

Green Capital Needs Assessment and Replacement Reserve Analysis

Prepared for:

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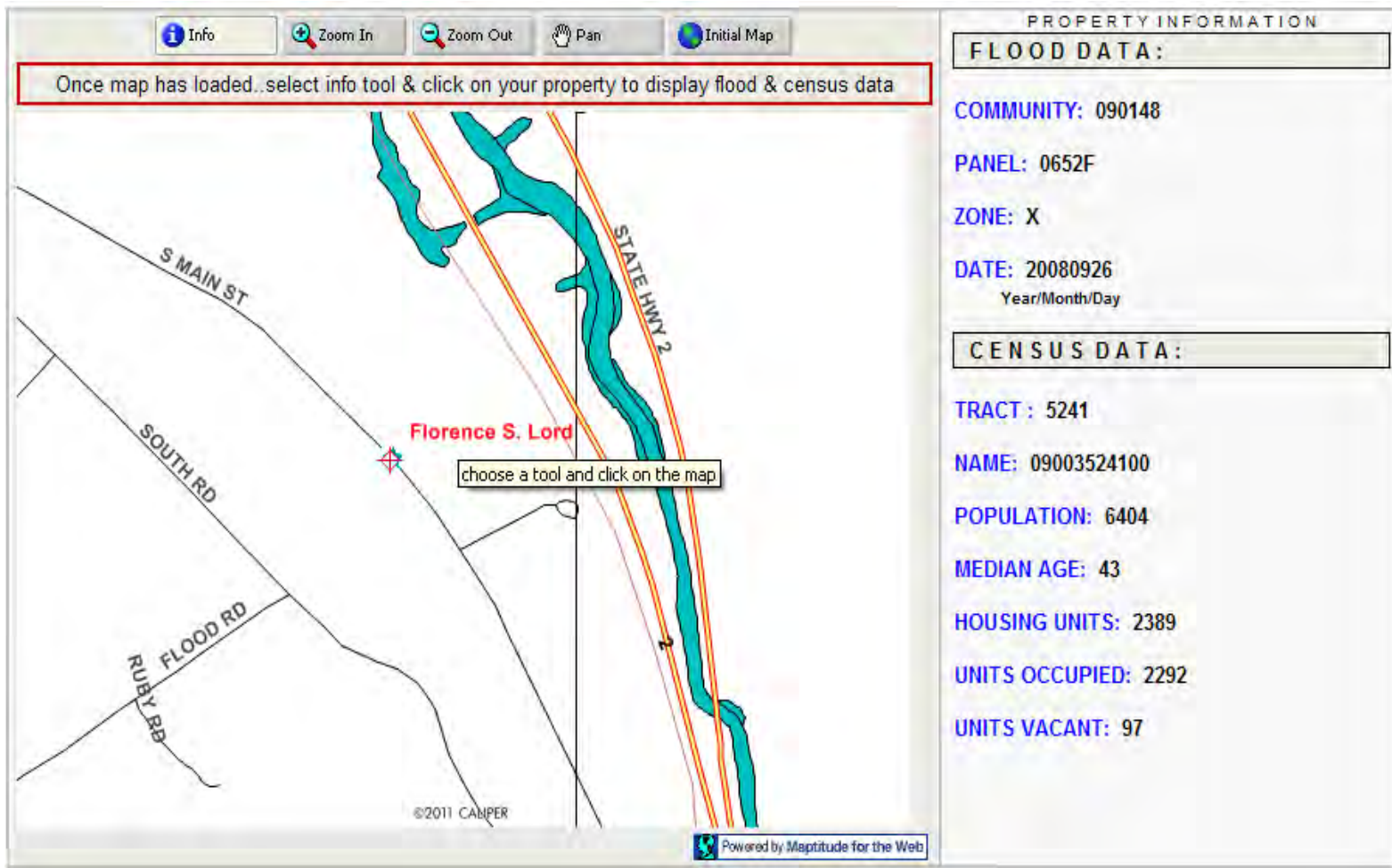
May 20, 2013

Revised Final Report



Florence S. Lord Senior Housing

155 South Main Street
Marlborough, CT 06447



Florence S. Lord

155 South Main Street
Marlborough, CT 06447

Zone X = Outside the 500-year floodplain and
Outside the 1% and 0.2% annual chance floodplains

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HOW TO READ THIS REPORT

The report is divided into two sections: "Findings and Recommendations" and "Supporting Data".

Findings and Recommendations: The three elements comprising this section constitute the main content of the report. A comprehensive list of the recommended green options and their benefits, and a snapshot of key energy findings, are included in the Executive Summary. Additional detail regarding the property's existing conditions, current and future capital needs, and green recommendations are illustrated in the narrative and photo pages.

Supporting Data: These nine sections contain the support data and calculations used in determining the feasibility of the green recommendations. Hard costs estimates and replacement/repair timing are presented in the capital needs worksheets. The Capital Needs Summaries and Replacement Reserve Analyses highlight the total 20-year capital costs for both the conventional and green scenarios pitted against current funding circumstances. Cost-benefit analyses are included in the Simple Payback and Life Cycle Cost "cut sheets" at the end of the report.

Executive Summary

Overview and Goals

This Green Capital Needs Assessment (GCNA) has been undertaken on behalf of Connecticut Housing Finance Authority. It is aimed at determining the development's current and prospective physical circumstances, on both a traditional and green basis. A traditional CNA focuses on those capital activities that reasonably can be expected to ensure that a property is viable and in good condition over a twenty-year horizon. In a traditional CNA, it is common for On-Site Insight (OSI) to informally comment on maintenance practices, or suggest discretionary upgrades that might affect operations, marketability, or occupant well being. This GCNA is aimed at more rigorously and more formally identifying green alternatives to conventional replacement of major components and systems. It offers options aimed at helping:

- improve energy and water efficiency,
- reduce operating and capital costs through the use of durable materials and improved maintenance,
- safeguard indoor environmental quality (IEQ) for residents, and
- reduce the property's environmental impact.

We see a number of sensible green opportunities, now and in the future, to replace existing elements with more durable and/or environmentally friendly materials and technology. In both the narrative and detailed capital needs worksheets that follow, conventional and green capital activities are presented in parallel. Capital needs summaries are presented separately for conventional and green models. The green opportunities described in the plan fall into one of two categories: energy and water conservation measures (EWCs), or green measures (GMs), expanded in detail below:

Executive Summary

A Note on NPV

Net present value (NPV) is the difference in total life cycle costs between the conventional recommendation and the green recommendation. The EWCMs and GMs that carry a negative NPV are viewed as cost-prohibitive, despite potential environmental benefits or additional energy savings. In this report, OSI does not recommend measures that carry a negative NPV.

Energy and Water Conservation Measures (EWCMs):

In the report, 4 energy and water conservation measures (EWCMs) are identified. Energy and water conservation measures are upgrades and improvements to existing mechanical and electrical systems that have a direct impact on energy consumption, and therefore potential utility (electric, gas, oil, water, sewer) savings if implemented appropriately. As part of the inspection process, the property's utility data was analyzed. This information is then used as part of the EWCM recommendation and calculation process.

Certain EWCMs are interactive. In order to achieve the projected annual energy savings for an interactive group, the EWCMs must be implemented in concert with one another. If any of the interactive EWCMs are deferred or foregone, there may be a significant impact on the utility savings outlook. For example, replacement of an inefficient boiler system may not achieve projected utility savings associated with that system if inefficient windows remain in place.

The energy conservation measure specifications (i.e. boiler efficiencies, R-values, U-values) presented in this plan are mostly derived from the International Energy Code and the American Society of Heating, Refrigeration and Air-Conditioning (ASHRAE) Handbook. These measures represent one conceptual option; various alternatives may yield different results. It must be noted that a number of factors may affect the estimated annual energy savings and simple payback periods, and therefore the figures outlined in this report are not guaranteed.

Executive Summary

Green Measures (GMs):

The report identifies 5 Green Measures (GMs). Green measures are replacements of existing materials and systems that do not have a direct impact on energy consumption; however, they represent opportunities to reduce capital and operational expenditures in the future due to increased durability, enhanced performance, and increased expected useful life (EUL) potential. Additionally, if implemented properly, GMs can improve indoor environmental quality and can benefit resident and staff health, safety, and well-being.

The life cycle costs for the GMs are calculated in the attached worksheets with the comparative life cycle cost for the conventional replacement alternatives. Other GMs included in the plan do not represent enhanced performance or extended expected useful lives, and therefore the life cycle costs for these GMs are not calculated. Many of the projected savings are based on certain performance and EUL criteria for the respective systems and materials. Several factors may impede upon the expected performance and may skew the estimated savings. In this case, the savings presented in the plan are estimated and cannot be guaranteed.

Building Modeling Methodology

This report uses an energy model created in TREAT to determine the energy loads (electric and fossil fuel uses including heating, domestic hot water, and non-heating systems) for this property. The TREAT model is based on building-specific construction, HVAC systems, and other building systems (i.e. lighting, appliances, etc.) as identified by the inspection team. The energy model also incorporates 12 months of utility bills, and matches weather data to the utility billing period.

Using the SUNREL™ energy simulation software developed by the National Renewable Energy Laboratory (NREL), TREAT calculates energy uses on an hourly basis (again factoring in weather/climate, existing HVAC systems, and internal gains) for an entire year. The result produces calculated energy use for the property, and proposed energy savings for identified measures. The energy savings are shown both independently and with full interaction of all measures. Additional measures, such as water usage, which is currently not modeled in

Executive Summary

TREAT has been presented using OSI's existing utility models. Also, since TREAT evaluates the building as a whole, it is possible that measures reduce electric consumption, could also show an increase in heating requirements (i.e. lighting reduction reduces heat typically produced by the original lighting system and in turn would require an increase to the heating load). The calculated loads (electricity, natural gas) are reconciled against billed utility loads within a 10% margin.

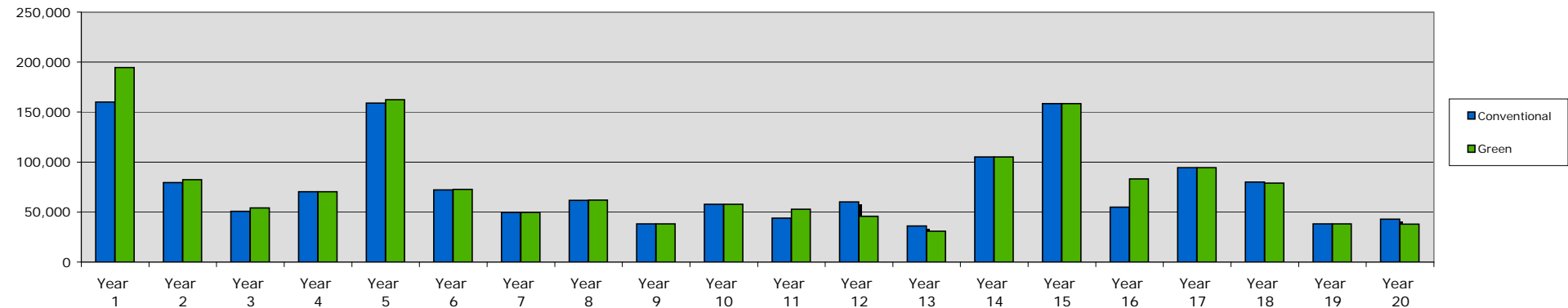
Executive Summary

Dashboard

Property Data

Location:	Marlborough
Year Built:	1993
Number of Units:	28
Number of Buildings:	1

Comparison of Capital Needs - Conventional vs. Green



Environmental Impact

(Total Carbon Release Based on Current Annual Energy Usage)

Building Square Footage:	33,635
Resident Population (<i>estimated</i>):	34

	BTUs/yr	Conversion	lbs CO ₂	lbs CO ₂ / Res
Gas	0	x 11.023100	0	0
Oil	0	x 11.023100	0	0
Electricity	248,632,440	x 1.582917	115,313	3,392
Total	248,632,440		115,313	3,392

Replacement Reserve Analysis

Conventional

Plan #1: Capital costs exceed reserves in all Years of the plan.
Plan #2: Infusion of \$780,000 in Year 1.

Green

Plan #1: Capital costs exceed reserves in all years of the plan.
Plan #2: Infusion of \$840,000 in all Years of the plan.

Health and Safety

Hazardous Materials

	Identified	Location / Notes
Lead Based Paint (LBP):	Not Tested	Unlikely due to age
Asbestos Containing Materials (ACMs):	Not Tested	Unlikely due to age
Mold:	Not Observed	-

Indoor Ventilation

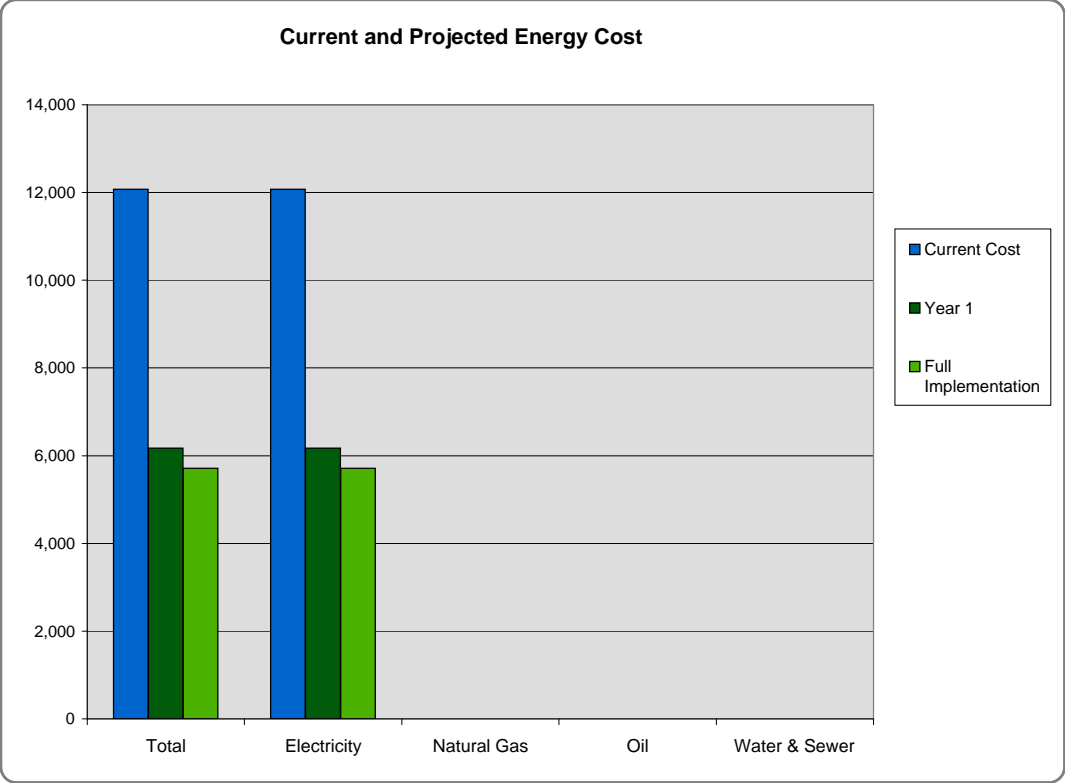
Bathroom and kitchen exhaust fans; operable windows

Indoor Air Quality (IAQ)

	Design Specification	Actual Read	Notes
Air Flow Rate	Not Measured	-	-
Thermal Comfort	68-72	68-74	-
Carbon Monoxide	0	Not Measured	-
Carbon Dioxide	<1000	874 - 1324	High

Executive Summary

Energy Savings



Energy Intensity / Benchmarking Data

TREAT Modeled Data

Building Square Footage: **33,635**

Heating Degree Days: 5,122

TREAT Model

	Amount	Units	BTUs/yr	Energy Intensity (BTUs/(HDDs x SF))
Heating	17,123	kWh	58,422,127	0
Cooling	0	kWh	0	0
DHW	8,180	kWh	27,911,638	0
Electricity	47,567	kWh	162,298,675	1
Total			248,632,440	1

	Gallons/yr	Gallons/sf/yr
Water	0	0

Energy Usage Summary

Billing Data

Utility	Current Usage	Current Cost	Projected Usage	Projected Cost	% Savings
Electricity	72,870 kWh	\$12,073	34,480 kWh	\$5,713	52.7%
Natural Gas	0 therms	\$0	0 therms	\$0	n/a
Oil	0 gallons	\$0	0 gallons	\$0	n/a
Water & Sewer	0 gallons	\$0	0 gallons	\$0	n/a
Total		\$12,073		\$5,713	52.7%

Executive Summary

Green Improvement Plan

						Annual Utility Savings									
Measure	Upfront Cost	EUL	Simple SIR ¹	Incremental Cost ²	Green NPV ⁴	Electric		Gas		Oil		Water & Sewer		Total \$	Recommended Timing
						KWh	\$	Therms	\$	Gallons	\$	Gallons	\$		

Recommended EWCMs (Based on Financial Analysis)

Interactive Group															
EWCM 1 - Convert Lighting	22,102	20	0.62	1,542	7,589	4,165	690							690	Immediate
EWCM 2 - Install Heat Pumps	18,000	15	1.23	13,100	2,523	8,936	1,481							1,481	Immediate
EWCM 3 - Pump Motors	9,245	20	0.99	645	5,400	2,758	457							457	Future
EWCM 4 - Convert Lighting	20,690	20	3.61	20,690	43,552	22,530	3,733							3,733	Immediate
Interactive Group Total ⁵	70,037			35,977			6,360							6,360	
EWCM Subtotal	70,037			35,977		0	6,360	0	0	0	0	0	0	6,360	

Recommended GMs (Based on Financial Analysis)

GM 2 - Linoleum Floors	43,797	25		13,008	3,228	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Immediate
GM Subtotal	43,797			13,008		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Total	113,834			48,985		0	6,360	0	0	0	0	0	0	6,360	

Optional Actions

GM 1 - Roof Covering	135,461	50	0.00	78,425	(50,554)									0	Immediate
GM 3 - Comm. Kitchen Cabinets	3,628	25		253	(253)									0	Immediate
GM 4 - DU Cabinetry	81,270	25		5,670	(5,670)									0	Immediate
GM 5 - Ceramic Tile Countertop	25,200	25		11,908	(613)									0	Immediate

Notes:

- Simple SIR is calculated as (Total Annual Savings * Estimated Useful Life) / Upfront Cost.
- Incremental Cost is the difference in cost between the green and conventional alternatives.
- Green SIR (Savings to Investment Ratio) is a relative measure that reflects the ratio of total savings to total investment of Green vs. Conventional. Unlike Simple SIR, this calculation takes into account maintenance costs, inflation, discounting, and differences in expected useful life.
- Green NPV is the net present value of installing a green vs. conventional product.
- Interactive group total recognizes full interaction of all measures based on the TREAT model.

