YEAROUT ENERGY

City of Santa Fe

Investment Grade Audit (IGA) Report

Executive Summary

August 21, 2020

1.0 Executive Summary

The City of Santa Fe (COSF) engaged Yearout Energy (YE) in August 2019 to perform an Investment Grade Audit (IGA) of several facilities of various types located in Santa Fe, NM. The goal of an IGA is to identify the potential project scope for budget-neutral facility upgrades thanks to reduced utility and O&M costs. The IGA was developed following the program guidelines outlined by the New Mexico Energy, Minerals, and Natural Resources Department (NM-EMNRD) and New Mexico General Services Department (NM-GSD).

The project specific objectives for this IGA include:

- Developing a self-funding, budget-neutral project with a finance period ≤ 20 years
- Reduce energy and water consumption
- Reduce utility and operational costs
- Standardize equipment throughout city facilities
- Accelerate the implementation of renewable energy where feasible to support the Sustainable Santa Fe 25-Year Plan
- Implement LED lighting retrofit/replacement opportunities
- Reduce the COSF's environmental impact

An essential step in the IGA process is to establish the baseline performance for each facility from which proposed improvements will be measured. The following tables depict a summary of the baseline annual cost and energy consumption by utility type for all COSF facilities included in the IGA.

Table 1: Baseline Annual Cost Breakdown by Utility Type

Utility	$/year
Electricity	$3,888,817
Natural Gas	$335,028
Water & Sewer	$317,231
Total	$4,541,076

Table 2: Baseline Annual Energy Consumption Breakdown by Utility Type

Utility	kBTU/year
Electricity	159,107,775
Natural Gas	75,732,660
Total	234,840,435

As a result of the comprehensive IGA process, Yearout Energy and the COSF have co-developed the following recommended Guaranteed Energy Service Performance Contract (GESPC) project:

Table 3: GESPC Project Summary

Turn-Key GESPC Project Price	$15,442,785
Up-front Capital Contribution by COSF	$1,125,000
Approximate Net Financed Amount	$14,280,347
Year 1 Utility Savings	$752,137
Year 1 Operations and Maintenance Savings	$27,643
Estimated Incentives from Utility Provider(s)	$230,392
Project Financing Period	18.0 Years
Weighted Average Service Life of Proposed Measures	31.0 Years
Percent Reduction in Annual Utility Costs*	16.8%
Environmental Impact (Reduction in Annual Emissions)	6,717,430 lbs. CO_2
Environmental Impact (Direct Reduction in Annual Water Consumption)	2,007,380 gallons
Environmental Impact (Indirect Reduction in Annual Water Consumption)	3,264,992 gallons

*The percent reduction in annual utility costs takes into consideration existing or future REC payments made to the COSF

A fundamental benefit of GESPC projects is that they allow for the savings from measures with quicker returns on investment to supplement the funding of critical infrastructure improvements and/or high priority capital intensive measures such as renewable energy.

Throughout the IGA process, Yearout Energy collaborated closely with COSF to identify and co-develop Facility Improvement Measures (FIM) that would allow COSF to leverage future energy and operational savings to fund essential facility capital improvements through a GESPC. The FIMs recommended for implementation include:

- Upgrading approximately 9,000 existing lighting fixtures to LED technology
- Install 2.750MW DC renewable energy systems which are sized for a target offset of 80% of post-retrofit On-Peak consumption at select COSF facilities and a 60% of post-retrofit On-Peak consumption at select Water Utilities and Buckman Direct Diversion (BDD) sites
- Repair the underperforming existing solar PV carports at Genoveva Chavez Community Center to recover lost production and available REC payments
- Upgrade approximately 760 existing domestic water fixtures to reduce water consumption
- Remediate ~200 square feet of existing air leakage in building envelope
- Install 28 new high efficiency transformers
- Identify and correct billing errors to reduce utility costs
- Replace the roof at the Canyon Road Water Treatment Plant in order reduce energy and operational costs and support the installation of rooftop solar PV.

The benefits from those measures are summarized in the following table.

