Addendum No. 1

General Contractor of RAD Phase 1
RFQ No. 1932-DD

June 7, 2019

This addendum is hereby made a part of the contract documents entitled **REQUEST FOR QUALIFICATIONS (RFQ) No. 1932-DD for General Contractor for Pre-Construction and Construction Management Services – RAD Phase 1 Project**, for Housing Authority of the City of Sacramento and the Housing Authority of the County of Sacramento on behalf of the Sacramento Housing Authority Reposition Program (SHARP) issued May 22, 2019. The following are changes and/or additions and/or deletions supplementing and/or clarifying the RFQ, the Supplementals or Attachments. All other conditions shall remain the same.

RFQ CLARIFICATION:

1. Introduction:

DELETE: Construction costs for this project are anticipated to be in the $6 million range, which will include physical improvements to the buildings and various site improvements. This budget shall include all general conditions, overhead and profit, insurance, contingency, etc. An overview of the scope of work associated with the project is included in the Project Description below. More detailed scopes will be provided at a later date.

INSERT: **Construction costs for this project are anticipated to be in the $6 million range, which will include physical improvements to the buildings and various site improvements. This budget shall include all general conditions, overhead and profit, insurance, contingency, etc. This project will utilize 4% Tax Credits, and will be subject to regulations governing that funding source.**

The scope of work for the rehabilitation of these six properties would include:

Building envelope improvements
Interior and Exterior Painting
ADA modifications
Kitchen and Bathroom modifications
Flooring replacements
Roofing replacement
HVAC
Common area and Laundry room upgrades
Fencing and miscellaneous site improvements

2. Questions:

QUESTION 1: Note that the GC may NOT self-perform any of the construction work." Might it be the intent of the customer to rescind or modify this statement?

ANSWER 1: Currently, this is the recommendation of our legal counsel since this will be a design bid build project to avoid potential conflicts of interest and undue

advantage. The winning contractor will be helping to develop and finalize the scope during pre-construction, and our counsel suggested that this may be a potential conflict. However, after discussion with our procurement and legal department and a review of HUD guidance on self-performing GCs, the winning GC could potentially submit sealed bids for the work that they would want to self-perform. That sealed bid would be evaluated against the other sub-contractor bids submitted for the same work, and the procurement and bid review would happen within our procurement department. Each job that the GC wanted to self-perform would have to go through this process and the lowest bid for each job would prevail. The other condition is that the GC could not be involved with the design or specs of the work that they were looking to bid on.

QUESTION 2: Note Do you expect to bid the construction portion of the project as a LUMP SUM contract to one General Contractor, or to break it down by site, trade, etc..?

ANSWER 1: The bid for the construction portion of the project will be from one general contractor, who will break down the budget for each of the individual sites.

ATTACHMENTS:

Drawings:

1. **9205 Elk Grove Blvd**
2. **4500/4530 Perry Avenue**
3. **4930 El Pariso**
4. **1043 43rd Avenue**
5. **8223 Walerga Road**
6. **4930 Folsom Boulevard**

Capital Needs Assessments:

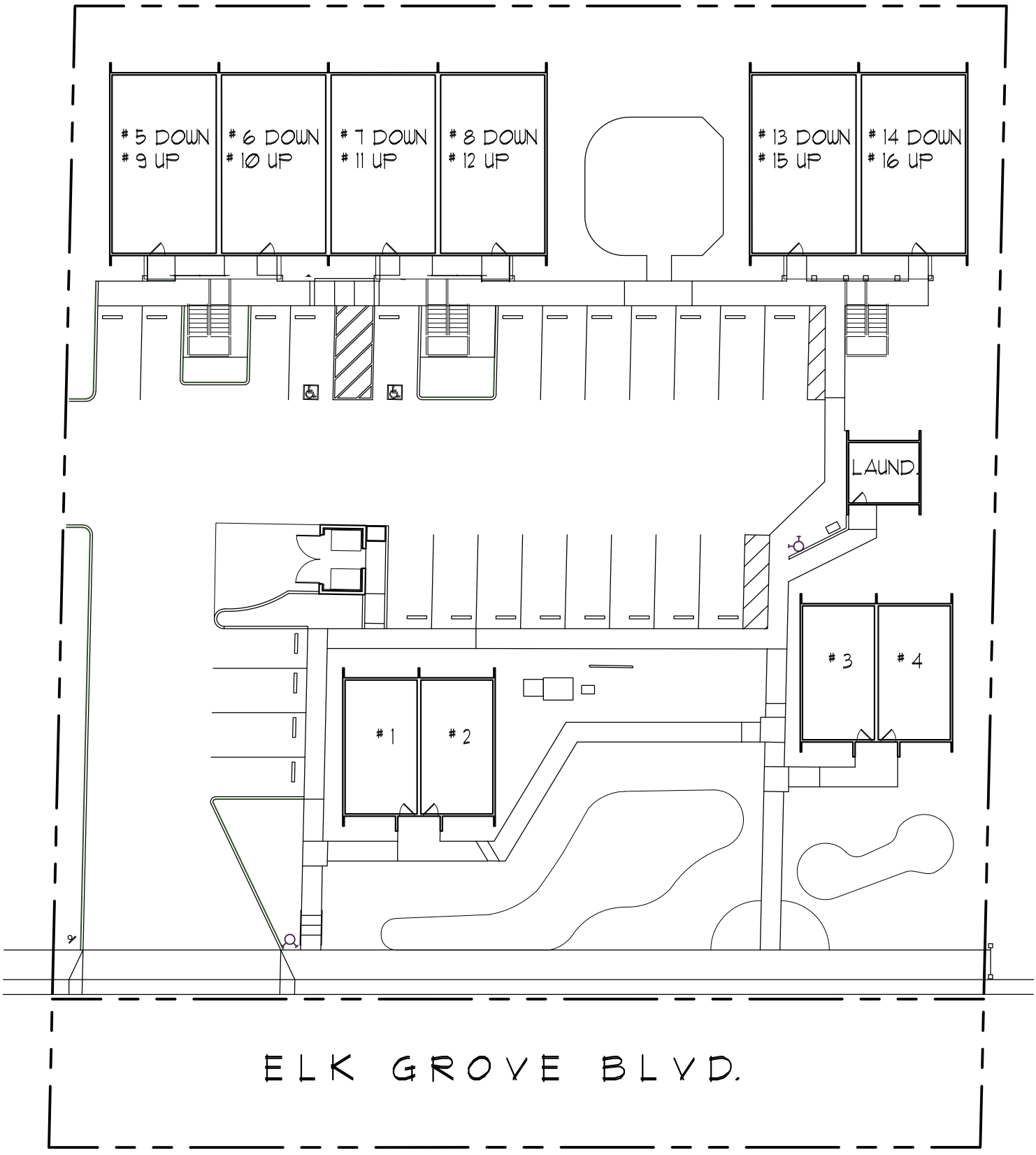
1. **9205 Elk Grove Blvd**
2. **4500/4530 Perry Avenue**
3. **4930 El Pariso**
4. **1043 43rd Avenue**
5. **8223 Walerga Road**
6. **4930 Folsom Boulevard**

DATE: June 7, 2019

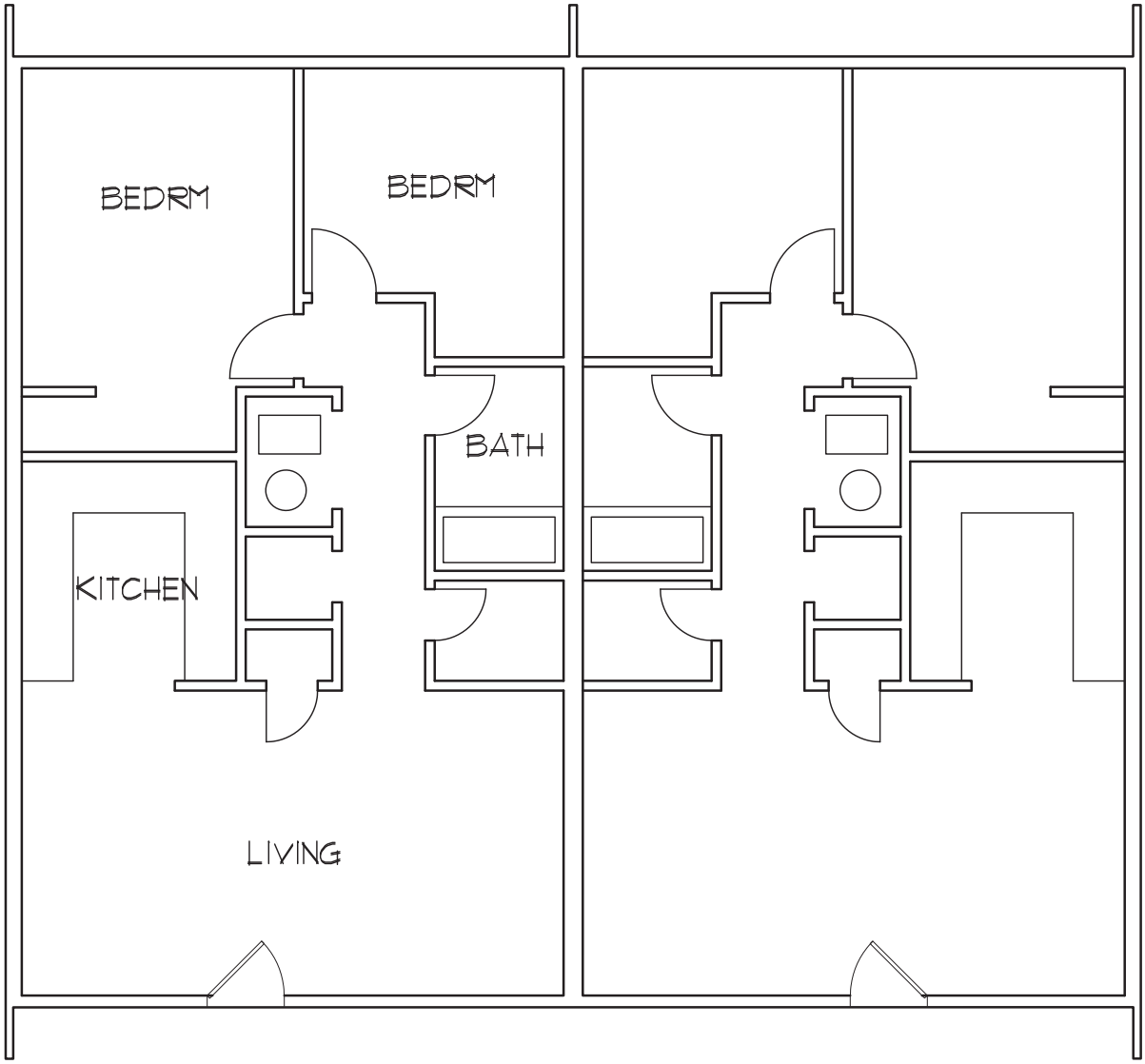
BY: Dina D. Dennis

Dina D. Dennis
Compliance Analyst/Section 3 Coordinator

9205 Elk Grove Blvd.



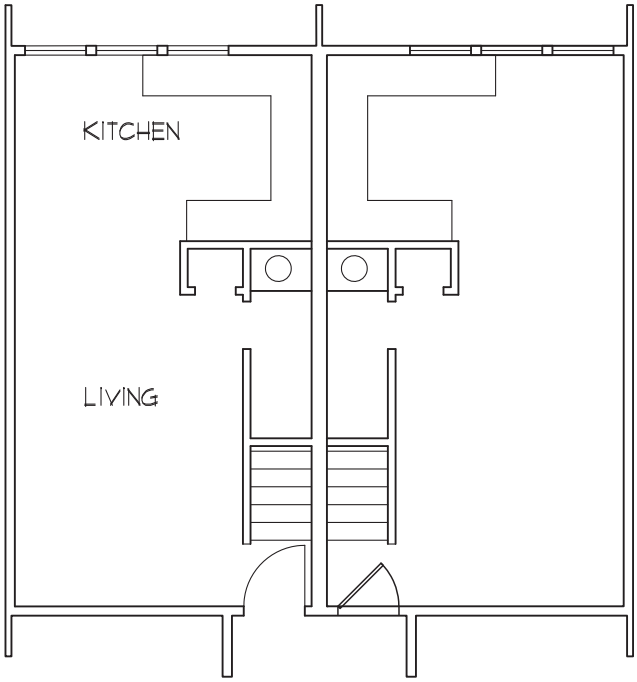
9205 Elk Grove Blvd.



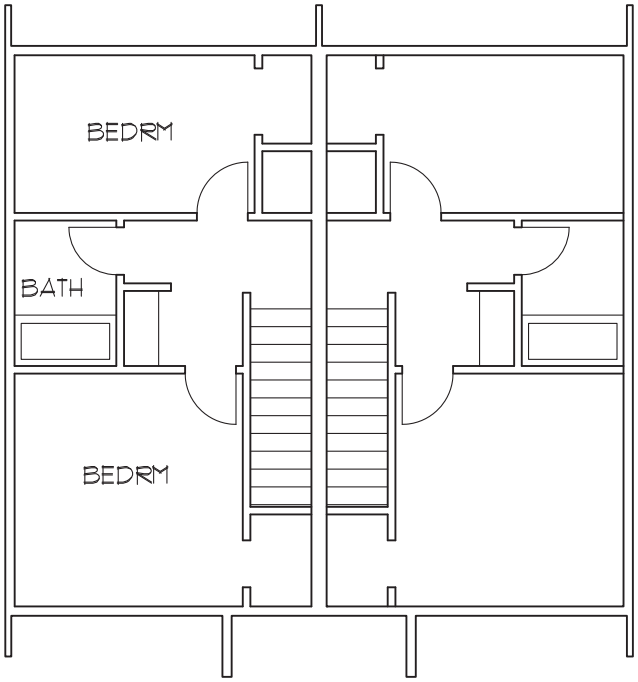
APARTMENT FLATS

ELK GROVE BLVD.

9205 Elk Grove Blvd.



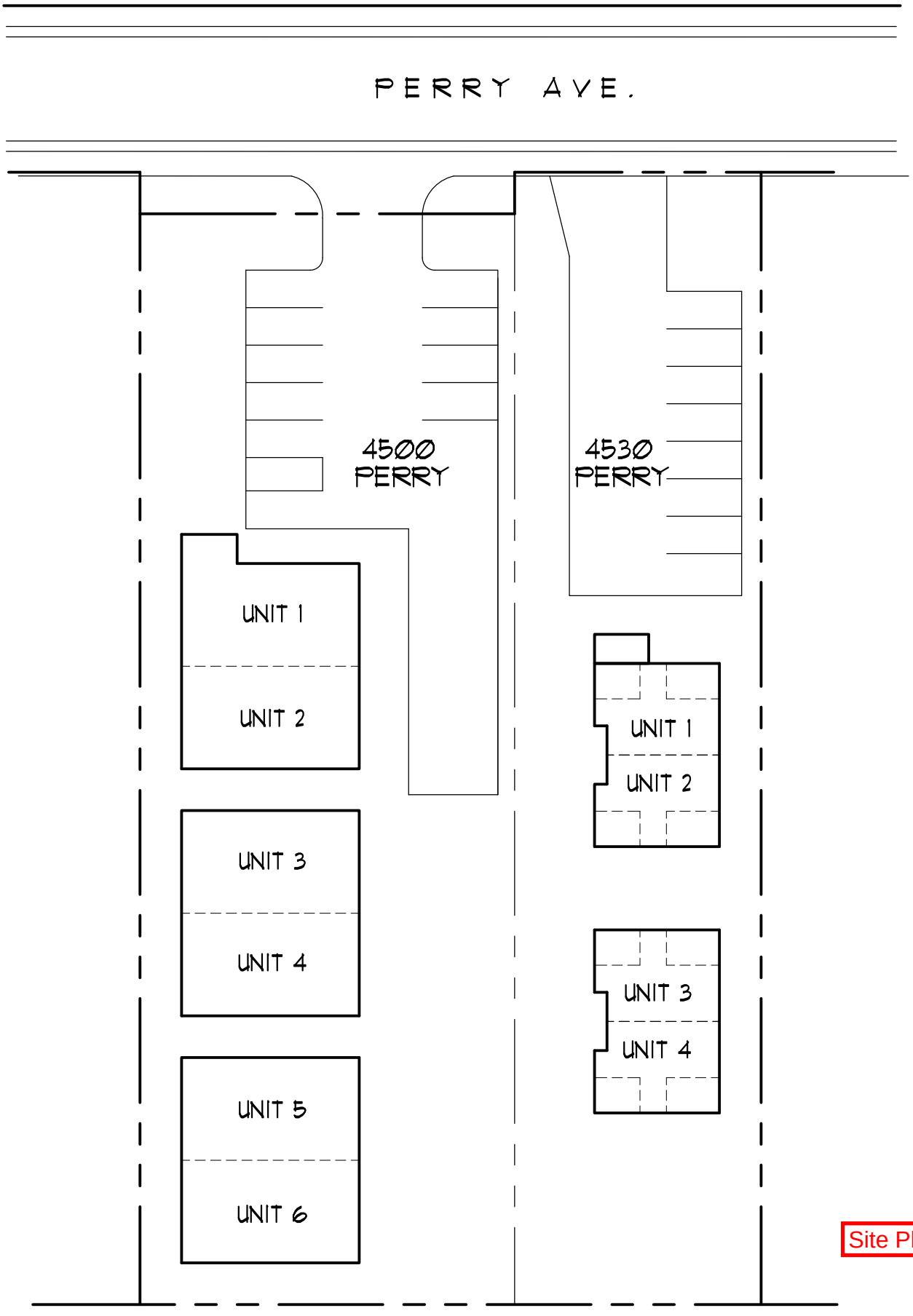
TOWNHOUSE - LOWER FLOOR



TOWNHOUSE - UPPER FLOOR

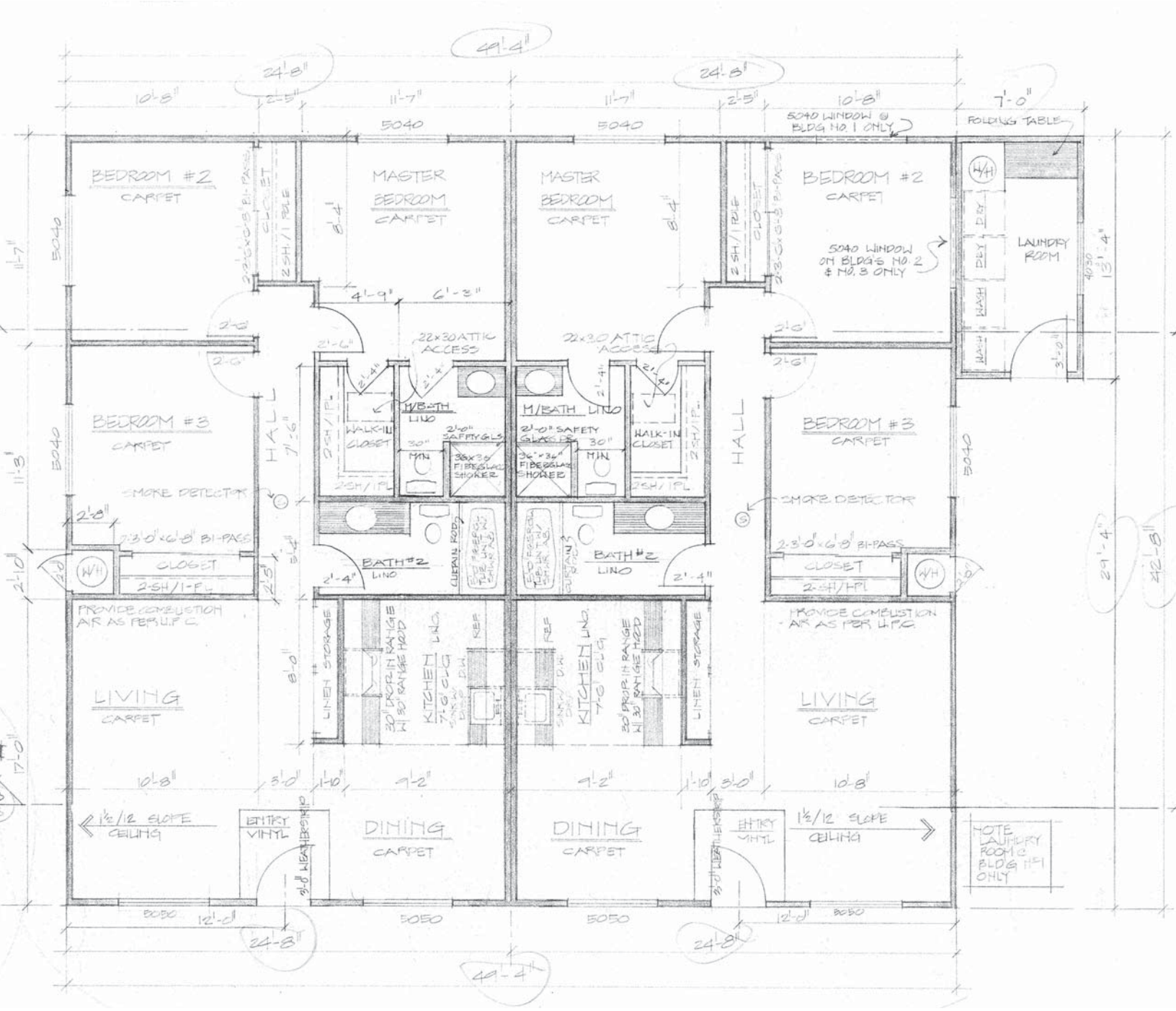
ELK GROVE BLVD.

4500/4530 Perry Ave.

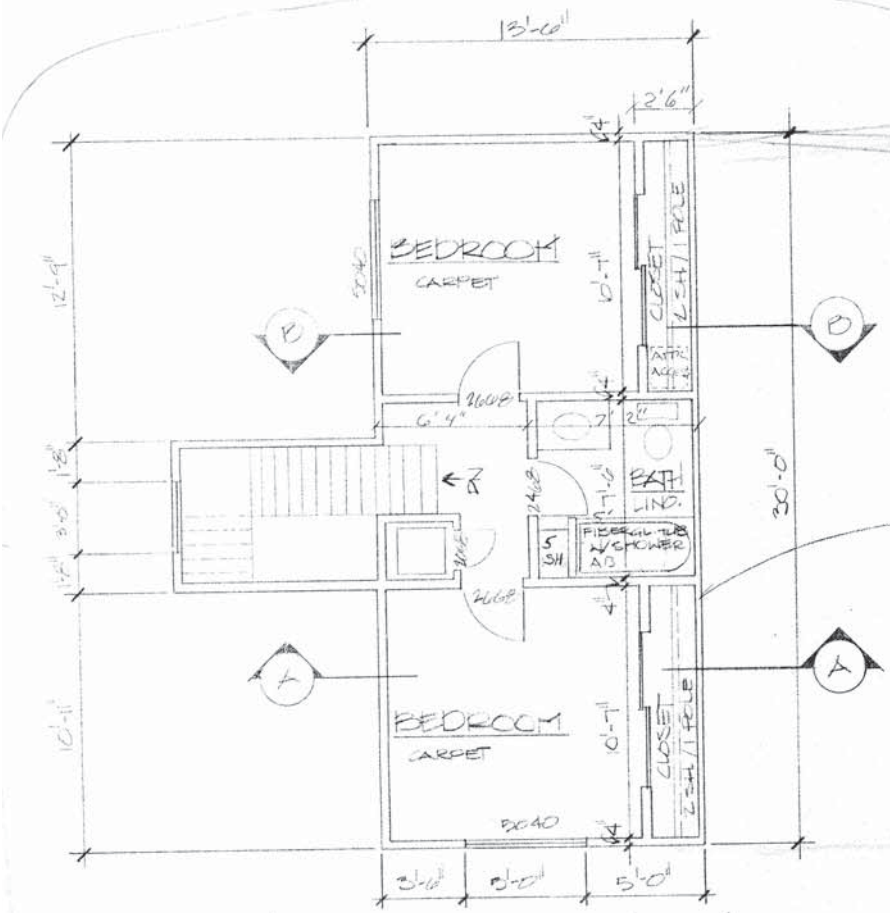


Site Plan

4500 Perry Ave.

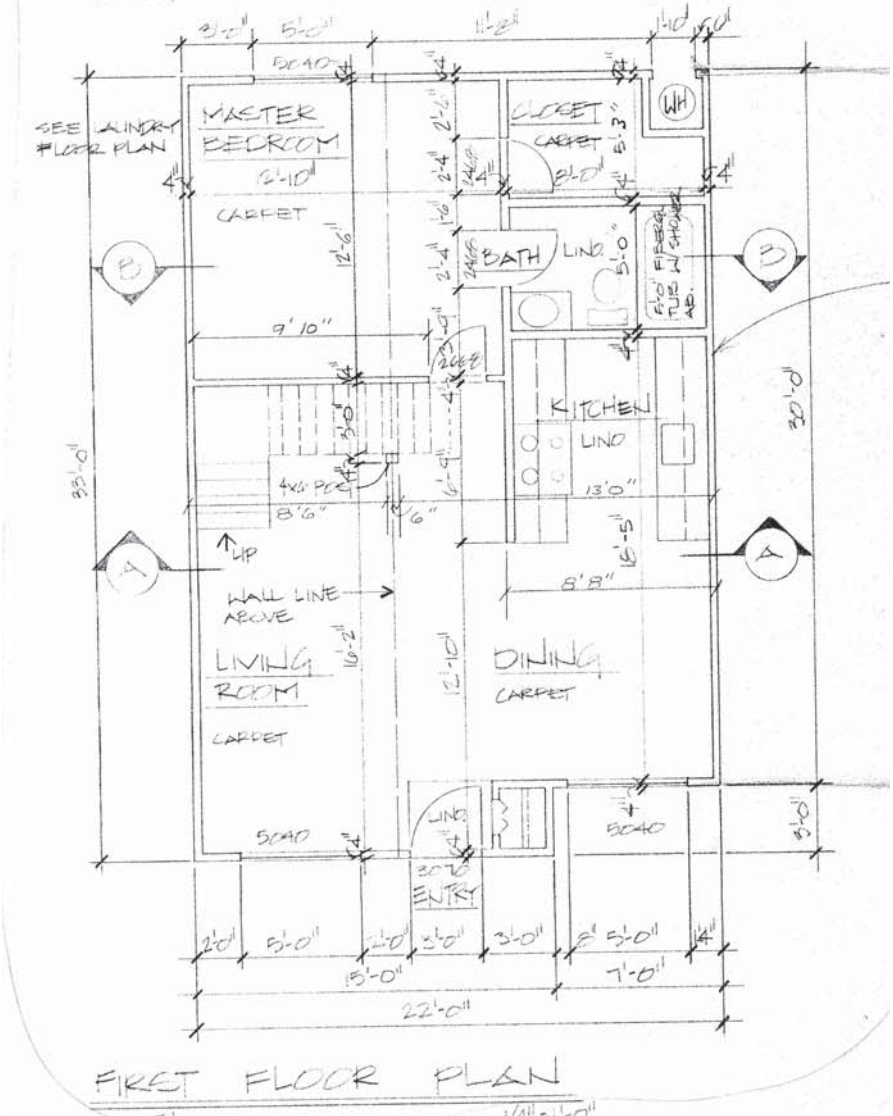


4530 Perry Ave.



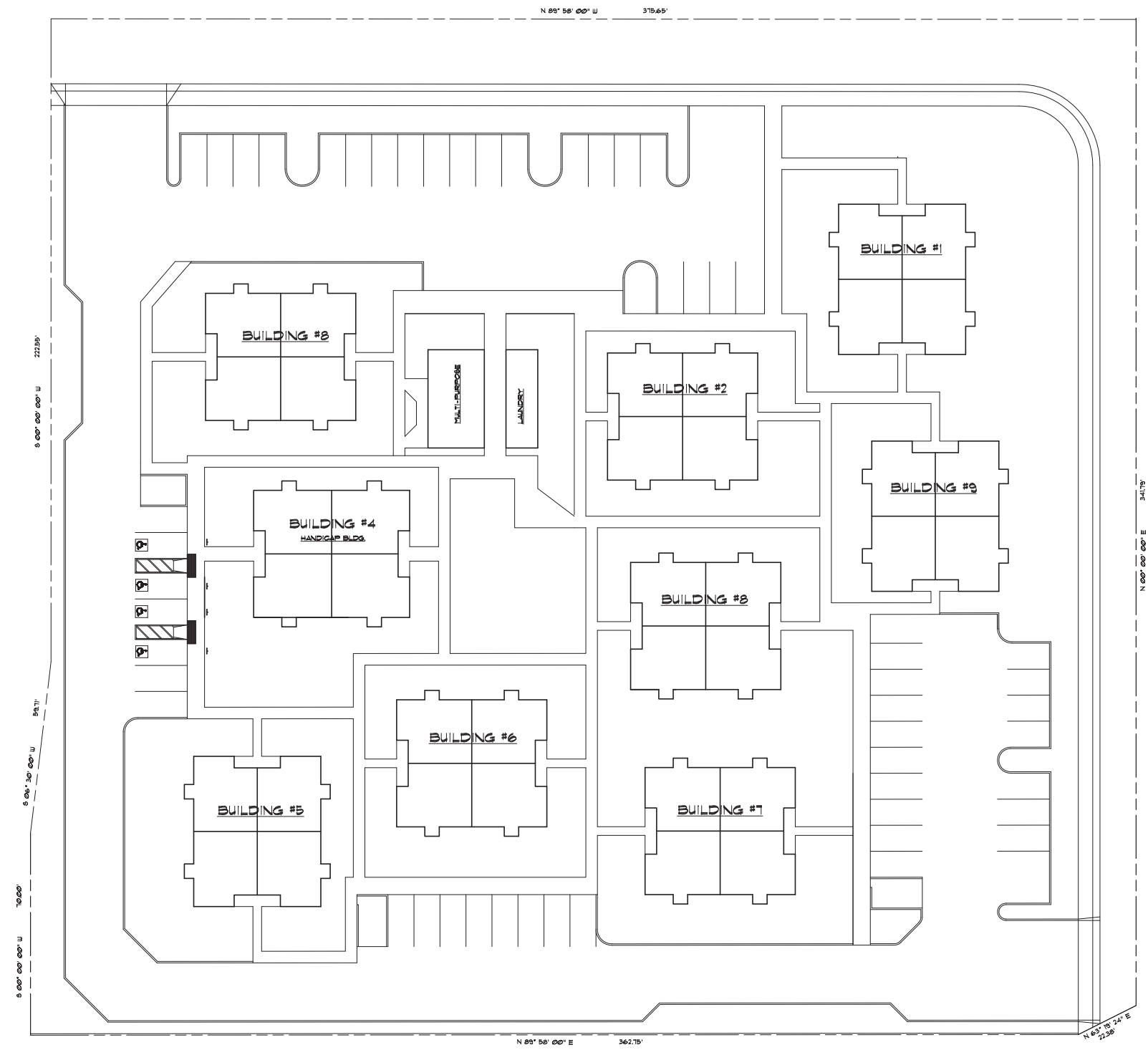
SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

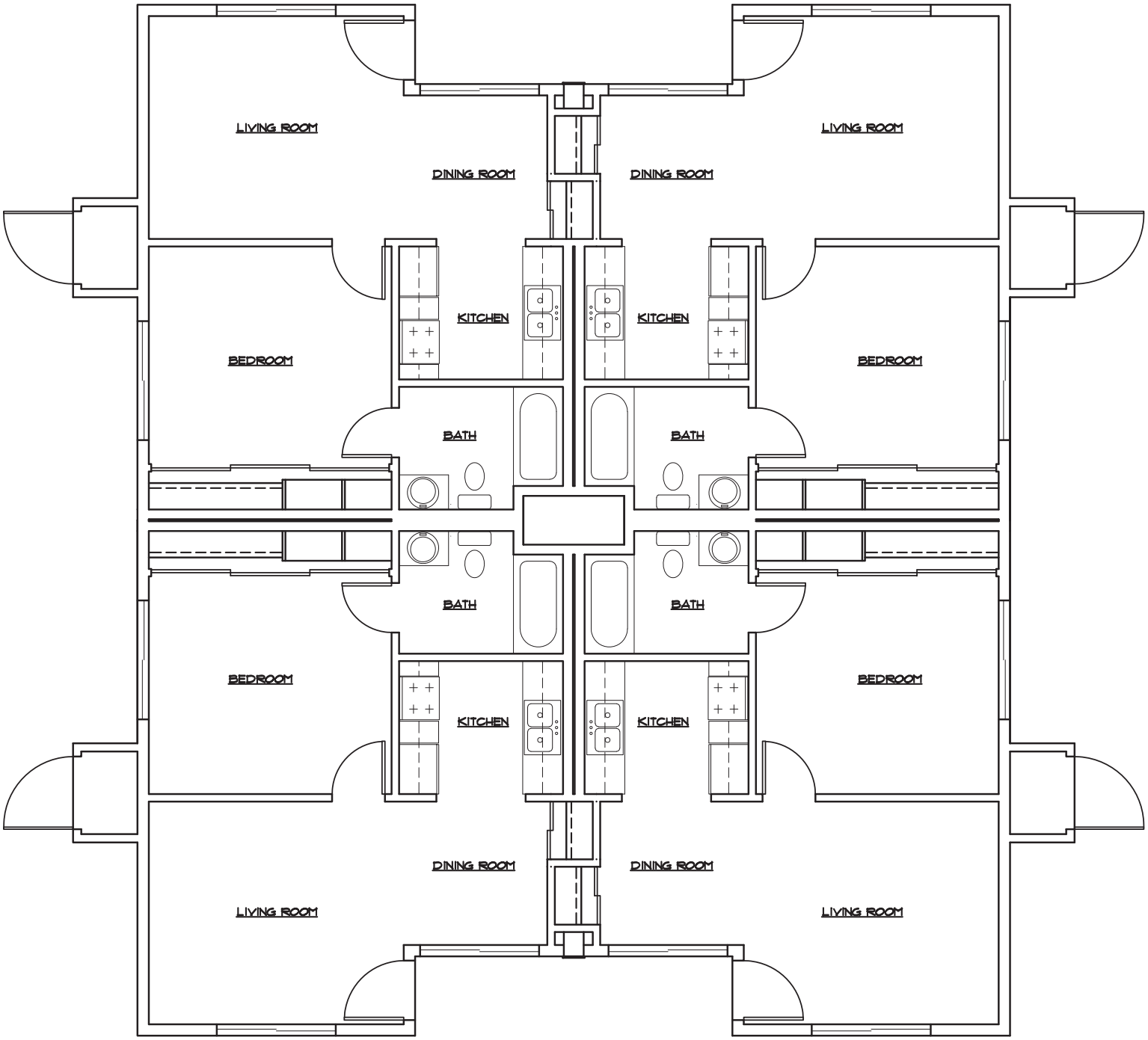


FIRST FLOOR PLAN

4930 El Paraiso Ave.



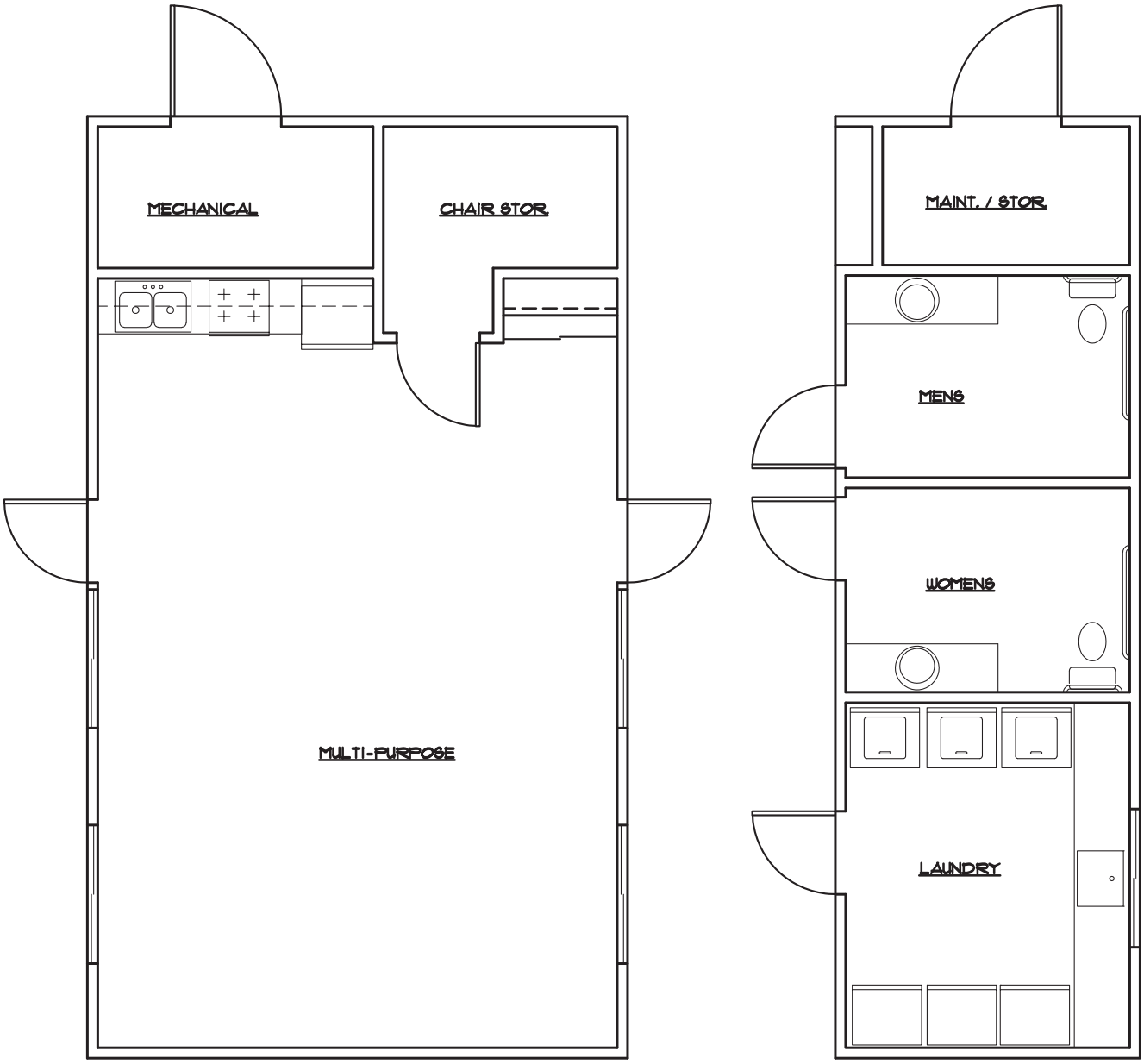
4930 El Paraiso Ave.



FLOOR PLAN - DWELLING UNIT

SCALE: 1/8" = 1'-0"

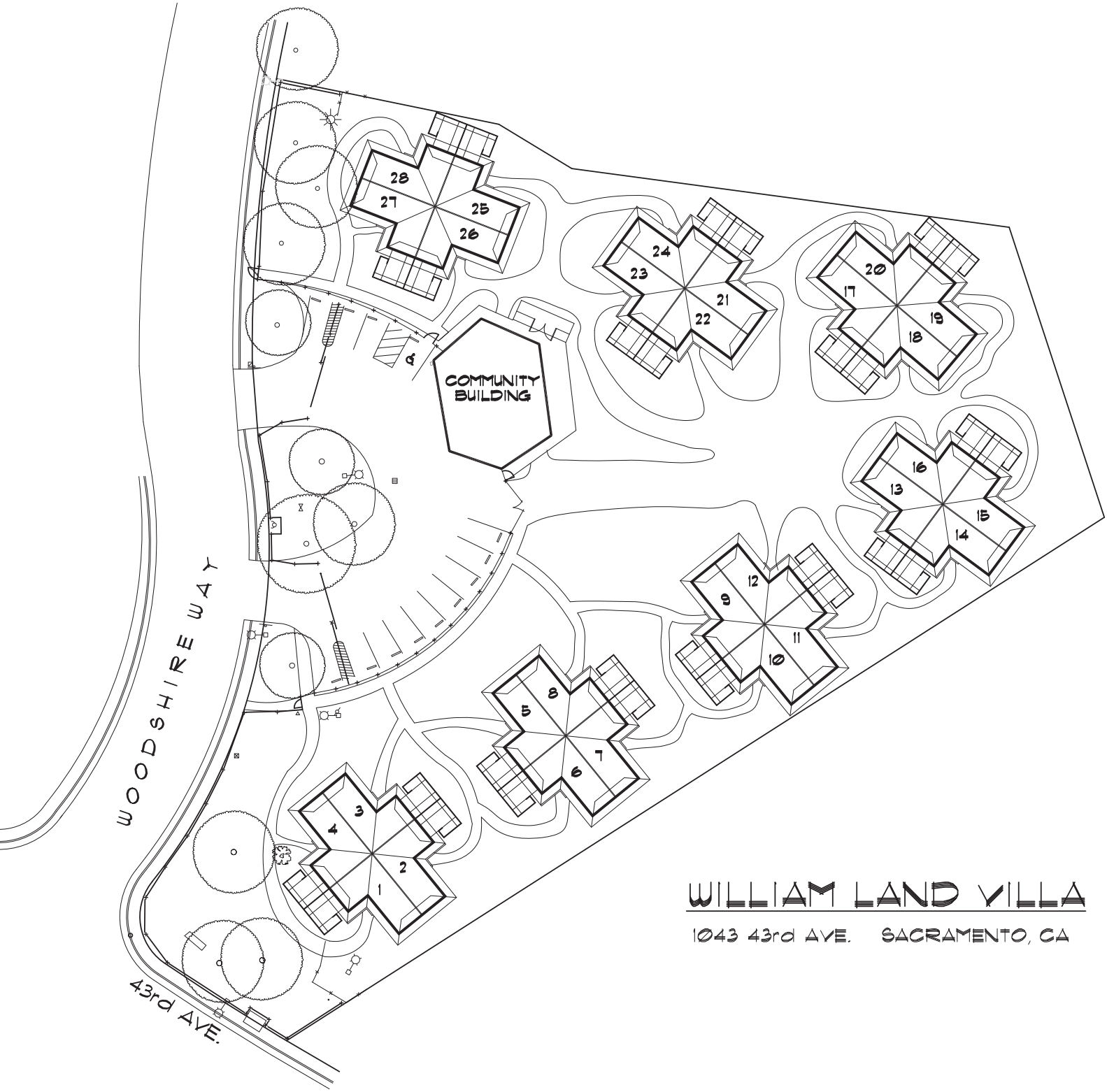
4930 El Paraiso Ave.



MULTI PURPOSE - LAUNDRY FLOOR PLAN

SCALE: 1/8" = 1'-0"

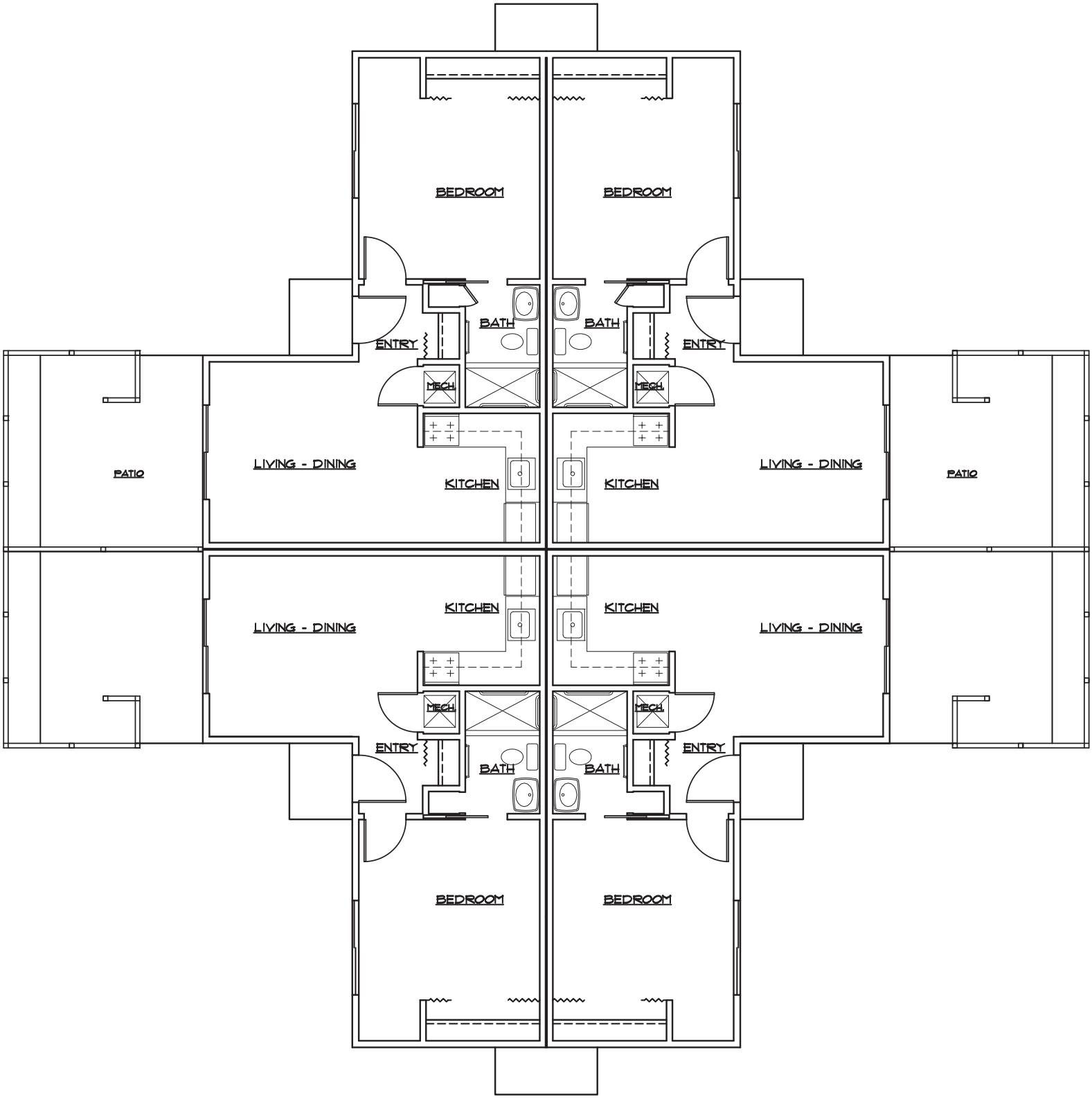
1043 43rd Ave.



WILLIAM LAND VILLA

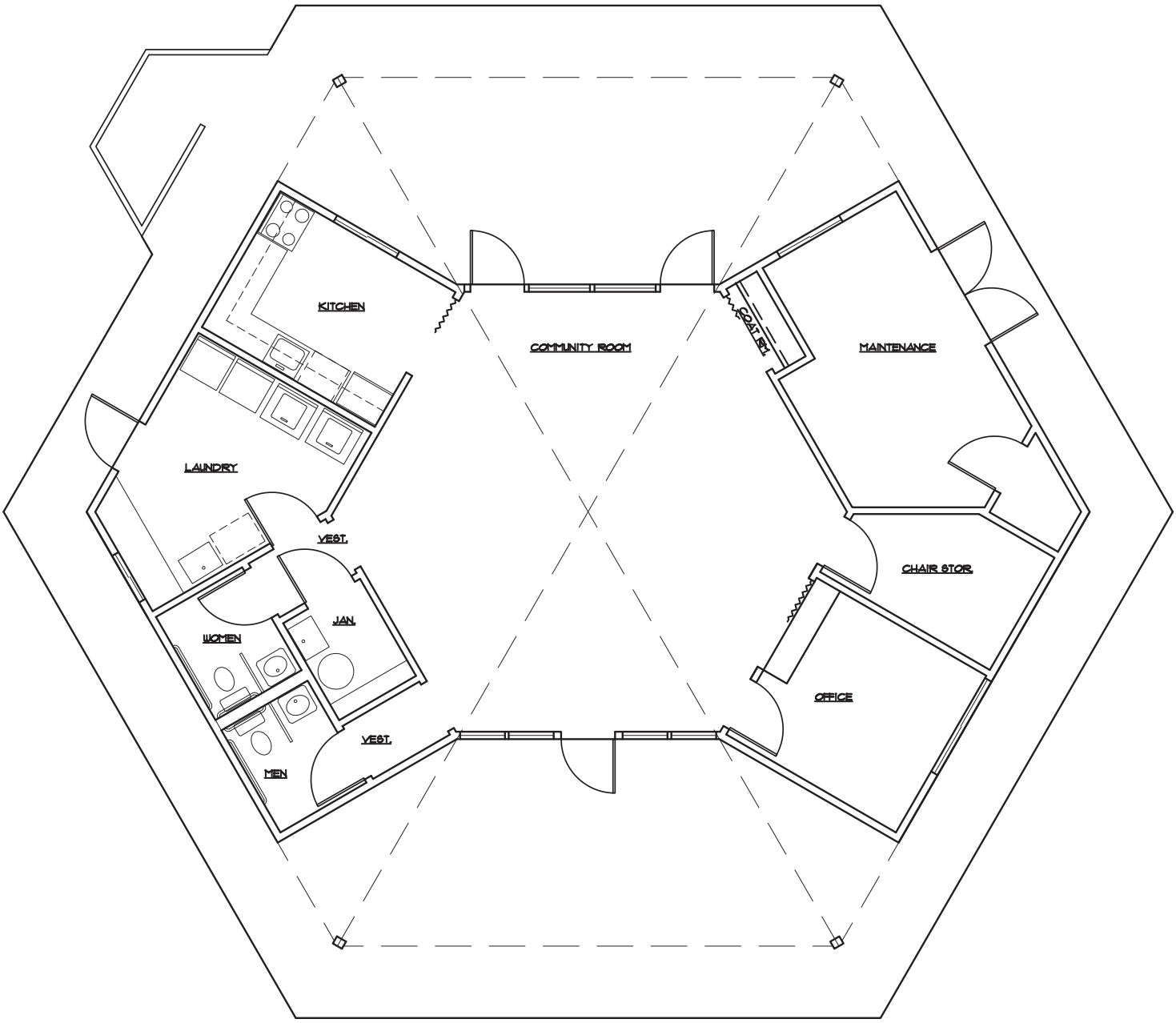
1043 43rd AVE. SACRAMENTO, CA

1043 43rd Ave.



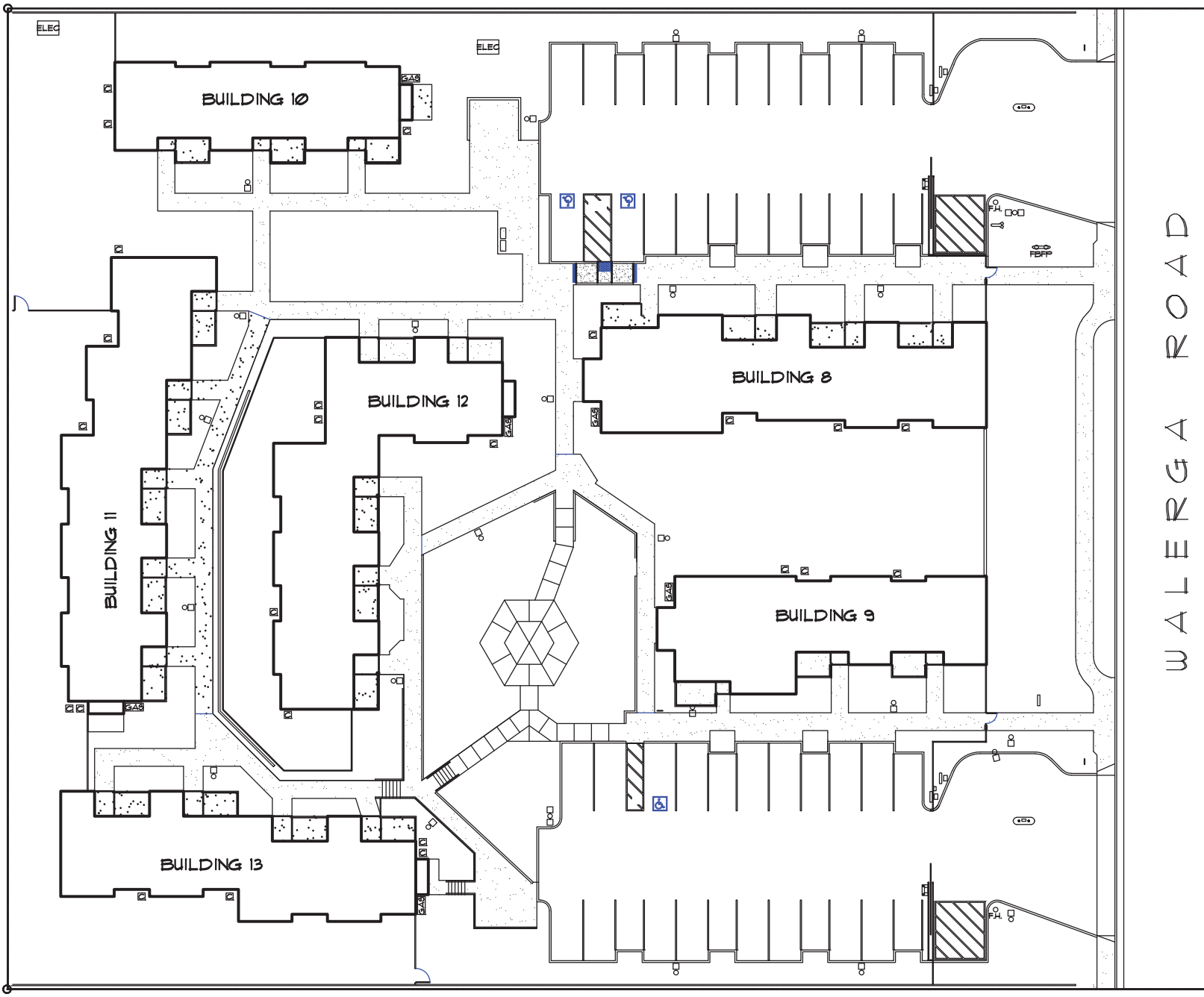
TYPICAL FLOOR PLAN

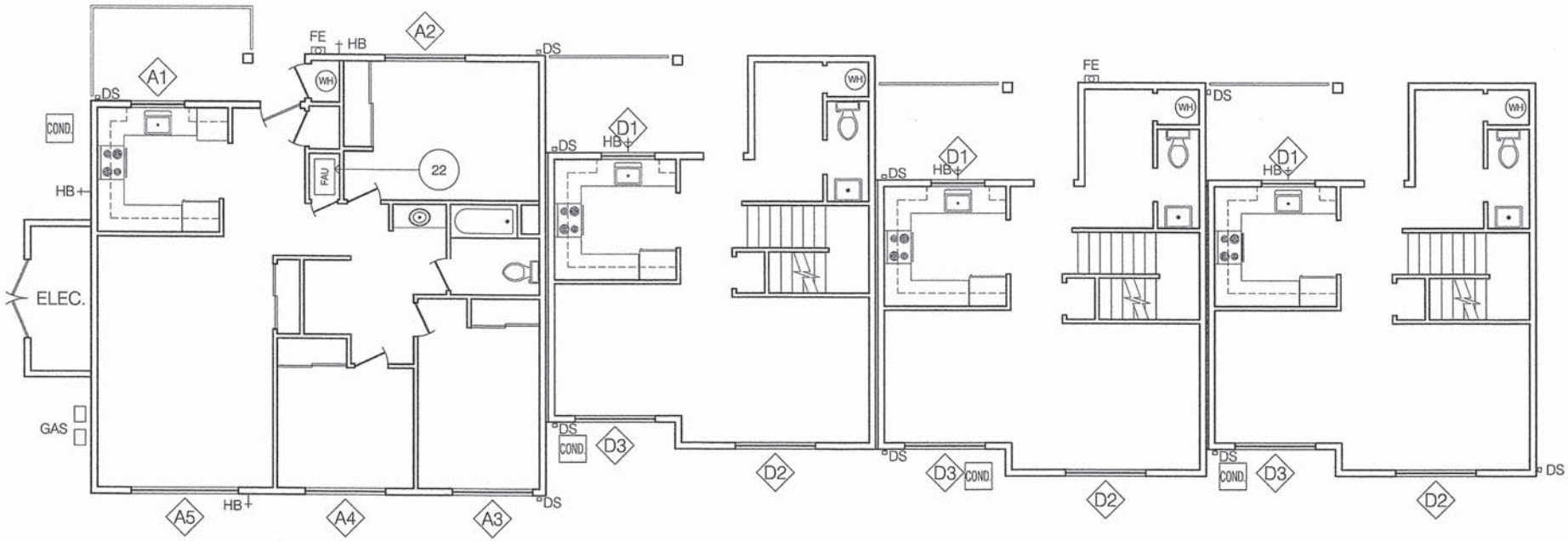
1043 43rd Ave.



COMMUNITY BUILDING

8223 Walerga Road

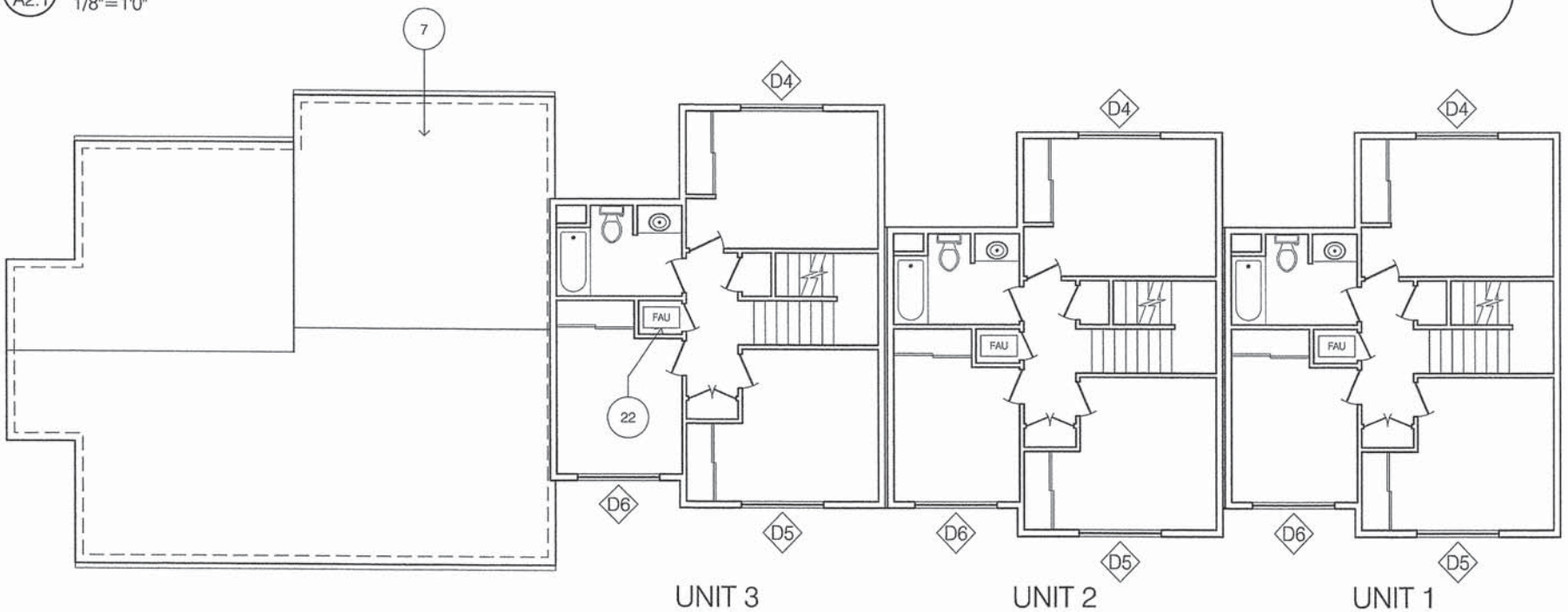




1 A2.1 FIRST FLOOR PLAN - BUILDING 8

1/8"=1'0"

NORTH



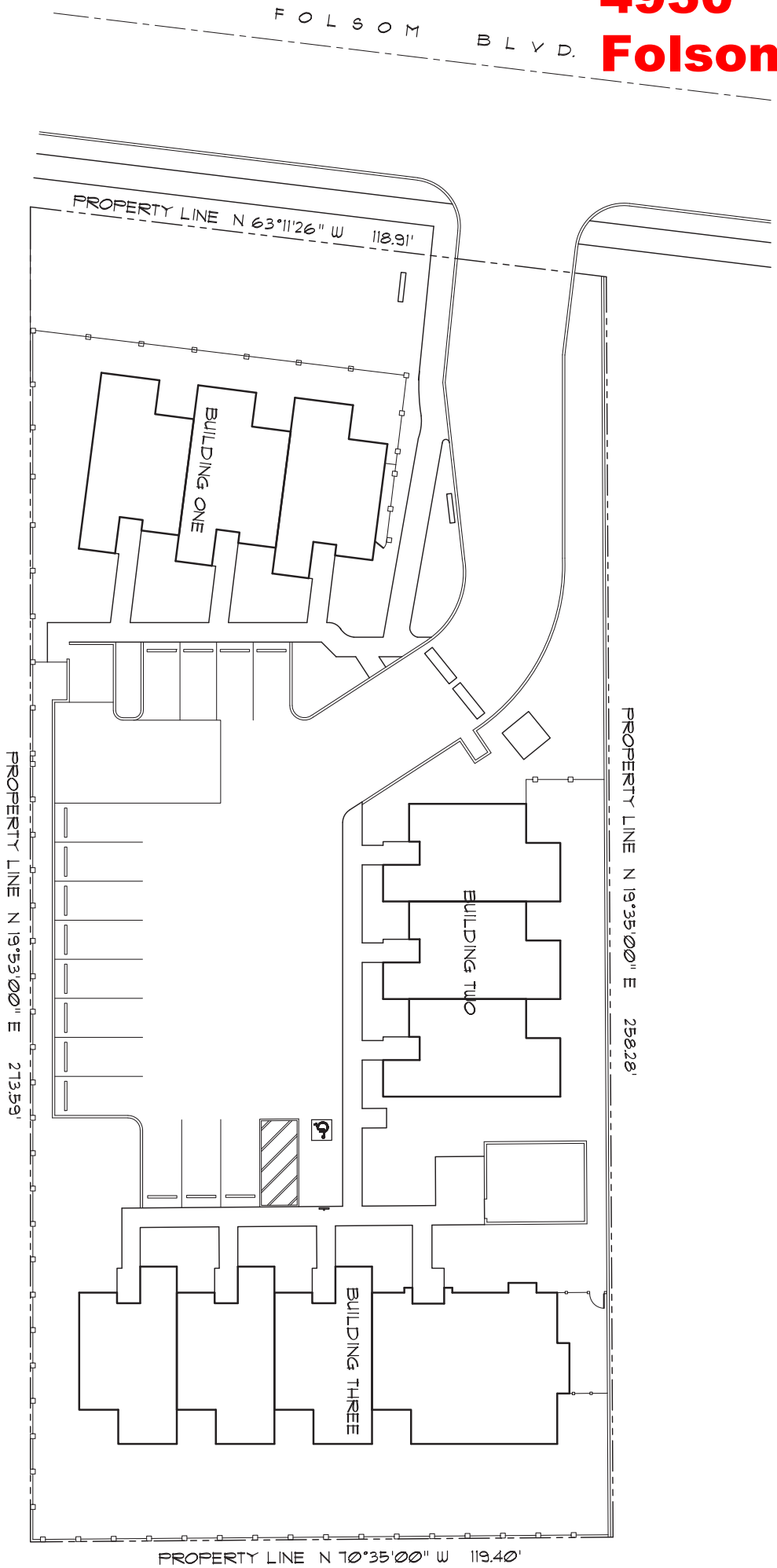
2 A2.1 SECOND FLOOR PLAN - BUILDING 8

1/8"=1'0"

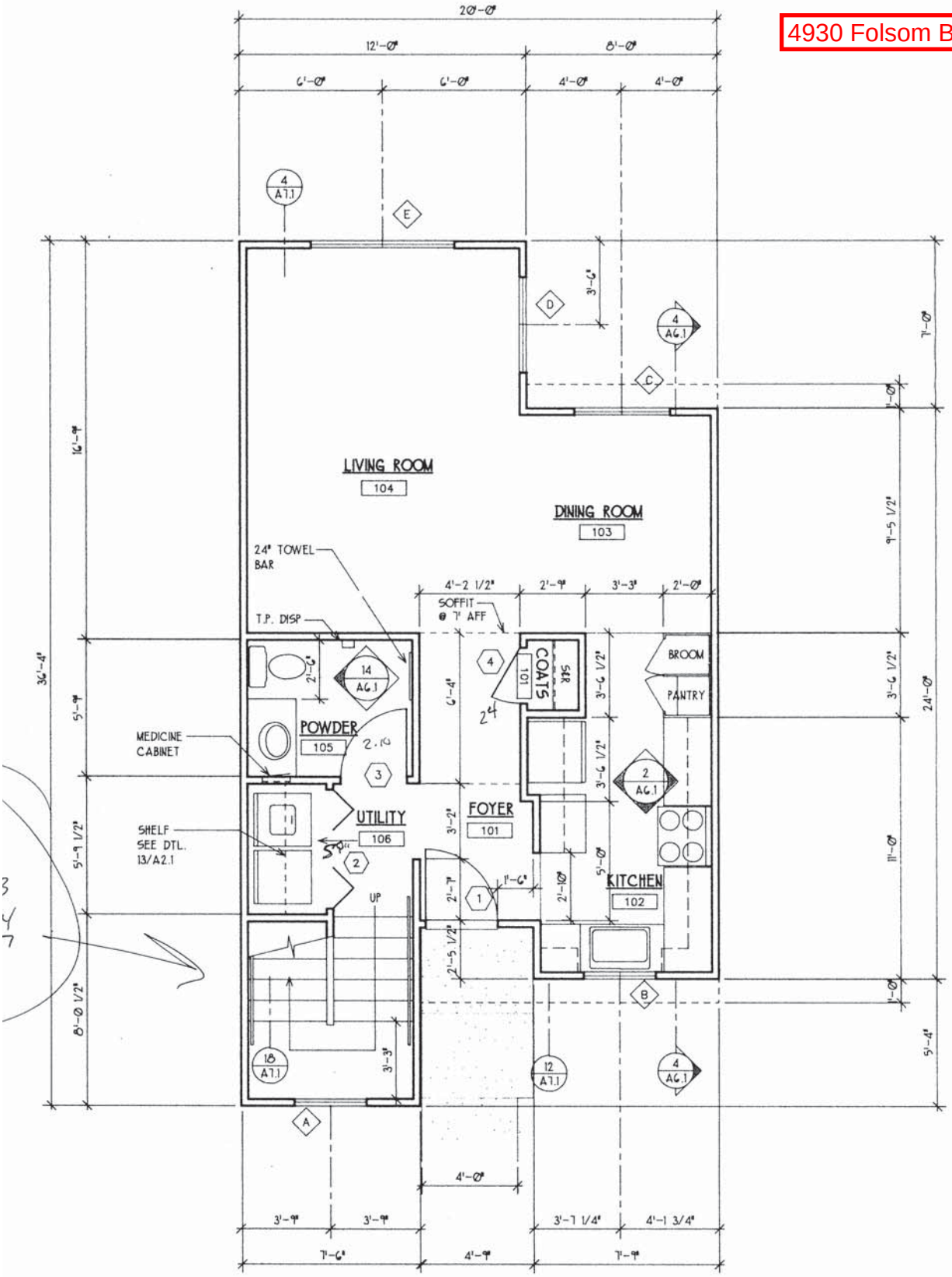
NORTH

8223 Walerga Road
Building 8

4930 Folsom Blvd.



4930 Folsom Blvd.



NOTE:
PROVIDE INSULATION AT ALL EXTERIOR WALLS, PARTY WALLS (BOTH SIDES), BATHROOMS, AND MECHANICAL CLOSETS.