Narrative

Florence S. Lord is a development designed for occupancy by seniors. The building contains a total of 28 units, all of which are accessed through a series of interior common hallways and stairwells. The unit breakdown is as follows: 28 one-bedroom units. The building was originally constructed in 1993.

Site

Site Surface

Florence S. Lord is located on a parcel of land in Malborough, CT. No capital costs are carried for landscaping improvements, as they are understood to be handled from operations. If, at some future date, management contemplates re-landscaping, OSI recommends attention to sustainable design. Conventional landscaping relies on large lawns, non-native species, extensive irrigation, and heavy use of fertilizers and pesticides. This type of landscaping also tends to be labor-intensive. There are design features that can enhance soil quality, and reduce storm water run-off and pollution. Such measures can also minimize water usage, maintenance costs, and green waste.

Roadways and Parking Areas

Existing conditions	Capital needs	Green alternative
The parking area is located in the front of the building. The roadways were observed to be in fair condition for their age.	Future costs to resurface the parking area are shown in Year 4. Costs to crack-fill, seal coat, and restripe the asphalt parking area as needed throughout the plan.	Consider resurfacing with a light colored aggregate martial. A lighting colored asphalt material will reflect heat and reduce the heat island effect.

Narrative

Pedestrian Walkways

Existing conditions	Capital needs	Green alternative
The walkways were observed to be in good overall condition.	Costs are shown for as needed repair/replacement throughout the plans timeframe.	Repairs and replacements using Portland cement with at least 20% recycled-content materials is recommended. This measure increases the durability and strength of the concrete, and reduces greenhouse gas emissions associated with cement production. Where contractors are familiar with the product, there is little or no incremental cost to this option. We are uncertain about local market circumstances with regard to it. A separate cost option is not shown for this here.

Narrative

Site Lighting

Existing conditions	Capital needs	Green alternative
The parking area is illuminated by eight pole mounted high pressure sodium fixtures. The lights are controlled by photocells.	Future replacement costs for the site lighting are shown in Year 5 of the plan.	EWCM #1 Replace the existing fixtures with high efficiency LED models. LEDs use significantly less electricity and have a longer expected useful life than traditional incandescent fixtures.

Fencing & Gates

Existing conditions	Capital needs	Green alternative
A low-rise wood picket fence is located at the rear of the property. The fence was observed to be in poor condition. A new PVC and wood post dumpster enclosure is located next to the maintenance shed.	Costs to replace the fencing are shown as needed in Years 1 and 18 of the plan.	Install FSC certified wood fencing in place of the existing wood and PVC/wood models.

Narrative

Patio/Deck

Existing conditions	Capital needs	Green alternative
The concrete patio/deck located of the rear of the building was observed to be in good overall condition. Some deterioration was noted at corners on the underside of the overhanging section of the deck.	Repair allowances are shown every five years starting in Year 1 of the plan.	Repairs and replacements using Portland cement with at least 20% recycled-content materials is recommended.

Accessibility

Existing conditions	Capital needs	Green alternative
The site parking area lacks compliant parking spaces.	The designated parking spaces must be leveled and restriped to comply with accessibility requirements.	No green alternatives.
Several deficiencies were noted throughout the common areas.	Fire alarm pull station must be lowered within reach limits.	No green alternatives.

Narrative

Existing conditions	Capital needs	Green alternative
	<p>Install compliant community kitchen cabinetry.</p> <p>Install rear grab bars in public restrooms.</p>	
There are three barrier free units at the development. Dwelling units have sufficient dimensions to support UFAS accessibility however there are deficiencies.	Costs are shown to install pipe insulation, grab bars, lower thermostats, install horn/strobes and compliant cabinetry.	No green alternatives.

Narrative

Mechanical Room

The central mechanical room contains the domestic water storage tanks and fire suppression equipment. The 1,000 gallon domestic water storage tank is located in the central mechanical room. The larger reserve tanks (also serving the sprinkler system) are 2,500 gallons each. No problems were observed or reported with respect to the storage tanks. Additional domestic hot water heating and space heating equipment is located throughout the building.

Domestic Hot Water

Existing conditions	Capital needs	Green alternative
The common areas are served by three 30-gallon electric hot water tanks. The tanks are original to the development.	Costs are shown to replace the hot water tanks in Years 1 and 16 of the plan.	There are no small (30-gallon) electric heat pump DHW tanks.

Electric Space Heaters

Existing conditions	Capital needs	Green alternative
The hallways are heated with ceiling hung electric space heaters. The heaters are original to the development.	Costs to replace the space heaters are shown in Year 1 of the plan.	EWCM #2 The electric space heaters could be replaced with electric heat pumps. Air source heat pump will significantly reduce the electricity used for hallway heating.

Narrative

Building Mechanical and Electrical Systems

The major building systems include fire suppression, distribution piping systems for hydronic heat, domestic hot and cold water, sanitary wastewater, and natural gas services, as well as heating and ventilation, electrical, fire detection, security and elevators.

Compactors

Existing conditions	Capital needs	Green alternative
The development is served by a hydraulic “bag type” compactor. The compactor is original to the development.	Costs to replace the compactor are shown in Year 10 of the plan.	No green alternative suggested.

Well Pump Controls

Existing conditions	Capital needs	Green alternative
The Allen Bradley well pump controls were replaced in 2009. No problems were observed or reported during the assessment.	Future replacement costs are shown in Year 11 of the plan.	No green alternative suggested.

Narrative

Septic System and Leach Fields

Existing conditions	Capital needs	Green alternative
No problems were reported with respect to the septic tank or leaching fields. These systems are long lived and should be monitored throughout the plan. The system is equipped with two large pumps.	Costs to replace the pumps are shown in Year 6 of the plan.	No green alternative.

Building Air Conditioning

Existing conditions	Capital needs	Green alternative
The Library is cooled by a 1.5 -ton Trane condenser. The split system air conditioning is original to the development.	Costs are shown to replace the condenser in Years 1 and 16 of the plan.	The cooling load for this condenser was not significant and could not be modeled. Consider replacing the existing unit with a high efficiency model (SEER 15 or greater).

Narrative

Building Fire suppression

Existing conditions	Capital needs	Green alternative
The development features a sprinkler system for fire suppression. Large storage tanks hold water to supply the system in the event of a fire. A portion of the sprinkler system is dry. A Champion compressor is used to maintain adequate line pressure.	Costs to replace the compressor are shown in Year 10 of the plan.	No green alternative.

Heat Pumps

Existing conditions	Capital needs	Green alternative
The common rooms feature thru-wall heat pumps for heating. The heat pumps are original to the development.	Costs to replace the units are shown in Year 5 of the plan.	The heating load on this equipment was not significant enough to calculate expected savings from a high efficiency unit. Consider replacing the heat pumps with high efficiency units.

Narrative

Premium Efficiency Pumps

Existing conditions	Capital needs	Green alternative
Two 2-horsepower booster pumps circulate domestic water throughout the building. The standard efficiency pumps have an estimated efficiency of 77%.	Costs to replace the pumps are shown in Year 18 of the plan.	EWCM #3 Install premium efficiency (88% eff.) pumps. The high efficiency pumps will reduce electricity used to circulate water throughout the building.

Emergency Generator

Existing conditions	Capital needs	Green alternative
A 125kW emergency generator provides electricity for the development in the event of a power outage. The generator provide emergency lighting, powers the elevator, and one outlet in each unit.	Costs to rebuild the generator are shown in Year 1 of the plan. Future replacement costs are shown in Year 14 .	No green alternative suggested.

Narrative

Fire Detection

Existing conditions	Capital needs	Green alternative
The central fire alarm control panel is original to the development.	Costs to replace the fire panel are shown in Year 1 of the plan.	No green alternative suggested.

Signal/Security

Existing conditions	Capital needs	Green alternative
The development features a security camera system with DVR and central monitor.	Periodic repair/replacement costs are shown throughout the plan.	No green alternatives.

Elevators

Existing conditions	Capital needs	Green alternative
A 25-horsepower hydraulic elevator provides access to all three floors of the building. The elevator machinery is maintained under a full service contract.	Costs to replace the elevator controls and hydraulic pump package are shown in Year 15 of the plan after 35 years of service. Costs to refurbish cab interiors and replace door operators (items not typically covered under a service contract) are shown in Year 1 of the plan.	No green alternative suggested.

Narrative

Building Architectural Systems

Building Exterior

Florence S. Lord is a three-story building with 28 apartments. The building is constructed on a poured concrete foundation. No issues were observed or reported with regard to the building framing and it should be monitored going forward.

Maintenance Shed

Existing conditions	Capital needs	Green alternative
A maintenance shed is used to house landscaping and other equipment. The shed features a composite asphalt roof structure and vinyl siding.	Costs are shown to replace the roofing and overhead garage door in Year 15 of the plan.	No green alternatives.

Doors

Existing conditions	Capital needs	Green alternative
The main entrance features an insulated metal double leaf door with vision panel. The rear entrance and egress doors are single leaf insulated metal doors. The doors were observed to be in good overall condition.	Costs to replace doors are shown in Year 15 of the report.	Consider replacing existing doors with insulated fiberglass models.

Narrative

Siding

Existing conditions	Capital needs	Green alternative
The brick exterior was observed to be in good overall condition. The vinyl siding was in good overall condition. Minor organic growth was observed in the north side of the property.	Costs are shown to point/repair approximately 8% of the brickwork every five years. An allowance is shown, concurrent with brick work, to power wash the vinyl siding.	Repairs and replacements using Portland cement with at least 20% recycled-content materials is recommended.

Windows / Curtain Walls

Existing conditions	Capital needs	Green alternative
The property features primarily double glazed, vinyl-clad casement windows. The windows were observed to be in fair overall condition. That said, site staff indicated the development has recently experienced problems with the windows and replacement parts are difficult to find.	Costs are shown to replace all windows with comparable double pane, single-hung models are shown in Year 5. Costs are shown every seven years to prepare and paint the steel window lentils.	Consider replacing windows with fiberglass-framed, double-glazed models with a low-E (low emissivity) coating, and a gas fill between the glazing layers. The low-e coating will reflect heat from entering the building during the summer, and can reflect radiant infrared energy from escaping the building during the heating months. A gas fill (such as argon) between the

Narrative

Existing conditions	Capital needs	Green alternative
		glazing layers will reduce heat transfer through the glass similar to the low-e coating. It is recommended that the windows be monitored and appropriately caulked going forward to keep air infiltration to a minimum.

Building Mounted Lighting

Existing conditions	Capital needs	Green alternative
Small 75 watt high pressure sodium wall packs are located at each entryway to the building.	Costs to replace the wallpacks are shown in Years 1 and 16.	EWCM#1 Install high efficiency LED replacement.

Narrative

Roof		
Existing conditions	Capital needs	Green alternative
The composite shingle roof is original to the development. Site staff reported roof damage that occurred during a recent weather event.	Costs to replace the roof are shown in Year 1 of the plan.	Consider replacing the traditional composite shingle roofing with long-lived metal tile roofing. The metal tile roof should be a light color to help reflect heat and reduce the heat island effect.

Note:

We do not, as yet, recommend a ‘green vegetative roof’ – the installation of soil and vegetation on a waterproof membrane - as an option. While these may also reduce roof temperatures and cooling loads, and reduce storm water run-off, they are much more expensive than conventional systems, and we see too many questions about performance and maintenance.

Narrative

Building Interior Common Areas

The building interior includes the common hallways and stairwells, several community rooms, a management office, a public laundry facility, and a set of public restrooms. Wall and ceiling surfaces are painted drywall or wallpapered throughout. Allowances are shown throughout the plan for as-needed repairs and painting. As a green measure, the plan specifies low-VOC or recycled-content paint for painting and low VOC adhesives and wallpaper products are shown at no additional premium.

Interior Finishes

Existing conditions	Capital needs	Green alternative
Painting and wallpaper were observed to be in fair condition. The wallpaper and painted surfaces are understood to be original and exhibit some peeling edges and separation at the seams.	Costs to paint, repair, and replace wallpaper are shown starting in Years 1 and 2. Future allowances are based on expected useful lives.	Specify low volatile organic compound (VOC) and/or recycled-content paint (content should be at least 50% recycled; VOCs should not exceed 250 grams per liter). In addition specify low VOC wallpaper and adhesives.
The hallways and stairs feature mostly carpeting. The basement hallway floor is covered with linoleum. The laundry room, restroom, and hallways floors are also covered with vinyl or linoleum products. Most flooring dates to the original construction of the development in 1993.	Costs to replace vinyl flooring and carpet surfaces are shown as needed throughout the plan.	Replace vinyl/carpet flooring with linoleum products. Linoleum is a natural product (containing linseed oil, powdered wood or cork, ground limestone, resin binders, natural jute backing), which has been found to be more durable than its vinyl tile counterpart.

Narrative

Existing conditions	Capital needs	Green alternative
		<p>Linoleum tile hardens over time, and therefore becomes less susceptible to scratching and cracking. Installation of linoleum has a lower annual life cycle cost than vinyl and keeps the vinyl product out of our landfills in the future.</p>

Interior Lighting

Existing conditions	Capital needs	Green alternative
<p>Interior lighting is a mix of two lamp and four lamp T8 fluorescent fixtures. Half the walkway lamps are on continuously. All community rooms feature switch controls and are not left on all the time.</p>	<p>Maintain from Operating</p>	<p>EWCM #4</p> <p>Retrofit existing fixtures with LED lamps and occupancy sensors in some of the support/common rooms. LED lamps will reduce utility costs and reduce operations costs.</p>

Narrative

Community Kitchen

Existing conditions	Capital needs	Green alternative
The community kitchen features plywood cabinets and particleboard countertops. The Cabinets and countertops were observed to be in fair condition.	Costs to replace cabinetry in-kind with are shown in Year 5 of the plan.	Replace the cabinetry with solid wood cabinetry, specifically with models that are certified by the Forest Stewardship Council (FSC), and replace the countertop with a solid surface such as ceramic tile or stone.
The community kitchen appliances include; an Energy Star refrigerator and 24-inch electric range.	Costs to replace all kitchen appliances are shown concurrent with cabinetry replacement.	Green alternative already in place

Laundry room

Existing conditions	Capital needs	Green alternative
The laundry room features non Energy Star washers and gas dryers. The equipment is leased.	Operating	Consider requesting Energy Star models from the vendor. High-efficiency models (specifically, models with an Energy Star rating) utilize less water (as much as 40% less) than traditional washing machines, and

Narrative

Existing conditions	Capital needs	Green alternative
		<p>the lower demand for hot water also has an energy-savings component.</p> <p>No green recommendation is included for the dryers, since no high-efficiency models are available.</p>

Restrooms

Existing conditions	Capital needs	Green alternative
The restrooms contain low flow 1.6 gpf toilet, wall mounted sink, and standard receptacles/dispensers.	Operating	Replacement of the toilets with a high efficiency models (1.28 gallons per flush).

Narrative

Dwelling Units

During the course of the assessment, OSI gained access to 4 units accounting for 14% of the total. These were distributed among all unit types. A sample of this size is felt to be sufficient given the age, tenancy, design, and location of the development. Additional information about units and capital replacements was obtained from discussions with residents during inspections and additional capital history forms submitted by management.

Living Area Finishes		
Existing conditions	Capital needs	Green alternative
Units feature painted walls and ceilings.	Operating	<p>Specify low VOC products when refinishing interior surfaces.</p> <p>Conventional paint, wallpaper, and adhesives contain thousands of chemicals, many of which are know toxins. Some of the most harmful chemicals are volatile organic compounds (VOCs).</p> <p>VOCs are unstable, carbon-containing compounds that readily vaporize into the air causing air pollution and poor indoor air quality.</p>

Narrative

Existing conditions	Capital needs	Green alternative
Unit living areas and bedrooms feature carpet covered areas. Most carpeting is understood to be original to the development.	Costs are shown to replace the carpeting as needed throughout the plan based on a seven year expected useful life.	Replace carpet with low VOC Green label certified carpeting flooring.
Bathrooms feature ceramic tile flooring. The linoleum flooring in the kitchen areas is original to the development. The linoleum was observed to be in fair overall condition.	Costs to replace are shown over the first six years of the plan.	Green alternative already in place

Bathrooms

Existing conditions	Capital needs	Green alternative
Some damage was observed with respect to the original fiberglass tubs and surrounds. Bathroom showers feature 2.0gpm showerheads.	Costs are shown to replace the tubs as needed throughout the plans timeframe.	Install low flow 1.7gpm showerheads to reduce water consumptions and domestic hot water use.
Each bathroom has a wall mounted sink. The	Future replacement allowances are shown	Green alternative already in place

Narrative

Existing conditions	Capital needs	Green alternative
sinks were observed to be in good overall condition.	starting in Year 10 of the plan.	
Dwelling unit toilets are 1.6 gpf low flow models.	Costs to replace the toilets are shown through the first fifteen years of the plan.	Replace 1.6gpf models with high efficiency 1.28gpf models to achieve the maximum water savings.
Bathroom exhaust fans are mostly original to the development.	Costs to replace the fans are shown throughout the plan.	Install Energy Star exhaust fans with humidastats to improve indoor air quality.

Kitchens

Existing conditions	Capital needs	Green alternative
Kitchen cabinets are plywood models with Laminated particleboard (LPB) countertops. All cabinetry dates back to original construction of the development. Most cabinets were observed to be in fair to poor	Costs to replace cabinets and countertops are shown starting in Year 5. Future countertop replacements costs are shown starting in Year 14 of the plan. Costs to replace the rangehoods are shown	Cabinets are shown being replaced with a comparable green product such as bamboo or wood cabinets that are certified by the Forest Stewardship Council (FSC). Replace countertops with either a stone

Narrative

Existing conditions	Capital needs	Green alternative
condition.	concurrent with cabinet replacement.	surface or stone/ceramic tile countertop.
Units feature 24-inch electric ranges and frost-free Energy Star refrigerators. The refrigerators were all recently replaced.	Costs are shown for as needed replacement.	Green alternative already in place

Unit Mechanical

Existing conditions	Capital needs	Green alternative
Each dwelling unit features thee electric baseboard heaters with independent, wall mounted, thermostats. No problems were observed or reported during the assessment.	Future replacement costs are shown starting in Year 5. Costs to replace the thermostats are shown throughout the plan.	No green alternative recommended.
Each dwelling unit features a 30-gallon electric domestic hot water tank. Approximately seven DHW tank have been replaced in recent years.	Costs to replace older hot water tanks are shown starting in Year 1 and 11. Future replacement costs for newer models are shown starting in Years 2 and 12.	No suitable green alternative

Narrative

Unit Electrical		
Existing conditions	Capital needs	Green alternative
Dwelling units feature living area smoke detectors.	Costs are shown to install bedroom smoke detectors starting in Year 1. Future replacement costs are shown starting in Years 7 and 14.	No green alternative.

