENCED HEREIN. ESCO, BY THE SIGNATURE BELOW OF ITS AUTHORIZED REPRESENTATIVE, HEREBY ACKNOWLEDGES THAT IT HAS READ THIS DESIGN AND CONSTRUCTION CONTRACT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. THIS DESIGN AND CONSTRUCTION CONTRACT MAY BE EXECUTED IN SEVERAL COUNTERPARTS, EACH OF WHICH SHALL BE AN ORIGINAL, AND ALL OF WHICH SHALL CONSTITUTE THE SAME INSTRUMENT.

IN WITNESS WHEREOF, and intending to be legally bound, the authorized representatives of the parties hereto subscribe their names.

ESCO: _____ Date: _____
Signature

_____ Title: _____
Printed Name

CITY OF SANDY: _____ Date: _____
Kim Yamashita, City Manager

Approved for Legal Sufficiency
City Attorney: _____ Date: _____
David Doughman, City Attorney

Exhibit 1A

Energy Savings Performance Contract

State of Oregon General Conditions For Public Improvement Projects, January 1, 2012 Edition

The 2012 Edition of the State of Oregon General Conditions for Public Improvement Projects can be found using the following link: <https://www.oregon.gov/das/Procurement/Guiddoc/GenCon4PI.pdf>

Exhibit 2A

Energy Savings Performance Contract

Supplemental Conditions

ADDED PARAGRAPH:

The following paragraph is added to the STANDARD TERMS AND CONDITIONS of the ESPC.

4.5.5 Neither party shall be liable to the other party for any consequential, indirect, special, incidental, exemplary, or similar, damages or losses, including loss of profits, arising out of or relating to this agreement, whether based in contract or tort or any other theory, even if a party has been advised of the possibility of such damage.

ADDED PARAGRAPH:

The following paragraph is added to the STANDARD TERMS AND CONDITIONS of the ESPC.

4.5.6 In no event shall the aggregated liability of a party exceed the greater of \$3,929,098 or that party's total primary insurance coverage then available with respect to such damages.

Exhibit 3A

Energy Savings Performance Contract

Project Development Plan

[the final project development plan report would replace this page]

Schedule 3

Energy Savings Performance Contract

Compensation to ESCO

5.03 Compensation to ESCO

5.03.1 COMPENSATION TO ESCO OVERVIEW

PURPOSE

Schedule 3 shall establish all cost components for the Design-Build Contract, including all fees, the cost of work, and the Guaranteed Maximum Price for Construction. The Design-Build Contract shall include a Design Fixed Fee, Annual Measurement & Verification Fixed Fee, Cost of Work, Project Management, Construction Management, and Project Engineering Fixed Fee, Commissioning and City Staff Training Fixed Fee, and ESCO Fixed Fee.

The Total Guaranteed Maximum Price for Construction shall be the sum of the Cost of Work; Project Management, Construction Management, and Project Engineering Fixed Fee; the Commissioning and City Staff Training Fixed Fee; and the ESCO Fixed Fee.

5.03.2 TOTAL GUARANTEED MAXIMUM PRICE BREAKDOWN

COST OF WORK

The Cost of Work includes all direct cost estimates for equipment and installation labor. This also includes permits, insurance, taxes, and bonds. Note, that the bond will only cover the cost of design and construction and will not cover the performance guarantees (see Schedule 6, Section 5.06.3.3 for bond clarification language). Installation labor includes craft or trades persons, working foremen, commissioning and startup specialists, delivery persons, site supervision, and similar classifications whose work directly involves implementation of the FIMs.

The Cost of Work includes ESCO's contingency of \$140,221. ESCO will utilize the contingency for items necessary to complete the original scope of the Project. ESCO will submit a Change Order Proposal to City when utilizing the contingency funds. ESCO will utilize contingency to cover costs for unforeseen or latent conditions and owner directed changes beyond items originally estimated and scoped for the Project. ESCO has made a good faith effort to identify and estimate the cost of work, however the City may not unduly hold back authorization of the use of contingency funds by ESCO unless the change is due to errors or omissions committed by ESCO, its designers, subcontractors, or suppliers.

ESCO intends to self-perform commissioning and site supervision aspects. ESCO reserves the right to self-perform startup specialist, plumbing trades, piping trades, sheet metal trades, and electrical trades as needed to achieve the scope of work. ESCO has already competitively bid portions of the work to a select list of ESCO qualified subcontractors that may include aspects of the work reserved for self-performance. Should ESCO self-perform the any of the work noted above, ESCO will provide bid results to City along with ESCO's self-perform pricing in comparison to the competitively bid results for approval prior to awarding the work. The table below outlines the subcontractors that are planned to be utilized.

Subcontractor / Vendor	Associated Scope of Work	CCB #
Pedal Valves, Inc.	Water meter installation	225791
Mueller Systems	Water meters & AMR/AMI components	
Consolidated Supply Co.	Installation of AMR/AMI components	210054
Christenson Electric, Inc.	Street Lighting LED Conversion	458
Current by GE	Street Lighting Control components	

Site Supervision time will be substantiated at the rate \$156/hour and Safety time will be substantiated at \$129/hour.

Commissioning and system startup time will be substantiated at the rate of \$137/hour.

The Cost of Work included in the Guaranteed Maximum Price (GMP) for the Project is estimated to be \$3,004,370.

DESIGN FIXED FEE

The Design Fixed Fee includes all costs associated with professional services and ESCO's oversight to provide biddable plans, record drawings, and final Schedules 7 through 10. ESCO shall provide stamped construction documents as required to obtain permits. In lieu of specification manuals, the required information will be included on the biddable plans and record drawings. Fee will be progress billed based on City's acceptance of design components.

The Design Fixed Fee included in the GMP for the Project is \$211,677.

PROJECT MANAGEMENT, CONSTRUCTION MANAGEMENT, AND PROJECT ENGINEERING FIXED FEE

The Project Management, Construction Management, and Project Engineering Fixed Fee includes all costs associated with all activities performed by ESCO throughout the construction phase.

The Project Management, Construction Management, and Project Engineering Fixed Fee included in the GMP for the Project is \$168,265.

ANNUAL MEASUREMENT & VERIFICATION, AND ENERGY SAVINGS GUARANTEE FIXED FEE

The Annual Measurement & Verification and Energy Savings Guarantee Fixed Fee (M&V Fixed Fee) includes all costs associated with the performance of all M&V activities, delivery of one annual M&V report, and all costs associated with providing the Energy Savings Guarantee. M&V Fixed Fee for years after the first annual M&V report are outlined in Schedule 6, Section 5.06.3.1 Energy Savings Guarantee Term and Schedule 6, Section 5.06.3.2 Energy Savings Guarantee Fee.

The M&V Fixed Fee included in the GMP for the Project is \$5,889 plus additional years desired by City.

COMMISSIONING AND CITY STAFF TRAINING FIXED FEE

The Commissioning and City Staff Training Fixed Fee includes costs associated with the preparation and execution of the commissioning and City staff training plans, and submittal of the final commissioning report.

The Commissioning and City Staff Training Fixed Fee included in the GMP for the Project is \$28,044.

ESCO FIXED FEE

The ESCO Fixed Fee includes costs associated with overhead expenses, all other indirect costs, and profit.

The ESCO Fixed Fee included in the GMP for the Project is \$510,852.

5.03.3 TOTAL GUARANTEED MAXIMUM PRICE

The Guaranteed Maximum Price (GMP) for the Project is \$3,929,098.

Schedule 6

Energy Savings Performance Contract

M&V Plan and Guaranteed Savings Provisions

5.06 Schedule 6 – M&V Plan and Guaranteed Savings Provisions

5.06.1 MEASUREMENT & VERIFICATION PLAN OVERVIEW

PURPOSE

Schedule 6 provides the Measurement & Verification (M&V) plan for the Project. Schedule 6 also establishes the terms and conditions for the Energy Savings Guarantee.

5.06.2 MEASUREMENT & VERIFICATION PLAN

5.06.2.1 Overview of FIMs Included in Project

FIM 07.00 – Water Meter AMR/AMI

A fixed network AMR/AMI will be installed within the City Limits. The existing water meters will be replaced with new water meters and radios for remote reading. The "savings" associated with this measure is increased revenue for the City from improved meter accuracy.

FIM 09.03 – Street Lighting Conversion

The existing high pressure sodium (HPS) and mercury vapor (MV) street lighting fixtures will be converted to light emitting diode (LED) technology. The pendant acorn style fixtures will remain and be retrofit with a LED conversion kit. The remaining HPS and MV fixtures will be removed and new LED fixtures will be installed. The savings associated with this measure is based on reduced power consumption of the street lighting.

5.06.2.2 M&V Option Selected By FIM

FIM 07.00 – Water Meter AMR/AMI

McKinstry will utilize Option A-Retrofit Isolation with Key Parameter Measurement for this measure.

McKinstry does not guarantee the revenue increase from replacing the water meters. McKinstry will guarantee that the new water meters average accuracy is at least 98.5%.

The existing baseline water and sewer billing information will be used in conjunction with the pre-measurement meter accuracy data to determine the amount of water and sewer that should be billed to customers. During the PDP phase 80 existing water meters (73 of the 5/8"x3/4" and 7 of the 1" meters) were bench tested. An additional 80 existing meters will be removed and sent for 3rd party bench testing results. These measurements will constitute the scope of the pre-measurements.

160 new meters that align with the pre-measurement meter size, account type, and usage will be bench tested to confirm the post retrofit accuracy.

Measured Variables:

1. Average accuracy of existing water meters
2. Average accuracy of new water meters.

Stipulated Variables:

1. Water and sewer consumption of the end-users
2. Manual meter reading subcontract value
3. Meter annual O&M replacement cost savings.

FIM 09.03 –Street Lighting Conversion

McKinstry will utilize Option A-Retrofit Isolation with Key Parameter Measurement for this measure.

For the flat rate street lighting fixtures, McKinstry will review the first two months' PGE street lighting invoices following Substantial Completion of the project to confirm that the invoice accurately reflects the correct fixture quantities by lamp group and the correct tariff rates are being applied. Following each month's review, any discrepancies will be communicated to the City for delivery to PGE. Any corrections made by PGE will be verified with the second month's invoice review. Once McKinstry has verified that the second month's invoice is correct, McKinstry will calculate the monthly utility cost avoided savings (in dollars). This value will be compared to the baseline utility cost to determine the amount of utility cost avoided savings. The results of Cost Avoided Utility Bill Savings analysis will be presented in the Preliminary M&V Report. Once accepted by the City, the utility cost avoided savings will be carried forward for the remainder of the guarantee period.

For the metered light fixtures. The post retrofit wattage will be measured using the new lighting control node to confirm the post retrofit wattage. The pre retrofit wattage will be stipulated per the information in the GIS audit that was completed in January 2019.

Measured Variables:

1. Quantity of existing flat rate fixture wattage.
2. Post Retrofit wattage of the metered fixtures.

Stipulated Variables:

1. Hours of Operation
2. Pre-retrofit wattage of the metered fixtures.

5.06.2.3 Measurements to Be Taken During M&V

For a complete breakdown of the key performance indicators, stipulated values, and timing of measurements see Section 3, Table 3.2 of the Project Development Plan Report.

Below is a summary table of the measurements to be taken. The final location and instruments to be used will be developed during the Design Phase of the Design-Build Agreement.

FIM Name	Key Performance Indicators	Pre Measurement	Post Measurement	Stipulated
07.00-Water Meter AMR/AMI	Existing Meter Accuracy (%)	✓		
	New Meter Accuracy (%)		✓	
	Total Annual Water Production			✓
09.06-Street Lighting Conversion	Astronomical Night Hrs/Yr (hrs)			✓
	Fixture Input Power by Fixture Type (W)	✓	✓	
	Number of Fixtures by Fixture Type (Qty)	✓	✓	

5.06.2.4 Quantities of Measurements to Be Taken During M&V

McKinstry proposes to measure a statistically relevant quantity of variables when the same component is being measured in quantities over 10. When determining the quantity to sample, the "Sampling for M&V: Reference Guide Version 1.0" published by Bonneville Power Administration in September 2011 will be used to determine the quantity of samples to be measured.