WALL LEGEND

2X4 STUD

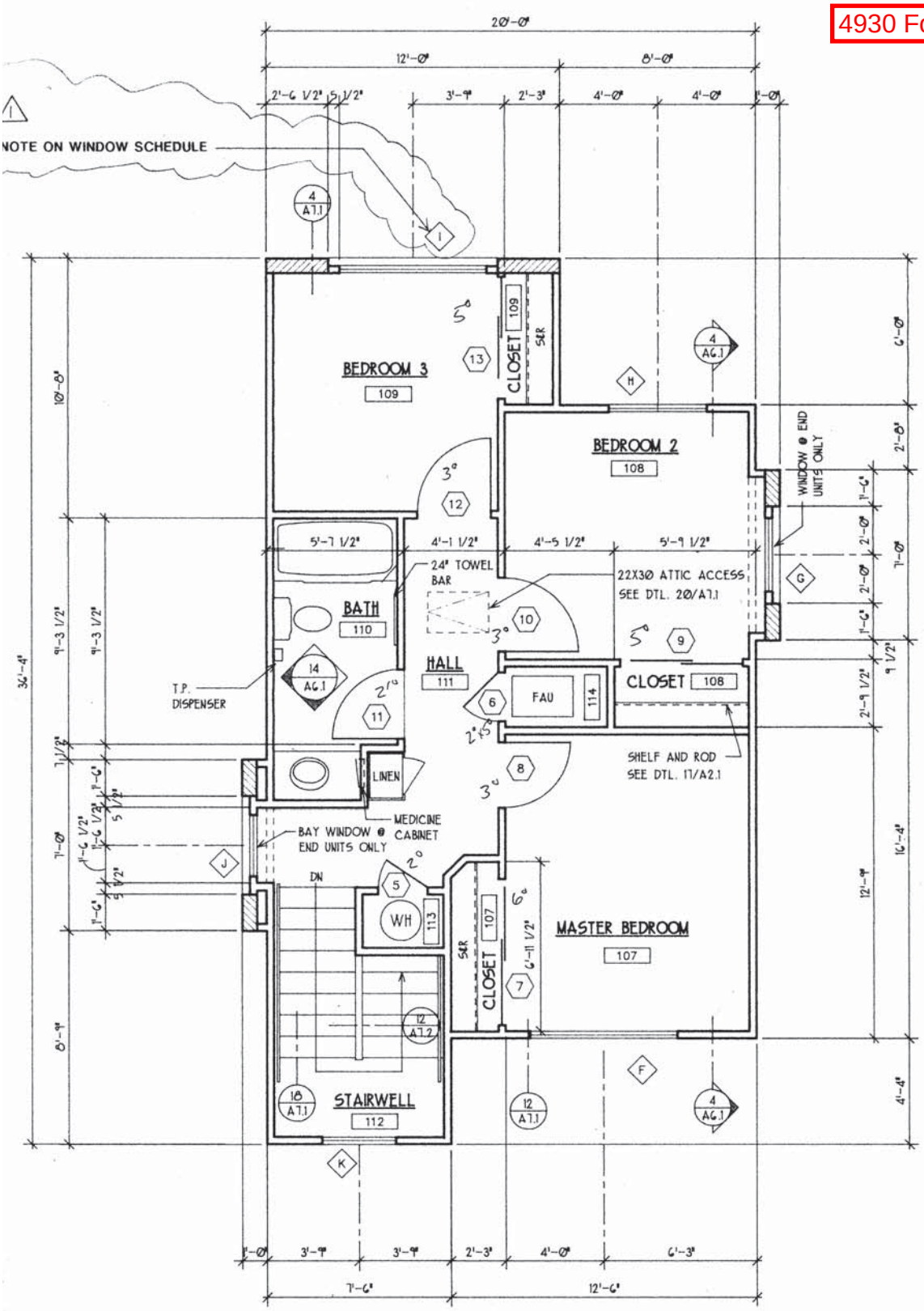
2X8 STUD

FIRST FLOOR	=	592 S.F.
SECOND FLOOR	=	549 S.F.
TOTAL	=	1,141 S.F.

FIRST FLOOR PLAN

SCALE: 1/4"=1'-0"

4930 Folsom Blvd.



SECOND FLOOR PLAN SCALE: 1/4"=1'-0"

CAPITAL NEEDS
ASSESSMENT

SACRAMENTO HOUSING & REDEVELOPMENT AGENCY
801 12th Street
Sacramento, California 95814
Vance Kelly

PROPERTY CONDITION CHECKLIST REPORT
of
POINTE LAGOON - 9205 ELK GROVE BOULEVARD
9205 Elk Grove Boulevard
Sacramento, California 95824

PREPARED BY:

EMG
10461 Mill Run Circle, Suite 1100,
Owings Mills, Maryland 21117
800.733.0660
410.785.6220 (fax)
www.emgcorp.com

EMG CONTACT:

Matthew Anderson
Program Manager
800.733.0660, x7613
manderson@emgcorp.com

EMG Project #:	136742.19R000-005.306
Date of Report:	March 25, 2019
On site Date:	March 8, 2019

CERTIFICATION

EMG has completed a Capital Needs Assessment (CNA) of the subject property, Pointe Lagoon - 9205 Elk Grove Boulevard, located at 9205 Elk Grove Boulevard, in Sacramento, Sacramento County, California. The CNA was performed on March 8, 2019.

The CNA was performed at the Client's request using methods and procedures consistent with good commercial and customary practice and with the standards outlined in 24 CFR 968.315, the Comprehensive Grant Program Guidebook 7485.3G, the Public Housing Modernization Standards Handbook 7485.2, and 24 CFR Part 5, Uniform Physical Condition Standards. EMG also utilizes the standards set forth by ASTM E2018-01, Standard Guide for Property Condition Assessments: Baseline Physical Needs Assessment Process. In addition, EMG's reference to the Client follows the ASTM guide's definition of User, whereas, the party that retains EMG for the preparation of a baseline CNA of the subject property. A user may include, without limitation, a purchaser, potential tenant, owner, existing or potential mortgagee, lender, or property manager of the subject property.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and EMG.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of EMG. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to EMG.

The opinions EMG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent architect or engineer in the same community under similar circumstances. EMG assumes no responsibility or liability for the accuracy of information contained within this report that has been obtained from the Client or the Client's representatives, from other interested parties, or from the public domain. The conclusions presented represent EMG's professional judgment based on information obtained during the course of this assignment. EMG's evaluations, analyses, and opinions are not representations regarding the design integrity, structural soundness, or actual value of the property. Factual information regarding operations, conditions, and test data provided by the Client or the Client's representative has been assumed to be correct and complete. The conclusions presented within this report are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment.

EMG certifies that EMG has no undisclosed interest in the subject property, that EMG's relationship with the Client is at arms-length, and that EMG's employment and compensation are not contingent upon the findings or estimated costs to remedy any noted deficiencies due to deferred maintenance and/or any noted component or system replacements.

EMG's CNA cannot wholly eliminate the uncertainty regarding the presence of physical deficiencies and/or the performance of a subject property's building systems. Preparation of a CNA in accordance with ASTM E2018-01 is intended to reduce, but not eliminate, the uncertainty regarding the potential for component or system failure and to reduce the potential that such component or system failure may not be initially observed. This CNA was prepared recognizing the inherent subjective nature of EMG's opinions as to such issues as workmanship, quality of original installation, and estimating the remaining useful life of any given component or system. It should be understood that EMG's suggested remedy may be determined under time constraints or may be formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the noted physical deficiencies.

Any questions regarding this report should be directed to Matthew Anderson at manderson@emgcorp.com or at 800.733.0660, x7613.

Prepared by: Tammy Prusa
Project Manager

Reviewed by:

Al Diefert
Technical Report Reviewer For
Matthew Anderson
Program Manager

TABLE OF CONTENTS

1. Observation Data 1
2. General Description Property Data 2
3. General Condition 3
4. System Condition Ratings 5
5. Current and Planned Renovation 6
6. Significant Issues/Deficiencies 7
7. Additional Investigations 8
8. Exhibits/Attachments 11

1. OBSERVATION DATA

Observation Data			
EMG Field Observer:	Deborah McCutchen	Property Contact Name:	Jaime Knacke
Date Observed:	March 8, 2019	Prop Contact Phone Number	916.449.6392
Interview Conducted (Y/N)	Yes	Name/Function Of Interviewee:	Property Manager

2. GENERAL DESCRIPTION PROPERTY DATA

General Description and Property Data						
Property Name:	Pointe Lagoon - 9205 Elk Grove Boulevard					
Street Address:	9205 Elk Grove Boulevard		City, State:	Sacramento, California		
Building Type:	Apartments	Age:	1986	Year Renovated:	2010	
Size (# Units):	16	# Buildings:	4	# Floors	2	
Other Buildings Or Amenities	Laundry building with coin-operated washers and dryers					
UBC Seismic Zone:	Zone 3		Flood Zone Determination:	X (unshaded)		
# Parking Spaces:	24					

Apartment Unit Types and Mix		
12	2 Bedroom/1 Bathroom	Unknown
4	2 Bedrooms/1 Bathroom - Townhome	Unknown
16	Total Number of Units	
	Total Building Area:	Unknown

Building Specifications	
Foundation Construction:	Concrete slab
Structural System:	Wood frame
Exterior Wall finish:	Stucco
Roof finish:	Asphalt shingles (2010)
Windows:	Vinyl, double glazed sliding (2010)

Building Systems	
Plumbing:	Copper and ABS, individual electric-fired storage tank water heaters
Fire Sprinklers (Y/N):	No
Cooling System:	Split systems, Exterior pad-mounted condenser
Heating Equipment:	Split systems, Electric furnace
Electrical System:	Copper wire
Fire Alarm and Life Safety System:	Smoke detectors and Exterior Fire Extinguishers

Interiors:			
Flooring:	Vinyl Composition Tile	Walls:	Painted drywall
Plumbing Fixtures	Tub, toilet, shower, vanity cabinet with sink	Cabinets	Wood with laminate counter
Light Fixtures:	Standard residential grade	Appliances:	Refrigerator, Electric range

3. GENERAL CONDITION

General Condition
Generally, the property was constructed within industry standards, has been well maintained over recent years and appeared to be in fair overall condition. Property management personnel reported that the last significant capital expenditure program was in 2010. Over the past three years, the property has had no capital expenditure program. There are a number of Rehabilitation Needs and Replacement Reserves that should be accomplished during the evaluation period as part of the preventive maintenance program. These needs are identified in the various sections of this report and are summarized in the enclosed cost tables.

Section 504 of the Rehabilitation Act of 1973 is a Federal accessibility law that was enacted on June 2, 1988. Section 504 applies to multi-family properties that have 15 or more units. The property must have a minimum of five percent mobility accessible units and two percent of the units for visual / audio hearing impairments. Exceptions can be considered due to undue financial burdens or structural restrictions. However, the exceptions do not relieve the recipients from compliance utilizing other units/buildings or other methods to achieve reasonable accommodations.

Reasonable Accommodations as described in 24 CFR 8.4(b)(i), 8.24 and 8.33 are as follows: When a family member requires an accessible feature(s) or policy modification to accommodate a disability, property owners must provide such feature(s) or policy modification unless doing so would result in a fundamental alteration in the nature of its program or result in a financial and administrative burden.

The Uniform Federal Accessibility Standard (UFAS) 24 CFR part 40 was adopted by HUD and made effective October 4, 1984. The UFAS applies only to new construction or to alterations to the existing buildings. Alterations are defined as work that costs 50 percent or more of the building's value when the work performed occurs within a twelve month period. Apartments modified for mobility impaired residents are to comply with UFAS.

The Fair Housing Amendments Act (FHA) of 1988 amended Title VIII of the Civil Rights Act of 1968 to aid in the prohibitions against discrimination in housing on the basis of disability and familial status. The Fair Housing Act also made it unlawful to design and construct certain "covered multi-family dwellings" for first occupancy after March 13, 1991, in a manner that makes them inaccessible to persons with disabilities. The Fair Housing Act does apply to this property due to the date of construction.

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" on the basis of disability. Generally, the rental office and access from the site to the rental office must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Buildings completed and occupied after January 26, 1992 are required to comply fully with ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of complying to the extent allowed by structural feasibility and the financial resources available; otherwise a reasonable accommodation must be made.

During the CNA, a visual Accessibility Survey in general conformance with Section 504 Accessibility Standards and the Uniform Federal Accessibility Standards (UFAS) was conducted. It is understood by the Client that the visual observation described herein does not comprise a full measured Accessibility Compliance Survey, and that such a survey is beyond the scope of EMG's undertaking. Actual measurements were not taken to verify compliance.

Based on the date of construction, 1986, the accessibility standards that apply to the Project are 504, UFAS and the ADA Guidelines. However, as the property is not new construction, or completing substantial rehabilitation or other rehabilitation, the property is only required to complete reasonable accommodations. Property management stated that Section 504 requests are completed on an individual case-by-case basis.

Based on EMG's observations, the facility appears to be in general compliance with the Section 504 Standards and the ADA Guidelines. Elements that were observed at the property, which were not accessible as stated within the priorities of are as follows:

Unit Accessibility

- The property does not currently have any visual / audio hearing impairment units. Since 2% of the units are required to be accessible, one unit should be converted.

Laundry Room

- A front-loading washing machine is required to accommodate disabled residents.

A full ADA Measured Compliance Survey may reveal additional aspects of the property that are not in compliance.

Corrections of these conditions should be addressed from a liability standpoint, but are not necessarily code violations. The Americans with Disabilities Act Accessibility Guidelines concern civil rights issues as they pertain to the disabled and are not a construction code, although many local jurisdictions have adopted the Guidelines as such. The cost to address the achievable items noted above is included as a lump sum in the Immediate Repairs.

4. SYSTEM CONDITION RATINGS

System Condition Ratings				
System	**Good**	**Fair**	**Poor**	**Unknown**
Site/Landscaping		✓		
Pavements/Parking		✓		
Structural	✓			
Exterior Walls		✓		
Roofs		✓		
Mechanical/HVAC		✓		
Interiors		✓		

Definitions:

Good = Satisfactory as-is. Requires only routine maintenance over the evaluation period. Repair or replacement may be required due to a system's estimated useful life.

Fair = Satisfactory as-is. Repair or replacement is required due to current physical condition and/or estimated remaining useful life.

Poor = Immediate repair, replacement, or significant maintenance is required.

Unknown = A system or material that was not visible during our review or does not exist at the property. Such as a building in a downtown location with no Pavements/Parking.

5. CURRENT AND PLANNED RENOVATION

Current and Planned Renovation
Not Applicable

6. SIGNIFICANT ISSUES/DEFICIENCIES

Significant Issues/Deficiencies
There is isolated damage to some unit gypsum board walls, the cost to repair the gypsum board wall is below the cost threshold and is considered to be routine maintenance.

7. ADDITIONAL INVESTIGATIONS

Additional Investigations
No further investigation is necessary at this time.

Replacement Reserves Report

6/5/2019

Location	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Total Escalated Estimate
Pointe Lagoon-9205 Elk Grove / Energy Conservation Measures - 2019	$82,027	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,504	$0	$0	$0	$0	$25,558	$0	$0	$43,874	$0	$71,975	**$224,937**
Pointe Lagoon-9205 Elk Grove / Laundry Rooms - 2019	$0	$0	$0	$7,864	$0	$16,635	$0	$21,524	$0	$0	$15,525	$6,885	$0	$10,568	$0	$22,356	$0	$0	$0	$0	$49,737	**$151,095**
Pointe Lagoon-9205 Elk Grove / Residential Buildings - 2019	$3,878	$0	$0	$226,080	$0	$0	$0	$0	$127,112	$0	$155,591	$153,357	$0	$196,465	$0	$0	$0	$253,403	$183,442	$0	$0	**$1,299,329**
Pointe Lagoon-9205 Elk Grove / Site - 2019	$0	$0	$0	$27,628	$0	$0	$0	$0	$5,741	$0	$2,576	$0	$0	$94,573	$1,307	$16,994	$0	$0	$7,715	$0	$0	**$156,533**
GrandTotal	**$85,905**	**$0**	**$0**	**$261,571**	**$0**	**$16,635**	**$0**	**$21,524**	**$132,853**	**$0**	**$175,195**	**$160,242**	**$0**	**$301,606**	**$1,307**	**$64,908**	**$0**	**$253,403**	**$235,031**	**$0**	**$121,712**	**$1,831,894**

Pointe Lagoon-9205 Elk Grove / Energy Conservation Measures - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
X103X	All Apartment Bathrooms	ECM, Low Flow Faucet Aerators, Install	10	10	0	16	EA	$12.05	$193	$193										$193										$193	**$578**
X103X	Apartment Building Interior	ECM, Existing Water Heater With New Energy Efficient Units, Replace	18	18	0	16	EA	$1,610.71	$25,771	$25,771																		$25,771			**$51,543**
X103X	All Apartment Lighting	ECM, Incandescent / Halogen / Compact Fluorecent Lamps, Replace	15	15	0	96	EA	$26.69	$2,562	$2,562															$2,562						**$5,124**
X103X	All Apartment Units	ECM, Hot Water Pipes, Insulatoin, Provide	15	15	0	48	LF	$19.06	$915	$915															$915						**$1,830**
X103X	All Apartment Kitchens	ECM, Low Flow Faucet Aerators, Install	10	10	0	16	EA	$12.05	$193	$193										$193										$193	**$578**
X103X	All Apartment Units	ECM, Existing Heat Pumps With Energy Efficient Heat Pumps, Replace	20	20	0	16	EA	$2,420.75	$38,732	$38,732																				$38,732	**$77,464**
X103X	All Apartment Showerheads	ECM, Low Flow Shower Heads, Install	10	10	0	16	EA	$45.84	$733	$733										$733										$733	**$2,200**
X104X	Energy Conservation Measures - 2019	ECM, Existing Refrigerator(s) With Energy Star Certified Refrigerator(s), Replace	15	15	0	16	EA	$807.96	$12,927	$12,927															$12,927						**$25,855**
Totals, Unescalated										**$82,027**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,119**	**$0**	**$0**	**$0**	**$0**	**$16,404**	**$0**	**$0**	**$25,771**	**$0**	**$39,851**	**$165,172**
Totals, Escalated (3.0% inflation, compounded annually)										**$82,027**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,504**	**$0**	**$0**	**$0**	**$0**	**$25,558**	**$0**	**$0**	**$43,874**	**$0**	**$71,975**	**$224,937**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Pointe Lagoon-9205 Elk Grove / Laundry Rooms - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2011	Laundry room	Exterior Wall, Painted Surface, 1-2 Stories, Prep & Paint	10	7	3	1250	SF	$3.48	$4,349				$4,349										$4,349								**$8,698**
B2011	Laundry room	Exterior Wall, Stucco, 1-2 Stories, Replace	40	20	20	1250	SF	$22.03	$27,538																				$27,538		**$27,538**
B2032	Exterior wall	Exterior Door, Steel, Replace	25	15	10	1	EA	$1,151.52	$1,152												$1,152										**$1,152**
B3011	Laundry room	Roof, Asphalt Shingle, Replace	20	9	11	1200	SF	$4.14	$4,974													$4,974									**$4,974**
C3012	Laundry room	Interior Wall Finish, Plastic Fiberglass-Reinforced Panels, Replace	20	10	10	2000	SF	$4.68	$9,356												$9,356										**$9,356**
C3024	Laundry room	Interior Floor Finish, Vinyl Sheeting, Replace	15	8	7	1000	SF	$8.50	$8,496								$8,496														**$8,496**
D2014	Laundry room	Sink/Lavatory, Vitreous China, Replace	20	10	10	1	EA	$1,044.12	$1,044												$1,044										**$1,044**
D2023	Laundry room	Water Heater, Gas, Residential, 30 to 50 GAL, Replace	10	7	3	1	EA	$2,847.50	$2,847				$2,847										$2,847								**$5,695**
E1016	Laundry room	Commercial Laundry, Washer, 20 to 30 LB, Replace	10	5	5	2	EA	$7,174.86	$14,350						$14,350									$14,350						**$28,699**
E1016	Laundry room	Commercial Laundry, Dryer, 30 to 50 LB, Replace	15	8	7	2	EA	$4,502.47	$9,005								$9,005														**$9,005**
Totals, Unescalated										**$0**	**$0**	**$0**	**$7,197**	**$0**	**$14,350**	**$0**	**$17,501**	**$0**	**$0**	**$11,552**	**$4,974**	**$0**	**$7,197**	**$0**	**$14,350**	**$0**	**$0**	**$0**	**$0**	**$27,538**	**$104,658**
Totals, Escalated (3.0% inflation, compounded annually)										**$0**	**$0**	**$0**	**$7,864**	**$0**	**$16,635**	**$0**	**$21,524**	**$0**	**$0**	**$15,525**	**$6,885**	**$0**	**$10,568**	**$0**	**$22,356**	**$0**	**$0**	**$0**	**$0**	**$49,737**	**$151,095**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Pointe Lagoon-9205 Elk Grove / Residential Buildings - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2011	Exterior walls	Exterior Wall, Painted Surface, 1-2 Stories, Prep & Paint	10	7	3	20480	SF	$3.48	$71,254				$71,254										$71,254								**$142,508**
B2032	Exterior	Exterior Door, Steel, Replace	25	15	10	16	EA	$1,151.52	$18,424											$18,424											**$18,424**
B3011	Roofs	Roof, Asphalt Shingle, Replace	20	9	11	9240	SF	$5.12	$47,290												$47,290										**$47,290**
C3024	Interior flooring	Interior Floor Finish, Vinyl Tile (VCT), Replace	15	12	3	15400	SF	$5.82	$89,589				$89,589																$89,589		**$179,178**
D2011	Apartment bathroom	Toilet, Flush Tank (Water Closet), Replace	20	7	13	16	EA	$1,278.81	$20,461														$20,461								**$20,461**
D2014	Apartment kitchen	Sink, Stainless Steel, Replace	20	17	3	16	EA	$1,277.48	$20,440				$20,440																		**$20,440**
D2015	Apartment bathroom	Bathtub & Shower Enclosure, Fiberglass, Replace	20	7	13	16	EA	$2,163.69	$34,619														$34,619								**$34,619**
D3051	Interior mechanical closet	Furnace, Electric, 26 to 40 MBH, Replace	20	9	11	16	EA	$3,968.67	$63,499												$63,499										**$63,499**
D5019	All units	Load Center, 120 / 240 V, 125 Amp, Single Phase Residential, Replace	30	13	17	16	EA	$9,582.08	$153,313																			$153,313			**$153,313**
D5022	Exterior wall	Metal Halide Lighting Fixture, 250 W, Replace	20	10	10	10	EA	$906.77	$9,068											$9,068											**$9,068**
D5029	All units	Lighting System, Interior, Multi-Family, Upgrade	25	15	10	15400	SF	$5.73	$88,282											$88,282											**$88,282**
E1094	Unit kitchens	Residential Appliances, Range Hood, Vented or Ventless, Replace	15	12	3	16	EA	$329.18	$5,267				$5,267																$5,267		**$10,534**
E1094	Unit kitchens	Residential Appliances, Range, Electric, Replace	15	12	3	16	EA	$806.07	$12,897				$12,897																$12,897		**$25,794**
E2012	Kitchen	Kitchen Counter, Plastic Laminate, Postformed, Replace	10	7	3	140	LF	$53.21	$7,449				$7,449										$7,449								**$14,898**

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
E2012	Bathroom	Bathroom Vanity Cabinet, Wood, with Cultured Marble Sink Top, 24 to 30", Replace	20	12	8	16	EA	$1,312.37	$20,998									$20,998														**$20,998**
E2012	Kitchen	Kitchen Cabinet, Base and Wall Section, Wood, Replace	20	12	8	140	LF	$566.75	$79,345									$79,345														**$79,345**
Z104X	Laundry room	ADA, Laundry, Coin-Operated Washer, Front Loading, Install	0	0	0	1	EA	$2,666.33	$2,666	$2,666																						**$2,666**
Z107X	1 Unit	ADA, Residential Unit, Visual Bell & Strobe, Hearing Impaired, Install	0	0	0	1	EA	$1,211.97	$1,212	$1,212																						**$1,212**
Totals, Unescalated										**$3,878**	**$0**	**$0**	**$206,895**	**$0**	**$0**	**$0**	**$0**	**$100,343**	**$0**	**$115,774**	**$110,788**	**$0**	**$133,783**	**$0**	**$0**	**$0**	**$153,313**	**$107,753**	**$0**	**$0**	**$932,529**
Totals, Escalated (3.0% inflation, compounded annually)										**$3,878**	**$0**	**$0**	**$226,080**	**$0**	**$0**	**$0**	**$0**	**$127,112**	**$0**	**$155,591**	**$153,357**	**$0**	**$196,465**	**$0**	**$0**	**$0**	**$253,403**	**$183,442**	**$0**	**$0**	**$1,299,329**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Pointe Lagoon-9205 Elk Grove / Site - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
D4031	Site	Fire Extinguisher, Replace	15	1	14	2	EA	$432.12	$864															$864								**$864**
G2022	Parking lot	Parking Lots, Asphalt Pavement, Seal & Stripe	5	2	3	9840	SF	$0.46	$4,532				$4,532					$4,532				$4,532					$4,532					**$18,127**
G2022	Site	Parking Lots, Asphalt Pavement, Mill & Overlay	25	12	13	9840	SF	$3.98	$39,117												$39,117											**$39,117**
G2031	Site	Pedestrian Pavement, Sidewalk, Concrete Large Areas, Replace	30	15	15	1000	SF	$10.91	$10,908														$10,908								**$10,908**
G2041	Perimeter of property	Fences & Gates, Wood Board, 6' high, Refinish	10	7	3	3750	SF	$1.90	$7,135				$7,135								$7,135										**$14,271**
G2049	Site	Dumpster Accessories, Enclosures, Wood/Metal Gates, Replace	20	10	10	1	EA	$1,916.43	$1,916											$1,916											**$1,916**
G4021	Site	Pole Light, Exterior, 135 to 1000 W HID (Fixture, Ballast, & Lamp), Replace	10	7	3	5	EA	$2,723.18	$13,616				$13,616								$13,616										**$27,232**
Totals, Unescalated										**$0**	**$0**	**$0**	**$25,283**	**$0**	**$0**	**$0**	**$0**	**$4,532**	**$0**	**$1,916**	**$64,400**	**$864**	**$10,908**	**$0**	**$0**	**$4,532**	**$0**	**$0**	**$112,435**		
Totals, Escalated (3.0% inflation, compounded annually)										**$0**	**$0**	**$0**	**$27,628**	**$0**	**$0**	**$0**	**$0**	**$5,741**	**$0**	**$2,576**	**$94,573**	**$1,307**	**$16,994**	**$0**	**$0**	**$7,715**	**$0**	**$0**	**$156,533**		

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

8. EXHIBITS/ATTACHMENTS

Appendix A: Photographs of Property

Appendix B: Pre-survey Questionnaire

Appendix C: Supporting Documentation

APPENDIX A:
PHOTOGRAPHS OF PROPERTY

EMG PHOTOGRAPHIC RECORD

Project No.: 136742.19R000-005.306 **Project Name: Pointe Lagoon - 9205 Elk Grove Boulevard**

#1	FRONT ELEVATION

#2	RIGHT ELEVATION

#3	REAR ELEVATION

#4	LEFT ELEVATION

#5	WINDOW, VINYL-CLAD DOUBLE-GLAZED

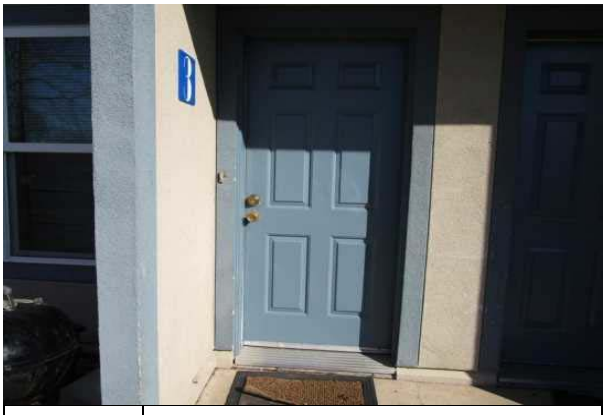
#6	ROOF, ASPHALT SHINGLE

EMG PHOTOGRAPHIC RECORD

Project No.: 136742.19R000-005.306 **Project Name: Pointe Lagoon - 9205 Elk Grove Boulevard**

#7	FURNACE, ELECTRIC

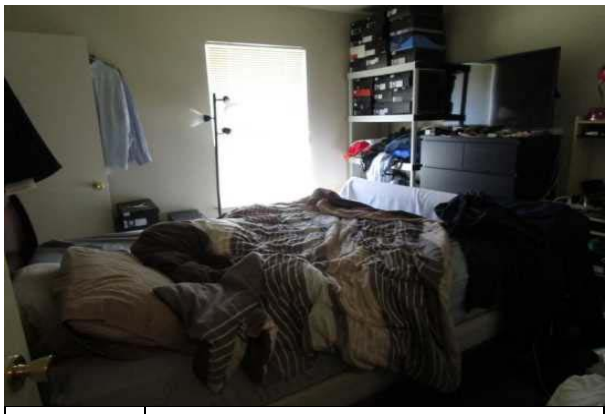
#8	LOAD CENTER



#9	EXTERIOR DOOR, STEEL

#10	EXTERIOR WALL, STUCCO

#11	LAUNDRY ROOM BUILDING



#12	UNIT BEDROOM

EMG PHOTOGRAPHIC RECORD

Project No.: 136742.19R000-005.306 **Project Name: Pointe Lagoon - 9205 Elk Grove Boulevard**

#13	UNIT LIVING ROOM

#14	UNIT BATHROOM

#15	UNIT STAIRWELL

#16	UNIT KITCHEN

APPENDIX B:
PRE-SURVEY QUESTIONNAIRE

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

This questionnaire must be completed by the property owner, the owner's designated representative, or someone knowledgeable about the subject property. If the form is not completed, EMG's Project Manager will require ***additional time*** during the on-site visit with such a knowledgeable person in order to complete the questionnaire. During the site visit, EMG's Field Observer may ask for details associated with selected questions. This questionnaire will be utilized as an exhibit in EMG's final report.

Name of Institution:	**Sacramento Housing and Redevelopment Agency**
Name of Building: **9205 Elk Grove Blvd**	Building #: **714**
Name of person completing questionnaire: **Jaime Knacke**	
Length of Association With the Property: **7 months**	Phone Number: **916-449-6392**

Site Information					
Year of Construction?	**1986**				
No. of Stories?	Floors.				
Total Site Area?	.83 Acres				
Total Building Area?	36,004 Square Feet				
Area Heated (%)	%100				
Area Cooled (%)	%100				
Total Conditioned Area (%)	%100				
Primary Heating System?	**HVAC**				
Secondary Heating System?	**None**				
If Oil Used For Heating- Tank Capacity	Gallons _____ No. of Tanks				
Primary Cooling System & Capacity?	**Central**				
Do Any HVAC Systems Use R-11, R-12 or R-22 Refrigerants?	**R-22**				
	Elec.	Natural Gas	Propane	No.2 Oil	Dist. Steam
Primary Heating Fuel?	☐	☒	☐	☐	☐
Secondary Heating Fuel?	☐	☐	☐	☐	☐
Domestic Water Heater Fuel?	☐	☒	☐	☐	

Building Occupancy/Schedule			
Estimated No. of Residence	16		
No. of Staff Members	5		
Standard Staff Work Timing	08 :00 AM/PM - 05:00 AM/PM		
Maintenance Staff Hours	07 : 30 AM/PM - 04:00 AM/PM		
Apartment Type	**Qty**	**Area (Sqft)**	**No. of Bathrooms**
No. of Apts. In Building:	**16**		16
No. of Efficiency Apts:	**0**		0
No. of 1 Bedroom Apts:	**0**		0
No. of 2 Bedroom Apts:	**16**		16
No. of 3 Bedroom Apts:	**0**		0
No. of 4 Bedroom Apts:	**0**		0
No. of 5 Bedroom Apts:	**0**		0
No. of 6 Bedroom Apts:	**0**		0
No. of Vacant Apts:	**0**		0
No. of Down Apts:	**0**		0

Inspections	Date of Last Inspection	List of Any Outstanding Repairs Required
1. Elevators	**N/A**	
2. HVAC Mechanical, Electric, Plumbing?	**JAN 2019**	
3. Life-Safety/Fire?	**N/A**	
4. Roofs?	**JAN 2019**	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Key Questions	Response
Major Capital Improvements in Last 3 yrs.	NONE
Planned Capital Expenditure For Next Year?	RAD
Age of the Roof?	Unknown
What bldg. Systems Are Responsibilities of Tenants? (HVAC/Roof/Interior/Exterior/Paving)	N/A

Unk = Unknown, NA = Not Applicable	Yes	No	NA	Unk	Comments
1. Are the plumbing fixtures Low Flow *(Below 2.0GPM, .6GPF)*	☐	☒	☐	☐	
2. Are there any vacant buildings or significant building areas?	☐	☐	☐	☒	
3. Do tenants pay for utilities at leased properties?	☒	☐	☐	☐	
4. Does the owner pay for exterior site lighting electricity?	☐	☒	☐	☐	
5. Any Issues with exterior Lighting?	☐	☒	☐	☐	

Building Structure							
		Y/N		Y/N		Y/N	Additional Comments?
Roof Type:	Pitched?	Y	Flat		Both		
Attic Insulation:	Batt	Y	Cellulose		Fiberglass		
Window Frame:	Wooden		Vinyl	Y	Metal		
Window Glazing:	Single		Double	Y	Triple		
Structure	Wooden	Y	Metal		Conc.		

Building Lighting			
Type of Linear Fluorescent Lamps? *(T8/T12)*	**T8**	Exterior Lighting Control *(Timer/Photocell)*	**PHOTO**
Type of Common Lamps? *(Incan/CFLs)*		Exterior Light Timing	N/A Hr
Lighting Sensors? *(Y/N)*	**Y**	EXIT Lights (Incan/Fluor/LED)	**YES**

Other Systems				
Item	Qty		Selection	Utility Company / Provider Name
# of Elevators	**0**	Hydraulic/Traction	**0**	N/A
# of Electric Meters	**17**	Master/ Direct	**0**	
# of Nat. Gas Meters	**1**	Resi/Commercial/Indust.	**0**	
# of Water Meters	**1**			
# of Backup Generator	**0**	Fuel?:	**0**	

Preventive Maintenance of Mechanical System		
Systems	**Annual Professional Maintenance**	**Seldom or Never Maintained**
Tenant Space Heating Systems (*Furnace/Boilers/Heat pumps*)	☒	☐
Tenant Space Cooling Systems (*Condensers/Window AC*)	☒	☐
Domestic Water Heaters	☒	☐

Building Appliances		
	Value	Additional Comments?
Percentage of Energy Star Certified Refrigerators (%)	80%	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Percentage of Refrigerators older than 8 years (%)	80%	Please provide general age of refrigerators here
Cooking Range Type (Electric/Gas/Propane)	GAS	
Laundry System (Leased/Owned)	LEASED	
No. of Washers	2	
No. of Dryers	2	

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	Question	Y	N	Unk	NA	Comments
	Zoning, Building Design & Life Safety Issues					
1	Are there any unresolved building, fire, or zoning code issues?		X			
2	Is there any pending litigation concerning the property?		X			
3	Are there any other significant issues/hazards with the property?		X			
4	Are there any unresolved construction defects at the property?		X			
5	Has any part of the property ever contained visible suspect fungal growth?		X			
6	Is there a fungal Operations and Maintenance Plan?		X			
7	Are there any recalled fire sprinkler heads (Star, GEM, Central, and Omega)?		X			
8	Have there been indoor air quality or fungal related complaints from tenants?		X			
	General Site					
9	Are there any problems with erosion, storm water drainage or areas of paving that do not drain?	X				
10	Are there any problems with the landscape irrigation systems?		X			
	Building Structure					
11	Are there any problems with foundations or structures?		X			
12	Is there any water infiltration in basements or crawl spaces?		X			

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

13	Has a termite/wood boring insect inspection been performed within the last year?		X			
BUILDING ENVELOPE						
Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates *"Unknown"*)						
	QUESTION	Y	N	Unk	NA	**COMMENTS**
14	Are there any wall, or window leaks?		X			
15	Are there any roof leaks?		X			
16	Is the roofing covered by a warranty or bond?		X			
17	Are there any poorly insulated areas?			X		
18	Is Fire Retardant Treated (FRT) plywood used?				X	
19	Is exterior insulation and finish system (EIFS) or a synthetic stucco finish used?		X			
BUILDING HVAC AND ELECTRICAL						
20	Are there any leaks or pressure problems with natural gas service?		X			
21	Does any part of the electrical system use aluminum wiring?		X			
22	Do Residential units have a less than 60-Amp service?	X				
23	Do Commercial units have less than 200-Amp service?	X				
24	Are there any problems with the utilities, such as inadequate capacities?		X			
ADA						
25	Has the management previously completed an ADA review?	X				
26	Have any ADA improvements been made to the property?		X			
27	Does a Barrier Removal Plan exist for the property?			X		

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

28	Has the Barrier Removal Plan been approved by an arms-length third party?			X		

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	QUESTION	Y	N	Unk	NA	COMMENTS
29	Has building ownership or management received any ADA related complaints?		X			
30	Does elevator equipment require upgrades to meet ADA standards?				X	
	PLUMBING					
31	Is the property served by a private water well?		X			
32	Is the property served by a private septic system or other waste treatment systems?			X		

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

33	Is polybutylene piping used?		X			
34	Are there any plumbing leaks or water pressure problems?		X			

Issues or Concerns That EMG Should Know About?	
1.	
2.	
3.	

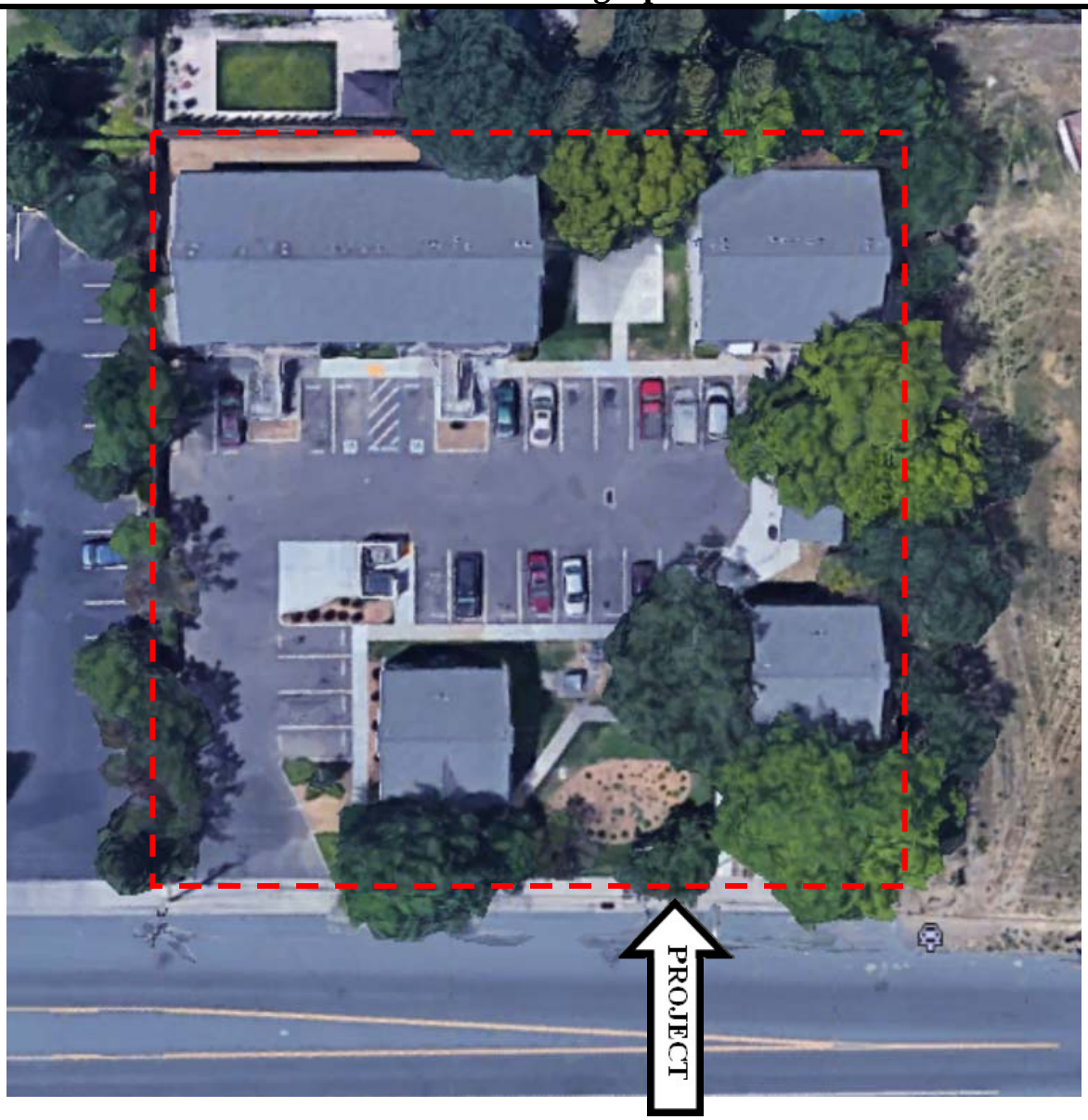
Items Provided to EMG Auditors	Yes	No	N/A	Additional Comments?
Access to 10% (GPNA), 25% (RAD) Apartments	☐	☒	☐	
Access to All Mechanical Spaces	☒	☐	☐	
Access to Roof/Attic Space	☐	☒	☐	
Access to Building As-Built Drawings	☐	☒	☐	
Site plan with bldg., roads, parking and other features	☒	☐	☐	
Access to last 12/24 Months Common Area Utility Data	☒	☐	☐	
Access to last 12/24 Months Tenant Utility Data	☐	☐	☒	
Contact Details of Mech, Elevator, Roof, Fire Contractors:	☐	☐	☒	
List of Commercial Tenants in the property	☒	☐	☐	
Previous reports pertaining to the physical condition of property.	☒	☐	☐	
ADA survey and status of improvements implemented.	☒	☐	☐	
Current / pending litigation related to property condition.	☒	☐	☐	
Any brochures or marketing information.	☒	☐	☐	
Appraisal, either current or previously prepared.	☐	☐	☒	
Summary of Projects executed in last 5 years	☒	☐	☐	

Signature of person Interviewed or completing form

Date 3-5-19

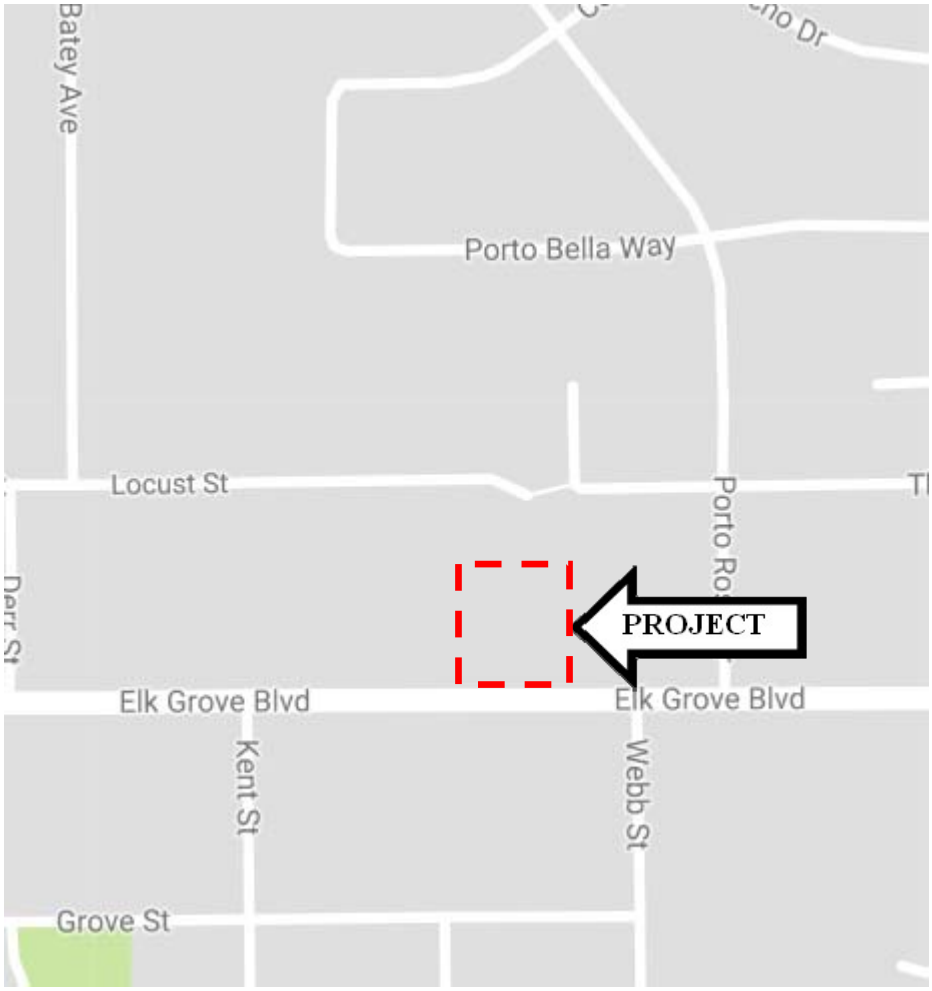
APPENDIX C:
SUPPORTING DOCUMENTATION

Aerial Photograph



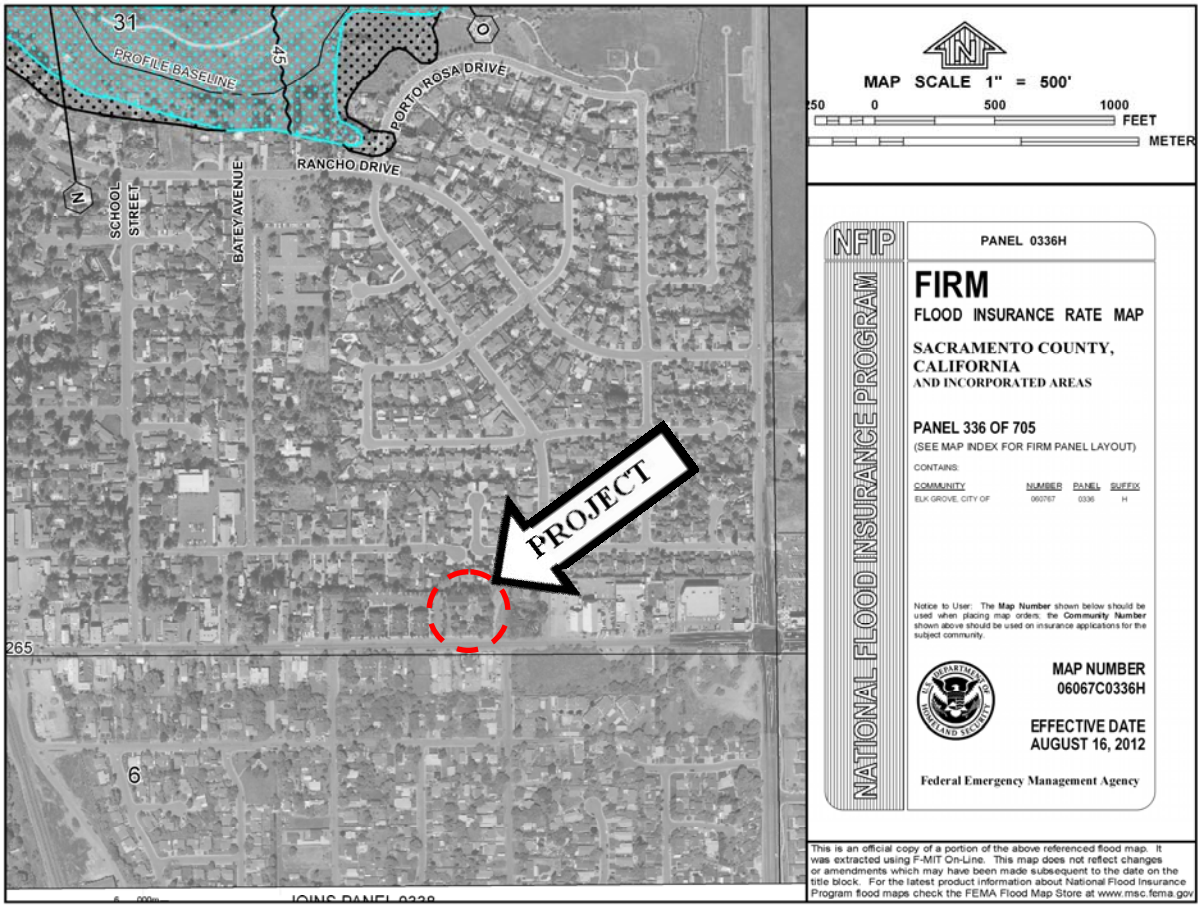
EMG	**Source:**	**Project Number:** 136742.19R000-005.306
N	**Google Earth** **The north arrow indicator is an approximation of 0° North.**	**Project Name:** Pointe Lagoon - 9205 Elk Grove Boulevard **On-Site-Date:** March 8, 2019

Street Map



EMG	**Source:** **Google**	**Project Number:** **136742.19R000-005.306**
N	**The north arrow indicator is an approximation of 0° North.**	**Project Name:** **Pointe Lagoon - 9205 Elk Grove Boulevard**
		On-Site-Date: **March 8, 2019**

Flood Map



EMG

Source:

FEMA

Date: August 16, 2012

The north arrow indicator is an approximation of 0° North.

Project Number:

136742.19R000-005.306

Project Name:

Pointe Lagoon - 9205 Elk Grove Boulevard

On-Site-Date:

March 8, 2019

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Faucet Aerators
EAP2-b	**Location**: All Apartment Bathrooms

Property Type:	Residential	Estimated No. of Operational Weeks	52
		Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Number of Occupants Affected By Retrofit	48		Number of Occupants Affected by Retrofit	48	
Do You Want To Replace Kitchen Faucets Aerators	No	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	Yes	*(Select)*
Total Number of Faucet Aerators To Be Replaced	0		Total Number of Faucet Aerators To Be Replaced	16	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	-	GPM	GPM of Existing Faucet Aerators	1.5	GPM
GPM of Proposed Faucet Aerator	-	GPM	GPM of Proposed Faucet Aerator	1	GPM
Estimated Number of Uses Per Day	0		Estimated Number of Uses Per Day	5	
Estimated Total Faucet Use Time Per Occupant	0.00	Mins	Estimated Total Faucet Use Time Per Occupant	8.10	Mins

Annual Water Savings From Installing Low Flow Aerators: 42.46 kGal

8.1 Min/Person/day @AWWA

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Electric	(Select)	Property Location in United States	Central Localities	
Energy Factor of Domestic Hot Water Heater:	0.74	EF	Heating Fuel Tariff	$0.14	$/kWh
Hot Water Discharge Temperature at Faucet	101.00	°F	Water Tariff ($/1000 Gal)	$5.00	$/kGal
Equivalent Heating Fuel Savings:	4,887	kWh	Annual Cost Savings In Form of Water	$212	$
Savings Discounted by 15% to Account For Cold Water Use					
Annual Water Savings	42.46	kGal	Annual Energy Savings From Water Heater	$684	$

COST BENEFIT ANALYSIS					
Estimated Total Annual Cost Savings	$897	$$	Estimated Total Installation Cost	$159	$$
Simple Payback Period	0.18	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $159 Estimated Annual Cost Savings: $897 Simple Payback Period (Yrs): 0.18

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Faucet Aerators
EAP2	**Location**: All Apartment Kitchens

Property Type:	Residential	Estimated No. of Operational Weeks	52
		Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Number of Occupants Affected By Retrofit	48		Number of Occupants Affected by Retrofit		
Do You Want To Replace Kitchen Faucets Aerators	Yes	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	No	*(Select)*
Total Number of Faucet Aerators To Be Replaced	16		Total Number of Faucet Aerators To Be Replaced	0	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	2.2	GPM	GPM of Existing Faucet Aerators		GPM
GPM of Proposed Faucet Aerator	1.5	GPM	GPM of Proposed Faucet Aerator		GPM
Estimated Number of Uses Per Day	4		Estimated Number of Uses Per Day	4	
Estimated Total Faucet Use Time Per Occupant	4.05	Mins	Estimated Total Faucet Use Time Per Occupant	0.00	Mins
(hide) Water Savings- Kitchen	29.72	kGal	(hide) Water Savings From Bathroom/yr	0.00	kGal

Annual Water Savings From Installing Low Flow Aerators: 29.72 kGal

8.1 Min/Person/day @AWWA

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Natural Gas	(Select)	Property Location in United States	Central Localities	
Energy Factor of Domestic Hot Water Heater:	0.79	EF	Heating Fuel Tariff	0	$/Therm
Hot Water Discharge Temperature at Faucet	122.00	°F	Water Tariff ($/1000 Gal)	$5.00	$/kGal
Equivalent Heating Fuel Savings: *Savings Discounted by 15% to Account For Cold Water Use*	165	Therms	Annual Cost Savings In Form of Water	$149	$
Annual Water Savings	29.72	kGal	Annual Energy Savings From Water Heater	$0	$

COST BENEFIT ANALYSIS

Estimated Total Annual Cost Savings	$149	$$	Estimated Total Installation Cost	$159	$$
Simple Payback Period	1.07	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $159 Estimated Annual Cost Savings: $149 Simple Payback Period (Yrs): 1.07

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Shower Heads
EAP1	Location: All Apartment Showerheads

Total Number of Shower Heads To Be Replaced		16	
No. of Shower Days/Year		292	
No. of Residents		48	
Estimated Time Per Shower		8.10	Mins
GPM of Existing Shower Head		2.5	GPM
GPM of Proposed Shower Head *	*(Select)*	1.75	GPM

**(Federal Law Requires all new shower heads to have a max flow rate of 2.5 GPM)*

Water & Energy Savings Calculations

Property Location in United States		Central Localities	
Select Type of Water Heater Fuel	*(Select)*	Natural Gas	
Average Hot Water Discharge Temperature		110.00	°F
Annual Water Savings *(Assuming 1 shower/day/person)*		85	kGal
Energy Factor of Domesitc Hot Water Heater:		0.74	EF
Equivalent Heating Fuel Energy savings:		47,924	kBtu

Cost Savings Calculations

Equivalent Heating Fuel Savings Natural Gas		479	Therms
Water Tariff ($/1000 Gal)	$5.00	$/kGal	
Annual Cost Savings In Form of Water		$426	$$
Annual Energy Savings From Water Heater		$0	$$
Estimated Total Annual Cost Savings		$426	$$

Estimated Installation Costs

Estimated Total Installation Cost	$605	$$
Simple Payback Period	1.42	Years
Type of Recommendation	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG.May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming off the shower heads, savings can be generated in the form of reduced water and sewer costs. Additional savings can be realized via reduction in the demand for hot water. Currently Federal law requires all new shower heads to have a maximum flow rate of 2.5 GPM.

EMG recommends replacing the existing shower heads with new low flow shower heads as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment:	$605	Simple Payback:	1.42
Annual Cost Savings:	$426		

Property of EMG Corp, All Rights Reserved

UIC	Insulate Hot Water Pipes
EAH6A	Location: All Apartment Units

ENTER EXISTING CONDITION

Type of Heating Fuel	Electric	(Select)	System Under Consideration:	Domestic Water Heaters	
Enter Estimated Length of Exposed Pipe (Ft)	48.00		Average Diameter of the Exposed Pipe	0.08	(Ft)
Average Ambient Space Temperature Around The Exposed Pipe (°F)	72.00	◦F	Average Temperature of Fluid In The Pipe (◦F)	120.00	◦F
Estimated Annual Heating Plant Efficiency (%):	87%		Estimated Annual Heating Hours of Operation (Hrs)	8,760	Hrs

EXISTING STATE			PROPOSED		
Enter The Existing Net Effective R-Value of The Return Pipe	0.62	Sq.Ft deg F.hr/btu	Enter The Proposed Net Effective R-Value of The Return Pipe	3.00	Sq.Ft deg F.hr/btu
Annual Conduction Losses From Existing Insulation	8,183	kBtu/Yr	Annual Conduction Losses From Proposed Insulation	1,691	kBtu/Yr

ENERGY SAVINGS

Estimated Energy Savings	6,492	kBtu	Estimated Total Annual Input Heating Energy Savings	7,462	kBtu
Cost of Heating Fuel/Unit:	$0.14	$/kWh	Estimated Total Annual Input Heating Energy Savings	2,187	kWh

COST ANALYSIS

Estimated Cost For Adding Insulation	$755	$$	Total Annual Estimated Cost Savings	$306	$$
Simple Pay Back Period	2.47	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

EMG recommends insulating hot water pipes with cylindrical half-sections of insulation or with flexible cell material. Large pipes should be insulated with flexible material. If access to the pipes for servicing is required, rigid insulation (curved or flat segments or cylindrical half-, third-, or quarter-sections) offers an advantage. Fittings such as elbows, valves, and tees may be insulated with preformed insulation, fabricated fitting insulation, individual pieces cut from sectional straight pipe insulation, or insulating cements. Fitting insulation should be cemented with pipe insulation (ASHRAE 1985). In marginally heated spaces, the heat loss from the pipe might be used to maintain temperatures above freezing. In that case, it might be desirable to leave a portion of the pipe un-insulated.

SUMMARY:

Initial Investment:	$755	Simple Payback:	2.47	Years
Energy Cost Savings:	$306			

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Linear Fluorescent Lamps
EAL2-S	Location: All Apartment Kitchen and Bathroom

Existing Lighting System

	Kitchen Ceiling						Stairwell- BiLevel Lighting
Current Type of Lamp: *(Select)*	F42T12	-					
Current Annual Avg Hrs of Operation:	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Existing Number of Fixtures:	16	0	0	0	0	0	0

Proposed Lighting System

Proposed Lamp Replacement: *(Select)*	F42LED	-	-	-	-	-	F42LED
Proposed Annual Avg. Hours of Operation	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Proposed Number of Fixtures:	16	0	0	0	0	0	0
Proposed Lighting Control: *(Select)*	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch
No. of Lighting Controls:	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty

Energy Saving Calculation

Estimated Annual Energy Savings	432 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Are The Ballast's Being Replaced: *(Select)*	No	No	No	No	No	No	No
Estimated Material Cost:	$767 $	$0 $	$0 $	$0 $	$0 $	$0 $	$0 $
Estimated Labor Cost:	$132 $	$0 $	$0 $	$0 $	$0 $	$0 $	$0 $
Total Installation Cost:	$899 $	$0 $	$0 $	$0 $	$0 $	$0 $	$0 $

Estimated Total Material Cost:	$767 $$	Estimated Total Labor Cost:	$162	Total kWh Saving	432 kWh
Electric Rate:	$0.14 $$	**Total Initial Investment For Retrofit**	$929	Estimated Annual O&M Cost Savings	$5
				Estimated Annual Cost Savings	$65
Simple Pay back Period	14.22 Yrs	*Type of Recommendation*	**No/Low Cost ECM Recommendation**		

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

Fluorescent lighting is recommended for areas where color sensitivity is an important criterion (e.g., offices or small parts assembly rooms). Fluorescent tubes are currently available that produce a higher light output (more lumens per watt) than standard fluorescent tubes. There are efficient 40-watt lamps that produce 8% to 10% more light than standard lamps. The 34-watt fluorescent tubes use 15% less power than standard lamps, while producing about 8% less light. Since the human eye responds to light exponen-tially, rather than linearly, the difference is often unnoticeable. "T8" fluorescent lamps use only 32 watts, but existing fixtures must be replaced. Therefore, EMG recommends retrofitting all the existing fixtures with new 17.5W LED Tube lamps. The LED tubes provide a 180 degree light dispersal, and can be retrofitted in the existing ligt fixture. The LED tubes are rated at 50,000 hrs as compared to 20,000 to 30,000 hrs ratings for conventional fluorescent lamps.

It is important to replace all lamps when re-lamping a fluorescent fixture, never mix energy-efficient and standard lamps with the same ballast. Ensure that the fluorescent ballast is compatible with the energy-efficient lamps. It must be noted that when switching from T-12 magnetic ballast to T8 lamps, the ballasts should be replaced with instant start electrical ballast. Also it should be noted that when installing an occupancy sensor/motion sensor, rapid start electronic ballast should be used.

SUMMARY:

Initial Investment: $767 Simple Payback: 14.22 Years

Annual Cost Savings: $65

Property of EMG Corp, All Rights Reserved

UIC	Replace Incandescent/CFL /Halogen Lamps With LED Lamps
EAL1B-S	Location: All Apartment Lighting

	Unit Entry	Closet Light	Bathroom	Hallway			
Current Type of Lamps in the Fixtures:	2 Pin-CFL18	Screw In-I40	Screw In-I40	Screw In-I40	-	-	-
Number of Lamps to Be Replaced :	16	16	32	32	0	0	0
Current Annual Usage:	1,825 hrs	730 hrs	730 hrs	730 hrs	0 hrs	0 hrs	0 hrs
Proposed Measure	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	-	-	-
Replacement Qty- Lamps / Fixtures:	16	16	32	32	0	0	0
Proposed Annual Avg. Hours of Operation	1,825 hrs	730 hrs	730 hrs	730 hrs	0 hrs	0 hrs	0 hrs
Proposed Replacement:	2 Pin-LED8	LED8	LED8	LED8	-	-	-
Estimated Annual Energy Savings	292 kWh	374 kWh	748 kWh	748 kWh	0 kWh	0 kWh	0 kWh
Total labor Cost For Retrofit	$81	$81	$162	$162	$0	$0	$0
Estimated Cost Per Lamp/Fixture	$14.99	$12.50	$12.50	$12.50	$0.00	$0.00	$0.00
Cost For Retrofit	$321	$281	$562	$562	$0	$0	$0

Total Initial Investment For Retrofit	$2,114	Total kWh Saving	2,161 kWh	Total O&M Savings/Yr	$356
Electric Rate	**$0.14**	Estimated Annual Cost Savings	$659	Simple Pay back Period	3.21 Yrs
Type of Recommendation	Capital Cost ECM Recommendation				

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

The existing incandescent lamps can be replaced with screw-in compact fluorescent lamps. The result of the replacement is a direct energy savings up to 60%. In case of the incandescent lamps approximately 80% of the energy consumed by it is lost in the form of heat radiated by them when lit where as only 20% is actually converted into light. In addition to this the commercially available incandescent lamp have an annual life expectancy of 5000 hrs, whereas a CFL can last for nearly 10,000-12,000 hrs, which is more than twice the life expectancy of the incandescent lamps. Not all, screw-in fluorescent lamps are generally compatible with dimmers.

EMG recommends replacing all the existing lamps with new LED/CFL's or replace the entire fixture with new LED fixture.