Table 4: Facility Improvement Measures (FIM) Summary

FIM No.	FIM Name	Year 1 Annual Utility Savings	Year 1 Annual O&M Savings	Year 1 Total Annual Savings	Labor, Equip & Material Costs	Estimated Utility Rebate	Net Cost	Average Service Life Years
1.00	LED Lighting	$217,056	$21,761	$238,818	$2,222,158	$192,032	$2,030,126	15.0
2.00	Renewable Energy	$473,609	$0	$473,609	$7,167,913	$0	$7,167,913	37.0
3.00	Water Conservation	$14,404	$1,135	$15,539	$173,807	$21,450	$152,357	20.0
4.00	Building Envelope	$10,477	$1,572	$12,048	$206,170	$0	$206,170	20.0

FIM No.	FIM Name	Year 1 Annual Utility Savings	Year 1 Annual O&M Savings	Year 1 Total Annual Savings	Labor, Equip & Material Costs	Estimated Utility Rebate	Net Cost	Average Service Life Years
5.00	HE Transformers	$9,567	$1,435	$11,002	$199,171	$7,766	$191,405	32.0
6.00	Utility Management	$1,821	$0	$1,821	$0	$1,516	($1,516)	---
7.00	GCCC Solar Carport Repairs	$25,204	$0	$25,204	$155,730	$7,628	$148,102	20.0
8.00	Roof Replacement	$0	$1,740	$1,740	$199,918	$0	$199,918	20.0
Total		$752,137	$27,643	$779,780	$10,324,867	$230,392	$10,094,474	31.0

* Total Annual Savings include Utility Savings and O&M Savings.

Additional FIMs were investigated during the IGA but not recommended for a variety of reasons. A description of these FIMs is provided in Section 4.0 of this report.

The reduction in greenhouse gas (GHG) emissions is of particular interest for the City of Santa Fe. The "Sustainable Santa Fe 25-year Plan" calls for carbon neutrality by 2040 and targets 50% renewable energy consumption by 2025. The installation of solar photovoltaic (PV) energy, energy efficient lighting, high efficiency transformers and building envelope remediation make a significant contribution towards achieving these goals. The annual 6.7-million-pound reduction in CO_2 emissions is equivalent to planting 833 acres of trees or not driving 3.96 million miles each year. It is worth noting that these values are based on the current electricity supply mix and should the targets of the New Mexico Energy Transition Act be achieved, the reductions in GHG emissions by COSF would be even greater.

Following the review and acceptance of this report by COSF, NM-EMNRD and NM-OSE, Yearout Energy will develop a Guaranteed Utility Savings Contract (GUSC) to implement the final agreed-upon project scope. Yearout Energy anticipates the implementation of this project to commence in Q4, 2020, with a 16-month overall construction period.