5.06.3 GUARANTEED SAVINGS CONTRACT PROVISIONS

5.06.3.1 Energy Savings Guarantee Term

The cost of the first year of Measurement & Verification is included in the Guaranteed Maximum Price. The cost of ongoing Measurement & Verification in years 2-20 is at the discretion of the City. McKinstry is prepared to continue the Energy Savings Guarantee for a period equal to the shortest of the following criteria:

1. City authorizes the continuation of the Energy Savings Guarantee Period via written direction and appropriate PO or contract extension that includes authorization for additional Measurement & Verification Fee. Authorization must be provided within 30 calendar days of the delivery of the previous periods Measurement & Verification Report. Should the City cancel and/or not renew the ongoing services, the Energy Savings Guarantee will also be terminated at the same point in time.
2. The term of any City obtained financing to pay for the associated work.
3. The expected useful life of the equipment installed and associated work.
4. The City is notified that the Owner's Responsibilities are not being met and does not take corrective action within 30 calendar days.

5.06.3.2 Energy Savings Guarantee Fee

The Table below outlines the Energy Savings Guarantee Fee for each of the first 5 years.

Energy Savings Guarantee Year	Energy Savings Guarantee Fee
Year 1	INCLUDED IN GMP
Year 2	\$6,066
Year 3	\$6,248
Year 4	\$6,435
Year 5	\$6,628
Future Years Beyond Year 5	To Be Negotiated Based on Current Rates & Scope

5.06.3.3 Bond Coverage Clarification

Subject to the requirements of ORS 279C.380, Contractor shall furnish performance and payment Bonds, each in an amount equal to the Construction Cost. The Bonds shall cover completion of the physical work per the approved design and shall not guarantee or warranty efficiency or system performance. The Bonds shall not cover any obligation of the contractor to ensure that the work as constructed will result in any particular level of energy savings. Any suit on the Bonds must be brought within the period of one (1) year after substantial completion, as defined in the contract; provided, however, that if this suit limitation is void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

CUSTOMER NAME: City of Sandy, Oregon

ATTACHMENT FOR THE SPECIFIC CONTRACT TITLED: ESPC Water Meter AMR/AMI and Street Lighting Conversion Project

By:

Printed Name: _____

Title:

Date: _____

5.06.3.4 FIM Specific Measurement & Verification Methodology

GUARANTEES

Schedule 5-Savings Calculations Formulae provides the specific energy consumption savings for each facility improvement measure and the guarantee that McKinstry will provide associated with that measure. Savings calculations are based upon both baseline operating characteristics and proposed operational criteria.

PROPOSED

The proposed operating criteria, including system performance and operational expenditures, which were used for savings calculations are provided in Section 3, Table 3.2 of the Project Development Plan. Systems must be operated per the proposed criteria to ensure energy cost savings are realized. McKinstry will provide the initial start-up, commissioning, and programming of the system to ensure that the systems operate per the proposed operating criteria. City acknowledges their responsibility to ensure that these criteria are maintained, and the associated energy savings are realized. Energy Savings Guarantees are predicated on City maintaining their responsibilities as provided below in Section 5.06.3.5 - Ongoing Owner Responsibilities.

REPORTING

Section 3, Table 3.2-M&V Plan Outline in the Project Development Plan provides the specific ongoing reporting tasks that McKinstry will perform to verify that the systems are performing as specified. The intent of the verification is to measure and verify leading indicators on which the energy savings are based. McKinstry has proposed measurement of these indicators as the Measurement & Verification for this project. The site-specific Measurement & Verification Program encompasses the following elements:

1. Closeout Commissioning Report: McKinstry will provide a closeout commissioning report. This report is released one month after all commissioning items are closed out. A major portion of the scope of this report consists of the tasks outlined under the "Post-Retrofit" stage in Section 3, Table 3.2 of the Project Development Plan.
2. First Year Reporting: The scope of this report consists of the tasks outlined under the "First Year" column of Section 3, Table 3.2 in the Project Development Plan. A Notice of Commencement of Energy Savings will be delivered 6-8 weeks after the Closeout Commissioning Report is delivered and approved by the City. The first report shall be provided no later than one year after the last date noted in the Notice of Commencement of Energy Savings. However, if additional phases of work are involved, a single Performance Assurance Report may be provided at regular interval(s) that reports across all relevant phases of work.
3. Years 2 – 5 Ongoing Reporting: Same as First Year Reporting. See also Sections 5.06.2.1 and Section 5.06.3.2 for additional details.

5.06.3.5 FIM Ongoing Owner Responsibilities

An ESPC is a partnership between City and McKinstry. To ensure project success, City shall provide the following services as part of Measurement & Verification. If these services are not provided, energy savings and associated guarantees will be modified to reflect the associated impact via baseline adjustments.

1. Maintain all equipment per manufacturer's recommendations and proposed maintenance schedule.
2. Maintain all sequence of operations and performance criteria related to installed systems as proposed and designed.
3. Provide other FIM specific ongoing responsibilities as provided in Section 3, Table 3.2 - M&V Plan Outline of the Project Development Plan.
4. Provide McKinstry with copies of actual monthly utility billing information on a minimum of a quarterly basis for the duration of the ongoing Energy Savings Guarantee Period. This includes electric, water, and sewer information. For this project, the ongoing Energy Savings Guarantee Period shall be one year, unless extended as outlined in Schedule 6.
5. Provide McKinstry all internal sub-meter data, including electric, water, and sewer meters, providing direct or indirect service to all equipment included in this project.
6. Provide McKinstry access to the lighting control system and the AMI network for the purpose of collecting and logging data over time as required for performance verification.
7. City shall notify McKinstry in writing with regards to any changes or alterations to the properties that will affect energy usage. This notification must be provided within two weeks of the change. This includes occupancy or use changes, load changes, scheduling changes, and sequence of operations changes, or equipment additions.

5.06.3.6 FIM Change of Use

If City chooses to make changes that effect the equipment installed in this project such as, set point adjustments, longer operating hours, or continuous equipment operation, City agrees that:

1. Savings deemed as met described above will continue to be deemed as met.
2. Additional cost of extended equipment operation is a cost of the change, not due to a failure of the McKinstry or their equipment.
3. McKinstry shall not be responsible for any increase in energy, maintenance, or any other costs incurred because of the extended equipment operation.
4. McKinstry at its option may make a baseline energy use adjustment to account for a change-of-use for any FIM. City will be allowed to review and

approve any baseline adjustment, however City must in good faith approve said adjustments or provide specific changes to the variables used in the adjustment if rejecting the adjustment.

5.06.3.7 Utility Rates

Water and Sewer Rates

Water rates for the customer varies depending on the location (inside or outside city limits) as well as the meter/service size installed. Table 8d shows the water and sewer rates in effect February of 2019. The City is proposing increases to the water and sewer rates at the October 7th City Council meeting. The proposed increased rates are also shown in Table 8d. The proposed increased rates are the what has been used in the savings calculations.

Service Description	Service Type	February 2019 Rates (per kGal)	February 2019 Rates (per CCF)	October 2019 Proposed Rates (per kGal)	October 2019 Proposed Rates (per CCF)
Single Family	Water	\$3.56	\$2.66	\$3.73	\$2.79
	Sewer	\$3.37	\$2.52	\$6.67	\$4.99
Multifamily	Water	\$3.34	\$2.50	\$3.51	\$2.63
	Sewer	\$4.57	\$3.42	\$9.05	\$6.77
Commercial/Industrial	Water	\$3.06	\$2.29	\$3.21	\$2.40
	Sewer	\$4.57	\$3.42	\$9.05	\$6.77
Outside Single Family	Water	\$5.32	\$3.98	\$5.59	\$4.18
Outside Commercial/Industrial	Water	\$4.76	\$3.56	\$5.00	\$3.74
Laundry	Sewer	\$4.12	\$3.08	\$4.12	\$3.08
Metered	Sewer	\$4.18	\$3.13	\$4.18	\$3.13

Water and Sewer Rate Escalation

The performance period for this project is 20 years. To account for future rate changes, an escalation rate for water was used in the cash flow analysis. The escalation rate is calculated based on the October 7, 2019 proposed rates and proposed future increases. Table 8e shows the projected rates for future years.

Rate Type	2019	2020	2021	2022	2023 - 2035
Water Consumption	Per Table 8d	5%	4%	3%	2%
Sewer Consumption	Per Table 8d	98%	16%	15%	10%

Street Lighting Rates

The rates used for both the flat rate street lighting and the metered lighting can be found in Appendix B of the Project Development Plan Report.

Floor Utility Rate

For calculation of savings, the utility rate shall never drop below the base utility rates described above. This shall be known as the Floor Utility Rate.

Rate Schedule Changes

When the utility company makes a change to the rate schedule, the new rate will be used for calculating savings realized during a given period. If a rate schedule change occurs partway through a period, an aggregate rate comprised of a weighted average between the old and the new rate will be used. The weighting will be based upon the portion of the period that each rate applied.

5.06.3.8 Non-Performance

In the event the equipment performance is not met, McKinstry accepts responsibility for additional energy used by the equipment because of the reduced performance. McKinstry may, at its option, execute any of the following options:

1. Repair or replace equipment as required to meet required performance. Should repair or replacement occur, McKinstry will also be responsible to cover the lost savings.
2. Make payments for the extra energy consumption to City. If McKinstry chooses the payment option, McKinstry reserves the right to select either an annual payment for the duration of the performance assurance period or a one-time lump-sum payment of the same amount. In either case, the payment will be calculated based upon the quantity of additional energy used and the Base Utility Rate as described above.

**ENERGY SAVINGS PERFORMANCE CONTRACT
PHASE 2: DESIGN AND CONSTRUCTION CONTRACT**

THIS **PHASE 2 DESIGN AND CONSTRUCTION CONTRACT** ("Contract") is between the City of Sandy, a Municipal corporation of the State of Oregon, (the "City", "Owner" or "Agency"), and McKinstry Essention, LLC,

Company	<u>McKinstry Essention, LLC</u>
Address	<u>16790 NE Mason St, Suite 100</u>
City, State Zip	<u>Portland, Oregon 97230</u>
Phone	<u>503.331.0234</u>

(the "ESCO" or "Consultant") (collectively Owner and Consultant are referred to as the "Parties"). This Contract is for all Services related to completion of the project more particularly described as follows (the "Project"): City of Sandy ESPC Project.

- **PHASE 2 CONSTRUCTION:** Furnish, install and commission energy efficiency improvements, as selected by City. Commissioning includes verification of system installation and operating parameters, training of operations and maintenance staff, providing equipment manuals, documentation and all warranty information as further specified in this Contract.
- **PHASE 3 MEASUREMENT & VERIFICATION:** Examine the installed FIMs as outlined in Schedule 6 of this Contract, to monitor and verify the operation of energy-using systems post-installation.

The Project extents will include the entire jurisdictional boundary of the City of Sandy.

This Contract shall become effective on the date that the Contract is fully executed by the Parties (the "Effective Date"). No Services shall be performed prior to the Effective Date. The Contract shall expire, unless otherwise terminated or extended, on March 31, 2022. The expiration or termination of the Contract shall not extinguish, prejudice, or limit either Party's right to enforce this Contract with respect to any default or defect in performance that has not been cured.

1. RESERVED.
2. **SUBSTANTIAL COMPLETION DATE:** December 31, 2020 or 415 calendar days after the Effective date, whichever is later. See requirements in Sections 18.2 and 18.3 of this Design and Construction Contract.
3. **DEFINITIONS.** The key, defined terms used in this Design and Construction Contract, are set forth at Section 1 of Division 1 of the Energy Savings Performance Contract between Owner and ESCO, with an Effective Date of November 12, 2018 (the "ESPC"). Exhibit 1A to this Contract (the "General Conditions"), unless defined in the body of this Contract, and in this Section 3 as follows:
 - 3.1. "Construction Work" means the providing of all work, services, construction management services, materials, equipment, transportation, tools, labor and incidentals necessary to complete the construction work described in and reasonably inferred from this Contract and the other Contract Documents, including but not limited to the services and work set forth in Sections 5.5 and 5.6 of this Design and Construction Contract.
 - 3.2. "Contract Time" means any incremental period of time allowed under the Design and Construction Contract to complete any portion of the Work as reflected in the project schedule.
 - 3.3. "Design Services" means all the design services and construction administration services to be performed by ESCO under this Design and Construction Contract and the other Contract Documents, including but not limited to Sections 5.3 and 5.4 of this Design and Construction Contract.