SUMMARY;

Initial Investment: $2,114 Simple Payback Period: 3.21 yrs

Annual Cost Savings: $659

Property of EMG Corp, All Rights Reserved

UIC	**Upgrade Electric Heating System To Heat Pumps**
EAH11-A	**Location: All Apartment Units**

ASHRAE Climatic Zone: Zone-3

Building Exterior

Select Existing Heating System Type	Heat Pump - Split System		PTAC		PTAC		PTAC	
Number of Existing Systems:	16	Qty		Qty		Qty		Qty
Output Capacity of Heating System/Unit:	18,000.00	btuh		kW		kW		kW
Output Capacity of Heating System:	18,000	Btuh	0	Btuh	0	Btuh	0	Btuh
Existing COP of Heating System:	1.48	COP		COP		COP		COP
Estimated Annual Heating Hours:	915	Hrs		Hrs		Hrs		Hrs
Auxiliary Heating In Heatpumps:	5	kW		kW		kW		kW
Cooling Capacity of Each System:	18,000	Btuh		Btuh		Btuh		Btuh
Existing EER of Cooling System:	5.06	EER		EER		EER		EER
Estimated Annual Cooling Hours:	610	Hrs		Hrs		Hrs		Hrs
Install Programmable Thermostats With Heatpumps:	Yes		Yes		Yes		Yes	
Current Energy Consumption From Cooling:	34,719	kWh	0	kWh	0	kWh	0	kWh
Current Energy Consumption From Heating:	57,208	kWh	0	kWh	0	kWh	0	kWh
Total Existing Electric Consumption:	91,927	kWh	0	kWh	0	kWh	0	kWh

Proposed System

Heat pump Type	Air-Source Split Heat Pump System		Air-Source PTHP System		Water-Source System		Water-Source System	
Proposed Number of Systems:	16	Qty	1	Qty	2	Qty		Qty
Proposed Heat pump Capacity:	18,000	Btuh	-	Btuh	-	Btuh	-	Btuh
Proposed COP:	3.59	COP	-	COP	-	COP	-	COP
Proposed Emergency Heat Rating:	5.28	kW	0.00	kW	0.00	kW	0.00	kW
Proposed Energy Consumption From Cooling:	12,047	kWh	0	kWh	0	kWh	0	kWh
Proposed Energy Consumption From Heating:	13,879	kWh	0	kWh	0	kWh	0	kWh
Total Proposed Electric Consumption:	25,925	kWh	0	kWh	0	kWh	0	kWh
Total Electric Savings:	66,002	kWh	0	kWh	0	kWh	0	kWh
Total Cost For Replacement:	$31,957.97		$0.00		$0.00		$0.00	
Annual Energy Cost Savings:	$9,240		$0		$0		$0	
Individual Simple Payback	3.46	Yrs	-	Yrs	-	Yrs	-	Yrs

Total Initial Investment:	$31,957.97	Total Annual Electric Savings	66,002 kWh
Total Annual Cost Savings	$9,240.23	Overall Simple Payback Period:	3.46 Yrs

Disclaimer: PREPARED BY EMG. MAY 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Refrigerator(s) With Energy Star Certified Refrigerator(s)
EAA1	Location: Apartment Kitchens

Number of Refrigerators To Be Replaced	16 Qty	
Details of Existing Refrigerator:	1993-2000 Top Freezer 7.5-16.4 CuFt -893.75 kWh	
Estimated Annual Energy Consumption By The Existing Refrigerator:	894	kWh/Year
Proposed New Refrigerator:	2010 -2012 Top Freezer 12.0-15.0 CuFt-349 kWh/Yr	
Estimated Proposed Annual Energy Consumption of The New Refrigerator:	349	kWh/Year
Annual Kwh Savings Per Unit (Kwh/year)	545	kWh
Total Annual Kwh Savings (Kwh/year)	8,716	kWh
Current Electrical Tariff ($/Kwh)	$0.14	$/kWh
Annual Cost Savings From All Refrigerators ($$)	$1,220	$$

Total Installation Cost Including, Eco Friendly Disposal Of Existing Refrigerator ($$)

No. of Units	Disposal Tax	Unit Cost	Total Cost	
16	$50	$494	$10,666	$$

Simple Return on Investment	8.74	Yrs

Note- *Average Life of a Refrigerator is 15 Years*

Type of Recommendation — Capital Cost ECM Recommendation

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

One of the highest 'silent' energy consuming devices in any home/office is the refrigerator, which runs all year long. Having a low energy consuming refrigerator thus results in a considerable reduction in the annual energy costs. On an average a useful life of any refrigerator is approximately 19 years and hence EMG recommends replacing the current refrigerator at the end of its useful life with a new energy star certified low energy consuming refrigerator.

EMG strongly recommends replacing the existing older non energy star refrigerators with new energy efficient Energy Star Certified refrigerators of the appropriate type.

The expected useful life of new refrigerators is approximately 15 years.

Summary:

Initial Investment:	$10,666	Simple Payback:	8.74	Yrs
Annual Cost Savings:	$1,220			

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Water Heater With New Energy Efficient Units
EAD3	**Location: Apartment Building Interior**

Step 1	**Existing Water Heater Details**	*Mechanical Closet*							
	Number of Water Heaters Being Replaced:	16							
	Select Existing Hot Water Heater Fuel	Electric		Natural Gas		Natural Gas		Electric	
	Insert Energy Factor of Existing Water Heater	0.74	EF		EF		EF		EF
	Input Existing Water Heater Input Rating	4.50	kW		kBtus		kBtus		kW
	Select One Method For Calculation	Annual Heating Hours		Annual Heating Hours		Annual DWH Load		Annual DWH Load	
	Insert Average Annual Hours of Operation	915	hrs		hrs		Therms		kWh
	Annual Water Heater Energy Consumption/Heater	4,118	kWh	0	Therms	0	hrs	0	hrs
	Total Estimated Annual Energy Consumption For all Heaters	65,880	kWh	0	Therms	0	Therms	0	kWh
	Total Estimated Annual Operating Energy Costs For all Heaters	$9,223	$	$0	$	$0	$	$0	$
Step 2	**Proposed New Water Heater**								
	Proposed Hot Water Heater Fuel	Electric		Heat Pump		Electric		Natural Gas	
	Capacity of the Proposed New Water Heater	50-Gal,4.5-kW							
	Energy Factor of Proposed Water Heater	0.95	EF	0.00	EF	0.00	EF	0.00	EF
	Proposed Water Heater Input Rating	4.50	kW	0.00	kW	0.00	kW	0.00	kBtuh
	Annual kBtuh Consumption For All The Proposed Water Heaters	175,094	kBtuh	0	kBtuh	0	Btuh	0	kBtuh
	Estimated Annual Water Heater Fuel Consumption (All Heaters)	51,317	kWh	0	kWh	0	kWh	0	Therms
	Estimated Total Annual Energy Costs	$7,184	$	$0		$0		$0	
Step 3	**Energy & Cost Saving Calculation**								
	Estimated Cost of New Water Heater/Unit	$1,347	$	$0	$	$0	$	$0	$
	Total Estimated Installation Cost	$26,412	$	$0	$	$0	$	$0	$
	Total Estimated Annual Cost Savings	$2,039	$	$0	$	$0	$	$0	$
	Total Annual Cost Savings:	$2,039		Total Initial Investment::		$26,412			
	Simple Pay Back Period	12.95							
	Type of Recommendation	Capital Cost ECM Recommendation							

Disclaimer: PREPARED BY EMG. DECEMBER 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM SUMMARY:

Electric resistance is the most expensive method for heating domestic hot water. A natural gas or propane fired water system provide more units of heat with direct burning of fuel while high wattage draw is required for electric water heaters to create resistance heat. This electric usage can be seen with the increase power demand for the site and the additional kWh consumption. The installation process of the gas/propane fired water heater requires additional measures with tying a gas line or fuel tank to the system along with installing an exhaust gas vent. This process is not a costly retrofit if a current gas line or tank is at the site. The hot water exhaust duct can be tied to the existing gas fired furnaces or boilers for an easy retrofit.

SUMMARY:

Initial Investment: $26,412 Simple Payback: 12.95 yrs
Annual Cost Savings: $2,039

Property of EMG Corp, All Rights Reserved

UIC	Retrofit Apartment Tank Toilets to Dual Flush
EAP3	Location: All Apartment Toilets

EXISTING CONDITION

Total Occupants:	48	
Number of Water Closets To Be Replaced	16	
Number of Occupied Days Per Week (Max 7)	7	
Number of Occupied Weeks/Year (Max 52)	52	
Estimated Restroom Usage/Individual/Day *5.05 flushes/person/day@American Water Works Association (AWWA)*	4	(Select)

PROPOSED RETROFIT/REPLACEMENT

Existing Gallons Per Flush Ratings For Water Closet Flushes		1.60	GPF
Replace or Retrofit Toilets With Dual Flush Toilets		Retrofit	
Replace			
GPF of Proposed New Low Flow Water Closet Fixture*		0.8	GPF
Retrofit			
Dual Flush - Retrofit Setup Valve for Flush Tank Toilet	*Solid Waste (20%)*	1.60	GPF
**(Federal Law Requires All Flushes Not To Exceed 1.6 GPF)*	*Liquid Waste (80%)*	1.28	GPF

Water & Cost Saving Calculations

Water Savings By The Use of Low Flow Water Closet Flush Valves/Day	49.15	gal
Total Annual Water Savings in gallons	17.89	kgal
Cost Savings Calculations		
Enter Water Tariff Rate ($/1000Gal)	$5.00	$$
Estimated Cost Savings From Water	$89	$$
Estimated Cost of Retrofit		
Estimated Total Cost For Retrofit	$2,136	$$
Simple Pay Back Period	23.88	Yrs
Type of Recommendation	Capital Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

The highest water utilization at any home/office occurs in the restrooms. It is estimated that on an average a normal human being uses the restroom at least four times a day. Keeping with the global water conservation objectives, federal law prohibits use of any new water closet flushes over 1.6 GPF.

Existing toilets can be retrofitted with pressure-assisted flush technology to reduce the flush rate to 1.0 GPF or less. Though water efficient these toilets make considerable amount of noise as this involves release of pressurized air during the course of flushing. Thus making them unpopular among residential properties.

Thus EMG recommends replacing the existing high flow toilets with new low flow 1.28GPF rated flush tank toilets, which are comparatively more water efficient at the same time considerably quiter as compared to the pressure assisted technology retrofitted toilets.

Summary:

Initial Investment: $2,136

Simple Payback: 23.88 Years

Annual Cost Saving: $89

EMG ACCESSIBIILITY CHECKLIST

Property Name: Pointe Lagoon - 9205 Elk Grove Boulevard
Date: March 20, 2019
Project Number: 136742.19R000-005.306

EMG Accessibility Checklist						
UFAS/ADA Accessibility						
	Building History	Yes	No	N/A	Unk	Comments
1.	Has the management previously completed an accessibility review?				√	
2.	Does an accessibility compliance plan exist for the property?				√	
3.	Has the plan been reviewed/approved by outside agencies (engineering firms, building department, other agencies)?				√	
4.	Have any accessibility related complaints been received in the past?				√	
5.	Is the property Section 504 compliant?	√				
	Building Access	Yes	No	N/A	Comments	
1.	Are there an adequate number (per regulation) of wheelchair accessible parking spaces available at the rental office (96" wide/ 60" aisle)	√				
2.	Is there at least one wheelchair accessible van parking space (96" wide/ 96" aisle) for every 8 standard accessible spaces?	√				
3.	Are accessible parking spaces located on the shortest accessible route of travel from an accessible building entrance?	√				
4.	Does signage exist directing you to wheelchair accessible parking and an accessible building entrance?			√		
5.	Is there a ramp from the parking to an accessible building entrance (1:12 slope or less)	√				
6.	If the main entrance is inaccessible, are there alternate accessible entrances?			√		
7.	Is the accessible entrance doorway at least 32" wide?	√				
8.	Is the door handle easy to open? (lever/push type knob, no twisting required, no higher than 48" above floor)	√				
9.	Are entry doors other than revolving doors available?	√				
	Rental Office	Yes	No	N/A	Comments	
1.	Is the entry door to the rental office 3'wide with no step or threshold over ½" tall?			√	There is no rental office on property.	

EMG Accessibility Checklist					
	Rental Office (cont.)	Yes	No	N/A	Comments
2.	Is there a counter or table at 30” high for wheelchair access to fill out a rental application?			√	
3.	Is there clearance behind the counter for an employee in a wheelchair?			√	
	Building Corridors and Elevators	Yes	No	N/A	Comments
1.	Is the path of travel free of obstructions and wide enough for a wheelchair (at least 60” wide)?			√	
2.	Are floor surfaces firm, stable and slip resistant (carpets wheelchair friendly)?			√	
3.	Do obstacles (phones, fountains, etc.) protrude no more than 4” into walkways or corridor?			√	
4.	Are elevators controls low enough to be reached from a wheelchair (48” front approach/54” side approach)?			√	
5.	Are there raised elevator markings in Braille and standard alphabet for the blind?			√	
6.	Are there audible signals inside cars indicating floor changes?			√	
7.	Do elevator lobbies have visual and audible indicators of the cars arrival?			√	
8.	Does the elevator interior provide sufficient wheelchair turning area (51” x 68” minimum)?			√	
9.	Is at least one wheelchair accessible public phone available?			√	
10	Are wheelchair accessible facilities (restrooms, exits, etc.) identified with signage?			√	
	Common Area Restrooms	Yes	No	N/A	Comments
1.	Are common area public restrooms located on an accessible route?			√	
2.	Are pull handles push/pull or lever type?			√	
3.	Are access doors wheelchair accessible (at least 32” wide)?			√	
4.	Are public restrooms large enough for wheelchair turnaround (60” turning diameter)?			√	
5.	Are stall doors wheelchair accessible (at least 32” wide)?			√	
6.	If stalls are to narrow can the toilet room be converted to a single occupant toilet room?			√	
7.	Are grab bars provided in toilet stalls (33”-36” above floor)?			√	
8.	Do sinks provide clearance for a wheelchair to roll under (29” clearance)?			√	
9.	Are sink handles operable with one hand without grasping, pinching or twisting?			√	
10.	Are exposed pipes under sink sufficiently insulated against contact?			√	

EMG Accessibility Checklist					
	Common Area Restrooms (cont.)	Yes	No	N/A	Comments
11.	Are soap dispensers, towel, etc. reachable (48" from floor for frontal approach, 54" for side approach)?			√	
12.	Is the base of the mirror no more than 40" off floor?			√	
	Common Area Kitchen	Yes	No	N/A	Comments
1.	In a "U"-shaped kitchen is there 60" clear floor space width?			√	
2.	In a "U"-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40" width?			√	
3.	In a "L"-shaped kitchen, is there a 40" width minimum maintained?			√	
4.	Are countertops a maximum of 24" deep and 36" high?			√	
5.	Knee space beneath cabinetry is 30" wide and 27" high.			√	
6.	Is insulation installed below sinks on piping?			√	
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?			√	
	Common Area Laundry Rooms	Yes	No	N/A	Comments
1.	Are the laundry rooms located on an accessible route?	√			ADA apartment units have laundry hook-ups.
2.	Are the door handles push/pull or lever type?	√			
3.	Are the access doors wheelchair accessible (at least 32" clear width)?	√			
4.	Are laundry rooms large enough for wheelchair turnaround (60" turning diameter)?	√			
5.	Is there a front load washing machine	√			
6.	If clothes folding tables are provided is one section at 32" high with a clear area below the table?			√	

EMG Accessibility Checklist					
Fair Housing Accessibility / Section 504					
	Access to Unit	Yes	No	N/A	Comments
1.	Property management reports that the number of units currently accessible and those adaptable meet FHA requirements of all ground floor units or 100% for a high rise.	√			
2.	Are 5% of the units fully accessible to those individuals with mobility impairments and 2% of units accessible to those individuals with audio / visual impairments?	√	√		No audio/visual impaired units.
3.	Are there any barriers or structural restrictions preventing access to the building?		√		
4.	Are the accessible units on an accessible route?	√			
5.	Is the apartment entry corridor 36” wide, door 32” wide (frame to frame), threshold height less than ½”, and appropriate door hardware present?	√			
	Unit Living Space	Yes	No	Unk	Comments
1.	Is there access throughout unit?			√	ADA unit was not observed. ADA unit modifications were reportedly performed in 2010.
2.	Are electrical outlets 15” minimum above floor minimum?			√	
3.	Are environmental controls and switches 48” maximum above floor or lower?			√	
	Unit Bathroom	Yes	No	N/A	Comments
1.	Is entry door at least 32” wide frame-to-frame?			√	
2.	Are switches & outlets in accessible locations?			√	
3.	Are bathroom walls around the toilet and tub/shower reinforced?			√	
4.	Is there a 30” x 48” clear floor space outside of door swing area?			√	
5.	Is there a 56” x 48” clear floor space in front of toilet (48” out from wall toilet is hung against)?			√	
6.	Is there a 30” x 48” clear floor space in front of lavatories (30” deep from front of counter)?			√	
7.	Is there a 30” x 48” clear floor space in front of tub/shower (30” out from tub/shower)?			√	
8.	Is vanity a maximum of 24” deep and 36” high?			√	
9.	Knee space beneath sink is 30” wide and 27” high.			√	
10.	Is shower stall 36”x 42” minimum with small lip?			√	Tubs
11.	Is insulation installed below sinks on piping?			√	
	Unit Kitchen	Yes	No	Unk	Comments
1.	In a “U”-shaped kitchen is there 60” clear floor space width?			√	

EMG Accessibility Checklist					
	Unit Kitchen (cont.)	Yes	No	Unk	Comments
2.	In a “U”-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40” width?			√	
3.	In a “L”-shaped kitchen, is there a 40” width minimum maintained?			√	
4.	Are countertops a maximum of 24” deep and 36” high?			√	
5.	Knee space beneath cabinetry is 30” wide and 27” high.			√	
6.	Is insulation installed below sinks on piping?			√	Required in adaptable unit regardless of occupancy.
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?			√	

CAPITAL NEEDS
ASSESSMENT

SACRAMENTO HOUSING & REDEVELOPMENT AGENCY
801 12th Street
Sacramento, California 95814
Vance Kelly

PROPERTY CONDITION CHECKLIST REPORT
of
POINTE LAGOON - 4500 PERRY AVENUE
4500 Perry Avenue
Sacramento, California 95820

PREPARED BY:

EMG
10461 Mill Run Circle, Suite 1100,
Owings Mills, Maryland 21117
800.733.0660
410.785.6220 (fax)
www.emgcorp.com

EMG CONTACT:

Matthew Anderson
Program Manager
800.733.0660, x7613
manderson@emgcorp.com

EMG Project #:	136742.19R000-003.306
Date of Report:	March 22, 2019
On-Site Date:	March 18, 2019

CERTIFICATION

EMG has completed a Capital Needs Assessment (CNA) of the subject property, Pointe Lagoon - 4500 Perry Avenue, located at 4500 Perry Avenue in Sacramento, Sacramento County, California. The CNA was performed on March 6, 2019.

The CNA was performed at the Client's request using methods and procedures consistent with good commercial and customary practice and with the standards outlined in 24 CFR 968.315, the Comprehensive Grant Program Guidebook 7485.3G, the Public Housing Modernization Standards Handbook 7485.2, and 24 CFR Part 5, Uniform Physical Condition Standards. EMG also utilizes the standards set forth by ASTM E2018-01, Standard Guide for Property Condition Assessments: Baseline Physical Needs Assessment Process. In addition, EMG's reference to the Client follows the ASTM guide's definition of User, whereas, the party that retains EMG for the preparation of a baseline CNA of the subject property. A user may include, without limitation, a purchaser, potential tenant, owner, existing or potential mortgagee, lender, or property manager of the subject property.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and EMG.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of EMG. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to EMG.

The opinions EMG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent architect or engineer in the same community under similar circumstances. EMG assumes no responsibility or liability for the accuracy of information contained within this report that has been obtained from the Client or the Client's representatives, from other interested parties, or from the public domain. The conclusions presented represent EMG's professional judgment based on information obtained during the course of this assignment. EMG's evaluations, analyses, and opinions are not representations regarding the design integrity, structural soundness, or actual value of the property. Factual information regarding operations, conditions, and test data provided by the Client or the Client's representative has been assumed to be correct and complete. The conclusions presented within this report are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment.

EMG certifies that EMG has no undisclosed interest in the subject property, that EMG's relationship with the Client is at arms-length, and that EMG's employment and compensation are not contingent upon the findings or estimated costs to remedy any noted deficiencies due to deferred maintenance and/or any noted component or system replacements.

EMG's CNA cannot wholly eliminate the uncertainty regarding the presence of physical deficiencies and/or the performance of a subject property's building systems. Preparation of a CNA in accordance with ASTM E2018-01 is intended to reduce, but not eliminate, the uncertainty regarding the potential for component or system failure and to reduce the potential that such component or system failure may not be initially observed. This CNA was prepared recognizing the inherent subjective nature of EMG's opinions as to such issues as workmanship, quality of original installation, and estimating the remaining useful life of any given component or system. It should be understood that EMG's suggested remedy may be determined under time constraints or may be formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the noted physical deficiencies.

Any questions regarding this report should be directed to Matthew Anderson at manderson@emgcorp.com or at 800.733.0660, x7613.

Prepared by: Tammy Prusa
Project Manager

Reviewed by:

Al Diefert
Technical Report Reviewer
For
Matthew Anderson
Program Manager

TABLE OF CONTENTS

1. Observation Data 1
2. General Description Property Data 2
3. General Condition 3
4. System Condition Ratings 5
5. Current and Planned Renovation 6
6. Significant Issues/Deficiencies 7
7. Additional Investigations 8
8. Exhibits/Attachments 11

1. OBSERVATION DATA

Observation Data			
EMG Field Observer:	Debbie Whitham	Property Contact Name:	Leo Dominguez
Date Observed:	March 6, 2019	Prop Contact Phone Number	916.440.1327
Interview Conducted (Y/N)	Yes	Name/Function Of Interviewee:	Property Manager

2. GENERAL DESCRIPTION PROPERTY DATA

General Description and Property Data						
Property Name:	Pointe Lagoon - 4500 Perry Avenue					
Street Address:	4500 Perry Avenue			City, State:	Sacramento, California	
Building Type:	Apartments	Age:		1991	Year Renovated:	None
Size (# Units):	10	# Buildings:		5	# Floors	1 and 2
Other Buildings Or Amenities	Two Laundry rooms with coin-operated washers and dryers. One laundry room is currently locked due to vandalism.					
UBC Seismic Zone:	Zone 3			Flood Zone Determination:	X (unshaded)	
# Parking Spaces:	17					

Apartment Unit Types and Mix		
0	1 Bedroom/1 Bathroom – ADA unit	N/A
6	3 Bedrooms/1 Bathroom – one story	Unknown
4	3 Bedrooms/1 Bathrooms – two story	Unknown
10	Total Number of Units	
	Total Building Area	39,724SF

Building Specifications	
Foundation Construction:	Concrete slab
Structural System:	Wood frame
Exterior Wall finish:	T1-11 plywood siding
Roof finish:	Asphalt shingles (3) single-story buildings – 2005, (2) two-story - 2007
Windows:	Aluminum, double glazed sliding with exterior screens

Building Systems	
Plumbing:	Copper and ABS; Gas water heaters
Fire Sprinklers (Y/N):	No
Cooling System:	All Electric Rooftop package units
Heating Equipment:	All Electric Rooftop package units
Electrical System:	Copper wire
Fire Alarm and Life Safety System:	Smoke detectors and Exterior Fire Extinguishers

Interiors:			
Flooring:	Vinyl Composition Tile	Walls:	Painted drywall
Plumbing Fixtures	Tub, toilet, shower, vanity cabinet with sink	Cabinets	Wood with laminate counter
Light Fixtures:	Standard residential grade	Appliances:	Refrigerator, Electric range

3. GENERAL CONDITION

General Condition
Generally, the property was constructed within industry standards, has been maintained over recent years and appeared to be in fair to poor overall condition. Property management personnel reported that, over the past three years, the property has had no capital expenditure program. There are a number of Rehabilitation Needs and Replacement Reserves that should be accomplished during the evaluation period as part of the preventive maintenance program. These needs are identified in the various sections of this report and are summarized in the enclosed cost tables.

Section 504 of the Rehabilitation Act of 1973 is a Federal accessibility law that was enacted on June 2, 1988. Section 504 applies to multi-family properties that have 15 or more units. The property must have a minimum of five percent mobility accessible units and two percent of the units for visual / audio hearing impairments. Exceptions can be considered due to undue financial burdens or structural restrictions. However, the exceptions do not relieve the recipients from compliance utilizing other units/buildings or other methods to achieve reasonable accommodations.

Reasonable Accommodations as described in 24 CFR 8.4(b)(i), 8.24 and 8.33 are as follows: When a family member requires an accessible feature(s) or policy modification to accommodate a disability, property owners must provide such feature(s) or policy modification unless doing so would result in a fundamental alteration in the nature of its program or result in a financial and administrative burden.

The Uniform Federal Accessibility Standard (UFAS) 24 CFR part 40 was adopted by HUD and made effective October 4, 1984. The UFAS applies only to new construction or to alterations to the existing buildings. Alterations are defined as work that costs 50 percent or more of the building's value when the work performed occurs within a twelve month period. Apartments modified for mobility impaired residents are to comply with UFAS.

The Fair Housing Amendments Act (FHA) of 1988 amended Title VIII of the Civil Rights Act of 1968 to aid in the prohibitions against discrimination in housing on the basis of disability and familial status. The Fair Housing Act also made it unlawful to design and construct certain "covered multi-family dwellings" for first occupancy after March 13, 1991, in a manner that makes them inaccessible to persons with disabilities. The Fair Housing Act does apply to this property due to the date of construction.

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" on the basis of disability. Generally, the rental office and access from the site to the rental office must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Buildings completed and occupied after January 26, 1992 are required to comply fully with ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of complying to the extent allowed by structural feasibility and the financial resources available; otherwise a reasonable accommodation must be made.

During the CNA, a visual Accessibility Survey in general conformance with Section 504 Accessibility Standards and the Uniform Federal Accessibility Standards (UFAS) was conducted. It is understood by the Client that the visual observation described herein does not comprise a full measured Accessibility Compliance Survey, and that such a survey is beyond the scope of EMG's undertaking. Actual measurements were not taken to verify compliance.

Based on the date of construction, 1991, the accessibility standards that apply to the Project are 504, UFAS, and the ADA Guidelines. However, as the property is not new construction, or completing substantial rehabilitation or other rehabilitation, the property is only required to complete reasonable accommodations. Property management stated that Section 504 requests are completed on an individual case-by-case basis. Based on EMG's observations and interview of the Property Manager, the property is generally non-compliant with Section 504 and the ADA guidelines. Presently, none of the units are accessible for individuals with mobility impairments according to property management. There are no units at present which have visual / audio modifications, thus not meeting the two percent accessible requirements of 504.

Based on EMG's observations, the facility did appear to be in compliance with the Section 504 Standards and the ADA Guidelines. Elements that were observed at the property, which were not accessible as stated within the priorities of are as follows:

Unit Accessibility

- The property does not currently have any accessible units. Since 5% of the units are required to be accessible, one unit should be converted to fully accessible.
- The property does not currently have any visual / audio hearing impairment units. Since 2% of the units are required to be accessible, one unit should be converted.

A full ADA Measured Compliance Survey may reveal additional aspects of the property that are not in compliance.

Corrections of these conditions should be addressed from a liability standpoint, but are not necessarily code violations. The Americans with Disabilities Act Accessibility Guidelines concern civil rights issues as they pertain to the disabled and are not a construction code, although many local jurisdictions have adopted the Guidelines as such. The cost to address the achievable items noted above is included as a lump sum in the Immediate Repairs.

4. SYSTEM CONDITION RATINGS

System Condition Ratings				
System	**Good**	**Fair**	**Poor**	**Unknown**
Site/Landscaping			✓	
Pavements/Parking		✓		
Structural		✓		
Exterior Walls		✓		
Roofs		✓		
Mechanical/HVAC		✓		
Interiors			✓	

Definitions:

Good = Satisfactory as-is. Requires only routine maintenance over the evaluation period. Repair or replacement may be required due to a system's estimated useful life.

Fair = Satisfactory as-is. Repair or replacement is required due to current physical condition and/or estimated remaining useful life.

Poor = Immediate repair, replacement, or significant maintenance is required.

Unknown = A system or material that was not visible during our review or does not exist at the property. Such as a building in a downtown location with no Pavements/Parking.

5. CURRENT AND PLANNED RENOVATION

Current and Planned Renovation
Not Applicable

6. SIGNIFICANT ISSUES/DEFICIENCIES

Significant Issues/Deficiencies
A front-loading washing machine is not provided in the laundry room. A front-loading washing machine is required to accommodate disabled residents. Since the washing machines are leased, no costs are included in the cost tables to replace one of existing washing machines with a front-loading model.

7. ADDITIONAL INVESTIGATIONS

Additional Investigations
No further investigation is necessary at this time.

Replacement Reserves Report

6/5/2019

Location	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Total Escalated Estimate
Pointe Lagoon-4500 Perry / Energy Conservation Measures - 2019	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Pointe Lagoon-4500 Perry / Laundry Rooms - 2019	$17,360	$0	$0	$90,151	$0	$47,978	$5,976	$0	$0	$0	$0	$16,747	$0	$20,551	$0	$0	$8,031	$0	$8,818	$21,215	$0	**$236,826**
Pointe Lagoon-4500 Perry / Residential Buildings - 2019	$19,170	$0	$0	$962,636	$86,996	$0	$72,399	$0	$68,365	$0	$0	$0	$0	$108,597	$0	$0	$0	$0	$310,900	$135,537	$0	**$1,764,599**
Pointe Lagoon-4500 Perry / Site - 2019	$5,389	$0	$2,705	$8,222	$0	$0	$0	$3,136	$0	$0	$0	$0	$3,635	$11,050	$0	$14,933	$19,273	$4,214	$0	$0	$0	**$72,556**
GrandTotal	**$41,918**	**$0**	**$2,705**	**$1,061,009**	**$86,996**	**$47,978**	**$78,375**	**$3,136**	**$68,365**	**$0**	**$0**	**$16,747**	**$3,635**	**$140,198**	**$0**	**$14,933**	**$27,303**	**$4,214**	**$319,719**	**$156,751**	**$0**	**$2,073,980**

Pointe Lagoon-4500 Perry / Energy Conservation Measures - 2019

* Markup/LocationFactor (1) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Pointe Lagoon-4500 Perry / Laundry Rooms - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2011	Laundry room	Exterior Wall, Painted Surface, 1-2 Stories, Prep & Paint	10	7	3	1750	SF	$3.06	$5,350				$5,350										$5,350									**$10,701**
B2011	Laundry room	Exterior Wall, Textured Plywood (T1-11), Replace	20	17	3	1750	SF	$12.34	$21,601				$21,601																			**$21,601**
B2032	Laundry room	Exterior Door, Steel, Replace	25	20	5	2	EA	$1,011.88	$2,024						$2,024																	**$2,024**
B3011	Laundry room	Roof, Asphalt Shingle, Replace	20	17	3	4800	SF	$4.50	$21,587				$21,587																			**$21,587**
C3012	Laundry room	Interior Wall Finish, Gypsum Board/Plaster/Metal, Prep & Paint	8	5	3	8000	SF	$1.51	$12,098				$12,098								$12,098								$12,098			**$36,295**
C3031	Laundry room	Interior Ceiling Finish, Gypsum Board/Plaster, Prep & Paint	10	7	3	4000	SF	$2.07	$8,264				$8,264										$8,264									**$16,529**
D2023	Laundry Rooms	Water Heater, Gas, Residential, 30 to 50 GAL, Replace	10	4	6	2	EA	$2,502.20	$5,004							$5,004										$5,004						**$10,009**
D4031	Laundry room	Fire Extinguisher, Replace	15	2	13	1	EA	$379.72	$380														$380									**$380**
D5019	Laundy Room	Load Center, 120 / 240 V, 125 Amp to 225 Amp, Single Phase Residential, Replace	30	27	3	1	EA	$8,420.10	$8,420				$8,420																			**$8,420**
D5029	Laundry room	Lighting System, Interior, Office Building, Upgrade	25	20	5	4000	SF	$9.84	$39,362						$39,362																	**$39,362**
E1094	Laundry room	Residential Appliances, Clothes Dryer, Replace	15	12	3	2	EA	$1,173.50	$2,347				$2,347																$2,347			**$4,694**
E1094	Laundry room	Residential Appliances, Clothes Washer, Replace	15	12	3	2	EA	$1,416.43	$2,833				$2,833																$2,833			**$5,666**
Z101X	Laundry room	ADA, Door, Wider 32" Opening, Framed Wall, Modify	0	0	0	1	EA	$1,384.50	$1,385	$1,385																						**$1,385**
Z105X	Laundry room	ADA, Miscellaneous (Lump Sum Budgetary Allowance), Upgrade	0	0	0	1	EA	$15,975.00	$15,975	$15,975																						**$15,975**
Totals, Unescalated									**$17,360**	**$0**	**$0**	**$82,501**	**$0**	**$41,386**	**$5,004**	**$0**	**$0**	**$0**	**$0**	**$12,098**	**$0**	**$13,994**	**$0**	**$0**	**$5,004**	**$0**	**$5,180**	**$12,098**	**$0**	**$194,626**
Totals, Escalated (3.0% inflation, compounded annually)									**$17,360**	**$0**	**$0**	**$90,151**	**$0**	**$47,978**	**$5,976**	**$0**	**$0**	**$0**	**$0**	**$16,747**	**$0**	**$20,551**	**$0**	**$0**	**$8,031**	**$0**	**$8,818**	**$21,215**	**$0**	**$236,826**

* Markup/LocationFactor (1) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Pointe Lagoon-4500 Perry / Residential Buildings - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2011	Exterior walls	Exterior Wall, Painted Surface, 1-2 Stories, Prep & Paint	10	7	3	14780	SF	$3.06	$45,187				$45,187										$45,187									**$90,374**
B2011	Exterior walls	Exterior Wall, Textured Plywood (T1-11), Replace	20	17	3	14780	SF	$12.34	$182,435				$182,435																			**$182,435**
B2021	Building envelope	Window, Aluminum Double-Glazed 24 SF, 1-2 Stories, Replace	30	27	3	50	EA	$927.03	$46,351				$46,351																			**$46,351**
B2032	Apartments	Exterior Door, Steel Insulated, Replace	25	22	3	10	EA	$1,680.07	$16,801				$16,801																			**$16,801**
B3011	Single-story buildings	Roof, Asphalt Shingle, Replace	20	14	6	9000	SF	$4.50	$40,476							$40,476																**$40,476**
B3011	Two-story buildings	Roof, Asphalt Shingle, Replace	20	12	8	12000	SF	$4.50	$53,968									$53,968														**$53,968**
C3024	Interior flooring	Interior Floor Finish, Vinyl Tile (VCT), Replace	15	12	3	35724	SF	$5.11	$182,621				$182,621																$182,621			**$365,242**
D2011	Unit bathroom	Toilet, Flush Tank (Water Closet), Replace	20	17	3	10	EA	$1,123.73	$11,237				$11,237																			**$11,237**
D2015	Unit bathroom	Bathtub & Shower Enclosure, Fiberglass, Replace	20	17	3	10	EA	$1,901.31	$19,013				$19,013																			**$19,013**
D2023	Apartments	Water Heater, Gas, Residential, 30 to 50 GAL, Replace	10	7	3	10	EA	$2,502.20	$25,022				$25,022										$25,022									**$50,044**
D3052	Roof	Packaged Unit (RTU), 2 Ton, Replace	15	11	4	10	EA	$7,729.46	$77,295						$77,295															$77,295		**$154,589**
D5019	All units	Load Center, 120 / 240 V, 125 Amp, Single Phase Residential, Replace	30	27	3	10	EA	$8,420.10	$84,201				$84,201																			**$84,201**
D5022	Exterior wall	Compact Fluorescent Lighting Fixture, Ballast, 32 W, Replace	20	17	3	20	EA	$144.85	$2,897				$2,897																			**$2,897**
D5029	All units	Lighting System, Interior, Multi-Family, Upgrade	25	22	3	39724	SF	$5.04	$200,108				$200,108																			**$200,108**
E1094	Unit kitchens	Residential Appliances, Range Hood, Vented or Ventless, Replace	15	9	6	10	EA	$289.26	$2,893							$2,893																**$2,893**
E1094	Kitchen	Residential Appliances, Refrigerator, 14-18 CF, Replace	15	9	6	10	EA	$1,018.18	$10,182							$10,182																**$10,182**
E1094	Unit kitchens	Residential Appliances, Range, Electric, Replace	15	9	6	10	EA	$708.32	$7,083							$7,083																**$7,083**
E2012	Apartment kitchens	Kitchen Cabinet, Base and Wall Section, Wood, Replace	20	17	3	100	LF	$498.03	$49,803				$49,803																			**$49,803**
E2012	Apartment bathrooms	Bathroom Vanity Cabinet, Wood, with Cultured Marble Sink Top, 24 to 30", Replace	20	17	3	10	EA	$1,153.22	$11,532				$11,532																			**$11,532**
E2012	Unit kitchens	Kitchen Counter, Plastic Laminate, Postformed, Replace	10	7	3	80	LF	$46.75	$3,740				$3,740										$3,740									**$7,481**
Z103X	Kitchen	ADA, Kitchen, Sink & Counter, Minor Reconfiguration, Modify	0	0	0	1	EA	$2,130.00	$2,130	$2,130																						**$2,130**

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
Z107X	Apartment (x1) within complex	ADA, Residential Unit, Visual Bell & Strobe, Hearing Impaired, Install	0	0	0	1	EA	$1,065.00	$1,065	$1,065																					**$1,065**
Z108X	Bathroom	ADA, Restroom, Full Reconfiguration, Renovate	0	0	0	1	EA	$15,975.00	$15,975	$15,975																					**$15,975**
Totals, Unescalated										**$19,170**	**$0**	**$0**	**$880,948**	**$77,295**	**$0**	**$60,633**	**$0**	**$53,968**	**$0**	**$0**	**$0**	**$0**	**$73,949**	**$0**	**$0**	**$0**	**$0**	**$182,621**	**$77,295**	**$0**	**$1,425,878**
Totals, Escalated (3.0% inflation, compounded annually)										**$19,170**	**$0**	**$0**	**$962,636**	**$86,996**	**$0**	**$72,399**	**$0**	**$68,365**	**$0**	**$0**	**$0**	**$0**	**$108,597**	**$0**	**$0**	**$0**	**$0**	**$310,900**	**$135,537**	**$0**	**$1,764,599**

* Markup/LocationFactor (1) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Pointe Lagoon-4500 Perry / Site - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
G2022	Parking lot	Parking Lots, Asphalt Pavement, Seal & Stripe	5	3	2	6300	SF	$0.40	$2,550			$2,550					$2,550					$2,550				$2,550					**$10,198**
G2022	Parking area	Parking Lots, Asphalt Pavement, Overlay	25	9	16	6300	SF	$1.91	$12,010																$12,010						**$12,010**
G2031	Site	Pedestrian Pavement, Sidewalk, Concrete Large Areas, Replace	30	15	15	1000	SF	$9.59	$9,585															$9,585							**$9,585**
G2041	Perimeter of property	Fences & Gates, Wood Board, Refinish	10	7	3	4500	SF	$1.67	$7,524				$7,524										$7,524								**$15,048**
Z106X	ADA Parking space	ADA, Parking, Signage, Pole-Mounted, Install	0	0	0	1	EA	$532.50	$533	$533																					**$533**
Z109X	Accessible apartment entry	ADA, Site, Ramp, Concrete, Up to 48" Wide, Install	0	0	0	6	LF	$809.40	$4,856	$4,856																					**$4,856**
Totals, Unescalated										**$5,389**	**$0**	**$2,550**	**$7,524**	**$0**	**$0**	**$0**	**$2,550**	**$0**	**$0**	**$0**	**$0**	**$2,550**	**$7,524**	**$0**	**$9,585**	**$12,010**	**$2,550**	**$0**	**$0**	**$0**	**$52,231**
Totals, Escalated (3.0% inflation, compounded annually)										**$5,389**	**$0**	**$2,705**	**$8,222**	**$0**	**$0**	**$0**	**$3,136**	**$0**	**$0**	**$0**	**$0**	**$3,635**	**$11,050**	**$0**	**$14,933**	**$19,273**	**$4,214**	**$0**	**$0**	**$0**	**$72,556**

* Markup/LocationFactor (1) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

8. EXHIBITS/ATTACHMENTS

APPENDIX A: Photographs of Property

APPENDIX B: Pre-survey Questionnaire

APPENDIX C: Supporting Documentation

APPENDIX A:
PHOTOGRAPHS OF PROPERTY

#1	FRONT ELEVATION

#2	LEFT ELEVATION

#3	REAR ELEVATION

#4	RIGHT ELEVATION

#5	WATER HEATER, GAS, RESIDENTIAL

#6	LOAD CENTER

#7	LIGHTING SYSTEM, INTERIOR, MULTI-FAMILY

#8	PACKAGED UNIT (RTU)

#9	EXTERIOR WALL, PAINTED SURFACE

#10	UNIT LIVING ROOM

#11	UNIT BEDROOM

#12	UNIT STAIRWELL

#13	UNIT BATHROOM

#14	UNIT KITCHEN

APPENDIX B:
PRE-SURVEY QUESTIONNAIRE

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

This questionnaire must be completed by the property owner, the owner's designated representative, or someone knowledgeable about the subject property. If the form is not completed, EMG's Project Manager will require ***additional time*** during the on-site visit with such a knowledgeable person in order to complete the questionnaire. During the site visit, EMG's Field Observer may ask for details associated with selected questions. This questionnaire will be utilized as an exhibit in EMG's final report.

Name of Institution:	**Sacramento Housing and Redevelopment Agency**
Name of Building: **4500/4530 Perry Ave**	Building #: **773**
Name of person completing questionnaire: **Jaime Knacke**	
Length of Association With the Property: **7 months**	Phone Number: **916-449-6392**

Site Information					
Year of Construction?	**1991**				
No. of Stories?	Floors.				
Total Site Area?	.91 Acres				
Total Building Area?	39,724 Square Feet				
Area Heated (%)	%100				
Area Cooled (%)	%100				
Total Conditioned Area (%)	%100				
Primary Heating System?	**HVAC**				
Secondary Heating System?	**None**				
If Oil Used For Heating- Tank Capacity	Gallons _____ No. of Tanks				
Primary Cooling System & Capacity?	**CENTRAL**				
Do Any HVAC Systems Use R-11, R-12 or R-22 Refrigerants?	**R-22**				
	Elec.	Natural Gas	Propane	No.2 Oil	Dist. Steam
Primary Heating Fuel?	☐	☒	☐	☐	☐
Secondary Heating Fuel?	☐	☐	☐	☐	☐
Domestic Water Heater Fuel?	☐	☒	☐	☐	

Building Occupancy/Schedule			
Estimated No. of Residence	10		
No. of Staff Members	5		
Standard Staff Work Timing	08 :00 AM/PM - 05:00 AM/PM		
Maintenance Staff Hours	07 : 30 AM/PM - 04:00 AM/PM		
Apartment Type	**Qty**	**Area (Sqft)**	**No. of Bathrooms**
No. of Apts. In Building:	10		1
No. of Efficiency Apts:	0		1
No. of 1 Bedroom Apts:	0		0
No. of 2 Bedroom Apts:	0		0
No. of 3 Bedroom Apts:	10		1
No. of 4 Bedroom Apts:	0		0
No. of 5 Bedroom Apts:	0		0
No. of 6 Bedroom Apts:	0		0
No. of Vacant Apts:	0		0
No. of Down Apts:	0		0

Inspections	Date of Last Inspection	List of Any Outstanding Repairs Required
1. Elevators	**N/A**	
2. HVAC Mechanical, Electric, Plumbing?	**JAN 2019**	
3. Life-Safety/Fire?	**N/A**	
4. Roofs?	**N/A**	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Key Questions	Response
Major Capital Improvements in Last 3 yrs.	NONE
Planned Capital Expenditure For Next Year?	RAD
Age of the Roof?	20 YEARS
What bldg. Systems Are Responsibilities of Tenants? (HVAC/Roof/Interior/Exterior/Paving)	N/A

Unk = Unknown, NA = Not Applicable	Yes	No	NA	Unk	Comments
1. Are the plumbing fixtures Low Flow *(Below 2.0GPM, .6GPF)*	☒	☐	☐	☐	
2. Are there any vacant buildings or significant building areas?	☐	☒	☐	☐	
3. Do tenants pay for utilities at leased properties?	☒	☐	☐	☐	
4. Does the owner pay for exterior site lighting electricity?	☐	☒	☐	☐	
5. Any Issues with exterior Lighting?	☐	☒	☐	☐	

Building Structure							
		Y/N		Y/N		Y/N	Additional Comments?
Roof Type:	Pitched?	Y	Flat		Both		
Attic Insulation:	Batt	Y	Cellulose		Fiberglass		
Window Frame:	Wooden		Vinyl	Y	Metal		
Window Glazing:	Single		Double	Y	Triple		
Structure	Wooden	Y	Metal		Conc.		

Building Lighting			
Type of Linear Fluorescent Lamps? *(T8/T12)*	**T8**	Exterior Lighting Control *(Timer/Photocell)*	**PHOTO**
Type of Common Lamps? *(Incan/CFLs)*	**BOTH**	Exterior Light Timing	N/A Hr
Lighting Sensors? *(Y/N)*	**Y**	EXIT Lights (Incan/Fluor/LED)	**N/A**

Other Systems				
Item	Qty		Selection	Utility Company / Provider Name
# of Elevators		Hydraulic/Traction	**0**	N/A
# of Electric Meters	**10**	Master/ Direct	**0**	
# of Nat. Gas Meters	**10**	Resi/Commercial/Indust.	**0**	
# of Water Meters	**0**			
# of Backup Generator	**0**	Fuel?:	**0**	

Preventive Maintenance of Mechanical System		
Systems	**Annual Professional Maintenance**	**Seldom or Never Maintained**
Tenant Space Heating Systems (*Furnace/Boilers/Heat pumps*)	☒	☐
Tenant Space Cooling Systems (*Condensers/Window AC*)	☐	☐
Domestic Water Heaters	☒	☐

Building Appliances		
	Value	Additional Comments?
Percentage of Energy Star Certified Refrigerators (%)	30%	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Percentage of Refrigerators older than 8 years (%)	80%	Please provide general age of refrigerators here
Cooking Range Type (Electric/Gas/Propane)	ELECTRIC	
Laundry System (Leased/Owned)	LEASED	
No. of Washers	2	
No. of Dryers	2	

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates *"Unknown"*)

	Question	Y	N	Unk	NA	Comments
	Zoning, Building Design & Life Safety Issues					
1	Are there any unresolved building, fire, or zoning code issues?			X		
2	Is there any pending litigation concerning the property?		X			
3	Are there any other significant issues/hazards with the property?		X			
4	Are there any unresolved construction defects at the property?		X			
5	Has any part of the property ever contained visible suspect fungal growth?			X		
6	Is there a fungal Operations and Maintenance Plan?		X			
7	Are there any recalled fire sprinkler heads (Star, GEM, Central, and Omega)?				X	
8	Have there been indoor air quality or fungal related complaints from tenants?		X			
	General Site					
9	Are there any problems with erosion, storm water drainage or areas of paving that do not drain?	X				EXTERIOR DRAINING SYSTEM
10	Are there any problems with the landscape irrigation systems?		X			
	Building Structure					
11	Are there any problems with foundations or structures?		X			
12	Is there any water infiltration in basements or crawl spaces?		X			

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

13	Has a termite/wood boring insect inspection been performed within the last year?		X			
BUILDING ENVELOPE						
Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates *"Not Applicable"*, **Unk** indicates *"Unknown"*)						
QUESTION		Y	N	Unk	NA	**COMMENTS**
14	Are there any wall, or window leaks?		X			
15	Are there any roof leaks?		X			
16	Is the roofing covered by a warranty or bond?		X			
17	Are there any poorly insulated areas?			X		
18	Is Fire Retardant Treated (FRT) plywood used?		X			T1A11
19	Is exterior insulation and finish system (EIFS) or a synthetic stucco finish used?		X			
BUILDING HVAC AND ELECTRICAL						
20	Are there any leaks or pressure problems with natural gas service?		X			
21	Does any part of the electrical system use aluminum wiring?		X			
22	Do Residential units have a less than 60-Amp service?		X			
23	Do Commercial units have less than 200-Amp service?		X			
24	Are there any problems with the utilities, such as inadequate capacities?		X			
ADA						
25	Has the management previously completed an ADA review?			X		
26	Have any ADA improvements been made to the property?		X			
27	Does a Barrier Removal Plan exist for the property?			X		

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

28	Has the Barrier Removal Plan been approved by an arms-length third party?		X			

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates *"Unknown"*)

	Question	Y	N	Unk	NA	Comments
29	Has building ownership or management received any ADA related complaints?			X		
30	Does elevator equipment require upgrades to meet ADA standards?				X	
	PLUMBING					
31	Is the property served by a private water well?		X			
32	Is the property served by a private septic system or other waste treatment systems?		X			
33	Is polybutylene piping used?			X		
34	Are there any plumbing leaks or water pressure problems?		X			

Issues or Concerns That EMG Should Know About?	
1.	BAD DRAINING SYSTEM
2.	
3.	

Items Provided to EMG Auditors	Yes	No	N/A	Additional Comments?
Access to 10% (GPNA), 25% (RAD) Apartments	☐	☒	☐	
Access to All Mechanical Spaces	☒	☐	☐	
Access to Roof/Attic Space	☐	☒	☐	
Access to Building As-Built Drawings	☐	☒	☐	
Site plan with bldg., roads, parking and other features	☒	☐	☐	
Access to last 12/24 Months Common Area Utility Data	☒	☐	☐	
Access to last 12/24 Months Tenant Utility Data	☐	☐	☒	
Contact Details of Mech, Elevator, Roof, Fire Contractors:	☐	☐	☒	
List of Commercial Tenants in the property	☒	☐	☐	
Previous reports pertaining to the physical condition of property.	☒	☐	☐	
ADA survey and status of improvements implemented.	☒	☐	☐	
Current / pending litigation related to property condition.	☒	☐	☐	
Any brochures or marketing information.	☒	☐	☐	
Appraisal, either current or previously prepared.	☐	☐	☒	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

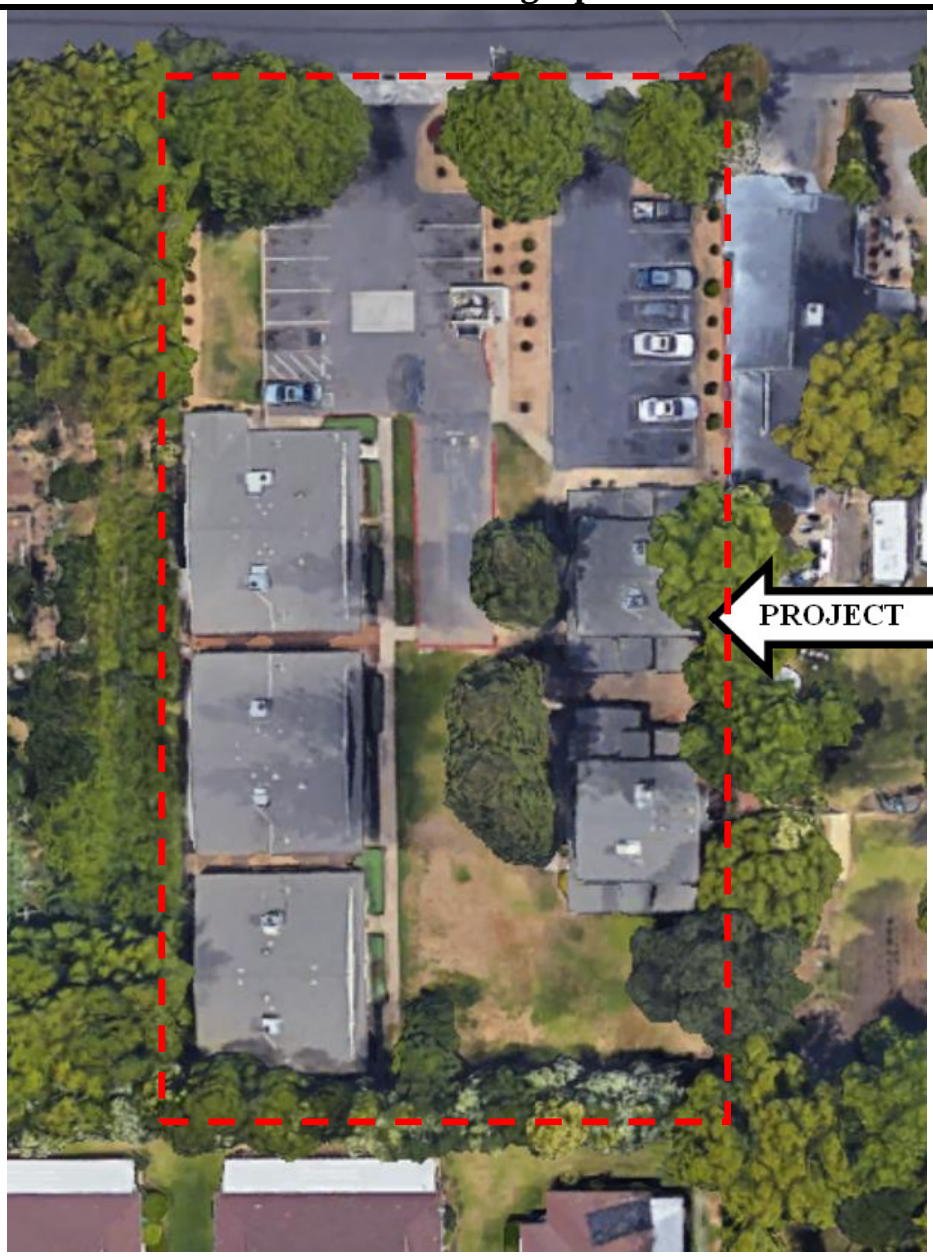
Summary of Projects executed in last 5 years	☒	☐	☐	

_____ _____

Signature of person Interviewed or completing form Date

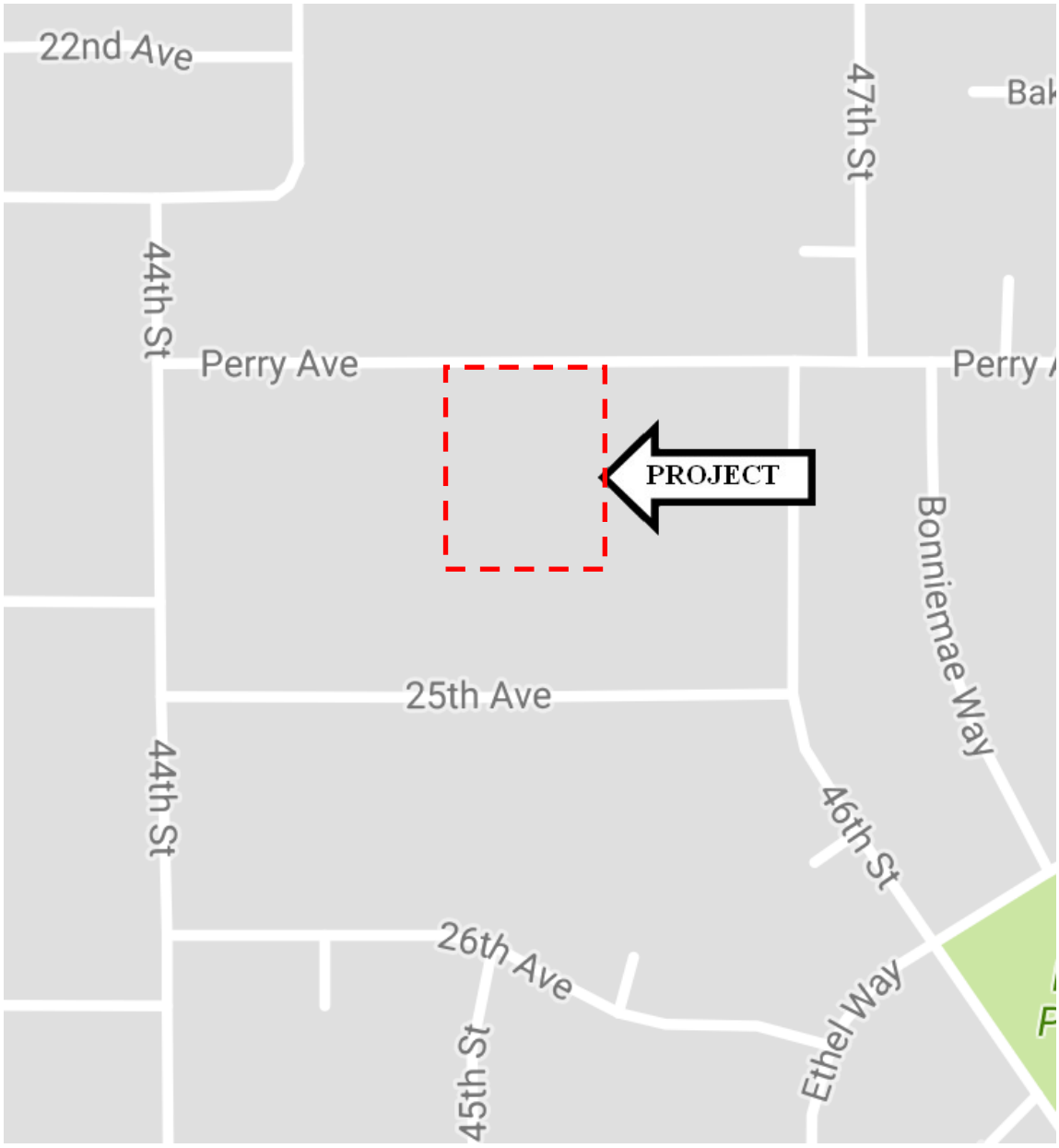
APPENDIX C:
SUPPORTING DOCUMENTATION

Aerial Photograph



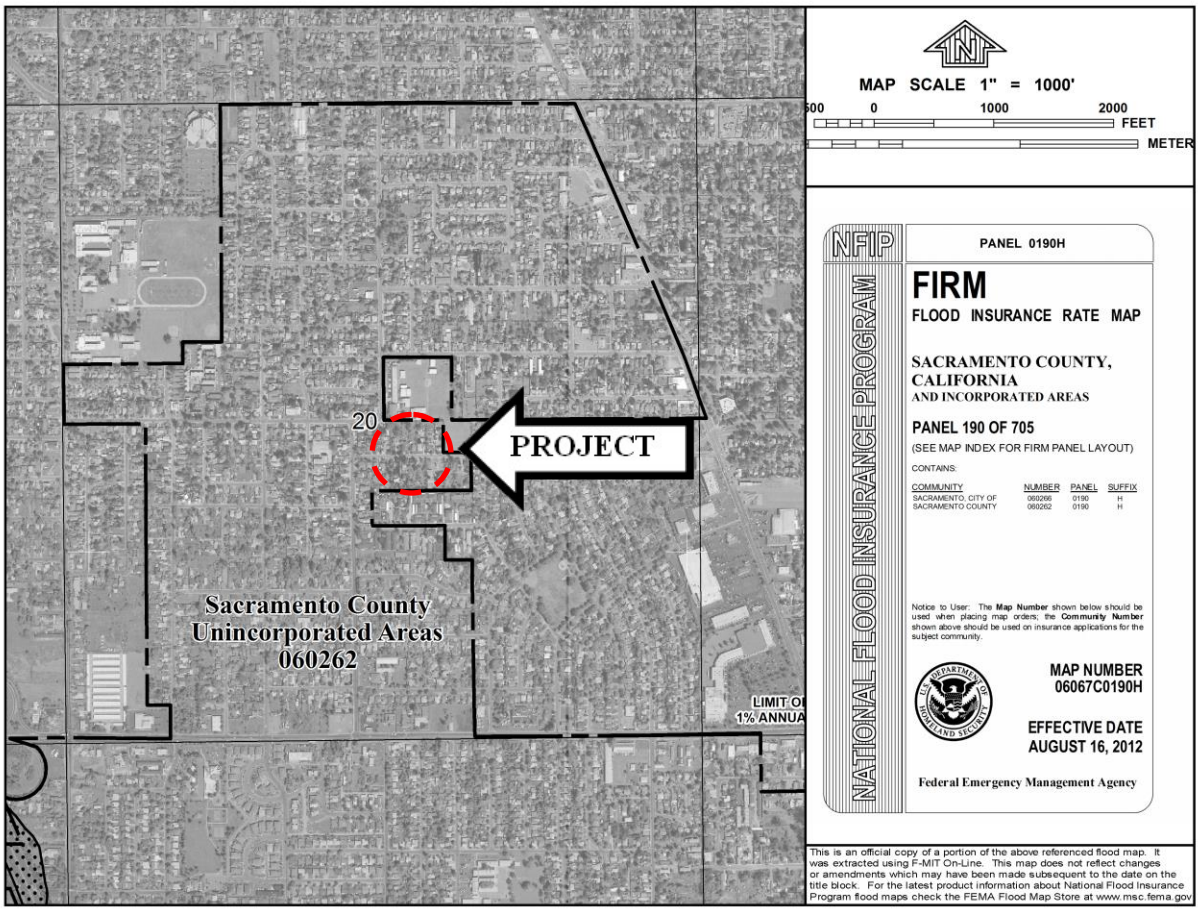
EMG	**Source:**	**Project Number:** 136742.19R000-003.306
N	**Google Earth** **The north arrow indicator is an approximation of 0° North.**	**Project Name:** Pointe Lagoon - 4500 Perry Avenue **On-Site-Date:** March 6, 2019

Street Map



EMG	**Source:** **Google**	**Project Number:** **136742.19R000-003.306**
N	**The north arrow indicator is an approximation of 0° North.**	**Project Name:** **Pointe Lagoon - 4500 Perry Avenue**
		On-Site-Date: **March 6, 2019**

Flood Map



EMG

Source:

FEMA

Date: August 16, 2012

Project Number:

136742.19R000-003.306

Project Name:

Pointe Lagoon - 4500 Perry Avenue

On-Site-Date:

March 6, 2019

The north arrow indicator is an approximation of 0° North.

EMG ACCESSIBIILITY CHECKLIST

Property Name: Pointe Lagoon – 4500 Perry Avenue
Date: March 18, 2019
Project Number: 136742.19R000-003.306

EMG Accessibility Checklist						
UFAS/ADA Accessibility						
	Building History	Yes	No	N/A	Unk	Comments
1.	Has the management previously completed an accessibility review?				√	
2.	Does an accessibility compliance plan exist for the property?				√	
3.	Has the plan been reviewed/approved by outside agencies (engineering firms, building department, other agencies)?				√	
4.	Have any accessibility related complaints been received in the past?				√	
5.	Is the property Section 504 compliant?				√	
	Building Access	Yes	No	N/A	Comments	
1.	Are there an adequate number (per regulation) of wheelchair accessible parking spaces available at the rental office (96” wide/ 60” aisle)	√				
2.	Is there at least one wheelchair accessible van parking space (96” wide/ 96” aisle) for every 8 standard accessible spaces?	√				
3.	Are accessible parking spaces located on the shortest accessible route of travel from an accessible building entrance?	√				
4.	Does signage exist directing you to wheelchair accessible parking and an accessible building entrance?			√		
5.	Is there a ramp from the parking to an accessible building entrance (1:12 slope or less)	√	√		Extends into the loading zone.	
6.	If the main entrance is inaccessible, are there alternate accessible entrances?			√		
7.	Is the accessible entrance doorway at least 32” wide?	√				
8.	Is the door handle easy to open? (lever/push type knob, no twisting required, no higher than 48” above floor)	√				
9.	Are entry doors other than revolving doors available?	√				
	Rental office	Yes	No	N/A	Comments	
1.	Is the entry door to the rental office 3’wide with no step or threshold over ½” tall?			√	There is no rental office on property.	