FIM Matrix

City of Santa Fe

January 25, 2021

YEAROUT ENERGY

Site	Site No.	1.00 LED Lighting	2.00 Renewable Energy	3.00 Water Conservation	4.00 Building Envelope	5.00 HE Transformers	6.00 Utility Management	7.00 GCCC Solar Carport Repairs	8.00 Roof Replacement
COSF Facilities									
Bicentennial / Alto Park Complex	01	●	●	●	●	●	○	○	○
Fire Station #2	02	○	○	○	○	○	○	○	○
Fire Station #8	03	●	●	●	●	○	○	○	○
Fort Marcy Recreation Complex	04	●	○	●	●	○	○	○	○
Genoveva Chavez Community Center	05	●	○	●	●	○	●	●	○
La Familia Medical Center	06	●	○	●	●	○	○	○	○
Municipal Recreation Complex	07	●	●	○	●	●	●	○	○
Police Dept - Admin	08	●	●	●	●	○	○	○	○
Public Library - Main	09	●	○	●	●	○	○	○	○
Public Library - Southside	10	●	●	●	●	●	○	○	○
Salvador Perez Swimming Pool	11	●	○	●	●	○	○	○	○
Sandoval Parking Garage Lot B	12	○	○	●	○	○	○	○	○
Santa Fe Convention Center	13	●	○	●	●	○	○	○	○
Santa Fe Regional Airport	14	●	●	○	●	○	○	○	○
Siler Complex	15	●	○	●	●	○	○	○	○
Siringo Complex	16	●	○	●	●	○	○	○	○
Southside Transit Center	17	○	●	○	○	○	○	○	○
Transit Administration	18	●	○	●	●	●	○	○	○
Water Utilities Department									
Canyon Road Water Treatment Plant	19	○	●	○	●	●	○	○	●
Santa Fe Water Dept Office	20	●	○	●	●	○	○	○	○
WWTP	21	●	○	○	○	●	○	○	○
10M Gallon Tank	22	●	●	○	○	○	○	○	○
10M Gallon Tank Booster Station #1	23	○	○	○	○	○	○	○	○
Buckman Booster Station #1	24	●	●	○	○	○	○	○	○
Buckman Booster Station #3 & Well #13	25	○	●	○	○	○	○	○	○
Buckman Booster Station #4	26	○	●	○	○	○	○	○	○
Buckman Well #1	27	●	○	○	○	○	○	○	○
Buckman Well #10	28	●	●	○	○	○	○	○	○
Calle De Agua Tank	29	○	○	○	○	○	○	○	○
Camino La Canada	30	●	●	○	○	○	○	○	○
Cristo Rey Church	31	●	○	○	○	○	○	○	○
Dempsey Booster Station	32	●	○	○	○	○	○	○	○
St Michaels & SF Railroad	33	○	○	○	○	○	○	○	○
Well Los Montoyas	34	●	●	○	○	○	○	○	○
Buckman Direct Diversion (BDD)									
BDD Main	35	●	○	○	○	○	○	○	○
BDD Booster Station #1A	36	●	●	○	○	○	○	○	○
BDD Booster Station #2A	37	●	○	○	○	○	○	○	○
BDD Lift Station	38	●	●	○	○	○	○	○	○
Total Qty		29	17	15	17	6	2	1	1

6.8 Preliminary Project Financial Analysis

General Inputs	
Length of Analysis	25 Years
Turn-Key Project Cost	$15,442,785
Up-Front Capital Contribution	$1,125,000
Other Grants & Incentives	$0
Utility Rebate	$230,392
Capitalized Interest (16 Month Construction Period)	$3,340
Cost of Issuance	$189,614
Net Financed Amount	$14,280,347
Type of Amortization	Savings
Finance Term	18 Years
Annual Interest Rate	2.250%

Measurement & Verification	
Year 1 M&V Fee	$68,632
M&V Duration	3 Years

Annual Maintenance	
Year 1 Maintenance Fee	$16,571
On-Going Maintenance Duration	25 Years

Inverter Equipment Replacement (Appears in Maintenance Column)	
Estimated Cost to Replace Solar PV Inverters	$416,700
Anticipated Year of Replacement	Year 15
Annual Amount Set Aside for Equip Replacement	$27,780