- 3.4. "Project Management Services" means the project management services that ESCO shall perform throughout the period of performance of this Design and Construction Contract, as more particularly described in Section 5.2.
- 3.5. "Work" means all Project Management Services, Design Services and Construction Work to be performed by ESCO under this Design and Construction Contract and the other Contract Documents for the Project.
4. CONTRACT DOCUMENTS. The Contract Documents listed at Section 4.1 below are intended to reflect the Parties' understanding of their respective rights and responsibilities concerning completion of the Work under the Design and Construction Contract.
- 4.1. Interpretation. In the event of any inconsistency, conflict, or ambiguity between or among the Contract Documents, the Contract Documents shall take precedence in the following order:
- 4.1.1. All written modifications, amendments and change orders to this Design and Construction Contract that have been executed by Owner;
 - 4.1.2. This Design and Construction Contract;
 - 4.1.3. Exhibit 3A Project Development Plan;
 - 4.1.4. Exhibits, Schedules and Attachments to this Contract and not listed elsewhere in this paragraph 4.1;
 - 4.1.5. All design and construction drawings, Plans, Specifications and documents prepared and approved for the Project;
 - 4.1.6. Exhibit 1A to this Contract: 2012 State of Oregon General Terms and Conditions for Public Improvements;
 - 4.1.7. Exhibit 2A supplemental terms and conditions to this contract
 - 4.1.8. The executed ESPC between the City and ESCO;
 - 4.1.9. City of Sandy RFQ, dated 5-31-2017;
 - 4.1.10. ESCO's Proposal submitted in response to the RFQ.
- 4.2. Ownership of Work Product. All drawings, Plans, Specifications, audits, reports, and other work product required to be delivered by ESCO under this Contract ("Work Product") shall be the exclusive property of Owner. Owner and ESCO intend that such Work Product be deemed "work made for hire." If for any reason the Work Product is not deemed "work made for hire," ESCO hereby irrevocably assigns to Owner all of its right, title and interest in and to any and all of the Work Product, whether arising from copyright, or any state or federal intellectual property law or doctrine. ESCO shall execute such further documents and instruments as Owner may reasonably request in order to fully vest such rights in Owner. ESCO forever waives any and all rights relating to the Work Product, including without limitation, any and all rights arising under 17 USC §106A or any other rights of identification of authorship or rights of approval, restriction or limitation on use or subsequent modifications.
- 4.2.1. ESCO, notwithstanding other conditions in this Section 4.2, shall have, with Owner's written permission, the right to utilize such Work Product on its brochures or other literature that it may utilize for marketing and sales, and in addition, ESCO may use standard line drawings, specifications and calculations on other unrelated projects.
 - 4.2.2. If Owner reuses or modifies the Work Product without ESCO's involvement or prior written consent, Owner shall to the extent permitted by Article XI, Section 7, of the Oregon Constitution and by the Oregon Tort Claims Act, indemnify ESCO against liability for damage to person or property arising from Owner's reuse or modification of the Work Product, provided Owner shall not be required to indemnify ESCO for any such liability arising out of or related to the wrongful or negligent acts of ESCO or ESCO's employees or agents.

5. ESCO's SERVICES

5.1. General.

- 5.1.1. ESCO agrees that the Project Development Plan package of Energy related items, Non-Energy-related items and water-saving measures, and the Design Development Documents approved by ESCO and Owner shall serve as the basis for the Statement of Work for Phase II (as described in Section 3 of Division 1 of the ESPC.)
- 5.1.2. As the Design-Builder for this Project, ESCO shall perform all Project Management Services, Design Services, and Construction Work necessary to complete the Project.
- 5.1.3. ESCO shall obtain at its own expense and shall maintain in effect for the duration of this Design and Construction Contract, the insurance coverage required both in Section G of the General Conditions and in Section 9 of Division 1 of the ESPC. Before execution of this Design and Construction Contract, ESCO shall provide to Owner certificates of insurance in compliance with the foregoing insurance provisions that demonstrate the required coverages are in effect and are being maintained for this Design and Construction Contract and the Work and services to be performed hereunder. In addition, before execution of this Design and Construction Contract, ESCO shall provide to Owner a performance bond and a payment bond, as required by Section G.2 of the General Conditions, on the bond forms furnished by Owner. Each bond shall be in the total amount of those elements of the Contract Price for this Design and Construction Contract as provided in Section 9.1.5 below. In addition, before beginning work, ESCO and all subcontractors shall file and maintain with the Construction Contractors Board the public works bond required by ORS 279C.836.
- 5.1.4. ESCO shall perform all services in good faith and shall perform all Work as expeditiously as is consistent with the highest professional skill, care and the orderly progress of the Work.
- 5.1.5. Within four weeks after execution of this Design and Construction Contract, ESCO shall submit for Owner's approval a schedule for the performance of the Work, which shall include allowances for periods of time required for Owner's review and for approval by authorities having jurisdiction over the Project. Time limits established by this schedule and approved by Owner shall not, except for reasonable cause, be exceeded by ESCO or Owner.
- 5.1.6. ESCO shall in good faith provide Owner with the necessary technical documentation for, and assist Owner in the procurement of, any utility rebates or incentives (the "Rebates") and tax credits (the "Tax Credits") that may be available for the Project. ESCO estimates the Rebates to be approximately \$ 39,708 and the Tax Credits to be approximately \$ 0. ESCO does not guarantee the specific availability or amount of the Rebates or the Tax Credits.
- 5.1.7. Under Section 6.4.3 of Division 3 of the ESPC, ESCO was required to provide drafts of Schedules 7 through 10 as provided in that Section. As part of the services under this Design and Construction Contract, ESCO is required to provide final versions of Schedules 7 through 10. ESCO shall provide proposed final versions of these Schedules for review by Owner, and ESCO shall then revise these Schedules as required by Owner or as negotiated between Owner and ESCO to arrive at final versions of Schedules 7 through 10. More than one version of one or more of these Schedules may be necessary in arriving at accepted final versions.

5.2. Project Management.

- 5.2.1. ESCO shall appoint an ESCO staff person as ESCO's Project Manager (the "EPM", who is identified in Section 6.3 of this Design and Construction Contract) who shall be reasonably available to Owner and who shall have the expertise and experience required to supervise the Work for the duration of the Project. EPM shall communicate regularly with Owner and shall have the authority to act on behalf of ESCO. EPM shall consult with Owner's Project Manager (the "OPM") on issues affecting design, construction, Contract performance, Project budget and Project schedule. The EPM may be replaced during the Project only with Owner's prior consent, consistent with the provisions of Section 6.3 and 6.5 of this Design and Construction Contract.
- 5.2.2. The EPM shall provide Owner with a status report every two weeks, in which it shall detail the progress of the Work including the following: 1) whether the Work is proceeding according to schedule; 2) any discrepancies, conflicts, or ambiguities in the Contract Documents that require resolution; 3) any safety

issues related to the Work; 4) any other matter that requires resolution to ensure timely and cost-effective completion of the Work. At least four working days prior to the scheduled meeting, ESCO shall submit to Owner a list of identified matters that require resolution; any matters that require Owner approvals, and any proposed deviations from the Project schedule.

5.2.3. The EPM shall be the principal contact between the OPM and all other ESCO representatives, and shall be responsible for all communications, including, but not limited to, conveying concerns, decisions and formal actions.

5.2.4. The EPM shall be responsible for maintaining thorough and complete project records and regular briefings to the OPM. The EPM shall coordinate the flow of information, communications and formal Documents so that Owner has the material required for its timely action on policy, design and budget matters. The EPM shall be responsible for transmission of Documentation required for Owner approval or actions.

5.2.5. Owner's review of, and response to, any of the matters presented above shall not relieve ESCO of its obligation to complete the Work within the Contract Time and shall not be construed as relieving ESCO of its complete and exclusive control over the means, methods, sequences and techniques for executing the Work.

5.3. Design.

Based on approved design development documents generated by ESCO and approved by Owner during the Project Development Plan, and any further adjustments in the scope or quality of the Project or in the construction budget authorized by Owner, ESCO shall prepare, for approval by Owner, Construction Documents.

5.3.1. The Construction Documents must meet the following requirements:

5.3.1.1. ESCO shall provide Owner with catalog cuts of all specified items, if different than design development documents.

5.3.1.3. ESCO shall provide Owner with in-progress Construction Documents as needed. At the completion of construction ESCO shall supply record drawings, and a copy of the final Construction Documents on a re-usable data storage device.

5.3.1.4. ESCO shall prepare 95% Construction Documents for review and approval by Owner, and shall continue with preparation of the final Construction Documents, including final Specifications for all authorized Work on the Project and shall incorporate into those final Construction Documents the comments and any modifications or changes desired by Owner, and any modifications required for compliance with applicable codes, regulations or standards. The resulting final Construction Documents shall be a complete, fully coordinated, integrated package, suitable for use in the construction of the Project, without significant addenda or further clarifications required. All submittals shall be made in accordance with the schedule made pursuant to Section 5.1.5 of this Design and Construction Contract.

5.3.1.5. ESCO shall file all documents required for the approval of governmental authorities having jurisdiction over the Project and shall obtain all necessary permits. In the event that Owner files any permits, ESCO shall assist Owner as Owner deems necessary.

5.3.2. All specified items shall be standard, cataloged, manufactured items or "off the shelf" items. No custom items are to be designed or specified without prior written authorization of Owner.

5.3.3. Recycled products shall be used where they are economically feasible. ESCO shall give preference to materials and supplies manufactured from recycled materials under the following conditions:

- The recycled product is available;
- The recycled product meets applicable standards;
- The recycled product can be substituted for a comparable non-recycled product; and
- Recycled product costs do not exceed the costs of non-recycled products by more than five percent.

5.4. Construction Administration Services

5.4.1. GENERAL OFFICE CONSTRUCTION ADMINISTRATION. ESCO shall process submittals, including without

limitation, the receipt, review and disposition of shop drawings, product data, and samples. ESCO shall transmit any such submittals to Owner, as required and shall maintain a master file of submittal communications. ESCO shall keep a submittal log on a spreadsheet program and send a copy to Owner on a weekly basis.