EMG Accessibility Checklist					
	Rental office	Yes	No	N/A	Comments
2.	Is there a counter or table at 30” high for wheelchair access to fill out a rental application?			√	
3.	Is there clearance behind the counter for an employee in a wheelchair?			√	
	Building Corridors and Elevators	Yes	No	N/A	Comments
1.	Is the path of travel free of obstructions and wide enough for a wheelchair (at least 60” wide)?			√	
2.	Are floor surfaces firm, stable and slip resistant (carpets wheelchair friendly)?			√	
3.	Do obstacles (phones, fountains, etc.) protrude no more than 4” into walkways or corridor?			√	
4.	Are elevators controls low enough to be reached from a wheelchair (48” front approach/54” side approach)?			√	
5.	Are there raised elevator markings in Braille and standard alphabet for the blind?			√	
6.	Are there audible signals inside cars indicating floor changes?			√	
7.	Do elevator lobbies have visual and audible indicators of the cars arrival?			√	
8.	Does the elevator interior provide sufficient wheelchair turning area (51” x 68” minimum)?			√	
9.	Is at least one wheelchair accessible public phone available?			√	
10	Are wheelchair accessible facilities (restrooms, exits, etc.) identified with signage?			√	
	Common Area Restrooms	Yes	No	N/A	Comments
1.	Are common area public restrooms located on an accessible route?			√	
2.	Are pull handles push/pull or lever type?			√	
3.	Are access doors wheelchair accessible (at least 32” wide)?			√	
4.	Are public restrooms large enough for wheelchair turnaround (60” turning diameter)?			√	
5.	Are stall doors wheelchair accessible (at least 32” wide)?			√	
6.	If stalls are to narrow can the toilet room be converted to a single occupant toilet room?			√	
7.	Are grab bars provided in toilet stalls (33”-36” above floor)?			√	
8.	Do sinks provide clearance for a wheelchair to roll under (29” clearance)?			√	
9.	Are sink handles operable with one hand without grasping, pinching or twisting?			√	
10.	Are exposed pipes under sink sufficiently insulated against contact?			√	

EMG Accessibility Checklist					
	Common Area Restrooms	Yes	No	N/A	Comments
11.	Are soap dispensers, towel, etc. reachable (48" from floor for frontal approach, 54" for side approach)?			√	
12.	Is the base of the mirror no more than 40" off floor?			√	
	Common Area Kitchen	Yes	No	N/A	Comments
1.	In a "U"-shaped kitchen is there 60" clear floor space width?			√	
2.	In a "U"-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40" width?			√	
3.	In a "L"-shaped kitchen, is there a 40" width minimum maintained?			√	
4.	Are countertops a maximum of 24" deep and 36" high?			√	
5.	Knee space beneath cabinetry is 30" wide and 27" high.			√	
6.	Is insulation installed below sinks on piping?			√	
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?			√	
	Common Area Laundry rooms	Yes	No	N/A	Comments
1.	Are the laundry rooms located on an accessible route?			√	ADA apartment units have laundry hook-ups.
2.	Are the door handles push/pull or lever type?			√	
3.	Are the access doors wheelchair accessible (at least 32" clear width)?			√	
4.	Are laundry rooms large enough for wheelchair turnaround (60" turning diameter)?			√	
5.	Is there a front load washing machine			√	
6.	If clothes folding tables are provided is one section at 32" high with a clear area below the table?			√	

EMG Accessibility Checklist					
Fair Housing Accessibility / Section 504					
	Access to Unit	Yes	No	N/A	Comments
1.	Property management reports that the number of units currently accessible and those adaptable meet FHA requirements of all ground floor units or 100% for a high rise.	√			Built 1990.
2.	Are 5% of the units fully accessible to those individuals with mobility impairments and 2% of units accessible to those individuals with audio / visual impairments?	√	√		No audio/visual impaired units.
3.	Are there any barriers or structural restrictions preventing access to the building?		√		
4.	Are the accessible units on an accessible route?	√			
5.	Is the apartment entry corridor 36” wide, door 32” wide (frame to frame), threshold height less than ½”, and appropriate door hardware present?	√			
	Unit Living Space	Yes	No	N/A	Comments
1.	Is there access throughout unit?	√			
2.	Are electrical outlets 15” minimum above floor minimum?	√			
3.	Are environmental controls and switches 48” maximum above floor or lower?	√			
	Unit Bathroom	Yes	No	N/A	Comments
1.	Is entry door at least 32” wide frame-to-frame?	√			
2.	Are switches & outlets in accessible locations?	√			
3.	Are bathroom walls around the toilet and tub/shower reinforced?	√			
4.	Is there a 30” x 48” clear floor space outside of door swing area?	√			
5.	Is there a 56” x 48” clear floor space in front of toilet (48” out from wall toilet is hung against)?	√			
6.	Is there a 30” x 48” clear floor space in front of lavatories (30” deep from front of counter)?	√			
7.	Is there a 30” x 48” clear floor space in front of tub/shower (30” out from tub/shower)?	√			
8.	Is vanity a maximum of 24” deep and 36” high?	√			
9.	Knee space beneath sink is 30” wide and 27” high.	√			
10.	Is shower stall 36”x 42” minimum with small lip?			√	Tubs
11.	Is insulation installed below sinks on piping?	√			
	Unit Kitchen	Yes	No	N/A	Comments
1.	In a “U”-shaped kitchen is there 60” clear floor space width?	√			

EMG Accessibility Checklist					
	Unit Kitchen	Yes	No	N/A	Comments
2.	In a “U”-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40” width?	√			
3.	In a “L”-shaped kitchen, is there a 40” width minimum maintained?			√	
4.	Are countertops a maximum of 24” deep and 36” high?			√	
5.	Knee space beneath cabinetry is 30” wide and 27” high.	√			
6.	Is insulation installed below sinks on piping?				Required in adaptable unit regardless of occupancy.
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?			√	

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Faucet Aerators
EAP2-b	**Location**: All Apartment Bathrooms

Property Type:	Residential	Estimated No. of Operational Weeks	52
		Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Number of Occupants Affected By Retrofit	40		Number of Occupants Affected by Retrofit	40	
Do You Want To Replace Kitchen Faucets Aerators	No	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	Yes	*(Select)*
Total Number of Faucet Aerators To Be Replaced	0		Total Number of Faucet Aerators To Be Replaced	10	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	-	GPM	GPM of Existing Faucet Aerators	2	GPM
GPM of Proposed Faucet Aerator	-	GPM	GPM of Proposed Faucet Aerator	1	GPM
Estimated Number of Uses Per Day	0		Estimated Number of Uses Per Day	5	
Estimated Total Faucet Use Time Per Occupant	0.00	Mins	Estimated Total Faucet Use Time Per Occupant	8.10	Mins

Annual Water Savings From Installing Low Flow Aerators: 70.76 kGal
8.1 Min/Person/day @AWWA

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Natural Gas	(Select)	Property Location in United States	Central Localities	
Energy Factor of Domestic Hot Water Heater:	0.42	EF	Heating Fuel Tariff	$1.52	$/Therm
Hot Water Discharge Temperature at Faucet	126.00	°F	Water Tariff ($/1000 Gal)	$5.00	$/kGal
Equivalent Heating Fuel Savings: *Savings Discounted by 15% to Account For Cold Water Use*	788	Therms	Annual Cost Savings In Form of Water	$354	$
Annual Water Savings	70.76	kGal	Annual Energy Savings From Water Heater	$1,198	$

COST BENEFIT ANALYSIS				
Estimated Total Annual Cost Savings	$1,552	$$	Estimated Total Installation Cost	$103 $$
Simple Payback Period	0.07	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $103 Estimated Annual Cost Savings: $1,552 Simple Payback Period (Yrs): 0.07

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Faucet Aerators
EAP2	**Location**: All Apartment Kitchens

Property Type:	Residential	Estimated No. of Operational Weeks	52
		Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Number of Occupants Affected By Retrofit	40		Number of Occupants Affected by Retrofit		
Do You Want To Replace Kitchen Faucets Aerators	Yes	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	No	*(Select)*
Total Number of Faucet Aerators To Be Replaced	10		Total Number of Faucet Aerators To Be Replaced	0	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	2.2	GPM	GPM of Existing Faucet Aerators		GPM
GPM of Proposed Faucet Aerator	1.5	GPM	GPM of Proposed Faucet Aerator		GPM
Estimated Number of Uses Per Day	4		Estimated Number of Uses Per Day	4	
Estimated Total Faucet Use Time Per Occupant	4.05	Mins	Estimated Total Faucet Use Time Per Occupant	0.00	Mins
(hide) Water Savings- Kitchen	24.77	kGal	(hide) Water Savings From Bathroom/yr	0.00	kGal

Annual Water Savings From Installing Low Flow Aerators: 24.77 kGal
8.1 Min/Person/day @AWWA

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Natural Gas	(Select)	Property Location in United States	Central Localities	
Energy Factor of Domestic Hot Water Heater:	0.42	EF	Heating Fuel Tariff	$1.52	$/Therm
Hot Water Discharge Temperature at Faucet	110.00	°F	Water Tariff ($/1000 Gal)	$5.00	$/kGal
Equivalent Heating Fuel Savings:	209	Therms	Annual Cost Savings In Form of Water	$124	$
Savings Discounted by 15% to Account For Cold Water Use					
Annual Water Savings	24.77	kGal	Annual Energy Savings From Water Heater	$318	$

COST BENEFIT ANALYSIS				
Estimated Total Annual Cost Savings	$442	$$	Estimated Total Installation Cost	$103 $$
Simple Payback Period	0.23	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $103 Estimated Annual Cost Savings: $442 Simple Payback Period (Yrs): 0.23

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Shower Heads
EAP1	Location: All Apartment Showerheads

Total Number of Shower Heads To Be Replaced		10	
No. of Shower Days/Year		292	
No. of Residents		40	
Estimated Time Per Shower		8.10	Mins
GPM of Existing Shower Head		2.5	GPM
GPM of Proposed Shower Head *	*(Select)*	1.75	GPM

**(Federal Law Requires all new shower heads to have a max flow rate of 2.5 GPM)*

Water & Energy Savings Calculations

Property Location in United States		Central Localities	
Select Type of Water Heater Fuel	*(Select)*	Natural Gas	
Average Hot Water Discharge Temperature		110.00	°F
Annual Water Savings *(Assuming 1 shower/day/person)*		71	kGal
Energy Factor of Domesitc Hot Water Heater:		0.42	EF
Equivalent Heating Fuel Energy savings:		70,365	kBtu

Cost Savings Calculations

Equivalent Heating Fuel Savings	Natural Gas	704	Therms
Water Tariff ($/1000 Gal)	$5.00	$/kGal	
Annual Cost Savings In Form of Water		$355	$$
Annual Energy Savings From Water Heater		$1,070	$$
Estimated Total Annual Cost Savings		$1,424	$$

Estimated Installation Costs

Estimated Total Installation Cost	$389	$$
Simple Payback Period	0.27	Years
Type of Recommendation	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG.May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming off the shower heads, savings can be generated in the form of reduced water and sewer costs. Additional savings can be realized via reduction in the demand for hot water. Currently Federal law requires all new shower heads to have a maximum flow rate of 2.5 GPM.

EMG recommends replacing the existing shower heads with new low flow shower heads as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment:	$389	Simple Payback:	0.27
Annual Cost Savings:	$1,424		

Property of EMG Corp. All Rights Reserved

UIC	Control External Air Leakage In Residential Buildings
EAE4B	Location: All Apartments

ENTER EXISTING CONDITION

Total No. of Units to be Air Sealed	10	Select Building Type	Garden Style	
Units on Top Floor/Requiring Airsealing Through Attic	10	Building Infiltration Tightness	Average (0.6-0.8 ACH)	
Units on Lower Floors	0	Estimated Space Volume Under Consideration	101,600	Cu.Ft
Insert Existing Estimated Air Change Rate/Hr (ACH 1): *(Existing Air Changes Per Hour, 1.5 is very leaky and 0.35 ideal)*	0.80	Cubic Feet/Min (CFM 1):	1,355	
Insert Proposed Estimated Air Change Rate/Hr (ACH 2):	0.52	Cubic Feet/Min (CFM 2):	881	

WINTER			SUMMER		
Select Type of Heating Fuel	Electric (Select)		Is the Building Cooled?	Yes	
Estimated Annual Heating Plant Efficiency	2.31	COP	Estimated Annual Cooling Plant Efficiency	7.89	EER
Annual Heating Degree Days(HDD):	2,711		Annual Cooling Degree Days(CDD):	1,479	
Estimated Total Annual Input Heating Energy Savings	4,227	kWh	Estimated Total Annual Input Cooling Energy Savings	2,304	kWh
Cost/Unit of Heating Fuel:	$0.23	$/kWh	Cost/Unit For Electricity	$0.23	$$
Estimated Annual Heating Cost Savings	$972	$$	Estimated Annual Cooling Cost Savings	$530	$$

Cost Analysis

Initial Investment to Air Seal Top Floor Units	$650	Initial Investment to Air Seal All Other Floors	$455	
Estimated Annual O&M Savings	$75	Total Cost For Air Sealing The Building	$6,500	
Total Estimated Annual Cost Savings	$1,577	Simple Pay Back Period	4.12	Yrs
Type of Recommendation	Capital Cost ECM Recommendation			

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

One of the most commonly used methods for reducing air leakage through building structures is caulking and weather stripping.

Particularly effective measures include caulking cracks around windows and door frames and weather stripping around windows and doors. Weather-stripping and caulking of doors and windows, helps in thermally isolating of the building with the outside atmosphere. This prevents the infiltration of external un-conditioned air along with moisture and humidity into the conditioned space at the same time, prevents the conditioned air from escaping out. A precisely thermally isolated building directly affects the cooling and heating load on the facilities HVAC system as it has to put in less effort in maintaining the desired temperature inside the facility. As per ASHRAE a well insulated and ventilated building should have an air change rate not more than 0.35 per hour.

In order to ensure proper thermal isolation of the property, EMG recommends ensuring that the weather-stripping and caulking of all external doors and windows remains intact. Its also recommended that door sweeps be installed under all the doors opening into conditioned space. Any visible cracks between the window frame and wall should be plugged by caulking.

In case of building with window airconditioners, EMG recommends use of interior/exterior window airconditioner covers so as to prevent cold air drafts into the conditioned space during the winter so as to save on heating costs.

SUMMARY:

Initial Investment: $6,500 Simple Pay Back Period: 4.12 Yrs

Annual Energy Cost Savings: $1,577

Property of EMG Corp, All Rights Reserved

UIC	Replace Incandescent/CFL /Halogen Lamps With LED Lamps
EAL1B-S	Location: All Apartment Lighting

	Unit Entry	Foyer	Bedroom	Hallway	Bathroom Ceiling		
Current Type of Lamps in the Fixtures:	Screw In-CFL15	Screw In-I60	Screw In-CFL15	Screw In-I60	Screw In-CFL15	-	-
Number of Lamps to Be Replaced :	10	10	40	10	40	0	0
Current Annual Usage:	1,825 hrs	730 hrs	730 hrs	730 hrs	730 hrs	0 hrs	0 hrs
Proposed Measure	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	-	-
Replacement Qty- Lamps / Fixtures:	10	10	40	10	40	0	0
Proposed Annual Avg. Hours of Operation	1,825 hrs	730 hrs	730 hrs	730 hrs	730 hrs	0 hrs	0 hrs
Proposed Replacement:	LED11	LED11	LED11	LED11	LED11	-	-
Estimated Annual Energy Savings	73 kWh	358 kWh	117 kWh	358 kWh	117 kWh	0 kWh	0 kWh
Total labor Cost For Retrofit	$54	$54	$214	$54	$214	$0	$0
Estimated Cost Per Lamp/Fixture	$13.75	$13.75	$13.75	$13.75	$13.75	$0.00	$0.00
Cost For Retrofit	$191	$191	$764	$191	$764	$0	$0

Total Initial Investment For Retrofit	$2,733	Total kWh Saving	1,022 kWh	Total O&M Savings/Yr	$214	
Electric Rate	**$0.23**	Estimated Annual Cost Savings	$449	Simple Pay back Period	6.08	Yrs
Type of Recommendation	Capital Cost ECM Recommendation					

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

The existing incandescent lamps can be replaced with screw-in compact fluorescent lamps. The result of the replacement is a direct energy savings up to 60%. In case of the incandescent lamps approximately 80% of the energy consumed by it is lost in the form of heat radiated by them when lit where as only 20% is actually converted into light. In addition to this the commercially available incandescent lamp have an annual life expectancy of 5000 hrs, whereas a CFL can last for nearly 10,000-12,000 hrs, which is more than twice the life expectancy of the incandescent lamps. Not all, screw-in fluorescent lamps are generally compatible with dimmers.

EMG recommends replacing all the existing lamps with new LED/CFL's or replace the entire fixture with new LED fixture.

SUMMARY;

Initial Investment: $2,733 Simple Payback Period: 6.08 yrs

Annual Cost Savings: $449

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Water Heater With New Energy Efficient Units
EAD3	**Location: Apartment Building Interior**

Step 1	**Existing Water Heater Details**	*Mechanical Closet*							
	Number of Water Heaters Being Replaced:	10							
	Select Existing Hot Water Heater Fuel	Natural Gas		Natural Gas		Natural Gas		Electric	
	Insert Energy Factor of Existing Water Heater	0.42	EF		EF		EF		EF
	Input Existing Water Heater Input Rating	38.00	kBtus		kBtus		kBtus		kW
	Select One Method For Calculation	Annual Heating Hours		Annual Heating Hours		Annual DWH Load		Annual DWH Load	
	Insert Average Annual Hours of Operation	915	hrs		hrs		Therms		kWh
	Annual Water Heater Energy Consumption/Heater	348	Therms	0	Therms	#DIV/0!	hrs	#DIV/0!	hrs
	Total Estimated Annual Energy Consumption For all Heaters	3,477	Therms	0	Therms	0	Therms	0	kWh
	Total Estimated Annual Operating Energy Costs For all Heaters	$5,285	$	$0	$	$0	$	$0	$
Step 2	**Proposed New Water Heater**								
	Proposed Hot Water Heater Fuel	Natural Gas		Heat Pump		Electric		Natural Gas	
	Capacity of the Proposed New Water Heater	40-Gal,40-kBtu							
	Energy Factor of Proposed Water Heater	0.70	EF	0.00	EF	0.00	EF	0.00	EF
	Proposed Water Heater Input Rating	40.00	kBtuh	0.00	kW	0.00	kW	0.00	kBtuh
	Annual kBtuh Consumption For All The Proposed Water Heaters	208,620	kBtuh	#DIV/0!	kBtuh	#DIV/0!	kBtuh	#DIV/0!	kBtuh
	Estimated Annual Water Heater Fuel Consumption (All Heaters)	2,086	Therms	0	kWh	0	kWh	0	Therms
	Estimated Total Annual Energy Costs	$3,171	$	$0		$0		$0	
Step 3	**Energy & Cost Saving Calculation**								
	Estimated Cost of New Water Heater/Unit	$1,160	$	$0	$	$0	$	$0	$
	Total Estimated Installation Cost	$15,084	$	$0	$	$0	$	$0	$
	Total Estimated Annual Cost Savings	$2,114	$	$0	$	$0	$	$0	$
	Total Annual Cost Savings:	$2,114		Total Initial Investment::		$15,084			
	Simple Pay Back Period	7.14							
	Type of Recommendation	Capital Cost ECM Recommendation							

Disclaimer: PREPARED BY EMG. DECEMBER 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM SUMMARY:

Electric resistance is the most expensive method for heating domestic hot water. A natural gas or propane fired water system provide more units of heat with direct burning of fuel while high wattage draw is required for electric water heaters to create resistance heat. This electric usage can be seen with the increase power demand for the site and the additional kWh consumption. The installation process of the gas/propane fired water heater requires additional measures with tying a gas line or fuel tank to the system along with installing an exhaust gas vent. This process is not a costly retrofit if a current gas line or tank is at the site. The hot water exhaust duct can be tied to the existing gas fired furnaces or boilers for an easy retrofit.

SUMMARY:

Initial Investment: $15,084 Simple Payback: 7.14 yrs

Annual Cost Savings: $2,114

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Linear Fluorescent Lamps
EAL2-S	Location: All Apartment Kitchen and Bathroom

Existing Lighting System

	Kitchen Ceiling	Bathroom Vanity					Stairwell- BiLevel Lighting
Current Type of Lamp: *(Select)*	F42T12	F22T8					
Current Annual Avg Hrs of Operation:	730 hrs	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Existing Number of Fixtures:	10	10	0	0	0	0	0

Proposed Lighting System

Proposed Lamp Replacement: *(Select)*	F42LED	F22LED	-	-	-	-	-
Proposed Annual Avg. Hours of Operation	730 hrs	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Proposed Number of Fixtures:	10	10	0	0	0	0	0
Proposed Lighting Control: *(Select)*	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch
No. of Lighting Controls:	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty

Energy Saving Calculation

Estimated Annual Energy Savings	270 kWh	95 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Are The Ballast's Being Replaced: *(Select)*	No	No	No	No	No	No	No
Estimated Material Cost:	$480 $	$320 $	$0 $	$0 $	$0 $	$0 $	$0 $
Estimated Labor Cost:	$82 $	$82 $	$0 $	$0 $	$0 $	$0 $	$0 $
Total Installation Cost:	$562 $	$402 $	$0 $	$0 $	$0 $	$0 $	$0 $

Estimated Total Material Cost:	$800 $$	Estimated Total Labor Cost:	$214	Total kWh Saving		365 kWh
Electric Rate:	$0.23 $$	**Total Initial Investment For Retrofit**	$1,014	Estimated Annual O&M Cost Savings		$5
				Estimated Annual Cost Savings		$89
Simple Pay back Period	11.38 Yrs	*Type of Recommendation*	**Capital Cost ECM Recommendation**			

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

Fluorescent lighting is recommended for areas where color sensitivity is an important criterion (e.g., offices or small parts assembly rooms). Fluorescent tubes are currently available that produce a higher light output (more lumens per watt) than standard fluorescent tubes. There are efficient 40-watt lamps that produce 8% to 10% more light than standard lamps. The 34-watt fluorescent tubes use 15% less power than standard lamps, while producing about 8% less light. Since the human eye responds to light exponen-tially, rather than linearly, the difference is often unnoticeable. "T8" fluorescent lamps use only 32 watts, but existing fixtures must be replaced. Therefore, EMG recommends retrofitting all the existing fixtures with new 17.5W LED Tube lamps. The LED tubes provide a 180 degree light dispersal, and can be retrofitted in the existing ligt fixture. The LED tubes are rated at 50,000 hrs as compared to 20,000 to 30,000 hrs ratings for conventional fluorescent lamps.

It is important to replace all lamps when re-lamping a fluorescent fixture, never mix energy-efficient and standard lamps with the same ballast. Ensure that the fluorescent ballast is compatible with the energy-efficient lamps. It must be noted that when switching from T-12 magnetic ballast to T8 lamps, the ballasts should be replaced with instant start electrical ballast. Also it should be noted that when installing an occupancy sensor/motion sensor, rapid start electronic ballast should be used.

SUMMARY:

Initial Investment: $800 Simple Payback: 11.38 Years

Annual Cost Savings: $89

Property of EMG, All Rights Reserved

UIC	Replace External Windows
EAE2	Location: All Apartments

ENTER EXISTING CONDITIONS

Existing and Proposed Window Properties

Total Sq.Ft window area:	1,000	sq.ft
Approximate number of windows:	50	
Total existing window area:	1,000	Sq.Ft
Select The Existing Window Type	Metal Frame & Double Glazing	*(Select)*
Existing U-value of window: (1/R)	0.87	Btu/ ft².°F·h
ASHRAE Climatic Zone	Zone-3	
New U-value with Double pane Low E window: (1/R)	0.35	Btu/ ft².°F·h
AHRAE 90.1 Recommended Value		

Existing & Proposed Air Leakage Through Windows

Insert Existing Estimated Air Change Rate/Hr (ACH 1):	0.80	
(Existing Air Changes Per Hour, 1.5 is very leaky and 0.35 ideal)		
Insert Proposed Estimated Air Change Rate/Hr (ACH 2):	0.52	
Estimated Space Volume Under Consideration	101,600.00	Cu. Ft
Is the Property Cooled ?	Yes	*(Select)*

WINTER

Select Type of Heating Fuel	Electric	*(Select)*
Net heating plant & distribution system efficiency:	2.31	**COP**
Annual Heating Hours:	2,711	HDD
Estimated Total Annual Input Heating Energy Savings By Replacing Windows	1,258.10	kWh
Estimated Total Annual Input Heating Energy Savings Achieved By Controlling Air Leakage Through Windows	4,227	kWh
Estimated Total Input Heating Fuel Savings From Replacing Windows	5,485	kWh

SUMMER

Select Type of Cooling Fuel:	Electric	*(Default)*
Cooling Plant Efficiency **(EER)**:	7.89	**EER**
Annual Cooling Hours:	1,479	CDD
Annual Total Input Cooling Fuel Savings During Summer Season By Replacing Windows	2,339	kWh
Estimated Total Annual Input Cooling Energy Savings Achieved By Controlling Air Leakage Through Windows	2,304	kWh
Estimated Total Input Cooling Fuel Savings From Replacing Windows	4,643	kWh

ENERGY & COST ANALYSIS

Insert Cost of Heating Fuel:	$0.23	$/kWh	Annual Heating Cost Savings:	$1,261.60	$$
Insert Cost of Cooling Fuel:	$0.23	$/kWh	Annual Cooling Cost Savings:	$1,067.92	$$
Total Annual Cost Savings	$2,353		Total Annual Cost Savings From Heating & Cooling:	$2,330	$$
Cost of window upgrade:	$35,759		Estimated Annual O&M Savings	$23	$
Simple payback:	15.20	**Yrs**	*Type of Recommendation*	Capital Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

Windows play a major role in the energy use and comfort of an interior space. In the winter, heat in a room is lost when cold outside air infiltrates around the edges of windows. Heat also can be lost by conduction directly through the pane, even if the window fits tightly. Windows with insulated panes, such as those filled with Argon address this issue, while proper caulking and sealant address the infiltration issue. The cold drafts and the chilly windowpane make the room uncomfortable. Windows also can help to heat a room by letting the sun's rays enter. While this solar radiation is beneficial in the winter, it can be a major source of discomfort in hot, summer climates. Energy Star rated windows with Low-E glazing are designed to keep the solar heat gain minimized during the summer months. Choosing a replacement window that fits properly has the desired U-value, and proper glazing characteristics is critical to energy conservation through window upgrades.

Summary:

Initial Investment:	$35,759	Simple Payback	15.20 Yrs
Annual Energy Cost Savings:	$2,353		

CAPITAL NEEDS
ASSESSMENT

SACRAMENTO HOUSING & REDEVELOPMENT AGENCY
801 12th Street
Sacramento, California 95814
Vance Kelly

PROPERTY CONDITION CHECKLIST REPORT
of
POINTE LAGOON - EL PARAISO
4930 El Paraiso Avenue
Sacramento, California 95824

PREPARED BY:

EMG
10461 Mill Run Circle, Suite 1100,
Owings Mills, Maryland 21117
800.733.0660
410.785.6220 (fax)
www.emgcorp.com

EMG CONTACT:

Matthew Anderson
Program Manager
800.733.0660, x7613
manderson@emgcorp.com

EMG Project #:	136742.19R000-004.306
Date of Report:	March 22, 2019
On site Date:	March 7, 2019

TABLE OF CONTENTS

Certification 1
1. Executive Summary 3
1.1. Summary of Findings 3
1.2. Follow Up Recommendations 3
1.3. Opinions of Probable Cost 4
1.3.1. Methodology 4
1.3.2. Immediate Repairs 4
1.3.3. Physical Needs Over the Term 4
2. Purpose and Scope 8
2.1. Purpose 8
2.2. Deviations from the ASTM E2018-01 Guide 9
2.3. Additional Scope Considerations 9
2.4. Property's Remaining Useful Life Estimate 9
2.5. Personnel Interviewed 10
2.6. Documentation Reviewed 10
2.7. Pre-Survey Questionnaire 10
2.8. Weather Conditions 10
3. Code Information, Accessibility, and Mold 11
3.1. Code Information, Flood Zone and Seismic Zone 11
3.2. ADA Accessibility 11
3.3. Mold 13
4. Existing Building Evaluation 14
4.1. Apartment Unit Types 14
4.2. Apartment Units Observed 14
5. Site Improvements 15
5.1. Utilities 15
5.2. Parking, Paving, and Sidewalks 15
5.3. Drainage Systems and Erosion Control 16
5.4. Topography and Landscaping 16
5.5. General Site Improvements 16
6. Building Architectural and Structural Systems 18
6.1. Foundations 18
6.2. Superstructure 18
6.3. Roofing 18
6.4. Exterior Walls 19
6.5. Exterior and Interior Stairs 19
6.6. Windows and Doors 19
6.7. Patio, Terrace, and Balcony 20
6.8. Common Areas, Entrances, and Corridors 20
7. Building Mechanical and Electrical Systems 21
7.1. Building Heating, Ventilating, and Air-conditioning (HVAC) 21
7.2. Building Plumbing 21
7.3. Building Gas Distribution 22
7.4. Building Electrical 22

7.5. Building Elevators and Conveying Systems 22
7.6. Fire Protection Systems 22
8. Dwelling Units 24
8.1. Interior Finishes 24
8.2. Appliances 24
8.3. HVAC 25
8.4. Plumbing 25
8.5. Electrical 26
9. Other Structures 27
10. Appendices 28

CERTIFICATION

EMG has completed a Capital Needs Assessment (CNA) of the subject property, El Paraiso, located at 4930 El Paraiso Avenue in Sacramento, Sacramento County, California. The CNA was performed on March 7, 2019.

The CNA was performed at the Client's request using methods and procedures consistent with good commercial and customary practice and with the standards outlined in 24 CFR 968.315, the Comprehensive Grant Program Guidebook 7485.3G, the Public Housing Modernization Standards Handbook 7485.2, and 24 CFR Part 5, Uniform Physical Condition Standards. EMG also utilizes the standards set forth by ASTM E2018-01, Standard Guide for Capital Needs Assessments: Baseline Physical Needs Assessment Process. In addition, EMG's reference to the Client follows the ASTM guide's definition of User, whereas, the party that retains EMG for the preparation of a baseline CNA of the subject property. A user may include, without limitation, a purchaser, potential tenant, owner, existing or potential mortgagee, lender, or property manager of the subject property.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and EMG.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of EMG. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to EMG.

The opinions EMG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent architect or engineer in the same community under similar circumstances. EMG assumes no responsibility or liability for the accuracy of information contained within this report that has been obtained from the Client or the Client's representatives, from other interested parties, or from the public domain. The conclusions presented represent EMG's professional judgment based on information obtained during the course of this assignment. EMG's evaluations, analyses, and opinions are not representations regarding the design integrity, structural soundness, or actual value of the property. Factual information regarding operations, conditions, and test data provided by the Client or the Client's representative has been assumed to be correct and complete. The conclusions presented within this report are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment.

EMG certifies that EMG has no undisclosed interest in the subject property, that EMG's relationship with the Client is at arms-length, and that EMG's employment and compensation are not contingent upon the findings or estimated costs to remedy any noted deficiencies due to deferred maintenance and/or any noted component or system replacements.

EMG's CNA cannot wholly eliminate the uncertainty regarding the presence of physical deficiencies and/or the performance of a subject property's building systems. Preparation of a CNA in accordance with ASTM E2018-01 is intended to reduce, but not eliminate, the uncertainty regarding the potential for component or system failure and to reduce the potential that such component or system failure may not be initially observed. This CNA was prepared recognizing the inherent subjective nature of EMG's opinions as to such issues as workmanship, quality of original installation, and estimating the remaining useful life of any given component or system. It should be understood that EMG's suggested remedy may be determined under time constraints or may be formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the noted physical deficiencies.

Any questions regarding this report should be directed to Matthew Anderson at manderson@emgcorp.com or at 800.733.0660, x7613.

Prepared by: Tammy Prusa
Field Observer

Reviewed by:

Al Diefert
Technical Report Reviewer
For
Matthew Anderson
Program Manager

1. EXECUTIVE SUMMARY

1.1. SUMMARY OF FINDINGS

The Client contracted with EMG to conduct a Capital Needs Assessment (CNA) of the subject property, El Paraiso, located at 4930 El Paraiso Avenue in Sacramento, Sacramento County, California. The CNA was performed on March 7, 2019.

Property Summary	
Item	**Description**
Property Type	Multi-Family Residential
Number of Buildings	Nine Residential, One Community/Laundry
Number of Floors	One
Number of Apartments	36
Site Area	2.61 acres
Construction Date	1986
On site Amenities	Community building with laundry room
Construction Quality	Fair
Maintenance Practices	Fair
Overall Condition	Fair
Recent Capital Improvements	None

There are a number of immediate repairs and capital reserve costs recommended over the evaluation period. These needs are identified in the various sections of this report and are summarized in the attached cost tables. A *Project at a Glance* summary table is provided as part of the Executive Summary.

A portion of the property is under renovation. Elements of the construction not complete include roof replacement. This CNA assumes that all remaining work will be completed to the satisfaction of the Owner and municipal authorities and assumes that an occupancy permit will be issued. This CNA is not intended to be used for construction inspection or observation purposes, and no opinion as to the quality of workmanship or the state of completion should be implied.

1.2. FOLLOW UP RECOMMENDATIONS

No additional evaluation is necessary.

1.3. OPINIONS OF PROBABLE COST

This section provides estimates for the repair and capital reserves items noted within this PCCR.

These estimates are based on invoice or bid documents provided either by the Owner/facility and construction costs developed by construction resources such as *R.S. Means* and *Marshall & Swift,* EMG's experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions.

1.3.1. Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, EMG opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its effective age.

Where quantities could not be derived from an actual take-off, lump sum costs or allowances are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

1.3.2. Immediate Repairs

Immediate repairs are opinions of probable costs that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) material building or fire code violations, or (3) conditions that, if left un-remedied, have the potential to result in or contribute to critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

1.3.3. Physical Needs Over the Term

Replacement Reserves are for recurring probable expenditures that are not classified as operation or maintenance expenses and should be annually budgeted for in advance. These needs are reasonably predictable both in terms of frequency and cost. However, they may also include components or systems that have an indeterminable life, but nonetheless have a potential liability for failure within an estimated time period.

Replacement Reserves excludes systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs were solicited from ownership/property management, and/or EMG's previous experience in preparing such schedules for other similar facilities. Costs for work performed by ownership's or property management's maintenance staff were also considered. All costs are scrutinized and verified through research, as discussed above.

EMG's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the evaluation period, which is defined as 20 years starting with the Housing Authority's fiscal year 2011. Additional information concerning systems or components respective replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined in the Immediate Repairs Cost Estimate.

Replacement Reserves Report

6/5/2019

Location	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Total Escalated Estimate
Pointe Lagoon-El Paraiso / Community Building - 2019	$21,595	$0	$7,507	$7,612	$0	$0	$0	$0	$0	$0	$0	$2,859	$0	$2,072	$0	$33,342	$0	$11,696	$5,942	$3,621	$0	**$96,246**
Pointe Lagoon-El Paraiso / Energy Conservation Measures - 2019	$159,021	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,383	$0	$0	$0	$0	$36,000	$0	$0	$0	$0	$161,944	**$360,349**
Pointe Lagoon-El Paraiso / Residential Buildings - 2019	$126,650	$0	$0	$1,072,302	$0	$24,178	$97,883	$0	$123,950	$0	$40,251	$159,906	$0	$172,751	$0	$756,672	$0	$0	$202,009	$0	$54,094	**$2,830,646**
Pointe Lagoon-El Paraiso / Site - 2019	$0	$0	$34,155	$29,757	$0	$0	$0	$20,154	$29,693	$0	$0	$0	$33,993	$116,889	$0	$0	$246,619	$27,085	$0	$0	$0	**$538,344**
GrandTotal	**$307,266**	**$0**	**$41,662**	**$1,109,671**	**$0**	**$24,178**	**$97,883**	**$20,154**	**$153,643**	**$0**	**$43,634**	**$162,765**	**$33,993**	**$291,711**	**$0**	**$826,014**	**$246,619**	**$38,780**	**$207,951**	**$3,621**	**$216,038**	**$3,825,585**

Pointe Lagoon-El Paraiso / Community Building - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
C3012	Throughout	Interior Wall Finish, Gypsum Board/Plaster/Metal, Prep & Paint	8	5	3	1200	SF	$1.72	$2,065				$2,065								$2,065								$2,065		**$6,196**
C3024	Community Building	Interior Floor Finish, Vinyl Tile (VCT), Replace	15	12	3	600	SF	$5.82	$3,490				$3,490															$3,490			**$6,981**
C3031	Throughout	Interior Ceiling Finish, Gypsum Board/Plaster, Prep & Paint	10	7	3	600	SF	$2.35	$1,411				$1,411									$1,411									**$2,821**
D2023	Laundry Room Mechanical Closet	Water Heater, Electric, Commercial, 101 to 120 GAL, Replace	15	13	2	1	EA	$13,596.30	$13,596	$13,596													$13,596								**$27,193**
D2023	Community Building Mechanical closet	Water Heater, Electric, Residential, 30 to 52 GAL, Replace	15	13	2	1	EA	$2,107.49	$2,107			$2,107														$2,107					**$4,215**
D3032	Community Building Exterior	Condensing Unit/Heat Pump, Split System, 5 Ton, Replace	15	13	2	1	EA	$7,804.86	$7,805	$7,805													$7,805								**$15,610**
D3041	Community Building Mechanical closet	Fan Coil Unit, 3.5 to 5 Ton, Replace	15	13	2	1	EA	$4,968.51	$4,969			$4,969														$4,969					**$9,937**
Z108X	Community Building	ADA, Restroom, Lavatory Pipe Wraps, Install	0	0	0	2	EA	$96.96	$194	$194																					**$194**
Totals, Unescalated										**$21,595**	**$0**	**$7,076**	**$6,966**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,411**	**$0**	**$21,401**	**$0**	**$7,076**	**$3,490**	**$2,065**	**$0**	**$73,146**
Totals, Escalated (3.0% inflation, compounded annually)										**$21,595**	**$0**	**$7,507**	**$7,612**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,411**	**$0**	**$33,342**	**$0**	**$11,696**	**$5,942**	**$3,621**	**$0**	**$96,246**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Pointe Lagoon-El Paraiso / Energy Conservation Measures - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
X101X	All Apartments	ECM, External Air Leakage In Residential Buildings, Control, Upgrade	15	15	0	14688	SF	$1.04	$15,309	$15,309													$15,309								**$30,618**
X103X	Exterior	ECM, Existing Linear Fluorescent Lamps, Replace	15	15	0	72	EA	$52.78	$3,800	$3,800													$3,800								**$7,600**
X103X	All Apartments	ECM, Low Flow Shower Heads, Install	10	10	0	36	EA	$45.84	$1,650	$1,650										$1,650									$1,650		**$4,950**
X103X	Apartment bathrooms	ECM, Low Flow Faucet Aerators, Install	10	10	0	36	EA	$12.05	$434	$434										$434									$434		**$1,301**
X103X	All Apartment Lighting	ECM, Incandescent / Halogen / Compact Fluorecent Lamps, Replace	15	15	0	72	EA	$26.93	$1,939	$1,939													$1,939								**$3,878**
X103X	Apartment Building Exterior	ECM, Existing Water Heater With New Energy Efficient Units, Replace	0	18	0	36	EA	$1,284.69	$46,249	$46,249																					**$46,249**
X103X	Throughout	ECM, Hot Water Pipes, Insulation, Replace	15	15	0	108	LF	$19.06	$2,059	$2,059													$2,059								**$4,118**
X103X	Apartment kitchens	ECM, Low Flow Faucet Aerators, Install	10	10	0	36	EA	$12.05	$434	$434										$434									$434		**$1,301**
X103X	All Apartments	ECM, Existing Heat Pumps With Energy Efficient Heat Pumps, Replace	20	20	0	36	EA	$2,420.75	$87,147	$87,147																			$87,147		**$174,294**
Totals, Unescalated										**$159,021**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,518**	**$0**	**$0**	**$0**	**$0**	**$23,107**	**$0**	**$0**	**$0**	**$0**	**$89,665**	**$274,310**
Totals, Escalated (3.0% inflation, compounded annually)										**$159,021**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$3,383**	**$0**	**$0**	**$0**	**$0**	**$36,000**	**$0**	**$0**	**$0**	**$0**	**$161,944**	**$360,349**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Pointe Lagoon-El Paraiso / Residential Buildings - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2011	Exterior	Exterior Wall, Painted Surface, 1-2 Stories, Prep & Paint	10	7	3	18360	SF	$3.48	$63,878				$63,878										$63,878								**$127,756**
B2011	Exterior	Exterior Wall, Stucco, 1-2 Stories, Replace	40	25	15	18360	SF	$22.03	$404,482																$404,482						**$404,482**
B2021	Apartments	Window, Aluminum Double-Glazed Gas-Filled 24 SF, 1-2 Stories, Replace	30	27	3	108	EA	$1,126.71	$121,684				$121,684																		**$121,684**
B2032	Apartment entry	Exterior Door, Steel Insulated, Replace	25	17	8	36	EA	$1,911.92	$68,829									$68,829													**$68,829**
B2039	Apartment entrys	Screen Door, Plain/Anodized Aluminum, Replace	10	7	3	36	EA	$603.66	$21,732				$21,732										$21,732								**$43,463**
B3011	Roofs	Roof, Asphalt Shingle, Replace	20	9	11	27870	SF	$4.14	$115,519												$115,519										**$115,519**
C3024	Apartment Interiors	Interior Floor Finish, Vinyl Tile (VCT), Replace	15	12	3	18360	SF	$5.82	$106,808				$106,808																$106,808			**$213,617**
D2011	Unit bathroom	Toilet, Flush Tank (Water Closet), Replace	20	17	3	36	EA	$1,278.81	$46,037				$46,037																		**$46,037**
D2015	Apartment bathrooms	Bathtub & Shower Enclosure, Fiberglass, Replace	20	17	3	36	EA	$2,163.69	$77,893				$77,893																		**$77,893**
D3041	Exterior closet	Fan Coil Unit, 1 to 1.5 Ton, Replace	15	9	6	36	EA	$2,277.10	$81,976							$81,976															**$81,976**
D3042	Bathroom exhaust fans	Exhaust Fan, Bathroom, Replace	15	13	2	72	EA	$1,127.74	$81,197	$81,197															$81,197						**$162,394**
D3051	All units	Furnace, Electric, 26 to 40 MBH, Replace	20	17	3	36	EA	$3,968.67	$142,872				$142,872																		**$142,872**
D5029	Throughout	Lighting System, Interior, Multi-Family, Upgrade	25	22	3	18360	SF	$5.73	$105,251				$105,251																		**$105,251**
D5037	Apartment Bedrooms	Smoke Detector, Install	10	10	0	36	EA	$252.61	$9,094	$9,094										$9,094										$9,094	**$27,282**
E1094	Unit range hoods	Residential Appliances, Range Hood, Vented or Ventless, Replace	15	12	3	36	EA	$329.18	$11,851				$11,851																$11,851			**$23,701**
E1094	Unit kitchens	Residential Appliances, Garbage Disposal, Replace	10	7	3	36	EA	$357.53	$12,871				$12,871										$12,871								**$25,742**

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
E1094	Apartment kitchens	Residential Appliances, Refrigerator, 14-18 CF, Replace	15	10	5	18	EA	$1,158.69	$20,856						$20,856															$20,856	**$41,713**
E1094	Tenant units	Residential Appliances, Range, Electric, Replace	15	7	8	36	EA	$806.07	$29,018									$29,018													**$29,018**
E1094	Apartment kitchens	Residential Appliances, Refrigerator, 14-18 CF, Replace	15	5	10	18	EA	$1,158.69	$20,856											$20,856											**$20,856**
E2012	Apartment kitchens	Kitchen Cabinet, Base and Wall Section, Wood, Replace	20	17	3	360	LF	$566.75	$204,031				$204,031																		**$204,031**
E2012	Apartment bathrooms	Bathroom Vanity Cabinet, Wood, with Cultured Marble Sink Top, 24 to 30", Replace	20	17	3	36	EA	$1,312.37	$47,245				$47,245																		**$47,245**
E2012	Apartment kitchens	Kitchen Counter, Plastic Laminate, Postformed, Replace	10	7	3	360	LF	$53.21	$19,154				$19,154										$19,154								**$38,308**
Z108X	Tenant units	ADA Bathroom renovation, Replace	0	0	0	2	EA	$18,179.55	$36,359	$36,359																					**$36,359**
Totals, Unescalated										**$126,650**	**$0**	**$0**	**$981,308**	**$0**	**$20,856**	**$81,976**	**$0**	**$97,848**	**$0**	**$29,950**	**$115,519**	**$0**	**$117,635**	**$0**	**$485,679**	**$0**	**$0**	**$118,659**	**$0**	**$29,950**	**$2,206,031**
Totals, Escalated (3.0% inflation, compounded annually)										**$126,650**	**$0**	**$0**	**$1,072,302**	**$0**	**$24,178**	**$97,883**	**$0**	**$123,950**	**$0**	**$40,251**	**$159,906**	**$0**	**$172,751**	**$0**	**$756,672**	**$0**	**$0**	**$202,009**	**$0**	**$54,094**	**$2,830,646**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Pointe Lagoon-El Paraiso / Site - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2039	Perimeter	Pedestrian Gate, Wrought Iron, Replace	25	17	8	4	EA	$867.21	$3,469									$3,469													**$3,469**
D5022	Throughout property	Metal Halide Lighting Fixture, Pulse Start, 150 W, Replace	20	18	2	12	EA	$696.06	$8,353			$8,353																			**$8,353**
D5038	Site entry	Vehicle Control Gate w/ Controller, Replace	15	7	8	2	EA	$9,985.46	$19,971									$19,971													**$19,971**
G2022	Paved areas	Parking Lots, Asphalt Pavement, Seal & Stripe	5	3	2	35581	SF	$0.46	$16,387			$16,387					$16,387					$16,387					$16,387				**$65,547**
G2022	Parking area	Parking Lots, Asphalt Pavement, Mill & Overlay	25	9	16	35581	SF	$3.98	$141,444																$141,444						**$141,444**
G2041	Perimeter	Fences & Gates, Wood Board, Refinish	10	8	2	3918	SF	$1.90	$7,455			$7,455										$7,455									**$14,910**
G2041	Perimeter fence	Fences & Gates, Metal Tube, 6' High, Replace	30	17	13	540	LF	$96.97	$52,364														$52,364								**$52,364**
G2055	Throughout property	Landscaping, Sod at Eroded Areas, Install	20	4	16	10000	SF	$1.22	$12,241																$12,241						**$12,241**
G4021	Site	Pole Light, Exterior, 135 to 1000 W HID (Fixture, Ballast, & Lamp), Replace	10	7	3	10	EA	$2,723.18	$27,232				$27,232										$27,232								**$54,464**
Totals, Unescalated										**$0**	**$0**	**$32,195**	**$27,232**	**$0**	**$0**	**$0**	**$16,387**	**$23,440**	**$0**	**$0**	**$0**	**$23,842**	**$79,595**	**$0**	**$0**	**$153,685**	**$16,387**	**$0**	**$0**	**$0**	**$372,762**
Totals, Escalated (3.0% inflation, compounded annually)										**$0**	**$0**	**$34,155**	**$29,757**	**$0**	**$0**	**$0**	**$20,154**	**$29,693**	**$0**	**$0**	**$0**	**$33,993**	**$116,889**	**$0**	**$0**	**$246,619**	**$27,085**	**$0**	**$0**	**$0**	**$538,344**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

2. PURPOSE AND SCOPE

2.1. PURPOSE

The purpose of this report is to assist the Client in evaluating the physical aspects of this property and how its condition may affect the Client's financial decisions over time. For this CNA, the major independent building components were observed and their physical conditions were evaluated in accordance with ASTM E2018-01 and with the standards outlined in 24 CFR 968.315, the Comprehensive Grant Program Guidebook 7485.3G, the Public Housing Modernization Standards Handbook 7485.2, and 24 CFR Part 5, Uniform Physical Condition Standards. These components include the site and building exteriors, interior areas, and the interior of the buildings. The estimated cost for repairs and/or capital reserve items are included in the cost estimates presented in the previous section. All findings relating to these opinions of probable costs are included in the relevant narrative sections of this Report.

The property management staff, available maintenance procedures, available drawings, and other documentation were reviewed as part of this assessment. The property's systems and components were observed and evaluated for their present condition. The estimated costs for repairs and/or capital reserves are included in the enclosed cost tables. All findings relating to these opinions of probable costs are included in the narrative sections of this report.

The physical condition of building systems and related components are typically defined as being in one of three conditions: Good, Fair, or Poor, or a combination thereof. For the purposes of this report, the following definitions are used:

Good	=	Satisfactory as-is. Requires only routine maintenance over the evaluation period. Repair or replacement may be required due to a system's estimated useful life.
Fair	=	Satisfactory as-is. Repair or replacement is required due to current physical condition and/or estimated remaining useful life.
Poor	=	Immediate repair, replacement, or significant maintenance is required.

Each building system or component is further identified with the following references if costs or other actions are applicable:

RM	=	Routine maintenance
IR	=	Immediate Repair recommended
RR	=	Replacement Reserve cost recommended during the evaluation term
NA	=	Not applicable

2.2. DEVIATIONS FROM THE ASTM E2018-01 GUIDE

ASTM E2018-01 requires that any deviations from the Guide be so stated within the report. EMG's probable cost threshold limitation is reduced from the Guide's $3,000 to $1,000, thus allowing for a more comprehensive assessment on smaller scale properties. Therefore, EMG's opinions of probable costs that are individually less than a threshold amount of $1,000 are typically omitted from this PCCR. However, comments and estimated costs regarding identified deficiencies relating to life, safety or accessibility items are included regardless of this cost threshold.

The written report that pertains to the property condition is presented, for the most part, in a table format rather than narrative text, thus the name of the report is changed to Property Condition Checklist Report (PCCR).

In lieu of providing written record of communication forms, personnel interviewed from the facility and government agencies are identified in Section 2.5. Relevant information based on these interviews is included in Sections 2.5, 3.1, and other applicable report sections.

2.3. ADDITIONAL SCOPE CONSIDERATIONS

Items required by ASTM E2018-01 are included within the Capital Needs Assessment (CNA) and the associated Property Condition Checklist Report (PCCR). Additional "non-scope" considerations were addressed as part of EMG's CNA/PCCR. These additional items are identified as follows:

- The report will be reviewed by a Professional Engineer or a Registered Architect other than the Field Observer
- Property disclosure information is obtained from *EMG's Pre-Survey Questionnaire* (copy included in the Appendices of this Report)
- A limited visual assessment for ADA accessibility utilizing *EMG's Accessibility Checklist* (copy included in the Appendices of this Report)
- Preparation of the *Modified Capital Reserves Schedule* based upon a reserve term provided by the Client
- Provide a statement on the property's Remaining Useful Life
- Provide cross-reference indexing between cost tables and report text
- Determination of Federal Emergency Management Agency (FEMA) Flood Plain Zone for single address properties
- Determination of geographic Uniform Building Code Seismic Zone

2.4. PROPERTY'S REMAINING USEFUL LIFE ESTIMATE

Subject to the qualifications stated in this paragraph and elsewhere in this report, the Remaining Useful Life (RUL) of the property is estimated to be not less than 35 years. The Remaining Useful Life estimate is an expression of a professional opinion and is not a guarantee or warranty, expressed or implied. This estimate is based upon the observed physical condition of the property at the time of EMG's visit and is subject to the possible effect of concealed conditions or the occurrence of extraordinary events such as natural disasters or other "acts of God" that may occur subsequent to the date of EMG's site visit.

The Remaining Useful Life for the property is further based on the assumption that: (a) the immediate repairs, short term repairs, and future repairs for which replacement reserve funds are recommended are completed in a timely and workman-like manner, and (b) a comprehensive program of preventive and remedial property maintenance is continuously implemented using an acceptable standard of care. The Remaining Useful Life estimate is made only with regard to the expected physical or structural integrity of the improvements on the property, and no opinion regarding economic or market conditions, the present or future appraised value of the property, or its present or future economic utility, is expressed by EMG.

2.5. PERSONNEL INTERVIEWED

The following personnel from the facility and government agencies were interviewed in the process of conducting the CNA:

Name and Title	Organization	Phone Number
Jaime Knacke Site Manager	Sacramento Regional Housing Authority	916.449.6392

The CNA was performed with the assistance of Jaime Knacke, Site Manager, Sacramento Regional Housing Authority, the onsite Point of Contact (POC), who was cooperative and provided information, which appeared to be accurate based upon subsequent site observations. The onsite contact is somewhat knowledgeable about the subject property and answered most questions posed during the interview process. The POC's management involvement at the property has been for the past seven months.

2.6. DOCUMENTATION REVIEWED

Prior to the CNA, relevant documentation was requested that could aid in the knowledge of the subject property's physical improvements, extent and type of use, and/or assist in identifying material discrepancies between reported information and observed conditions. The review of submitted documents does not include comment on the accuracy of such documents or their preparation, methodology, or protocol. No documents were provided for review while performing the CNA.

2.7. PRE-SURVEY QUESTIONNAIRE

A Pre-Survey Questionnaire was sent to the POC prior to the site visit. The PSQ is provided in Appendix D of this report.

2.8. WEATHER CONDITIONS

Weather conditions at the time of the site visit were clear, with temperatures in the 90s (°F).

3. CODE INFORMATION, ACCESSIBILITY, AND MOLD

3.1. CODE INFORMATION, FLOOD ZONE AND SEISMIC ZONE

Currently the 2016 edition of the California Building Code is in effect in Sacramento County California for new construction and renovations. In addition, the following codes have also been adopted:

Code Table	
Year	**Title**
2016	NFPA
2016	California Mechanical Code
2016	California Plumbing Code
2016	California Electrical Code
2016	California Energy Code

If significant renovations are performed on a building or structure that total more than 50% of the value of the building, as determined by the building official, then the entire structure must be brought up to current codes. On lesser renovations the new material or equipment must meet the current building codes but the other existing building components or systems are "grandfathered" and do not have to meet the current codes.

According to the Flood Insurance Rate Map, published by the Federal Emergency Management Agency (FEMA) and dated August 16, 2012, the property is located in Zone X (shaded), defined as an area between the limits of the 100-year and 500-year flood; or certain areas subject to 100-year flood with average depths less than one foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the 100-year flood.

According to the 1997 Uniform Building Code Seismic Zone Map of the United States, the property is located in Seismic Zone 3, defined as an area of moderate to high probability of damaging ground motion.

3.2. ADA ACCESSIBILITY

Section 504 of the Rehabilitation Act of 1973 is a Federal accessibility law that was enacted on June 2, 1988. Section 504 applies to multi-family properties that have 15 or more units. The property must have a minimum of five percent mobility accessible units and two percent of the units for visual / audio hearing impairments. Exceptions can be considered due to undue financial burdens or structural restrictions. However, the exceptions do not relieve the recipients from compliance utilizing other units/buildings or other methods to achieve reasonable accommodations.

Reasonable Accommodations as described in 24 CFR 8.4(b)(i), 8.24 and 8.33 are described as follows: When a family member requires an accessible feature(s) or policy modification to accommodate a disability, property owners must provide such feature(s) or policy modification unless doing so would resulting in a fundamental alteration in the nature of its program or result in a financial and administrative burden.

The Uniform Federal Accessibility Standard (UFAS) 24 CFR part 40 was adopted by HUD and made effective October 4, 1984. The UFAS applies only to new construction or to alterations to the existing buildings. Alterations are defined as work that costs 50 percent or more of the building's value when the work performed occurs within a twelve month period. Apartments modified for mobility impaired residents are to comply with UFAS.

The Fair Housing Amendments Act (FHA) of 1988 amended Title VIII of the Civil Rights Act of 1968 to aid in the prohibitions against discrimination in housing on the basis of disability and familial status. The Fair Housing Act also made it unlawful to design and construct certain "covered multi-family dwellings" for first occupancy after March 13, 1991, in a manner that makes them inaccessible to persons with disabilities. The Fair Housing Act does not apply to this property due to the date of construction.

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" on the basis of disability. Generally the rental office and access from the site to the rental office must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Buildings completed and occupied after January 26, 1992 are required to comply fully with ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of complying to the extent allowed by structural feasibility and the financial resources available; otherwise a reasonable accommodation must be made.

During the CNA, a visual Accessibility Survey in general conformance with Section 504 Accessibility Standards and the Uniform Federal Accessibility Standards (UFAS) was conducted. It is understood by the Client that the visual observation described herein does not comprise a full measured Accessibility Compliance Survey, and that such a survey is beyond the scope of EMG's undertaking. Actual measurements were not taken to verify compliance.

Based on the date of construction, 1986, the accessibility standards that apply to the Project are the Section 504 standards and the ADA Guidelines for the community facilities. Presently, none of the units are accessible for individuals with mobility impairments according to property management.

There are also no units at present which have visual / audio modifications for the hearing impaired.

Based on EMG's observations, the facility did not appear to be in compliance with the Section 504 Standards and the ADA Guidelines. Elements that were observed at the property, which were not accessible as stated within the priorities of are as follows:

Restrooms

- Wrap drain pipes below lavatory with insulation; protect against contact with hot, sharp, or abrasive surfaces.

A full ADA Measured Compliance Survey may reveal additional aspects of the property that are not in compliance.

Corrections of these conditions should be addressed from a liability standpoint, but are not necessarily code violations. The Americans with Disabilities Act Accessibility Guidelines concern civil rights issues as they pertain to the disabled and are not a construction code, although many local jurisdictions have adopted the Guidelines as such. The cost to address the achievable items noted above is included as a lump sum in the Immediate Repairs.

3.3. MOLD

As part of the CNA, EMG completed a limited, visual assessment for the presence of visible mold growth, conditions conducive to mold growth, or evidence of moisture in readily accessible areas of the property. EMG interviewed property personnel concerning any known or suspected mold contamination, water infiltration, or mildew-like odor problems.

This assessment does not constitute a comprehensive mold survey of the property. The reported observations and conclusions are based solely on interviews with property personnel and conditions observed in readily accessible areas of the property at the time of the assessment. Sampling was not conducted as part of the assessment.

EMG did not note any visual indications of the presence of visible mold growth, conditions conducive to mold growth, or evidence of moisture in any readily accessible areas of the property.

4. EXISTING BUILDING EVALUATION

4.1. APARTMENT UNIT TYPES

The following table identifies the reported apartment types and apartment mix.

Apartment Unit Types and Mix		
Quantity	**Type**	**Floor Area**
36	1 Bedroom/1 Bathroom	510 SF
There is currently one vacant unit.		
There are currently no down units.		
36	**TOTAL**	

4.2. APARTMENT UNITS OBSERVED

Ten percent of the apartment units were observed in order to establish a representative sample and to gain a clear understanding of the property's overall condition. Other areas accessed included the exterior of the property and the interior common areas. The following apartments were observed.

Apartment Units Observed		
Unit/Floor	**Type**	**Comments**
31	1 Bedroom/1 Bathroom	Vacant. Fair condition.
72	1 Bedroom/1 Bathroom	Occupied. Fair condition.
13	1 Bedroom/1 Bathroom	Occupied. Fair condition.
21	1 Bedroom/1 Bathroom	Occupied. Fair condition.
43	1 Bedroom/1 Bathroom	Occupied. Fair condition.
81	1 Bedroom/1 Bathroom	Occupied. Fair condition.
63	1 Bedroom/1 Bathroom	Occupied. Fair condition.
52	1 Bedroom/1 Bathroom	Occupied. Fair condition.

All areas of the property were available for observation during the site visit.

A "down unit" is a term used to describe a non-rentable apartment unit due to poor conditions such as fire damage, water damage, missing appliances, damaged floor, wall or ceiling surfaces, or other significant deficiencies. According to the POC, there are no down units.

5. SITE IMPROVEMENTS

5.1. UTILITIES

Site Utilities			
Utility	**Supplier**	**Action**	**Condition**
Sanitary sewer	City of Sacramento Water District	RM	Good
Storm sewer	City of Sacramento Water District	RM	Good
Domestic water	City of Sacramento Water District	RM	Good
Electric service	Sacramento Municipal Utility District	RM	Good
Natural gas service	Not applicable	NA	NA

Observations/Comments:

- No repair costs are recommended. Routine maintenance is recommended over the evaluation period.

5.2. PARKING, PAVING, AND SIDEWALKS

Item	Description	Action	Condition
Parking and Paving	Surface Lots 38 total parking stalls Asphalt	RR	Fair
Sidewalks, Curbs and Gutters	Concrete	RM	Fair
Site Access	Two driveways into site from adjacent street.	RM	Good
Security/Access Control	Pedestrian and vehicle metal gates	RR	Fair

Observations/Comments:

- There are no significant signs of cracks or surface deterioration. In order to maximize the pavement life, pothole patching, crack sealing, seal coating, and striping of the asphalt paving is recommended over the evaluation period.
- The security gates are in fair condition. Replacement is recommended over the evaluation period. The cost of this work is included in the Replacement Reserves

5.3. DRAINAGE SYSTEMS AND EROSION CONTROL

Item	Description	Action	Condition
Drainage Systems and Erosion Control	Surface flow, inlets, underground piping	RM	Fair

Observations/Comments:

- No repair costs are recommended. Routine maintenance is recommended over the evaluation period.

5.4. TOPOGRAPHY AND LANDSCAPING

Item	Description	Action	Condition
Topography	Relatively flat	RM	Fair
Landscaping	Trees, grass, shrubs	RR	Fair
Irrigation	Automatic underground system	RM	Fair
Adjacent Properties	Commercial, residential,	RM	Fair
Retaining Walls	Not applicable	NA	NA

Observations/Comments:

- The landscaping is in fair condition. Replacement is recommended over the evaluation period. The cost of this work is included in the Replacement Reserves.

5.5. GENERAL SITE IMPROVEMENTS

Item	Description	Action	Condition
Signage	No signs	NA	NA
Site Lighting	Parking lot light standards, Pole-mounted fixtures	RR	Fair
Building Lighting	Wall-mounted fixtures	RR	Fair
Pools	Not applicable	NA	NA
Pool Equipment	Not applicable	NA	NA
Pool Deck	Not applicable	NA	NA
Pool Fencing	Not applicable	NA	NA
Site Fencing	Metal tube, wood board, and CMU	RR	Fair
Site Amenities	None	NA	NA
Dumpsters	Set on pads in CMU enclosures	RM	Good

Observations/Comments:

- The metal tube perimeter fencing is in fair condition. Replacement is recommended over the evaluation period. The cost of this work is included in the Replacement Reserves.
- The wood board perimeter fencing is in fair condition. The wood fence will require refinishing over the evaluation period. The cost of this work is included in the Replacement Reserves

6. BUILDING ARCHITECTURAL AND STRUCTURAL SYSTEMS

6.1. FOUNDATIONS

Item	Description	Action	Condition
Floor	Concrete slab-on-grade	RM	Good
Footings	Concrete perimeter footings	RM	Good
Basements and Crawl Spaces	Not applicable	NA	NA

Observations/Comments:

- No repair costs are recommended. Routine maintenance is recommended over the evaluation period.

6.2. SUPERSTRUCTURE

Item	Description	Action	Condition
Walls	Conventional wood stud-framed walls	RM	Good
Floor structure	Slab-on-grade	RM	Good
Roof structure	Wood rafters or pre-manufactured trusses with plywood sheathing	RM	Good

Observations/Comments:

- No repair costs are recommended. Routine maintenance is recommended over the evaluation period.

6.3. ROOFING

Item	Description	Action	Condition
Type	Gabled		
Finish	Asphalt shingles	RR	Fair
Age	2010		
Drainage	Gutters and downspouts	RM	Fair
Flashing	Sheet metal	RM	Fair
Insulation	Fiberglass batts	RM	Fair
Parapet and Copings	Not applicable	NA	NA

Item	Description	Action	Condition
Soffits, Eaves, and Fascias	Exposed soffits	RM	Fair
Skylights	Not applicable	NA	NA
Attics	Wood joists	RM	Good
Ventilation	Gable end vents	RM	Fair
Other	Not applicable	NA	NA

Observations/Comments:

- The asphalt shingle roofing is in fair condition. Replacement is recommended over the evaluation period. The cost of this work is included in the Replacement Reserves.

6.4. EXTERIOR WALLS

Item	Description	Action	Condition
Typical Finishes and Cladding	Stucco	RR	Fair
Other finishes	Painted wood trim, wood siding at gables	RR	Fair
Sealants	Caulking and sealants at joints, finish transitions, and at wall openings.	RM	Fair

Observations/Comments:

- The exterior finishes are in fair condition. Painting and patching is recommended over the evaluation period. The cost of this work is included in the Replacement Reserves.

6.5. EXTERIOR AND INTERIOR STAIRS

Not applicable. There are no stairs at the property.

6.6. WINDOWS AND DOORS

Item	Description	Action	Condition
Windows	Aluminum-framed sliding units with screens	RR	Fair
Entrance Doors	Metal-insulated doors	RR	Fair
Door Hardware	Knob handles, spy eyes, deadbolts	RM	Fair
Patio/Balcony Doors	Not applicable	NA	NA
Overhead Doors	Not applicable	NA	NA
Screen Doors	Aluminum screen door	RR	Fair

Observations/Comments:

- The windows, doors and screen doors are in fair condition. Replacement is recommended over the evaluation period. The cost of this work is included in the Replacement Reserves.

6.7. PATIO, TERRACE, AND BALCONY

Not applicable. There are no patios, terraces or balconies.

6.8. COMMON AREAS, ENTRANCES, AND CORRIDORS

The following table identifies the interior common areas and generally describes the finishes in each common area.

Description					
Renovations	The interior finishes in the common areas have not been renovated within the last 10 years.				
Area	**Floor**	**Walls**	**Ceilings**	**Action**	**Condition**
Community Room	Vinyl Tile	Painted drywall	Painted drywall	RR	Fair
Common Area Kitchen	Vinyl Tile	Painted drywall	Painted drywall	RR	Fair
Common Area Kitchen Appliances	Residential style appliances similar to apartment unit appliances.			RM	Fair
Common Area Restrooms	Sheet vinyl	Painted drywall	Painted drywall	RR	Fair
Laundry Room	Vinyl tile	Painted drywall	Painted drywall	RR	Fair
Washers and Dryers	Four washing machines (1 front-load) and four electric clothes dryers Owned and maintained by outside contractor			RM	Good

Observations/Comments:

- Based on their estimated Remaining Useful Life (RUL), common area vinyl tile replacement is anticipated over the evaluation period. The cost of this work is included in the Replacement Reserves.
- The interior wall finishes are in fair condition. Painting and patching is recommended over the evaluation period. The cost of this work is included in the Replacement Reserves

7. BUILDING MECHANICAL AND ELECTRICAL SYSTEMS

7.1. BUILDING HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

Item	Description	Action	Condition
Age and Type	Fan coil appears to be original. Exterior heat pump unit dated 1999.		
Heating and Air-conditioning	For community room / laundry room- Interior electric fan-coil, Exterior heat pump pad-mounted condenser	RR	Fair
Refrigerant	R-22		
Quantity/Capacity	One at 5 tons		
Controls	Manual thermostat in community building		
Ducts	Concealed ducts above ceilings and soffits		
Ventilation	Bathroom exhaust fans	RM	Fair

Observations/Comments:

- Based on its estimated Remaining Useful Life (RUL), HVAC replacement is anticipated over the evaluation period. The cost of this work is included in the Replacement Reserves.

7.2. BUILDING PLUMBING

Item	Description	Action	Condition
Water Meter	Meters in vaults along public street	RM	Fair
Domestic Water Supply	Copper pipe	RM	Fair
Domestic Waste and Ventilation	PVC pipe	RM	Fair
Domestic Hot Water	Electric water heater for Laundry Room, 119.9-gal at 18 kW Electric water heater for Community Room, 30-gal	RR	Fair
Common Area Restroom Fixtures	Residential grade bath fixtures and accessories (2 public toilet rooms)	RM	Fair

Observations/Comments:

- Based on its estimated Remaining Useful Life (RUL), water heater replacement is anticipated over the evaluation period. The cost of this work is included in the Replacement Reserves.

7.3. BUILDING GAS DISTRIBUTION

- Not applicable. There is no gas service to the site.

7.4. BUILDING ELECTRICAL

Item	Description	Action	Condition
Service Type	Underground lines to pad-mounted transformers	RM	Fair
Service Size	120/208 volt, three-phase, four-wire alternating current (AC)		
Electric Meters and Equipment	Meters along rear elevations, circuit breaker panels located inside	RM	Fair
Wiring	Copper wire in non-metallic sheathed cable	RM	Fair
Other Equipment	Not applicable	NA	NA

Observations/Comments:

- No repair costs are recommended. Routine maintenance is recommended over the evaluation period.

7.5. BUILDING ELEVATORS AND CONVEYING SYSTEMS

Not applicable. There are no elevators or conveying systems.

7.6. FIRE PROTECTION SYSTEMS

Item	Description	Action	Condition
Sprinkler Systems	Not applicable	NA	NA
Other Equipment and Devices	Hard-wired smoke detectors in common areas and at least one in every apartment unit	RM	Good
Fire Extinguishers	Located throughout exterior spaces. Last service date in January, 2017	RM	Good
Fire Hydrants	Located along parking lot drive aisles	RM	Good
Stair Wells	Not applicable	NA	NA
Smoke Detectors	In the immediate vicinity of the bedrooms outside of the bedroom	IR	N/A

Observations/Comments:

- To meet the NFPA 101 requirements, smoke detectors are required in every bedroom, in the immediate vicinity of the bedrooms outside of the bedroom, and on all levels of the dwelling unit. Additionally, the smoke detectors must be hard-wired, or the battery operated-type must have 10-year life, be tamper resistant, and are not interchangeable with appliances or toys. To meet the current code requirements, additional smoke detector installation is required in each bedroom. The cost of this work is included in the Immediate Repairs.