Narrative

Health and Safety

Resident and Staff Concerns:

As part of the assessment, the property was examined for potential resident and staff health and safety concerns.

Lead-Based Paint and Asbestos:

- OSI did not conduct any testing for asbestos containing material (ACMs) or for lead-based paint (LBP). Therefore, this section should not be interpreted as a comprehensive or conclusive identification of ACMs or LBP. No areas or components containing LPBs or ACMs were identified or reported.

Other Health and Safety Issues:

- DHW temperatures should be in the range of 110°F to 130°F; at temperatures of 140°F, burns (scalding) can occur.

Indoor Air Quality:

Ventilation (Common Areas and Apartments):

This building has no mechanically supplied fresh air. Each occupied space has a series of operable windows to provide fresh air. The exhaust fans located in each unit (bathrooms and rangehoods) are run as needed.

Narrative

Temperature, Humidity, Carbon Dioxide (CO₂)

Space temperature and humidity are the key components for comfort level. Temperature and relative humidity was measured in conditioned spaces (management office, dwelling unit, common hallway). The temperature of the conditioned spaces ranged between 68-74°F db, and the humidity ranged from 33-40% rH.

Carbon dioxide levels were measured during the inspection, and are included in Table B below. Carbon Monoxide was also tested during the inspection and is included in Table C below.

Mold and airborne concerns:

No mold was observed on the interior of the apartments, nor in any common spaces at the property.

Reporting:

The tables below describe actual conditions versus design specifications for flow rate and carbon dioxide. The “Notes” column describes a possible reason for a discrepancy between these values where applicable.

Table A. Flow Rate:

Conditioned Space	Actual Read	Design Specification	Notes
Hallways / Stairwells			N/A No mechanical ventilation
Community Room			N/A No mechanical ventilation
Office			N/A No mechanical ventilation
Apartment			N/A No mechanical ventilation

Narrative

Table B. Carbon Dioxide:

Space	Actual Read	Design Specification	Notes
Hallways / Stairwells	929	< 1,000 ppm	Conditioned space
Community Room	874	< 1,000 ppm	Conditioned space
Office	1120	< 1,000 ppm	Conditioned space
Apartment	1267	< 1,000 ppm	Conditioned space
Apartment	1317	< 1,000 ppm	Conditioned space
Apartment	1124	< 1,000 ppm	Conditioned space
Apartment	1324	< 1,000 ppm	Conditioned space

Table C. Carbon Monoxide:

Conditioned Space	Actual Read	Design Specification	Notes
Hallways / Stairwells		≈0 ppm	Carbon Monoxide level was not measured.
Community Room		≈0 ppm	Carbon Monoxide level was not measured.
Office			Carbon Monoxide level was not measured.
Apartment		≈0 ppm	Carbon Monoxide level was not measured.

Capital Needs Summary, Replacement Reserve Analysis - *Conventional*

Future capital actions are based on useful life expectations and assume continued effective maintenance and physical management. The timing of actions by system (including quantities and costs) is also presented in the Capital Needs Worksheet. Costs for the twenty-year plan total \$1,186,797 in current dollars (\$42,386 /unit), or \$1,513,803 (\$54,064/unit) in inflated dollars.

Two approaches to funding the property's physical needs through replacement reserves are presented in the Replacement Reserve Analysis section of the report, with accompanying graphics.

Plan #1 presents current capital funding circumstances. The development is estimated to have a replacement reserve balance of \$100,651 on December 31, 2012. Annual contributions are currently \$15,596 per year, or \$557 per unit. From OSI's experience, this is seen as an inadequate funding level for a property of this age and complexity. For planning purposes here, these contributions are shown being indexed at 3% for inflation going forward. Under this scenario, the property's needs exceed reserves in all years of the plan.

Plan #2, as one alternative, is aimed at fully meeting projected needs through Year 20. It starts with the same annual funding assumptions outlined above. The plan calls for an infusion of \$780,000 in outside capital in Year 1 to help fund near term capital needs. This is one hypothetical option, and is included for illustrative purposes only. No assumptions are made about its viability; various alternatives might achieve similar results.

Capital Needs Summary, Replacement Reserve Analysis - *Green*

Future capital actions are based on useful life expectations and assume continued effective maintenance and physical management. The timing of actions by system (including quantities and costs) is also presented in the Capital Needs Worksheet. Costs for the twenty-year plan total \$1,237,824 (\$44,208/unit) in current dollars, or \$1,569,959 (\$56,070/unit) in inflated dollars.

Two approaches to funding the property's physical needs through replacement reserves are presented in the Replacement Reserve Analysis section of the report, with accompanying graphics.

Plan #1 presents current capital funding circumstances. The development is estimated to have a replacement reserve balance of \$100,651 on December 31, 2012. Annual contributions are currently \$15,596 per year, or \$557 per unit. From OSI's experience, this is seen as an inadequate funding level for a property of this age and complexity. For planning purposes here, these contributions are shown being indexed at 3% for inflation going forward. Under this scenario, the property's needs exceed reserves in all years of the plan.

Plan #2, as one alternative, is aimed at fully meeting projected needs through Year 20. It starts with the same annual funding assumptions outlined above. The plan calls for an infusion of \$840,000 in outside capital in Year 1. This is one hypothetical option, and is included for illustrative purposes only. No assumptions are made about its viability; various alternatives might achieve similar results.

Narrative

Additional Notes:

1. The Physical Assessment of the property was conducted on March 1st, 2013. Members of the management and site staff provided information on the property's current condition, recent repairs, and near-term needs. Additional information was provided by informal interviews with residents during the dwelling unit evaluation portion of the assessment. We would like to thank site staff for their assistance.
2. OSI was represented on this assignment by Daniel Iles. Mr. Iles is a Building Performance Institute (BPI)-certified energy auditor, and LEED Green Associate accredited. Mr. Iles complied with the applicable professional standards for ethics as defined by the BPI Code of Ethics during the assessment process.
3. Regular updates of this plan are recommended to ensure careful monitoring of major building systems and to adjust the program to accommodate unanticipated circumstances surrounding the buildings, operations, and/or occupants.



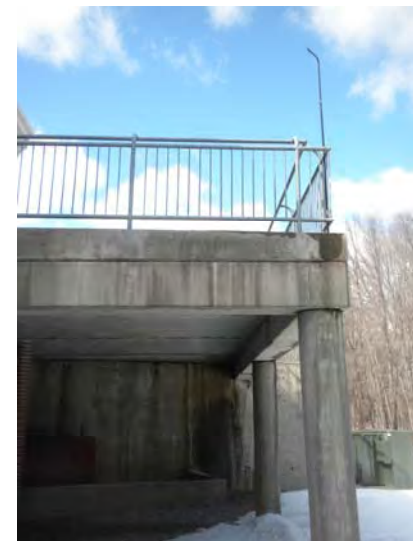
View of the property sign and front elevation



Typical asphalt condition



View of the dumpster enclosure



View of the concrete patio/deck



One of the thru-wall heat pump



The 1.5 ton Trane condenser



Example of the suspended space heater



View of the fire suppression system compressor



The well pump controls



The fire alarm control panel



One of two large (2,500 gallon)
water storage tanks



The 125 kW diesel fueled generator



The maintenance shed



The front entry way



Typical building architecture



View of a rusted window lintel



Typical window



View of the a stairwell egress door



Window caulking is exhibiting cracking and separating from brick



View of the composite shingle roof covering



Typical hallway view



View of the vinyl covered stairwell



The library room



Typical public restroom



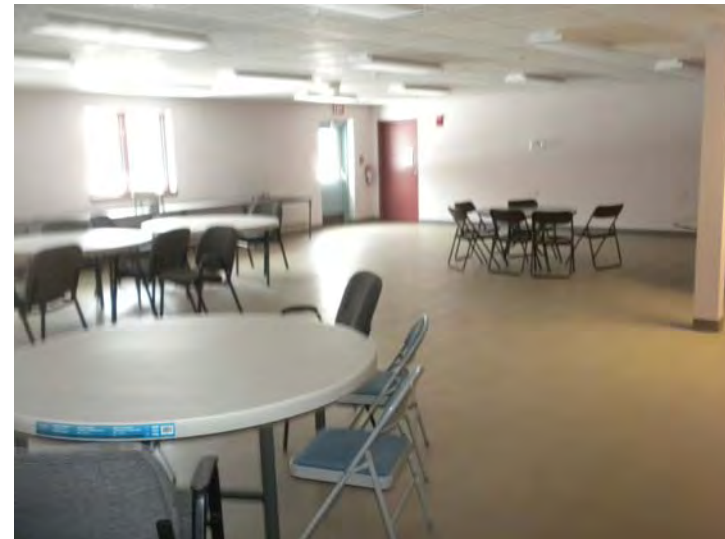
The laundry room



The community kitchen area



View of the fire curtain at the management office



View of the basement community room



Typical living area



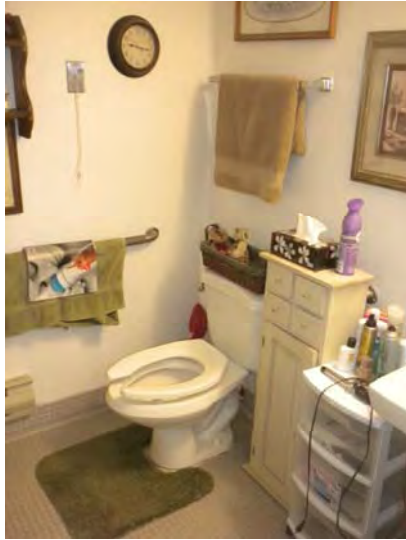
Typical bedroom area



View of a kitchen cabinetry and refrigerator



View of an electric range and cabinetry



Typical bathroom view



View of a fiberglass shower stall



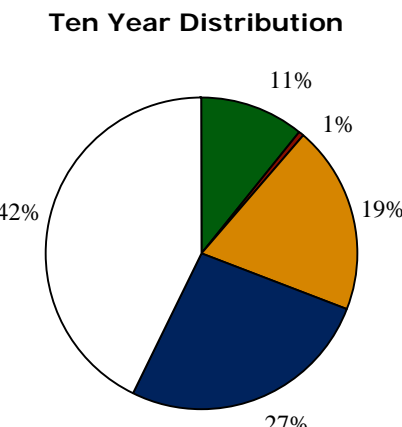
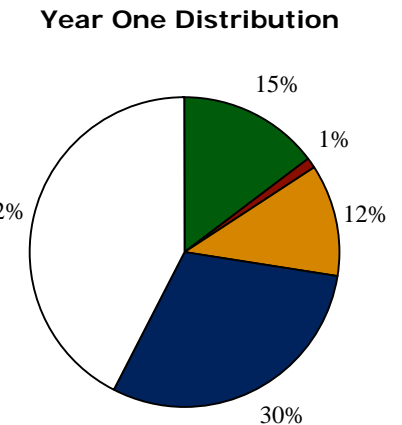
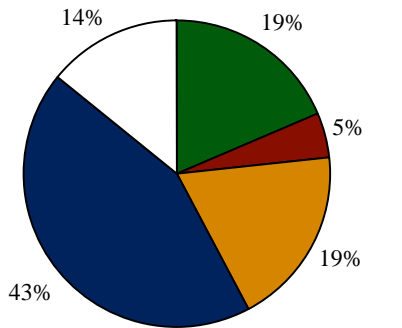
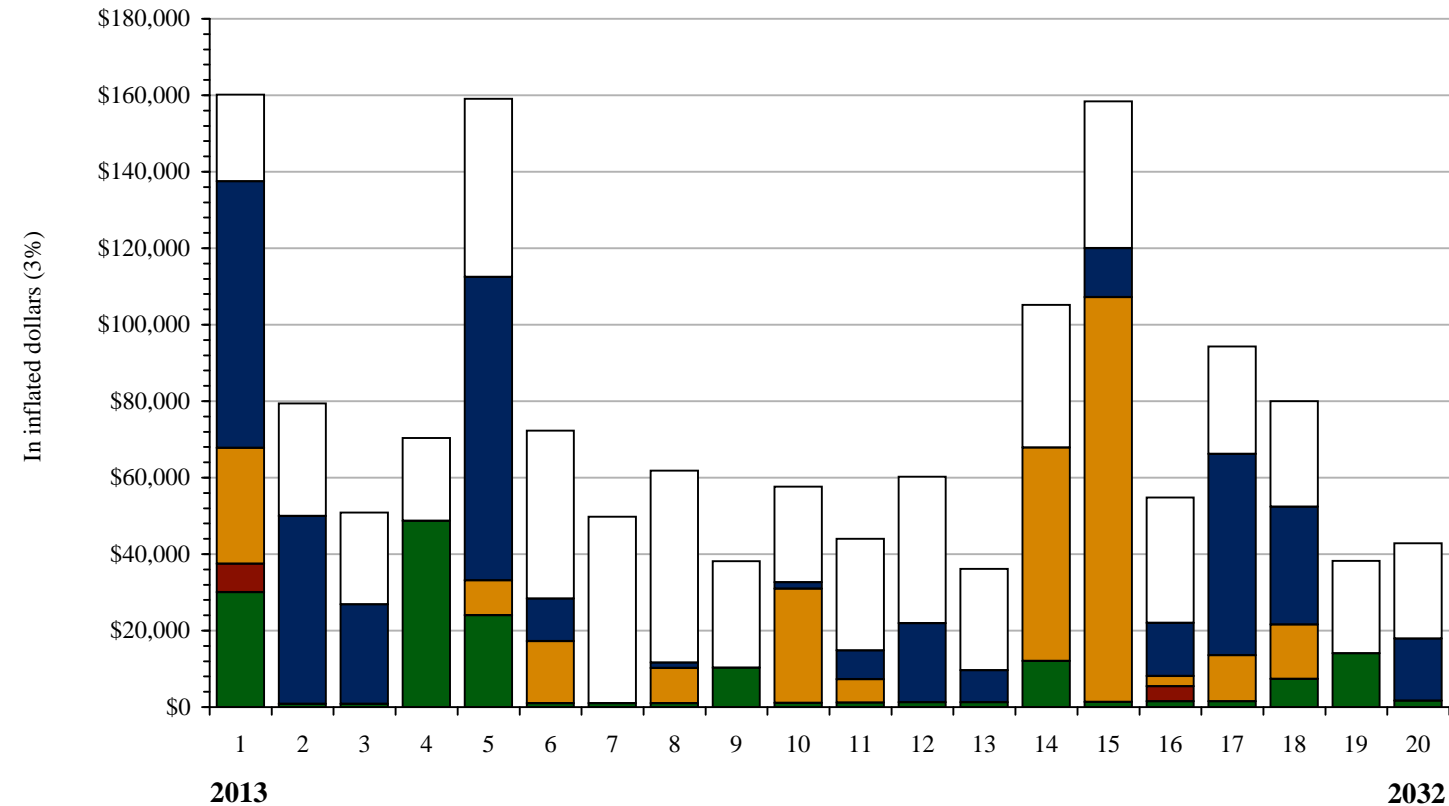
Dwelling units feature individual circuit breaker panels



Dwelling unit smoke detectors

Capital Needs Summary - *Conventional*

Florence S. Lord



Total Costs by Building System (inflated dollars)

	Year 1	Years 1-10	Years 1-20
Site Systems & Accessibility	\$30,002 or \$1,072/unit	\$118,703 or \$4,239/unit	\$161,904 or \$5,782/unit
Mechanical Room	\$7,450 or \$266/unit	\$7,450 or \$266/unit	\$11,423 or \$408/unit
Building Mech. & Elec.	\$30,300 or \$1,082/unit	\$94,750 or \$3,384/unit	\$291,381 or \$10,406/unit
Building Architectural	\$69,748 or \$2,491/unit	\$238,466 or \$8,517/unit	\$401,426 or \$14,337/unit
Dwelling Units	\$22,628 or \$808/unit	\$340,258 or \$12,152/unit	\$647,669 or \$23,131/unit
In inflated dollars:	\$160,128 or \$5,719/unit	\$799,627 or \$28,558/unit	\$1,513,803 or \$54,064/unit
In current dollars:	\$160,128 or \$5,719/unit	\$719,593 or \$25,700/unit	\$1,186,798 or \$42,386/unit