	Annual Savings				Annual Costs			Total Annual Savings Less Costs	Amortization Schedule				
	Electricity	Natural Gas	Water & Sewer	O&M	M&V	Maintenance	Equipment Replacement		Interest	Principal	Total Payment	Ending Balance	Annual Cash Flow
Annual Escalation -->	3.600%	4.000%	3.000%	3.000%	2.500%	3.000%							
Year 1	$729,086	$10,887	$12,165	$27,643	($68,632)	($16,571)	($27,780)	$666,797	($321,308)	($345,490)	($666,796)	$13,934,857	$1
Year 2	$755,333	$11,322	$12,530	$28,472	($70,348)	($17,068)	($27,780)	$692,461	($313,534)	($378,927)	($692,460)	$13,555,930	$1
Year 3	$782,525	$11,775	$12,906	$29,326	($72,106)	($17,580)	($27,780)	$719,065	($305,008)	($414,057)	($719,064)	$13,141,873	$1
Year 4	$810,696	$12,246	$13,293	$30,206	$0	($18,107)	($27,780)	$820,553	($295,692)	($524,861)	($820,552)	$12,617,012	$1
Year 5	$839,881	$12,736	$13,692	$31,112	$0	($18,650)	($27,780)	$850,990	($283,883)	($567,107)	($850,989)	$12,049,905	$1
Year 6	$870,116	$13,245	$14,102	$32,046	$0	($19,210)	($27,780)	$882,520	($271,123)	($611,397)	($882,519)	$11,438,508	$1
Year 7	$901,441	$13,775	$14,525	$33,007	$0	($19,786)	($27,780)	$915,182	($257,366)	($657,816)	($915,181)	$10,780,692	$1
Year 8	$933,892	$14,326	$14,961	$33,997	$0	($20,380)	($27,780)	$949,017	($242,566)	($706,452)	($949,016)	$10,074,240	$1
Year 9	$967,513	$14,899	$15,410	$35,017	$0	($20,991)	($27,780)	$984,068	($226,670)	($757,397)	($984,067)	$9,316,843	$1
Year 10	$1,002,343	$15,495	$15,872	$36,068	$0	($21,621)	($27,780)	$1,020,377	($209,629)	($810,748)	($1,020,376)	$8,506,095	$1
Year 11	$1,038,427	$16,115	$16,348	$37,150	$0	($22,269)	($27,780)	$1,057,991	($191,387)	($866,604)	($1,057,990)	$7,639,491	$1
Year 12	$1,075,811	$16,760	$16,839	$38,264	$0	($22,938)	($27,780)	$1,096,956	($171,889)	($925,067)	($1,096,955)	$6,714,424	$1
Year 13	$1,114,540	$17,430	$17,344	$39,412	$0	($23,626)	($27,780)	$1,137,320	($151,075)	($986,246)	($1,137,319)	$5,728,178	$1
Year 14	$1,154,663	$18,127	$17,864	$40,594	$0	($24,334)	($27,780)	$1,179,135	($128,884)	($1,050,251)	($1,179,134)	$4,677,927	$1
Year 15	$1,196,231	$18,852	$18,400	$41,812	$0	($25,065)	($27,780)	$1,222,452	($105,253)	($1,117,198)	($1,222,451)	$3,560,729	$1
Year 16	$1,239,296	$19,606	$18,952	$43,067	$0	($25,816)	($27,780)	$1,267,324	($80,116)	($1,187,208)	($1,267,323)	$2,373,520	$1
Year 17	$1,283,910	$20,391	$19,521	$44,359	$0	($26,591)	($27,780)	$1,313,809	($53,404)	($1,260,405)	($1,313,808)	$1,113,115	$1
Year 18	$1,330,131	$21,206	$20,106	$45,689	$0	($27,389)	($27,780)	$1,361,965	($25,045)	($1,113,115)	($1,138,159)	$0	$223,805
Year 19	$1,378,016	$22,055	$20,710	$47,060	$0	($28,210)	($27,780)	$1,411,850	$0	$0	$0	$0	$1,411,850
Year 20	$1,427,624	$22,937	$21,331	$48,472	$0	($29,057)	($27,780)	$1,463,527	$0	$0	$0	$0	$1,463,527
Year 21	$1,479,019	$23,854	$21,971	$49,926	$0	($29,928)	($27,780)	$1,517,062	$0	$0	$0	$0	$1,517,062
Year 22	$1,532,263	$24,808	$22,630	$51,424	$0	($30,826)	($27,780)	$1,572,519	$0	$0	$0	$0	$1,572,519
Year 23	$1,587,425	$25,801	$23,309	$52,966	$0	($31,751)	($27,780)	$1,629,970	$0	$0	$0	$0	$1,629,970
Year 24	$1,644,572	$26,833	$24,008	$54,555	$0	($32,703)	($27,780)	$1,689,485	$0	$0	$0	$0	$1,689,485
Year 25	$1,703,777	$27,906	$24,728	$56,192	$0	($33,685)	($27,780)	$1,751,139	$0	$0	$0	$0	$1,751,139
Total	$28,778,531	$453,390	$443,517	$1,007,836	($211,086)	($604,151)	($694,500)	$29,173,536	($3,633,833)	($14,280,347)	($17,914,162)	---	$11,259,374