8. DWELLING UNITS

8.1. INTERIOR FINISHES

The following table generally describes finishes in apartment units:

Item	Description			Action	Condition
Interior Doors	Hollow core wood doors with knob handle hardware			RM	Fair
Wardrobe Doors	Siding doors			RM	Fair
Area	**Floor**	**Walls**	**Ceilings**		
Living room	Vinyl tile	Painted drywall	Painted drywall	RR	Fair
Kitchen	Sheet vinyl	Painted drywall	Painted drywall	RR	Fair
Bedroom	Vinyl tile	Painted drywall	Painted drywall	RR	Fair
Bathroom	Sheet vinyl	Painted drywall Fiberglass tub surround	Painted drywall	RR	Fair

Observations/Comments:

- The interior finishes in the apartment units are in fair condition. Based on its estimated Remaining Useful Life (RUL), painting and vinyl flooring replacement is anticipated over the evaluation period. The cost of this work is included in the Replacement Reserves.

8.2. APPLIANCES

Each apartment unit kitchen typically includes the following appliances:

Item	Description	Action	Condition
Age of Appliances	Apartment appliances are reportedly replaced on an "as needed" basis and vary in age and condition.		
Refrigerator	Frost-free	RR	Fair
Range	Electric	RR	Fair
Hood	Ducted	RR	Fair
Dishwasher	Not provided	NA	NA
Disposal	Provided	RR	Fair
Washers and Dryers	Not provided	NA	NA
Kitchen Cabinets	Stained wood	RR	Fair
Kitchen Countertops	Plastic-laminated wood	R	Fair

Observations/Comments:

- Based on their estimated Remaining Useful Life (RUL), kitchen appliance replacement is anticipated over the evaluation period. The cost of this work is included in the Replacement Reserves.

8.3. HVAC

Item	Description	Action	Condition
Age and Type	All HVAC equipment replaced in 2010. HVAC equipment is reportedly replaced on an "as needed" basis.		
Heating and Air-conditioning	Split systems with remote heat pumps	RR	Fair
Refrigerant	R-410A		
Quantity/Capacity	36 at 1.5 tons each		
Controls	Manual thermostat in each apartment unit		
Ducts	Concealed ducts above ceilings and soffits		
Ventilation	Bathroom and kitchen exhaust fans	RR	Fair

Observations/Comments:

- Based on their estimated Remaining Useful Life (RUL), the HVAC equipment is recommended for replacement over the evaluation period. The cost of this work is included in the Replacement Reserves Estimate.

8.4. PLUMBING

Item	Description	Action	Condition
Age of Water Heaters	The apartment unit water heaters vary in age. Apartment unit water heaters are reportedly replaced on an "as needed" basis.		
Domestic Hot Water	Electric water heaters 36 at 30 gallons	RR	Fair
Bathroom Fixtures	Water closet, sink, vanity, fiberglass tubs	RR	Fair
Bathroom Accessories	Typical residential accessories including medicine cabinets, towel bars, and mirrors	RM	Fair

Observations/Comments:

- The bathroom fixtures and accessories are generally in fair condition and will require minor replacements and routine maintenance over the evaluation period. A budget for as-needed bathroom renovation is included in the Replacement Reserves Estimate.

- The water heaters appear to be in fair condition. Based on their estimated Remaining Useful Life (RUL), water heater replacement is anticipated over the evaluation period. The cost of this work is included in the Replacement Reserves.

8.5. ELECTRICAL

Item	Description	Action	Condition
Service Size	Minimum 125 amps each	RM	Fair
Distribution	Circuit breaker panels	RM	Fair
Fixtures	Fluorescent and incandescent fixtures	RM	Fair
GFCI Protection	Bathrooms and kitchen	RM	Fair

Observations/Comments:

- GFCI outlets were observed in kitchens and bathrooms.

9. OTHER STRUCTURES

Item	Description	Action	Condition
Community Building	Conventional wood framed structure similar to apartment buildings	RM	Fair

Observations/Comments:

- No repair costs are recommended. Routine maintenance is recommended over the evaluation period.

10. APPENDICES

Appendix A: Photographic Record

Appendix B: Supporting Documentation

Appendix C: EMG Accessibility Checklist

Appendix D: Pre-Survey Questionnaire and Documentation Request Form

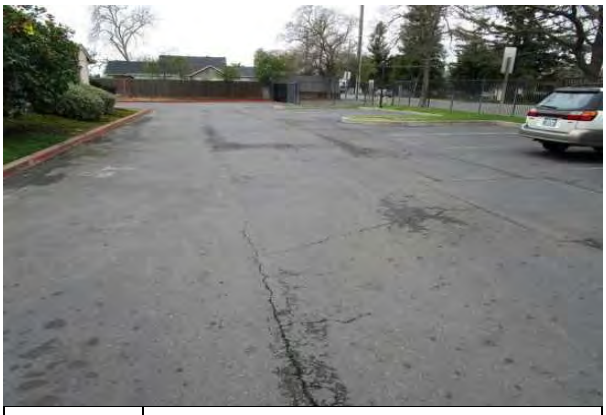
APPENDIX A:
PHOTOGRAPHIC RECORD

#1	FRONT ELEVATION

#2	LEFT ELEVATION

#3	REAR ELEVATION

#4	RIGHT ELEVATION



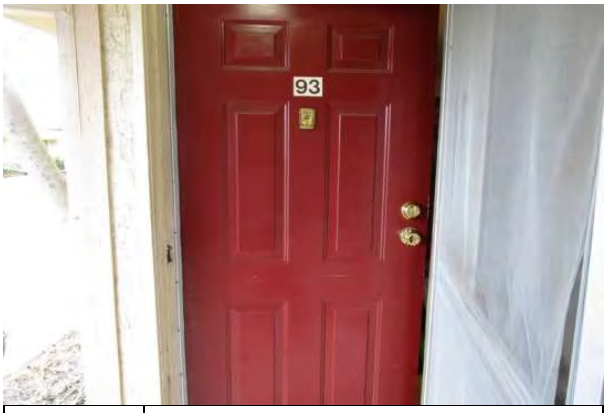
#5	ASPHALT PARKING LOT

#6	CONDENSING UNIT

#7	DISTRIBUTION PANEL

#8	WATER HEATER

#9	FURNACE, ELECTRIC



#10	EXTERIOR DOOR, STEEL INSULATED

#11	UNIT KITCHEN

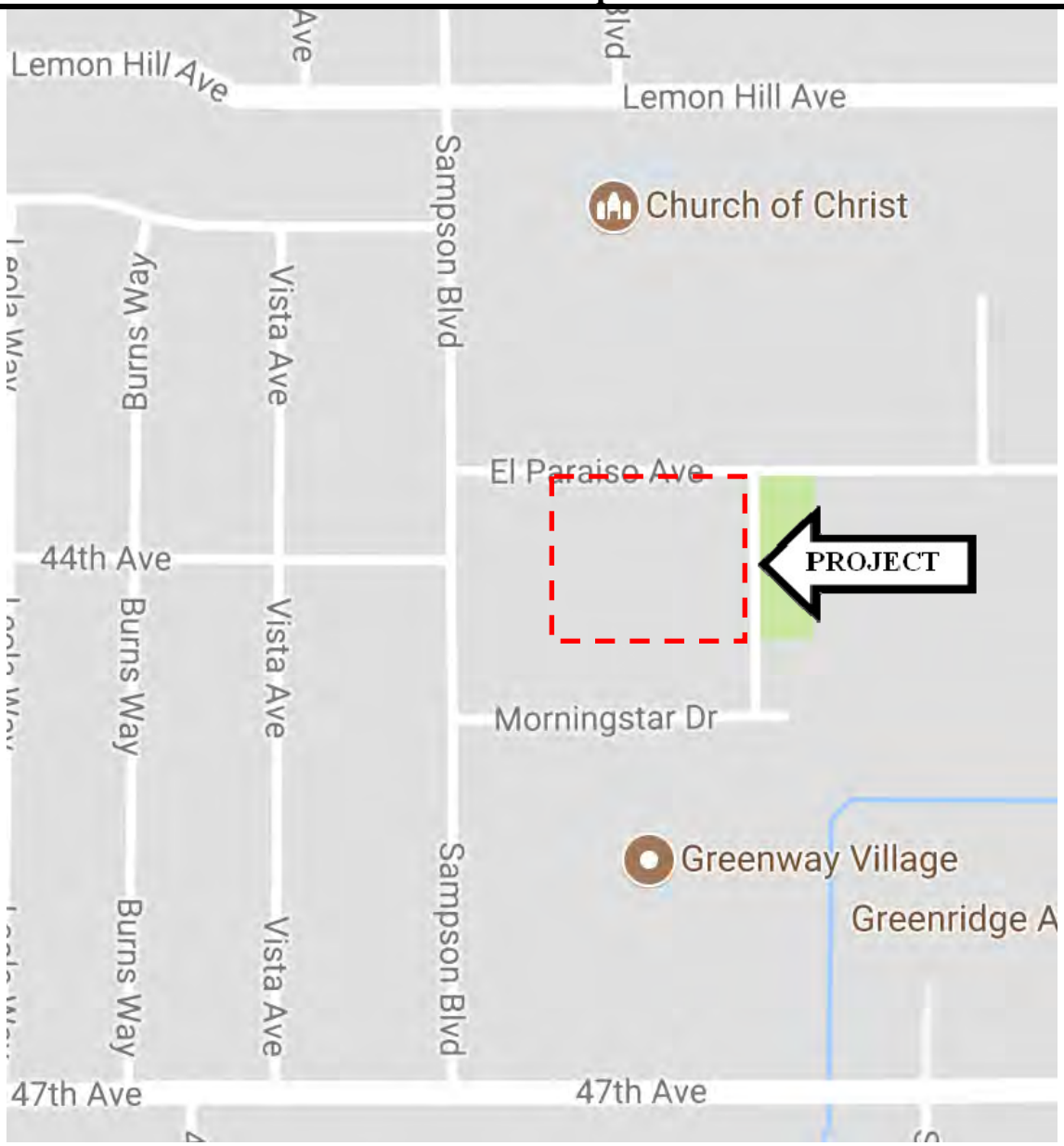
#12	UNIT BATHROOM

#13	UNIT LIVING ROOM

#14	COMMUNITY BUILDING INTERIOR

APPENDIX B:
SUPPORTING DOCUMENTATION

Street Map

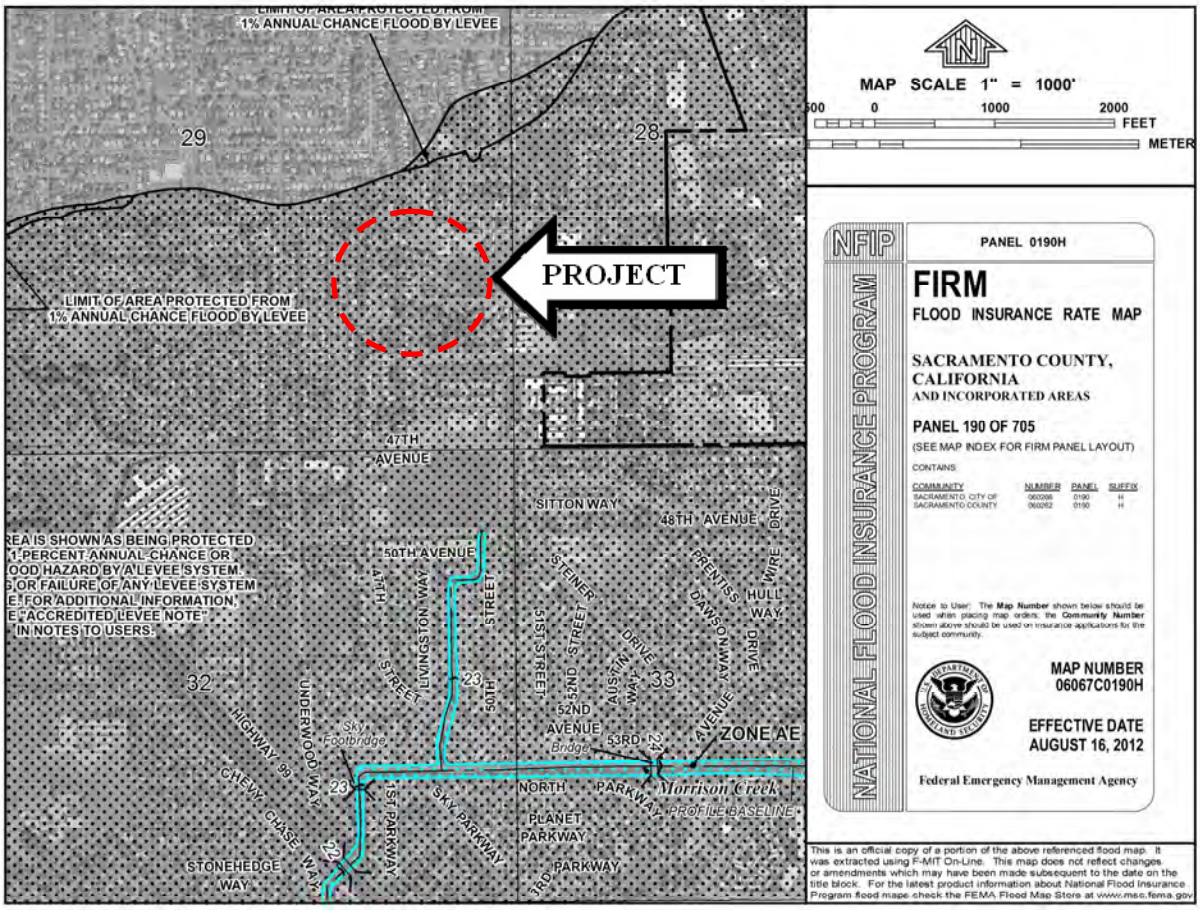


EMG	**Source:**	**Project Number:** 136742.19R000-004.306
N	**Google** **The north arrow indicator is an approximation of 0° North.**	**Project Name:** Pointe Lagoon - El Paraiso **On-Site-Date:** March 7, 2019

Aerial Photograph

EMG	**Source:** Google Earth	**Project Number:** 136742.19R000-004.306
N	The north arrow indicator is an approximation of 0° North.	**Project Name:** Pointe Lagoon - El Paraiso
		On-Site-Date: March 7, 2019

Flood Map



EMG

Source:

FEMA

Date: August 16, 2012

Project Number:

136742.19R000-004.306

Project Name:

Pointe Lagoon - El Paraiso

On-Site-Date:

March 7, 2019

The north arrow indicator is an approximation of 0° North.

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Faucet Aerators
EAP2-b	**Location**: All Apartment Bathrooms

Property Type:	Residential	Estimated No. of Operational Weeks	52
		Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Number of Occupants Affected By Retrofit	72		Number of Occupants Affected by Retrofit	72	
Do You Want To Replace Kitchen Faucets Aerators	No	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	Yes	*(Select)*
Total Number of Faucet Aerators To Be Replaced	0		Total Number of Faucet Aerators To Be Replaced	36	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	-	GPM	GPM of Existing Faucet Aerators	2	GPM
GPM of Proposed Faucet Aerator	-	GPM	GPM of Proposed Faucet Aerator	1	GPM
Estimated Number of Uses Per Day	0		Estimated Number of Uses Per Day	5	
Estimated Total Faucet Use Time Per Occupant	0.00	Mins	Estimated Total Faucet Use Time Per Occupant	8.10	Mins

Annual Water Savings From Installing Low Flow Aerators: 127.37 kGal

8.1 Min/Person/day @AWWA

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Electric	(Select)	Property Location in United States	Central Localities	
Energy Factor of Domestic Hot Water Heater:	0.86	EF	Heating Fuel Tariff	$0.14	$/kWh
Hot Water Discharge Temperature at Faucet	110.00	°F	Water Tariff ($/1000 Gal)	$5.00	$/kGal
Equivalent Heating Fuel Savings:	15,386	kWh	Annual Cost Savings In Form of Water	$637	$
Savings Discounted by 15% to Account For Cold Water Use					
Annual Water Savings	127.37	kGal	Annual Energy Savings From Water Heater	$2,154	$

COST BENEFIT ANALYSIS					
Estimated Total Annual Cost Savings	$2,791	$$	Estimated Total Installation Cost	$358	$$
Simple Payback Period	0.13	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $358 Estimated Annual Cost Savings: $2,791 Simple Payback Period (Yrs): 0.13

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Faucet Aerators
EAP2	**Location**: All Apartment Kitchens

Property Type:	Residential	Estimated No. of Operational Weeks	52
		Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Number of Occupants Affected By Retrofit	72		Number of Occupants Affected by Retrofit		
Do You Want To Replace Kitchen Faucets Aerators	Yes	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	No	*(Select)*
Total Number of Faucet Aerators To Be Replaced	36		Total Number of Faucet Aerators To Be Replaced	0	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	2.2	GPM	GPM of Existing Faucet Aerators		GPM
GPM of Proposed Faucet Aerator	1	GPM	GPM of Proposed Faucet Aerator		GPM
Estimated Number of Uses Per Day	4		Estimated Number of Uses Per Day	4	
Estimated Total Faucet Use Time Per Occupant	4.05	Mins	Estimated Total Faucet Use Time Per Occupant	0.00	Mins
(hide) Water Savings- Kitchen	76.42	kGal	(hide) Water Savings From Bathroom/yr	0.00	kGal

Annual Water Savings From Installing Low Flow Aerators: 76.42 kGal

8.1 Min/Person/day @AWWA

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Electric	(Select)	Property Location in United States	Central Localities	
Energy Factor of Domestic Hot Water Heater:	0.86	EF	Heating Fuel Tariff	$0.14	$/kWh
Hot Water Discharge Temperature at Faucet	132.60	°F	Water Tariff ($/1000 Gal)	$5.00	$/kGal
Equivalent Heating Fuel Savings: *Savings Discounted by 15% to Account For Cold Water Use*	13,404	kWh	Annual Cost Savings In Form of Water	$382	$
Annual Water Savings	76.42	kGal	Annual Energy Savings From Water Heater	$1,877	$

COST BENEFIT ANALYSIS

Estimated Total Annual Cost Savings	$2,259	$$	Estimated Total Installation Cost	$358	$$
Simple Payback Period	0.16	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $358 Estimated Annual Cost Savings: $2,259 Simple Payback Period (Yrs): 0.16

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Shower Heads
EAP1	Location: All Apartment Showerheads

Total Number of Shower Heads To Be Replaced		36	
No. of Shower Days/Year		292	
No. of Residents		72	
Estimated Time Per Shower		8.10	Mins
GPM of Existing Shower Head		2.5	GPM
GPM of Proposed Shower Head *	*(Select)*	1.75	GPM

**(Federal Law Requires all new shower heads to have a max flow rate of 2.5 GPM)*

Water & Energy Savings Calculations

Property Location in United States		Central Localities	
Select Type of Water Heater Fuel	*(Select)*	Electric	
Average Hot Water Discharge Temperature		110.00	°F
Annual Water Savings *(Assuming 1 shower/day/person)*		128	kGal
Energy Factor of Domesitc Hot Water Heater:		0.86	EF
Equivalent Heating Fuel Energy savings:		61,855	kBtu

Cost Savings Calculations

Equivalent Heating Fuel Savings Electric		18,129	kWh
Water Tariff ($/1000 Gal)	$5.00	$/kGal	
Annual Cost Savings In Form of Water		$639	$$
Annual Energy Savings From Water Heater		$2,538	$$
Estimated Total Annual Cost Savings		$3,177	$$

Estimated Installation Costs

Estimated Total Installation Cost		$1,361	$$
Simple Payback Period		0.43	Years
Type of Recommendation		Capital Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG.May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming off the shower heads, savings can be generated in the form of reduced water and sewer costs. Additional savings can be realized via reduction in the demand for hot water. Currently Federal law requires all new shower heads to have a maximum flow rate of 2.5 GPM.

EMG recommends replacing the existing shower heads with new low flow shower heads as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment:	$1,361	Simple Payback:	0.43
Annual Cost Savings:	$3,177		

Property of EMG Corp, All Rights Reserved

UIC	Insulate Hot Water Pipes
EAH6A	Location: All Apartments

ENTER EXISTING CONDITION

Type of Heating Fuel	Electric	(Select)	System Under Consideration:	Domestic Water Heaters	
Enter Estimated Length of Exposed Pipe (Ft)	108.00		Average Diameter of the Exposed Pipe	0.08	(Ft)
Average Ambient Space Temperature Around The Exposed Pipe (°F)	72.00	◦F	Average Temperature of Fluid In The Pipe (◦F)	120.00	◦F
Estimated Annual Heating Plant Efficiency (%):	86%		Estimated Annual Heating Hours of Operation (Hrs)	8,760	Hrs

EXISTING STATE			PROPOSED		
Enter The Existing Net Effective R-Value of The Return Pipe	0.62	Sq.Ft deg F.hr/btu	Enter The Proposed Net Effective R-Value of The Return Pipe	3.00	Sq.Ft deg F.hr/btu
Annual Conduction Losses From Existing Insulation	18,411	kBtu/Yr	Annual Conduction Losses From Proposed Insulation	3,805	kBtu/Yr

ENERGY SAVINGS

Estimated Energy Savings	14,606	kBtu	Estimated Total Annual Input Heating Energy Savings	16,984	kBtu
Cost of Heating Fuel/Unit:	$0.14	$/kWh	Estimated Total Annual Input Heating Energy Savings	4,978	kWh

COST ANALYSIS

Estimated Cost For Adding Insulation	$1,698	$$	Total Annual Estimated Cost Savings	$697	$$
Simple Pay Back Period	2.44	Years	*Type of Recommendation*	Capital Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

EMG recommends insulating hot water pipes with cylindrical half-sections of insulation or with flexible cell material. Large pipes should be insulated with flexible material. If access to the pipes for servicing is required, rigid insulation (curved or flat segments or cylindrical half-, third-, or quarter-sections) offers an advantage. Fittings such as elbows, valves, and tees may be insulated with preformed insulation, fabricated fitting insulation, individual pieces cut from sectional straight pipe insulation, or insulating cements. Fitting insulation should be cemented with pipe insulation (ASHRAE 1985). In marginally heated spaces, the heat loss from the pipe might be used to maintain temperatures above freezing. In that case, it might be desirable to leave a portion of the pipe un-insulated.

SUMMARY:

Initial Investment:	$1,698	Simple Payback:	2.44	Years
Energy Cost Savings:	$697			

Property of EMG Corp, All Rights Reserved

UIC	**Upgrade Electric Heating System To Heat Pumps**
EAH11-A	**Location:**

ASHRAE Climatic Zone:	Zone-3	*Side of Building*		*Specify Location Here*		*Specify Location Here*		*Specify Location Here*	
Select Existing Heating System Type		**Heat Pump - Split System**		**PTAC**		**PTAC**		**PTAC**	
Number of Existing Systems:		36	Qty		Qty		Qty		Qty
Output Capacity of Heating System/Unit:		18,000.00	btuh		kW		kW		kW
Output Capacity of Heating System:		18,000	Btuh	0	Btuh	0	Btuh	0	Btuh
Existing COP of Heating System:		2.48	COP		COP		COP		COP
Estimated Annual Heating Hours:		915	Hrs		Hrs		Hrs		Hrs
Auxiliary Heating In Heatpumps:		5	kW		kW		kW		kW
Cooling Capacity of Each System:		18,000	Btuh		Btuh		Btuh		Btuh
Existing EER of Cooling System:		8.48	EER		EER		EER		EER
Estimated Annual Cooling Hours:		610	Hrs		Hrs		Hrs		Hrs
Install Programmable Thermostats With Heatpumps:		Yes		Yes		Yes		Yes	
Current Energy Consumption From Cooling:		46,613	kWh	0	kWh	0	kWh	0	kWh
Current Energy Consumption From Heating:		88,996	kWh	0	kWh	0	kWh	0	kWh
Total Existing Electric Consumption:		135,610	kWh	0	kWh	0	kWh	0	kWh

Proposed System

Heat pump Type	**Air-Source Split Heat Pump System**		**Air-Source PTHP System**		**Water-Source System**		**Water-Source System**	
Proposed Number of Systems:	36	Qty	1	Qty	2	Qty		Qty
Proposed Heat pump Capacity:	18,000	Btuh	-	Btuh	-	Btuh	-	Btuh
Proposed COP:	3.59	COP	-	COP	-	COP	-	COP
Proposed Emergency Heat Rating:	5.28	kW	0.00	kW	0.00	kW	0.00	kW
Proposed Energy Consumption From Cooling:	27,105	kWh	0	kWh	0	kWh	0	kWh
Proposed Energy Consumption From Heating:	30,098	kWh	0	kWh	0	kWh	0	kWh
Total Proposed Electric Consumption:	57,203	kWh	0	kWh	0	kWh	0	kWh
Total Electric Savings:	78,407	kWh	0	kWh	0	kWh	0	kWh
Total Cost For Replacement:	$71,905.42		$0.00		$0.00		$0.00	
Annual Energy Cost Savings:	$10,977		$0		$0		$0	
Individual Simple Payback	6.55	Yrs	-	Yrs	-	Yrs	-	Yrs
Total Initial Investment:	$71,905.42				Total Annual Electric Savings		78,407	kWh
Total Annual Cost Savings	$10,976.98				Overall Simple Payback Period:		6.55	Yrs

Disclaimer: PREPARED BY EMG. MAY 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

Property of EMG Corp. All Rights Reserved

UIC	Control External Air Leakage In Residential Buildings
EAE4B	Location: All Apartments

ENTER EXISTING CONDITION

Total No. of Units to be Air Sealed	36	Select Building Type	Low Rise	
Units on Top Floor/Requiring Airsealing Through Attic	36	Building Infiltration Tightness	Average (0.6-0.8 ACH)	
Units on Lower Floors	0	Estimated Space Volume Under Consideration	117,504	Cu.Ft
Insert Existing Estimated Air Change Rate/Hr (ACH 1): *(Existing Air Changes Per Hour, 1.5 is very leaky and 0.35 ideal)*	1.00	Cubic Feet/Min (CFM 1):	1,958	
Insert Proposed Estimated Air Change Rate/Hr (ACH 2):	0.65	Cubic Feet/Min (CFM 2):	1,273	

WINTER			SUMMER		
Select Type of Heating Fuel	Electric (Select)		Is the Building Cooled?	Yes	
Estimated Annual Heating Plant Efficiency	2.48	COP	Estimated Annual Cooling Plant Efficiency	8.48	EER
Annual Heating Degree Days(HDD):	2,711		Annual Cooling Degree Days(CDD):	1,479	
Estimated Total Annual Input Heating Energy Savings	5,692	kWh	Estimated Total Annual Input Cooling Energy Savings	3,099	kWh
Cost/Unit of Heating Fuel:	$0.14	$/kWh	Cost/Unit For Electricity	$0.14	$$
Estimated Annual Heating Cost Savings	$797	$$	Estimated Annual Cooling Cost Savings	$434	$$

Cost Analysis

Initial Investment to Air Seal Top Floor Units	$350	Initial Investment to Air Seal All Other Floors	$350	
Estimated Annual O&M Savings	$62	Total Cost For Air Sealing The Building	$12,600	
Total Estimated Annual Cost Savings	$1,292	Simple Pay Back Period	9.75	Yrs
Type of Recommendation	Capital Cost ECM Recommendation			

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

One of the most commonly used methods for reducing air leakage through building structures is caulking and weather stripping.

Particularly effective measures include caulking cracks around windows and door frames and weather stripping around windows and doors. Weather-stripping and caulking of doors and windows, helps in thermally isolating of the building with the outside atmosphere. This prevents the infiltration of external un-conditioned air along with moisture and humidity into the conditioned space at the same time, prevents the conditioned air from escaping out. A precisely thermally isolated building directly affects the cooling and heating load on the facilities HVAC system as it has to put in less effort in maintaining the desired temperature inside the facility. As per ASHRAE a well insulated and ventilated building should have an air change rate not more than 0.35 per hour.

In order to ensure proper thermal isolation of the property, EMG recommends ensuring that the weather-stripping and caulking of all external doors and windows remains intact. Its also recommended that door sweeps be installed under all the doors opening into conditioned space. Any visible cracks between the window frame and wall should be plugged by caulking.

In case of building with window airconditioners, EMG recommends use of interior/exterior window airconditioner covers so as to prevent cold air drafts into the conditioned space during the winter so as to save on heating costs.

SUMMARY:

Initial Investment:	$12,600	Simple Pay Back Perio	9.75 Yrs
Annual Energy Cost Savings	$1,292		

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Linear Fluorescent Lamps
EAL2-S	Location: All Apartment Kitchen and Bathroom

Existing Lighting System

	Kitchen Ceiling	Bathroom Vanity					Stairwell- BiLevel Lighting
Current Type of Lamp: *(Select)*	F42T12	F41T12					
Current Annual Avg Hrs of Operation:	730 hrs	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	8,760 hrs
Existing Number of Fixtures:	36	36	0	0	0	0	0

Proposed Lighting System

Proposed Lamp Replacement: *(Select)*	F42LED	F41LED	-	-	-	-	F42LED
Proposed Annual Avg. Hours of Operation	730 hrs	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	2,190 hrs
Proposed Number of Fixtures:	36	36	0	0	0	0	0
Proposed Lighting Control: *(Select)*	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch
No. of Lighting Controls:	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty

Energy Saving Calculation

Estimated Annual Energy Savings	972 kWh	854 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Are The Ballast's Being Replaced: *(Select)*	No	No	No	No	No	No	No
Estimated Material Cost:	$1,727 $	$863 $	$0 $	$0 $	$0 $	$0 $	$0 $
Estimated Labor Cost:	$297 $	$148 $	$0 $	$0 $	$0 $	$0 $	$0 $
Total Installation Cost:	$2,023 $	$1,012 $	$0 $	$0 $	$0 $	$0 $	$0 $

Estimated Total Material Cost:	$2,590 $$	Estimated Total Labor Cost:	$546	Total kWh Saving	1,826 kWh
Electric Rate:	$0.14 $$	**Total Initial Investment For Retrofit**	$3,136	Estimated Annual O&M Cost Savings	$16
				Estimated Annual Cost Savings	$272
Simple Pay back Period	11.53 Yrs	*Type of Recommendation*	**Capital Cost ECM Recommendation**		

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

Fluorescent lighting is recommended for areas where color sensitivity is an important criterion (e.g., offices or small parts assembly rooms). Fluorescent tubes are currently available that produce a higher light output (more lumens per watt) than standard fluorescent tubes. There are efficient 40-watt lamps that produce 8% to 10% more light than standard lamps. The 34-watt fluorescent tubes use 15% less power than standard lamps, while producing about 8% less light. Since the human eye responds to light exponen-tially, rather than linearly, the difference is often unnoticeable. "T8" fluorescent lamps use only 32 watts, but existing fixtures must be replaced. Therefore, EMG recommends retrofitting all the existing fixtures with new 17.5W LED Tube lamps. The LED tubes provide a 180 degree light dispersal, and can be retrofitted in the existing ligt fixture. The LED tubes are rated at 50,000 hrs as compared to 20,000 to 30,000 hrs ratings for conventional fluorescent lamps.

It is important to replace all lamps when re-lamping a fluorescent fixture, never mix energy-efficient and standard lamps with the same ballast. Ensure that the fluorescent ballast is compatible with the energy-efficient lamps. It must be noted that when switching from T-12 magnetic ballast to T8 lamps, the ballasts should be replaced with instant start electrical ballast. Also it should be noted that when installing an occupancy sensor/motion sensor, rapid start electronic ballast should be used.

SUMMARY:

Initial Investment: $2,590 Simple Payback: 11.53 Years

Annual Cost Savings: $272

Property of EMG Corp, All Rights Reserved

UIC	Replace Incandescent/CFL /Halogen Lamps With LED Lamps
EAL1B-S	Location: All Apartment Lighting

	Porch Light	Unit Entry					
Current Type of Lamps in the Fixtures:	Screw In-CFL15	2 Pin-CFL13	Screw In-I60	Screw In-I40	Screw In-CFL15	-	-
Number of Lamps to Be Replaced :	36	36					
Current Annual Usage:	730 hrs	730 hrs	730 hrs	730 hrs	730 hrs	730 hrs	730 hrs
Proposed Measure	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	-	-
Replacement Qty- Lamps / Fixtures:	36	36	0	0	0	0	0
Proposed Annual Avg. Hours of Operation	730 hrs	730 hrs	730 hrs	730 hrs	730 hrs	730 hrs	730 hrs
Proposed Replacement:	LED11	2 Pin-LED6	LED11	LED8	LED11	-	-
Estimated Annual Energy Savings	105 kWh	184 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Total labor Cost For Retrofit	$182	$182	$0	$0	$0	$0	$0
Estimated Cost Per Lamp/Fixture	$13.75	$12.40	$13.75	$12.50	$13.75	$0.00	$0.00
Cost For Retrofit	$677	$628	$0	$0	$0	$0	$0

Total Initial Investment For Retrofit	$1,600	Total kWh Saving	289 kWh	Total O&M Savings/Yr	$59
Electric Rate	**$0.14**	Estimated Annual Cost Savings	$100	Simple Pay back Period	16.06 Yrs
Type of Recommendation	Capital Cost ECM Recommendation				

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

The existing incandescent lamps can be replaced with screw-in compact fluorescent lamps. The result of the replacement is a direct energy savings up to 60%. In case of the incandescent lamps approximately 80% of the energy consumed by it is lost in the form of heat radiated by them when lit where as only 20% is actually converted into light. In addition to this the commercially available incandescent lamp have an annual life expectancy of 5000 hrs, whereas a CFL can last for nearly 10,000-12,000 hrs, which is more than twice the life expectancy of the incandescent lamps. Not all, screw-in fluorescent lamps are generally compatible with dimmers.

EMG recommends replacing all the existing lamps with new LED/CFL's or replace the entire fixture with new LED fixture.

SUMMARY;

Initial Investment: $1,600 Simple Payback Period: 16.06 yrs

Annual Cost Savings: $100

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Water Heater With New Energy Efficient Units
EAD3	**Location: Apartment Building Interior**

Step 1	**Existing Water Heater Details**	*Mechanical Closet*							
	Number of Water Heaters Being Replaced:	36							
	Select Existing Hot Water Heater Fuel	Electric		Natural Gas		Natural Gas		Electric	
	Insert Energy Factor of Existing Water Heater	0.86	EF		EF		EF		EF
	Input Existing Water Heater Input Rating	4.50	kW		kBtus		kBtus		kW
	Select One Method For Calculation	Annual Heating Hours		Annual Heating Hours		Annual DWH Load		Annual DWH Load	
	Insert Average Annual Hours of Operation	915	hrs		hrs		Therms		kWh
	Annual Water Heater Energy Consumption/Heater	4,118	kWh	0	Therms	#DIV/0!	hrs	#DIV/0!	hrs
	Total Estimated Annual Energy Consumption For all Heaters	148,230	kWh	0	Therms	0	Therms	0	kWh
	Total Estimated Annual Operating Energy Costs For all Heaters	$20,752	$	$0	$	$0	$	$0	$
Step 2	**Proposed New Water Heater**								
	Proposed Hot Water Heater Fuel	Electric		Heat Pump		Electric		Natural Gas	
	Capacity of the Proposed New Water Heater	40-Gal,4.5-kW							
	Energy Factor of Proposed Water Heater	0.95	EF	0.00	EF	0.00	EF	0.00	EF
	Proposed Water Heater Input Rating	4.50	kW	0.00	kW	0.00	kW	0.00	kBtuh
	Annual kBtuh Consumption For All The Proposed Water Heaters	457,847	kBtuh	#DIV/0!	kBtuh	#DIV/0!	kBtuh	#DIV/0!	kBtuh
	Estimated Annual Water Heater Fuel Consumption (All Heaters)	134,187	kWh	0	kWh	0	kWh	0	Therms
	Estimated Total Annual Energy Costs	$18,786	$	$0		$0		$0	
Step 3	**Energy & Cost Saving Calculation**								
	Estimated Cost of New Water Heater/Unit	$1,060	$	$0	$	$0	$	$0	$
	Total Estimated Installation Cost	$46,772	$	$0	$	$0	$	$0	$
	Total Estimated Annual Cost Savings	$1,966	$	$0	$	$0	$	$0	$
	Total Annual Cost Savings:	$1,966		Total Initial Investment::		$46,772			
	Simple Pay Back Period	23.79							
	Type of Recommendation	Capital Cost ECM Recommendation							

Disclaimer: PREPARED BY EMG. DECEMBER 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM SUMMARY:

Electric resistance is the most expensive method for heating domestic hot water. A natural gas or propane fired water system provide more units of heat with direct burning of fuel while high wattage draw is required for electric water heaters to create resistance heat. This electric usage can be seen with the increase power demand for the site and the additional kWh consumption. The installation process of the gas/propane fired water heater requires additional measures with tying a gas line or fuel tank to the system along with installing an exhaust gas vent. This process is not a costly retrofit if a current gas line or tank is at the site. The hot water exhaust duct can be tied to the existing gas fired furnaces or boilers for an easy retrofit.

SUMMARY:

Initial Investment: $46,772 Simple Payback: 23.79 yrs

Annual Cost Savings: $1,966

APPENDIX C:
EMG ACCESSIBILITY CHECKLIST

EMG ACCESSIBIILITY CHECKLIST

Property Name: Pointe Lagoon - El Paraiso
Date: March 7, 2019
Project Number: 136742.19R000-004.306

EMG Accessibility Checklist						
UFAS/ADA Accessibility						
	Building History	Yes	No	N/A	Unk	Comments
1.	Has the management previously completed an accessibility review?	√				
2.	Does an accessibility compliance plan exist for the property?		√			
3.	Has the plan been reviewed/approved by outside agencies (engineering firms, building department, other agencies)?			√		
4.	Have any accessibility related complaints been received in the past?		√			
5.	Is the property Section 504 compliant?		√			

	Building Access	Yes	No	N/A	Comments
1.	Are there an adequate number (per regulation) of wheelchair accessible parking spaces available at the rental office (96" wide/ 60" aisle)	√			
2.	Is there at least one wheelchair accessible van parking space (96" wide/ 96" aisle) for every 8 standard accessible spaces?	√			
3.	Are accessible parking spaces located on the shortest accessible route of travel from an accessible building entrance?	√			
4.	Does signage exist directing you to wheelchair accessible parking and an accessible building entrance?	√			
5.	Is there a ramp from the parking to an accessible building entrance (1:12 slope or less)	√			
6.	If the main entrance is inaccessible, are there alternate accessible entrances?			√	
7.	Is the accessible entrance doorway at least 32" wide?	√			
8.	Is the door handle easy to open? (lever/push type knob, no twisting required, no higher than 48" above floor)	√			
9.	Are entry doors other than revolving doors available?	√			
	Rental Office	Yes	No	N/A	Comments
1.	Is the entry door to the rental office 3'wide with no step or threshold over ½" tall?			√	There is no rental office on property.

EMG Accessibility Checklist					
	Rental Office (cont.)	Yes	No	N/A	Comments
2.	Is there a counter or table at 30” high for wheelchair access to fill out a rental application?			√	
3.	Is there clearance behind the counter for an employee in a wheelchair?			√	
	Building Corridors and Elevators	Yes	No	N/A	Comments
1.	Is the path of travel free of obstructions and wide enough for a wheelchair (at least 60” wide)?	√			
2.	Are floor surfaces firm, stable and slip resistant (carpets wheelchair friendly)?	√			
3.	Do obstacles (phones, fountains, etc.) protrude no more than 4” into walkways or corridor?			√	
4.	Are elevators controls low enough to be reached from a wheelchair (48” front approach/54” side approach)?			√	
5.	Are there raised elevator markings in Braille and standard alphabet for the blind?			√	
6.	Are there audible signals inside cars indicating floor changes?			√	
7.	Do elevator lobbies have visual and audible indicators of the cars arrival?			√	
8.	Does the elevator interior provide sufficient wheelchair turning area (51” x 68” minimum)?			√	
9.	Is at least one wheelchair accessible public phone available?			√	
10	Are wheelchair accessible facilities (restrooms, exits, etc.) identified with signage?			√	
	Common Area Restrooms	Yes	No	N/A	Comments
1.	Are common area public restrooms located on an accessible route?	√			
2.	Are pull handles push/pull or lever type?	√			
3.	Are access doors wheelchair accessible (at least 32” wide)?	√			
4.	Are public restrooms large enough for wheelchair turnaround (60” turning diameter)?	√			
5.	Are stall doors wheelchair accessible (at least 32” wide)?			√	
6.	If stalls are to narrow can the toilet room be converted to a single occupant toilet room?			√	
7.	Are grab bars provided in toilet stalls (33”-36” above floor)?	√			
8.	Do sinks provide clearance for a wheelchair to roll under (29” clearance)?	√			
9.	Are sink handles operable with one hand without grasping, pinching or twisting?	√			
10.	Are exposed pipes under sink sufficiently insulated against contact?		√		

EMG Accessibility Checklist					
	Common Area Restrooms (cont.)	Yes	No	N/A	Comments
11.	Are soap dispensers, towel, etc. reachable (48" from floor for frontal approach, 54" for side approach)?	√			
12.	Is the base of the mirror no more than 40" off floor?	√			
	Common Area Kitchen	Yes	No	N/A	Comments
1.	In a "U"-shaped kitchen is there 60" clear floor space width?			√	
2.	In a "U"-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40" width?			√	
3.	In a "L"-shaped kitchen, is there a 40" width minimum maintained?	√			
4.	Are countertops a maximum of 24" deep and 36" high?			√	
5.	Knee space beneath cabinetry is 30" wide and 27" high.			√	
6.	Is insulation installed below sinks on piping?			√	
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?			√	
	Common Area Laundry Rooms	Yes	No	N/A	Comments
1.	Are the laundry rooms located on an accessible route?	√			
2.	Are the door handles push/pull or lever type?	√			
3.	Are the access doors wheelchair accessible (at least 32" clear width)?	√			
4.	Are laundry rooms large enough for wheelchair turnaround (60" turning diameter)?	√			
5.	Is there a front load washing machine		√		
6.	If clothes folding tables are provided is one section at 32" high with a clear area below the table?			√	

EMG Accessibility Checklist					
Fair Housing Accessibility / Section 504					
	Access to Unit	Yes	No	N/A	Comments
1.	Property management reports that the number of units currently accessible and those adaptable meet FHA requirements of all ground floor units or 100% for a high rise.		√	√	Built 1986.
2.	Are 5% of the units fully accessible to those individuals with mobility impairments and 2% of units accessible to those individuals with audio / visual impairments?		√		No audio/visual impaired units.
3.	Are there any barriers or structural restrictions preventing access to the building?		√		
4.	Are the accessible units on an accessible route?	√			
5.	Is the apartment entry corridor 36” wide, door 32” wide (frame to frame), threshold height less than ½”, and appropriate door hardware present?	√			
	Unit Living Space	Yes	No	N/A	Comments
1.	Is there access throughout unit?	√			
2.	Are electrical outlets 15” minimum above floor minimum?	√			
3.	Are environmental controls and switches 48” maximum above floor or lower?	√			
	Unit Bathroom	Yes	No	N/A	Comments
1.	Is entry door at least 32” wide frame-to-frame?	√			
2.	Are switches & outlets in accessible locations?	√			
3.	Are bathroom walls around the toilet and tub/shower reinforced?				UNKNOWN
4.	Is there a 30” x 48” clear floor space outside of door swing area?	√			
5.	Is there a 56” x 48” clear floor space in front of toilet (48” out from wall toilet is hung against)?		√		
6.	Is there a 30” x 48” clear floor space in front of lavatories (30” deep from front of counter)?	√			
7.	Is there a 30” x 48” clear floor space in front of tub/shower (30” out from tub/shower)?	√			
8.	Is vanity a maximum of 24” deep and 36” high?		√		
9.	Knee space beneath sink is 30” wide and 27” high.		√		
10.	Is shower stall 36”x 42” minimum with small lip?			√	Tubs
11.	Is insulation installed below sinks on piping?	√			
	Unit Kitchen	Yes	No	N/A	Comments
1.	In a “U”-shaped kitchen is there 60” clear floor space width?	√			

EMG Accessibility Checklist					
	Unit Kitchen (cont.)	Yes	No	N/A	Comments
2.	In a “U”-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40” width?	√			
3.	In a “L”-shaped kitchen, is there a 40” width minimum maintained?			√	
4.	Are countertops a maximum of 24” deep and 36” high?	√			
5.	Knee space beneath cabinetry is 30” wide and 27” high.	√			
6.	Is insulation installed below sinks on piping?		√		Required in adaptable unit regardless of occupancy.
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?		√		

APPENDIX D:
PRE-SURVEY QUESTIONNAIRE AND DOCUMENTATION REQUEST FORM

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

This questionnaire must be completed by the property owner, the owner's designated representative, or someone knowledgeable about the subject property. If the form is not completed, EMG's Project Manager will require ***additional time*** during the on-site visit with such a knowledgeable person in order to complete the questionnaire. During the site visit, EMG's Field Observer may ask for details associated with selected questions. This questionnaire will be utilized as an exhibit in EMG's final report.

Name of Institution:	**Sacramento Housing and Redevelopment Agency**	
Name of Building: **4930 El Paraiso Ave**	Building #: **765**	
Name of person completing questionnaire: **Jaime Knacke**		
Length of Association With the Property: **7 months**	Phone Number: **916-449-6392**	

Site Information					
Year of Construction?	**1986**				
No. of Stories?	Floors				
Total Site Area?	2.61 Acres				
Total Building Area?	113,692 Square Feet				
Area Heated (%)	%100				
Area Cooled (%)	%100				
Total Conditioned Area (%)	%100				
Primary Heating System?	**HVAC**				
Secondary Heating System?	**None**				
If Oil Used For Heating- Tank Capacity	Gallons		No. of Tanks		
Primary Cooling System & Capacity?	**Central**				
Do Any HVAC Systems Use R-11, R-12 or R-22 Refrigerants?	**R-22**				
	Elec.	Natural Gas	Propane	No.2 Oil	Dist. Steam
Primary Heating Fuel?	☒	☐	☐	☐	☐
Secondary Heating Fuel?	☐	☐	☐	☐	☐
Domestic Water Heater Fuel?	☒	☐	☐	☐	

Building Occupancy/Schedule			
Estimated No. of Residence	**36**		
No. of Staff Members	**5**		
Standard Staff Work Timing	08:00 AM/PM - 05:00 AM/PM		
Maintenance Staff Hours	07:30 AM/PM - 04:00 AM/PM		
Apartment Type	**Qty**	**Area (Sqft)**	**No. of Bathrooms**
No. of Apts. In Building:	**36**		36
No. of Efficiency Apts:	**0**		0
No. of 1 Bedroom Apts:	**36**		0
No. of 2 Bedroom Apts:	**0**		0
No. of 3 Bedroom Apts:	**0**		1
No. of 4 Bedroom Apts:	**0**		0
No. of 5 Bedroom Apts:	**0**		0
No. of 6 Bedroom Apts:	**0**		0
No. of Vacant Apts:	**0**		0
No. of Down Apts:	**0**		0

Inspections	Date of Last Inspection	List of Any Outstanding Repairs Required
1. Elevators	**N/A**	
2. HVAC Mechanical, Electric, Plumbing?	**UNK**	
3. Life-Safety/Fire?	**N/A**	
4. Roofs?	**JAN 2019**	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Key Questions	Response
Major Capital Improvements in Last 3 yrs.	NONE
Planned Capital Expenditure For Next Year?	RAD
Age of the Roof?	9 YEARS
What bldg. Systems Are Responsibilities of Tenants? (HVAC/Roof/Interior/Exterior/Paving)	N/A

Unk = Unknown, NA = Not Applicable	Yes	No	NA	Unk	Comments
1. Are the plumbing fixtures Low Flow *(Below 2.0GPM, .6GPF)*	☐	☒	☐	☐	
2. Are there any vacant buildings or significant building areas?	☒	☐	☐	☐	
3. Do tenants pay for utilities at leased properties?	☒	☐	☐	☐	
4. Does the owner pay for exterior site lighting electricity?	☒	☐	☐	☐	
5. Any Issues with exterior Lighting?	☐	☒	☐	☐	

Building Structure							
		Y/N		Y/N		Y/N	Additional Comments?
Roof Type:	Pitched?	Y	Flat		Both		
Attic Insulation:	Batt	Y	Cellulose		Fiberglass		
Window Frame:	Wooden		Vinyl		Metal	Y	
Window Glazing:	Single		Double	Y	Triple		
Structure	Wooden	Y	Metal		Conc.		

Building Lighting			
Type of Linear Fluorescent Lamps? *(T8/T12)*	**T8**	Exterior Lighting Control *(Timer/Photocell)*	**PHOTO**
Type of Common Lamps? *(Incan/CFLs)*		Exterior Light Timing	N/A Hr
Lighting Sensors? *(Y/N)*	**NO**	EXIT Lights (Incan/Fluor/LED)	**YES**

Other Systems				
Item	Qty		Selection	Utility Company / Provider Name
# of Elevators	**0**	Hydraulic/Traction	**0**	N/A
# of Electric Meters	**37**	Master/ Direct	**0**	
# of Nat. Gas Meters	**0**	Resi/Commercial/Indust.	**0**	
# of Water Meters	**1**			
# of Backup Generator	**0**	Fuel?:	**0**	

Preventive Maintenance of Mechanical System		
Systems	**Annual Professional Maintenance**	**Seldom or Never Maintained**
Tenant Space Heating Systems (*Furnace/Boilers/Heat pumps*)	☒	☐
Tenant Space Cooling Systems (*Condensers/Window AC*)	☒	☐
Domestic Water Heaters	☒	☐

Building Appliances		
	Value	Additional Comments?
Percentage of Energy Star Certified Refrigerators (%)	80%	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Percentage of Refrigerators older than 8 years (%)	80%	
Cooking Range Type (Electric/Gas/Propane)	GAS	
Laundry System (Leased/Owned)	LEASED	
No. of Washers	4	
No. of Dryers	4	

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates *"Unknown"*)

	Question	Y	N	Unk	NA	Comments
	Zoning, Building Design & Life Safety Issues					
1	Are there any unresolved building, fire, or zoning code issues?		X			
2	Is there any pending litigation concerning the property?		X			
3	Are there any other significant issues/hazards with the property?		X			
4	Are there any unresolved construction defects at the property?		X			
5	Has any part of the property ever contained visible suspect fungal growth?		X			
6	Is there a fungal Operations and Maintenance Plan?		X			
7	Are there any recalled fire sprinkler heads (Star, GEM, Central, and Omega)?		X			
8	Have there been indoor air quality or fungal related complaints from tenants?		X			
	General Site					
9	Are there any problems with erosion, storm water drainage or areas of paving that do not drain?	X				EXTERIOR DRAINING SYSTEM
10	Are there any problems with the landscape irrigation systems?		X			
	Building Structure					
11	Are there any problems with foundations or structures?		X			
12	Is there any water infiltration in basements or crawl spaces?		X			

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

13	Has a termite/wood boring insect inspection been performed within the last year?	X				
BUILDING ENVELOPE						
Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates *"Not Applicable"*, **Unk** indicates *"Unknown"*)						
QUESTION		**Y**	**N**	**Unk**	**NA**	**COMMENTS**
14	Are there any wall, or window leaks?		X			
15	Are there any roof leaks?		X			
16	Is the roofing covered by a warranty or bond?		X			
17	Are there any poorly insulated areas?			X		
18	Is Fire Retardant Treated (FRT) plywood used?				X	
19	Is exterior insulation and finish system (EIFS) or a synthetic stucco finish used?	X				
BUILDING HVAC AND ELECTRICAL						
20	Are there any leaks or pressure problems with natural gas service?		X			
21	Does any part of the electrical system use aluminum wiring?		X			
22	Do Residential units have a less than 60-Amp service?	X				
23	Do Commercial units have less than 200-Amp service?	X				
24	Are there any problems with the utilities, such as inadequate capacities?		X			
ADA						
25	Has the management previously completed an ADA review?	X				
26	Have any ADA improvements been made to the property?		X			
27	Does a Barrier Removal Plan exist for the property?			X		

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

28	Has the Barrier Removal Plan been approved by an arms-length third party?			X		

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates *"Unknown"*)

	QUESTION	Y	N	Unk	NA	COMMENTS
29	Has building ownership or management received any ADA related complaints?		X			
30	Does elevator equipment require upgrades to meet ADA standards?				X	
	PLUMBING					
31	Is the property served by a private water well?		X			
32	Is the property served by a private septic system or other waste treatment systems?			X		
33	Is polybutylene piping used?		X			
34	Are there any plumbing leaks or water pressure problems?		X			

Issues or Concerns That EMG Should Know About?	
1.	
2.	
3.	

Items Provided to EMG Auditors	Yes	No	N/A	Additional Comments?
Access to 10% (GPNA), 25% (RAD) Apartments	☐	☒	☐	
Access to All Mechanical Spaces	☒	☐	☐	
Access to Roof/Attic Space	☒	☐	☐	
Access to Building As-Built Drawings	☒	☐	☐	
Site plan with bldg., roads, parking and other features	☒	☐	☐	
Access to last 12/24 Months Common Area Utility Data	☒	☐	☐	
Access to last 12/24 Months Tenant Utility Data	☐	☐	☒	
Contact Details of Mech, Elevator, Roof, Fire Contractors:	☐	☐	☒	
List of Commercial Tenants in the property	☒	☐	☐	
Previous reports pertaining to the physical condition of property.	☒	☐	☐	
ADA survey and status of improvements implemented.	☒	☐	☐	
Current / pending litigation related to property condition.	☒	☐	☐	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Any brochures or marketing information.	☒	☐	☐	
Appraisal, either current or previously prepared.	☒	☐	☐	
Summary of Projects executed in last 5 years	☐	☐	☒	

D. Knapp
Signature of person Interviewed or completing form

Date 3-5-19

On the day of the site visit, provide EMG's Field Observer access to all of the available documents listed below. Provide copies if possible.

INFORMATION REQUIRED

1. All available construction documents (blueprints) for the original construction of the building or for any tenant improvement work or other recent construction work.

2. A site plan, preferably 8 1/2" X 11", which depicts the arrangement of buildings, roads, parking stalls, and other site features.

3. For commercial properties, provide a tenant list which identifies the names of each tenant, vacant tenant units, the floor area of each tenant space, and the gross and net leasable area of the building(s).

4. For apartment properties, provide a summary of the apartment unit types and apartment unit type quantities, including the floor area of each apartment unit as measured in square feet.

5. For hotel or nursing home properties, provide a summary of the room types and room type quantities.

6. Copies of Certificates of Occupancy, building permits, fire or health department inspection reports, elevator inspection certificates, roof or HVAC warranties, or any other similar, relevant documents.

7. The names of the local utility companies which serve the property, including the water, sewer, electric, gas, and phone companies.

8. The company name, phone number, and contact person of all outside vendors who serve the property, such as mechanical contractors, roof contractors, fire sprinkler or fire extinguisher testing contractors, and elevator contractors.

9. A summary of recent (over the last 5 years) capital improvement work which describes the scope of the work and the estimated cost of the improvements. Executed contracts or proposals for improvements. Historical costs for repairs, improvements, and replacements.

10. Records of system and material ages (roof, MEP, paving, finishes, furnishings).

11. Any brochures or marketing information.

12. Appraisal, either current or previously prepared.

13. Current occupancy percentage and typical turnover rate records (for commercial and apartment properties).

14. Previous reports pertaining to the physical condition of property.

15. ADA survey and status of improvements implemented.

16. Current / pending litigation related to property condition.

Your timely compliance with this request is greatly appreciated.

CAPITAL NEEDS
ASSESSMENT

SACRAMENTO HOUSING & REDEVELOPMENT AGENCY
801 12th Street
Sacramento, California 95814
Vance Kelly

PROPERTY CONDITION CHECKLIST REPORT
of
MEADOW COMMONS - WILLAM LAND VILLA
1043 43rd Avenue
Sacramento, California 95822

PREPARED BY:

EMG
10461 Mill Run Circle, Suite 1100,
Owings Mills, Maryland 21117
800.733.0660
410.785.6220 (fax)
www.emgcorp.com

EMG CONTACT:

Matthew Anderson
Program Manager
800.733.0660, x7613
manderson@emgcorp.com

EMG Project #:	136742.19R000-006.306
Date of Report:	March 22, 2019
On-Site Date:	March 7, 2019

CERTIFICATION

EMG has completed a Capital Needs Assessment (CNA) of the subject property, William Land Villa, located at 1043 43rd Avenue, in Sacramento, Sacramento County, California. The CNA was performed on March 7, 2019.

The CNA was performed at the Client's request using methods and procedures consistent with good commercial and customary practice and with the standards outlined in 24 CFR 968.315, the Comprehensive Grant Program Guidebook 7485.3G, the Public Housing Modernization Standards Handbook 7485.2, and 24 CFR Part 5, Uniform Physical Condition Standards. EMG also utilizes the standards set forth by ASTM E2018-01, Standard Guide for Property Condition Assessments: Baseline Physical Needs Assessment Process. In addition, EMG's reference to the Client follows the ASTM guide's definition of User, whereas, the party that retains EMG for the preparation of a baseline CNA of the subject property. A user may include, without limitation, a purchaser, potential tenant, owner, existing or potential mortgagee, lender, or property manager of the subject property.

This report is exclusively for the use and benefit of the Client identified on the first page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and EMG.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of EMG. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to EMG.

The opinions EMG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent architect or engineer in the same community under similar circumstances. EMG assumes no responsibility or liability for the accuracy of information contained within this report that has been obtained from the Client or the Client's representatives, from other interested parties, or from the public domain. The conclusions presented represent EMG's professional judgment based on information obtained during the course of this assignment. EMG's evaluations, analyses, and opinions are not representations regarding the design integrity, structural soundness, or actual value of the property. Factual information regarding operations, conditions, and test data provided by the Client or the Client's representative has been assumed to be correct and complete. The conclusions presented within this report are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment.

EMG certifies that EMG has no undisclosed interest in the subject property, that EMG's relationship with the Client is at arms-length, and that EMG's employment and compensation are not contingent upon the findings or estimated costs to remedy any noted deficiencies due to deferred maintenance and/or any noted component or system replacements.

EMG's CNA cannot wholly eliminate the uncertainty regarding the presence of physical deficiencies and/or the performance of a subject property's building systems. Preparation of a CNA in accordance with ASTM E2018-01 is intended to reduce, but not eliminate, the uncertainty regarding the potential for component or system failure and to reduce the potential that such component or system failure may not be initially observed. This CNA was prepared recognizing the inherent subjective nature of EMG's opinions as to such issues as workmanship, quality of original installation, and estimating the remaining useful life of any given component or system. It should be understood that EMG's suggested remedy may be determined under time constraints or may be formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the noted physical deficiencies.

Any questions regarding this report should be directed to Matthew Anderson at manderson@emgcorp.com or at 800.733.0660, x7613.

Prepared by: Tammy Prusa
Project Manager

Reviewed by:

Al Diefert
Technical Report Reviewer
For
Matthew Anderson
Program Manager

TABLE OF CONTENTS

Certification 1
1. Observation Data 1
2. General Description Property Data 2
3. General Condition 3
4. System Condition Ratings 5
5. Current & Planned Renovation 6
6. Significant Issues/Deficiencies 7
7. Additional Investigations 8
8. Exhibits/Attachments 12

1. OBSERVATION DATA

Observation Data			
EMG Field Observer:	Deborah McCutchen	Property Contact Name:	Fred Weisgerber
Date Observed:	March 7, 2019	Prop Contact Phone Number	916.440.1327
Interview Conducted (Y/N)	Y	Name/Function Of Interviewee:	Maintenance Lead

2. GENERAL DESCRIPTION PROPERTY DATA

General Description and Property Data						
Property Name:	Meadow Commons - William Land Villa					
Street Address:	1043 43rd Avenue			City, State:	Sacramento, California	
Building Type:	Residential	Age:		1971	Year Renovated:	Unknown
Size (# Units):	28	# Buildings:		7	# Floors	1
Other Buildings Or Amenities	Community Building					
UBC Seismic Zone:	Zone 3			Flood Zone Determination:	X (shaded)	
# Parking Spaces:	11, Concrete Paved					
Apartment Unit Types and Mix						
28	1 Bedroom/1 Bathroom				500 SF	
				Total Building Area	14,000 SF	

Building Specifications	
Foundation Construction:	Concrete slab
Structural System:	Wood frame
Exterior Wall finish:	Wood Siding (T1-11 and cedar shake)
Roof finish:	Asphalt shingles (2010)
Windows:	Aluminum, single glazed

Building Systems	
Plumbing Material:	Copper & ABS
Fire Sprinklers (Y/N):	No
Cooling System:	Packaged rooftop (2010)
Heating Equipment:	Gas-fired packaged rooftop
Electrical System:	Copper wire
Fire Alarm & Life Safety System:	Smoke detectors and Fire Extinguishers

Interiors:			
Flooring:	Carpet and vinyl	Walls:	Painted drywall
Plumbing Fixtures	Tub, toilet, shower, porcelain wall sink	Cabinets	Wood with laminate counter
Light Fixtures:	Standard residential grade	Appliances:	Refrigerator, electric range

3. GENERAL CONDITION

General Condition
Generally, the property was constructed within industry standards, has been well-maintained over recent years and appeared to be in fair overall condition. Property management personnel reported that, over the past three years, the property has had no capital improvement expenditure program. There are a number of Immediate Repairs and Rehabilitation Needs and Replacement Reserves that should be accomplished during the evaluation period as part of the preventive maintenance program. These needs are identified in the various sections of this report and are summarized in the enclosed cost tables.

Section 504 of the Rehabilitation Act of 1973 is a Federal accessibility law that was enacted on June 2, 1988. Section 504 applies to multi-family properties that have 15 or more units. The property must have a minimum of five percent mobility accessible units and two percent of the units for visual / audio hearing impairments. Exceptions can be considered due to undue financial burdens or structural restrictions. However, the exceptions do not relieve the recipients from compliance utilizing other units/buildings or other methods to achieve reasonable accommodations.

Reasonable Accommodations as described in 24 CFR 8.4(b)(i), 8.24 and 8.33 are as follows: When a family member requires an accessible feature(s) or policy modification to accommodate a disability, property owners must provide such feature(s) or policy modification unless doing so would result in a fundamental alteration in the nature of its program or result in a financial and administrative burden.

The Uniform Federal Accessibility Standard (UFAS) 24 CFR part 40 was adopted by HUD and made effective October 4, 1984. The UFAS applies only to new construction or to alterations to the existing buildings. Alterations are defined as work that costs 50 percent or more of the building's value when the work performed occurs within a twelve month period. Apartments modified for mobility impaired residents are to comply with UFAS.

The Fair Housing Amendments Act (FHA) of 1988 amended Title VIII of the Civil Rights Act of 1968 to aid in the prohibitions against discrimination in housing on the basis of disability and familial status. The Fair Housing Act also made it unlawful to design and construct certain "covered multi-family dwellings" for first occupancy after March 13, 1991, in a manner that makes them inaccessible to persons with disabilities. The Fair Housing Act does apply to this property due to the date of construction.

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" on the basis of disability. Generally, the rental office and access from the site to the rental office must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Buildings completed and occupied after January 26, 1992 are required to comply fully with ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of complying to the extent allowed by structural feasibility and the financial resources available; otherwise a reasonable accommodation must be made.

During the CNA, a visual Accessibility Survey in general conformance with Section 504 Accessibility Standards and the Uniform Federal Accessibility Standards (UFAS) was conducted. It is understood by the Client that the visual observation described herein does not comprise a full measured Accessibility Compliance Survey, and that such a survey is beyond the scope of EMG's undertaking. Actual measurements were not taken to verify compliance.

Based on the date of construction, 1971, the accessibility standards that apply to the Project are the Fair Housing Act, Section 504 standards, and UFAS. Property management stated that requests for accessible apartments are completed on an as requested basis. Presently, none of the units are accessible for individuals with mobility impairments according to property management.

Based on EMG's observations, the facility did not appear to be in compliance with the Section 504 Standards and the ADA Guidelines. Elements that were observed at the property, which were not accessible as stated within the priorities of are as follows:

Common Area Bathroom

- The bathrooms in the community building are not property configured to meet accessibility standards. The sinks appear to be too low, the pipes are not insulated, and the grab bars are not located properly.

Unit Accessibility

- The property does not currently have any fully accessible units. Since 5% of the units are required to be accessible, one unit should be converted to fully accessible.
- The property does not currently have any visual / audio hearing impairment units. Since 2% of the units are required to be accessible, one unit should be converted to fully accessible.

A full ADA Measured Compliance Survey may reveal additional aspects of the property that are not in compliance.

Corrections of these conditions should be addressed from a liability standpoint, but are not necessarily code violations. The Americans with Disabilities Act Accessibility Guidelines concern civil rights issues as they pertain to the disabled and are not a construction code, although many local jurisdictions have adopted the Guidelines as such. The cost to address the achievable items noted above is included as a lump sum in the Immediate Repairs.

4. SYSTEM CONDITION RATINGS

System Condition Ratings				
System	**Good**	**Fair**	**Poor**	**Unknown**
Site/Landscaping		✓		
Pavements/Parking		✓		
Structural	✓			
Exterior Walls		✓		
Roofs		✓		
Mechanical/HVAC		✓		
Interiors		✓		

5. CURRENT & PLANNED RENOVATION

Current and Planned Renovation
Not applicable.

6. SIGNIFICANT ISSUES/DEFICIENCIES

Significant Issues/Deficiencies
Smoke detectors were not observed in all bedrooms, as required by HUD. Smoke detectors should be installed in all bedrooms. A cost allowance to install smoke detectors in all bedrooms is included in the immediate repairs.
GFCI outlets were not observed in the in the kitchen and bathroom and should be installed as a life/safety item. The cost for this work is included in the immediate repairs.
A front-loading washing machine is not provided in the laundry room. A front-loading washing machine is required to accommodate disabled residents. Since the washing machines are leased, no costs are included in the cost tables to replace one of the existing washing machines with a front-loading model.
The windows have reached the end of their useful life and are beginning to fail. The windows must be replaced. A cost to replace the windows in included in the Immediate Repairs.