Capital Needs Summary - *Conventional*

OSI Ref: 13119
 Property Age: 20 Years
 Financing: CHFA

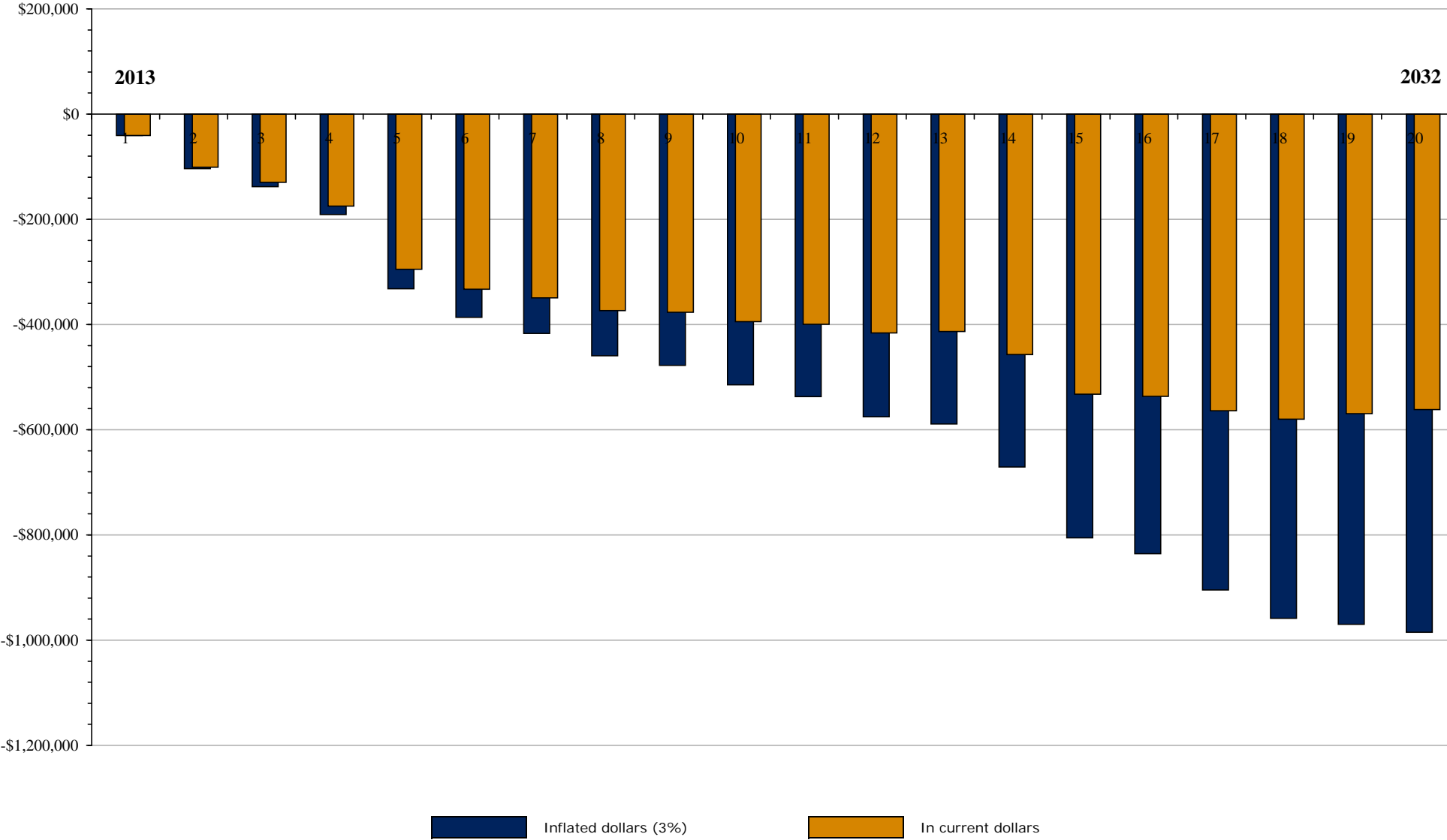
Residential Buildings: 1
 Total Number of Units: 28
 Occupancy: Elderly

	2013 Year 1	2014 Year 2	2015 Year 3	2016 Year 4	2017 Year 5	2018 Year 6	2019 Year 7	2020 Year 8	2021 Year 9	2022 Year 10
Site Systems & Accessibility										
Surface Accessibility	\$30,002	\$798	\$822	\$48,687	\$24,013	\$968	\$997	\$1,027	\$10,301	\$1,089
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Sub-Total	\$30,002	\$798	\$822	\$48,687	\$24,013	\$968	\$997	\$1,027	\$10,301	\$1,089
Mechanical Room										
Boilers	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boiler Room Systems	\$7,450	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mechanical Sub-Total	\$7,450	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Mech. & Electrical										
Mechanical	\$1,700	\$0	\$0	\$0	\$9,117	\$16,230	\$0	\$0	\$0	\$29,879
Electrical	\$22,100	\$0	\$0	\$0	\$0	\$0	\$0	\$9,224	\$0	\$0
Elevators	\$6,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mechanical & Electrical Sub-Total	\$30,300	\$0	\$0	\$0	\$9,117	\$16,230	\$0	\$9,224	\$0	\$29,879
Building Architectural										
Structural and Exterior	\$10,010	\$0	\$0	\$0	\$56,990	\$6,550	\$0	\$1,359	\$0	\$0
Roof Systems	\$57,038	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Halls, Stairs, Lobbies	\$0	\$25,256	\$26,014	\$0	\$4,502	\$4,637	\$0	\$0	\$0	\$0
Community Spaces	\$2,700	\$23,942	\$0	\$0	\$17,823	\$0	\$0	\$0	\$0	\$1,644
Building Architectural Sub-Total	\$69,748	\$49,198	\$26,014	\$0	\$79,315	\$11,187	\$0	\$1,359	\$0	\$1,644
Dwelling Units										
Living Areas	\$7,828	\$8,063	\$8,305	\$8,554	\$8,811	\$9,075	\$9,347	\$9,628	\$9,916	\$10,214
Bathrooms	\$3,230	\$3,327	\$3,427	\$3,530	\$3,635	\$3,744	\$3,857	\$3,972	\$4,092	\$5,213
Kitchens	\$3,713	\$3,825	\$3,939	\$4,058	\$25,386	\$26,148	\$26,232	\$27,019	\$3,961	\$4,080
Mechanical & Electrical	\$7,856	\$14,221	\$8,335	\$5,576	\$8,816	\$4,942	\$9,325	\$9,605	\$9,893	\$5,562
Dwelling Units Sub-Total	\$22,628	\$29,435	\$24,006	\$21,717	\$46,648	\$43,909	\$48,761	\$50,224	\$27,862	\$25,069
Total Capital Costs	\$160,128	\$79,432	\$50,842	\$70,404	\$159,093	\$72,294	\$49,758	\$61,833	\$38,163	\$57,681

Costs on these pages are aggregated by category from the Capital Needs worksheets which follow. Total capital costs on these pages are carried forward to line F of the Replacement Reserve Analysis(es) that follow.

2023 Year 11	2024 Year 12	2025 Year 13	2026 Year 14	2027 Year 15	2028 Year 16	2029 Year 17	2030 Year 18	2031 Year 19	2032 Year 20	
\$1,202	\$1,238	\$1,275	\$12,029	\$1,353	\$1,487	\$1,532	\$7,363	\$14,047	\$1,674	Site Systems & Accessibility
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Surface Accessibility
\$1,202	\$1,238	\$1,275	\$12,029	\$1,353	\$1,487	\$1,532	\$7,363	\$14,047	\$1,674	Site Sub-Total
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Mechanical Room
\$0	\$0	\$0	\$0	\$0	\$3,973	\$0	\$0	\$0	\$0	Boilers
										Boiler Room Systems
\$0	\$0	\$0	\$0	\$0	\$3,973	\$0	\$0	\$0	\$0	Mechanical Sub-Total
\$6,048	\$0	\$0	\$0	\$0	\$2,649	\$0	\$14,214	\$0	\$0	Building Mech. & Electrical
\$0	\$0	\$0	\$55,804	\$0	\$0	\$12,035	\$0	\$0	\$0	Mechanical
\$0	\$0	\$0	\$0	\$105,881	\$0	\$0	\$0	\$0	\$0	Electrical
										Elevators
\$6,048	\$0	\$0	\$55,804	\$105,881	\$2,649	\$12,035	\$14,214	\$0	\$0	Mechanical & Electrical Sub-Total
\$7,593	\$0	\$0	\$0	\$12,728	\$13,874	\$0	\$0	\$0	\$0	Building Architectural
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Structural and Exterior
\$0	\$8,135	\$8,379	\$0	\$0	\$0	\$29,918	\$30,816	\$0	\$0	Roof Systems
\$0	\$12,580	\$0	\$0	\$0	\$0	\$22,718	\$0	\$0	\$16,220	Halls, Stairs, Lobbies
										Community Spaces
\$7,593	\$20,714	\$8,379	\$0	\$12,728	\$13,874	\$52,636	\$30,816	\$0	\$16,220	Building Architectural Sub-Total
\$10,520	\$10,836	\$11,161	\$11,496	\$11,841	\$12,196	\$12,562	\$12,939	\$13,327	\$13,727	Dwelling Units
\$5,369	\$5,530	\$5,696	\$5,867	\$6,043	\$5,003	\$5,153	\$5,308	\$5,467	\$5,631	Living Areas
\$4,202	\$4,328	\$0	\$4,880	\$5,026	\$5,177	\$5,333	\$4,132	\$0	\$0	Bathrooms
\$9,059	\$17,567	\$9,611	\$15,108	\$15,561	\$10,466	\$5,089	\$5,241	\$5,398	\$5,560	Kitchens
										Mechanical & Electrical
\$29,151	\$38,262	\$26,468	\$37,351	\$38,471	\$32,842	\$28,136	\$27,620	\$24,192	\$24,918	Dwelling Units Sub-Total
\$43,994	\$60,214	\$36,123	\$105,184	\$158,434	\$54,824	\$94,339	\$80,012	\$38,239	\$42,812	Total Capital Costs

Replacement Reserve (RR) Analysis: *Plan One - Conventional*



Current Replacement Reserve Balance: **\$100,651**
Adjusted Replacement Reserve Balance: **\$100,651**
Current annual contributions to reserve accounts: **\$15,596**

At the end of Year One, Reserve Balances are projected to be: **(\$40,627)**
At the end of Year 20, Reserve Balances are projected to be: **(\$984,766)**
Unmet needs projected in most years of the plan

Replacement Reserve (RR) Analysis: *Plan One - Conventional*

Reserve Funding In Year 1										
Starting Balance:		\$100,651 or \$3,595/unit		Replacement Reserve (RR) analysis starts here with the starting RR balance reported, or imputed, to have been on hand at the start of Year 1, and current annual RR contributions. The projections below reflect Starting RR Balance (Line A), plus the Total Annual RR Contributions (Line D) and Interest Earnings on RR (Line E), minus Total Annual Capital Costs (Line F), taken from the CNS above. This is expressed arithmetically as (A+D+E)-F=G, Year-End Balances, then carries forward to Line A of the following Year.						
Contributions to Reserves:		\$15,596 or \$557/unit								
	2013 Year 1	2014 Year 2	2015 Year 3	2016 Year 4	2017 Year 5	2018 Year 6	2019 Year 7	2020 Year 8	2021 Year 9	2022 Year 10
(A) Reserve Balances										
Starting Replacement Reserves	\$100,651	(\$40,627)	(\$103,753)	(\$137,801)	(\$190,907)	(\$332,182)	(\$386,125)	(\$416,980)	(\$459,344)	(\$477,453)
(B) Annual Funding										
Contributions Indexed at 3%	\$557	\$574	\$591	\$609	\$627	\$646	\$665	\$685	\$706	\$727
(C) Additional Unit Contributions										
(D) Total Annual Reserve Funding	\$15,596	\$16,064	\$16,546	\$17,043	\$17,554	\$18,080	\$18,623	\$19,182	\$19,757	\$20,350
(E) Interest on Reserves at 3%	\$3,253	\$241	\$248	\$256	\$263	\$271	\$279	\$288	\$296	\$305
Total Funds Available	\$119,501	(\$24,322)	(\$86,959)	(\$120,502)	(\$173,090)	(\$313,831)	(\$367,222)	(\$397,510)	(\$439,290)	(\$456,798)
(F) Total Capital Cost	\$160,128	\$79,432	\$50,842	\$70,404	\$159,093	\$72,294	\$49,758	\$61,833	\$38,163	\$57,681
(G) Reserve Balances	(\$40,627)	(\$103,753)	(\$137,801)	(\$190,907)	(\$332,182)	(\$386,125)	(\$416,980)	(\$459,344)	(\$477,453)	(\$514,479)
Outside Capital:										
Adjusted Reserve Balances	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

*ANNUAL RR CONTRIBUTIONS are shown being indexed for inflation at the % specified above except when Additional Contributions are called for.

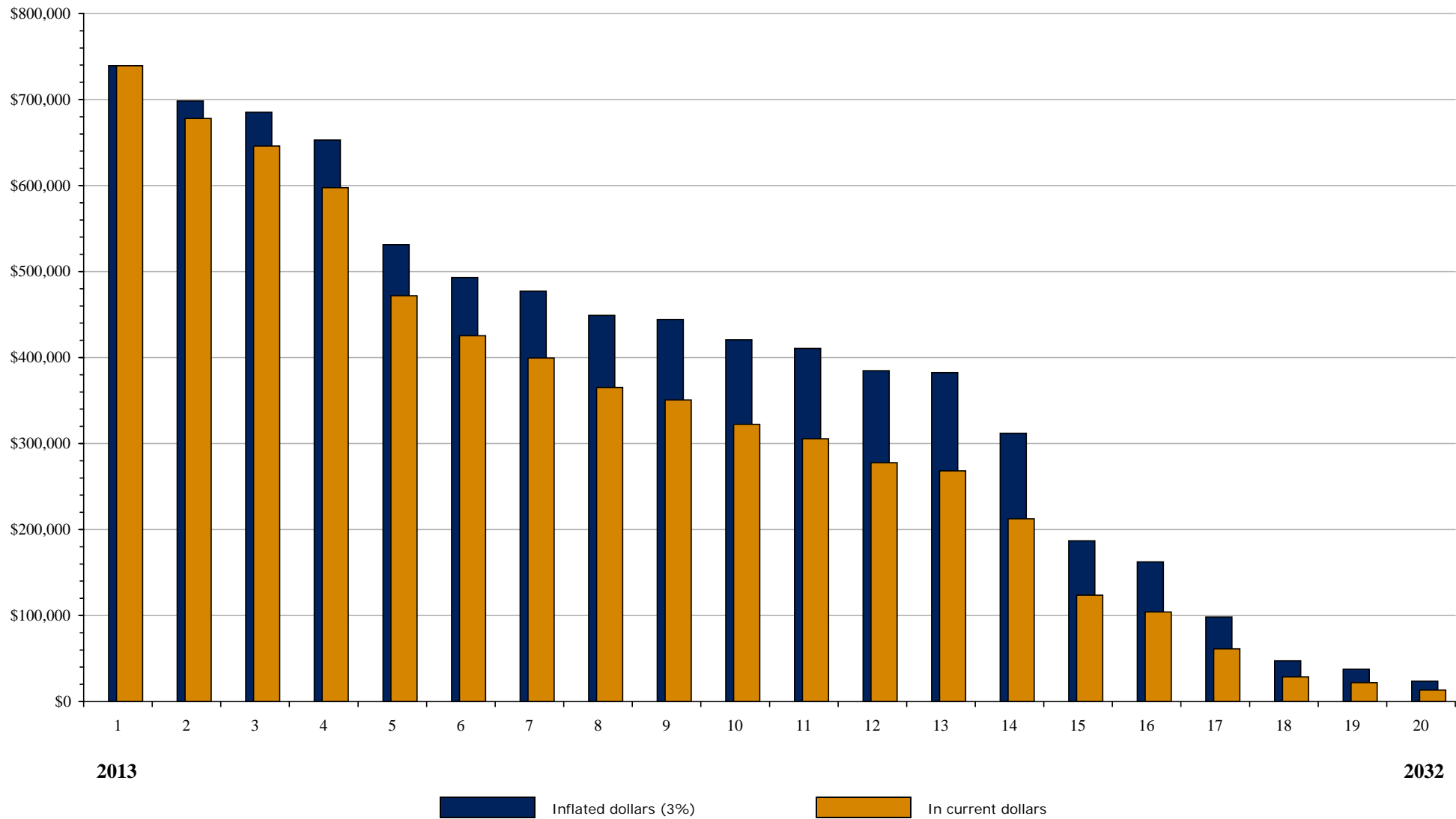
Line C, Additional Contributions allows for material adjustments in annual RR funding that would enable the property to meet all projected needs out of reserves through Year 20.

**INTEREST EARNINGS ON RESERVES are calculated on 100% of starting balances and on 50% of the total annual contribution for the year at the rate shown

Replacement Reserve (RR) Analysis: *Plan One - Conventional*

Reserve Funding In Year 20										
Projected replacement reserve balance is (\$984,766)					This is (\$35,170)per unit in inflated dollars or (\$20,057) per unit in uninflated dollars					
Projected annual funding to reserves is \$27,348					This is \$977 per unit in inflated dollars or \$557 per unit in current dollars					
2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
										Reserve Balances (A)
(\$514,479)	(\$537,199)	(\$575,500)	(\$589,053)	(\$670,990)	(\$805,479)	(\$835,641)	(\$904,576)	(\$958,423)	(\$969,713)	Starting Replacement Reserves
										Annual Funding (B)
\$749	\$771	\$794	\$818	\$843	\$868	\$894	\$921	\$948	\$977	Contributions Indexed at 3%
										Additional Unit Contributions (C)
\$20,960	\$21,589	\$22,237	\$22,904	\$23,591	\$24,299	\$25,028	\$25,778	\$26,552	\$27,348	Total Annual Reserve Funding (D)
\$314	\$324	\$334	\$344	\$354	\$364	\$375	\$387	\$398	\$410	Interest on Reserves at 3% (E)
(\$493,205)	(\$515,286)	(\$552,930)	(\$565,805)	(\$647,045)	(\$780,816)	(\$810,238)	(\$878,411)	(\$931,473)	(\$941,954)	Total Funds Available
\$43,994	\$60,214	\$36,123	\$105,184	\$158,434	\$54,824	\$94,339	\$80,012	\$38,239	\$42,812	Total Capital Cost (F)
(\$537,199)	(\$575,500)	(\$589,053)	(\$670,990)	(\$805,479)	(\$835,641)	(\$904,576)	(\$958,423)	(\$969,713)	(\$984,766)	Reserve Balances (G)
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

Replacement Reserve (RR) Analysis: *Plan Two - Conventional*



Current Replacement Reserve Balance: **\$100,651**
Adjusted Replacement Reserve Balance: **\$100,651**
Current annual contributions to reserve accounts: **\$15,596**

At the end of Year One, Reserve Balances are projected to be: **\$739,373**
At the end of Year 20, Reserve Balances are projected to be: **\$23,636**
All projected capital needs are met throughout the plan

Replacement Reserve (RR) Analysis: *Plan Two - Conventional*

		Reserve Funding In Year 1								
		Starting Balance:		\$100,651 or \$3,595/unit		Replacement Reserve (RR) analysis starts here with the starting RR balance reported, or imputed, to have been on hand at the start of Year 1, and current annual RR contributions. The projections below reflect Starting RR Balance (Line A), plus the Total Annual RR Contributions (Line D) and Interest Earnings on RR (Line E), minus Total Annual Capital Costs (Line F), taken from the CNS above. This is expressed arithmetically as (A+D+E)-F=G, Year-End Balances, then carries forward to Line A of the following Year.				
		Contributions to Reserves:		\$15,596 or \$557/unit						
	2013 Year 1	2014 Year 2	2015 Year 3	2016 Year 4	2017 Year 5	2018 Year 6	2019 Year 7	2020 Year 8	2021 Year 9	2022 Year 10
(A) Reserve Balances										
Starting Replacement Reserves	\$100,651	\$739,373	\$698,428	\$685,333	\$652,787	\$531,095	\$493,086	\$477,023	\$448,970	\$444,330
(B) Annual Funding										
Contributions Indexed at 3%	\$557	\$574	\$591	\$609	\$627	\$646	\$665	\$685	\$706	\$727
(C) Additional Unit Contributions										
(D) Total Annual Reserve Funding	\$15,596	\$16,064	\$16,546	\$17,043	\$17,554	\$18,080	\$18,623	\$19,182	\$19,757	\$20,350
(E) Interest on Reserves at 3%	\$3,253	\$22,422	\$21,201	\$20,816	\$19,847	\$16,204	\$15,072	\$14,598	\$13,765	\$13,635
Total Funds Available	\$119,501	\$777,860	\$736,175	\$723,192	\$690,188	\$565,380	\$526,781	\$510,803	\$482,493	\$478,315
(F) Total Capital Cost	\$160,128	\$79,432	\$50,842	\$70,404	\$159,093	\$72,294	\$49,758	\$61,833	\$38,163	\$57,681
(G) Reserve Balances	(\$40,627)	\$698,428	\$685,333	\$652,787	\$531,095	\$493,086	\$477,023	\$448,970	\$444,330	\$420,634
Outside Capital:	\$780,000									
Adjusted Reserve Balances	\$739,373	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes:

Infusion of outside capital in Year 1 of \$780,000 (\$32,500/unit).