- 5.4.2.INSPECTION COORDINATION. ESCO shall provide all necessary services relating to independent inspection and testing required by applicable regulatory agencies, or relating to other inspection, testing and commissioning of the systems and equipment installed on the Project site as part of the Work, including but not limited to the following: administration and coordination of field testing as required by the Contract Documents; establishing the scope, standards, procedures and frequency of testing and inspections required to complete the Work; arranging for testing and inspections; notifying inspection and testing agencies of status of any portion of the Work requiring testing and inspection; evaluating compliance by testing and inspection agencies with required scope, standards, procedures and frequency; review of reports on inspections and tests; notifying Owner of any observed deficiencies in the Work; and, providing copies of all reports on inspections and tests, as well as copies of all correspondence from the testing and inspection agencies, to Owner.
- 5.4.3.SUPPLEMENTAL DOCUMENTS. ESCO shall prepare, reproduce and distribute supplemental drawings, Plans and Specifications and shall issue interpretations in response to requests for clarification by Owner's Project Manager, or subcontractors or as required by construction exigencies. ESCO shall be responsible for notifying the appropriate parties of Owner's instructions and of changed requirements and schedule revisions.
- 5.4.4. CHANGE REQUESTS/CHANGE ORDERS, requested or approved by Owner: ESCO shall prepare, reproduce and distribute drawings, Plans and Specifications to describe Work to be added, deleted or modified; review proposals from subcontractor(s) for reasonableness of quantities and costs of labor and materials; review and recommend changes in time for substantial completion; assist in preparation of Owner approved modifications to the GMP; coordinate communications, approvals and notifications. ESCO shall keep a log of all change requests on a spreadsheet program and copy Owner bi-weekly.
- 5.4.5.PAYMENT REVIEW. ESCO shall evaluate and certify applications for payment and shall maintain detailed records supporting approved applications for payment.
- 5.4.6.PROJECT CLOSEOUT. ESCO shall verify that work is sufficiently complete, in accordance with the Contract Documents, to permit occupancy or utilization for the use for which it is intended. ESCO shall coordinate a detailed inspection with Owner's representative to ensure that the Work conforms to the Contract Documents; to verify the list submitted by the subcontractor(s) of items to be completed or corrected; to determine the amounts to be withheld until final completion; to issue Certificates of Substantial Completion; to perform inspection(s) upon notice by the sub- contractor(s) that the Work is ready for final inspection and acceptance; to notify Owner and subcontractor(s) of deficiencies found in follow-up inspection(s), if any; to perform final inspection with Owner's representative to verify final completion of the Work; receipt and transmittal of warranties, affidavits, receipts, releases and waivers of lien or bonds indemnifying Owner against liens; and issuance of Final Certificate(s) for Payment.
- 5.4.7.RECORD DRAWINGS services consisting of: Preparation of record drawings on reproducible Mylar, and on a re-recordable compact disk, based on information furnished by the subcontractors including significant changes in the work made during construction including modifying the floor plan layouts including partitions, furniture and equipment; transmittal of record drawings and general data, appropriately identified, to Owner and others as directed.
- 5.4.8.WARRANTY REVIEW: Prior to the expiration of the warranties of any subcontractors and manufacturers, ESCO and Owner's representative shall perform a warranty review, documenting defects or deficiencies in installation, materials, systems and equipment and preparing instructions to the sub-contractors and manufacturers for correction of noted defects. The ESCO shall then follow through to ensure that each defect or deficiency is appropriately addressed and verify that an appropriate remedy has been accomplished. ESCO shall copy Owner on the correspondence related to these warranty issues.

5.5. Construction Services/Construction Management Services.

- 5.5.1.ESCO shall have complete control over and charge of and shall be responsible for construction means,

methods, techniques, sequences or procedures, and for safety precautions and programs in connection with the Work on the Project, so that, upon completion of the Work, the Project shall be structurally sound and shall be a complete, fully-functioning facility suitable for the purposes for which it is intended. These roles are solely ESCO's responsibility under this Design and Construction Contract. ESCO shall be fully responsible for maintaining construction schedules and for any failure to carry out the Work in accordance with the Contract Documents. ESCO shall be deemed to have complete control over or charge of acts or omissions of all ESCO employees, agents, design professionals, and construction managers, as well as subcontractors, or their agents or employees, or of any other persons performing portions of the Work.

- 5.5.2. ESCO's responsibility to provide the Work under this Design and Construction Contract commences with the execution of this Design and Construction Contract and terminates upon ESCO's satisfaction of all obligations set forth in this Design and Construction Contract including those enumerated at Section K of the General Conditions.
- 5.5.3. ESCO shall provide, supervise and administer all Construction Work as set forth in this Design and Construction Contract and in the General Conditions unless otherwise provided in this Design and Construction Contract.
- 5.5.4. ESCO's duties, responsibilities and limitations of authority shall not be modified or extended without the express written agreement of the Parties and any required governmental approvals.
- 5.5.5. Except as may otherwise be provided in the Contract Documents or when direct communications have otherwise been specifically authorized, Owner shall conduct all communications concerning the Work through the EPM.
- 5.5.6. Subject to the right to suspend and terminate as provided in Section J of the General Conditions, in no event shall the existence of any claim, dispute or question constitute a justification for either party to suspend or terminate the progress of the Work, and both parties, in such event, shall continue to prosecute the Work and perform under this Design and Construction Contract diligently, and shall resolve the claim, dispute or question by agreement, mediation or other means.
- 5.5.7. At its own expense, ESCO shall correct Construction Work which does not conform to the Construction Documents.
- 5.5.8. ESCO warrants to Owner that materials and equipment incorporated in the Construction Work shall be new unless otherwise specified, and that the Construction Work shall be of good quality, free from faults and defects, and in conformance with the Contract Documents.
- 5.5.9. ESCO shall pay all sales, consumer, use and similar taxes and shall secure and pay for building and other permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Construction Work which are either customarily secured or are legally required. Owner shall compensate ESCO for the actual cost of approved changes in the Construction Work including the cost of permits, licenses, inspections or governmental fees incurred by ESCO as a direct result of this Project; provided, however, ESCO shall pay all costs of this Project that result from errors or defects in the design of the Project or in the Construction Work.
- 5.5.10. ESCO shall give notices and comply with all laws, ordinances, rules, regulations and lawful orders of public authorities relating to the Project, including but not limited to compliance with energy conservation design measures required under ORS 276.900 to 276.915 and rules adopted pursuant to those statutes.
- 5.5.11. ESCO shall be responsible to Owner for the completion of the Construction Work in accordance with this Design and Construction Contract.
- 5.5.12. ESCO shall keep the premises free from accumulation of waste materials or rubbish caused by ESCO's operations. At the completion of the Construction Work, ESCO shall remove from and about the Project all of ESCO's tools, construction equipment, machinery, surplus materials, waste materials and rubbish.
- 5.5.13. ESCO shall prepare Change Orders for Owner's approval and execution and shall have authority to make minor changes in the design of the Project and Construction Work consistent with the intent of the Project, not involving an adjustment in the contract sum or an extension of the contract time. ESCO shall promptly inform Owner, in writing, of all minor changes in the design of the Project and the Construction Work.
- 5.5.14. ESCO shall notify Owner when the Construction Work or an agreed upon portion thereof is substantially completed by issuing a Certificate of Substantial Completion which shall establish the date of Substantial

Completion; state the responsibility for each party for security, maintenance, heat, utilities, and damage to the Construction Work; include a list of items to be completed or corrected; and fix the time within which ESCO shall complete items listed

5.5.15. ESCO shall maintain in good order at the site one true and correct record copy of the drawings, Plans, Specifications, product data, samples, shop drawings, Change Orders, and other modifications, marked currently to record changes made during construction. ESCO shall deliver in-progress construction drawings and Plans to Owner upon completion of the design and construction of the Project, and prior to final payment. The record copy shall be based solely on information obtained by ESCO.

5.5.16. For this Project, the provisions of ORS 279C.800 to 279C.870, relative to prevailing wage rates, shall apply, and ESCO and all subcontractors shall comply with the foregoing requirements and the related requirements as provided in Section C of the General Conditions, including but not limited to the requirement to pay workers at not less than the specified minimum hourly rate of wage. A copy of the Oregon Bureau of Labor and Industries (BOLI) current prevailing wage rate publication applicable to this Project is appended to this Contract as Exhibit 4A and is incorporated herein by this reference. The ESCO's signature on this Design and Construction Contract constitutes a certification that ESCO agrees to be bound by such rates and the foregoing requirements for this Project, and that ESCO agrees to the attachment of a copy of the applicable BOLI publication. (A copy of the then applicable BOLI prevailing wage rates was referenced in the RFP and incorporated into the RFP, together with the BOLI web address where they were available. However, Owner reserves the right to require that the applicable BOLI wage rates current at the time this Design and Construction Contract is executed be attached to, or incorporated into, and apply to this Design and Construction Contract).

5.5.17. Pursuant to ORS 279C.825, the PWR fee shall be paid by ESCO according to the administrative rules of the Commissioner of BOLI.

5.6. Protection of Persons and Property.

5.6.1. ESCO shall be fully responsible for initiating, maintaining and providing supervision of safety precautions and programs in connection with the Work.

5.6.2. ESCO shall take reasonable precautions to ensure the safety of and shall provide reasonable protection to prevent damage, injury or loss to: 1) employees of Owner present on the Work site, employees of ESCO, and other persons who may be affected; 2) the Work and materials and equipment to be incorporated therein; and 3) other property at, or adjacent to the Work site.

5.6.3. ESCO shall be liable for damage or loss to property at the site caused by the negligence of ESCO, or anyone directly or indirectly employed by ESCO, or by anyone for whose acts it may be liable, except to the extent that damage or loss is attributable to the acts or omissions of Owner. This subparagraph shall in no way affect the applicability or coverage of the insurance required in Section G of the General Conditions.

5.7. Additional Services. All other services requested by Owner and mutually agreed to in writing by Owner and ESCO, including, among others, changes in the Work exceeding that described in Section 5 of this Design and Construction Contract, shall constitute additional services and shall be paid by Owner as provided in the written agreement applicable thereto.

6. RELATIONSHIP BETWEEN AND ROLES OF THE PARTIES

6.1. Owner Responsibilities.

6.1.1. Owner shall designate a representative authorized to act on Owner's behalf with respect to the Project. Owner or such authorized representative shall examine documents submitted by ESCO and shall promptly render decisions pertain thereto to avoid delay in the orderly progress of the Work. Owner shall render approval of formal submittals on the Schedule of Performance within ten (10) calendar days after receipt of submittals from ESCO.

- 6.1.2. If Owner observes or otherwise becomes aware of a fault or defect in the Work or nonconformity with the design documents or Construction Documents, Owner shall give prompt written notice thereof to ESCO.
- 6.1.3. Owner shall furnish required information and services and shall promptly render decisions pertaining thereto to avoid delay in the orderly progress of the design and construction.
- 6.1.4. No approval or acceptance of Construction Documents or changes herein given by or on behalf of Owner shall establish any warranty or representation on the part of Owner that such Construction Documents or changes are technically sound, complete or correct.
- 6.1.5. Owner shall communicate with the design professionals only through ESCO's Representative except in matters of public safety.

6.2. Independent Contractor. ESCO is an independent contractor and not an officer, employee, or agent of Owner as those terms are used in ORS 30.265.

6.3. ESCO's Key Personnel. ESCO's project staff shall consist of the following personnel. ESCO's personnel identified herein shall be considered unique, key personnel, and shall not be replaced during the Project without the written permission of Owner, which shall not be unreasonably withheld.

6.3.1. Michael S. Johnson, PE shall be the ESCO's Principal-in-Charge

6.3.2. ESCO shall assign the EPM upon contract execution. EPM shall participate in all meetings throughout the Project term.

6.3.3. The design professional for the street lighting conversion, namely Robert E. Rippee, PE, shall be ESCO's design professional that shall provide all design services provided for in this Design and Construction Contract for street lighting.

6.4. Design Builder's Consultants/Subcontractors. ESCO shall be assisted by the consultants and/ or subcontractors set forth in Exhibit 5A hereto. The Parties acknowledge and agree that the consultants have been reviewed and approved by Owner, prior to the execution of this Design and Construction Contract.

6.5. Replacement of ESCO's Project Team. If ESCO intends to substitute key personnel, consultants, or subcontractors, a request must be given to Owner at least 10 days prior to the intended time of substitution. When Owner has approved replacements, ESCO shall provide a transition period of at least 10 working days during which the original and replacement personnel shall be working on the Project concurrently, if feasible. Once a replacement for any key personnel, consultants or sub- contractors is authorized, further replacement shall not occur without the written permission of Owner.

7. PAYMENT OF COMPENSATION

Owner shall make payments to ESCO for those portions of the Contract Price (as defined in Section 9 herein) pertaining to the Construction Work in the manner set forth at Section E "Payments" of the General Conditions. Owner shall compensate ESCO for design, engineering and all other contracted Work pursuant to the terms of Section 9 herein.

8. TERMINATION

8.1. Parties' Right to Terminate by Mutual Agreement. This Design and Construction Contract may be terminated by written agreement of the Parties.

8.2. Owner's Right to Terminate for Convenience. Owner may, in its sole discretion, terminate this Design and Construction Contract by written notice to ESCO specifying the date of termination. If Owner, during Phase II terminates this Design and Construction Contract for convenience by providing 15 days advance written notice thereof to ESCO, Owner shall pay to ESCO that sum equal to the percentage of the Work that is completed and accepted by Owner.