7. ADDITIONAL INVESTIGATIONS

Additional Investigations
No further investigation is necessary at this time.

Replacement Reserves Report

6/5/2019

Location	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Total Escalated Estimate
Meadow Commons-William Land Villa / Community Building - 2019	$37,825	$0	$1,229	$55,766	$0	$0	$5,933	$0	$13,127	$0	$0	$3,335	$7,983	$34,882	$654	$51,995	$0	$1,915	$11,911	$4,225	$0	**$230,779**
Meadow Commons-William Land Villa / Energy Conservation Measures - 2019	$1,958	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,631	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,536	**$8,126**
Meadow Commons-William Land Villa / Residential Buildings - 2019	$292,100	$61,591	$11,063	$279,011	$0	$93,039	$294,085	$59,327	$122,129	$0	$30,639	$82,774	$0	$104,926	$42,815	$104,882	$0	$76,173	$262,335	$0	$236,215	**$2,153,105**
Meadow Commons-William Land Villa / Site - 2019	$29,176	$0	$12,219	$26,798	$0	$0	$35,481	$57,469	$2,197	$0	$2,736	$0	$2,528	$99,924	$0	$0	$0	$2,931	$0	$0	$20,055	**$291,514**
GrandTotal	**$361,059**	**$61,591**	**$24,511**	**$361,575**	**$0**	**$93,039**	**$335,499**	**$116,796**	**$137,452**	**$0**	**$36,007**	**$86,109**	**$10,511**	**$239,732**	**$43,468**	**$156,877**	**$0**	**$81,019**	**$274,246**	**$4,225**	**$259,806**	**$2,683,523**

Meadow Commons-William Land Villa / Community Building - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2011	Building exterior	Exterior Wall, Painted Surface, 1-2 Stories, Prep & Paint	10	7	3	1400	SF	$3.48	$4,871				$4,871										$4,871								**$9,742**
B2011	Building exterior	Exterior Wall, Wood Shakes/Shingles, 1-2 Stories, Replace	20	7	13	1400	SF	$8.11	$11,350														$11,350								**$11,350**
B2021	Exterior wall	Window, Aluminum Double-Glazed 12 SF, 1-2 Stories, Replace	30	15	15	10	EA	$708.04	$7,080																$7,080						**$7,080**
B2023	Front entrance	Storefront, Metal-Framed Windows w/out Door(s), Replace	30	15	15	2	SF	$58.17	$116																$116						**$116**
B2031	Front entrance	Exterior Door, Fully-Glazed Aluminum-Framed Swinging Motor-Operated, Replace	30	15	15	2	EA	$12,355.26	$24,711																$24,711						**$24,711**
B3011	Main roof	Roof, Asphalt Shingle, Replace	20	12	8	2500	SF	$4.14	$10,362									$10,362													**$10,362**
C1021	Throughout	Interior Door, Wood Hollow-Core, Replace	20	17	3	10	EA	$722.96	$7,230				$7,230																		**$7,230**
C3012	Building interior	Interior Wall Finish, Gypsum Board/Plaster/Metal, Prep & Paint	8	5	3	1400	SF	$1.72	$2,409				$2,409								$2,409									$2,409		**$7,228**
C3012	Common area restrooms	Interior Wall Finish, Ceramic Tile, Replace	25	22	3	160	SF	$20.06	$3,209				$3,209																		**$3,209**
C3024	Community room	Interior Floor Finish, Vinyl Tile (VCT), Replace	15	12	3	1000	SF	$5.82	$5,817				$5,817																$5,817			**$11,635**
C3024	Common area restrooms	Interior Floor Finish, Vinyl Sheeting, Replace	15	12	3	100	SF	$8.50	$850				$850																$850			**$1,699**
C3031	Community room	Interior Ceiling Finish, Gypsum Board/Plaster, Prep & Paint	10	7	3	1100	SF	$2.35	$2,586				$2,586										$2,586									**$5,173**
D2011	Common area restrooms	Toilet, Flush Tank (Water Closet), Replace	20	17	3	2	EA	$1,278.81	$2,558				$2,558																			**$2,558**
D2014	Common area restrooms	Sink/Lavatory, Vitreous China, Replace	20	17	3	2	EA	$1,044.12	$2,088				$2,088																			**$2,088**
D2014	Mechanical closet	Service Sink, Porcelain Enamel, Cast Iron, Replace	20	17	3	1	EA	$1,648.68	$1,649				$1,649																			**$1,649**
D2018	Community room	Drinking Fountain, Refrigerated, Replace	10	7	3	1	EA	$1,524.06	$1,524				$1,524										$1,524									**$3,048**
D2023	Mechanical closet	Water Heater, Electric, Residential, 50 GAL, Replace	15	2	13	1	EA	$2,107.49	$2,107														$2,107									**$2,107**
D3032	Building exterior	Condensing Unit/Heat Pump, Split System, 4 Ton, Replace	15	3	12	1	EA	$5,599.08	$5,599													$5,599										**$5,599**
D3041	Common area restrooms	Bath Exhaust Fan, Ceiling Mounted, Residential, 70 to 110 CFM, Replace	15	15	0	2	EA	$329.96	$660	$660															$660						**$1,320**
D3041	Mechanical closet	Fan Coil Unit, 3.5 to 5 Ton, Replace	15	9	6	1	EA	$4,968.51	$4,969												$4,969										**$4,969**
D4031	Throughout	Fire Extinguisher, Replace	15	1	14	1	EA	$432.12	$432															$432							**$432**
D5029	Community room	Lighting System, Interior, Office Building, Upgrade	25	22	3	1000	SF	$11.20	$11,199				$11,199																		**$11,199**
E1094	Community room	Residential Appliances, Range, Electric, Replace	15	13	2	1	EA	$806.07	$806	$806															$806						**$1,612**
E1094	Community room	Residential Appliances, Refrigerator, 14-18 CF, Replace	15	13	2	1	EA	$1,158.69	$1,159			$1,159															$1,159				**$2,317**
E1094	Common area kitchen	Residential Appliances, Dishwasher, Replace	10	7	3	1	EA	$994.95	$995				$995										$995								**$1,990**
E1094	Common area kitchen	Residential Appliances, Range Hood, Vented or Ventless, Replace	15	12	3	1	EA	$329.18	$329				$329															$329			**$658**
E2012	Common area kitchen	Kitchen Cabinet, Base and Wall Section, Wood, Replace	20	17	3	6	LF	$566.75	$3,401				$3,401																		**$3,401**
E2012	Common area kitchen	Kitchen Counter, Plastic Laminate, Postformed, Replace	10	7	3	6	LF	$53.21	$319				$319										$319								**$638**
Z108X	Common area restrooms	ADA, Restroom, Unisex Single Occupant, Full Conversion, Renovate	0	0	0	2	EA	$18,179.55	$36,359	$36,359																					**$36,359**
Totals, Unescalated										**$37,825**	**$0**	**$1,159**	**$51,034**	**$0**	**$0**	**$4,969**	**$0**	**$10,362**	**$0**	**$2,409**	**$5,599**	**$23,753**	**$432**	**$33,373**	**$0**	**$1,159**	**$6,996**	**$2,409**	**$0**	**$181,479**
Totals, Escalated (3.0% inflation, compounded annually)										**$37,825**	**$0**	**$1,229**	**$55,766**	**$0**	**$0**	**$5,933**	**$0**	**$13,127**	**$0**	**$3,335**	**$7,983**	**$34,882**	**$654**	**$51,995**	**$0**	**$1,915**	**$11,911**	**$4,225**	**$0**	**$230,779**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Meadow Commons-William Land Villa / Energy Conservation Measures - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
X103X	All Apartment Bathrooms	ECM, Low Flow Faucet Aerators, Install	10	10	0	28	EA	$12.05	$337	$337											$337									$337	**$1,012**
X103X	All Apartment Kitchens	ECM, Low Flow Faucet Aerators, Install	10	10	0	28	EA	$12.05	$337	$337											$337									$337	**$1,012**
X103X	All Apartment Showerheads	ECM, Low Flow Shower Heads, Install	10	10	0	28	EA	$45.84	$1,283	$1,283											$1,283									$1,283	**$3,850**
Totals, Unescalated										**$1,958**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,958**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,958**	**$5,874**
Totals, Escalated (3.0% inflation, compounded annually)										**$1,958**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,631**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$3,536**	**$8,126**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Meadow Commons-William Land Villa / Residential Buildings - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2011	Exterior walls	Exterior Wall, Painted Surface, 1-2 Stories, Prep & Paint	10	7	3	1200	SF	$3.48	$4,175				$4,175										$4,175								**$8,350**

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2011	Exterior walls	Exterior Wall, Wood Clapboard Siding, 1-2 Stories, Replace	20	7	13	1200	SF	$32.75	$39,305														$39,305								**$39,305**
B2021	Unit living areas	Window, Aluminum Double-Glazed 24 SF, 1-2 Stories, Replace	30	30	0	56	EA	$1,054.96	$59,078	$59,078																						**$59,078**
B2031	Each apartment	Exterior Door, Fully-Glazed Aluminum-Framed Sliding, Replace	25	7	18	28	EA	$2,829.11	$79,215																			$79,215				**$79,215**
B2032	Front entrance	Exterior Door, Fiberglass, Replace	25	22	3	28	EA	$969.98	$27,159				$27,159																			**$27,159**
B2039	Front entrance	Screen Door, Plain/Anodized Aluminum, Replace	10	7	3	28	EA	$603.66	$16,902				$16,902										$16,902									**$33,805**
B3011	Roofs	Roof, Asphalt Shingle, Replace	20	12	8	16800	SF	$5.12	$85,981									$85,981														**$85,981**
C3024	Throughout	Interior Floor Finish, Vinyl Tile (VCT), Replace	15	12	3	7000	SF	$5.82	$40,722				$40,722															$40,722				**$81,444**
C3025	Interiors	Interior Floor Finish, Carpet Residential-Grade Nylon, Replace	7	8	0	2000	SF	$6.29	$12,580	$12,580							$12,580							$12,580								**$37,741**
C3025	Interiors	Interior Floor Finish, Carpet Residential-Grade Nylon, Replace	7	5	2	2500	SF	$6.29	$15,725	$15,725							$15,725							$15,725								**$47,176**
C3025	Interiors	Interior Floor Finish, Carpet Residential-Grade Nylon, Replace	7	4	3	2500	SF	$6.29	$15,725				$15,725							$15,725							$15,725					**$47,176**
D2011	Unit bathroom	Toilet, Flush Tank (Water Closet), Replace	20	17	3	28	EA	$1,278.81	$35,807				$35,807																			**$35,807**
D2014	Unit kitchens	Sink/Lavatory, Vitreous China, Replace	20	17	3	28	EA	$1,044.12	$29,235				$29,235																			**$29,235**
D2014	Unit kitchens	Sink/Lavatory, Stainless Steel, Replace	20	17	3	28	EA	$1,277.48	$35,769				$35,769																			**$35,769**
D2017	Unit bathroom	Shower, Ceramic Tile, Replace	30	15	15	28	EA	$2,404.28	$67,320																$67,320							**$67,320**
D2023	Interior closet	Water Heater, Gas, Residential, 30 to 50 GAL, Replace	10	7	3	21	EA	$2,847.50	$59,797		$59,797										$59,797											**$119,595**
D2023	Interior closet	Water Heater, Gas, Residential, 30 to 50 GAL, Replace	10	3	7	7	EA	$2,847.50	$19,932								$19,932											$19,932				**$39,865**
D3052	Roof	Packaged Unit (RTU), Up to 2 Ton, Replace	15	9	6	28	EA	$8,796.13	$246,292							$246,292																**$246,292**
D5021	Kitchen and bathroom	Receptacle, Ground Fault Circuit Interrupter (GFCI), 15-20 Amp, Replace	20	20	0	56	EA	$104.08	$5,829	$5,829																				$5,829		**$11,657**
D5022	Exterior wall	Compact Fluorescent Lighting Fixture, Ballast, 32 W, Replace	20	17	3	28	EA	$164.84	$4,616				$4,616																			**$4,616**
D5029	Throughout	Lighting System, Interior, Multi-Family, Upgrade	25	20	5	14000	SF	$5.73	$80,257						$80,257																	**$80,257**
D5037	Bedrooms and living areas	Smoke Detector, , Replace	10	10	0	28	EA	$252.61	$7,073	$7,073										$7,073										$7,073		**$21,219**
E1094	Apartment Interiors	Residential Appliances, Refrigerator, 14-18 CF, Replace	15	13	2	9	EA	$1,158.69	$10,428			$10,428															$10,428					**$20,856**
E1094	Apartment Interiors	Residential Appliances, Range, Electric, Replace	15	12	3	28	EA	$806.07	$22,570				$22,570																$22,570			**$45,140**
E1094	Apartment Interiors	Residential Appliances, Refrigerator, 14-18 CF, Replace	15	12	3	10	EA	$1,158.69	$11,587				$11,587																$11,587			**$23,174**
E1094	Apartment Interiors	Residential Appliances, Refrigerator, 14-18 CF, Replace	15	7	8	9	EA	$1,158.69	$10,428									$10,428														**$10,428**
E2012	Unit kitchens	Kitchen Cabinet, Base and Wall Section, Wood, Replace	20	18	2	208	LF	$566.75	$117,885	$117,885																				$117,885		**$235,769**
E2012	Unit kitchens	Kitchen Counter, Plastic Laminate, Postformed, Replace	10	7	3	208	LF	$53.21	$11,067				$11,067										$11,067									**$22,133**
Z103X	Kitchen	ADA, Kitchen, Sink & Counter, Full Reconfiguration, Renovate	0	0	0	2	EA	$18,179.55	$36,359	$36,359																						**$36,359**
Z107X	Selected Apartment	ADA, Residential Unit, Visual Bell & Strobe, Hearing Impaired, Install	0	0	0	1	EA	$1,211.97	$1,212	$1,212																						**$1,212**
Z108X	Bathroom	ADA, Restroom, Full Reconfiguration, Renovate	0	0	0	2	EA	$18,179.55	$36,359	$36,359																						**$36,359**
Totals, Unescalated										**$292,100**	**$59,797**	**$10,428**	**$255,335**	**$0**	**$80,257**	**$246,292**	**$48,238**	**$96,409**	**$0**	**$22,798**	**$59,797**	**$0**	**$71,450**	**$28,306**	**$67,320**	**$0**	**$46,086**	**$154,094**	**$0**	**$130,787**	**$1,669,494**
Totals, Escalated (3.0% inflation, compounded annually)										**$292,100**	**$61,591**	**$11,063**	**$279,011**	**$0**	**$93,039**	**$294,085**	**$59,327**	**$122,129**	**$0**	**$30,639**	**$82,774**	**$0**	**$104,926**	**$42,815**	**$104,882**	**$0**	**$76,173**	**$262,335**	**$0**	**$236,215**	**$2,153,105**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Meadow Commons-William Land Villa / Site - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2039	Site fence	Pedestrian Gate, Wrought Iron, Replace	25	17	8	2	EA	$867.21	$1,734									$1,734														**$1,734**
D2031	Underground Sewer	Pipe & Fittings, Cast Iron, 4", Replace	50	50	0	100	LF	$97.44	$9,744	$9,744																						**$9,744**
D2031	Underground Sewer	Pipe & Fittings, Cast Iron, 4", Replace	50	48	2	100	LF	$97.44	$9,744			$9,744																					**$9,744**
D2031	Underground Sewer	Pipe & Fittings, Cast Iron, 4", Replace	50	48	2	100	LF	$97.44	$9,744							$9,744																**$9,744**
D5022	Exterior walkways	Metal Halide or LED Pole and Light Fixture, 250 W, Replace	20	20	0	10	EA	$906.77	$9,068	$9,068																					$9,068	**$18,135**
D5038	Parking area	Vehicle Control Gate w/ Controller, Replace	15	9	6	2	EA	$9,985.46	$19,971							$19,971																**$19,971**
G1031	Landscaping	Landscaping, Ground Cover, Re-Establish	25	26	0	1000	SF	$4.50	$4,495	$4,495																						**$4,495**
G1031	Landscaping	Landscaping, Ground Cover, Re-Establish	25	18	7	10000	SF	$4.50	$44,954								$44,954															**$44,954**
G2022	Parking area	Parking Lots, Concrete Pavement, Pressure Wash and Paint Stripe	5	3	2	3850	SF	$0.46	$1,773			$1,773					$1,773					$1,773					$1,773					**$7,092**
G2031	Site	Pedestrian Pavement, Sidewalk, Concrete Large Areas, Replace	30	27	3	1000	SF	$10.91	$10,908				$10,908																			**$10,908**
G2041	Perimeter of property and patios	Fences & Gates, Wood Board, Refinish	10	30	0	1070	SF	$1.90	$2,036	$2,036										$2,036										$2,036		**$6,108**
G2041	Perimeter of property and patios	Fences & Gates, Wood Board, Replace	30	17	13	5070	SF	$7.41	$37,544														$37,544									**$37,544**
G2041	Perimeter of property	Fences & Gates, Wood Board, Replace	30	17	13	2280	SF	$7.41	$16,884														$16,884									**$16,884**
G2057	Landscaping	Irrigation System/Valves, , Replace	25	25	0	1000	SF	$3.83	$3,833	$3,833																						**$3,833**
G4021	Site	Pole Light, Exterior, 135 to 1000 W HID (Fixture, Ballast, & Lamp), Replace	10	7	3	5	EA	$2,723.18	$13,616				$13,616										$13,616									**$27,232**
Totals, Unescalated										**$29,176**	**$0**	**$11,517**	**$24,524**	**$0**	**$0**	**$29,715**	**$46,728**	**$1,734**	**$0**	**$2,036**	**$0**	**$1,773**	**$68,044**	**$0**	**$0**	**$0**	**$1,773**	**$0**	**$0**	**$11,104**	**$228,124**
Totals, Escalated (3.0% inflation, compounded annually)										**$29,176**	**$0**	**$12,219**	**$26,798**	**$0**	**$0**	**$35,481**	**$57,469**	**$2,197**	**$0**	**$2,736**	**$0**	**$2,528**	**$99,924**	**$0**	**$0**	**$0**	**$2,931**	**$0**	**$0**	**$20,055**	**$291,514**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

8. EXHIBITS/ATTACHMENTS

APPENDIX A: Photographs of Property

APPENDIX B: Pre-survey Questionnaire

APPENDIX C: Supporting Documentation

APPENDIX A:
PHOTOGRAPHS OF PROPERTY

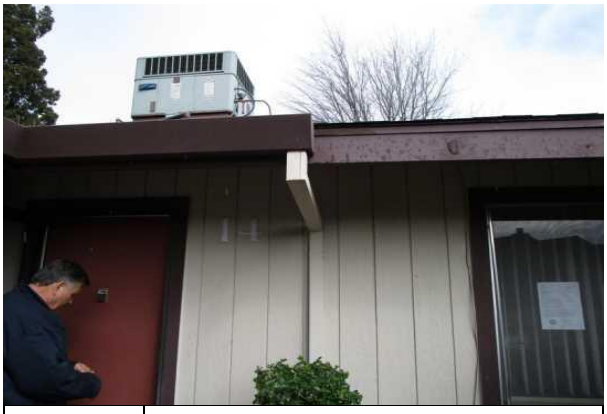
#1	FRONT ELEVATION

#2	REAR ELEVATION

#3	RIGHT ELEVATION

#4	EXTERIOR DOOR, FULLY-GLAZED ALUMINUM-FRAMED SLIDING

#5	EXTERIOR WALL, WOOD CLAPBOARD SIDING



#6	PACKAGED UNIT (RTU)

#7	WATER HEATER, GAS, RESIDENTIAL

#8	ROOF, ASPHALT SHINGLE

#9	SCREEN DOOR, PLAIN/ANODIZED ALUMINUM

#10	WINDOW, ALUMINUM DOUBLE-GLAZED

#11	UNIT LIVING ROOM

#12	UNIT KITCHEN

#13	UNIT BEDROOM

#14	UNIT BATHROOM

APPENDIX B:
PRE-SURVEY QUESTIONNAIRE

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

This questionnaire must be completed by the property owner, the owner's designated representative, or someone knowledgeable about the subject property. If the form is not completed, EMG's Project Manager will require ***additional time*** during the on-site visit with such a knowledgeable person in order to complete the questionnaire. During the site visit, EMG's Field Observer may ask for details associated with selected questions. This questionnaire will be utilized as an exhibit in EMG's final report.

Name of Institution:	Sacramento Housing and Redevelopment Agency
Name of Building: William Land Villa	Building #: 1043
Name of person completing questionnaire: Douglas W. Gongaware Jr.	
Length of Association With the Property: 5 Months	Phone Number: (916) 449-6305

Site Information					
Year of Construction?	1971				
No. of Stories?	1 Floors.				
Total Site Area?	1.54 Acres				
Total Building Area?	16,035 Sqft				
Area Heated (%)	100%				
Area Cooled (%)	100%				
Total Conditioned Area (%)	100%				
Primary Heating System?	Central Heat Gas				
Secondary Heating System?	None				
If Oil Used For Heating- Tank Capacity	N/A Gallons		No. of Tanks		
Primary Cooling System & Capacity?	1.5 Ton				
Do Any HVAC Systems Use R-11, R-12 or R-22 Refrigerants?	R-22 for residential units. 410A for Community Room				
	Elec.	Natural Gas	Propane	No.2 Oil	Dist. Steam
Primary Heating Fuel?	☐	☒	☐	☐	☐
Secondary Heating Fuel?	☐	☐	☐	☐	☐
Domestic Water Heater Fuel?	☐	☒	☐	☐	

Building Occupancy/Schedule			
Estimated No. of Residence	28		
No. of Staff Members	5		
Standard Staff Work Timing	8 :30 AM - 5 : 00 PM		
Maintenance Staff Hours	7 :30 AM - 4 : 00 PM		
Apartment Type	**Qty**	**Area (Sqft)**	**No. of Bathrooms**
No. of Apts. In Building:	4	2000	4
No. of Efficiency Apts:			
No. of 1 Bedroom Apts:	28	14,000	1
No. of 2 Bedroom Apts:			
No. of 3 Bedroom Apts:			
No. of 4 Bedroom Apts:			
No. of 5 Bedroom Apts:			
No. of 6 Bedroom Apts:			
No. of Vacant Apts:			
No. of Down Apts:			

Inspections	Date of Last Inspection	List of Any Outstanding Repairs Required
1. Elevators	N/A	
2. HVAC Mechanical, Electric, Plumbing?	2/21/2019	
3. Life-Safety/Fire?	2/21/2019	
4. Roofs?	2/21/2019	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Key Questions	Response
Major Capital Improvements in Last 3 yrs.	Community Room HVAC System
Planned Capital Expenditure For Next Year?	Unknown
Age of the Roof?	Unknown
What bldg. Systems Are Responsibilities of Tenants? (HVAC/Roof/Interior/Exterior/Paving)	None

Unk = Unknown, NA = Not Applicable	Yes	No	NA	Unk	Comments
1. Are the plumbing fixtures Low Flow *(Below 2.0GPM, .6GPF)*	☒	☒	☐	☐	80% of property Low Flow
2. Are there any vacant buildings or significant building areas?	☐	☒	☐	☐	
3. Do tenants pay for utilities at leased properties?	☒	☐	☐	☐	
4. Does the owner pay for exterior site lighting electricity?	☒	☐	☐	☐	
5. Any Issues with exterior Lighting?	☐	☒	☐	☐	

Building Structure							
		Y/N		Y/N		Y/N	Additional Comments?
Roof Type:	Pitched?	Yes	Flat		Both		
Attic Insulation:	Batt		Cellulose		Fiberglass	Yes	
Window Frame:	Wooden		Vinyl		Metal	Yes	
Window Glazing:	Single	Yes	Double		Triple		
Structure	Wooden	Yes	Metal		Conc.		

Building Lighting			
Type of Linear Fluorescent Lamps? *(T8/T12)*	Both	Exterior Lighting Control *(Timer/Photocell)*	Photocell
Type of Common Lamps? *(Incan/CFLs)*	CFL'S	Exterior Light Timing	12 hours current
Lighting Sensors? *(Y/N)*	Some	EXIT Lights (Incan/Fluor/LED)	LED/Pressure Sodium

Other Systems				
Item	Qty		Selection	Utility Company / Provider Name
# of Elevators	None	Hydraulic/Traction	N/A	N/A
# of Electric Meters	29	Master/ Direct	Direct	
# of Nat. Gas Meters	29	Resi/Commercial/Indust.	Residential	
# of Water Meters	1			
# of Backup Generator	N/A	Fuel?:		

Preventive Maintenance of Mechanical System		
Systems	**Annual Professional Maintenance**	**Seldom or Never Maintained**
Tenant Space Heating Systems (*Furnace/Boilers/Heat pumps*)	☒	☐
Tenant Space Cooling Systems (*Condensers/Window AC*)	☒	☐
Domestic Water Heaters	☐	☒

Building Appliances		
	Value	Additional Comments?
Percentage of Energy Star Certified Refrigerators (%)	80%	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Percentage of Refrigerators older than 8 years (%)	20%	10-12 Years
Cooking Range Type (Electric/Gas/Propane)		Electric
Laundry System (Leased/Owned)		Leased
No. of Washers		3
No. of Dryers		3

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates *"Unknown"*)

	QUESTION	Y	N	Unk	NA	COMMENTS
	ZONING, BUILDING DESIGN & LIFE SAFETY ISSUES					
1	Are there any unresolved building, fire, or zoning code issues?		X			
2	Is there any pending litigation concerning the property?		X			
3	Are there any other significant issues/hazards with the property?		X			
4	Are there any unresolved construction defects at the property?		X			
5	Has any part of the property ever contained visible suspect fungal growth?		X			
6	Is there a fungal Operations and Maintenance Plan?	X				
7	Are there any recalled fire sprinkler heads (Star, GEM, Central, and Omega)?		X			
8	Have there been indoor air quality or fungal related complaints from tenants?		X			
	GENERAL SITE					
9	Are there any problems with erosion, storm water drainage or areas of paving that do not drain?		X			
10	Are there any problems with the landscape irrigation systems?		X			
	BUILDING STRUCTURE					
11	Are there any problems with foundations or structures?		X			
12	Is there any water infiltration in basements or crawl spaces?		X			

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

13	Has a termite/wood boring insect inspection been performed within the last year?		X			
BUILDING ENVELOPE						
Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates *"Unknown"*)						
	QUESTION	Y	N	Unk	NA	**COMMENTS**
14	Are there any wall, or window leaks?		X			
15	Are there any roof leaks?		X			
16	Is the roofing covered by a warranty or bond?			X		
17	Are there any poorly insulated areas?			X		
18	Is Fire Retardant Treated (FRT) plywood used?			X		
19	Is exterior insulation and finish system (EIFS) or a synthetic stucco finish used?		X			T-111
BUILDING HVAC AND ELECTRICAL						
20	Are there any leaks or pressure problems with natural gas service?		X			
21	Does any part of the electrical system use aluminum wiring?		X			
22	Do Residential units have a less than 60-Amp service?		X			
23	Do Commercial units have less than 200-Amp service?		X			
24	Are there any problems with the utilities, such as inadequate capacities?		X			
ADA						
25	Has the management previously completed an ADA review?	X				
26	Have any ADA improvements been made to the property?		X			
27	Does a Barrier Removal Plan exist for the property?			X		

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

28	Has the Barrier Removal Plan been approved by an arms-length third party?			X		

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	QUESTION	Y	N	Unk	NA	COMMENTS
29	Has building ownership or management received any ADA related complaints?		X			
30	Does elevator equipment require upgrades to meet ADA standards?				X	
	PLUMBING					
31	Is the property served by a private water well?		X			
32	Is the property served by a private septic system or other waste treatment systems?		X			
33	Is polybutylene piping used?		X			
34	Are there any plumbing leaks or water pressure problems?		X			

Issues or Concerns That EMG Should Know About?	
1.	
2.	
3.	

Items Provided to EMG Auditors	Yes	No	N/A	Additional Comments?
Access to 10% (GPNA), 25% (RAD) Apartments	☐	☐	☐	
Access to All Mechanical Spaces	☐	☐	☐	
Access to Roof/Attic Space	☐	☐	☐	
Access to Building As-Built Drawings	☐	☐	☐	
Site plan with bldg., roads, parking and other features	☐	☐	☐	
Access to last 12/24 Months Common Area Utility Data	☐	☐	☐	
Access to last 12/24 Months Tenant Utility Data	☐	☐	☐	
Contact Details of Mech, Elevator, Roof, Fire Contractors:	☐	☐	☐	
List of Commercial Tenants in the property	☐	☐	☐	
Previous reports pertaining to the physical condition of property.	☐	☐	☐	
ADA survey and status of improvements implemented.	☐	☐	☐	
Current / pending litigation related to property condition.	☐	☐	☐	
Any brochures or marketing information.	☐	☐	☐	
Appraisal, either current or previously prepared.	☐	☐	☐	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

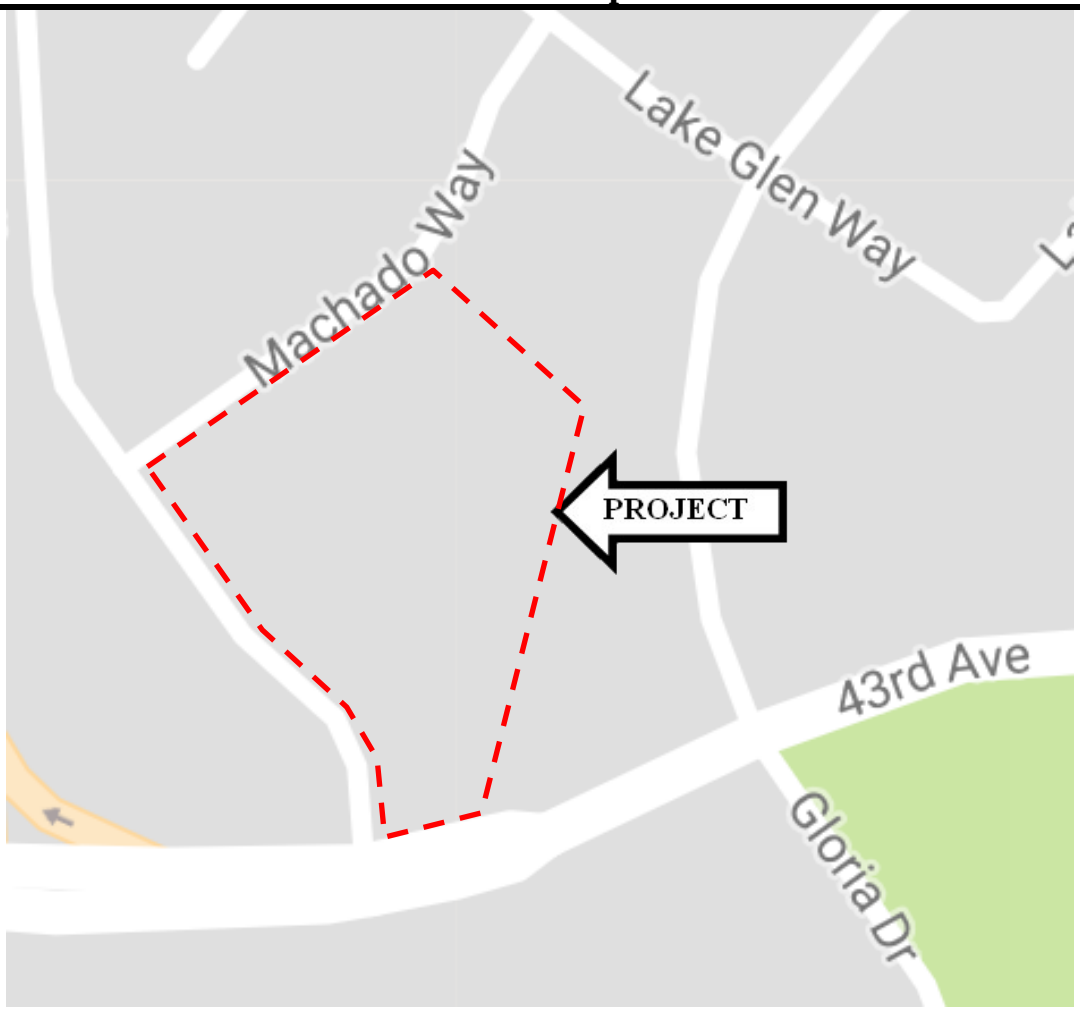
Summary of Projects executed in last 5 years	☐	☐	☐	

Signature of person interviewed or completing form

3/5/2019
Date

APPENDIX C:
SUPPORTING DOCUMENTATION

Street Map

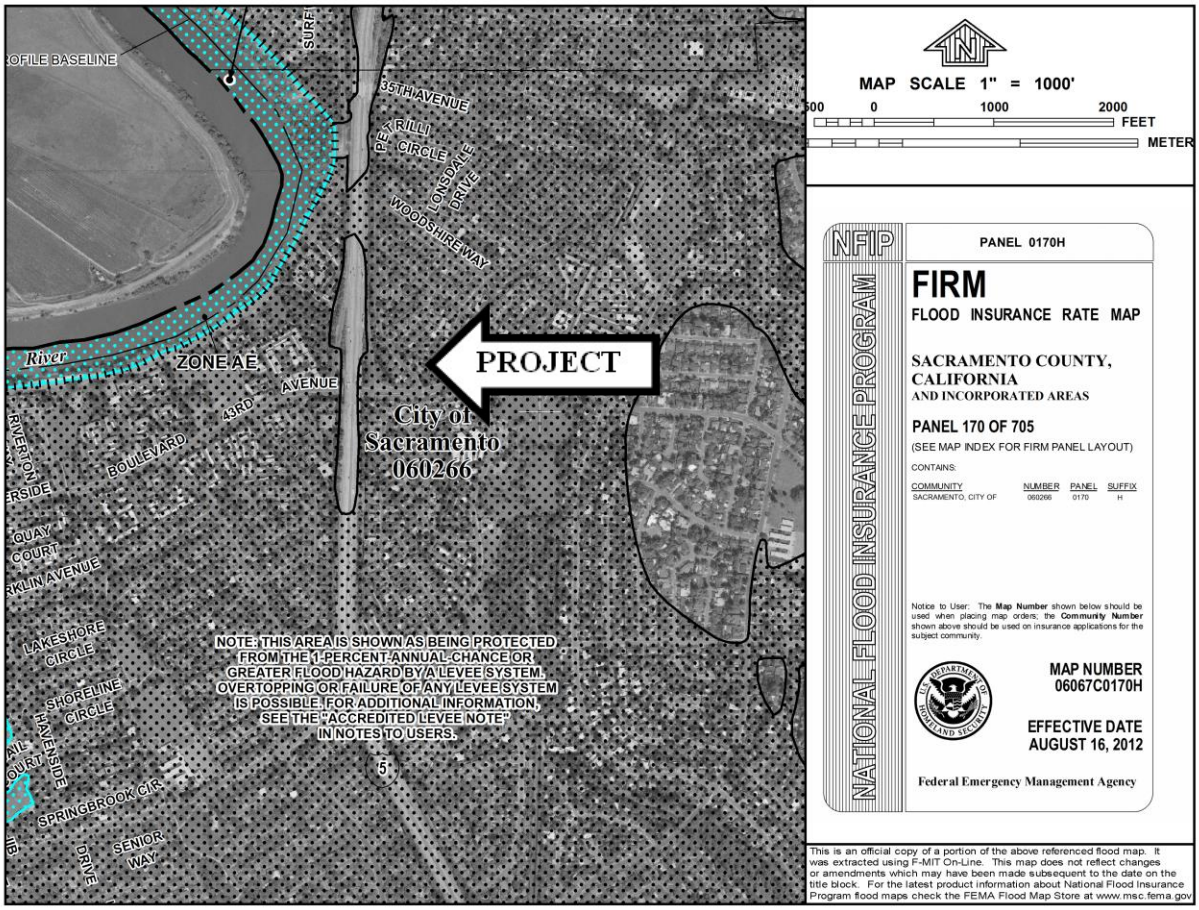


EMG	**Source:** **Google**	**Project Number:** **136742.19R000-006.306**
N	**The north arrow indicator is an approximation of 0° North.**	**Project Name:** **Meadow Commons - William Land Villa**
		On-Site-Date: **March 7, 2019**

Aerial Photograph

EMG	**Source:** **USGS**	**Project Number:** **136742.19R000-006.306**
N	**The north arrow indicator is an approximation of 0° North.**	**Project Name:** **Meadow Commons - William Land Villa**
		On-Site-Date: **March 7, 2019**

Flood Map



EMG	**Source:** **FEMA** **Date: 2012**	**Project Number:** **136742.19R000-006.306**
N	**The north arrow indicator is an approximation of 0° North.**	**Project Name:** **Meadow Commons - William Land Villa**
		On-Site-Date: **March 7, 2019**

EMG ACCESSIBIILITY CHECKLIST

Property Name: Meadow Commons – William Land Villa
Date: March 19, 2019
Project Number: 136742.19R000-006.306

EMG Accessibility Checklist						
UFAS/ADA Accessibility						
	Building History	Yes	No	N/A	Unk	Comments
1.	Has the management previously completed an accessibility review?				√	Improvements were observed at site.
2.	Does an accessibility compliance plan exist for the property?				√	
3.	Has the plan been reviewed/approved by outside agencies (engineering firms, building department, other agencies)?				√	
4.	Have any accessibility related complaints been received in the past?		√			
5.	Is the property Section 504 compliant?	√				According to POC.
	Building Access	Yes	No	N/A	Comments	
1.	Are there an adequate number (per regulation) of wheelchair accessible parking spaces available at the rental office (96” wide/ 60” aisle)			√	There is no rental office on property.	
2.	Is there at least one wheelchair accessible van parking space (96” wide/ 96” aisle) for every 8 standard accessible spaces?		√			
3.	Are accessible parking spaces located on the shortest accessible route of travel from an accessible building entrance?	√				
4.	Does signage exist directing you to wheelchair accessible parking and an accessible building entrance?			√		
5.	Is there a ramp from the parking to an accessible building entrance (1:12 slope or less)	√				
6.	If the main entrance is inaccessible, are there alternate accessible entrances?			√		
7.	Is the accessible entrance doorway at least 32” wide?	√				
8.	Is the door handle easy to open? (lever/push type knob, no twisting required, no higher than 48” above floor)	√				
9.	Are entry doors other than revolving doors available?	√				
	Rental office	Yes	No	N/A	Comments	
1.	Is the entry door to the rental office 3’wide with no step or threshold over ½” tall?			√	There is no rental office.	

EMG Accessibility Checklist					
	Rental office	Yes	No	N/A	Comments
2.	Is there a counter or table at 30” high for wheelchair access to fill out a rental application?			√	
3.	Is there clearance behind the counter for an employee in a wheelchair?			√	
	Building Corridors and Elevators	Yes	No	N/A	Comments
1.	Is the path of travel free of obstructions and wide enough for a wheelchair (at least 60” wide)?			√	There is no elevator.
2.	Are floor surfaces firm, stable and slip resistant (carpets wheelchair friendly)?			√	
3.	Do obstacles (phones, fountains, etc.) protrude no more than 4” into walkways or corridor?			√	
4.	Are elevators controls low enough to be reached from a wheelchair (48” front approach/54” side approach)?			√	
5.	Are there raised elevator markings in Braille and standard alphabet for the blind?			√	
6.	Are there audible signals inside cars indicating floor changes?			√	
7.	Do elevator lobbies have visual and audible indicators of the cars arrival?			√	
8.	Does the elevator interior provide sufficient wheelchair turning area (51” x 68” minimum)?			√	
9.	Is at least one wheelchair accessible public phone available?			√	
10	Are wheelchair accessible facilities (restrooms, exits, etc.) identified with signage?			√	
	Common Area Restrooms	Yes	No	N/A	Comments
1.	Are common area public restrooms located on an accessible route?	√			
2.	Are pull handles push/pull or lever type?		√		
3.	Are access doors wheelchair accessible (at least 32” wide)?	√			
4.	Are public restrooms large enough for wheelchair turnaround (60” turning diameter)?		√		
5.	Are stall doors wheelchair accessible (at least 32” wide)?			√	
6.	If stalls are to narrow can the toilet room be converted to a single occupant toilet room?			√	
7.	Are grab bars provided in toilet stalls (33”-36” above floor)?			√	
8.	Do sinks provide clearance for a wheelchair to roll under (29” clearance)?	√			
9.	Are sink handles operable with one hand without grasping, pinching or twisting?	√			
10.	Are exposed pipes under sink sufficiently insulated against contact?		√		

EMG Accessibility Checklist					
	Common Area Restrooms	Yes	No	N/A	Comments
11.	Are soap dispensers, towel, etc. reachable (48” from floor for frontal approach, 54” for side approach)?	√			
12.	Is the base of the mirror no more than 40” off floor?	√			
	Common Area Kitchen	Yes	No	N/A	Comments
1.	In a “U”-shaped kitchen is there 60” clear floor space width?			√	
2.	In a “U”-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40” width?			√	
3.	In a “L”-shaped kitchen, is there a 40” width minimum maintained?	√			
4.	Are countertops a maximum of 24” deep and 36” high?	√			
5.	Knee space beneath cabinetry is 30” wide and 27” high.		√		
6.	Is insulation installed below sinks on piping?		√		
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?		√		
	Common Area Laundry rooms	Yes	No	N/A	Comments
1.	Are the laundry rooms located on an accessible route?	√			
2.	Are the door handles push/pull or lever type?	√			
3.	Are the access doors wheelchair accessible (at least 32” clear width)?	√			
4.	Are laundry rooms large enough for wheelchair turnaround (60” turning diameter)?	√			“
5.	Is there a front load washing machine	√			
6.	If clothes folding tables are provided is one section at 32” high with a clear area below the table?			√	

EMG Accessibility Checklist					
Fair Housing Accessibility / Section 504					
	Access to Unit	Yes	No	N/A	Comments
1.	Property management reports that the number of units currently accessible and those adaptable meet FHA requirements of all ground floor units or 100% for a high rise.			√	Due to age of property. Accessible units provided at other properties.
2.	Are 5% of the units fully accessible to those individuals with mobility impairments and 2% of units accessible to those individuals with audio / visual impairments?		√		
3.	Are there any barriers or structural restrictions preventing access to the building?		√		
4.	Are the accessible units on an accessible route?			√	
5.	Is the apartment entry corridor 36” wide, door 32” wide (frame to frame), threshold height less than ½”, and appropriate door hardware present?	√			
	Unit Living Space	Yes	No	N/A	Comments
1.	Is there access throughout unit?		√		
2.	Are electrical outlets 15” minimum above floor minimum?		√		
3.	Are environmental controls and switches 48” maximum above floor or lower?		√		
	Unit Bathroom	Yes	No	N/A	Comments
1.	Is entry door at least 32” wide frame-to-frame?		√		
2.	Are switches & outlets in accessible locations?		√		
3.	Are bathroom walls around the toilet and tub/shower reinforced?			**unk**	
4.	Is there a 30” x 48” clear floor space outside of door swing area?		√		
5.	Is there a 56” x 48” clear floor space in front of toilet (48” out from wall toilet is hung against)?		√		
6.	Is there a 30” x 48” clear floor space in front of lavatories (30” deep from front of counter)?		√		
7.	Is there a 30” x 48” clear floor space in front of tub/shower (30” out from tub/shower)?		√		
8.	Is vanity a maximum of 24” deep and 36” high?	√			
9.	Knee space beneath sink is 30” wide and 27” high.		√		
10.	Is shower stall 36”x 42” minimum with small lip?		√		
11.	Is insulation installed below sinks on piping?		√		

EMG Accessibility Checklist					
	Unit Kitchen	Yes	No	N/A	Comments
1.	In a “U”-shaped kitchen is there 60” clear floor space width?		√		
2.	In a “U”-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40” width?		√		
3.	In a “L”-shaped kitchen, is there a 40” width minimum maintained?	√			
4.	Are countertops a maximum of 24” deep and 36” high?	√			
5.	Knee space beneath cabinetry is 30” wide and 27” high.		√		
6.	Is insulation installed below sinks on piping?		√		Required in adaptable unit regardless of occupancy.
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?			√	

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Faucet Aerators
EAP2	**Location**: All Apartment Kitchens

Property Type:	Residential	Estimated No. of Operational Weeks	52
		Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Number of Occupants Affected By Retrofit	56		Number of Occupants Affected by Retrofit		
Do You Want To Replace Kitchen Faucets Aerators	Yes	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	No	*(Select)*
Total Number of Faucet Aerators To Be Replaced	28		Total Number of Faucet Aerators To Be Replaced	0	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	2	GPM	GPM of Existing Faucet Aerators		GPM
GPM of Proposed Faucet Aerator	1.5	GPM	GPM of Proposed Faucet Aerator		GPM
Estimated Number of Uses Per Day	4		Estimated Number of Uses Per Day	4	
Estimated Total Faucet Use Time Per Occupant	4.05	Mins	Estimated Total Faucet Use Time Per Occupant	0.00	Mins
(hide) Water Savings- Kitchen	24.77	kGal	(hide) Water Savings From Bathroom/yr	0.00	kGal

Annual Water Savings From Installing Low Flow Aerators: 24.77 kGal

8.1 Min/Person/day @AWWA

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Natural Gas	(Select)	Property Location in United States	Central Localities	
Energy Factor of Domestic Hot Water Heater:	0.67	EF	Heating Fuel Tariff	$1.60	$/Therm
Hot Water Discharge Temperature at Faucet	123.00	°F	Water Tariff ($/1000 Gal)	$8.70	$/kGal
Equivalent Heating Fuel Savings: *Savings Discounted by 15% to Account For Cold Water Use*	165	Therms	Annual Cost Savings In Form of Water	$215	$
Annual Water Savings	24.77	kGal	Annual Energy Savings From Water Heater	$264	$

COST BENEFIT ANALYSIS					
Estimated Total Annual Cost Savings	$480	$$	Estimated Total Installation Cost	$278	$$
Simple Payback Period	0.58	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $278 Estimated Annual Cost Savings: $480 Simple Payback Period (Yrs): 0.58

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Faucet Aerators
EAP2-b	**Location**: All Apartment Bathrooms

Property Type:	Residential	Estimated No. of Operational Weeks	52
		Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Number of Occupants Affected By Retrofit	56		Number of Occupants Affected by Retrofit	56	
Do You Want To Replace Kitchen Faucets Aerators	No	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	Yes	*(Select)*
Total Number of Faucet Aerators To Be Replaced	0		Total Number of Faucet Aerators To Be Replaced	28	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	-	GPM	GPM of Existing Faucet Aerators	1.5	GPM
GPM of Proposed Faucet Aerator	-	GPM	GPM of Proposed Faucet Aerator	1	GPM
Estimated Number of Uses Per Day	0		Estimated Number of Uses Per Day	5	
Estimated Total Faucet Use Time Per Occupant	0.00	Mins	Estimated Total Faucet Use Time Per Occupant	8.10	Mins

Annual Water Savings From Installing Low Flow Aerators: 49.53 kGal

8.1 Min/Person/day @AWWA

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Natural Gas	(Select)	Property Location in United States	Central Localities	
Energy Factor of Domestic Hot Water Heater:	0.67	EF	Heating Fuel Tariff	$1.60	$/Therm
Hot Water Discharge Temperature at Faucet	123.00	°F	Water Tariff ($/1000 Gal)	$8.70	$/kGal
Equivalent Heating Fuel Savings:	330	Therms	Annual Cost Savings In Form of Water	$431	$
Savings Discounted by 15% to Account For Cold Water Use					
Annual Water Savings	49.53	kGal	Annual Energy Savings From Water Heater	$528	$

COST BENEFIT ANALYSIS					
Estimated Total Annual Cost Savings	$959	$$	Estimated Total Installation Cost	$278	$$
Simple Payback Period	0.29	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $278 Estimated Annual Cost Savings: $959 Simple Payback Period (Yrs): 0.29

Property of EMG Corp, All Rights Reserved

UIC	Retrofit Apartment Tank Toilets to Dual Flush
EAP3	Location: All Apartment Toilets

EXISTING CONDITION

Total Occupants:		56	
Number of Water Closets To Be Replaced		28	
Number of Occupied Days Per Week (Max 7)		7	
Number of Occupied Weeks/Year (Max 52)		52	
Estimated Restroom Usage/Individual/Day *5.05 flushes/person/day@American Water Works Association (AWWA)*		4	(Select)

PROPOSED RETROFIT/REPLACEMENT

Existing Gallons Per Flush Ratings For Water Closet Flushes		1.60	GPF
Replace or Retrofit Toilets With Dual Flush Toilets		Retrofit	
Replace			
GPF of Proposed New Low Flow Water Closet Fixture*		0.8	GPF
Retrofit			
Dual Flush - Retrofit Setup Valve for Flush Tank Toilet	*Solid Waste (20%)*	1.60	GPF
**(Federal Law Requires All Flushes Not To Exceed 1.6 GPF)*	*Liquid Waste (80%)*	1.28	GPF

Water & Cost Saving Calculations

Water Savings By The Use of Low Flow Water Closet Flush Valves/Day	57.34	gal
Total Annual Water Savings in gallons	20.87	kgal
Cost Savings Calculations		
Enter Water Tariff Rate ($/1000Gal)	$8.70	$$
Estimated Cost Savings From Water	$182	$$
Estimated Cost of Retrofit		
Estimated Total Cost For Retrofit	$3,738	$$
Simple Pay Back Period	20.59	Yrs
Type of Recommendation	Capital Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

The highest water utilization at any home/office occurs in the restrooms. It is estimated that on an average a normal human being uses the restroom at least four times a day. Keeping with the global water conservation objectives, federal law prohibits use of any new water closet flushes over 1.6 GPF.

Existing toilets can be retrofitted with pressure-assisted flush technology to reduce the flush rate to 1.0 GPF or less. Though water efficient these toilets make considerable amount of noise as this involves release of pressurized air during the course of flushing. Thus making them unpopular among residential properties.

Thus EMG recommends replacing the existing high flow toilets with new low flow 1.28GPF rated flush tank toilets, which are comparatively more water efficient at the same time considerably quiter as compared to the pressure assisted technology retrofitted toilets.

Summary:

Initial Investment: $3,738

Simple Payback: 20.59 Years

Annual Cost Saving: $182

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Shower Heads
EAP1	Location: All Apartment Showerheads

Total Number of Shower Heads To Be Replaced		28	
No. of Shower Days/Year		292	
No. of Residents		56	
Estimated Time Per Shower		8.10	Mins
GPM of Existing Shower Head		2.5	GPM
GPM of Proposed Shower Head *	*(Select)*	1.75	GPM

**(Federal Law Requires all new shower heads to have a max flow rate of 2.5 GPM)*

Water & Energy Savings Calculations

Property Location in United States		Central Localities	
Select Type of Water Heater Fuel	*(Select)*	Natural Gas	
Average Hot Water Discharge Temperature		122.00	°F
Annual Water Savings *(Assuming 1 shower/day/person)*		99	kGal
Energy Factor of Domesitc Hot Water Heater:		0.67	EF
Equivalent Heating Fuel Energy savings:		76,574	kBtu

Cost Savings Calculations

Equivalent Heating Fuel Savings Natural Gas		766	Therms
Water Tariff ($/1000 Gal)	$8.70	$/kGal	
Annual Cost Savings In Form of Water		$864	$$
Annual Energy Savings From Water Heater		$1,225	$$
Estimated Total Annual Cost Savings		$2,089	$$

Estimated Installation Costs

Estimated Total Installation Cost		$1,059	$$
Simple Payback Period		0.51	Years
Type of Recommendation		Capital Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG.May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming off the shower heads, savings can be generated in the form of reduced water and sewer costs. Additional savings can be realized via reduction in the demand for hot water. Currently Federal law requires all new shower heads to have a maximum flow rate of 2.5 GPM.

EMG recommends replacing the existing shower heads with new low flow shower heads as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment:	$1,059	Simple Payback:	0.51
Annual Cost Savings:	$2,089		

Property of EMG Corp, All Rights Reserved

UIC	Replace Incandescent/CFL /Halogen Lamps With LED Lamps
EAL1B-S	Location: All Apartment Lighting

	Unit Entry	Foyer	Living Room	Hallway	Kitchen Ceiling	Kitchen Hood	Kitchen Sink Light
Current Type of Lamps in the Fixtures:	-	-	Screw In-CFL26	-	Screw In-CFL26	-	-
Number of Lamps to Be Replaced :	0	0	28	0	28	0	0
Current Annual Usage:	0 hrs	0 hrs	730 hrs	0 hrs	730 hrs	0 hrs	0 hrs
Proposed Measure	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	-	-
Replacement Qty- Lamps / Fixtures:	0	0	28	0	28	0	0
Proposed Annual Avg. Hours of Operation	0 hrs	0 hrs	730 hrs	0 hrs	730 hrs	0 hrs	0 hrs
Proposed Replacement:	-	-	LED19	-	LED19	-	-
Estimated Annual Energy Savings	0 kWh	0 kWh	143 kWh	0 kWh	143 kWh	0 kWh	0 kWh
Total labor Cost For Retrofit	$0	$0	$141	$0	$141	$0	$0
Estimated Cost Per Lamp/Fixture	$0.00	$0.00	$20.00	$0.00	$20.00	$0.00	$0.00
Cost For Retrofit	$0	$0	$701	$0	$701	$0	$0

Total Initial Investment For Retrofit	$1,720	Total kWh Saving	286 kWh	Total O&M Savings/Yr	$102	
Electric Rate	**$0.14**	Estimated Annual Cost Savings	$142	Simple Pay back Period	12.07	Yrs
Type of Recommendation	Capital Cost ECM Recommendation					

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

The existing incandescent lamps can be replaced with screw-in compact fluorescent lamps. The result of the replacement is a direct energy savings up to 60%. In case of the incandescent lamps approximately 80% of the energy consumed by it is lost in the form of heat radiated by them when lit where as only 20% is actually converted into light. In addition to this the commercially available incandescent lamp have an annual life expectancy of 5000 hrs, whereas a CFL can last for nearly 10,000-12,000 hrs, which is more than twice the life expectancy of the incandescent lamps. Not all, screw-in fluorescent lamps are generally compatible with dimmers.

EMG recommends replacing all the existing lamps with new LED/CFL's or replace the entire fixture with new LED fixture.

SUMMARY;

Initial Investment: $1,720 Simple Payback Period: 12.07 yrs

Annual Cost Savings: $142

Property of EMG Corp, All Rights Reserved

UIC	Replace Incandescent/CFL /Halogen Lamps With LED Lamps
EAL1B-S2	Location: All Apartment Lighting

	Dining Room	Stairwell	Bedroom	Closet Light	Bathroom Ceiling	Bathroom Vanity	Porch Light
Current Type of Lamps in the Fixtures:	-	-	Screw In-CFL26	-	-	-	Screw In-CFL26
Number of Lamps to Be Replaced :	0	0	28	0	0	0	56
Current Annual Usage:	0 hrs	0 hrs	730 hrs	0 hrs	0 hrs	0 hrs	730 hrs
Proposed Measure	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	-	Replace Lamps With LED Equivalent
Replacement Qty- Lamps / Fixtures:	0	0	28	0	0	0	56
Proposed Annual Avg. Hours of Operation	0 hrs	0 hrs	730 hrs	0 hrs	0 hrs	0 hrs	730 hrs
Proposed Replacement:	-	-	LED19	-	-	-	LED19
Estimated Annual Energy Savings	0 kWh	0 kWh	143 kWh	0 kWh	0 kWh	0 kWh	286 kWh
Total labor Cost For Retrofit	$0	$0	$141	$0	$0	$0	$283
Estimated Cost Per Lamp/Fixture	$0.00	$0.00	$20.00	$0.00	$0.00	$0.00	$20.00
Cost For Retrofit	$0	$0	$701	$0	$0	$0	$1,403

Total Initial Investment For Retrofit	$2,579	Total kWh Saving	429 kWh	Total O&M Savings/Yr	$154	
Electric Rate	**$0.14**	Estimated Annual Cost Savings	$214	Simple Pay back Period	12.07	Yrs
Type of Recommendation	Capital Cost ECM Recommendation					

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

The existing incandescent lamps can be replaced with screw-in compact fluorescent lamps. The result of the replacement is a direct energy savings up to 60%. In case of the incandescent lamps approximately 80% of the energy consumed by it is lost in the form of heat radiated by them when lit where as only 20% is actually converted into light. In addition to this the commercially available incandescent lamp have an annual life expectancy of 5000 hrs, whereas a CFL can last for nearly 10,000-12,000 hrs, which is more than twice the life expectancy of the incandescent lamps. Not all, screw-in fluorescent lamps are generally compatible with dimmers.

EMG recommends replacing all the existing lamps with new LED/CFL's or replace the entire fixture with new LED fixture.

SUMMARY;

Initial Investment: $2,579 Simple Payback Period: 12.07 yrs

Annual Cost Savings: $214

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Linear Fluorescent Lamps
EAL2-S	Location: All Apartment Kitchen and Bathroom

Existing Lighting System

	Kitchen Ceiling	Bathroom Vanity					Stairwell- BiLevel Lighting
Current Type of Lamp: *(Select)*	-	F42T8	-	-	-	-	
Current Annual Avg Hrs of Operation:	0 hrs	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Existing Number of Fixtures:	0	28	0	0	0	0	0

Proposed Lighting System

Proposed Lamp Replacement: *(Select)*	F42LED	F42LED	-	-	-	-	-
Proposed Annual Avg. Hours of Operation	0 hrs	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Proposed Number of Fixtures:	0	28	0	0	0	0	0
Proposed Lighting Control: *(Select)*	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch
No. of Lighting Controls:	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty

Energy Saving Calculation

Estimated Annual Energy Savings	0 kWh	491 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Are The Ballast's Being Replaced: *(Select)*	No	No	No	No	No	No	No
Estimated Material Cost:	$0 $	$1,343 $	$0 $	$0 $	$0 $	$0 $	$0 $
Estimated Labor Cost:	$0 $	$231 $	$0 $	$0 $	$0 $	$0 $	$0 $
Total Installation Cost:	$0 $	$1,574 $	$0 $	$0 $	$0 $	$0 $	$0 $

Estimated Total Material Cost:	$1,343 $$	Estimated Total Labor Cost:	$283	Total kWh Saving	491	kWh
Electric Rate:	$0.14 $$	**Total Initial Investment For Retrofit**	$1,626	Estimated Annual O&M Cost Savings	$6	
				Estimated Annual Cost Savings	$74	
Simple Pay back Period	21.88 Yrs	*Type of Recommendation*	**Capital Cost ECM Recommendation**			

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

Fluorescent lighting is recommended for areas where color sensitivity is an important criterion (e.g., offices or small parts assembly rooms). Fluorescent tubes are currently available that produce a higher light output (more lumens per watt) than standard fluorescent tubes. There are efficient 40-watt lamps that produce 8% to 10% more light than standard lamps. The 34-watt fluorescent tubes use 15% less power than standard lamps, while producing about 8% less light. Since the human eye responds to light exponen-tially, rather than linearly, the difference is often unnoticeable. "T8" fluorescent lamps use only 32 watts, but existing fixtures must be replaced. Therefore, EMG recommends retrofitting all the existing fixtures with new 17.5W LED Tube lamps. The LED tubes provide a 180 degree light dispersal, and can be retrofitted in the existing ligt fixture. The LED tubes are rated at 50,000 hrs as compared to 20,000 to 30,000 hrs ratings for conventional fluorescent lamps.

It is important to replace all lamps when re-lamping a fluorescent fixture, never mix energy-efficient and standard lamps with the same ballast. Ensure that the fluorescent ballast is compatible with the energy-efficient lamps. It must be noted that when switching from T-12 magnetic ballast to T8 lamps, the ballasts should be replaced with instant start electrical ballast. Also it should be noted that when installing an occupancy sensor/motion sensor, rapid start electronic ballast should be used.

SUMMARY:

Initial Investment: $1,343 Simple Payback: 21.88 Years

Annual Cost Savings: $74

CAPITAL NEEDS
ASSESSMENT

SACRAMENTO HOUSING & REDEVELOPMENT AGENCY
801 12th Street
Sacramento, California 95814
Vance Kelly

CAPITAL NEEDS CHECKLIST REPORT
of
RIO GARDEN - WALERGA
8223 Walerga Road
Antelope, California 95843

PREPARED BY:

10461 Mill Run Circle, Suite 1100
Owings Mills, Maryland 21117
800.733.0660
410.785.6220 (fax)
www.emgcorp.com

EMG CONTACT:

Matthew Anderson
Program Manager
800.733.0660, x7613
manderson@emgcorp.com

EMG Project #: 136742.19R000-002.306
Date of Report: March 25, 2019
On site Date: March 8, 2019

CERTIFICATION

EMG has completed a Capital Needs Assessment (CNA) of the subject property, Rio Garden - Walerga, located at 8223 Walerga Road in Antelope, Sacramento County, California. The CNA was performed on March 8, 2019.

The CNA was performed at the Client's request using methods and procedures consistent with good commercial and customary practice and with the standards outlined in 24 CFR 968.315, the Comprehensive Grant Program Guidebook 7485.3G, the Public Housing Modernization Standards Handbook 7485.2, and 24 CFR Part 5, Uniform Physical Condition Standards. EMG also utilizes the standards set forth by ASTM E2018-01, Standard Guide for Property Condition Assessments: Baseline Capital Needs Assessment Process. In addition, EMG's reference to the Client follows the ASTM guide's definition of User, whereas, the party that retains EMG for the preparation of a baseline CNA of the subject property. A user may include, without limitation, a purchaser, potential tenant, owner, existing or potential mortgagee, lender, or property manager of the subject property.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and EMG.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of EMG. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to EMG.

The opinions EMG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent architect or engineer in the same community under similar circumstances. EMG assumes no responsibility or liability for the accuracy of information contained within this report that has been obtained from the Client or the Client's representatives, from other interested parties, or from the public domain. The conclusions presented represent EMG's professional judgment based on information obtained during the course of this assignment. EMG's evaluations, analyses, and opinions are not representations regarding either the design integrity, structural soundness, or actual value of the property. Factual information regarding operations, conditions, and test data provided by the Client or the Client's representative has been assumed to be correct and complete. The conclusions presented within this report are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment.

EMG certifies that EMG has no undisclosed interest in the subject property, that EMG's relationship with the Client is at arms-length, and that EMG's employment and compensation are not contingent upon the findings or estimated costs to remedy any noted deficiencies due to deferred maintenance and/or any noted component or system replacements.

EMG's CNA cannot wholly eliminate the uncertainty regarding the presence of physical deficiencies and/or the performance of a subject property's building systems. Preparation of a CNA in accordance with ASTM E2018-01 is intended to reduce, but not eliminate, the uncertainty regarding the potential for component or system failure and to reduce the potential that such component or system failure may not be initially observed. This CNA was prepared recognizing the inherent subjective nature of EMG's opinions as to such issues as workmanship, quality of original installation, and estimating the remaining useful life of any given component or system. It should be understood that EMG's suggested remedy may be determined under time constraints or may be formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the noted physical deficiencies.

Any questions regarding this report should be directed to Matthew Anderson at manderson@emgcorp.com or at 800.733.0660, x7613.

Prepared by: Tammy Prusa

Project Manager

Reviewed by:

Al Diefert
Technical Report Reviewer For
Matthew Anderson
Program Manager

TABLE OF CONTENTS

1. Observation Data 1
2. General Description Property Data 2
3. General Condition 3
4. System Condition Ratings 5
5. Current and Planned Renovation 6
6. Significant Issues/Deficiencies 7
7. Additional Investigations 8
8. Exhibits/Attachments 11

1. OBSERVATION DATA

Observation Data			
EMG Field Observer:	Debbie Whitham	Property Contact Name:	Tom Carson
Date Observed:	March 8, 2019	Prop Contact Phone Number	916.919.2446
Interview Conducted (Y/N)	Y	Name/Function Of Interviewee:	Lead Maintenance Technician

2. GENERAL DESCRIPTION PROPERTY DATA

General Description and Property Data						
Property Name:	Rio Garden - Walerga					
Street Address:	8223 Walerga Road			City, State:	Antelope, California	
Building Type:	Garden Apartments	Age:		1996	Year Renovated:	2009-2010
Size (# Units):	Total of 24. 22 - 3 R/1.5BA; 2 – 3 BR/1 BA;	# Buildings:		6	# Floors	2/1
Other Buildings Or Amenities	None					
UBC Seismic Zone:	Zone 3			Flood Zone Determination:	X	
# Parking Spaces:	45					

Building Specifications	
Foundation Construction:	Concrete slab
Structural System:	Wood frame
Exterior Wall finish:	Stucco
Roof finish:	Asphalt shingles (2010)
Windows:	Vinyl double glazed (2010)

Building Systems	
Plumbing Material:	Copper and ABS
Fire Sprinklers (Y/N):	Units 11-20 are equipped with fire sprinklers
Cooling System:	Split systems
Heating Equipment:	Natural Gas
Electrical System:	Copper wire
Fire Alarm and Life Safety System:	Smoke detectors

Interiors:			
Flooring:	Vinyl tile and Sheet Vinyl	Walls:	Painted drywall
Plumbing Fixtures	Tub, toilet, shower, wall-mounted sink, vanity cabinet	Cabinets	Wood with laminate counter
Light Fixtures:	Standard residential grade	Appliances:	Refrigerator, gas range

3. GENERAL CONDITION

General Condition
Generally, the property was constructed within industry standards, has been well-maintained over recent years and appeared to be in fair overall condition. Property management personnel reported a recent exterior modernization program consisting of new HVAC furnaces and condensers, vinyl-framed windows, asphalt composition shingles, exterior paint, landscaping, paving, and fencing. There are a number of Replacement Reserves that should be accomplished during the evaluation period as part of the preventive maintenance program. These needs are identified in the various sections of this report and are summarized in the enclosed cost tables.

Section 504 of the Rehabilitation Act of 1973 is a Federal accessibility law that was enacted on June 2, 1988. Section 504 applies to multi-family properties that have 15 or more units. The property must have a minimum of five percent mobility accessible units and two percent of the units for visual / audio hearing impairments. Exceptions can be considered due to undue financial burdens or structural restrictions. However, the exceptions do not relieve the recipients from compliance utilizing other units/buildings or other methods to achieve reasonable accommodations.