*ANNUAL RR CONTRIBUTIONS are shown being indexed for inflation at the % specified above except when Additional Contributions are called for.

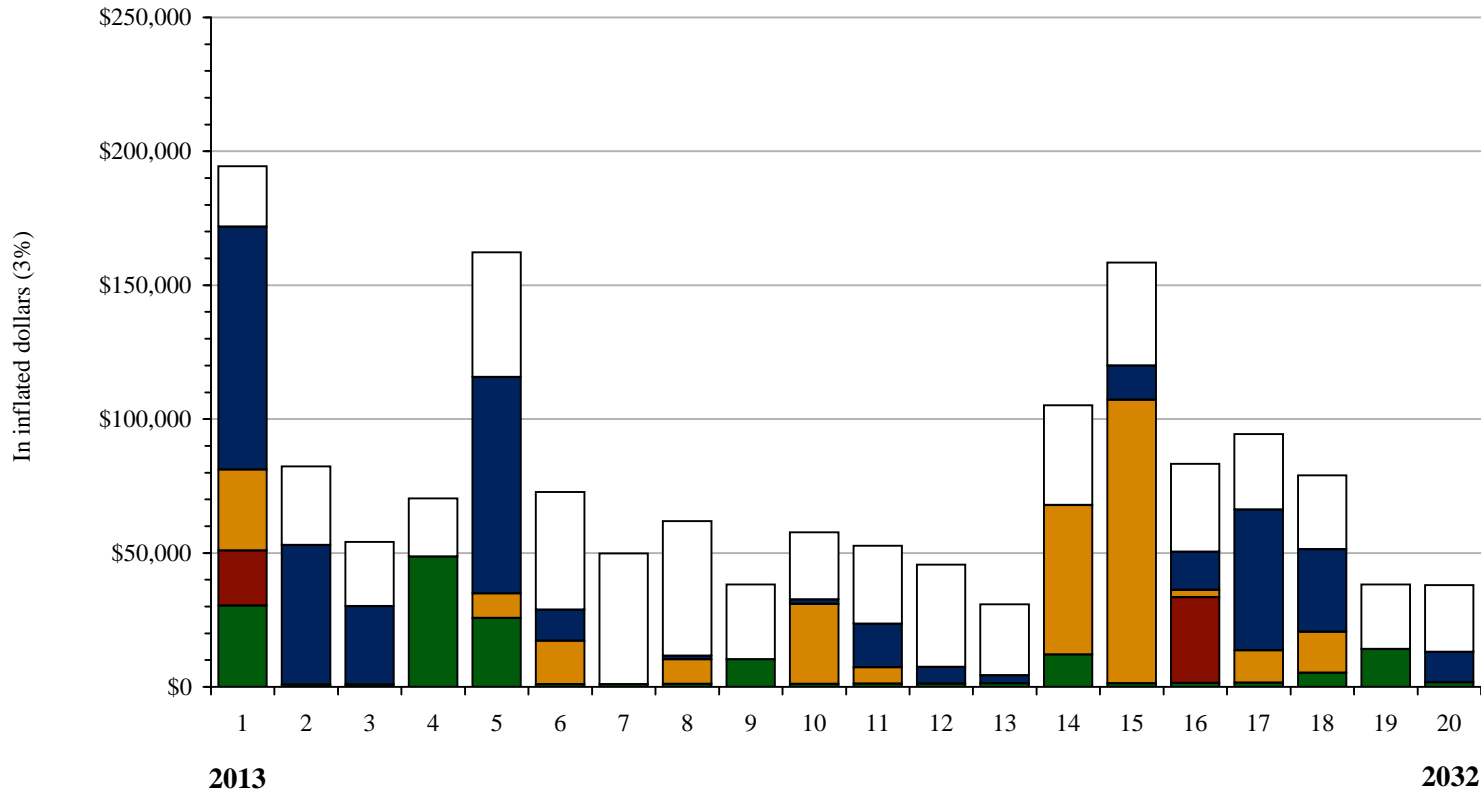
Line C, Additional Contributions allows for material adjustments in annual RR funding that would enable the property to meet all projected needs out of reserves through Year 20.

**INTEREST EARNINGS ON RESERVES are calculated on 100% of starting balances and on 50% of the total annual contribution for the year at the rate shown

Replacement Reserve (RR) Analysis: *Plan Two - Conventional*

Reserve Funding In Year 20									
Projected replacement reserve balance is \$23,636					This is \$844 per unit in inflated dollars or \$481 per unit in uninflated dollars				
Projected annual funding to reserves is \$27,348					This is \$977 per unit in inflated dollars or \$557 per unit in current dollars				
2023 Year 11	2024 Year 12	2025 Year 13	2026 Year 14	2027 Year 15	2028 Year 16	2029 Year 17	2030 Year 18	2031 Year 19	2032 Year 20
\$420,634	\$410,533	\$384,547	\$382,531	\$312,070	\$186,943	\$162,390	\$98,326	\$47,429	\$37,562
\$749	\$771	\$794	\$818	\$843	\$868	\$894	\$921	\$948	\$977
\$20,960	\$21,589	\$22,237	\$22,904	\$23,591	\$24,299	\$25,028	\$25,778	\$26,552	\$27,348
\$12,933	\$12,640	\$11,870	\$11,819	\$9,716	\$5,973	\$5,247	\$3,336	\$1,821	\$1,537
\$454,527	\$444,762	\$418,654	\$417,255	\$345,377	\$217,214	\$192,665	\$127,441	\$75,802	\$66,448
\$43,994	\$60,214	\$36,123	\$105,184	\$158,434	\$54,824	\$94,339	\$80,012	\$38,239	\$42,812
\$410,533	\$384,547	\$382,531	\$312,070	\$186,943	\$162,390	\$98,326	\$47,429	\$37,562	\$23,636
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

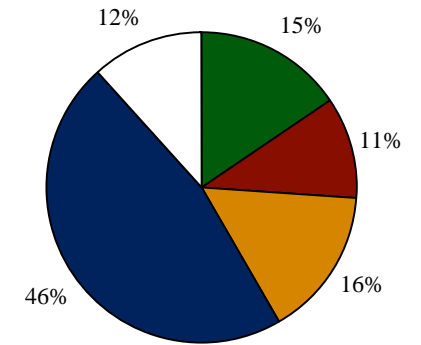
Capital Needs Summary - *Green*



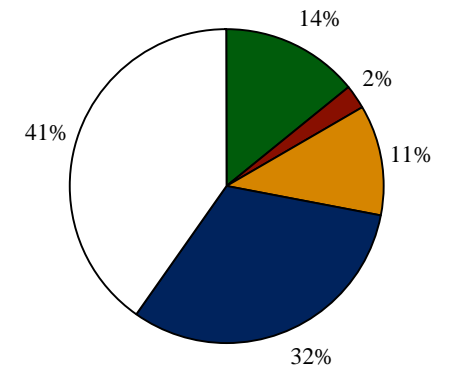
Total Costs by Building System (inflated dollars)

	Year 1	Years 1-10	Years 1-20
Site Systems & Accessibility	\$30,301 or \$1,082/unit	\$120,737 or \$4,312/unit	\$161,883 or \$5,782/unit
Mechanical Room	\$20,550 or \$734/unit	\$20,550 or \$734/unit	\$52,566 or \$1,877/unit
Building Mech. & Elec.	\$30,300 or \$1,082/unit	\$94,750 or \$3,384/unit	\$292,447 or \$10,445/unit
Building Architectural	\$90,682 or \$3,239/unit	\$267,600 or \$9,557/unit	\$414,970 or \$14,820/unit
Dwelling Units	\$22,643 or \$809/unit	\$340,438 or \$12,159/unit	\$648,092 or \$23,146/unit
In inflated dollars:	\$194,476 or \$6,946/unit	\$844,075 or \$30,146/unit	\$1,569,959 or \$56,070/unit
In current dollars:	\$194,476 or \$6,946/unit	\$763,320 or \$27,261/unit	\$1,237,824 or \$44,208/unit

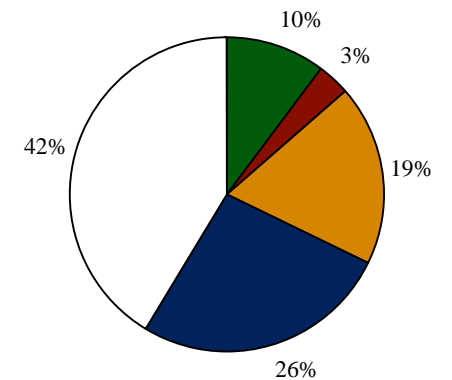
Florence S. Lord



Year One Distribution



Ten Year Distribution



Twenty Year Distribution

Capital Needs Summary - Green

OSI Ref: **13119**
 Property Age: **20 Years**
 Financing: **CHFA**

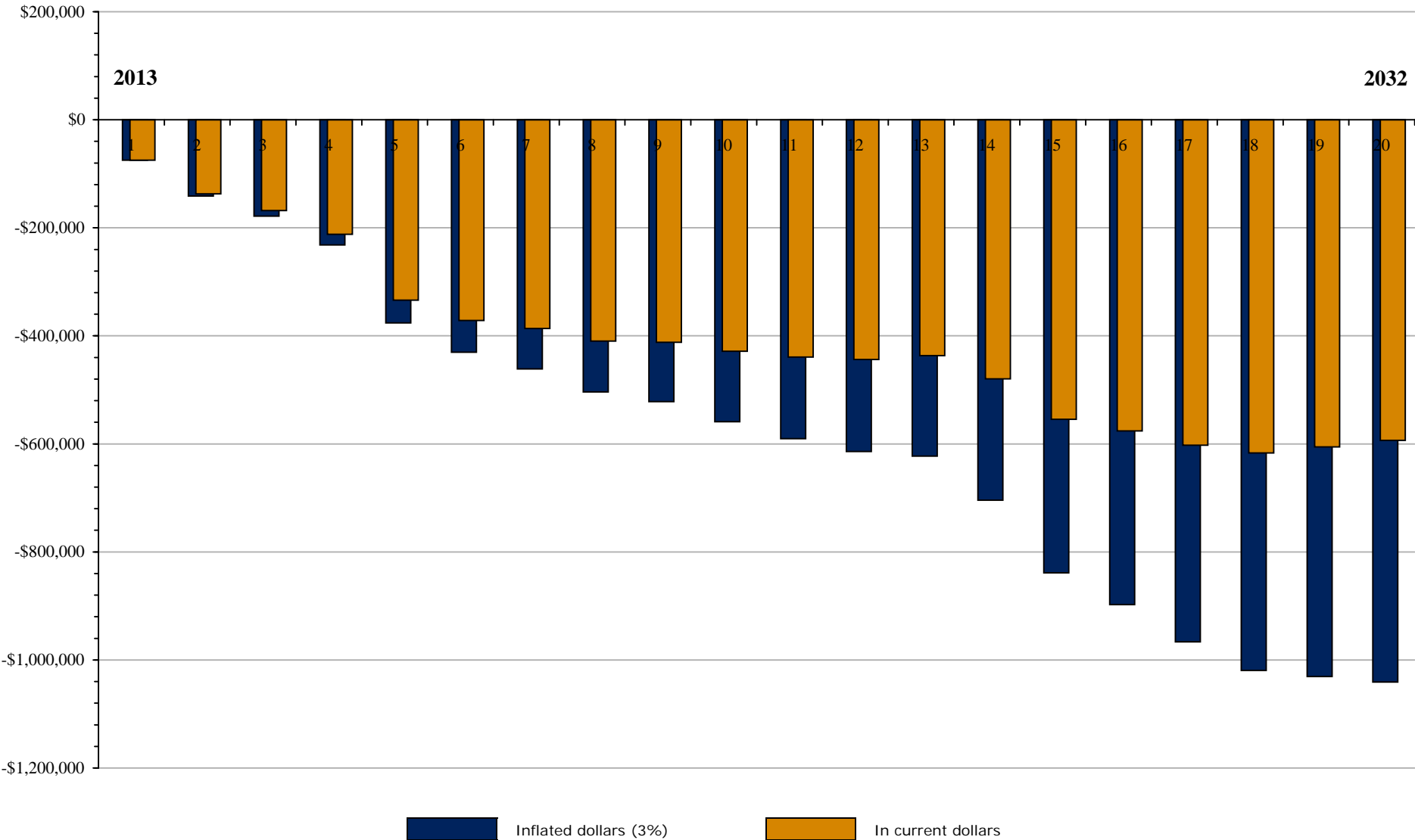
Residential Buildings: **1**
 Total Number of Units: **28**
 Occupancy: **Elderly**

	2013 Year 1	2014 Year 2	2015 Year 3	2016 Year 4	2017 Year 5	2018 Year 6	2019 Year 7	2020 Year 8	2021 Year 9	2022 Year 10
Site Systems & Accessibility										
Surface Accessibility	\$30,301 \$0	\$798 \$0	\$822 \$0	\$48,687 \$0	\$25,748 \$0	\$968 \$0	\$997 \$0	\$1,027 \$0	\$10,301 \$0	\$1,089 \$0
Site Sub-Total	\$30,301	\$798	\$822	\$48,687	\$25,748	\$968	\$997	\$1,027	\$10,301	\$1,089
Mechanical Room										
Boilers	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boiler Room Systems	\$20,550	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mechanical Sub-Total	\$20,550	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Mech. & Electrical										
Mechanical	\$1,700	\$0	\$0	\$0	\$9,117	\$16,230	\$0	\$0	\$0	\$29,879
Electrical	\$22,100	\$0	\$0	\$0	\$0	\$0	\$0	\$9,224	\$0	\$0
Elevators	\$6,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mechanical & Electrical Sub-Total	\$30,300	\$0	\$0	\$0	\$9,117	\$16,230	\$0	\$9,224	\$0	\$29,879
Building Architectural										
Structural and Exterior	\$10,254	\$0	\$0	\$0	\$56,990	\$6,550	\$0	\$1,359	\$0	\$0
Roof Systems	\$57,038	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Halls, Stairs, Lobbies	\$20,690	\$28,470	\$29,324	\$0	\$4,952	\$5,101	\$0	\$0	\$0	\$0
Community Spaces	\$2,700	\$23,663	\$0	\$0	\$18,864	\$0	\$0	\$0	\$0	\$1,644
Building Architectural Sub-Total	\$90,682	\$52,133	\$29,324	\$0	\$80,806	\$11,651	\$0	\$1,359	\$0	\$1,644
Dwelling Units										
Living Areas	\$7,828	\$8,063	\$8,305	\$8,554	\$8,811	\$9,075	\$9,347	\$9,628	\$9,916	\$10,214
Bathrooms	\$3,246	\$3,343	\$3,443	\$3,547	\$3,653	\$3,763	\$3,876	\$3,992	\$4,112	\$5,234
Kitchens	\$3,713	\$3,825	\$3,939	\$4,058	\$25,386	\$26,148	\$26,232	\$27,019	\$3,961	\$4,080
Mechanical & Electrical	\$7,856	\$14,221	\$8,335	\$5,576	\$8,816	\$4,942	\$9,325	\$9,605	\$9,893	\$5,562
Dwelling Units Sub-Total	\$22,643	\$29,451	\$24,022	\$21,734	\$46,666	\$43,927	\$48,780	\$50,243	\$27,882	\$25,089
Total Capital Costs	\$194,476	\$82,383	\$54,169	\$70,422	\$162,337	\$72,776	\$49,776	\$61,853	\$38,183	\$57,702

Costs on these pages are aggregated by category from the Capital Needs worksheets which follow. Total capital costs on these pages are carried forward to line F of the Replacement Reserve Analysis(es) that follow.