8.3. Owner's Right to Terminate for Cause. Owner may terminate this Design and Construction Contract, in whole or in part, immediately upon notice to ESCO, or such later date as Owner may establish in such notice, upon the occurrence of any of the following events:

8.3.1. Owner fails to receive funding, or appropriations, limitations or other expenditure authority at levels sufficient to pay for ESCO's services;

8.3.2. Federal, state or local laws, regulations or guidelines are modified or interpreted in such a way that either the services under this Contract are prohibited or Owner is prohibited from paying for such services from the planned funding source;

8.3.3. ESCO no longer holds a license or certificate that is required to perform the services;

8.3.4. ESCO commits any material breach or default of any covenant, warranty, obligation or agreement under this Design and Construction Contract, fails to perform the work under this Design and Construction Contract within the time specified herein or any extension thereof, or so fails to perform as to endanger ESCO's performance under this Design and Construction Contract in accordance with its terms, and such breach, default or failure is not cured within 10 calendar days after delivery of Owner's notice, or such longer period of cure as Owner may specify in such notice.

8.4. Cessation of Work. Upon receiving a notice of termination, and except as otherwise directed in writing by Owner, ESCO shall immediately cease all activities related to this Design and Construction Contract.

8.5. ESCO's Right to Terminate for Cause.

8.5.1. ESCO may terminate this Design and Construction Contract if Owner fails to pay ESCO pursuant to the terms of this Design and Construction Contract, if Owner does not cure its failure to make payment to ESCO within 15 calendar days after receiving written notice from ESCO of such failure to make payment.

8.5.2. ESCO may terminate this Design and Construction Contract, for reasons other than non-payment, if Owner commits any other material breach or default of this Contract and fails to cure such breach or default within 30 calendar days after delivery of ESCO's notice, or such longer period as ESCO may specify in such notice.

9. CONTRACT PRICE

The "Contract Price," is the maximum, not-to-exceed, total amount payable under this Design and Construction Contract unless it is increased or decreased by the price of approved change orders, is \$3,929,098, as established by ESCO as part of the Project Development Plan and is detailed in Schedule 3.

9.1. Guaranteed Maximum Price for Construction Work. ESCO agrees that the portion of the Contract Price attributable to the Construction Work shall not exceed the guaranteed maximum price of \$3,929,098 (the "GMP"), that amount having been proposed by ESCO as part of the Project Development Plan. The GMP is composed of the following parts and/or includes the following parts:

- 9.1.1. Cost of Work as that term is defined in Section 11 herein.
- 9.1.2. Not to Exceed Contingency. The GMP includes a contingency amount which is available for ESCO's exclusive use for costs that are incurred in performing the Construction Work that are not included in a specific line item of the Cost of the Work, or the basis for a Change Order under the Contract Documents (the "Contingency"). By way of example, and not as a limitation, such costs include trade buy-out differentials, overtime, unforeseen conditions, acceleration, costs in correcting damaged Work that are not covered by insurance, or Subcontractor defaults. The Contingency is not available to Owner for any reason, including changes in scope or any other item, which would enable ESCO to increase the GMP under the Contract Documents. ESCO shall provide Owner with notice of all anticipated charges against the Contingency; Owner will notify ESCO, within ten (10) days of Owner's receipt of ESCO's notice of anticipated charges against the Contingency, of any objection of Owner to any ESCO-proposed charges against the Contingency.
- 9.1.3. Project Management, Construction Management, and Construction Administration Services shall be included in the GMP.
- 9.1.4. Acceptance of GMP. The execution of this Design and Construction Contract signifies the acceptance of the GMP by Owner. The full performance bond and payment bond security required by the RFP and General Conditions shall each be equal to the GMP.
- 9.1.5. GMP Savings. In the event that the actual and final Cost of the Work, plus ESCO Fixed Fees is less than the GMP as amended, the difference shall accrue to Owner.
- 9.2. Design Services Fee. This fee shall be a firm fixed price, to provide those services defined in Sections 5.3 and 5.4 of this Design and Construction Contract. A portion of this amount is payable with each application for payment during the design phase, as a percentage of the completed design services.
- 9.3. Systems Start-up and Commissioning Fee shall be a firm fixed price, to provide those services as agreed upon by ESCO and Owner, based on the Proposal presented by ESCO in the Project Development Plan. A portion of this amount is payable with each application for payment, as a percentage of the completed systems start-up and commissioning services/work.
- 9.4. Training of Owner's Operations & Maintenance Personnel Fee. This fee shall be a firm fixed price, to provide those services as agreed upon by ESCO and Owner, based on the proposal presented by ESCO in the Project Development Plan. A portion of this amount is payable with each application for payment, as a percentage of the completed training services/work.
- 9.5. Measurement and Verification ("M & V") Services Fee. This fee shall be an annual fee to be paid upon completion and delivery of the M & V annual report immediately following the M&V Commencement Date (defined in as the first day of the month following both the signed certificate of final completion and ESCO's receipt of the Contract Price), as agreed upon by ESCO and Owner, pursuant to Schedules 1 through 6 of the Project Development Plan. The M & V services shall run parallel with the energy savings guarantee contract provisions (the "Savings Contract") (See Section 9.6 below) and shall terminate when the Savings Contract ends.
- 9.5.1. If at the end of any twelve (12) month period the guaranteed savings have not been achieved, ESCO shall pay to Owner the difference between the actual amount saved and the guaranteed amount, upon receipt of Owner's written request for payment. Owner also has the option of withholding payments otherwise due ESCO (if any) in the amount of the difference between the actual amount saved and the guaranteed amount.
- 9.5.2. The Savings Contract term shall commence on the date Owner issues its certificate of final completion for Phase 2 and shall be for one (1) year, unless renewed as detailed in Schedule 6. The Owner may terminate the Savings Contract at the end of any twelve (12) month period following payment to ESCO for the preceding twelve (12) month period

10. CHANGES IN THE WORK. Adjustments to the GMP required by changes in the Work beyond the stated scope may be determined by any of the methods listed in Section D of the General Conditions, except that the overhead and profit markup for ESCO shall be limited to the Cost of Work Fee percentage as noted in Section 9.1.1 of this Design and Construction Contract.
11. COST OF THE WORK. (Covered in the GMP, to be reimbursed) The term "Cost of the Work" shall mean costs necessarily incurred by ESCO in the proper performance of the Construction Work; provided, however, the Cost of the Work shall include only the items specifically identified in this Section 11 and must be directly related to the construction of the Project.
 - 11.1. Labor Costs.
 - 11.1.1. Wages of construction workers directly employed by ESCO to perform the Construction Work at the site.
 - 11.1.2. Wages and salaries of ESCO's supervisory and administrative personnel stationed at the site, and for such personnel off the site when specifically related to the Project and with Owner's agreement after review of any information and Documents required by Owner.
 - 11.1.3. Wages and salaries of ESCO's supervisory or administrative personnel engaged at factories, workshops or on the road, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time directly required for the Construction Work.
 - 11.1.4. Fringe benefit costs paid or incurred by ESCO for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Sections 11.1 through 11.3 of this Design and Construction Contract.
 - 11.2. Subcontract Costs.
 - 11.2.1. Payments made by ESCO to Subcontractors in accordance with the requirements of the subcontracts toward completion of the Construction Work.
 - 11.2.2. Costs, including transportation, of materials and equipment incorporated or to be incorporated into the completed Construction Work.
 - 11.2.3. Costs of materials in excess of those actually installed but required to provide reasonable allowance for waste and for spoilage. Unused excess materials, if any, shall be delivered to Owner at the completion of the Work or, at Owner's option, shall be sold by ESCO. Any sale shall be commercially reasonable and ESCO shall provide an accounting for such a sale within 15 days of the transaction. Net amounts realized if any, from such sales shall be credited to Owner as a deduction from the Cost of the Work
 - 11.3. Costs of Other Materials and Equipment, and Related Items.
 - 11.3.1. Costs, including transportation, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment, and hand tools not customarily owned by the construction workers, which are provided by ESCO at the site and fully consumed in the performance of the Construction Work; and cost less salvage value on such items if not fully consumed, whether sold to others or retained by ESCO. Cost for items previously used by ESCO shall mean fair market value.

- 11.3.2. Rental charges for temporary facilities, machinery, and equipment and hand tools not customarily owned by the construction workers, which are provided by ESCO at the site, whether rented from ESCO or others, and costs of transportation, installation, minor repairs and replacements, dismantling and removal thereof. Rates and quantities of equipment rented shall be according to industry standards, shall not exceed acquisition costs, and for individual items exceeding \$10,000, shall be subject to Owner's prior approval.
- 11.3.3. Costs of removal of debris from the site.
- 11.3.4. Cost of telegrams and long-distance telephone calls, postage and parcel delivery charges, telephone service at the site and reasonable petty cash expenses of the site office, which are solely for the benefit of the Construction Work.
- 11.3.5. That portion of the reasonable travel and subsistence expenses of ESCO's personnel, at Owner approved rates, but not in excess of the rates allowed Owner's employees, incurred while traveling in discharge of duties connected with the Construction Work. Main office staff travel shall not be reimbursed unless approved in advance by Owner.
- 11.4. Miscellaneous Costs.
 - 11.4.1. That portion of premiums for insurance directly attributable to this Design and Construction Contract, including deductible for builders all/risk insurance (but excluding premiums for comprehensive/commercial general liability, automobile liability, professional liability/errors & omissions, and worker's compensation coverage), and payment and performance bonds as required by Section G of the General Conditions (but excluding premiums for Subcontractor bonds unless authorized by Owner), Section 9.3 of Division 1 of the Contract, and Section 9.1.5 this Design and Construction Contract.
 - 11.4.2. Sales use or similar excise taxes imposed by a governmental authority which are directly related to the Construction Work and for which ESCO is liable.
 - 11.4.3. Fees and assessments for the building permit and for other permits, licenses and inspections for which ESCO is required by the Contract Documents to pay.
 - 11.4.4. Direct costs associated with ESCO's job site safety program.
 - 11.4.5. ESCO deposits lost for causes other than ESCO's fault or negligence.
- 11.5. Other Costs.
 - 11.5.1. Costs of drawings, Plans, Specifications and other Documents required to complete the Construction Work, except as provided by Owner.
 - 11.5.2. Other costs incurred in the performance of the Construction Work if and to the extent approved in advance in writing by Owner.
- 11.6. Repairs to Damaged, Defective or Nonconforming Construction Work. The Cost of the Work shall also include costs, which are incurred by ESCO in taking action to prevent threatened damage, injury or loss in case of an emergency affecting the safety of persons and property.
- 12. COSTS INCLUDED IN ESCO FIXED FEE (Not to be reimbursed). The Cost of Work Fee shall include all costs for overhead and profit that are not directly attributable to the Construction Work as defined in Section 11 of this Design and Construction Contract. Generally, the Cost of Work Fee shall include the following:
 - 12.1. Salaries and other compensation of ESCO's personnel stationed at ESCO's principal office or offices other than the site office except as otherwise allowed under the Contract.
 - 12.2. Expenses of ESCO's principal office and offices other than the site office.

- 12.3. Any overhead and general expenses, except as may be expressly included in Section 11 of this Design and Construction Contract.
- 12.4. ESCO's capital expenses, including interest on ESCO's capital employed for the Construction Work.
- 12.5. Any cost associated with the Project not specifically and expressly described in Section 11 of this Design and Construction Contract.
- 12.6. Costs due to the fault or negligence of ESCO, subcontractors, anyone directly or indirectly employed by any of them, or for whose acts any of them may be liable, including but not limited to costs for the correction of damaged, defective or nonconforming Construction Work, disposal and replacement of materials and equipment incorrectly ordered or supplied, and making good damage to property not forming part of the Construction Work.
- 12.7. Any costs which would exceed the GMP.

13. DISCOUNTS, REBATES AND REFUNDS

- 13.1. Discounts, Rebates and Refunds. Cash discounts obtained on payments made by ESCO shall accrue to Owner. Trade discounts, rebates, refunds and net amounts received from sales of surplus materials and equipment shall accrue to Owner, and ESCO shall use its best efforts to obtain such discounts, refunds and net amounts.
- 13.2. Amounts Credited to Owner. Amounts, which accrue to Owner in accordance with the provisions of Section 13.1 of this Design and Construction Contract, shall be credited to Owner as a deduction from the Cost of the Work.