Reasonable Accommodations as described in 24 CFR 8.4(b)(i), 8.24 and 8.33 are described as follows: When a family member requires an accessible feature(s) or policy modification to accommodate a disability, property owners must provide such feature(s) or policy modification unless doing so would resulting in a fundamental alteration in the nature of its program or result in a financial and administrative burden.

The Uniform Federal Accessibility Standard (UFAS) 24 CFR part 40 was adopted by HUD and made effective October 4, 1984. The UFAS applies only to new construction or to alterations to the existing buildings. Alterations are defined as work that costs 50 percent or more of the building's value when the work performed occurs within a twelve month period. Apartments modified for mobility impaired residents are to comply with UFAS.

The Fair Housing Amendments Act (FHA) of 1988 amended Title VIII of the Civil Rights Act of 1968 to aid in the prohibitions against discrimination in housing on the basis of disability and familial status. The Fair Housing Act also made it unlawful to design and construct certain "covered multi-family dwellings" for first occupancy after March 13, 1991, in a manner that makes them inaccessible to persons with disabilities. The Fair Housing Act does not apply to this property due to the date of construction.

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" on the basis of disability. Generally the rental office and access from the site to the rental office must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Buildings completed and occupied after January 26, 1992 are required to comply fully with ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of complying to the extent allowed by structural feasibility and the financial resources available; otherwise a reasonable accommodation must be made.

During the CNA, a visual Accessibility Survey in general conformance with Section 504 Accessibility Standards and the Uniform Federal Accessibility Standards (UFAS) was conducted. It is understood by the Client that the visual observation described herein does not comprise a full measured Accessibility Compliance Survey, and that such a survey is beyond the scope of EMG's undertaking. Actual measurements were not taken to verify compliance.

Based on the date of construction, 1996, the accessibility standards that apply to the Project are the Section 504 standards and UFAS Guidelines. Property management stated that requests for accessible apartments are completed on an as requested basis. Presently, none of the units are accessible for individuals with mobility impairments according to property management.

Based on EMG's observations as well as the information provided by SHRA's Site Manager, the facility appears to be in compliance with the Section 504 Standards and the ADA Guidelines.

A full ADA Measured Compliance Survey may reveal some aspects of the property that are not in compliance.

4. SYSTEM CONDITION RATINGS

System Condition Ratings				
System	**Good**	**Fair**	**Poor**	**Unknown**
Site/Landscaping		✓		
Pavements/Parking		✓		
Structural	✓			
Exterior Walls		✓		
Roofs		✓		
Mechanical/HVAC		✓		
Interiors		✓		

5. CURRENT AND PLANNED RENOVATION

Current and Planned Renovation
Not applicable.

6. SIGNIFICANT ISSUES/DEFICIENCIES

Significant Issues/Deficiencies
None.

7. ADDITIONAL INVESTIGATIONS

Additional Investigations
No further investigation is necessary at this time.

Location	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Total Escalated Estimate
Rio Garden - Walerga / Energy Conservation Measures - 2019	$54,605	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,478	$0	$0	$0	$0	$17,290	$0	$0	$0	$0	$78,578	**$151,952**
Rio Garden - Walerga / Residential Buildings - 2019	$72,718	$0	$233,292	$608,089	$0	$0	$12,706	$103,011	$0	$0	$348,115	$160,674	$0	$50,180	$0	$0	$17,076	$696,139	$201,950	$0	$0	**$2,503,950**
Rio Garden - Walerga / Site - 2019	$0	$0	$9,772	$29,757	$0	$92,168	$0	$11,328	$0	$0	$0	$0	$13,133	$39,991	$3,268	$269,745	$0	$15,224	$0	$0	$0	**$484,386**
GrandTotal	**$127,323**	**$0**	**$243,064**	**$637,846**	**$0**	**$92,168**	**$12,706**	**$114,339**	**$0**	**$0**	**$349,593**	**$160,674**	**$13,133**	**$90,171**	**$3,268**	**$287,035**	**$17,076**	**$711,363**	**$201,950**	**$0**	**$78,578**	**$3,140,287**

Rio Garden - Walerga / Energy Conservation Measures - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
X103X	All Apartment Showerheads	ECM, Low Flow Shower Heads, Install	10	10	0	24	EA	$45.84	$1,100	$1,100										$1,100										$1,100	**$3,300**
X103X	All Apartment Lighting	ECM, Incandescent / Halogen / Compact Fluorecent Lamps, Replace	15	15	0	260	EA	$27.56	$7,166	$7,166															$7,166						**$14,331**
X103X	All units	ECM, Inefficient Furnace System, Replace	20	20	0	24	EA	$1,766.96	$42,407	$42,407																				$42,407	**$84,814**
X103X	All units	ECM, Timers On Exhaust Fans, Install	15	15	0	46	EA	$85.48	$3,932	$3,932															$3,932						**$7,864**
Totals, Unescalated										**$54,605**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,100**	**$0**	**$0**	**$0**	**$0**	**$11,098**	**$0**	**$0**	**$0**	**$0**	**$43,507**	**$110,310**
Totals, Escalated (3.0% inflation, compounded annually)										**$54,605**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,478**	**$0**	**$0**	**$0**	**$0**	**$17,290**	**$0**	**$0**	**$0**	**$0**	**$78,578**	**$151,952**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Rio Garden - Walerga / Residential Buildings - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2011	Exterior walls	Exterior Wall, Painted Surface, 1-2 Stories, Prep & Paint	10	3	7	5560	SF	$3.48	$19,344								$19,344										$19,344				**$38,689**
B2032	Front entrance	Exterior Door, Steel, Replace	25	15	10	24	EA	$1,151.52	$27,636											$27,636											**$27,636**
B3011	Roof	Roof, Asphalt Shingle, Replace	20	9	11	22680	SF	$5.12	$116,075												$116,075										**$116,075**
C3024	Apartment Units	Interior Floor Finish, Vinyl Tile (VCT), Replace	15	13	2	37800	SF	$5.82	$219,900			$219,900															$219,900				**$439,800**
D2011	Unit bathroom	Toilet, Flush Tank (Water Closet), Replace	20	17	3	46	EA	$1,278.81	$58,825				$58,825																		**$58,825**
D2014	Unit kitchens	Sink/Lavatory, Stainless Steel, Replace	20	17	3	24	EA	$1,277.48	$30,659				$30,659																		**$30,659**
D2015	Unit bathroom	Bathtub, Enameled Steel, Replace	20	17	3	24	EA	$1,547.78	$37,147				$37,147																		**$37,147**
D2023	Apartment units	Water Heater, Gas, Residential, 30 to 50 GAL, Replace	10	7	3	12	EA	$2,847.50	$34,170				$34,170												$34,170						**$68,340**
D2023	Apartment units	Water Heater, Gas, Residential, 30 to 50 GAL, Replace	10	3	7	12	EA	$2,847.50	$34,170								$34,170										$34,170				**$68,340**
D3032	All units	Condensing Unit/Heat Pump, Split System, 2 Ton, Replace	15	12	3	24	EA	$3,783.99	$90,816				$90,816															$90,816			**$181,631**
D4019	Throughout	Sprinkler Heads (per SF), Replace	20	10	10	37800	SF	$1.61	$60,931											$60,931											**$60,931**
D5019	All units	Load Center, 120 / 240 V, 50 Amp to 100 Amp, Single Phase Residential, Replace	30	13	17	24	EA	$6,156.72	$147,761																		$147,761				**$147,761**
D5022	Exterior wall	Compact Fluorescent Lighting Fixture, Ballast, 32 W, Replace	20	10	10	48	EA	$164.84	$7,912											$7,912											**$7,912**
D5029	All units	Lighting System, Interior, Multi-Family, Upgrade	25	22	3	37800	SF	$5.73	$216,693				$216,693																		**$216,693**
D5037	Buildings 11, 12	Fire Alarm Control Panel, Addressable, Replace	15	5	10	2	EA	$24,600.07	$49,200											$49,200											**$49,200**
E1094	Unit kitchens	Residential Appliances, Refrigerator, 14-18 CF, Replace	15	12	3	24	EA	$1,158.69	$27,809				$27,809															$27,809			**$55,617**
E1094	Unit kitchens	Residential Appliances, Range Hood, Vented or Ventless, Replace	15	8	7	24	EA	$329.18	$7,900								$7,900														**$7,900**
E1094	Unit kitchens	Residential Appliances, Range, Gas, Replace	15	8	7	24	EA	$930.93	$22,342								$22,342														**$22,342**
E2012	Unit bathroom	Bathroom Vanity Cabinet, Wood, with Cultured Marble Sink Top, 24 to 30", Replace	20	17	3	46	EA	$1,312.37	$60,369				$60,369																		**$60,369**
E2012	All kitchens	Kitchen Counter, Plastic Laminate, Postformed, Replace	10	4	6	200	LF	$53.21	$10,641							$10,641												$10,641			**$21,282**
E2012	All kitchens	Kitchen Cabinet, Base and Wall Section, Wood, Replace	20	10	10	200	LF	$566.75	$113,351											$113,351											**$113,351**
Z103X	Apartment units	ADA, Kitchen, Sink & Counter, Full Reconfiguration, Renovate	0	0	0	2	EA	$18,179.55	$36,359	$36,359																					**$36,359**
Z108X	Apartment unit bathrooms	ADA, Restroom, Full Reconfiguration, Renovate	0	0	0	2	EA	$18,179.55	$36,359	$36,359																					**$36,359**
Totals, Unescalated										**$72,718**	**$0**	**$219,900**	**$556,488**	**$0**	**$0**	**$10,641**	**$83,757**	**$0**	**$0**	**$259,030**	**$116,075**	**$0**	**$34,170**	**$0**	**$0**	**$10,641**	**$421,176**	**$118,624**	**$0**	**$0**	**$1,903,220**
Totals, Escalated (3.0% inflation, compounded annually)										**$72,718**	**$0**	**$233,292**	**$608,089**	**$0**	**$0**	**$12,706**	**$103,011**	**$0**	**$0**	**$348,115**	**$160,674**	**$0**	**$50,180**	**$0**	**$0**	**$17,076**	**$696,139**	**$201,950**	**$0**	**$0**	**$2,503,950**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Rio Garden - Walerga / Site - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
D4031	Site	Fire Extinguisher, Replace	15	1	14	5	EA	$432.12	$2,161															$2,161							**$2,161**
G2022	Parking lots	Parking Lots, Asphalt Pavement, Seal & Stripe	5	3	2	20000	SF	$0.46	$9,211			$9,211					$9,211					$9,211					$9,211				**$36,844**
G2022	Parking lots	Parking Lots, Asphalt Pavement, Mill & Overlay	25	20	5	20000	SF	$3.98	$79,505						$79,505																**$79,505**
G2031	Site	Pedestrian Pavement, Sidewalk, Concrete Large Areas, Replace	30	15	15	15000	SF	$10.91	$163,616																$163,616						**$163,616**
G2041	Site	Fences & Gates, Wrought Iron, 4' High, Replace	30	15	15	100	LF	$43.72	$4,372																$4,372						**$4,372**
G2049	Site	Dumpster Accessories, Enclosures, Masonry, 8' High, Replace	35	20	15	20	LF	$257.57	$5,151																$5,151						**$5,151**
G4021	Site	Pole Light, Exterior, 135 to 1000 W HID (Fixture, Ballast, & Lamp), Replace	10	7	3	10	EA	$2,723.18	$27,232				$27,232										$27,232								**$54,464**
Totals, Unescalated										**$0**	**$0**	**$9,211**	**$27,232**	**$0**	**$79,505**	**$0**	**$9,211**	**$0**	**$0**	**$9,211**	**$0**	**$0**	**$27,232**	**$2,161**	**$173,139**	**$0**	**$9,211**	**$0**	**$0**	**$0**	**$346,112**
Totals, Escalated (3.0% inflation, compounded annually)										**$0**	**$0**	**$9,772**	**$29,757**	**$0**	**$92,168**	**$0**	**$11,328**	**$0**	**$0**	**$13,133**	**$39,991**	**$3,268**	**$269,745**	**$0**	**$15,224**	**$0**	**$0**	**$0**	**$0**	**$0**	**$484,386**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

8. EXHIBITS/ATTACHMENTS

Appendix A: Photographs of Property

Appendix B: Pre-survey Questionnaire

Appendix C: Supporting Documentation

APPENDIX A:
PHOTOGRAPHS OF PROPERTY

EMG PHOTOGRAPHIC RECORD

Project No.: 136742.19R000-002.306 **Project Name: Rio Gardens - Walerga**

#1	FRONT ELEVATION

#2	LEFT ELEVATION

#3	REAR ELEVATION

#4	RIGHT ELEVATION

#5	WATER HEATER, GAS, RESIDENTIAL

#6	INTERIOR DOOR, WOOD HOLLOW-CORE SLIDING

EMG PHOTOGRAPHIC RECORD

Project No.: 136742.19R000-002.306 **Project Name: Rio Gardens - Walerga**

#7	EXTERIOR DOOR, STEEL

#8	SPRINKLER HEADS

#9	LOAD CENTER

#10	CONDENSING UNIT/HEAT PUMP, SPLIT SYSTEM

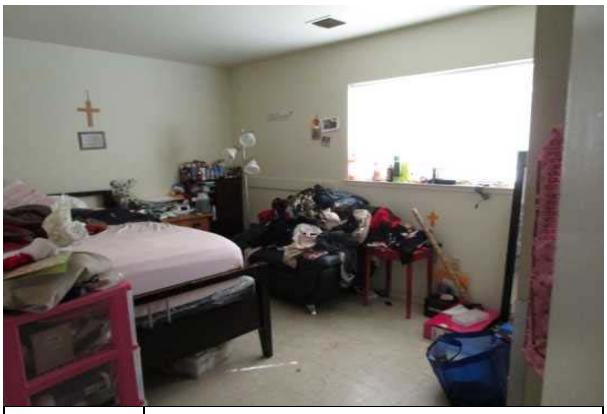
#11	ROOF, ASPHALT SHINGLE

#12	WINDOW, VINYL-CLAD DOUBLE-GLAZED

EMG PHOTOGRAPHIC RECORD

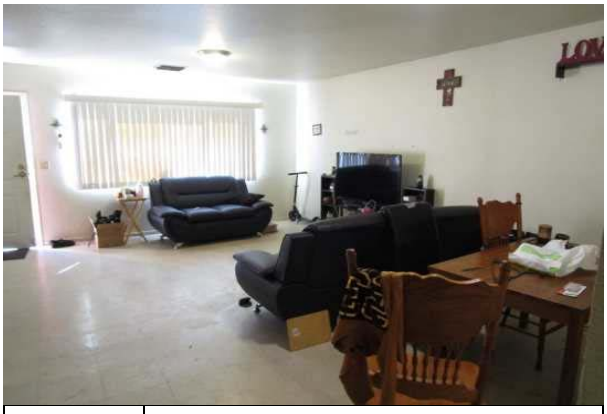
Project No.: 136742.19R000-002.306 **Project Name: Rio Gardens - Walerga**

#13	UNIT BATHROOM



#14	UNIT BEDROOM

#15	UNIT KITCHEN



#16	UNIT LIVING ROOM

APPENDIX B:
PRE-SURVEY QUESTIONNAIRE

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

This questionnaire must be completed by the property owner, the owner's designated representative, or someone knowledgeable about the subject property. If the form is not completed, EMG's Project Manager will require ***additional time*** during the on-site visit with such a knowledgeable person in order to complete the questionnaire. During the site visit, EMG's Field Observer may ask for details associated with selected questions. This questionnaire will be utilized as an exhibit in EMG's final report.

Name of Institution:	Sacramento Housing and Redevelopment Agency
Name of Building: 8223 Walerga Road Antelope, CA 95843	Building #:786
Name of person completing questionnaire: Tom Carson; Rosalyne Upchurch	
Length of Association With the Property:	Phone Number: (916) 449-6320

Site Information					
Year of Construction?	1989				
No. of Stories?	Mostly 2 story units; townhouses style				
Total Site Area?					
Total Building Area?	2 units @ 1122 sq ft. 17 units @1250 sq ft. 5 units @1300 sq ft.				
Area Heated (%)	All units heated				
Area Cooled (%)	All units cooled				
Total Conditioned Area (%)					
Primary Heating System?					
Secondary Heating System?					
If Oil Used For Heating- Tank Capacity	Gallons		No. of Tanks		
Primary Cooling System & Capacity?					
Do Any HVAC Systems Use R-11, R-12 or R-22 Refrigerants?					
	Elec.	Natural Gas	Propane	No.2 Oil	Dist. Steam
Primary Heating Fuel?	☐	☑	☐	☐	☐
Secondary Heating Fuel?	☐	☐	☐	☐	☐
Domestic Water Heater Fuel?	☐	☑	☐	☐	

Building Occupancy/Schedule			
Estimated No. of Residence	140		
No. of Staff Members	1 site Caretaker; 6 portfolio (AMP) staff members		
Standard Staff Work Timing	8 :00 - 5 :00pm		
Maintenance Staff Hours	7 :30am - 4:00pm		
Apartment Type	**Qty**	**Area (Sqft)**	**No. of Bathrooms**
No. of Apts. In Building:			
No. of Efficiency Apts:			
No. of 1 Bedroom Apts:			
No. of 2 Bedroom Apts:	2		
No. of 3 Bedroom Apts:	22 ~~24~~		
No. of 4 Bedroom Apts:			
No. of 5 Bedroom Apts:			
No. of 6 Bedroom Apts:			
No. of Vacant Apts:	0		
No. of Down Apts:	0		

Inspections	Date of Last Inspection	List of Any Outstanding Repairs Required
1. Elevators	N/A	N/A
2. HVAC Mechanical, Electric, Plumbing?	As needed.	NO.

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Inspections	Date of Last Inspection	List of Any Outstanding Repairs Required
3. Life-Safety/Fire?	Monthly = extinguishers; sprinkler = annually. (9/2015).	
4. Roofs?		

Key Questions	Response
Major Capital Improvements in Last 3 yrs.	2009 ARRA improvements.
Planned Capital Expenditure For Next Year?	$129,286.
Age of the Roof?	approx 10 yrs. (2009).
What bldg. Systems Are Responsibilities of Tenants? (HVAC/Roof/Interior/Exterior/Paving)	NONE.

Unk = Unknown, NA = Not Applicable	Yes	No	NA	Unk	Comments
1. Are the plumbing fixtures Low Flow *(Below 2.0GPM, .6GPF)*	☑	☐	☐	☐	
2. Are there any vacant buildings or significant building areas?	☑	☐	☐	☐	
3. Do tenants pay for utilities at leased properties?	☐	☐	☐	☐	
4. Does the owner pay for exterior site lighting electricity?	☐	☐	☐	☐	
5. Any Issues with exterior Lighting?	☐	☑	☐	☐	

Building Structure							
		Y/N		Y/N		Y/N	Additional Comments?
Roof Type:	Pitched?	Y	Flat		Both		
Attic Insulation:	Batt		Cellulose		Fiberglass		
Window Frame:	Wooden		Vinyl	Y	Metal		
Window Glazing:	Single		Double	Y	Triple		
Structure	Wooden	Y	Metal		Conc.		STUCCO EXTERIOR

Building Lighting			
Type of Linear Fluorescent Lamps? *(T8/T12)*	T-8,	Exterior Lighting Control *(Timer/Photocell)*	X
Type of Common Lamps? *(Incan/CFLs)*	CFLs	Exterior Light Timing	Hr
Lighting Sensors? *(Y/N)*		EXIT Lights (Incan/Fluor/LED)	

Other Systems				
Item	Qty		Selection	Utility Company / Provider Name
# of Elevators	0	Hydraulic/Traction		N/A
# of Electric Meters	24	Master/ Direct		
# of Nat. Gas Meters	24	Resi/Commercial/Indust.		
# of Water Meters	1			
# of Backup Generator	N/A	Fuel?:		

Preventive Maintenance of Mechanical System		
Systems	**Annual Professional Maintenance**	**Seldom or Never Maintained**
Tenant Space Heating Systems (*Furnace/Boilers/Heat pumps*)	☐	☑
Tenant Space Cooling Systems (*Condensers/Window AC*)	☐	☑
Domestic Water Heaters	☑ WE DO A VISUAL	☐

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Building Appliances		
	Value	Additional Comments?
Percentage of Energy Star Certified Refrigerators (%)	50 %	
Percentage of Refrigerators older than 8 years (%)	50 %	
Cooking Range Type (Electric/Gas/Propane)	GAS	
Laundry System (Leased/Owned)	N/A	
No. of Washers	0	
No. of Dryers	0	

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates *"Unknown"*)

	QUESTION	Y	N	Unk	NA	COMMENTS
ZONING, BUILDING DESIGN & LIFE SAFETY ISSUES						
1	Are there any unresolved building, fire, or zoning code issues?		X			
2	Is there any pending litigation concerning the property?		X			NO
3	Are there any other significant issues/hazards with the property?		X			
4	Are there any unresolved construction defects at the property?		X			
5	Has any part of the property ever contained visible suspect fungal growth?		X			
6	Is there a fungal Operations and Maintenance Plan?		X			NO
7	Are there any recalled fire sprinkler heads (Star, GEM, Central, and Omega)?		X			NO
8	Have there been indoor air quality or fungal related complaints from tenants?		X			
GENERAL SITE						
9	Are there any problems with erosion, storm water drainage or areas of paving that do not drain?		X			
10	Are there any problems with the landscape irrigation systems?		X			
BUILDING STRUCTURE						
11	Are there any problems with foundations or structures?		X			

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

12	Is there any water infiltration in basements or crawl spaces?				X	
13	Has a termite/wood boring insect inspection been performed within the last year?		X			

BUILDING ENVELOPE

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	QUESTION	Y	N	Unk	NA	COMMENTS
14	Are there any wall, or window leaks?		X			
15	Are there any roof leaks?		X			
16	Is the roofing covered by a warranty or bond?			X		
17	Are there any poorly insulated areas?		X			
18	Is Fire Retardant Treated (FRT) plywood used?			X		
19	Is exterior insulation and finish system (EIFS) or a synthetic stucco finish used?			X		

BUILDING HVAC AND ELECTRICAL

20	Are there any leaks or pressure problems with natural gas service?		X			
21	Does any part of the electrical system use aluminum wiring?		X			
22	Do Residential units have a less than 60-Amp service?		X			
23	Do Commercial units have less than 200-Amp service?				X	
24	Are there any problems with the utilities, such as inadequate capacities?		X			

ADA

25	Has the management previously completed an ADA review?			X		
26	Have any ADA improvements been made to the property?					
27	Does a Barrier Removal Plan exist for the property?			X		

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

28	Has the Barrier Removal Plan been approved by an arms-length third party?			X		

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates *"Unknown"*)

	QUESTION	Y	N	Unk	NA	COMMENTS
29	Has building ownership or management received any ADA related complaints?			X		
30	Does elevator equipment require upgrades to meet ADA standards?				X	
	PLUMBING					
31	Is the property served by a private water well?		X			
32	Is the property served by a private septic system or other waste treatment systems?		X			
33	Is polybutylene piping used?			X		
34	Are there any plumbing leaks or water pressure problems?		X			

Issues or Concerns That EMG Should Know About?	
1.	
2.	
3.	

Items Provided to EMG Auditors	Yes	No	N/A	Additional Comments?
Access to 10% (GPNA), 25% (RAD) Apartments	☐	☐	☐	
Access to All Mechanical Spaces	☐	☐	☐	
Access to Roof/Attic Space	☐	☐	☐	
Access to Building As-Built Drawings	☐	☐	☐	
Site plan with bldg., roads, parking and other features	☐	☐	☐	
Access to last 12/24 Months Common Area Utility Data	☐	☐	☐	
Access to last 12/24 Months Tenant Utility Data	☐	☐	☐	
Contact Details of Mech, Elevator, Roof, Fire Contractors:	☐	☐	☐	
List of Commercial Tenants in the property	☐	☐	☐	
Previous reports pertaining to the physical condition of property.	☐	☐	☐	
ADA survey and status of improvements implemented.	☐	☐	☐	
Current / pending litigation related to property condition.	☐	☐	☐	
Any brochures or marketing information.	☐	☐	☐	
Appraisal, either current or previously prepared.	☐	☐	☐	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

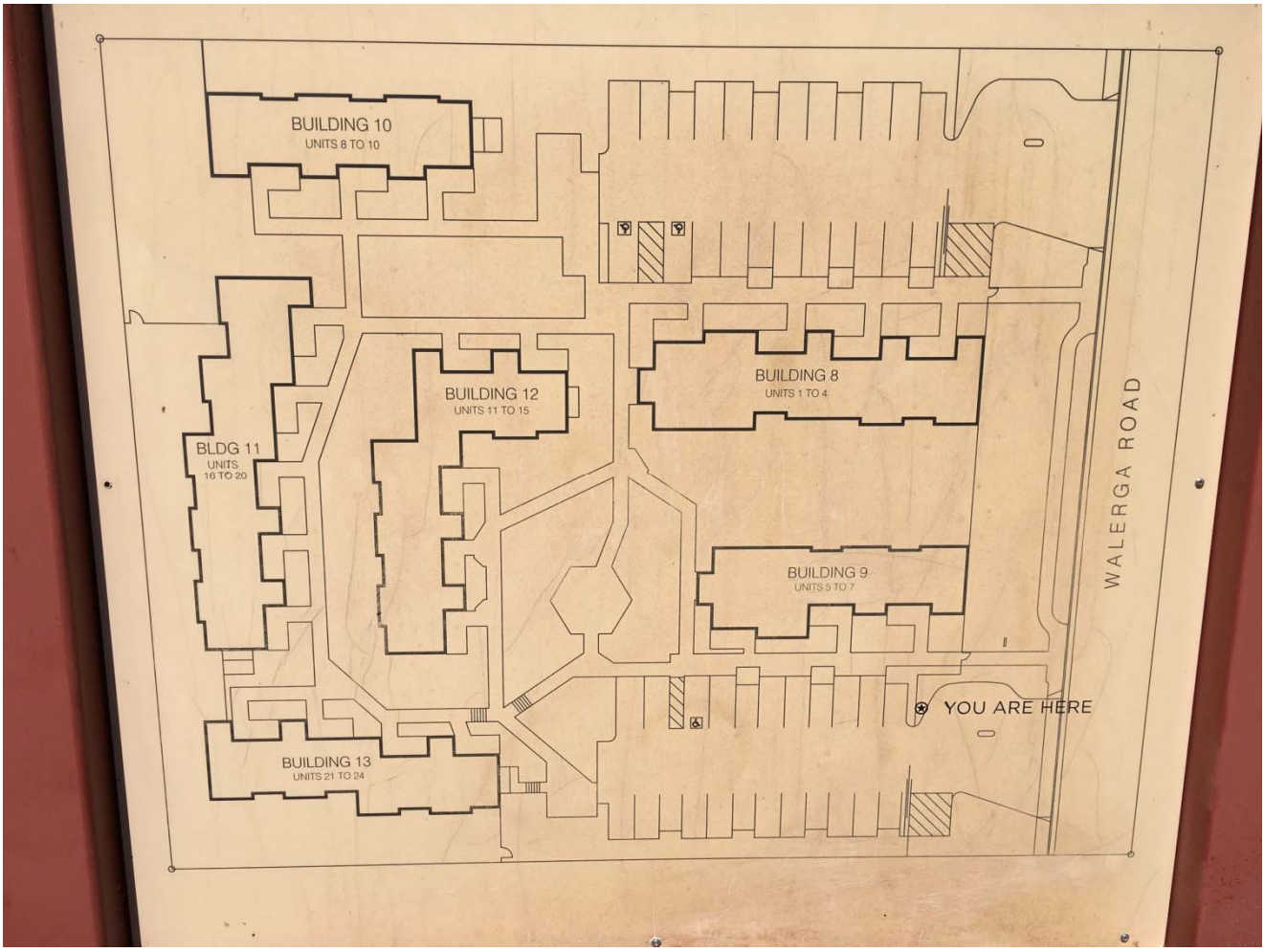
Summary of Projects executed in last 5 years	☐	☐	☐	

_____ _____

Signature of person Interviewed or completing form Date

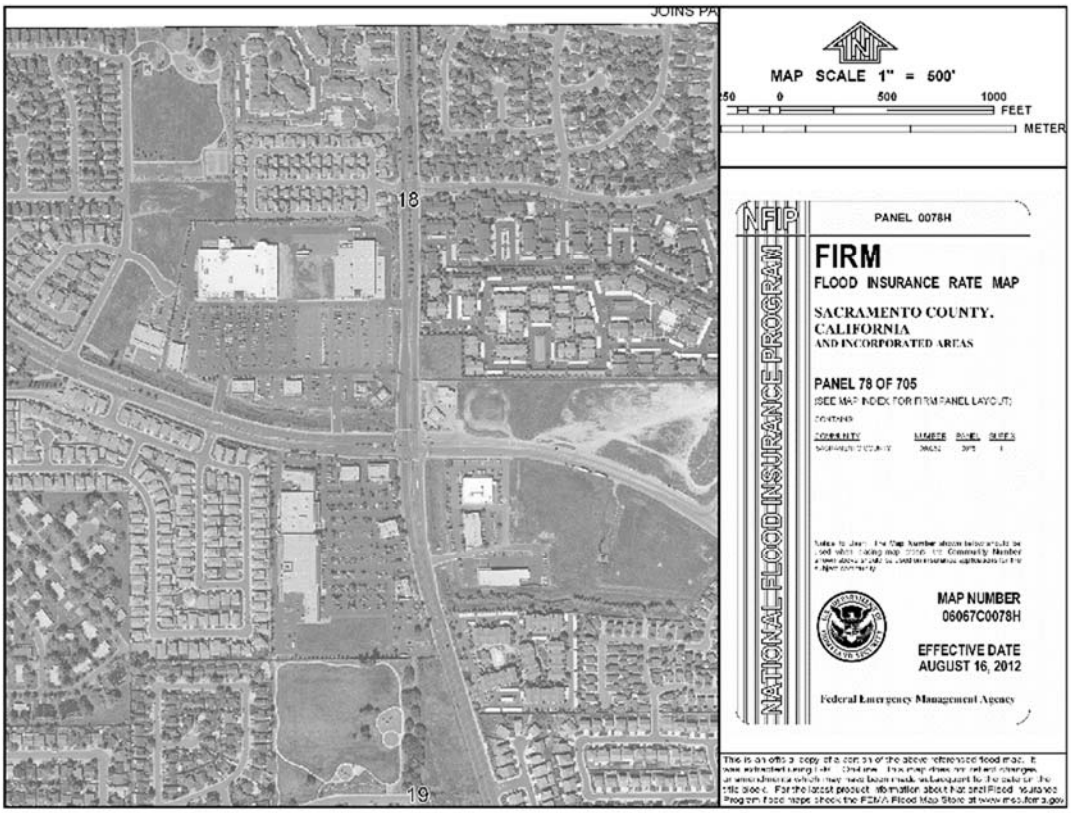
APPENDIX C:
SUPPORTING DOCUMENTATION

Site Plan



EMG	**Project Name:** **Rio Garden - Walerga**	**Project Number:** **136742.19R000-002.306**
	Source: **Property Site Map**	**On-Site Date:** **March 8, 2019**

Flood Map



EMG	**Project Name:** **Rio Garden - Walerga**	**Project Number:** **136742.19R000-002.306**
	Source: **FEMA Map No.: 06067C0078H** **Dated: August 16, 2012**	**On-Site Date:** **March 8, 2019**

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Shower Heads
EAP1	Location: All Apartment Showerheads

Total Number of Shower Heads To Be Replaced		24	
No. of Shower Days/Year		292	
No. of Residents		96	
Estimated Time Per Shower		8.10	Mins
GPM of Existing Shower Head		2.5	GPM
GPM of Proposed Shower Head *	*(Select)*	1.75	GPM

**(Federal Law Requires all new shower heads to have a max flow rate of 2.5 GPM)*

Water & Energy Savings Calculations

Property Location in United States		Central Localities	
Select Type of Water Heater Fuel	*(Select)*	Natural Gas	
Average Hot Water Discharge Temperature		105.00	°F
Annual Water Savings *(Assuming 1 shower/day/person)*		170	kGal
Energy Factor of Domesitc Hot Water Heater:		0.66	EF
Equivalent Heating Fuel Energy savings:		96,719	kBtu

Cost Savings Calculations

Equivalent Heating Fuel Savings Natural Gas		967	Therms
Water Tariff ($/1000 Gal)	$8.70	$/kGal	
Annual Cost Savings In Form of Water		$1,482	$$
Annual Energy Savings From Water Heater		$1,577	$$
Estimated Total Annual Cost Savings		$3,058	$$

Estimated Installation Costs

Estimated Total Installation Cost	$908	$$
Simple Payback Period	0.30	Years
Type of Recommendation	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG.May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming off the shower heads, savings can be generated in the form of reduced water and sewer costs. Additional savings can be realized via reduction in the demand for hot water. Currently Federal law requires all new shower heads to have a maximum flow rate of 2.5 GPM.

EMG recommends replacing the existing shower heads with new low flow shower heads as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment:	$908	Simple Payback:	0.30
Annual Cost Savings:	$3,058		

Property of EMG Corp, All Rights Reserved

UIC	Replace Incandescent/CFL /Halogen Lamps With LED Lamps
EAL1B-S	Location: All Apartment Lighting

	Unit Entry and Porch Light	Dining Room	Living Room	Hallway	Stairwell	Kitchen Hood	Bathroom Ceiling
Current Type of Lamps in the Fixtures:	2 Pin-CFL13	Screw In-I60	Screw In-I60	Screw In-I60	Screw In-I60	Screw In-I60	Screw In-I60
Number of Lamps to Be Replaced :	48	24	48	48	22	24	46
Current Annual Usage:	1,825 hrs	730 hrs	730 hrs	730 hrs	730 hrs	730 hrs	730 hrs
Proposed Measure	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent
Replacement Qty- Lamps / Fixtures:	48	24	48	48	22	24	46
Proposed Annual Avg. Hours of Operation	1,825 hrs	730 hrs	730 hrs	730 hrs	730 hrs	730 hrs	730 hrs
Proposed Replacement:	2 Pin-LED6	LED11	LED11	LED11	LED11	LED11	LED11
Estimated Annual Energy Savings	613 kWh	858 kWh	1,717 kWh	1,717 kWh	787 kWh	858 kWh	1,645 kWh
Total labor Cost For Retrofit	$243	$121	$243	$243	$111	$121	$232
Estimated Cost Per Lamp/Fixture	$12.40	$13.75	$13.75	$13.75	$13.75	$13.75	$13.75
Cost For Retrofit	$838	$451	$903	$903	$414	$451	$865

Total Initial Investment For Retrofit	$5,913	Total kWh Saving	8,196 kWh	Total O&M Savings/Yr	$1,014
Electric Rate	**$0.15**	Estimated Annual Cost Savings	$2,244	Simple Pay back Period	2.64 Yrs
Type of Recommendation	Capital Cost ECM Recommendation				

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

The existing incandescent lamps can be replaced with screw-in compact fluorescent lamps. The result of the replacement is a direct energy savings up to 60%. In case of the incandescent lamps approximately 80% of the energy consumed by it is lost in the form of heat radiated by them when lit where as only 20% is actually converted into light. In addition to this the commercially available incandescent lamp have an annual life expectancy of 5000 hrs, whereas a CFL can last for nearly 10,000-12,000 hrs, which is more than twice the life expectancy of the incandescent lamps. Not all, screw-in fluorescent lamps are generally compatible with dimmers.

EMG recommends replacing all the existing lamps with new LED/CFL's or replace the entire fixture with new LED fixture.

SUMMARY;

Initial Investment: $5,913 Simple Payback Period: 2.64 yrs

Annual Cost Savings: $2,244

Property of EMG Corp. All Rights Reserved

UIC	Install Timers On Exhaust Fans
EAC7A	Location:

Type of Exhaust Fan: Apt. Bathroom Exhaust Fans

EXISTING CONDITION

No. of Timers to Be Installed:	46	Qty	HP of Individual Fan Motor:	0.17	HP
No. of Exhaust Fans:	46		Total kW:	5.83	kW
Existing Daily Hours of Operation/Exhaust Fan:	2.00	Hrs/Day	Annual kWh For All Fans:	4,259	kWh

PROPOSED CONDITION

New Daily Hours With Timers/Exhaust Fan:	0.94	Hrs/Day	New Annual kWh For All Fans:	1,999	kWh
Type of Heating Fuel:	Natural Gas		Is The Property Cooled?	Yes	

Only For Apt. Bathroom Exhaust Fans			Only For Roof Top Exhaust Fans- Commerical Spaces		
CFM for Individual Bathroom Exhaust Fans *(For bathrooms<100Sqft)*	90	CFM	No. of Water Closets In Building	0	
			No. of Urinals In Building	0	
Total Exhuast CFM From All Fans	4,140	CFM	Total CFM for All Restroom Exhaust	0	CFM
Annual Heating Energy Savings	12,866	kbtu	Annual Heating Energy Savings	0	kbtu
Annual Cooling Energy Savings	7,019	kbtu	Annual Cooling Energy Savings	0	kbtu

Energy & Cost Savings

Estimated Annual Heating Plant Efficiency	81.00	%	Estimated Annual Cooling Plant Efficiency	8.48	EER
Annual Heating Energy Savings	159	Therms	Annual Cooling Energy Savings	828	kWh
Annual Electric Fan Motor Savings	2,260	kWh			

COST ANALYSIS

Electric Rate:	$0.15	$/kWh	Total Annual Electric Savings	3,088	kWh
Material Cost For Timers:	$920	$	Total Annual Non Electric Savings	159	Therms
Total Cost for Installing Timers	$3,244	$	Annual Cost savings:	$722	$
Simple Payback:	4.49	Yrs			

Type of Recommendation Capital Cost ECM Recommendation

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG Corp. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

Exhaust fans are generally used in areas with high concentrations of pollutants generated from occupants' activities. These exhaust requirements are rarely continuous, and the fans should operate only as needed. Continuous operations of bathroom exhaust fans results in exhausting conditioned air out. This causes low pressures in the conditioned space, which is filled up by infiltrated air from unconditioned spaces. Air infiltration leads to increase loads on heating and cooling system increasing the energy consumed to condition the space. In addition to this the fan motor is also consumes energy to operate, though insignificant as compared to the HVAC losses.

In case of the residential properties with individual exhaust fans in the bathrooms, EMG recommends installing timer switches on each bathroom fan to control the fan operations. Bathroom fans are essential to exhaust out the excess humidity and odor control. The timer switch will limit the operation time to 20 mins.

In case of central exhaust systems that have roof top or side wall mounted exhaust fans, EMG recommends a single electronic timer control to restrict the exhaust fan operations to typical building occupancy hours +/- 2 hrs. A single electronic timer would be able to control all the exhaust fans.

Summary:

Initial Investment:	$920	Simple Payback:	4.49	Years
Energy Cost Savings	$722			

Property of EMG Corp. All Rights Reserved

UIC	Replace Inefficient Furnace System
EAH12-A	Location:

Estimated Annual Cooling Hours:	610 Hrs		Estimated Annual Heating Hours:	915 Hrs	
Are The Condensing Units Being Replaced	No		Replace Furnace?	Yes	Heating Fuel: Natural Gas
Existing Cooling System			**Existing Heating System**		
No. of Cooling Plants To Be Replaced:	0		No. of Furnaces To Be Replaced:	24	
Input the Btu/Hr of the air conditioner:	0		Input the MBH Rating of the Furnace:	60 MBH	
Input Existing EER of the Air Conditioner:	0.00		Input Existing AFUE for the Furnace:	81% %	
Estimated Current Annual Energy Consumption For Cooling: *(For All Units)*	0 kWh		Estimated Annual Current Energy Consumption For Heating: *(For All Units)*	13,176 Therms	
Proposed Cooling System			**Proposed Heating System**		
Input the Btu/Hr of the Proposed Air Conditioner:	24,000 Btuh		Proposed Furnace:	Gas Fired -60MBH	
Input EER of the Proposed Air Conditioner:	0.00		Input AFUE for the Proposed Furnace:	96%	
Estimated Annual Energy Consumption With New AC's *(For One Unit)*	0 kWh		Estimated Annual Energy Consumption With New Furnace *(For One Unit)*	463 Therms	
Energy & Cost Savings From New Cooling System			**Energy & Cost Savings From New Heating System**		
Estimated Annual Energy Savings From New Cooling System: *(Total)*	0 kWh		Estimated Annual Energy Consumptions From New Heating System: *(Total)*	11,117 Therms	
Average Electric Rate:	$0.15 $/kWh		Average Heating Fuel Cost For New Furnace:	$1.63 $/Therm	
Estimated Annual Cost Savings From Cooling:	$0		Estimated Annual Cost Savings From Heating:	$3,356 $$	
Estimated Cost of New Condensing Unit: *(Material + Installation+Labor)*	$0		Estimated Cost of New Furnace Unit: *(Material + Installation+Labor)*	$1,189 $$	
Estimated Cost of New Evaporator Coils In Furnace: *(Material + Installation+Labor)*	$0		Estimated Total Cost of New Furnace Unit: *(Material + Installation+Labor)*	$28,548 $$	

Total Estimated Installed Cost For A New Air Conditioning System Setup + New High Efficiency Furnace : *(Includes Location Factor)*	$34,990 $$			
Estimated Total Energy Cost Savings From New HVAC System:	$3,356 $$	Estimated O&M Savings:	$168	Total Annual Savings: $3,524 $$
Estimated Simple Pay Back Period:	9.93 Years			
Type of Recommendation	Capital Cost ECM Recommendation			

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

Property of EMG Corp. All Rights Reserved

UIC	Replace Existing Air Conditioners with Energy Star Air Conditioners
EAH3	Location: All Apartments

Electric Rate: $0.15 $/kWh

Split System Air Conditioner

Number of Existing Air Conditioners	24	Qty	0	Qty	0	Qty	0	Qty
Insert Cooling Capacity of Existing Air-Conditioner	48,000	Btuh		Btuh		Btuh		Btuh
Please Input The Existing EER of The Air-Conditioner:	8.48	EER		EER		EER		EER
Estimated Annual Operating Hours:	610	Hrs		Hrs		Hrs		Hrs
Select Proposed Air Conditioner Type:	Split System-48000		-		-		-	
Estimated New Annual Operating Hours:	610	Hrs	0	Hrs	0	Hrs	0	Hrs
Please Input The Btu/Hr of The New Air-Conditioner:	48,000	Btuh	-	Btuh	-	Btuh	-	Btuh
EER of Proposed Air-Conditioning System:	14.00	EER	-	EER	-	EER	-	EER
Total Energy Consumption For Existing Air conditioner:	82,868	kWh	0	kWh	0	kWh	0	kWh
Total Energy Consumption For Proposed Air conditioner:	50,194	kWh	0	kWh	0	kWh	0	kWh
Annual kWh savings for all Air conditioner:	32,674	kWh	0	kWh	0	kWh	0	kWh
Estimated Annual Energy Cost Savings:	$4,901		$0		$0		$0	
Estimated Annual O&M Savings:	$245		$0		$0		$0	
Total Annual Cost Savings:	$5,146		$0		$0		$0	
Estimated Installed Cost For All Air conditioner:	$87,048		$0		$0		$0	

Total Initial Investment:	$87,048	Total Annual Electric Savings:	32,674 kWh
Total Annual Cost Savings:	$5,146	Simple Payback:	16.92 Yrs
Type of Recommendation	Capital Cost ECM Recommendation		

Disclaimer: PREPARED BY EMG. DECEMBER 2014, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

Advances in compressor and condenser technology have allowed for the development of more efficient air conditioning systems. As a result cooling can be provided at the same rate, with a lower energy input. Energy efficiency ratio (EER) is the ratio of cooling output to power input. Seasonal energy efficiency ratio (SEER) is an adjusted figure based on the length of the cooling season. A higher EER or SEER indicates a more efficient unit which can provide the same cooling capacity while consuming less energy. The minimum standard for air conditioner performance in most areas is currently 13 SEER as required by the 2006

EMG recommends replacing all the identified air conditioners with the new proposed high efficiency air conditioners as mentioned above.

Summary:

Initial Investment: $87,048 Simple Payback: 16.92 Yrs

Energy Cost Savings: $5,146

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Linear Fluorescent Lamps
EAL2-S	Location: All Apartment Kitchen and Bathroom

Existing Lighting System

	Kitchen Ceiling	Bathroom Vanity					Stairwell- BiLevel Lighting
Current Type of Lamp: *(Select)*	F44T8	F22T8					
Current Annual Avg Hrs of Operation:	730 hrs	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Existing Number of Fixtures:	24	46	0	0	0	0	0

Proposed Lighting System

Proposed Lamp Replacement: *(Select)*	F44LED	F22LED	-	-	-	-	-
Proposed Annual Avg. Hours of Operation	730 hrs	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Proposed Number of Fixtures:	24	46	0	0	0	0	0
Proposed Lighting Control: *(Select)*	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch
No. of Lighting Controls:	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty

Energy Saving Calculation

Estimated Annual Energy Savings	736 kWh	437 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Are The Ballast's Being Replaced: *(Select)*	No	No	No	No	No	No	No
Estimated Material Cost:	$2,302 $	$1,472 $	$0 $	$0 $	$0 $	$0 $	$0 $
Estimated Labor Cost:	$396 $	$379 $	$0 $	$0 $	$0 $	$0 $	$0 $
Total Installation Cost:	$2,698 $	$1,851 $	$0 $	$0 $	$0 $	$0 $	$0 $

Estimated Total Material Cost:	$3,774 $$	Estimated Total Labor Cost:	$950	Total kWh Saving	1,172 kWh
Electric Rate:	$0.15 $$	**Total Initial Investment For Retrofit**	$4,724	Estimated Annual O&M Cost Savings	$20
				Estimated Annual Cost Savings	$195
Simple Pay back Period	24.18 Yrs	*Type of Recommendation*	**Capital Cost ECM Recommendation**		

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

Fluorescent lighting is recommended for areas where color sensitivity is an important criterion (e.g., offices or small parts assembly rooms). Fluorescent tubes are currently available that produce a higher light output (more lumens per watt) than standard fluorescent tubes. There are efficient 40-watt lamps that produce 8% to 10% more light than standard lamps. The 34-watt fluorescent tubes use 15% less power than standard lamps, while producing about 8% less light. Since the human eye responds to light exponen-tially, rather than linearly, the difference is often unnoticeable. "T8" fluorescent lamps use only 32 watts, but existing fixtures must be replaced. Therefore, EMG recommends retrofitting all the existing fixtures with new 17.5W LED Tube lamps. The LED tubes provide a 180 degree light dispersal, and can be retrofitted in the existing ligt fixture. The LED tubes are rated at 50,000 hrs as compared to 20,000 to 30,000 hrs ratings for conventional fluorescent lamps.

It is important to replace all lamps when re-lamping a fluorescent fixture, never mix energy-efficient and standard lamps with the same ballast. Ensure that the fluorescent ballast is compatible with the energy-efficient lamps. It must be noted that when switching from T-12 magnetic ballast to T8 lamps, the ballasts should be replaced with instant start electrical ballast. Also it should be noted that when installing an occupancy sensor/motion sensor, rapid start electronic ballast should be used.

SUMMARY:

Initial Investment: $3,774 Simple Payback: 24.18 Years

Annual Cost Savings: $195

Property Name: Rio Garden - Walerga

Date: March 20, 2019

Project Number: 136742.19R000-002.306

EMG Accessibility Checklist						
UFAS/ADA Accessibility						
	Building History	**Yes**	**No**	**N/A**	**Unk**	**Comments**
1.	Has the management previously completed an accessibility review?				√	
2.	Does an accessibility compliance plan exist for the property?				√	
3.	Has the plan been reviewed/approved by outside agencies (engineering firms, building department, other agencies)?				√	
4.	Have any accessibility related complaints been received in the past?		√			
5.	Is the property Section 504 compliant?				√	
	Building Access	**Yes**	**No**	**N/A**	**Comments**	
1.	Are there an adequate number (per regulation) of wheelchair accessible parking spaces available at the rental office (96" wide/ 60" aisle)			√	No rental office	
2.	Is there at least one wheelchair accessible van parking space (96" wide/ 96" aisle) for the rental office?	√				
3.	Are accessible parking spaces located on the shortest accessible route of travel from an accessible building entrance?	√				
4.	Does signage exist directing you to wheelchair accessible parking and an accessible building entrance?		√			
5.	Is there a ramp from the parking to an accessible building entrance (1:12 slope or less)			√		
6.	If the main entrance is inaccessible, are there alternate accessible entrances?	√				
7.	Is the accessible entrance doorway at least 32" wide?	√				
8.	Is the door handle easy to open? (lever/push type knob, no twisting required, no higher than 48" above floor)	√				
9.	Are entry doors other than revolving doors available?	√				
	Rental office	**Yes**	**No**	**N/A**	**Comments**	
1.	Is the entry door to the rental office 3'wide with no step or threshold over ½" tall?			√	No rental office	
2.	Is there a counter or table at 30" high for wheelchair access to fill out a rental application?			√		

	Rental office	Yes	No	N/A	Comments
3.	Is there clearance behind the counter for an employee in a wheelchair?			√	
	Building Corridors and Elevators	**Yes**	**No**	**N/A**	**Comments**
1.	Is the path of travel free of obstructions and wide enough for a wheelchair (at least 60" wide)?			√	No interior common areas
2.	Are floor surfaces firm, stable and slip resistant (carpets wheelchair friendly)?			√	
3.	Do obstacles (phones, fountains, etc.) protrude no more than 4" into walkways or corridor?			√	
4.	Are elevators controls low enough to be reached from a wheelchair (48" front approach/54" side approach)?			√	No elevators
5.	Are there raised elevator markings in Braille and standard alphabet for the blind?			√	
6.	Are there audible signals inside cars indicating floor changes?			√	
7.	Do elevator lobbies have visual and audible indicators of the cars arrival?			√	
8.	Does the elevator interior provide sufficient wheelchair turning area (51" x 68" minimum)?			√	
9.	Is at least one wheelchair accessible public phone available?			√	
10	Are wheelchair accessible facilities (restrooms, exits, etc.) identified with signage?			√	
	Common Area Restrooms	**Yes**	**No**	**N/A**	**Comments**
1.	Are common area public restrooms located on an accessible route?			√	No Common Area Restrooms
2.	Are pull handles push/pull or lever type?			√	
3.	Are access doors wheelchair accessible (at least 32" wide)?			√	
4.	Are public restrooms large enough for wheelchair turnaround (60" turning diameter)?			√	
5.	Are stall doors wheelchair accessible (at least 32" wide)?			√	
6.	If stalls are to narrow can the toilet room be converted to a single occupant toilet room?			√	
7.	Are grab bars provided in toilet stalls (33"-36" above floor)?			√	
8.	Do sinks provide clearance for a wheelchair to roll under (29" clearance)?			√	
9.	Are sink handles operable with one hand without grasping, pinching or twisting?			√	
10.	Are exposed pipes under sink sufficiently insulated against contact?			√	
11.	Are soap dispensers, towel, etc. reachable (48" from floor for frontal approach, 54" for side approach)?			√	

	Common Area Restrooms (cont.)	Yes	No	N/A	Comments
12.	Is the base of the mirror no more than 40” off floor?			√	
	Common Area Kitchen	**Yes**	**No**	**N/A**	**Comments**
1.	In a “U”-shaped kitchen is there 60” clear floor space width?			√	No common area kitchen
2.	In a “U”-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40” width?			√	
3.	In a “L”-shaped kitchen, is there a 40” width minimum maintained?			√	
4.	Are countertops a maximum of 24” deep and 36” high?			√	
5.	Knee space beneath cabinetry is 30” wide and 27” high.			√	
6.	Is insulation installed below sinks on piping?			√	
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?			√	
	Common Area Laundry Rooms	**Yes**	**No**	**N/A**	**Comments**
1.	Are the laundry rooms located on an accessible route?			√	No common area laundry room. Hook up provided in the units
2.	Are the door handles push/pull or lever type?			√	
3.	Are the access doors wheelchair accessible (at least 32” clear width)?			√	
4.	Are laundry rooms large enough for wheelchair turnaround (60” turning diameter)?			√	
5.	Is there a front load washing machine?			√	
6.	If clothes folding tables are provided is one section at 32” high with a clear area below the table?			√	
	Fair Housing Accessibility / 504				
	Access to Unit	**Yes**	**No**	**N/A**	**Comments**
1.	Property management reports that the number of units currently accessible and those adaptable meet FHA requirements of all ground floor units or 100% for a high rise.	√			
2.	Are 5% of the units fully accessible to those individuals with mobility impairments and 2% of units accessible to those individuals with audio / visual impairments?		√		No know AV units on the property
3.	Are there any barriers or structural restrictions preventing access to the building?		√		
4.	Are the accessible units on an accessible route?	√			
5.	Is the apartment entry corridor 36” wide, door 32” wide (frame to frame), threshold height less than ½”, and appropriate door hardware present?	√			
	Unit Living Space	**Yes**	**No**	**N/A**	**Comments**
1.	Is there access throughout unit?	√			

	Unit Living Space	Yes	No	N/A	Comments
2.	Are electrical outlets 15” minimum above floor minimum?	√			
3.	Are environmental controls and switches 48” maximum above floor or lower?	√			
	Unit Bathroom	**Yes**	**No**	**N/A**	**Comments**
1.	Is entry door at least 32” wide frame-to-frame?	√			
2.	Are switches & outlets in accessible locations?	√			
3.	Are bathroom walls around the toilet and tub/shower reinforced?	√			
4.	Is there a 30” x 48” clear floor space outside of door swing area?	√			
5.	Is there a 56” x 48” clear floor space in front of toilet (48” out from wall toilet is hung against)?	√			
6.	Is there a 30” x 48” clear floor space in front of lavatories (30” deep from front of counter)?	√			
7.	Is there a 30” x 48” clear floor space in front of tub/shower (30” out from tub/shower)?	√			
8.	Is vanity a maximum of 24” deep and 36” high?			√	
9.	Knee space beneath sink is 30” wide and 27” high.	√			
10.	Is shower stall 36”x 42” minimum with small lip?			√	
11.	Is insulation installed below sinks on piping?	√			
	Unit Kitchen	**Yes**	**No**	**N/A**	**Comments**
1.	In a “U”-shaped kitchen is there 60” clear floor space width?	√			
2.	In a “U”-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40” width?	√			
3.	In a “L”-shaped kitchen, is there a 40” width minimum maintained?			√	
4.	Are countertops a maximum of 24” deep and 36” high?	√			
5.	Knee space beneath cabinetry is 30” wide and 27” high.	√			
6.	Is insulation installed below sinks on piping?		√		
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?		√		

**Based on visual observation only. The slope was not confirmed through measurements.*

CAPITAL NEEDS
ASSESSMENT

SACRAMENTO HOUSING & REDEVELOPMENT AGENCY
801 12th Street
Sacramento, California 95814
Vance Kelly

PROPERTY CONDITION CHECKLIST REPORT
of
OAK PARK - FOLSOM
4921 Folsom Boulevard
Sacramento, California 95819

PREPARED BY:

EMG
10461 Mill Run Circle, Suite 1100
Owings Mills, Maryland 21117
800.733.0660
410.785.6220 (fax)
www.emgcorp.com

EMG CONTACT:

Matthew Anderson
Program Manager
800.733.0660, x7613
manderson@emgcorp.com

EMG Project #:	136742.19R000-001.306
Date of Report:	March 22, 2019
On-Site Date:	March 6, 2019

CERTIFICATION

EMG has completed a Capital Fund Green Physical Needs Assessment (GPNA) of the subject property, Oak Park-Folsom, located at 4921 Folsom Boulevard in Sacramento, Sacramento County, California. The GPNA was performed on March 6, 2019.

The GPNA was performed at the Client's request using methods and procedures consistent with good commercial and customary practice and with the standards outlined in 24 CFR 968.315, the Comprehensive Grant Program Guidebook 7485.3G, the Public Housing Modernization Standards Handbook 7485.2, and 24 CFR Part 5, Uniform Physical Condition Standards. EMG also utilizes the standards set forth by ASTM E2018-01, Standard Guide for Property Condition Assessments: Baseline Physical Needs Assessment Process. In addition, EMG's reference to the Client follows the ASTM guide's definition of User, whereas, the party that retains EMG for the preparation of a baseline GPNA of the subject property. A user may include, without limitation, a purchaser, potential tenant, owner, existing or potential mortgagee, lender, or property manager of the subject property.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and EMG.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of EMG. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to EMG.

The opinions EMG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent architect or engineer in the same community under similar circumstances. EMG assumes no responsibility or liability for the accuracy of information contained within this report that has been obtained from the Client or the Client's representatives, from other interested parties, or from the public domain. The conclusions presented represent EMG's professional judgment based on information obtained during the course of this assignment. EMG's evaluations, analyses, and opinions are not representations regarding either the design integrity, structural soundness, or actual value of the property. Factual information regarding operations, conditions, and test data provided by the Client or the Client's representative has been assumed to be correct and complete. The conclusions presented within this report are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment.

EMG certifies that EMG has no undisclosed interest in the subject property, that EMG's relationship with the Client is at arms-length, and that EMG's employment and compensation are not contingent upon the findings or estimated costs to remedy any noted deficiencies due to deferred maintenance and/or any noted component or system replacements.

EMG's GPNA cannot wholly eliminate the uncertainty regarding the presence of physical deficiencies and/or the performance of a subject property's building systems. Preparation of a GPNA in accordance with ASTM E2018-01 is intended to reduce, but not eliminate, the uncertainty regarding the potential for component or system failure and to reduce the potential that such component or system failure may not be initially observed. This GPNA was prepared recognizing the inherent subjective nature of EMG's opinions as to such issues as workmanship, quality of original installation, and estimating the remaining useful life of any given component or system. It should be understood that EMG's suggested remedy may be determined under time constraints or may be formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the noted physical deficiencies.

Any questions regarding this report should be directed to Matthew Anderson at manderson@emgcorp.com or at 800.733.0660, x7613.

Prepared by: Tammy Prusa
Project Manager

Reviewed by:

Al Diefert
Technical Report Reviewer
For
Matthew Anderson
Program Manager

TABLE OF CONTENTS

1. **Observation Data** 1
2. **General Description Property Data** 2
3. **General Condition** 3
4. **Existing Building Evaluation** 5
   4.1. Apartment Unit Types 5
   4.2. Apartment Units Observed 5
5. **System Condition Ratings** 6
6. **Current and Planned Renovation** 7
7. **Significant Issues/Deficiencies** 8
8. **Additional Investigations** 9
9. **Exhibits/Attachments** 12

1. OBSERVATION DATA

Observation Data			
EMG Field Observer:	Debbie Whitham	Property Contact Name:	Dennis Sorenson
Date Observed:	March 6, 2019	Prop Contact Phone Number	916.919.2693
Interview Conducted (Y/N)	Y	Name/Function Of Interviewee:	Dennis Sorenson / Oak Park Community Lead Maintenance Technician

2. GENERAL DESCRIPTION PROPERTY DATA

General Description and Property Data						
Property Name:	Oak Park - Folsom					
Street Address:	4921 Folsom Boulevard			City, State:	Sacramento, California	
Building Type:	Garden	Age:		1996	Year Renovated:	N/A
Size (# Units):	10	# Buildings:		3	# Floors	2 and 1
Other Buildings Or Amenities	None					
UBC Seismic Zone:	Zone 3			Flood Zone Determination:	X	
# Parking Spaces:	16 (1 ADA)					

Apartment Unit Types and Mix		
1(1-story)	3 Bedrooms/1 Bathroom	ADA Unit / 798
9 (2-Story)	3 Bedrooms/ 1 ½ Bathrooms	7299
	Total Building Area	8097

Building Specifications	
Foundation Construction:	Concrete slab
Structural System:	Wood frame
Exterior Wall finish:	Stucco and brick veneer
Roof finish:	Asphalt shingles
Windows:	Aluminum, double glazed

Building Systems	
Plumbing Material:	Copper and ABS
Fire Sprinklers (Y/N):	No
Cooling System:	Split System Condenser
Heating Equipment:	Gas furnace
Electrical System:	Copper wire (based on date of construction)
Fire Alarm and Life Safety System:	Smoke detectors

Interiors:			
Flooring:	Vinyl Composition Tile	Walls:	Painted drywall
Plumbing Fixtures	Tub, toilet, shower, vanity cabinet with sink	Cabinets	Wood with laminate counter
Light Fixtures:	Standard residential grade	Appliances:	Refrigerator, gas range and exhaust hood (vented out).

3. GENERAL CONDITION

General Condition
Generally, the property was constructed within industry standards, has been well-maintained over recent years and appeared to be in good overall condition. Property management personnel reported that, over the past three years, the property has had no significant capital improvements. There are a number of Immediate Repairs and Rehabilitation Needs and Replacement Reserves that should be accomplished during the evaluation period as part of the preventive maintenance program. These needs are identified in the various sections of this report and are summarized in the enclosed cost tables.

Section 504 of the Rehabilitation Act of 1973 is a Federal accessibility law that was enacted on June 2, 1988. Section 504 applies to multi-family properties that have 15 or more units. The property must have a minimum of five percent mobility accessible units and two percent of the units for visual / audio hearing impairments. Exceptions can be considered due to undue financial burdens or structural restrictions. However, the exceptions do not relieve the recipients from compliance utilizing other units/buildings or other methods to achieve reasonable accommodations.

Reasonable Accommodations as described in 24 CFR 8.4(b)(i), 8.24 and 8.33 are described as follows: When a family member requires an accessible feature(s) or policy modification to accommodate a disability, property owners must provide such feature(s) or policy modification unless doing so would resulting in a fundamental alteration in the nature of its program or result in a financial and administrative burden.

The Uniform Federal Accessibility Standard (UFAS) 24 CFR part 40 was adopted by HUD and made effective October 4, 1984. The UFAS applies only to new construction or to alterations to the existing buildings. Alterations are defined as work that costs 50 percent or more of the building's value when the work performed occurs within a twelve-month period. Apartments modified for mobility impaired residents are to comply with UFAS.

The Fair Housing Amendments Act (FHA) of 1988 amended Title VIII of the Civil Rights Act of 1968 to aid in the prohibitions against discrimination in housing on the basis of disability and familial status. The Fair Housing Act also made it unlawful to design and construct certain "covered multi-family dwellings" for first occupancy after March 13, 1991, in a manner that makes them inaccessible to persons with disabilities. The Fair Housing Act does not apply to this property due to the date of construction.

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" on the basis of disability. Generally, the rental office and access from the site to the rental office must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Buildings completed and occupied after January 26, 1992 are required to comply fully with ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of complying to the extent allowed by structural feasibility and the financial resources available; otherwise a reasonable accommodation must be made.

During the GPNA, a visual Accessibility Survey in general conformance with Section 504 Accessibility Standards and the Uniform Federal Accessibility Standards (UFAS) was conducted. It is understood by the Client that the visual observation described herein does not comprise a full measured Accessibility Compliance Survey, and that such a survey is beyond the scope of EMG's undertaking. Actual measurements were not taken to verify compliance.

Based on the date of construction, 1996, the accessibility standards that apply to the Project are the Fair Housing Act, Section 504 standards, and UFAS. Property management stated that requests for accessible apartments are completed on an as requested basis. Presently, two of the units are accessible for individuals with mobility impairments according to property management.

Based on EMG's observations and interview of the Property Manager, the property is compliant with Section 504 and the ADA Guidelines.

A full ADA Measured Compliance Survey may reveal some aspects of the property that are not in compliance.

4. EXISTING BUILDING EVALUATION

4.1. APARTMENT UNIT TYPES

The following table identifies the reported apartment types and apartment mix.

Apartment Unit Types and Mix		
Quantity	**Type**	**Floor Area**
1	3 Bedroom/ 1 Bathroom	798 SF
9	3 Bedroom/ 1 ½ Bathrooms	811 SF
There are currently 0 vacant units.		
There are currently 0 down units.		
10	**TOTAL**	**8,097 SF**

4.2. APARTMENT UNITS OBSERVED

Thirty percent of the apartment units were observed in order to establish a representative sample and to gain a clear understanding of the property's overall condition. Other areas accessed included the exterior of the property, and the interior common areas. The following apartments were observed.

Apartment Units Observed		
Unit/Floor	**Type**	**Comments**
3/ A	3 Bedroom/1 ½ Bathrooms	Occupied. Fair condition. 2-Story, no carpet
6/ B	3 Bedroom/1 ½ Bathrooms	Occupied. Poor condition. 2-Story
10/ C	3 Bedroom/1 Bathroom	Occupied. Fair condition. 1- story, ADA unit
4/B	3 Bedroom/1 ½ Bathrooms	Occupied. Fair condition.

All areas of the property were available for observation during the site visit.

A "down unit" is a term used to describe a non-rentable apartment unit due to poor conditions such as fire damage, water damage, missing appliances, damaged floor, wall or ceiling surfaces, or other significant deficiencies. According to the POC, there are no down units.

5. SYSTEM CONDITION RATINGS

System Condition Ratings				
System	**Good**	**Fair**	**Poor**	**Unknown**
Site/Landscaping	✓			
Pavements/Parking		✓		
Structural	✓			
Exterior Walls		✓		
Roofs	✓			
Mechanical/HVAC		✓		
Interiors		✓		

Definitions:

Good	=	Satisfactory as-is. Requires only routine maintenance over the evaluation period. Repair or replacement may be required due to a system's estimated useful life.
Fair	=	Satisfactory as-is. Repair or replacement is required due to current physical condition and/or estimated remaining useful life.
Poor	=	Immediate repair, replacement, or significant maintenance is required.
Unknown	=	A system or material that was not visible during our review or does not exist at the property. Such as a building in a downtown location with no Pavements/Parking.