2023 Year 11	2024 Year 12	2025 Year 13	2026 Year 14	2027 Year 15	2028 Year 16	2029 Year 17	2030 Year 18	2031 Year 19	2032 Year 20	
\$1,202 \$0	\$1,238 \$0	\$1,275 \$0	\$12,029 \$0	\$1,353 \$0	\$1,487 \$0	\$1,532 \$0	\$5,308 \$0	\$14,047 \$0	\$1,674 \$0	Site Systems & Accessibility Surface Accessibility
\$1,202	\$1,238	\$1,275	\$12,029	\$1,353	\$1,487	\$1,532	\$5,308	\$14,047	\$1,674	Site Sub-Total
\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$32,016	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	Mechanical Room Boilers Boiler Room Systems
\$0	\$0	\$0	\$0	\$0	\$32,016	\$0	\$0	\$0	\$0	Mechanical Sub-Total
\$6,048 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$55,804 \$0	\$0 \$0 \$105,881	\$2,649 \$0 \$0	\$0 \$12,035 \$0	\$15,281 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	Building Mech. & Electrical Mechanical Electrical Elevators
\$6,048	\$0	\$0	\$55,804	\$105,881	\$2,649	\$12,035	\$15,281	\$0	\$0	Mechanical & Electrical Sub-Total
\$7,593 \$0 \$0 \$8,742	\$0 \$0 \$2,952 \$3,201	\$0 \$0 \$3,041 \$0	\$0 \$0 \$0 \$0	\$12,728 \$0 \$0 \$0	\$14,254 \$0 \$0 \$0	\$0 \$0 \$29,918 \$22,718	\$0 \$0 \$30,816 \$0	\$0 \$0 \$0 \$0	\$0 \$0 \$0 \$11,406	Building Architectural Structural and Exterior Roof Systems Halls, Stairs, Lobbies Community Spaces
\$16,335	\$6,153	\$3,041	\$0	\$12,728	\$14,254	\$52,636	\$30,816	\$0	\$11,406	Building Architectural Sub-Total
\$10,520 \$5,391 \$4,202 \$9,059	\$10,836 \$5,552 \$4,328 \$17,567	\$11,161 \$5,719 \$0 \$9,611	\$11,496 \$5,890 \$4,880 \$15,108	\$11,841 \$6,067 \$5,026 \$15,561	\$12,196 \$5,028 \$5,177 \$10,466	\$12,562 \$5,179 \$5,333 \$5,089	\$12,939 \$5,334 \$4,132 \$5,241	\$13,327 \$5,494 \$0 \$5,398	\$13,727 \$5,659 \$0 \$5,560	Dwelling Units Living Areas Bathrooms Kitchens Mechanical & Electrical
\$29,172	\$38,283	\$26,491	\$37,374	\$38,495	\$32,867	\$28,161	\$27,646	\$24,219	\$24,946	Dwelling Units Sub-Total
\$52,757	\$45,675	\$30,807	\$105,208	\$158,458	\$83,273	\$94,364	\$79,050	\$38,266	\$38,025	Total Capital Costs

Replacement Reserve (RR) Analysis: *Plan One - Green*



Current Replacement Reserve Balance: **\$100,651**

Adjusted Replacement Reserve Balance: **\$100,651**

Current annual contributions to reserve accounts: **\$15,596**

At the end of Year One, Reserve Balances are projected to be: **(\$74,975)**

At the end of Year 20, Reserve Balances are projected to be: **(\$1,040,922)**

Unmet needs projected in most years of the plan

Replacement Reserve (RR) Analysis: *Plan One - Green*

Reserve Funding In Year 1										
Starting Balance:		\$100,651 or \$3,595/unit		Replacement Reserve (RR) analysis starts here with the starting RR balance reported, or imputed, to have been on hand at the start of Year 1, and current annual RR contributions. The projections below reflect Starting RR Balance (Line A), plus the Total Annual RR Contributions (Line D) and Interest Earnings on RR (Line E), minus Total Annual Capital Costs (Line F), taken from the CNS above. This is expressed arithmetically as (A+D+E)-F=G, Year-End Balances, then carries forward to Line A of the following Year.						
Contributions to Reserves:		\$15,596 or \$557/unit								
	2013 Year 1	2014 Year 2	2015 Year 3	2016 Year 4	2017 Year 5	2018 Year 6	2019 Year 7	2020 Year 8	2021 Year 9	2022 Year 10
(A) Reserve Balances										
Starting Replacement Reserves	\$100,651	(\$74,975)	(\$141,053)	(\$178,427)	(\$231,550)	(\$376,070)	(\$430,495)	(\$461,369)	(\$503,752)	(\$521,881)
(B) Annual Funding										
Contributions Indexed at 3%	\$557	\$574	\$591	\$609	\$627	\$646	\$665	\$685	\$706	\$727
(C) Additional Unit Contributions										
(D) Total Annual Reserve Funding	\$15,596	\$16,064	\$16,546	\$17,043	\$17,554	\$18,080	\$18,623	\$19,182	\$19,757	\$20,350
(E) Interest on Reserves at 3%	\$3,253	\$241	\$248	\$256	\$263	\$271	\$279	\$288	\$296	\$305
Total Funds Available	\$119,501	(\$58,670)	(\$124,258)	(\$161,129)	(\$213,733)	(\$357,719)	(\$411,592)	(\$441,899)	(\$483,699)	(\$501,226)
(F) Total Capital Cost	\$194,476	\$82,383	\$54,169	\$70,422	\$162,337	\$72,776	\$49,776	\$61,853	\$38,183	\$57,702
(G) Reserve Balances	(\$74,975)	(\$141,053)	(\$178,427)	(\$231,550)	(\$376,070)	(\$430,495)	(\$461,369)	(\$503,752)	(\$521,881)	(\$558,928)
Outside Capital:										
Adjusted Reserve Balances	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

*ANNUAL RR CONTRIBUTIONS are shown being indexed for inflation at the % specified above except when Additional Contributions are called for.

Line C, Additional Contributions allows for material adjustments in annual RR funding that would enable the property to meet all projected needs out of reserves through Year 20.

**INTEREST EARNINGS ON RESERVES are calculated on 100% of starting balances and on 50% of the total annual contribution for the year at the rate shown

Replacement Reserve (RR) Analysis: *Plan One - Green*

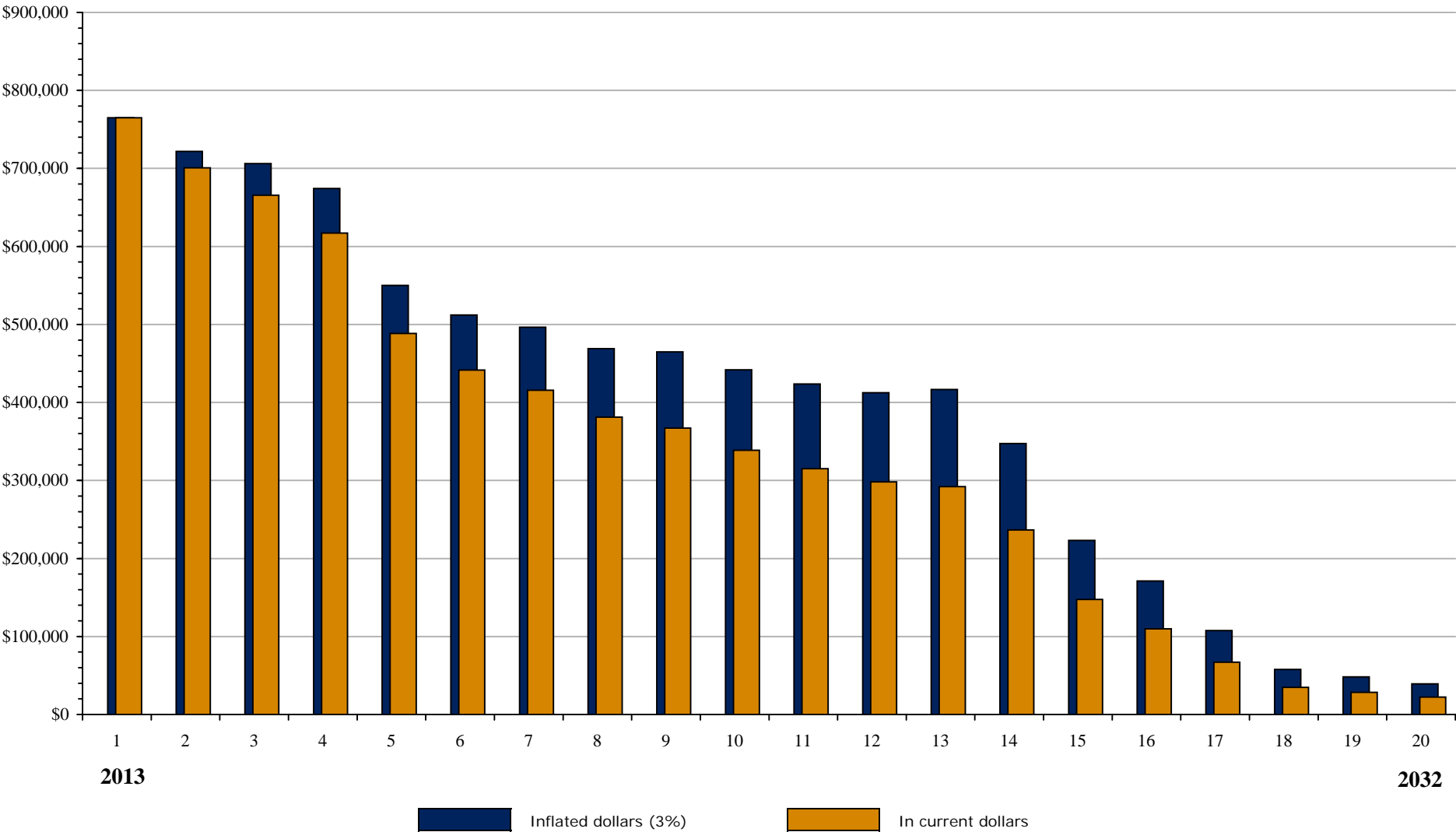
Reserve Funding In Year 20

Projected replacement reserve balance is **(\$1,040,922)** This is (\$37,176) per unit in inflated dollars or (\$21,201) per unit in uninflated dollars

Projected annual funding to reserves is **\$27,348** This is \$977 per unit in inflated dollars or \$557 per unit in current dollars

2023 Year 11	2024 Year 12	2025 Year 13	2026 Year 14	2027 Year 15	2028 Year 16	2029 Year 17	2030 Year 18	2031 Year 19	2032 Year 20	
										Reserve Balances (A)
(\$558,928)	(\$590,411)	(\$614,173)	(\$622,410)	(\$704,370)	(\$838,883)	(\$897,493)	(\$966,454)	(\$1,019,339)	(\$1,030,655)	Starting Replacement Reserves
										Annual Funding (B)
\$749	\$771	\$794	\$818	\$843	\$868	\$894	\$921	\$948	\$977	Contributions Indexed at 3%
										Additional Unit Contributions (C)
\$20,960	\$21,589	\$22,237	\$22,904	\$23,591	\$24,299	\$25,028	\$25,778	\$26,552	\$27,348	Total Annual Reserve Funding (D)
\$314	\$324	\$334	\$344	\$354	\$364	\$375	\$387	\$398	\$410	Interest on Reserves at 3% (E)
(\$537,653)	(\$568,498)	(\$591,603)	(\$599,162)	(\$680,425)	(\$814,220)	(\$872,090)	(\$940,289)	(\$992,389)	(\$1,002,896)	Total Funds Available
\$52,757	\$45,675	\$30,807	\$105,208	\$158,458	\$83,273	\$94,364	\$79,050	\$38,266	\$38,025	Total Capital Cost (F)
(\$590,411)	(\$614,173)	(\$622,410)	(\$704,370)	(\$838,883)	(\$897,493)	(\$966,454)	(\$1,019,339)	(\$1,030,655)	(\$1,040,922)	Reserve Balances (G)
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

Replacement Reserve (RR) Analysis: *Plan Two - Green*



Current Replacement Reserve Balance: **\$100,651**

Adjusted Replacement Reserve Balance: **\$100,651**

Current annual contributions to reserve accounts: **\$15,596**

At the end of Year One, Reserve Balances are projected to be: **\$765,025**

At the end of Year 20, Reserve Balances are projected to be: **\$39,371**

All projected capital needs are met throughout the plan

Replacement Reserve (RR) Analysis: *Plan Two - Green*

		Reserve Funding In Year 1								
		Replacement Reserve (RR) analysis starts here with the starting RR balance reported, or imputed, to have been on hand at the start of Year 1, and current annual RR contributions. The projections below reflect Starting RR Balance (Line A), plus the Total Annual RR Contributions (Line D) and Interest Earnings on RR (Line E), minus Total Annual Capital Costs (Line F), taken from the CNS above. This is expressed arithmetically as (A+D+E)-F=G, Year-End Balances, then carries forward to Line A of the following Year.								
		Starting Balance:	\$100,651 or \$3,595/unit							
		Contributions to Reserves:	\$15,596 or \$557/unit							
	2013 Year 1	2014 Year 2	2015 Year 3	2016 Year 4	2017 Year 5	2018 Year 6	2019 Year 7	2020 Year 8	2021 Year 9	2022 Year 10
(A) Reserve Balances										
Starting Replacement Reserves	\$100,651	\$765,025	\$721,898	\$706,181	\$674,243	\$549,950	\$512,024	\$496,511	\$469,023	\$464,965
(B) Annual Funding										
Contributions Indexed at 3%	\$557	\$574	\$591	\$609	\$627	\$646	\$665	\$685	\$706	\$727
(C) Additional Unit Contributions										
(D) Total Annual Reserve Funding	\$15,596	\$16,064	\$16,546	\$17,043	\$17,554	\$18,080	\$18,623	\$19,182	\$19,757	\$20,350
(E) Interest on Reserves at 3%	\$3,253	\$23,192	\$21,905	\$21,441	\$20,491	\$16,770	\$15,640	\$15,183	\$14,367	\$14,254
Total Funds Available	\$119,501	\$804,281	\$760,349	\$744,664	\$712,287	\$584,800	\$546,287	\$530,876	\$503,147	\$499,568
(F) Total Capital Cost	\$194,476	\$82,383	\$54,169	\$70,422	\$162,337	\$72,776	\$49,776	\$61,853	\$38,183	\$57,702
(G) Reserve Balances	(\$74,975)	\$721,898	\$706,181	\$674,243	\$549,950	\$512,024	\$496,511	\$469,023	\$464,965	\$441,867
Outside Capital:	\$840,000									
Adjusted Reserve Balances	\$765,025	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes:

Infusion of outside capital in Year 1 of \$840,000 (\$35,000/unit)

*ANNUAL RR CONTRIBUTIONS are shown being indexed for inflation at the % specified above except when Additional Contributions are called for.

Line C, Additional Contributions allows for material adjustments in annual RR funding that would enable the property to meet all projected needs out of reserves through Year 20.

**INTEREST EARNINGS ON RESERVES are calculated on 100% of starting balances and on 50% of the total annual contribution for the year at the rate shown

Replacement Reserve (RR) Analysis: *Plan Two - Green*

Reserve Funding In Year 20

Projected replacement reserve balance is **\$39,371**

This is \$1,406 per unit in inflated dollars or \$802 per unit in uninflated dollars

Projected annual funding to reserves is **\$27,348**

This is \$977 per unit in inflated dollars or \$557 per unit in current dollars

2023 Year 11	2024 Year 12	2025 Year 13	2026 Year 14	2027 Year 15	2028 Year 16	2029 Year 17	2030 Year 18	2031 Year 19	2032 Year 20	
										Reserve Balances (A)
\$441,867	\$423,640	\$412,587	\$416,728	\$347,269	\$223,174	\$171,260	\$107,437	\$57,775	\$48,192	Starting Replacement Reserves
										Annual Funding (B)
\$749	\$771	\$794	\$818	\$843	\$868	\$894	\$921	\$948	\$977	Contributions Indexed at 3%
										Additional Unit Contributions (C)
\$20,960	\$21,589	\$22,237	\$22,904	\$23,591	\$24,299	\$25,028	\$25,778	\$26,552	\$27,348	Total Annual Reserve Funding (D)
\$13,570	\$13,033	\$12,711	\$12,845	\$10,772	\$7,060	\$5,513	\$3,610	\$2,132	\$1,856	Interest on Reserves at 3% (E)
\$476,397	\$458,262	\$447,535	\$452,477	\$381,632	\$254,532	\$201,800	\$136,825	\$86,458	\$77,396	Total Funds Available
\$52,757	\$45,675	\$30,807	\$105,208	\$158,458	\$83,273	\$94,364	\$79,050	\$38,266	\$38,025	Total Capital Cost (F)
\$423,640	\$412,587	\$416,728	\$347,269	\$223,174	\$171,260	\$107,437	\$57,775	\$48,192	\$39,371	Reserve Balances (G)
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

Projected Capital Needs Over Twenty Years

SITE SYSTEMS

Replacement Items	Quantity	Cost / Unit in 2013 \$	Total Cost in 2013 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)	Notes
SURFACE								
Roadways & Parking	20,848 sf	2.10	\$43,781		20	25	4 in 1 Year	Asphalt paved surfaces - fair to poor condition Future costs to resurface
Roadways & Parking (Green)	20,848 sf	2.10	\$43,781	\$0	20	25	4 in 1 Year	Specify light colored asphalt material
Pedestrian Paving	2,043 sf	7.00	\$14,301		20	30	1 over 20 Years	Concerte walkways - no observed trip hazards Costs to maintain as needed
Pedestrian Paving (Green)	2,043 sf	7.00	\$14,301	\$0	20	30	1 over 20 Years	Specify recycled content/portland cement
Crack-Fill and Sealcoat	20,848 sf	0.35	\$7,297		4	5	1 /9 /14 /19	Specify low voc paint
Site Lighting	8 ea	2570.00	\$20,560		20	20	5 in 1 Year	High Pressure Sodium, 150 watt - good condition Cost to replace poles and fixtures
Site Lighting (Green)	8 sf	2762.75	\$22,102	\$1,542	20	20	5 in 1 Year	Replace with LED fixtures
Fencing & Dumpster Enclosure	100 lf	35.00	\$3,500		2	20	18 in 1 Year	PVC dumpster enclosure -
Fencing & Dumpster Enclosure (Green)	100 lf	21.00	\$3,990		20	20	1 in 1 Year	Wood picket fencing -
	100	22.57	\$2,257		2	20	18 in 1 Year	Specify FSC certified wood
	190 lf	22.57	\$4,288	\$0	20	20	1 in 1 Year	Specify FSC certified wood
Patio/Deck	1,140 ttl sf				20			Lightweight Concrete patio/deck - good condition
	171 sf	7.00	\$1,197		20	5	1 /6 /11 /16	Allowance for as needed repairs
Patio/Deck (Green)	171 sf	7.00	\$1,197	\$0	20	5	1 /6 /11 /16	Specify recycled content/portland cement
Deck Railing	105 lf				20	20		Galvanized steel deck railing - some rust Operating
Landscaping	1 ls				20	20		Lawn areas and mature trees - fair condition New property sign - no costs
Landscaping (Green)	ls							

ACCESSIBILITY

Site	1 ls	2000.00	\$2,000		ADD	20	1 in 1 Year	Pitched parking spaces, no compliant access aisle Restripe and rebuilding a flat asphalt surface
Site (Green)	ls							
Common Areas	1 ls	4180.50	\$4,181		20	20	1 in 1 Year	Reposition fire alarm pull station, install compliant kitchen cabinetry (See "Community Kitchen", install rear grab bars
Common Areas (Green)	ls							
Dwelling Units	3 ea	3920.00	\$11,760		20	20	1 in 1 Year	Insulate bathroom pipes, reposition grab bars, lower tstats Install horn/strobes, Compliant cabinetry
Dwelling Units (Green)	ls							
Miscellaneous	ls							