14. ESCO'S OBLIGATIONS UNDER SUBCONTRACTS.

- 14.1. No use of a subcontractor shall relieve ESCO of any of its obligations or liabilities under this Design and Construction Contract. ESCO shall be fully responsible and liable for the acts or omissions of all subcontractors and suppliers including persons directly or indirectly employed by them. ESCO shall have sole responsibility for managing and coordinating the operations of its subcontractors and suppliers, including the settlement of disputes with or between ESCO and any such subcontractor.
- 14.2. ESCO shall include in each subcontract and require each subcontractor to include in any lower tier subcontract, any provisions necessary to make all of the provisions of the General Conditions fully effective as applied to subcontractors. The ESCO shall provide all necessary Plans, Specifications, and instructions to its suppliers and subcontractors to enable them to properly perform their work.

15. SUBCONTRACTOR SELECTION.

- 15.1. The selection of all subcontractors shall be the sole responsibility of ESCO. ESCO shall pre-qualify subcontractors through a scoring system and interview process. Qualified subcontractors shall then be invited to bid. Subcontracts shall be awarded to the lowest responsive, responsible offeror. The pre-qualification and bidding process shall not encourage favoritism or substantially diminish competition. The process shall conform to the following procedures, in general compliance with the open and competitive nature of the Attorney General's Model Public Contract Rules, taking into account industry subcontracting practices:
 - 15.1.1. All bids or quotes shall be written and submitted to a specific location at a specific time. Subcontractors must be registered with the Construction Contractors Board.
 - 15.1.2. Bids or quotes shall be awarded to the lowest responsive and responsible offeror.
 - 15.1.3. The State of Oregon Bureau of Labor & Industries prevailing wage rates in effect on the effective date of this Design and Construction Contract shall apply.
- 15.2. Under the following circumstances, Construction Work may be subcontracted on other than a low bid or quote basis: single fabricators of materials; special packaging requirements for subcontractor work; or, where ESCO demonstrates that an alternative contracting method can clearly benefit Owner.

16. MISCELLANEOUS LABOR.

- 16.1. ESCO may provide normal layout, clean up, and other "pick-up" work required to complete the Project with its own forces, without the necessity of subcontracting.
- 16.2. If ESCO desires to perform any other Construction Work through third-party subcontractors or other entities, that Construction Work shall be bid according to the provisions of Section 16 of this Design and Construction Contract.

17. ACCOUNTING; AUDIT ACCESS. ESCO shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management under this Design and Construction Contract; the accounting and control systems shall be satisfactory to Owner. Owner and Owner's representatives, and auditors, shall be afforded reasonable and regular access to ESCO's records, books, correspondence, instructions, drawings, Plans, Specifications, receipts, subcontracts, purchase orders, vouchers, memoranda and other data relating to this Agreement, and ESCO shall preserve these for a period of three years after final payment, or for such longer period as may be required by law. Owner may, at its discretion, perform periodic audits of the Cost of the Work and any other reimbursable costs associated with the Project. Owner intends to conduct a final audit of reimbursable costs prior to the Agreement closeout. The ESCO shall cooperate fully with Owner in the performance of such audits.

18. CONTRACT TIME

- 18.1. Commencement of Work. The Work shall commence on the date ESCO receives Owner's Notice to Proceed, unless the parties mutually agree otherwise in writing. Owner's Notice to Proceed shall be issued on or after the effective date of this Design and Construction Contract. Time is of the essence with respect to this Agreement.
- 18.2. Substantial Completion. Substantial Completion for the entire Construction Work shall be achieved no later than 180 calendar days after the Date of Commencement ("Scheduled Substantial Completion Date").
- 18.3. Acceptance of Work. A prerequisite to Owner's acceptance is that ESCO must first warrant, by written notice to Owner's authorized representative, that ESCO has substantially completed the Statement of Work as follows: Phase II, The Energy Related and Non-Energy related items are substantially complete, commissioning has been performed, and the FIMs are producing savings equal to or greater than the Guaranteed Savings.
- 18.4. Final Completion of the Construction Work. Final Completion of the Construction Work, or identified portions of the Construction Work, shall be achieved as expeditiously as practicable. All of the dates set forth in this Section 18 shall be subject to adjustment in accordance with the General Conditions.
- 18.5. Project Schedule and Work Time Limitations. ESCO shall comply with the "Project Schedule" and "Work Time Limitations" for the Project negotiated by Owner and ESCO as provided in Sections 3.4 and 3.5 of Division 1 of the ESPC. Changes, if any, to the Project Schedule and Work Time Limitations, including changes for the Work under this Design and Construction Contract, must be agreed to in writing by Owner and ESCO.

19. LIQUIDATED DAMAGES FOR DELAY. Liquidated damages due to contractor-caused delays shall be limited to cost of lost energy savings for the same time-period as the delay, for each day after the contract substantial completion date until and including the actual date.

20. STANDARD OF CARE; DRAWINGS, PLANS & SPECIFICATIONS. ESCO hereby represents and warrants that all drawings, Plans, Specifications, and other Documents prepared pursuant to this Design and Construction Contract shall be completed in a manner consistent with the highest professional standard of care, and shall function for the purposes intended, and that the Project, if constructed in accordance with such drawings, Plans, Specifications, and other Documents, shall be structurally sound and a complete and properly functioning and suitable for the purposes for which it is intended.

21. CORRECTION OF DRAWINGS, PLANS & SPECIFICATIONS. ESCO shall be responsible for correcting any inconsistencies, errors or omissions in the drawings, Plans, Specifications, and other documents. ESCO shall correct, at no additional cost to Owner, any and all inconsistencies, errors and omissions in the drawings,

Plans and Specifications.

22. FUNDS AVAILABLE AND AUTHORIZED; PAYMENTS. Owner reasonably believes that sufficient funds are anticipated to pay all amounts due hereunder and hereby covenants and agrees that it will use its best efforts to obtain and properly request and pursue funds from which payments hereunder may be made, including making provisions for such payments to the extent necessary in the budget submitted for the purpose of obtaining funds and using its best efforts to have such budget approved. It is Owner's intention to make all payments due hereunder if funds are legally available for this Project and in that regard, Owner represents and warrants to ESCO that this Design and Construction Contract is important to Owner's efficient and economic operation. If, despite the above, Owner is not allotted sufficient funds for the next succeeding fiscal period by appropriation, appropriation limitation, grant, or other funds source lawfully available to it for such purposes to continue the Project and make payments hereunder, Owner may terminate this Agreement, by notice to ESCO, without penalty, effective at the end of the current fiscal period for which funds have been allocated and if not so terminated Owner will remain fully obligated for all amounts owing hereunder. Such termination shall not constitute an event of default under any other provision of the Design and Construction Contract, but Owner shall be obligated to pay all charges incurred through the end of such fiscal period. Owner shall give ESCO notice of such non-availability of funds within thirty (30) days after it received notice of such non-availability.
23. MISCELLANEOUS.
- 23.1. Governing Law; Jurisdiction; Venue. This Design and Construction Contract shall be governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflicts of law. Any claim, action, suit or proceeding (collectively "Claim") between Owner and ESCO that arises from or relates to this Design and Construction Contract shall be brought and conducted solely and exclusively within the Circuit Court of Clackamas County for the State of Oregon; provided, however, if a Claim must be brought in a federal forum, the it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon, Portland Division. In no event shall this Subsection be construed as a waiver by Owner or the State of Oregon of any form of defense or immunity, whether based on sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the United States Constitution or otherwise. ESCO, BY EXECUTION OF THIS DESIGN AND CONSTRUCTION CONTRACT, HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF SAID COURTS.
- 23.2. Foreign Contractor. If ESCO is not domiciled in or registered to do business in the State of Oregon, ESCO shall promptly provide to the Oregon Department of Revenue and the Secretary of State Corporation Division all information required by those agencies relative to this Design and Construction Contract. ESCO shall demonstrate its legal capacity to perform the work under this Design and Construction Contract in the State of Oregon prior to entering into this Design and Construction Contract.
- 23.3. Notices. Except as otherwise expressly provided in this Design and Construction Contract, any notices to be given hereunder shall be given in writing by personal delivery, facsimile, or mailing the same, postage prepaid, to ESCO or Owner at the addresses or numbers as either party may hereafter indicate pursuant to this Section. Any notice so addressed and mailed shall be deemed to be given five (5) calendar days after the date of mailing. Any notice delivered by facsimile shall be deemed to be given when receipt of the transmission is generated by the transmitting machine. To be effective against Owner, such facsimile transmission must be confirmed by telephone notice to Owner's Representative for the Project. Any notice by personal delivery shall be deemed to be given when actually delivered.
- 23.4. Disclosure of Tax Identification Number. ESCO must provide its federal tax ID number to Owner. This number is required pursuant to ORS 305.385. The Tax Identification Number provided pursuant to this authority will be used for the administration of state, federal and local tax laws.
- 23.5. Compliance with Applicable Law. ESCO agrees to comply with all federal, state, county, and local laws, ordinances, and regulations applicable to the Services to be provided under this Design and Construction Contract. ESCO specifically agrees to comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations. ESCO also shall comply with the

Americans with Disabilities Act of 1990 (Pub. L. No. 101-336), ORS 659A.142, and all regulations and administrative rules established pursuant to those laws. Failure or neglect on the part of ESCO to comply with any or all such laws, ordinances, rules, and regulations shall not relieve ESCO of these obligations nor of the requirements of this Design and Construction Contract. ESCO further agrees to make payments promptly when due, to all persons supplying to such ESCO labor or materials for the performance of the Services to be provided under this Design and Construction Contract; pay all contributions or amounts due the Industrial Accident Fund from such contractor incurred in the performance of this Design and Construction Contract; not permit any lien or claim to be filed or prosecuted against the Owner on account of any labor or material furnished; and pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167. If ESCO fails or refuses to make any such payments required herein, the appropriate Institution official may pay such claim. Any payment of a claim in the manner authorized in this Section shall not relieve ESCO from obligation with respect to any unpaid claims.

Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act and the Oregon Building Codes require all new construction to be totally accessible to people with physical limitations. Owner expects that all spaces in designs for new facilities and in remodel projects shall be accessible to people with physical limitations.

- 23.6. Tax Compliance Certification. By signature on this Design and Construction Contract, the undersigned hereby swears or affirms under penalty of perjury that the undersigned is authorized to act on behalf of ESCO and has authority and knowledge regarding the payment of taxes, and that ESCO is, to the best of the undersigned's knowledge, not in violation of any Oregon Tax Laws. For purposes of this certification, "Oregon Tax Laws" means those programs listed in ORS 305.380(4), namely any state tax imposed by ORS chapters 118, 314, 316, 317, 318, 321 and 323 and sections 10 to 20, chapter 533, Oregon Laws 1981, as amended by chapter 16, Oregon Laws 1982 (first special session); the elderly rental assistance program under ORS 310.630 to 310.706; and local taxes administered by the Department of Revenue under ORS 305.620.
- 23.7. Severability. If any term or provision of this Design and Construction Contract is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the Parties shall be construed and enforced as if the Design and Construction Contract did not contain the particular term or provision held to be invalid.
- 23.8. Waiver. The failure of Owner to enforce any provision of this Design and Construction Contract shall not constitute a waiver by Owner of that provision or any other provision.
- 23.9. Media Contacts; Confidentiality. ESCO shall provide no news release, press release, or any other statement to a member of the news media regarding this Project, without Owner's prior written authorization. Furthermore, except in the case where Owner specifically authorizes disclosure of Owner's confidential information in writing, ESCO shall maintain the confidentiality of Owner's information pertaining to the Project, unless withholding such information would violate the law, create the risk of significant harm to the public or prevent ESCO from establishing a claim or defense in an adjudicatory proceeding. ESCO shall require of its subcontractors similar agreements to maintain the confidentiality of Owner's information.
- 23.10. Conflict of Interest. Except with Owner's prior written consent, ESCO shall not engage in any activity, or accept any employment, interest or contribution that would, or would reasonably appear, to compromise ESCO's professional judgment with respect to this Project, including, without limitation, concurrent employment on any project in direct competition with the Project.