6. CURRENT AND PLANNED RENOVATION

Current and Planned Renovation
Not Applicable

7. SIGNIFICANT ISSUES/DEFICIENCIES

Significant Issues/Deficiencies
None

Replacement Reserves Report

6/5/2019

Location	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Total Escalated Estimate
Oak Park-Folsom / Energy Conservation Measures - 2019	$808	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,085	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,459	**$3,352**
Oak Park-Folsom / Residential Building - 2019	$0	$228,572	$0	$303,096	$0	$0	$0	$69,664	$0	$0	$0	$39,416	$0	$31,767	$0	$116,925	$156,074	$0	$84,507	$0	$0	**$1,030,022**
Oak Park-Folsom / Site - 2019	$0	$0	$2,541	$15,407	$0	$12,645	$0	$2,945	$0	$0	$0	$0	$3,414	$5,396	$0	$0	$0	$3,958	$0	$0	$0	**$46,308**
GrandTotal	**$808**	**$228,572**	**$2,541**	**$318,504**	**$0**	**$12,645**	**$0**	**$72,610**	**$0**	**$0**	**$1,085**	**$39,416**	**$3,414**	**$37,163**	**$0**	**$116,925**	**$156,074**	**$3,958**	**$84,507**	**$0**	**$1,459**	**$1,079,681**

Oak Park-Folsom / Energy Conservation Measures - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
X103X	All Apartment Bathrooms	ECM, Low Flow Faucet Aerators, Install	10	10	0	19	EA	$12.05	$229	$229										$229										$229	**$687**
X103X	All Apartment Kitchens	ECM, Low Flow Faucet Aerators, Install	10	10	0	10	EA	$12.05	$120	$120										$120										$120	**$361**
X103X	All Apartment Showerheads	ECM, Low Flow Shower Heads, Install	10	10	0	10	EA	$45.83	$458	$458										$458										$458	**$1,375**
Totals, Unescalated										**$808**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$808**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$808**	**$2,423**
Totals, Escalated (3.0% inflation, compounded annually)										**$808**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,085**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,459**	**$3,352**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Oak Park-Folsom / Residential Building - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
B2011	Throughout	Exterior Wall, Painted Surface, 1-2 Stories, Prep & Paint	10	7	3	4000	SF	$3.48	$13,917				$13,917										$13,917								**$27,834**
B2011	All units	Exterior Wall, Brick or Brick Veneer, 1-2 Stories, Repoint	25	10	15	1500	SF	$50.03	$75,050															$75,050							**$75,050**
B2021	Throughout each Building	Window, Aluminum Double-Glazed 12 SF, 1-2 Stories, Replace	30	23	7	80	EA	$708.04	$56,644								$56,644														**$56,644**
B2032	Front entrance	Exterior Door, Steel, Replace	25	22	3	10	EA	$1,151.52	$11,515				$11,515																		**$11,515**
B3011	Throughout of each buildings	Roof, Asphalt Shingle, Replace	20	4	16	8500	SF	$4.14	$35,232																$35,232						**$35,232**
C3024	All units	Interior Floor Finish, Vinyl Tile (VCT), Replace	15	12	3	7160	SF	$5.82	$41,653				$41,653														$41,653				**$83,306**
C3024	Bathroom	Interior Floor Finish, Vinyl Sheeting, Replace	15	12	3	940	SF	$8.50	$7,986				$7,986														$7,986				**$15,972**
D2011	Unit bathroom	Toilet, Flush Tank (Water Closet), Replace	20	17	3	19	EA	$1,278.81	$24,297		$24,297																				**$24,297**
D2015	Unit bathroom	Bathtub & Shower Enclosure, Fiberglass, Replace	20	17	3	10	EA	$2,163.69	$21,637				$21,637																		**$21,637**
D2023	All units	Water Heater, Gas, Residential, 30 to 50 GAL, Replace	10	7	3	10	EA	$2,847.50	$28,475		$28,475											$28,475									**$56,950**
D3032	All units	Condensing Unit/Heat Pump, Split System, 2 Ton, Replace	15	12	3	10	EA	$3,783.99	$37,840		$37,840															$37,840					**$75,680**
D3051	All units	Furnace, Gas, 26 to 40 MBH, Replace	20	17	3	10	EA	$2,760.20	$27,602				$27,602																		**$27,602**
D5019	All units	Load Center, 120 / 240 V, 125 Amp, Single Phase Residential, Replace	30	27	3	10	EA	$9,582.08	$95,821				$95,821																		**$95,821**
D5022	Exterior wall	Compact Fluorescent Lighting Fixture, 80 W, Replace	20	17	3	10	EA	$311.33	$3,113				$3,113																		**$3,113**
D5029	All units	Lighting System, Interior, Multi-Family, Upgrade	25	22	3	8097	SF	$5.73	$46,417				$46,417																		**$46,417**
E1094	All units	Residential Appliances, Range, Gas, Replace	15	12	3	10	EA	$930.93	$9,309		$9,309															$9,309					**$18,619**
E1094	All units	Residential Appliances, Range Hood, Vented or Ventless, Replace	15	12	3	10	EA	$329.18	$3,292		$3,292															$3,292					**$6,584**
E1094	All buildings	Residential Appliances, Refrigerator, 14-18 CF, Replace	15	12	3	10	EA	$1,158.69	$11,587		$11,587															$11,587					**$23,174**
E2012	Unit kitchens	Kitchen Cabinet, Base and Wall Section, Wood, Replace	20	17	3	145	LF	$566.75	$82,179		$82,179																				**$82,179**
E2012	All units	Bathroom Vanity Cabinet, Wood, with Cultured Marble Sink Top, 24 to 30", Replace	20	17	3	19	EA	$1,312.37	$24,935		$24,935																				**$24,935**
E2012	Unit bathroom	Kitchen Counter, Plastic Laminate, Postformed, Replace	10	7	3	145	LF	$53.21	$7,715				$7,715										$7,715								**$15,430**
Totals, Unescalated										**$0**	**$221,915**	**$0**	**$277,376**	**$0**	**$0**	**$0**	**$56,644**	**$0**	**$0**	**$0**	**$28,475**	**$0**	**$21,632**	**$0**	**$75,050**	**$97,260**	**$0**	**$49,639**	**$0**	**$0**	**$827,990**
Totals, Escalated (3.0% inflation, compounded annually)										**$0**	**$228,572**	**$0**	**$303,096**	**$0**	**$0**	**$0**	**$69,664**	**$0**	**$0**	**$0**	**$39,416**	**$0**	**$31,767**	**$0**	**$116,925**	**$156,074**	**$0**	**$84,507**	**$0**	**$0**	**$1,030,022**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

Oak Park-Folsom / Site - 2019

Uniformat Code	Location Description	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Deficiency Repair Estimate
G2022	Parking area	Parking Lots, Asphalt Pavement, Seal & Stripe	5	3	2	5200	SF	$0.46	$2,395			$2,395					$2,395					$2,395					$2,395				**$9,579**
G2031	Site	Pedestrian Pavement, Sidewalk, Concrete Large Areas, Replace	30	25	5	1000	SF	$10.91	$10,908						$10,908																**$10,908**
G2041	Site	Fences & Gates, Wood Board, Refinish	10	7	3	500	SF	$1.90	$951				$951										$951								**$1,903**
G2044	Site	Signage, Property, Monument/Pylon, Replace	20	17	3	1	EA	$10,425.37	$10,425				$10,425																		**$10,425**
G4021	Site	Pole Light, Exterior, 135 to 1000 W HID (Fixture, Ballast, & Lamp), Replace	10	7	3	1	EA	$2,723.18	$2,723				$2,723										$2,723								**$5,446**
Totals, Unescalated										**$0**	**$0**	**$2,395**	**$14,100**	**$0**	**$10,908**	**$0**	**$2,395**	**$0**	**$0**	**$0**	**$0**	**$2,395**	**$3,675**	**$0**	**$0**	**$0**	**$2,395**	**$0**	**$0**	**$0**	**$38,262**
Totals, Escalated (3.0% inflation, compounded annually)										**$0**	**$0**	**$2,541**	**$15,407**	**$0**	**$12,645**	**$0**	**$2,945**	**$0**	**$0**	**$0**	**$0**	**$3,414**	**$5,396**	**$0**	**$0**	**$0**	**$3,958**	**$0**	**$0**	**$0**	**$46,308**

* Markup/LocationFactor (1.138) has been included in unit costs. Markup includes a and 6.5% General Contractor factors applied to the location adjusted unit cost.

8. ADDITIONAL INVESTIGATIONS

Additional Investigations
No further investigation is necessary at this time.

9. EXHIBITS/ATTACHMENTS

Appendix A: Photographs of Property

Appendix B: Pre-survey Questionnaire

Appendix C: Supporting Documentation

APPENDIX A:
PHOTOGRAPHS OF PROPERTY

#1	FRONT ELEVATION

#2	RIGHT ELEVATION

#3	REAR ELEVATION

#4	LEFT ELEVATION

#5	ASPHALT PARKING LOT

#6	FURNACE, GAS

#7	WATER HEATER, GAS

#8	LOAD CENTER

#9	WINDOW, ALUMINUM DOUBLE-GLAZED

#10	ROOF, ASPHALT SHINGLE

#11	CONDENSING UNIT/HEAT PUMP, SPLIT SYSTEM

#12	UNIT KITCHEN

#13	UNIT BATHROOM

#14	UNIT BEDROOM

APPENDIX B:
PRE-SURVEY QUESTIONNAIRE

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

This questionnaire must be completed by the property owner, the owner's designated representative, or someone knowledgeable about the subject property. If the form is not completed, EMG's Project Manager will require ***additional time*** during the on-site visit with such a knowledgeable person in order to complete the questionnaire. During the site visit, EMG's Field Observer may ask for details associated with selected questions. This questionnaire will be utilized as an exhibit in EMG's final report.

Name of Institution:	SHRA
Name of Building: 4921 Folsom Blvd	Building #:
Name of person completing questionnaire: Dennis Sorenson	
Length of Association With the Property: 7 years	Phone Number(916) 919-2693

Site Information	
Year of Construction?	1984
No. of Stories?	Floors 2 and 1
Total Site Area?	.726 Acres / 31,625 Sq Feet
Total Building Area?	8097 Sqft
Area Heated (%)	%
Area Cooled (%)	%
Total Conditioned Area (%)	%
Primary Heating System?	Central heat and air. Split system with Natural gas furnace
Secondary Heating System?	N?A
If Oil Used For Heating- Tank Capacity	N/A Gallons No. of Tanks
Primary Cooling System & Capacity?	Split system condenser
Do Any HVAC Systems Use R-11, R-12 or R-22 Refrigerants?	Yes R-22

	Elec.	Natural Gas	Propane	No.2 Oil	Dist. Steam
Primary Heating Fuel?	☐	☒	☐	☐	☐
Secondary Heating Fuel? N/A	☐	☐	☐	☐	☐
Domestic Water Heater Fuel?	☐	☒	☐	☐	

Building Occupancy/Schedule			
Estimated No. of Residence			
No. of Staff Members			
Standard Staff Work Timing	: AM/PM - : AM/PM		
Maintenance Staff Hours	: AM/PM - : AM/PM		
Apartment Type	**Qty**	**Area (Sqft)**	**No. of Bathrooms**
No. of Apts. In Building:			
No. of Efficiency Apts:			1
No. of 1 Bedroom Apts:	8		1 // 1.5
No. of 2 Bedroom Apts:	8		1 // 1.5 // 2
No. of 3 Bedroom Apts:	10		1 // 1.5 // 2
No. of 4 Bedroom Apts:	0		1 // 1.5 // 2 // 3
No. of 5 Bedroom Apts:	0		1 // 1.5 // 2 // 3
No. of 6 Bedroom Apts:	0		1 // 1.5 // 2 // 3
No. of Vacant Apts:	0		
No. of Down Apts:	6		

Inspections	**Date of Last Inspection**	**List of Any Outstanding Repairs Required**
1. Elevators	n/a	
2. HVAC Mechanical, Electric, Plumbing?	Annually	
3. Life-Safety/Fire?	Annually	
4. Roofs?	Replaced 2016	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Key Questions	Response
Major Capital Improvements in Last 3 yrs.	Reroofed 2016
Planned Capital Expenditure For Next Year?	
Age of the Roof?	3 yrs
What bldg. Systems Are Responsibilities of Tenants? (HVAC/Roof/Interior/Exterior/Paving)	none

Unk = Unknown, NA = Not Applicable	Yes	No	NA	Unk	Comments
1. Are the plumbing fixtures Low Flow *(Below 2.0GPM, .6GPF)*	☐	☐	☐	☒	
2. Are there any vacant buildings or significant building areas?	☐	☒	☐	☐	
3. Do tenants pay for utilities at leased properties?	☒	☐	☐	☐	
4. Does the owner pay for exterior site lighting electricity?	☒	☐	☐	☐	
5. Any Issues with exterior Lighting?	☐	☐	☐	☐	Wallpacks changed to LED

Building Structure							
		Y/N		Y/N		Y/N	Additional Comments?
Roof Type:	Pitched?	xx	Flat		Both		
Attic Insulation:	Batt		Cellulose		Fiberglass		
Window Frame:	Wooden		Vinyl		Metal	xx	
Window Glazing:	Single		Double	xx	Triple		
Structure	Wooden	xx	Metal		Conc.		

Building Lighting			
Type of Linear Fluorescent Lamps? *(T8/T12)*		Exterior Lighting Control *(Timer/Photocell)*	Photocell
Type of Common Lamps? *(Incan/CFLs)*		Exterior Light Timing	N/A Hr
Lighting Sensors? *(Y/N)*	no	EXIT Lights (Incan/Fluor/LED)	Led & HID

Other Systems				
Item	Qty		Selection	Utility Company / Provider Name
# of Elevators	N/a	Hydraulic/Traction		N/A
# of Electric Meters	11	Master/ Direct		SMUD
# of Nat. Gas Meters	10	Resi/Commercial/Indust.	residental	PG&E
# of Water Meters	1			City of Sacramento
# of Backup Generator	N/A	Fuel?:		

Preventive Maintenance of Mechanical System		
Systems	**Annual Professional Maintenance**	**Seldom or Never Maintained**
Tenant Space Heating Systems (*Furnace/Boilers/Heat pumps*)	**Filters changed quarterly**	☒
Tenant Space Cooling Systems (*Condensers/Window AC*)	**Filters changed quarterly**	☐
Domestic Water Heaters	**Visually checked annually**	☐

Building Appliances		
	Value	Additional Comments?
Percentage of Energy Star Certified Refrigerators (%)	%	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

Percentage of Refrigerators older than 8 years (%)	70%	Please provide general age of refrigerators here
Cooking Range Type (Electric/Gas/Propane)		
Laundry System (Leased/Owned)		
No. of Washers		
No. of Dryers		

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	QUESTION	Y	N	Unk	NA	COMMENTS
	ZONING, BUILDING DESIGN & LIFE SAFETY ISSUES					
1	Are there any unresolved building, fire, or zoning code issues?		X			
2	Is there any pending litigation concerning the property?					
3	Are there any other significant issues/hazards with the property?		X			
4	Are there any unresolved construction defects at the property?		X			
5	Has any part of the property ever contained visible suspect fungal growth?		X			
6	Is there a fungal Operations and Maintenance Plan?					
7	Are there any recalled fire sprinkler heads (Star, GEM, Central, and Omega)?		N/A			
8	Have there been indoor air quality or fungal related complaints from tenants?		X			
	GENERAL SITE					
9	Are there any problems with erosion, storm water drainage or areas of paving that do not drain?					SOME EROSION IN FRONT # 10 STORM DRAIN IN FRONT of #10 FILLS WITH GRAVEL + DIRT
10	Are there any problems with the landscape irrigation systems?					JUST SOME BROKEN HEADS
	BUILDING STRUCTURE					
11	Are there any problems with foundations or structures?		X			
12	Is there any water infiltration in basements or crawl spaces?		N/A			

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

13	Has a termite/wood boring insect inspection been performed within the last year?		X			
BUILDING ENVELOPE						
Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates *"Not Applicable"*, **Unk** indicates *"Unknown"*)						
	QUESTION	Y	N	Unk	NA	**COMMENTS**
14	Are there any wall, or window leaks?					
15	Are there any roof leaks?		X			
16	Is the roofing covered by a warranty or bond?			X		
17	Are there any poorly insulated areas?		X			
18	Is Fire Retardant Treated (FRT) plywood used?			X		
19	Is exterior insulation and finish system (EIFS) or a synthetic stucco finish used?					
BUILDING HVAC AND ELECTRICAL						
20	Are there any leaks or pressure problems with natural gas service?		X			
21	Does any part of the electrical system use aluminum wiring?		X			
22	Do Residential units have a less than 60-Amp service?					
23	Do Commercial units have less than 200-Amp service?	N/A				
24	Are there any problems with the utilities, such as inadequate capacities?		X			
ADA						
25	Has the management previously completed an ADA review?			X		
26	Have any ADA improvements been made to the property?			X		
27	Does a Barrier Removal Plan exist for the property?			X		

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

28	Has the Barrier Removal Plan been approved by an arms-length third party?					

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any *Yes* responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	QUESTION	Y	N	Unk	NA	COMMENTS
29	Has building ownership or management received any ADA related complaints?			X		
30	Does elevator equipment require upgrades to meet ADA standards?		N/A			
	PLUMBING					
31	Is the property served by a private water well?		X			
32	Is the property served by a private septic system or other waste treatment systems?		X			
33	Is polybutylene piping used?		X			
34	Are there any plumbing leaks or water pressure problems?		X			

Issues or Concerns That EMG Should Know About?	
1.	
2.	
3.	

Items Provided to EMG Auditors	Yes	No	N/A	Additional Comments?
Access to 10% (GPNA), 25% (RAD) Apartments	☐	☐	☐	
Access to All Mechanical Spaces	☐	☐	☐	
Access to Roof/Attic Space	☐	☐	☐	
Access to Building As-Built Drawings	☐	☐	☐	
Site plan with bldg., roads, parking and other features	☐	☐	☐	
Access to last 12/24 Months Common Area Utility Data	☐	☐	☐	
Access to last 12/24 Months Tenant Utility Data	☐	☐	☐	
Contact Details of Mech, Elevator, Roof, Fire Contractors:	☐	☐	☐	
List of Commercial Tenants in the property	☐	☐	☐	
Previous reports pertaining to the physical condition of property.	☐	☐	☐	
ADA survey and status of improvements implemented.	☐	☐	☐	
Current / pending litigation related to property condition.	☐	☐	☐	
Any brochures or marketing information.	☐	☐	☐	
Appraisal, either current or previously prepared.	☐	☐	☐	

Energy & PNA Audit (Residential)
Pre-Survey Questionnaire

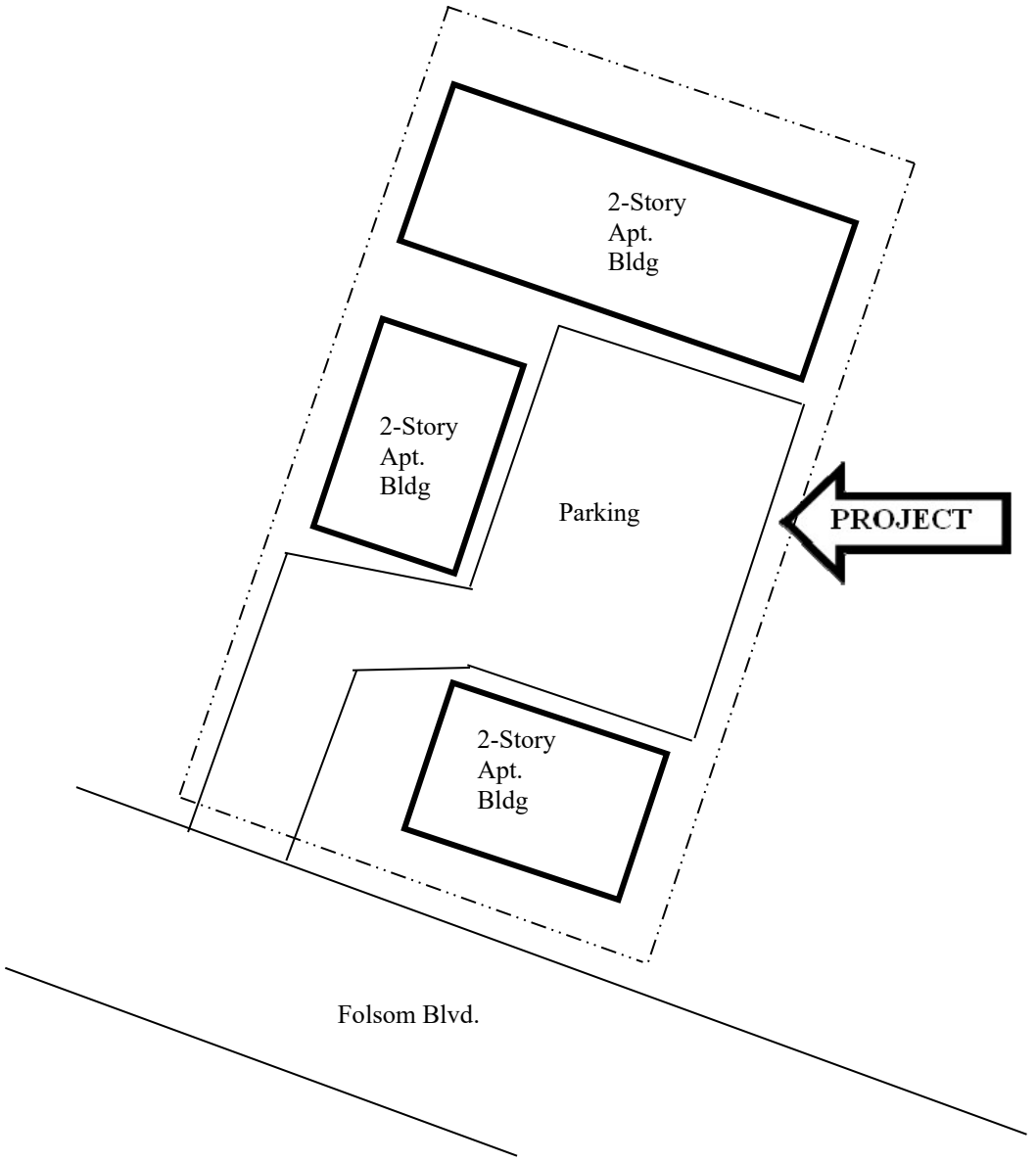
Summary of Projects executed in last 5 years	☐	☐	☐	

Signature of person Interviewed or completing form

Date 5 March 2019

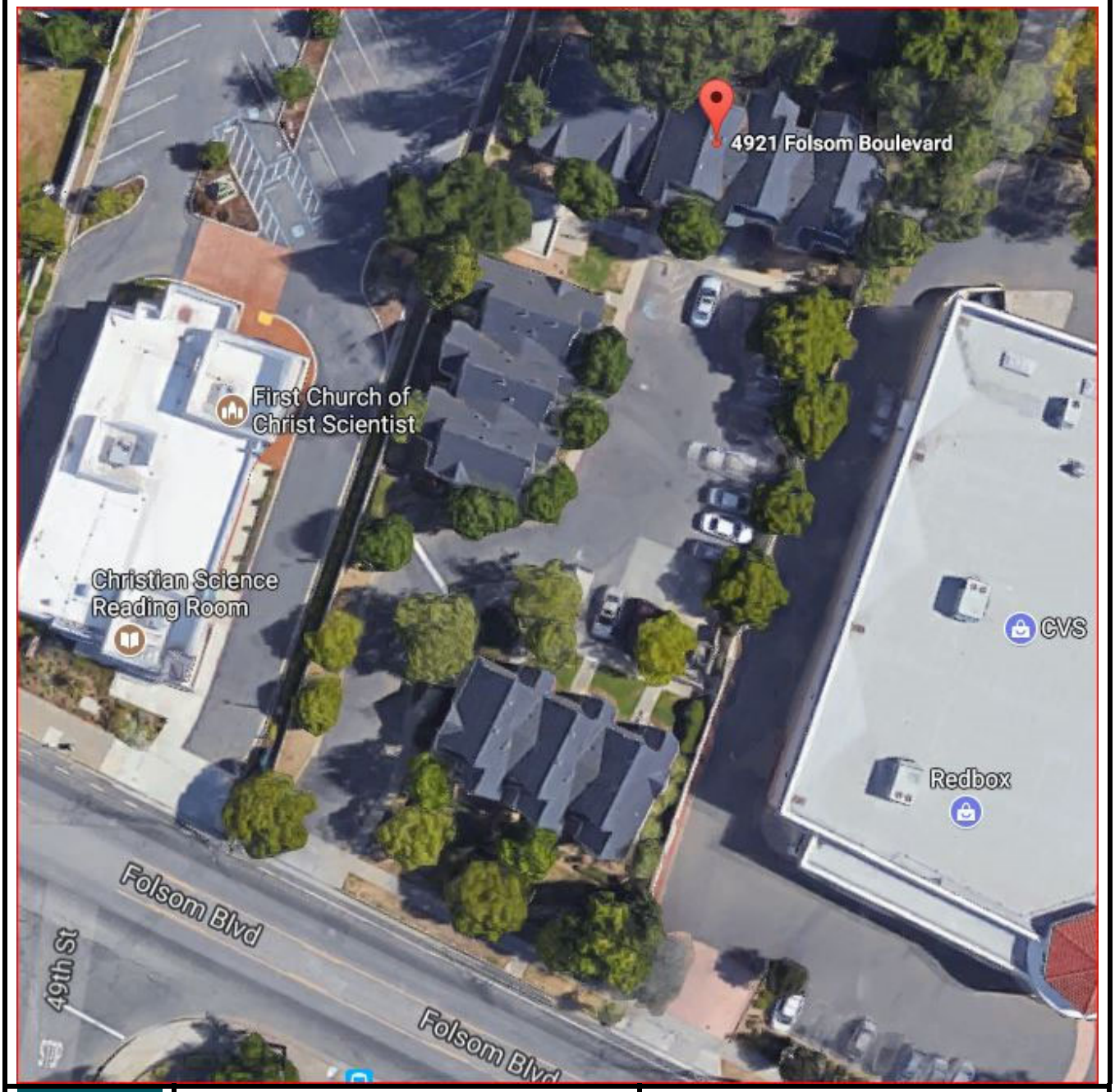
APPENDIX C:
SUPPORTING DOCUMENTATION

Street Map



EMG	**Source:**	**Project Number:** **136742.19R000-001.306**
N	**The north arrow indicator is an approximation of 0° North.**	**Project Name:** **Oak Park - Folsom**
		On-Site Date: **March 6, 2019**

Aerial Photograph



EMG

N

Source:

Google Maps: Imagery ©2016 Google, Map Data ©2016 Google

Project Number:

136742.19R000-001.306

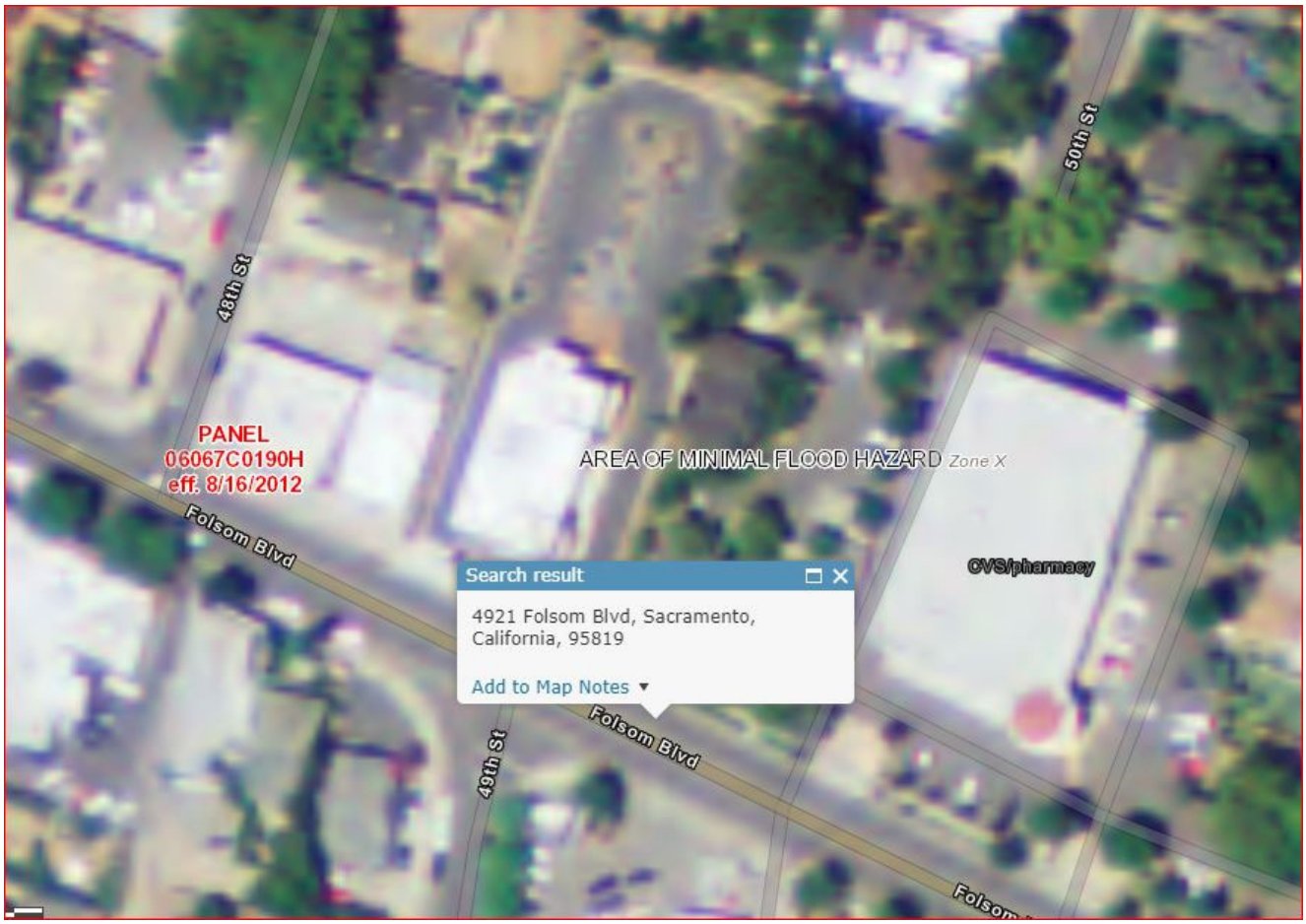
Project Name:

Oak Park - Folsom

On-Site Date:

March 6, 2019

Flood Map



EMG	**Source:**	**Project Number:** 136742.19R000-001.306
N	**FEMA Panel No.: 06067C0086H** **Dated: August 06, 2012**	**Project Name:** Oak Park - Folsom
		On-Site Date: March 6, 2019

EMG ACCESSIBILITY CHECKLIST

Property Name: Oak Park - Folsom
Date: March 18, 2019
Project Number: 136742.19R000-001.306

EMG Accessibility Checklist

UFAS/ADA Accessibility

	Building History	Yes	No	N/A	Unk	Comments
1.	Has the management previously completed a accessibility review?		√			
2.	Does an accessibility compliance plan exist for the property?		√			
3.	Has the plan been reviewed/approved by outside agencies (engineering firms, building department, other agencies)?			√		
4.	Have any accessibility related complaints been received in the past?				√	
5.	Is the property Section 504 compliant?		√			

	Building Access	Yes	No	N/A	Comments
1.	Are there an adequate number (per regulation) of wheelchair accessible parking spaces available at the rental office (96” wide/ 60” aisle)	√			15 parking stalls plus 1 ADA stall
2.	Is there at least one wheelchair accessible van parking space (96” wide/ 96” aisle) for the rental office?				
3.	Are accessible parking spaces located on the shortest accessible route of travel from an accessible building entrance?	√			
4.	Does signage exist directing you to wheelchair accessible parking and an accessible building entrance?	√			
5.	Is there a ramp from the parking to an accessible building entrance (1:12 slope or less)		√		
6.	If the main entrance is inaccessible, are there alternate accessible entrances?			√	
7.	Is the accessible entrance doorway at least 32” wide?	√			
8.	Is the door handle easy to open? (lever/push type knob, no twisting required, no higher than 48” above floor)		√		
9.	Are entry doors other than revolving doors available?			√	

EMG Accessibility Checklist					
	Rental Office	**Yes**	**No**	**N/A**	**Comments**
1.	Is the entry door to the rental office 3'wide with no step or threshold over ½" tall?		√		No rental office
2.	Is there a counter or table at 30" high for wheelchair access to fill out a rental application?			√	
3.	Is there clearance behind the counter for an employee in a wheelchair?			√	
	Building Corridors and Elevators	**Yes**	**No**	**N/A**	**Comments**
1.	Is the path of travel free of obstructions and wide enough for a wheelchair (at least 60" wide)?			√	
2.	Are floor surfaces firm, stable and slip resistant (carpets wheelchair friendly)?			√	
3.	Do obstacles (phones, fountains, etc.) protrude no more than 4" into walkways or corridor?			√	
4.	Are elevators controls low enough to be reached from a wheelchair (48" front approach/54" side approach)?			√	No elevator
5.	Are there raised elevator markings in Braille and standard alphabet for the blind?			√	
6.	Are there audible signals inside cars indicating floor changes?			√	
7.	Do elevator lobbies have visual and audible indicators of the cars arrival?			√	
8.	Does the elevator interior provide sufficient wheelchair turning area (51" x 68" minimum)?			√	
9.	Is at least one wheelchair accessible public phone available?			√	
10	Are wheelchair accessible facilities (restrooms, exits, etc.) identified with signage?			√	
	Common Area Restrooms	**Yes**	**No**	**N/A**	**Comments**
1.	Are common area public restrooms located on an accessible route?		√		No common area
2.	Are pull handles push/pull or lever type?			√	
3.	Are access doors wheelchair accessible (at least 32" wide)?			√	
4.	Are public restrooms large enough for wheelchair turnaround (60" turning diameter)?			√	
5.	Are stall doors wheelchair accessible (at least 32" wide)?			√	
6.	If stalls are to narrow can the toilet room be converted to a single occupant toilet room?			√	
7.	Are grab bars provided in toilet stalls (33"-36" above floor)?			√	
8.	Do sinks provide clearance for a wheelchair to roll under (29" clearance)?			√	
9.	Are sink handles operable with one hand without grasping, pinching or twisting?			√	

EMG Accessibility Checklist					
	Common Area Restrooms (cont.)	**Yes**	**No**	**N/A**	**Comments**
10.	Are exposed pipes under sink sufficiently insulated against contact?			√	
11.	Are soap dispensers, towel, etc. reachable (48" from floor for frontal approach, 54" for side approach)?			√	
12.	Is the base of the mirror no more than 40" off floor?			√	
	Common Area Kitchen	**Yes**	**No**	**N/A**	**Comments**
1.	In a "U"-shaped kitchen is there 60" clear floor space width?		√		No common area
2.	In a "U"-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40" width?			√	
3.	In a "L"-shaped kitchen, is there a 40" width minimum maintained?			√	
4.	Are countertops a maximum of 24" deep and 36" high?			√	
5.	Knee space beneath cabinetry is 30" wide and 27" high.			√	
6.	Is insulation installed below sinks on piping?			√	
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?			√	
	Common Area Laundry Rooms	**Yes**	**No**	**N/A**	**Comments**
1.	Are the laundry rooms located on an accessible route?		√		There is a laundry machines hook- up at each unit.
2.	Are the door handles push/pull or lever type?			√	
3.	Are the access doors wheelchair accessible (at least 32" clear width)?			√	
4.	Are laundry rooms large enough for wheelchair turnaround (60" turning diameter)?			√	
5.	Is there a front load washing machine			√	
6.	If clothes folding tables are provided is one section at 32" high with a clear area below the table?			√	

EMG Accessibility Checklist					
Fair Housing Accessibility / 504					
	Access to Unit	**Yes**	**No**	**N/A**	**Comments**
1.	Property management reports that the number of units currently accessible and those adaptable meet FHA requirements of all ground floor units or 100% for a high rise.	√			
2.	Are 5% of the units fully accessible to those individuals with mobility impairments and 2% of units accessible to those individuals with audio / visual impairments?	√			
3.	Are there any barriers or structural restrictions preventing access to the building?	√			
4.	Are the accessible units on an accessible route?	√			
5.	Is the apartment entry corridor 36” wide, door 32” wide (frame to frame), threshold height less than ½”, and appropriate door hardware present?	√			
	Unit Living Space		**No**	**N/A**	**Comments**
1.	Is there access throughout unit?	√			
2.	Are electrical outlets 15” minimum above floor minimum?		√		
3.	Are environmental controls and switches 48” maximum above floor or lower?		√		
	Unit Bathroom	**Yes**	**No**	**N/A**	**Comments**
1.	Is entry door at least 32” wide frame-to-frame?	√			
2.	Are switches & outlets in accessible locations?	√			
3.	Are bathroom walls around the toilet and tub/shower reinforced?	√			
4.	Is there a 30” x 48” clear floor space outside of door swing area?	√			
5.	Is there a 56” x 48” clear floor space in front of toilet (48” out from wall toilet is hung against)?		√		
6.	Is there a 30” x 48” clear floor space in front of lavatories (30” deep from front of counter)?	√			
7.	Is there a 30” x 48” clear floor space in front of tub/shower (30” out from tub/shower)?		√		
8.	Is vanity a maximum of 24” deep and 36” high?	√			
9.	Knee space beneath sink is 30” wide and 27” high.	√			
10.	Is shower stall 36”x 42” minimum with small lip?		√		
11.	Is insulation installed below sinks on piping?		√		
	Unit Kitchen	**Yes**		**N/A**	**Comments**
1.	In a “U”-shaped kitchen is there 60” clear floor space width?			√	
2.	In a “U”-shaped kitchen with base cabinet removed from beneath sink, is there a minimum of 40” width?			√	

EMG Accessibility Checklist					
	Unit Kitchen (cont.)	**Yes**		**N/A**	**Comments**
3.	In a “L”-shaped kitchen, is there a 40” width minimum maintained?	√			
4.	Are countertops a maximum of 24” deep and 36” high?	√			
5.	Knee space beneath cabinetry is 30” wide and 27” high.	√			
6.	Is insulation installed below sinks on piping?		√		
7.	Are adaptable units equipped with removable or retractable cabinetry fronts beneath sink or stove?	√			

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Faucet Aerators
EAP2-b	**Location**: All Apartment Bathrooms

Property Type:	Residential	Estimated No. of Operational Weeks	52
		Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Number of Occupants Affected By Retrofit	40		Number of Occupants Affected by Retrofit	40	
Do You Want To Replace Kitchen Faucets Aerators	No	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	Yes	*(Select)*
Total Number of Faucet Aerators To Be Replaced	0		Total Number of Faucet Aerators To Be Replaced	19	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	-	GPM	GPM of Existing Faucet Aerators	2.2	GPM
GPM of Proposed Faucet Aerator	-	GPM	GPM of Proposed Faucet Aerator	1	GPM
Estimated Number of Uses Per Day	0		Estimated Number of Uses Per Day	5	
Estimated Total Faucet Use Time Per Occupant	0.00	Mins	Estimated Total Faucet Use Time Per Occupant	8.10	Mins

Annual Water Savings From Installing Low Flow Aerators: 84.91 kGal

8.1 Min/Person/day @AWWA

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Natural Gas	(Select)	Property Location in United States	Central Localities	
Energy Factor of Domestic Hot Water Heater:	0.67	EF	Heating Fuel Tariff	$1.20	$/Therm
Hot Water Discharge Temperature at Faucet	110.00	°F	Water Tariff ($/1000 Gal)	$8.70	$/kGal
Equivalent Heating Fuel Savings:	449	Therms	Annual Cost Savings In Form of Water	$739	$
Savings Discounted by 15% to Account For Cold Water Use					
Annual Water Savings	84.91	kGal	Annual Energy Savings From Water Heater	$539	$

COST BENEFIT ANALYSIS					
Estimated Total Annual Cost Savings	$1,278	$$	Estimated Total Installation Cost	$189	$$
Simple Payback Period	0.15	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $189 Estimated Annual Cost Savings: $1,278 Simple Payback Period (Yrs): 0.15

Property of EMG Corp, All Rights Reserved

UIC	Install Low Flow Faucet Aerators
EAP2	**Location**: All Apartment Kitchens

Property Type:	Residential	Estimated No. of Operational Weeks	52
		Number of Occupied Days/Week (Max 7)	7

KITCHEN FAUCETS			BATHROOM FAUCETS		
Number of Occupants Affected By Retrofit	40		Number of Occupants Affected by Retrofit		
Do You Want To Replace Kitchen Faucets Aerators	Yes	*(Select)*	Do You Want To Replace Bathroom Faucets Aerators	No	*(Select)*
Total Number of Faucet Aerators To Be Replaced	10		Total Number of Faucet Aerators To Be Replaced	0	
Total Number of Faucets To Be Replaced:	0		Total Number of Faucets To Be Replaced:	0	
GPM of Existing Faucet Aerators	2.2	GPM	GPM of Existing Faucet Aerators		GPM
GPM of Proposed Faucet Aerator	1.5	GPM	GPM of Proposed Faucet Aerator		GPM
Estimated Number of Uses Per Day	4		Estimated Number of Uses Per Day	4	
Estimated Total Faucet Use Time Per Occupant	4.05	Mins	Estimated Total Faucet Use Time Per Occupant	0.00	Mins
(hide) Water Savings- Kitchen	24.77	kGal	(hide) Water Savings From Bathroom/yr	0.00	kGal

Annual Water Savings From Installing Low Flow Aerators: 24.77 kGal
8.1 Min/Person/day @AWWA

WATER & ENERGY SAVING CALCULATION			COST SAVING CALCULATION		
Select Type of Water Heater Fuel:	Natural Gas	(Select)	Property Location in United States	Central Localities	
Energy Factor of Domestic Hot Water Heater:	0.67	EF	Heating Fuel Tariff	$1.20	$/Therm
Hot Water Discharge Temperature at Faucet	110.00	°F	Water Tariff ($/1000 Gal)	$8.70	$/kGal
Equivalent Heating Fuel Savings: *Savings Discounted by 15% to Account For Cold Water Use*	131	Therms	Annual Cost Savings In Form of Water	$215	$
Annual Water Savings	24.77	kGal	Annual Energy Savings From Water Heater	$157	$

COST BENEFIT ANALYSIS

Estimated Total Annual Cost Savings	$373	$$	Estimated Total Installation Cost	$99	$$
Simple Payback Period	0.27	Years	*Type of Recommendation*	No/Low Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM EXPLANATION:

By reducing the flow of water coming from the restroom faucets, aerators can generate energy savings at low cost and with easy installation. The savings generated would be in the form of reduced water and sewer costs and at the same time aerators would save energy by reducing the demand for hot water. The average faucet has a flow rate of about 2 to 4 GPM. Adding a screw-in faucet aerator reduces the flow to 0.5 to 1.5 GPM in the bathroom and 2.2 GPM in the kitchen. In addition to saving energy and water, the "foamier" water that comes from faucet aerators wets objects better than water from a faucet with no aerator, which tends to bounce off the object rather than thoroughly wetting it.

EMG recommends replacing the proposed faucet aerators with new low flow aerators as mentioned above. The proposed ECM shall also result in an annual energy saving in form of reduction in water heating bills.

Summary:

Initial Investment: $99 Estimated Annual Cost Savings: $373 Simple Payback Period (Yrs): 0.27

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Water Heater With New Energy Efficient Units
EAD3	**Location: Apartment Building Interior**

Step 1	**Existing Water Heater Details**	*Mechanical Closet*							
	Number of Water Heaters Being Replaced:	10							
	Select Existing Hot Water Heater Fuel	Natural Gas		Natural Gas		Natural Gas		Electric	
	Insert Energy Factor of Existing Water Heater	0.67	EF		EF		EF		EF
	Input Existing Water Heater Input Rating	40.00	kBtus		kBtus		kBtus		kW
	Select One Method For Calculation	Annual Heating Hours		Annual Heating Hours		Annual DWH Load		Annual DWH Load	
	Insert Average Annual Hours of Operation	915	hrs		hrs		Therms		kWh
	Annual Water Heater Energy Consumption/Heater	366	Therms	0	Therms	#DIV/0!	hrs	#DIV/0!	hrs
	Total Estimated Annual Energy Consumption For all Heaters	3,660	Therms	0	Therms	0	Therms	0	kWh
	Total Estimated Annual Operating Energy Costs For all Heaters	$4,392	$	$0	$	$0	$	$0	$
Step 2	**Proposed New Water Heater**								
	Proposed Hot Water Heater Fuel	Natural Gas		Heat Pump		Electric		Natural Gas	
	Capacity of the Proposed New Water Heater	29-Gal,40-kBtu							
	Energy Factor of Proposed Water Heater	0.61	EF	0.00	EF	0.00	EF	0.00	EF
	Proposed Water Heater Input Rating	40.00	kBtuh	0.00	kW	0.00	kW	0.00	kBtuh
	Annual kBtuh Consumption For All The Proposed Water Heaters	402,000	kBtuh	#DIV/0!	kBtuh	#DIV/0!	kBtuh	#DIV/0!	kBtuh
	Estimated Annual Water Heater Fuel Consumption (All Heaters)	4,020	Therms	0	kWh	0	kWh	0	Therms
	Estimated Total Annual Energy Costs	$4,824	$	$0		$0		$0	
Step 3	**Energy & Cost Saving Calculation**								
	Estimated Cost of New Water Heater/Unit	$1,029	$	$0	$	$0	$	$0	$
	Total Estimated Installation Cost	$12,612	$	$0	$	$0	$	$0	$
	Total Estimated Annual Cost Savings	-$432	$	$0	$	$0	$	$0	$
	Total Annual Cost Savings:	-$432		Total Initial Investment::		$12,612			
	Simple Pay Back Period	-29.19							
	Type of Recommendation	Capital Cost ECM Recommendation							

Disclaimer: PREPARED BY EMG. DECEMBER 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM SUMMARY:

Electric resistance is the most expensive method for heating domestic hot water. A natural gas or propane fired water system provide more units of heat with direct burning of fuel while high wattage draw is required for electric water heaters to create resistance heat. This electric usage can be seen with the increase power demand for the site and the additional kWh consumption. The installation process of the gas/propane fired water heater requires additional measures with tying a gas line or fuel tank to the system along with installing an exhaust gas vent. This process is not a costly retrofit if a current gas line or tank is at the site. The hot water exhaust duct can be tied to the existing gas fired furnaces or boilers for an easy retrofit.

SUMMARY:

Initial Investment: $12,612 Simple Payback: -29.19 yrs
Annual Cost Savings: -$432

Property of EMG Corp, All Rights Reserved

UIC	Improve Attic Insulation Levels
EAE3	Location: Apartment Attic

ENTER EXISTING CONDITION

ASHRAE Climatic Zone	Zone-3		ASHRAE 90.1 Attic- Insulation Requirement:	R-30	
Enter Total Surface Area Under Consideration:	8,097	Sq.Ft	Existing Net Effective R-Value: (Sq.Ft deg F/btu)		
Proposed Type of Insulation To Be Added:	Loose Fill/ Cellulose	*(Select)*	Proposed Insulation Recommendation:	Partial Upgrade	*(Select)*
Recommended Level of Insulation To Be Added:	R-30		Proposed Net Effective R-Value: (Sq.Ft deg F/btu) *(Post Retrofit-Final Net Insulation)*		

ENTER CLIMATIC & SYSTEM DATA

Annual Cooling Degree Days (CDD):	1,479		Estimated Annual Cooling Plant Efficiency (EER):		EER
Annual Heating Degree Days (HDD):	2,711		Estimated Annual Heating Plant Efficiency: %		%

WINTER			SUMMER		
Select Type of Heating Fuel	Natural Gas	(Select)	Is the Property Cooled ?	Yes	(Select)
Annual Conduction Losses From Existing Insulation	#DIV/0!	kBtu	Annual Conduction Losses From Existing Insulation	#DIV/0!	Kbtu
Annual Conduction Losses From Proposed Insulation	#DIV/0!	kBtu	Annual Conduction Losses From Proposed Insulation	#DIV/0!	kBtu
Savings In Conduction Losses After Adding Insulation	#DIV/0!	kBtu	Savings In Conduction Losses After Adding Insulation	#DIV/0!	kBtu
Estimated Total Annual Input Heating Energy Savings	#DIV/0!	Therms	Estimated Total Annual Input Cooling Energy Savings	#DIV/0!	kWh
Cost of Heating Fuel/Unit:	$1.20	$/Therm	Cost of Electricity/Unit	$0.26	$$
Annual Heating Cost Savings	#DIV/0!	$$	Annual Cooling Cost Savings	#DIV/0!	$$

COST ANALYSIS

Estimated O&M Savings	#DIV/0!	$$	Estimated Cost To Add Insulation on	$8,907	
Total Estimated Annual Cost Savings	#DIV/0!	$$	Estimated Total Installation Cost	$10,917	$$
Simple Pay Back Period	#DIV/0!	Years	*Type of Recommendation*	Capital Cost ECM Recommendation	

Disclaimer: PREPARED BY EMG. May 2016 INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

The amount of heat conduction through ceiling and roof is proportional to its overall heat transfer coefficient (commonly called the U-factor) and the temperature difference between the conditioned space and its surrounding, modified by the effect of solar intensity and wind velocity on the exterior surfaces. One of the most effective ways to reduce heat transfer through ceilings and roofs is to retard heat conduction by adding insulation.

Where the existing roof is sound and directly accessible from an attic or ceiling void, polyurethane foam or mineral fiber may be sprayed on the underside, with rigid batt or other applicable insulation for the inside surface. Insulation, typically fiber-glass batt, may also be laid on the top of a ceiling, taking care not to cover up light fixtures.

Unimembers can degrade the performance of the insulation up to 20%, and resultant condensation can cause insulated structural the structure to deteriorate. Therefore, care should be taken to properly insulate the structural members. Often more energy can be conserved by insulating the ceiling rather than the roof unless the attic is being used for special storage, frequent access is required, or a moderate attic temperature is desired. However, if only the ceiling is insulated, any ducting or piping should be insulated to avoid excessive heat transfer or freezing. It is important to be sure that the attic is ventilated by providing one to two inches of ventilation area per square foot of attic.

Summary:

Initial Investment: $10,917 Simple Payback Period: #DIV/0! Yrs

Annual Energy Cost Savings: #DIV/0!

Property of EMG Corp. All Rights Reserved

UIC	Replace Existing Air Conditioners with Energy Star Air Conditioners
EAH3	Location: All Apartments

Electric Rate: $0.26 $/kWh

Split System Air Conditioner

Number of Existing Air Conditioners	1	Qty	9	Qty	0	Qty	0	Qty
Insert Cooling Capacity of Existing Air-Conditioner		Btuh		Btuh		Btuh		Btuh
Please Input The Existing EER of The Air-Conditioner:		EER		EER		EER		EER
Estimated Annual Operating Hours:	610	Hrs		Hrs		Hrs		Hrs
Select Proposed Air Conditioner Type:	-		-		-		-	
Estimated New Annual Operating Hours:	610	Hrs	0	Hrs	0	Hrs	0	Hrs
Please Input The Btu/Hr of The New Air-Conditioner:	-	Btuh	-	Btuh	-	Btuh	-	Btuh
EER of Proposed Air-Conditioning System:	-	EER	-	EER	-	EER	-	EER
Total Energy Consumption For Existing Air conditioner:	0	kWh	0	kWh	0	kWh	0	kWh
Total Energy Consumption For Proposed Air conditioner:	0	kWh	0	kWh	0	kWh	0	kWh
Annual kWh savings for all Air conditioner:	0	kWh	0	kWh	0	kWh	0	kWh
Estimated Annual Energy Cost Savings:	$0		$0		$0		$0	
Estimated Annual O&M Savings:	$0		$0		$0		$0	
Total Annual Cost Savings:	$0		$0		$0		$0	
Estimated Installed Cost For All Air conditioner:	$0		$0		$0		$0	

Total Initial Investment:	$0	Total Annual Electric Savings:	0 kWh
Total Annual Cost Savings:	$0	Simple Payback:	#DIV/0! Yrs
Type of Recommendation	No/Low Cost ECM Recommendation		

Disclaimer: PREPARED BY EMG. DECEMBER 2014, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

Advances in compressor and condenser technology have allowed for the development of more efficient air conditioning systems. As a result cooling can be provided at the same rate, with a lower energy input. Energy efficiency ratio (EER) is the ratio of cooling output to power input. Seasonal energy efficiency ratio (SEER) is an adjusted figure based on the length of the cooling season. A higher EER or SEER indicates a more efficient unit which can provide the same cooling capacity while consuming less energy. The minimum standard for air conditioner performance in most areas is currently 13 SEER as required by the 2006

EMG recommends replacing all the identified air conditioners with the new proposed high efficiency air conditioners as mentioned above.

Summary:

Initial Investment: $0 Simple Payback: #DIV/0! Yrs

Energy Cost Savings: $0

Property of EMG Corp. All Rights Reserved

UIC	Replace Inefficient Furnace System
EAH12-A	Location:

Estimated Annual Cooling Hours:	610 Hrs		Estimated Annual Heating Hours:	915 Hrs	
Are The Condensing Units Being Replaced	No		Replace Furnace?	Yes	Heating Fuel: Natural Gas
Existing Cooling System			**Existing Heating System**		
No. of Cooling Plants To Be Replaced:	0		No. of Furnaces To Be Replaced:		
Input the Btu/Hr of the air conditioner:	0		Input the MBH Rating of the Furnace:		MBH
Input Existing EER of the Air Conditioner:	0.00		Input Existing AFUE for the Furnace:		%
Estimated Current Annual Energy Consumption For Cooling: *(For All Units)*	0 kWh		Estimated Annual Current Energy Consumption For Heating: *(For All Units)*	0	Therms
Proposed Cooling System			**Proposed Heating System**		
Input the Btu/Hr of the Proposed Air Conditioner:	24,000 Btuh		Proposed Furnace:	Gas Fired -45MBH	
Input EER of the Proposed Air Conditioner:	0.00		Input AFUE for the Proposed Furnace:	92%	
Estimated Annual Energy Consumption With New AC's *(For One Unit)*	0 kWh		Estimated Annual Energy Consumption With New Furnace *(For One Unit)*	0	Therms
Energy & Cost Savings From New Cooling System			**Energy & Cost Savings From New Heating System**		
Estimated Annual Energy Savings From New Cooling System: *(Total)*	0 kWh		Estimated Annual Energy Consumptions From New Heating System: *(Total)*	0	Therms
Average Electric Rate:	$0.26 $/kWh		Average Heating Fuel Cost For New Furnace:	$1.20	$/Therm
Estimated Annual Cost Savings From Cooling:	$0		Estimated Annual Cost Savings From Heating:	$0	$$
Estimated Cost of New Condensing Unit: *(Material + Installation+Labor)*	$0		Estimated Cost of New Furnace Unit: *(Material + Installation+Labor)*	$1,124	$$
Estimated Cost of New Evaporator Coils In Furnace: *(Material + Installation+Labor)*	$0		Estimated Total Cost of New Furnace Unit: *(Material + Installation+Labor)*	$0	$$

Total Estimated Installed Cost For A New Air Conditioning System Setup + New High Efficiency Furnace : *(Includes Location Factor)*		$0 $$			
Estimated Total Energy Cost Savings From New HVAC System:	$0 $$	Estimated O&M Savings:	$0	Total Annual Savings:	$0 $$
Estimated Simple Pay Back Period:		#DIV/0! Years			
Type of Recommendation	No/Low Cost ECM Recommendation				

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

Property of EMG Corp, All Rights Reserved

UIC	Replace Incandescent/CFL /Halogen Lamps With LED Lamps
EAL1B-S	Location: All Apartment Lighting

	Unit Entry	Foyer	Living Room	Hallway	Kitchen Ceiling		
Current Type of Lamps in the Fixtures:	Screw In-I60	Screw In-I60	Screw In-I60	Screw In-I40	Screw In-CFL15	-	-
Number of Lamps to Be Replaced :	10	10	10	10	10	0	0
Current Annual Usage:	1,825 hrs	730 hrs	730 hrs	730 hrs	730 hrs	0 hrs	0 hrs
Proposed Measure	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	-	-
Replacement Qty- Lamps / Fixtures:	10	10	10	10	10	0	0
Proposed Annual Avg. Hours of Operation	1,825 hrs	730 hrs	730 hrs	730 hrs	730 hrs	0 hrs	0 hrs
Proposed Replacement:	LED11	LED11	LED11	LED8	LED11	-	-
Estimated Annual Energy Savings	894 kWh	358 kWh	358 kWh	234 kWh	29 kWh	0 kWh	0 kWh
Total labor Cost For Retrofit	$51	$51	$51	$51	$51	$0	$0
Estimated Cost Per Lamp/Fixture	$13.75	$13.75	$13.75	$12.50	$13.75	$0.00	$0.00
Cost For Retrofit	$188	$188	$188	$176	$188	$0	$0

Total Initial Investment For Retrofit	$1,137	Total kWh Saving	1,872 kWh	Total O&M Savings/Yr	$179	
Electric Rate	**$0.26**	Estimated Annual Cost Savings	$666	Simple Pay back Period	1.71	Yrs

Type of Recommendation — Capital Cost ECM Recommendation

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

The existing incandescent lamps can be replaced with screw-in compact fluorescent lamps. The result of the replacement is a direct energy savings up to 60%. In case of the incandescent lamps approximately 80% of the energy consumed by it is lost in the form of heat radiated by them when lit where as only 20% is actually converted into light. In addition to this the commercially available incandescent lamp have an annual life expectancy of 5000 hrs, whereas a CFL can last for nearly 10,000-12,000 hrs, which is more than twice the life expectancy of the incandescent lamps. Not all, screw-in fluorescent lamps are generally compatible with dimmers.

EMG recommends replacing all the existing lamps with new LED/CFL's or replace the entire fixture with new LED fixture.

SUMMARY;

Initial Investment: $1,137 Simple Payback Period: 1.71 yrs

Annual Cost Savings: $666

Property of EMG Corp, All Rights Reserved

UIC	Replace Incandescent/CFL /Halogen Lamps With LED Lamps
EAL1B-S2	Location: All Apartment Lighting

	Dining Room	Stairwell	Bedroom	Closet Light	Bathroom Ceiling		
Current Type of Lamps in the Fixtures:	Screw In-I60	Screw In-I60	Screw In-I60	Screw In-I40	Screw In-CFL15	-	-
Number of Lamps to Be Replaced :	10	10	30	32	19	0	0
Current Annual Usage:	1,825 hrs	730 hrs	730 hrs	730 hrs	730 hrs	0 hrs	0 hrs
Proposed Measure	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	Replace Lamps With LED Equivalent	-	-
Replacement Qty- Lamps / Fixtures:	10	10	30	32	19	0	0
Proposed Annual Avg. Hours of Operation	1,825 hrs	730 hrs	730 hrs	730 hrs	730 hrs	0 hrs	0 hrs
Proposed Replacement:	LED11	LED11	LED11	LED8	LED11	-	-
Estimated Annual Energy Savings	894 kWh	358 kWh	1,073 kWh	748 kWh	55 kWh	0 kWh	0 kWh
Total labor Cost For Retrofit	$51	$51	$152	$162	$96	$0	$0
Estimated Cost Per Lamp/Fixture	$13.75	$13.75	$13.75	$12.50	$13.75	$0.00	$0.00
Cost For Retrofit	$188	$188	$564	$562	$357	$0	$0

Total Initial Investment For Retrofit	$2,279	Total kWh Saving	3,128 kWh	Total O&M Savings/Yr	$377
Electric Rate	**$0.26**	Estimated Annual Cost Savings	$1,190	Simple Pay back Period	1.92 Yrs

Type of Recommendation — Capital Cost ECM Recommendation

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

The existing incandescent lamps can be replaced with screw-in compact fluorescent lamps. The result of the replacement is a direct energy savings up to 60%. In case of the incandescent lamps approximately 80% of the energy consumed by it is lost in the form of heat radiated by them when lit where as only 20% is actually converted into light. In addition to this the commercially available incandescent lamp have an annual life expectancy of 5000 hrs, whereas a CFL can last for nearly 10,000-12,000 hrs, which is more than twice the life expectancy of the incandescent lamps. Not all, screw-in fluorescent lamps are generally compatible with dimmers.

EMG recommends replacing all the existing lamps with new LED/CFL's or replace the entire fixture with new LED fixture.

SUMMARY;

Initial Investment: $2,279 Simple Payback Period: 1.92 yrs

Annual Cost Savings: $1,190

Property of EMG Corp, All Rights Reserved

UIC	Replace Existing Linear Fluorescent Lamps
EAL2-S	Location: All Apartment Kitchen and Bathroom

Existing Lighting System

	Kitchen Ceiling	Bathroom Vanity					Stairwell- BiLevel Lighting
Current Type of Lamp: *(Select)*	F42T12	F41T12					
Current Annual Avg Hrs of Operation:	730 hrs	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Existing Number of Fixtures:	10	19	0	0	0	0	0

Proposed Lighting System

Proposed Lamp Replacement: *(Select)*	F42LED	F41LED	-	-	-	-	-
Proposed Annual Avg. Hours of Operation	730 hrs	730 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Proposed Number of Fixtures:	10	19	0	0	0	0	0
Proposed Lighting Control: *(Select)*	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch
No. of Lighting Controls:	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty

Energy Saving Calculation

Estimated Annual Energy Savings	270 kWh	451 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Are The Ballast's Being Replaced: *(Select)*	No	No	No	No	No	No	No
Estimated Material Cost:	$480 $	$456 $	$0 $	$0 $	$0 $	$0 $	$0 $
Estimated Labor Cost:	$82 $	$78 $	$0 $	$0 $	$0 $	$0 $	$0 $
Total Installation Cost:	$562 $	$534 $	$0 $	$0 $	$0 $	$0 $	$0 $

Estimated Total Material Cost:	$935 $$	Estimated Total Labor Cost:	$197	Total kWh Saving	721 kWh
Electric Rate:	$0.26 $$	**Total Initial Investment For Retrofit**	$1,132	Estimated Annual O&M Cost Savings	$6
				Estimated Annual Cost Savings	$193
Simple Pay back Period	5.86 Yrs	*Type of Recommendation*	**Capital Cost ECM Recommendation**		

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM DESCRIPTION:

Fluorescent lighting is recommended for areas where color sensitivity is an important criterion (e.g., offices or small parts assembly rooms). Fluorescent tubes are currently available that produce a higher light output (more lumens per watt) than standard fluorescent tubes. There are efficient 40-watt lamps that produce 8% to 10% more light than standard lamps. The 34-watt fluorescent tubes use 15% less power than standard lamps, while producing about 8% less light. Since the human eye responds to light exponen-tially, rather than linearly, the difference is often unnoticeable. "T8" fluorescent lamps use only 32 watts, but existing fixtures must be replaced. Therefore, EMG recommends retrofitting all the existing fixtures with new 17.5W LED Tube lamps. The LED tubes provide a 180 degree light dispersal, and can be retrofitted in the existing ligt fixture. The LED tubes are rated at 50,000 hrs as compared to 20,000 to 30,000 hrs ratings for conventional fluorescent lamps.

It is important to replace all lamps when re-lamping a fluorescent fixture, never mix energy-efficient and standard lamps with the same ballast. Ensure that the fluorescent ballast is compatible with the energy-efficient lamps. It must be noted that when switching from T-12 magnetic ballast to T8 lamps, the ballasts should be replaced with instant start electrical ballast. Also it should be noted that when installing an occupancy sensor/motion sensor, rapid start electronic ballast should be used.

SUMMARY:

Initial Investment: $935 Simple Payback: 5.86 Years

Annual Cost Savings: $193

Property of EMG Corp, All Rights Reserved

UIC	Replace High Intensity Discharge Lamps With LED
EAL9-S	Location: Apartment Building Exterior

	Wallpacks	*Pole Lights*						
Existing Lamp & Fixture Type	Wall Packs-70W	Street Lights-175W	-	-	-	-	-	-
Fixture Mounting Height	0 -14 Ft	15 - 20 ft						
Proposed Replacement Type:	LED	LED	LED	LED	LED	LED	LED	LED
Number of Lamps to Be Replaced :								
Current Annual Avg Hrs of Operation:	3,650 hrs	3,650 hrs	hrs	hrs	hrs	hrs	hrs	hrs
Proposed Annual Avg. Hours of Operation	3,650 hrs	3,650 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs	0 hrs
Proposed Replacement:	30Watt	150Watt	-	-	-	-	-	-
Proposed Lighting Control: *(Select)*	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch	Light Switch
No. of Lighting Controls:	Qty	Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty	0 Qty
Estimated Annual Energy Savings	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Total labor Cost *(Includes Bucket Truck Fees if Applicable)*	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$
Estimated Material Cost:	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$
Cost For Retrofit	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$	$0 $$

Total Initial Investment For Retrofit	$0 $	Total kWh Saving	0	Electric Rate:	**$0.26** $	Energy Cost Savings:	$0 $	
Total O&M Savings:	$0 $	Total Cost Savings:	$0	Simple Pay back Period	#DIV/0! Yrs			
	Type of Recommendation		No/Low Cost ECM Recommendation					

Disclaimer: PREPARED BY EMG. May 2016, INFORMATION CONTAINED IN THIS DOCUMENT IS PRIVILEGED AND CONFIDENTIAL "TRADE SECRET" AND IS THE SOLE PROPERTY OF EMG CORP. THIS MATERIAL MUST BE CONSIDERED PRIVELEDGED AND CONFIDENTIAL BY ALL PARTIES PRIVY.

ECM Description:

Exterior and site lighting at the site is currently provided by High Intensity Discharge (HID) lighting. Significant savings can be achieved in terms of energy usage as well as in life-cycle performance terms with more energy efficient lighting technologies like Light Emitting Diodes (LED) and induction lighting. Induction and LED lighting with dimmable controls and no re-strike delay capabilities can be easily tied into a building management controls and/or photo-sensor controls to reduce light output and energy consumption. Apply that over ten years plus reduced replacement costs compared to HID lamps and it makes sense to go with LED/induction lighting.

The LED lights are rated 100,000hrs after which the illumination levels drop below 70%. LED's are gaining more popularity and acceptance over the time and are considered ideal replacement for parking and street lightings along with site illumination lights. The new LED lights consume less than a third of the power as consumed by the HID and last up to five times longer, in addition to this the LED's can be easily dimmed as per the requirement.

SUMMARY;

Initial Investment: $0 Annual Cost Savings: $0 Simple Payback Period: #DIV/0! Yrs