Replacement Items	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017	Year 6 2018	Year 7 2019	Year 8 2020	Year 9 2021	Year 10 2022	Year 11 2023	Year 12 2024	Year 13 2025	Year 14 2026	Year 15 2027	Year 16 2028	Year 17 2029	Year 18 2030	Year 19 2031	Year 20 2032
SURFACE																				
Roadways & Parking	\$0	\$0	\$0	\$47,840	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roadways & Parking (Green)	\$0	\$0	\$0	\$47,840	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pedestrian Paving	\$715	\$737	\$759	\$781	\$805	\$829	\$854	\$879	\$906	\$933	\$961	\$990	\$1,019	\$1,050	\$1,082	\$1,114	\$1,147	\$1,182	\$1,217	\$1,254
Pedestrian Paving (Green)	\$715	\$737	\$759	\$781	\$805	\$829	\$854	\$879	\$906	\$933	\$961	\$990	\$1,019	\$1,050	\$1,082	\$1,114	\$1,147	\$1,182	\$1,217	\$1,254
Crack-Fill and Sealcoat	\$7,297	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,243	\$0	\$0	\$0	\$0	\$10,716	\$0	\$0	\$0	\$0	\$12,422	\$0
Site Lighting	\$0	\$0	\$0	\$0	\$23,140	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Lighting (Green)	\$0	\$0	\$0	\$0	\$24,876	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fencing & Dumpster Enclosure	\$3,990	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,785	\$0	\$0
Fencing & Dumpster Enclosure (Green)	\$4,288	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,730	\$0	\$0
Patio/Deck	\$60	\$62	\$63	\$65	\$67	\$139	\$143	\$147	\$152	\$156	\$241	\$249	\$256	\$264	\$272	\$373	\$384	\$396	\$408	\$420
Patio/Deck (Green)	\$60	\$62	\$63	\$65	\$67	\$139	\$143	\$147	\$152	\$156	\$241	\$249	\$256	\$264	\$272	\$373	\$384	\$396	\$408	\$420
Deck Railing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Landscaping	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Landscaping (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ACCESSIBILITY																				
Site	\$2,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Common Areas	\$4,181	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Common Areas (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Dwelling Units	\$11,760	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Dwelling Units (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

MECHANICAL ROOM--*continued*

Replacement Items	Quantity	Cost / Unit in 2013 \$	Total Cost in 2013 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)			Notes
BOILER ROOM SYSTEMS										
Boiler Room Piping/Valves	ea									
Boiler Room Piping/Valves (Green)	ea									
3-Way Valve & Controller	ea									
3-Way Valve & Controller (Green)	ea									
Heat Exchanger	ea									
Heat Exchanger (Green)	ea									
DHW Generation	3 ea	850.00	\$2,550		20	15	1	16	in 1 Year	30 gallon electric hot water tanks Costs to replace
DHW Generation (Green)	ea									No suitable green alternative
DHW Generation	ea									
DHW Generation (Green)	ea									
Well Water Storage Tank	1 ea				20	15				1,000 gallon and two (2) 2,500 gallon tanks Monitor
Well Water Storage Tank (Green)	ea									
DHW Storage - 2	ea									
DHW Storage - 2 (Green)	ea									
Ceiling Hung Space Heaters	4 ea	1225.00	\$4,900		20	20	1		in 1 Year	Suspended electric space heaters at the end of hallways Costs to replace
Ceiling Hung Space Heaters (Green)	4 ea	4500.00	\$18,000	\$13,100	20	15	1	16	in 1 Year	Install electric heat pumps
Domestic Hot Water Pumps - 2	ea									
Domestic Hot Water Pumps - 2 (Green)	ea									
Miscellaneous	ea									
Miscellaneous (Green)	ea									
Miscellaneous	ea									

MECHANICAL ROOM--continued

Costs projected at 3%

Replacement Items	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017	Year 6 2018	Year 7 2019	Year 8 2020	Year 9 2021	Year 10 2022	Year 11 2023	Year 12 2024	Year 13 2025	Year 14 2026	Year 15 2027	Year 16 2028	Year 17 2029	Year 18 2030	Year 19 2031	Year 20 2032
BOILER ROOM SYSTEMS																				
Boiler Room Piping/Valves	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boiler Room Piping/Valves (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3-Way Valve & Controller	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3-Way Valve & Controller (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat Exchanger	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat Exchanger (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW Generation	\$2,550	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,973	\$0	\$0	\$0
DHW Generation (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW Generation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW Generation (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Well Water Storage Tank	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Well Water Storage Tank (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW Storage - 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW Storage - 2 (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ceiling Hung Space Heaters	\$4,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ceiling Hung Space Heaters (Green)	\$18,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$28,043	\$0	\$0	\$0
Domestic Hot Water Pumps - 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Domestic Hot Water Pumps - 2 (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING MECHANICAL AND ELECTRICAL

Replacement Items	Quantity	Cost / Unit in 2013 \$	Total Cost in 2013 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)			Notes
BUILDING MECHANICAL										Hydraulic, bag type compactor - fair condition
Compactors	1 ea	18000.00	\$18,000		20	30	10	in 1 Year	Future replacement costs	
Building Fire Suppression	1 ls				20	35			Sprinkler system - well pump storage tanks Operating	
Well Pump Controls	1 ls	4500.00	\$4,500		4	15	11	in 1 Year	Allen Bradley controls Future replacement costs	
Building Air Conditioning	1 ea	1700.00	\$1,700		20	15	1 16	in 1 Year	1.5 ton Trane condenser, R22, SEER 10 Costs to replace	
Building Air Conditioning (Green)	1 ea	1827.50	\$1,828	\$128	20	15			Install high effieincy SEER 15 models	
Septic Pumps	2 ea	7000.00	\$14,000		20	25	6	in 1 Year	Pump replacement	
Septic Pumps (Green)	2 ea				20	25				
Compressor	1 ea	4900.00	\$4,900		10	20	10	in 1 Year	7.5 horsepower, 200 gal. Champion compressor costs to repalce	
Compressor (Green)	ea									
Heat Pumps	4 ea	2025.00	\$8,100		20	25	5	in 1 Year	Thru-wall heat pumps Costs to replace	
Heat Pumps (Green)	4 ea	2176.88	\$8,708	\$608	20	25			Install high eff. Units	
Cold Water Booster Pumps	2 ea	4300.00	\$8,600		2	20	18	in 1 Year	Two, 2-horsepower basemounted pump motors (77% eff.) Future replacement costs	
Cold Water Booster Pumps (Green)	2 ea	4622.50	\$9,245	\$645	2	20	18	in 1 Year	Replace with high efficiency (88% eff.) motors	
BUILDING ELECTRICAL										
Building Power Wiring	1 ls				20	99				
Emergency Generator	1 ea	6500.00	\$6,500		20	20	1	in 1 Year	Kohler 125kW, diesel fired, 926.7hr runing time	
Emergency Lights	1 ea	38000.00	\$38,000		20	35	14	in 1 Year	Intrium rebuild costs futurereplacement costs Half of all common area lighting run by generator	
Smoke / Fire Detection	1 ls	15600.00	\$15,600		20	20	1	in 1 Year	Monitor Simplex zone type fire alarm Costs to replace	
Signaling / Communication	1 ls	7500.00	\$7,500		1	9	8 17	in 1 Year	12 security cameras, 1 monitor w/ DVR - Allow's	
BUILDING ELEVATORS										
Shafts and Doorways	1 ea				20	35				
Cabs	1 ea	6500.00	\$6,500		20	10	1	in 1 Year	Costs to refurbish the cab interior	
Controller/Dispatcher	1 ea				20	35				
Machine Room Equipment	1 ea	70000.00	\$70,000		20	35	15	in 1 Year	Dover hydraulic package and controls Costs to replace mechninery and controls	

BUILDING MECHANICAL AND ELECTRICAL

Costs projected at 3%																				
Replacement Items	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017	Year 6 2018	Year 7 2019	Year 8 2020	Year 9 2021	Year 10 2022	Year 11 2023	Year 12 2024	Year 13 2025	Year 14 2026	Year 15 2027	Year 16 2028	Year 17 2029	Year 18 2030	Year 19 2031	Year 20 2032
BUILDING MECHANICAL																				
Compactors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,486	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Fire Suppression	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Well Pump Controls	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,048	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Air Conditioning	\$1,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,649	\$0	\$0	\$0	\$0
Building Air Conditioning (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Septic Pumps	\$0	\$0	\$0	\$0	\$0	\$16,230	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Septic Pumps (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Compressor	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,393	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Compressor (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat Pumps	\$0	\$0	\$0	\$0	\$9,117	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat Pumps (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cold Water Booster Pumps	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,214	\$0	\$0
Cold Water Booster Pumps (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,281	\$0	\$0
BUILDING ELECTRICAL																				
Building Power Wiring	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Emergency Generator	\$6,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$55,804	\$0	\$0	\$0	\$0	\$0	\$0
Emergency Lights	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Smoke / Fire Detection	\$15,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Signaling / Communication	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,224	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,035	\$0	\$0	\$0
Shafts and Doorways	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cabs	\$6,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Controller/Dispatcher	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Machine Room Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$105,881	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE

Replacement Items	Quantity		Cost / Unit in 2013 \$	Total Cost in 2013 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)				Notes
STRUCTURE												
Foundation	570	lf				20	50					Concrete - monitor
												No problems
Framing	1	ls				20	70					Monitor
Slab		sf										
												Maintenance shed - good condition
Maintenance Shed	1	ea	2800.00	\$2,800		5	20	15		in	1 Year	Future roof & garage door replacement
BUILDING EXTERIOR												
												Insulated doule leaf - metal glass doors - fair condition
Exterior Common Doors	1	ea	690.00	\$690		20	35	15		in	1 Year	Costs to replace
Exterior Common Doors (Green)		ea										Consider installing similar fiberglass models
												Insulated single leaf metal/glass - fair condition
Exterior Common Doors	6	ea	345.00	\$2,070		20	35	15		in	1 Year	Future replacement costs
Exterior Common Doors (Green)		ea										Consider installing similar fiberglass models
												Aluminum sliding glass doors off community room
Glass Sliding Doors	1	ea	1750.00	\$1,750		20	35	15		in	1 Year	Costs to replace
Glass Sliding Doors (Green)		ea										
Service Doors		ea										
Storm Doors		ea										
	5,700											Brick walls - good overall condition
Exterior Walls - Brick	456	sf	7.00	\$3,192		20	5	1 6 11 16		in	1 Year	periodic repair/pointing allowance
Exterior Walls - Brick (Green)	5,700											
	456	sf	7.00	\$3,192	\$0	20	5	1 6 11 16		in	1 Year	Specify recycled content/portland cement
Exterior Walls - Vinyl	8,194	sf				20	40					Vinyl siding in good overall condition
Exterior Walls - Vinyl (Green)		sf										
Exterior Walls - Vinyl	8,194	sf	0.30	\$2,458		20	5	1 6 11 16		in	1 Year	Allowance to pressure wash vinyl siding as needed
Trim, Soffit, Fascia		lf										
Trim, Soffit, Fascia (Green)		lf										
Exterior Ceilings		sf										
Miscellaneous		ea										
Miscellaneous (Green)		ea										

BUILDING ARCHITECTURE

Costs projected at 3%

Replacement Items	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017	Year 6 2018	Year 7 2019	Year 8 2020	Year 9 2021	Year 10 2022	Year 11 2023	Year 12 2024	Year 13 2025	Year 14 2026	Year 15 2027	Year 16 2028	Year 17 2029	Year 18 2030	Year 19 2031	Year 20 2032
STRUCTURE																				
Foundation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Framing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Slab	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance Shed	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,235	\$0	\$0	\$0	\$0	\$0
BUILDING EXTERIOR																				
Exterior Common Doors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,044	\$0	\$0	\$0	\$0	\$0
Exterior Common Doors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Common Doors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,131	\$0	\$0	\$0	\$0	\$0
Exterior Common Doors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Glass Sliding Doors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,647	\$0	\$0	\$0	\$0	\$0
Glass Sliding Doors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Doors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Storm Doors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Walls - Brick	\$3,192	\$0	\$0	\$0	\$0	\$3,700	\$0	\$0	\$0	\$0	\$4,290	\$0	\$0	\$0	\$0	\$4,973	\$0	\$0	\$0	\$0
Exterior Walls - Brick (Green)	\$3,192	\$0	\$0	\$0	\$0	\$3,700	\$0	\$0	\$0	\$0	\$4,290	\$0	\$0	\$0	\$0	\$4,973	\$0	\$0	\$0	\$0
Exterior Walls - Vinyl	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Walls - Vinyl (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Walls - Vinyl	\$2,458	\$0	\$0	\$0	\$0	\$2,850	\$0	\$0	\$0	\$0	\$3,304	\$0	\$0	\$0	\$0	\$3,830	\$0	\$0	\$0	\$0
Trim, Soffit, Fascia	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Trim, Soffit, Fascia (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Ceilings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity		Cos/ Unit in 2013 \$	Total Cost in 2013 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)			Notes
BUILDING EXTERIORS (cont.)											
Windows	52	ea	467.50	\$24,310		20	25	5		in 1 Year	Vinyl clad window frames double glazed
Windows (Green)		ea									Future replacement costs
Windows	27	ea	975.00	\$26,325		20	25	5		in 1 Year	Bay windows
Windows (Green)		ea									Future replacement costs
Window Glazing	212	ea				20	10				Consider insulated fiberglass models
Window Glazing (Green)		ea									
Window Lintels	17	ea	65.00	\$1,105		20	7	1 8 15		in 1 Year	Operating
Unit Balconies		ea									Costs to paint steel window lintels
Unit Balconies (Green)		ea									specify low VOC paint
Unit Patios		ea									
Unit Patios (Green)		ea									
Building Mounted Lighting	7	ea	465.00	\$3,255		20	15	1 16		in 1 Year	75 watt high pressure sodium wall packs
Building Mounted Lighting (Green)	7	ea	499.88	\$3,499	\$244	20	15	1 16		in 1 Year	Costs to replace
											Install LED models
ROOF SYSTEMS											
Structure	14,259					20	50				Pitched, wood - monitor
Roof Covering	14,259	sf	4.00	\$57,038		20	20	1		in 1 Year	Composit asphalt shingles - recent storm damage
Roof Covering (Green)	14,259	sf	9.50	\$135,464	\$78,427	20	50				Costs to replace
Attic insulation	13,082	sf				20	20				Install a light colored metal roof
Attic insulation (Green)	13,082	sf	1.55	\$20,277		20	20			in 1 Year	Maintain existing
Roof Covering - 3	0	sf									Add 12 inches of open blown cellulose (R-38)
Skylights		ea									
Penthouses		ea									

BUILDING ARCHITECTURE--continued

Costs projected at 3%

Replacement Items	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017	Year 6 2018	Year 7 2019	Year 8 2020	Year 9 2021	Year 10 2022	Year 11 2023	Year 12 2024	Year 13 2025	Year 14 2026	Year 15 2027	Year 16 2028	Year 17 2029	Year 18 2030	Year 19 2031	Year 20 2032
BUILDING EXTERIORS (cont.)																				
Windows	\$0	\$0	\$0	\$0	\$27,361	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Windows (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Windows	\$0	\$0	\$0	\$0	\$29,629	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Windows (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Window Glazing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Window Glazing (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Window Lintels	\$1,105	\$0	\$0	\$0	\$0	\$0	\$0	\$1,359	\$0	\$0	\$0	\$0	\$0	\$0	\$1,671	\$0	\$0	\$0	\$0	\$0
Unit Balconies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Balconies (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Patios	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Patios (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Mounted Lighting	\$3,255	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,071	\$0	\$0	\$0	\$0
Building Mounted Lighting (Green)	\$3,499	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,452	\$0	\$0	\$0	\$0
ROOF SYSTEMS																				
Structure	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Covering	\$57,038	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Covering (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Attic insulation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Attic insulation (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Covering - 3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Skylights	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Penthouses	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2013 \$	Total Cost in 2013 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)			Notes
HALLS										
Hallway Walls and Ceilings	9,440 sf	3.95	\$37,288		20	15	2	17	over 2 Years	Original wallpaper Costs to replace
Hallway Walls and Ceilings (Green)	9,440 sf	3.95	\$37,288	\$0	20	15	2	17	over 2 Years	Specify low VOC wallpaper and adhesives
Hallway Floors	2,496 sf	3.00	\$7,488		10	10	2	12	over 2 Years	Carpet covered floors - fair to poor condition Costs to replace
Hallway Floors (Green)	2,496 sf	5.50	\$13,728	\$6,240	20	25	2		over 2 Years	Install linoleum flooring
Hallway Floors	sf									
Hallway Floors (Green)	sf									
Hallway Interior Lighting	1 ls				20	20				T8 fluorescent fixtures
Hallway Interior Lighting (Green)	1 ls	20690.00	\$20,690	\$20,690	20	20	1		in 1 Year	Install LED lamps
Hallway Heating	ea									
Hallway Heating (Green)	ea									
Hallway Doors	ea									
Miscellaneous	ea									
Miscellaneous (Green)	ea									
STAIRS										
Stair Walls and Ceilings	6,880 sf	0.62	\$4,266		20	10	2	12	over 2 Years	Painted walls and ceilings - fair condition Costs to paint
Stair Walls and Ceilings (Green)	6,880 sf	0.62	\$4,266	\$0	20	10	2	12	over 2 Years	Specify low VOC paint
Stair Floors	1,600 sf	5.00	\$8,000		20	20	5		over 2 Years	Vinyl floors and stair treats - fair condition, low traffic Future replacement costs
Stair Floors (Green)	1,600 sf	5.50	\$8,800	\$800	20	25	5		over 2 Years	Install linoleum floors
Stair Interior Lighting	ea									
Stair Interior Lighting (Green)	ea									
Stair Doors	ea									
Stair Railings	ea									