Exhibit List:

- Exhibit 1A – State of Oregon General Conditions for Public Improvement Projects, January 1, 2012 Edition (included by reference only).
- Exhibit 2A – Supplemental Terms and Conditions
- Exhibit 3A – Project Development Plan dated 10/9/2019

- Schedule 3 – Compensation to ESCO
- Schedule 6 – Measurement and Verification Plan

THIS DESIGN AND CONSTRUCTION CONTRACT CONSTITUTES THE ENTIRE AGREEMENT BETWEEN THE PARTIES ON THE SUBJECT MATTER ADDRESSED HEREIN. THE TERMS OF THIS DESIGN AND CONSTRUCTION CONTRACT CAN NOT BE WAIVED, ALTERED, MODIFIED, SUPPLEMENTED, OR AMENDED, IN ANY MANNER WHATSOEVER, EXCEPT BY WRITTEN INSTRUMENT SIGNED BY THE PARTIES AND CONTAINING ALL REQUIRED STATE OF OREGON APPROVALS. ANY SUCH WAIVER, ALTERATION, MODIFICATION, SUPPLEMENTATION, OR AMENDMENT, IF MADE, SHALL BE EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, REGARDING THIS DESIGN AND CONSTRUCTION CONTRACT EXCEPT AS CONTAINED, INCORPORATED OR REFERENCED HEREIN. ESCO, BY THE SIGNATURE BELOW OF ITS AUTHORIZED REPRESENTATIVE, HEREBY ACKNOWLEDGES THAT IT HAS READ THIS DESIGN AND CONSTRUCTION CONTRACT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. THIS DESIGN AND CONSTRUCTION CONTRACT MAY BE EXECUTED IN SEVERAL COUNTERPARTS, EACH OF WHICH SHALL BE AN ORIGINAL, AND ALL OF WHICH SHALL CONSTITUTE THE SAME INSTRUMENT.

IN WITNESS WHEREOF, and intending to be legally bound, the authorized representatives of the parties hereto subscribe their names.

ESCO: _____ Date: _____
 Signature
 _____ Title: _____
 Printed Name

CITY OF SANDY: _____ Date: _____
 Kim Yamashita, City Manager

Approved for Legal Sufficiency
 City Attorney: _____ Date: _____
 David Doughman, City Attorney

Exhibit 1A

Energy Savings Performance Contract

State of Oregon General Conditions For Public Improvement Projects, January 1, 2012 Edition

The 2012 Edition of the State of Oregon General Conditions for Public Improvement Projects can be found using the following link: <https://www.oregon.gov/das/Procurement/Guiddoc/GenCon4PI.pdf>

Exhibit 2A

Energy Savings Performance Contract

Supplemental Conditions

ADDED PARAGRAPH:

The following paragraph is added to the STANDARD TERMS AND CONDITIONS of the ESPC.

4.5.5 Neither party shall be liable to the other party for any consequential, indirect, special, incidental, exemplary, or similar, damages or losses, including loss of profits, arising out of or relating to this agreement, whether based in contract or tort or any other theory, even if a party has been advised of the possibility of such damage.

ADDED PARAGRAPH:

The following paragraph is added to the STANDARD TERMS AND CONDITIONS of the ESPC.

4.5.6 In no event shall the aggregated liability of a party exceed the greater of \$3,929,098 or that party's total primary insurance coverage then available with respect to such damages.

Exhibit 3A

Energy Savings Performance Contract

Project Development Plan

[the final project development plan report would replace this page]

Schedule 3

Energy Savings Performance Contract

Compensation to ESCO

5.03 Compensation to ESCO

5.03.1 COMPENSATION TO ESCO OVERVIEW

PURPOSE

Schedule 3 shall establish all cost components for the Design-Build Contract, including all fees, the cost of work, and the Guaranteed Maximum Price for Construction. The Design-Build Contract shall include a Design Fixed Fee, Annual Measurement & Verification Fixed Fee, Cost of Work, Project Management, Construction Management, and Project Engineering Fixed Fee, Commissioning and City Staff Training Fixed Fee, and ESCO Fixed Fee.

The Total Guaranteed Maximum Price for Construction shall be the sum of the Cost of Work; Project Management, Construction Management, and Project Engineering Fixed Fee; the Commissioning and City Staff Training Fixed Fee; and the ESCO Fixed Fee.

5.03.2 TOTAL GUARANTEED MAXIMUM PRICE BREAKDOWN

COST OF WORK

The Cost of Work includes all direct cost estimates for equipment and installation labor. This also includes permits, insurance, taxes, and bonds. Note, that the bond will only cover the cost of design and construction and will not cover the performance guarantees (see Schedule 6, Section 5.06.3.3 for bond clarification language). Installation labor includes craft or trades persons, working foremen, commissioning and startup specialists, delivery persons, site supervision, and similar classifications whose work directly involves implementation of the FIMs.

The Cost of Work includes ESCO's contingency of \$140,221. ESCO will utilize the contingency for items necessary to complete the original scope of the Project. ESCO will submit a Change Order Proposal to City when utilizing the contingency funds. ESCO will utilize contingency to cover costs for unforeseen or latent conditions and owner directed changes beyond items originally estimated and scoped for the Project. ESCO has made a good faith effort to identify and estimate the cost of work, however the City may not unduly hold back authorization of the use of contingency funds by ESCO unless the change is due to errors or omissions committed by ESCO, its designers, subcontractors, or suppliers.

ESCO intends to self-perform commissioning and site supervision aspects. ESCO reserves the right to self-perform startup specialist, plumbing trades, piping trades, sheet metal trades, and electrical trades as needed to achieve the scope of work. ESCO has already competitively bid portions of the work to a select list of ESCO qualified subcontractors that may include aspects of the work reserved for self-performance. Should ESCO self-perform any of the work noted above, ESCO will provide bid results to City along with ESCO's self-perform pricing in comparison to the competitively bid results for approval prior to awarding the work. The table below outlines the subcontractors that are planned to be utilized.

Subcontractor / Vendor	Associated Scope of Work	CCB #
Pedal Valves, Inc.	Water meter installation	225791
Mueller Systems	Water meters & AMR/AMI components	
Consolidated Supply Co.	Installation of AMR/AMI components	210054
Christenson Electric, Inc.	Street Lighting LED Conversion	458
Current by GE	Street Lighting Control components	

Site Supervision time will be substantiated at the rate \$156/hour and Safety time will be substantiated at \$129/hour.

Commissioning and system startup time will be substantiated at the rate of \$137/hour.

The Cost of Work included in the Guaranteed Maximum Price (GMP) for the Project is estimated to be \$3,004,370.

DESIGN FIXED FEE

The Design Fixed Fee includes all costs associated with professional services and ESCO's oversight to provide biddable plans, record drawings, and final Schedules 7 through 10. ESCO shall provide stamped construction documents as required to obtain permits. In lieu of specification manuals, the required information will be included on the biddable plans and record drawings. Fee will be progress billed based on City's acceptance of design components.

The Design Fixed Fee included in the GMP for the Project is \$211,677.

PROJECT MANAGEMENT, CONSTRUCTION MANAGEMENT, AND PROJECT ENGINEERING FIXED FEE

The Project Management, Construction Management, and Project Engineering Fixed Fee includes all costs associated with all activities performed by ESCO throughout the construction phase.

The Project Management, Construction Management, and Project Engineering Fixed Fee included in the GMP for the Project is \$168,265.

ANNUAL MEASUREMENT & VERIFICATION, AND ENERGY SAVINGS GUARANTEE FIXED FEE

The Annual Measurement & Verification and Energy Savings Guarantee Fixed Fee (M&V Fixed Fee) includes all costs associated with the performance of all M&V activities, delivery of one annual M&V report, and all costs associated with providing the Energy Savings Guarantee. M&V Fixed Fee for years after the first annual M&V report are outlined in Schedule 6, Section 5.06.3.1 Energy Savings Guarantee Term and Schedule 6, Section 5.06.3.2 Energy Savings Guarantee Fee.

The M&V Fixed Fee included in the GMP for the Project is \$5,889 plus additional years desired by City.

COMMISSIONING AND CITY STAFF TRAINING FIXED FEE

The Commissioning and City Staff Training Fixed Fee includes costs associated with the preparation and execution of the commissioning and City staff training plans, and submittal of the final commissioning report.

The Commissioning and City Staff Training Fixed Fee included in the GMP for the Project is \$28,044.

ESCO FIXED FEE

The ESCO Fixed Fee includes costs associated with overhead expenses, all other indirect costs, and profit.

The ESCO Fixed Fee included in the GMP for the Project is \$510,852.

5.03.3 TOTAL GUARANTEED MAXIMUM PRICE

The Guaranteed Maximum Price (GMP) for the Project is \$3,929,098.

Schedule 6

Energy Savings Performance Contract

M&V Plan and Guaranteed Savings Provisions

5.06 Schedule 6 – M&V Plan and Guaranteed Savings Provisions

5.06.1 MEASUREMENT & VERIFICATION PLAN OVERVIEW

PURPOSE

Schedule 6 provides the Measurement & Verification (M&V) plan for the Project. Schedule 6 also establishes the terms and conditions for the Energy Savings Guarantee.

5.06.2 MEASUREMENT & VERIFICATION PLAN

5.06.2.1 Overview of FIMs Included in Project

FIM 07.00 – Water Meter AMR/AMI

A fixed network AMR/AMI will be installed within the City Limits. The existing water meters will be replaced with new water meters and radios for remote reading. The "savings" associated with this measure is increased revenue for the City from improved meter accuracy.

FIM 09.03 – Street Lighting Conversion

The existing high pressure sodium (HPS) and mercury vapor (MV) street lighting fixtures will be converted to light emitting diode (LED) technology. The pendant acorn style fixtures will remain and be retrofit with a LED conversion kit. The remaining HPS and MV fixtures will be removed and new LED fixtures will be installed. The savings associated with this measure is based on reduced power consumption of the street lighting.

5.06.2.2 M&V Option Selected By FIM

FIM 07.00 – Water Meter AMR/AMI

McKinstry will utilize Option A-Retrofit Isolation with Key Parameter Measurement for this measure.

McKinstry does not guarantee the revenue increase from replacing the water meters. McKinstry will guarantee that the new water meters average accuracy is at least 98.5%.

The existing baseline water and sewer billing information will be used in conjunction with the pre-measurement meter accuracy data to determine the amount of water and sewer that should be billed to customers. During the PDP phase 80 existing water meters (73 of the 5/8"x3/4" and 7 of the 1" meters) were bench tested. An additional 80 existing meters will be removed and sent for 3rd party bench testing results. These measurements will constitute the scope of the pre-measurements.

160 new meters that align with the pre-measurement meter size, account type, and usage will be bench tested to confirm the post retrofit accuracy.

Measured Variables:

1. Average accuracy of existing water meters
2. Average accuracy of new water meters.

Stipulated Variables:

1. Water and sewer consumption of the end-users
2. Manual meter reading subcontract value
3. Meter annual O&M replacement cost savings.

FIM 09.03 –Street Lighting Conversion

McKinstry will utilize Option A-Retrofit Isolation with Key Parameter Measurement for this measure.

For the flat rate street lighting fixtures, McKinstry will review the first two months' PGE street lighting invoices following Substantial Completion of the project to confirm that the invoice accurately reflects the correct fixture quantities by lamp group and the correct tariff rates are being applied. Following each month's review, any discrepancies will be communicated to the City for delivery to PGE. Any corrections made by PGE will be verified with the second month's invoice review. Once McKinstry has verified that the second month's invoice is correct, McKinstry will calculate the monthly utility cost avoided savings (in dollars). This value will be compared to the baseline utility cost to determine the amount of utility cost avoided savings. The results of Cost Avoided Utility Bill Savings analysis will be presented in the Preliminary M&V Report. Once accepted by the City, the utility cost avoided savings will be carried forward for the remainder of the guarantee period.

For the metered light fixtures. The post retrofit wattage will be measured using the new lighting control node to confirm the post retrofit wattage. The pre retrofit wattage will be stipulated per the information in the GIS audit that was completed in January 2019.