Project Summary by Group

City of Santa Fe

September 24, 2020

Item	Facilities	Water Utilities	BDD	Total
Turn-Key Cost	$6,122,614	$5,495,534	$3,824,638	$15,442,785
Estimated Rebate	$176,046	$37,074	$17,272	$230,392
Capital Infusion	$925,000	$200,000	$0	$1,125,000
Net Amount After Rebate & Infusion	$5,021,568	$5,258,460	$3,807,365	$14,087,393
Year 1 Savings	$301,821	$261,155	$216,804	$779,780
Construction Period Interest (Capitalized Interest)	$169,896	$177,911	$128,816	$476,623
Closing Costs / Lender Fees	$103,829	$108,727	$78,724	$291,280
Total Financed Amount	$5,295,293	$5,545,099	$4,014,905	$14,855,297

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Louise N. Martinez, Director
Energy Conservation and Management Division

September 12, 2020

BY EMAIL: mayor@santafenm.gov

Mayor Alan Webber
City of Santa Fe
200 Lincoln Ave
Santa Fe, NM 87504

SUBJECT: **Certification of Guaranteed Energy Savings under the Public Facility Energy Efficiency and Water Conservation Act (NMSA 1978, Section 6-23-5) – City of Santa Fe**

Dear Mayor Webber:

The Investment Grade Energy Audit submitted by the City of Santa Fe to implement energy efficiency and renewable measures in city facilities has been reviewed and is hereby approved. The Investment Grade Energy Audit was performed by Yearout Energy Services Co. (YESCO).

The Energy Conservation and Management Division (ECMD) of the New Mexico Energy, Minerals and Natural Resources Department (EMNRD) has certification responsibilities and provides technical assistance to governmental entities under the Public Facility Energy Efficiency and Water Conservation Act (Act). The two certifications needed from EMNRD for each energy performance contracting project under the Act are:

- Vendor is a Qualified Provider and meets EMNRD experience requirements; and
- Guaranteed energy savings appear to be accurately estimated and reasonable.

EMNRD reviewed the Investment Grade Energy Audit. EMNRD now issues the following certification:

- Qualifications were provided on December 1, 2017 approving YESCO as a qualified entity under EMNRD's experience criteria.

- EMNRD certifies that the guaranteed energy savings from the proposed efficiency measures appear to be accurately estimated and reasonable.

The City of Santa Fe Investment Grade Audit is hereby certified with these Special Conditions:

- Certification is contingent upon implementation of the measures as outlined in the investment grade energy audit. No significant changes in scope are to be considered unless submitted for review and approval by EMNRD.

- Section 6-23-4 Requires that the savings be guaranteed by the provider. Measurement and Verification of the savings is essential to determine if the savings are being met. A copy of the Annual Measurement and

Verification Report shall be provided to EMNRD every year the contract is in place by January 31st of the following year. These reports are essential to meet legislative reporting requirements.

- The 3-rd party reviewer costs of 1.0% percent of the total project cost are to be included and accounted for in the project contract to reimburse EMNRD.

Pursuant to NMSA 1978, Section 6-23-5 of the Act, EMNRD has performed its certification duties. It is recommended that The City of Santa Fe implement its approval requirements to comply with NMSA 1978, 6-23-8 of the Act. Please contact me at Harold.Trujillo@state.nm.us, 505-490-7912 or Louise.N.Martinez@state.nm.us , 505-476-3315 if there are any questions.

Sincerely,

Harold J Trujillo

Harold Trujillo, PE
Bureau Chief
ECMD Energy Technology & Engineering

cc: Regina Wheeler, Public Works Director rawheeler@santafenm.gov
Caryn Grosse, Project Administrator clgrosse@santafenm.gov
Louise Martinez, Director ECMD
David Griego, Engineer ECMD
Alex Montano, YESCO