Measured Variables:

1. Quantity of existing flat rate fixture wattage.
2. Post Retrofit wattage of the metered fixtures.

Stipulated Variables:

1. Hours of Operation
2. Pre-retrofit wattage of the metered fixtures.

5.06.2.3 Measurements to Be Taken During M&V

For a complete breakdown of the key performance indicators, stipulated values, and timing of measurements see Section 3, Table 3.2 of the Project Development Plan Report.

Below is a summary table of the measurements to be taken. The final location and instruments to be used will be developed during the Design Phase of the Design-Build Agreement.

FIM Name	Key Performance Indicators	Pre Measurement	Post Measurement	Stipulated
07.00-Water Meter AMR/AMI	Existing Meter Accuracy (%)	✓		
	New Meter Accuracy (%)		✓	
	Total Annual Water Production			✓
09.06-Street Lighting Conversion	Astronomical Night Hrs/Yr (hrs)			✓
	Fixture Input Power by Fixture Type (W)	✓	✓	
	Number of Fixtures by Fixture Type (Qty)	✓	✓	

5.06.2.4 Quantities of Measurements to Be Taken During M&V

McKinstry proposes to measure a statistically relevant quantity of variables when the same component is being measured in quantities over 10. When determining the quantity to sample, the "Sampling for M&V: Reference Guide Version 1.0" published by Bonneville Power Administration in September 2011 will be used to determine the quantity of samples to be measured.

5.06.3 GUARANTEED SAVINGS CONTRACT PROVISIONS

5.06.3.1 Energy Savings Guarantee Term

The cost of the first year of Measurement & Verification is included in the Guaranteed Maximum Price. The cost of ongoing Measurement & Verification in years 2-20 is at the discretion of the City. McKinstry is prepared to continue the Energy Savings Guarantee for a period equal to the shortest of the following criteria:

1. City authorizes the continuation of the Energy Savings Guarantee Period via written direction and appropriate PO or contract extension that includes authorization for additional Measurement & Verification Fee. Authorization must be provided within 30 calendar days of the delivery of the previous periods Measurement & Verification Report. Should the City cancel and/or not renew the ongoing services, the Energy Savings Guarantee will also be terminated at the same point in time.
2. The term of any City obtained financing to pay for the associated work.
3. The expected useful life of the equipment installed and associated work.
4. The City is notified that the Owner's Responsibilities are not being met and does not take corrective action within 30 calendar days.

5.06.3.2 Energy Savings Guarantee Fee

The Table below outlines the Energy Savings Guarantee Fee for each of the first 5 years.

Energy Savings Guarantee Year	Energy Savings Guarantee Fee
Year 1	INCLUDED IN GMP
Year 2	\$6,066
Year 3	\$6,248
Year 4	\$6,435
Year 5	\$6,628
Future Years Beyond Year 5	To Be Negotiated Based on Current Rates & Scope

5.06.3.3 Bond Coverage Clarification

Subject to the requirements of ORS 279C.380, Contractor shall furnish performance and payment Bonds, each in an amount equal to the Construction Cost. The Bonds shall cover completion of the physical work per the approved design and shall not guarantee or warranty efficiency or system performance. The Bonds shall not cover any obligation of the contractor to ensure that the work as constructed will result in any particular level of energy savings. Any suit on the Bonds must be brought within the period of one (1) year after substantial completion, as defined in the contract; provided, however, that if this suit limitation is void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

CUSTOMER NAME: City of Sandy, Oregon

ATTACHMENT FOR THE SPECIFIC CONTRACT TITLED: ESPC Water Meter AMR/AMI and Street Lighting Conversion Project

By:

Printed Name: _____

Title:

Date: _____

5.06.3.4 FIM Specific Measurement & Verification Methodology

GUARANTEES

Schedule 5-Savings Calculations Formulae provides the specific energy consumption savings for each facility improvement measure and the guarantee that McKinstry will provide associated with that measure. Savings calculations are based upon both baseline operating characteristics and proposed operational criteria.

PROPOSED

The proposed operating criteria, including system performance and operational expenditures, which were used for savings calculations are provided in Section 3, Table 3.2 of the Project Development Plan. Systems must be operated per the proposed criteria to ensure energy cost savings are realized. McKinstry will provide the initial start-up, commissioning, and programming of the system to ensure that the systems operate per the proposed operating criteria. City acknowledges their responsibility to ensure that these criteria are maintained, and the associated energy savings are realized. Energy Savings Guarantees are predicated on City maintaining their responsibilities as provided below in Section 5.06.3.5 - Ongoing Owner Responsibilities.

REPORTING

Section 3, Table 3.2-M&V Plan Outline in the Project Development Plan provides the specific ongoing reporting tasks that McKinstry will perform to verify that the systems are performing as specified. The intent of the verification is to measure and verify leading indicators on which the energy savings are based. McKinstry has proposed measurement of these indicators as the Measurement & Verification for this project. The site-specific Measurement & Verification Program encompasses the following elements:

1. Closeout Commissioning Report: McKinstry will provide a closeout commissioning report. This report is released one month after all commissioning items are closed out. A major portion of the scope of this report consists of the tasks outlined under the "Post-Retrofit" stage in Section 3, Table 3.2 of the Project Development Plan.
2. First Year Reporting: The scope of this report consists of the tasks outlined under the "First Year" column of Section 3, Table 3.2 in the Project Development Plan. A Notice of Commencement of Energy Savings will be delivered 6-8 weeks after the Closeout Commissioning Report is delivered and approved by the City. The first report shall be provided no later than one year after the last date noted in the Notice of Commencement of Energy Savings. However, if additional phases of work are involved, a single Performance Assurance Report may be provided at regular interval(s) that reports across all relevant phases of work.
3. Years 2 – 5 Ongoing Reporting: Same as First Year Reporting. See also Sections 5.06.2.1 and Section 5.06.3.2 for additional details.

5.06.3.5 FIM Ongoing Owner Responsibilities

An ESPC is a partnership between City and McKinstry. To ensure project success, City shall provide the following services as part of Measurement & Verification. If these services are not provided, energy savings and associated guarantees will be modified to reflect the associated impact via baseline adjustments.

1. Maintain all equipment per manufacturer's recommendations and proposed maintenance schedule.
2. Maintain all sequence of operations and performance criteria related to installed systems as proposed and designed.
3. Provide other FIM specific ongoing responsibilities as provided in Section 3, Table 3.2 - M&V Plan Outline of the Project Development Plan.
4. Provide McKinstry with copies of actual monthly utility billing information on a minimum of a quarterly basis for the duration of the ongoing Energy Savings Guarantee Period. This includes electric, water, and sewer information. For this project, the ongoing Energy Savings Guarantee Period shall be one year, unless extended as outlined in Schedule 6.
5. Provide McKinstry all internal sub-meter data, including electric, water, and sewer meters, providing direct or indirect service to all equipment included in this project.
6. Provide McKinstry access to the lighting control system and the AMI network for the purpose of collecting and logging data over time as required for performance verification.
7. City shall notify McKinstry in writing with regards to any changes or alterations to the properties that will affect energy usage. This notification must be provided within two weeks of the change. This includes occupancy or use changes, load changes, scheduling changes, and sequence of operations changes, or equipment additions.

5.06.3.6 FIM Change of Use

If City chooses to make changes that effect the equipment installed in this project such as, set point adjustments, longer operating hours, or continuous equipment operation, City agrees that:

1. Savings deemed as met described above will continue to be deemed as met.
2. Additional cost of extended equipment operation is a cost of the change, not due to a failure of the McKinstry or their equipment.
3. McKinstry shall not be responsible for any increase in energy, maintenance, or any other costs incurred because of the extended equipment operation.
4. McKinstry at its option may make a baseline energy use adjustment to account for a change-of-use for any FIM. City will be allowed to review and

approve any baseline adjustment, however City must in good faith approve said adjustments or provide specific changes to the variables used in the adjustment if rejecting the adjustment.

5.06.3.7 Utility Rates

Water and Sewer Rates

Water rates for the customer varies depending on the location (inside or outside city limits) as well as the meter/service size installed. Table 8d shows the water and sewer rates in effect February of 2019. The City is proposing increases to the water and sewer rates at the October 7th City Council meeting. The proposed increased rates are also shown in Table 8d. The proposed increased rates are the what has been used in the savings calculations.

Service Description	Service Type	February 2019 Rates (per kGal)	February 2019 Rates (per CCF)	October 2019 Proposed Rates (per kGal)	October 2019 Proposed Rates (per CCF)
Single Family	Water	\$3.56	\$2.66	\$3.73	\$2.79
	Sewer	\$3.37	\$2.52	\$6.67	\$4.99
Multifamily	Water	\$3.34	\$2.50	\$3.51	\$2.63
	Sewer	\$4.57	\$3.42	\$9.05	\$6.77
Commercial/Industrial	Water	\$3.06	\$2.29	\$3.21	\$2.40
	Sewer	\$4.57	\$3.42	\$9.05	\$6.77
Outside Single Family	Water	\$5.32	\$3.98	\$5.59	\$4.18
Outside Commercial/Industrial	Water	\$4.76	\$3.56	\$5.00	\$3.74
Laundry	Sewer	\$4.12	\$3.08	\$4.12	\$3.08
Metered	Sewer	\$4.18	\$3.13	\$4.18	\$3.13

Water and Sewer Rate Escalation

The performance period for this project is 20 years. To account for future rate changes, an escalation rate for water was used in the cash flow analysis. The escalation rate is calculated based on the October 7, 2019 proposed rates and proposed future increases. Table 8e shows the projected rates for future years.

Rate Type	2019	2020	2021	2022	2023 - 2035
Water Consumption	Per Table 8d	5%	4%	3%	2%
Sewer Consumption	Per Table 8d	98%	16%	15%	10%

Street Lighting Rates

The rates used for both the flat rate street lighting and the metered lighting can be found in Appendix B of the Project Development Plan Report.

Floor Utility Rate

For calculation of savings, the utility rate shall never drop below the base utility rates described above. This shall be known as the Floor Utility Rate.

Rate Schedule Changes

When the utility company makes a change to the rate schedule, the new rate will be used for calculating savings realized during a given period. If a rate schedule change occurs partway through a period, an aggregate rate comprised of a weighted average between the old and the new rate will be used. The weighting will be based upon the portion of the period that each rate applied.

5.06.3.8 Non-Performance

In the event the equipment performance is not met, McKinstry accepts responsibility for additional energy used by the equipment because of the reduced performance. McKinstry may, at its option, execute any of the following options:

1. Repair or replace equipment as required to meet required performance. Should repair or replacement occur, McKinstry will also be responsible to cover the lost savings.
2. Make payments for the extra energy consumption to City. If McKinstry chooses the payment option, McKinstry reserves the right to select either an annual payment for the duration of the performance assurance period or a one-time lump-sum payment of the same amount. In either case, the payment will be calculated based upon the quantity of additional energy used and the Base Utility Rate as described above.



Staff Report

Meeting Date: November 4, 2019

From Thomas Fisher,

SUBJECT: PGE Night Work Variance

Background:

Section 8.20.020 B(7) of the Municipal Code prohibits construction activities between 6:00 PM and 7:00 AM on weekdays without an exception from the City Council. PGE is requesting a variance for night work along Proctor Blvd. between Bruns Ave. and Ten Eyck Rd. PGE crews will be setting up equipment and transferring equipment from old poles to new poles. The equipment work on specific new poles must be done at night to respect commercial work hours for the businesses impacted. PGE will provide prior notification to the customers impacted per the terms of a Right-Of-Way Permit issued by the City.

PGE expects the work to take place from November 11th to November 22nd between 6:00 p.m and 7:00 a.m. PGE crew equipment used at night will be limited to bucket trucks and linemen using hand tools while on the poles. The noise impact should be minimal. All cement saw cutting and the pole installations (requiring a vactor truck) will take place during daytime hours.

Recommendation:

Make a determination that the "public health, safety and welfare will not be impaired by the night work and that loss or inconvenience would result to PGE unless such exception were granted" per section 8.20.020 B(7) of the Municipal Code.

Budgetary Impact:

None