BUILDING ARCHITECTURE--continued

Costs projected at 3%

Replacement Items	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017	Year 6 2018	Year 7 2019	Year 8 2020	Year 9 2021	Year 10 2022	Year 11 2023	Year 12 2024	Year 13 2025	Year 14 2026	Year 15 2027	Year 16 2028	Year 17 2029	Year 18 2030	Year 19 2031	Year 20 2032
HALLS																				
Hallway Walls and Ceilings	\$0	\$19,203	\$19,779	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$29,918	\$30,816	\$0	\$0
Hallway Walls and Ceilings (Green)	\$0	\$19,203	\$19,779	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$29,918	\$30,816	\$0	\$0
Hallway Floors	\$0	\$3,856	\$3,972	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,183	\$5,338	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Floors (Green)	\$0	\$7,070	\$7,282	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Floors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Interior Lighting	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Interior Lighting (Green)	\$20,690	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Heating	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Heating (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Doors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
STAIRS																				
Stair Walls and Ceilings	\$0	\$2,197	\$2,263	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,952	\$3,041	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Walls and Ceilings (Green)	\$0	\$2,197	\$2,263	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,952	\$3,041	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Floors	\$0	\$0	\$0	\$0	\$4,502	\$4,637	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Floors (Green)	\$0	\$0	\$0	\$0	\$4,952	\$5,101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Interior Lighting	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Interior Lighting (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Doors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Railings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2013 \$	Total Cost in 2013 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)			Notes
LOBBIES / MAIL FACILITIES / ART & CRAFTS / BASEMENT										
Lobby Walls & Ceilings	2,408 sf	0.62	\$1,493		20	10	2	12	in 1 Year	Painted walls and ceilings - fair condition Costs to paint
Lobby Walls & Ceilings (Green)	1,240 sf	0.62	\$769	-\$724	20	10	2	12	in 1 Year	Specify low VOC paint
Lobby Floors	1,850 sf	5.00	\$9,250		varies	15	5	20	in 1 Year	Costs to replace VCT Ceramic tile flooring - good condition
Lobby Floors (Green)	312 sf				20	30				
Lobby Floors (Green)	1,850 sf	5.50	\$10,175	\$925	10	25	5		in 1 Year	Install natrual linoleum
COMMUNITY ROOM / OFFICE / LIBRARY										
Walls and Ceilings	2,017 sf	0.62	\$1,251		20	10	2	12	in 1 Year	Painted ceilings - repaint Costs to replace wallpaper
Walls and Ceilings (Green)	2,048 sf	3.95	\$8,090		20	15	2	17	in 1 Year	
Walls and Ceilings (Green)	2,017 sf	0.62	\$1,251		20	10	2	12	in 1 Year	Specify low VOC paint and materials
Walls and Ceilings (Green)	2,048 sf	3.95	\$8,090	\$0	20	15	2	17	in 1 Year	Carpet Costs to replace
Floor Covering	2,017 sf	3.00	\$6,051		20	10	2	12	in 1 Year	
Floor Covering (Green)	2,017 sf	3.23	\$6,505	\$454	20	9	2	11 20	in 1 Year	Low VOC carpet and adhesives
Community Kitchen Cabinets	1 ea	4545.00	\$4,545		20	25	5		in 1 Year	Original plywood models and original appliances Costs to replace cabinets
Community Kitchen Cabinets (Green)	1 ea	4798.13	\$4,798	\$253	20	25				The existing refrigerator is Energy Star rated (363kWh/yr) Install FSC certified wood cabinets and Energy Star appliances
Fire Wall Window Covers	2 ea	1350.00	\$2,700		20	20	1		in 1 Year	Window fire curtain - no operational Costs to replace
Fire Wall Window Covers (Green)	ea									
PUBLIC LAUNDRY / RESTROOMS / EXAM ROOM										
Walls and Ceilings	473 sf	0.62	\$293		20	10	2	12	in 1 Year	Painted ceilings - costs to repaint Wallpaper walls - costs to replace
Walls and Ceilings (Green)	1,536 sf	3.95	\$6,067		20	15	2	17	in 1 Year	
Walls and Ceilings (Green)	sf									
Floor Covering	102 sf				20	30				Ceramic tile - Operating
Floor Covering (Green)	371 sf	5.50	\$2,041		20	25	5		in 1 Year	Linoleum flooring in laundry room - future replacment
Floor Covering (Green)	sf									Green measure already in place
Laundry Equipment	2 ea				20	10				Leased dryers Leased washers
Laundry Equipment (Green)	2 ea				20	10				
Laundry Equipment (Green)	ea									Request ADA compliant Energy Star Rated models
Restroom Fixtures / Accessories	ls									
Toilets	3 ea	420.00	\$1,260		20	30	10		in 1 Year	1.6 gpf models - future replacement costs Well water no utility bills
Toilets (Green)	ea									Consider installing 1.28qpf models

BUILDING ARCHITECTURE--continued

Costs projected at 3%

Replacement Items	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017	Year 6 2018	Year 7 2019	Year 8 2020	Year 9 2021	Year 10 2022	Year 11 2023	Year 12 2024	Year 13 2025	Year 14 2026	Year 15 2027	Year 16 2028	Year 17 2029	Year 18 2030	Year 19 2031	Year 20 2032
LOBBIES / MAIL FACILITIES / ART & CRAFTS / BASEMENT																				
Lobby Walls & Ceilings	\$0	\$1,538	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,067	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lobby Walls & Ceilings (Green)	\$0	\$792	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,064	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lobby Floors	\$0	\$0	\$0	\$0	\$10,411	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,220
Lobby Floors (Green)	\$0	\$0	\$0	\$0	\$11,452	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
COMMUNITY ROOM / OFFICE / LIBRARY																				
Walls and Ceilings	\$0	\$9,620	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,731	\$0	\$0	\$0	\$0	\$12,981	\$0	\$0	\$0
Walls and Ceilings (Green)	\$0	\$9,620	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,731	\$0	\$0	\$0	\$0	\$12,981	\$0	\$0	\$0
Floor Covering	\$0	\$6,233	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,376	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floor Covering (Green)	\$0	\$6,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,742	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,406
Community Kitchen Cabinets	\$0	\$0	\$0	\$0	\$5,115	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Community Kitchen Cabinets (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fire Wall Window Covers	\$2,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fire Wall Window Covers (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PUBLIC LAUNDRY / RESTROOMS / EXAM ROOM																				
Walls and Ceilings	\$0	\$6,551	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$406	\$0	\$0	\$0	\$0	\$9,736	\$0	\$0	\$0
Walls and Ceilings (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floor Covering	\$0	\$0	\$0	\$0	\$2,297	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floor Covering (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Laundry Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Laundry Equipment (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Restroom Fixtures / Accessories	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Toilets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,644	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Toilets (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

DWELLING UNITS

Replacement Items	Quantity		Cost / Unit 2013.00	Total Cost in 2013 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)			Notes
LIVING AREA FINISHES											
Unit Hallway Doors	28	ea				20	35				Wood doors in metal frames - good condition Operating
Unit Interior Doors	56	ea	110.00	\$6,160		20	25	1	over	20 Years	Hollow core doors in wood frames - good overall Replace doors as needed
Unit Closet Doors	84	ea	326.20	\$27,401		20	25	1	over	20 Years	Hollow core bi-fold doors - fair condition Replace closet doors as needed
Unit Walls and Ceilings	67,203	sf				20	5				Painted walls and ceilings Operating
Unit Walls and Ceilings (Green)		sf									Specify low VOC paint
Living Area Floors	14,350	sf	3.00	\$43,050		>10	7	1	8	15	Carpet covered living areas and bedrooms - most 10+ years Costs to replace
Living Area Floors (Green)	14,350	sf	3.23	\$46,279	\$3,229	20	7				Specify low VOC carpet
Living Area Floors		sf									
Living Area Floors (Green)		sf									
BATHROOMS											
Bathroom Floors	1,568	sf				20	15				Ceramic tile flooring - fair overall condition Operating
Bathroom Floors (Green)		sf									
Bathtub and Shower	26	ea	1720.00	\$44,720		20	25	1	over	20 Years	Fiberglass tubs - some damage observed Costs to begin tub replacement
Bathtub and Shower (Green)		ea									
Bathtub and Shower	26	ea				20	20				Standard 2.0 gpm showerheads - Operating Well water & resident paid electric - no utility costs
Bathtub and Shower (Green)	26	ea				20	20				Install 1.7gpm models
Bathroom Sinks	28	ea	410.00	\$11,480		20	30	10	over	15 Years	Wall hung sinks - good overall condition Modest future repair/replacement allowance
Bathroom Toilets	28	ea	420.00	\$11,760		20	25	1	over	15 Years	1.6 gallons per flush models - fair condition Future replacement costs
Bathroom Toilets (Green)	28	ea				20	25				Well water - no utility costs Consider install 1.28gpf models
Ventilation & Exhaust	28	ea	150.00	\$4,200		20	20	1	over	20 Years	Ceiling mounted exhaust fans - mostly original Costs to replace
Ventilation & Exhaust (Green)	28	ea	161.25	\$4,515	\$315	20	20	1	over	20 Years	Install humidastat Energy Star exhaust fans.
Accessories	28	ea				20	10				Typical bathroom accessories Operating

Costs projected at 3%																				
Replacement Items	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017	Year 6 2018	Year 7 2019	Year 8 2020	Year 9 2021	Year 10 2022	Year 11 2023	Year 12 2024	Year 13 2025	Year 14 2026	Year 15 2027	Year 16 2028	Year 17 2029	Year 18 2030	Year 19 2031	Year 20 2032
LIVING AREA FINISHES																				
Unit Hallway Doors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Interior Doors	\$308	\$317	\$327	\$337	\$347	\$357	\$368	\$379	\$390	\$402	\$414	\$426	\$439	\$452	\$466	\$480	\$494	\$509	\$524	\$540
Unit Closet Doors	\$1,370	\$1,411	\$1,453	\$1,497	\$1,542	\$1,588	\$1,636	\$1,685	\$1,736	\$1,788	\$1,841	\$1,896	\$1,953	\$2,012	\$2,072	\$2,134	\$2,199	\$2,264	\$2,332	\$2,402
Unit Walls and Ceilings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Walls and Ceilings (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Living Area Floors	\$6,150	\$6,335	\$6,525	\$6,720	\$6,922	\$7,130	\$7,343	\$7,564	\$7,791	\$8,024	\$8,265	\$8,513	\$8,768	\$9,031	\$9,302	\$9,581	\$9,869	\$10,165	\$10,470	\$10,784
Living Area Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Living Area Floors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Living Area Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BATHROOMS																				
Bathroom Floors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bathroom Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bathtub and Shower	\$2,236	\$2,303	\$2,372	\$2,443	\$2,517	\$2,592	\$2,670	\$2,750	\$2,832	\$2,917	\$3,005	\$3,095	\$3,188	\$3,284	\$3,382	\$3,484	\$3,588	\$3,696	\$3,807	\$3,921
Bathtub and Shower (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bathtub and Shower	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bathtub and Shower (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bathroom Sinks	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$999	\$1,029	\$1,059	\$1,091	\$1,124	\$1,158	\$1,192	\$1,228	\$1,265	\$1,303	\$1,342
Bathroom Toilets	\$784	\$808	\$832	\$857	\$882	\$909	\$936	\$964	\$993	\$1,023	\$1,054	\$1,085	\$1,118	\$1,151	\$1,186	\$0	\$0	\$0	\$0	\$0
Bathroom Toilets (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ventilation & Exhaust	\$210	\$216	\$223	\$229	\$236	\$243	\$251	\$258	\$266	\$274	\$282	\$291	\$299	\$308	\$318	\$327	\$337	\$347	\$358	\$368
Ventilation & Exhaust (Green)	\$226	\$233	\$239	\$247	\$254	\$262	\$270	\$278	\$286	\$295	\$303	\$312	\$322	\$332	\$341	\$352	\$362	\$373	\$384	\$396
Accessories	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

DWELLING UNITS--*continued*

Replacement Items	Quantity	Cost / Unit in 2013 \$	Total Cost in 2013 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)	Notes
KITCHENS								
Kitchen Floors	1,960 sf	5.50	\$10,780.00		20	20	1 over 6 Years	Linoleum flooring - fair to poor condition Costs to replace
Kitchen Floors (Green)	sf							Green alternative already in place
Kitchen Cabinets	25 ea	2700.00	\$67,500.00		20	25	5 over 4 Years	Plywood cabinets - fair overall condition Costs to replace
Kitchen Cabinets (Green)	25 ea	2902.50	\$72,562.50	\$5,063	20	25		Install FSC certified
Kitchen Countertops	28 ea	474.72	\$13,292.1600		1	10	14 over 4 Years	Future countrertop replacement
Kitchen Countertops (Green)	28 ea	900.00	\$25,200.00	\$11,908	1	25	over 4 Years	Cost to install ceramic tile countertops
Kitchen Countertops	28 ea				20	10		Laminated particleboard countertops Costs to replace
Kitchen Countertops (Green)	ea							
Range	23 ea	500.00	\$11,500.0000		20	20	1 over 6 Years	24-inch electric ranges Costs to replace
Range (Green)	ea							
Range	5 ea	500.00	\$2,500.0000		<2	20	18 in 1 Year	Recently replaced ranges Future replacement allowance
Range (Green)	ea							
Refrigerator	28 ea	670.00	\$18,760.00		6	15	7 over 6 Years	Frost-free GE Energy Star refrigerators (363kWh/yr) Future replacement costs
Refrigerator (Green)	ea							
Refrigerator	ea							
Refrigerator (Green)	ea							
Dishwasher	ea							
Dishwasher (Green)	ea							
Rangehood and Vent	28 ea	281.00	\$7,868.00		20	25	5 over 4 Years	Ducted rangehoods Costs to replace
Disposals	ea							
Miscellaneous	ea							
Miscellaneous (Green)	ea							

DWELLING UNITS--continued

Costs projected at 3%

Replacement Items	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017	Year 6 2018	Year 7 2019	Year 8 2020	Year 9 2021	Year 10 2022	Year 11 2023	Year 12 2024	Year 13 2025	Year 14 2026	Year 15 2027	Year 16 2028	Year 17 2029	Year 18 2030	Year 19 2031	Year 20 2032
KITCHENS																				
Kitchen Floors	\$1,797	\$1,851	\$1,906	\$1,963	\$2,022	\$2,083	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Kitchen Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Kitchen Cabinets	\$0	\$0	\$0	\$0	\$18,993	\$19,563	\$20,150	\$20,754	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Kitchen Cabinets (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Kitchen Countertops	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,880	\$5,026	\$5,177	\$5,333	\$0	\$0	\$0
Kitchen Countertops (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Kitchen Countertops	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Kitchen Countertops (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Range	\$1,917	\$1,974	\$2,033	\$2,094	\$2,157	\$2,222	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Range (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Range	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,132	\$0	\$0
Range (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Refrigerator	\$0	\$0	\$0	\$0	\$0	\$0	\$3,733	\$3,845	\$3,961	\$4,080	\$4,202	\$4,328	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Refrigerator (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Refrigerator	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Refrigerator (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Dishwasher	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Dishwasher (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rangehood and Vent	\$0	\$0	\$0	\$0	\$2,214	\$2,280	\$2,349	\$2,419	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Disposals	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

DWELLING UNITS--*continued*

Replacement Items	Quantity		Cost / Unit in 2013 \$	Total Cost in 2013 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)		Notes
IN-UNIT MECHANICAL										
Electric Baseboard	84	ea	650.00	\$54,600		20	25	5	over 20 Years	Ten foot sections, three per unit - no problems Modest future replacement allowance
Electric Baseboard (Green)		ea								
Unit Thermostats	84	ea	105.00	\$8,820		20	20	1	over 20 Years	Wall mounted thermostats, one per radiator Costs to replace as needed
Unit Thermostats (Green)		ea								
Unit Air Conditioning		lf								
Unit Air Conditioning (Green)		lf								
Unit Radiation		ea								
Unit Radiation (Green)		ea								
Unit Domestic Hot Water	21	ea	850.00	\$17,850		20	10	1 11	over 5 Years	Mostly original electric domestic hot water heaters Costs to replace
Unit Domestic Hot Water (Green)		ea								
Unit Domestic Hot Water	7	ea	850.00	\$5,950		8	10	2 12	in 1 Year	Some replacements observed Costs to replace
Unit Domestic Hot Water (Green)		ea								
IN-UNIT ELECTRICAL										
Unit Electrical Panel	28	ea				20	50			Unit circuit breakers - no problems Monitor
Unit Wiring		ea								
Unit Security Call System	56	ea	195.00	\$10,920		20	20	1	over 10 Years	Emergency pull chords in bathrooms and bedrooms Costs to replace
	56	ea	190.00	\$10,640		varies	7	7 14	over 3 Years	Future replacement costs
Unit Smoke/Fire Detection	28	ea	295.00	\$8,260		ADD	7	1	over 3 Years	Costs to add bedroom smoke detectors
Unit Lighting	1	ls				20	10			Various fixtures, mostly fluoresent Resident paid electric bills
Unit Lighting (Green)		ea								
Unit Lighting		ea								
Unit Lighting (Green)		ea								
Unit Smoke/Fire Detection	56	ea				0	7			Future replacement costs

DWELLING UNITS--continued

Costs projected at 3%

Replacement Items	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017	Year 6 2018	Year 7 2019	Year 8 2020	Year 9 2021	Year 10 2022	Year 11 2023	Year 12 2024	Year 13 2025	Year 14 2026	Year 15 2027	Year 16 2028	Year 17 2029	Year 18 2030	Year 19 2031	Year 20 2032
IN-UNIT MECHANICAL																				
Electric Baseboard	\$0	\$0	\$0	\$0	\$3,073	\$3,165	\$3,260	\$3,358	\$3,458	\$3,562	\$3,669	\$3,779	\$3,892	\$4,009	\$4,129	\$4,253	\$4,381	\$4,512	\$4,648	\$4,787
Electric Baseboard (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Thermostats	\$441	\$454	\$468	\$482	\$496	\$511	\$527	\$542	\$559	\$575	\$593	\$610	\$629	\$648	\$667	\$687	\$708	\$729	\$751	\$773
Unit Thermostats (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Air Conditioning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Air Conditioning (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Radiation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Radiation (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Domestic Hot Water	\$3,570	\$3,677	\$3,787	\$3,901	\$4,018	\$0	\$0	\$0	\$0	\$0	\$4,798	\$4,942	\$5,090	\$5,243	\$5,400	\$0	\$0	\$0	\$0	\$0
Unit Domestic Hot Water (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Domestic Hot Water	\$0	\$6,129	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,236	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Domestic Hot Water (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
IN-UNIT ELECTRICAL																				
Unit Electrical Panel	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Wiring	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Security Call System	\$1,092	\$1,125	\$1,159	\$1,193	\$1,229	\$1,266	\$1,304	\$1,343	\$1,383	\$1,425	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Smoke/Fire Detection	\$2,753	\$2,836	\$2,921	\$0	\$0	\$0	\$4,235	\$4,362	\$4,493	\$0	\$0	\$0	\$0	\$5,208	\$5,365	\$5,526	\$0	\$0	\$0	\$0
Unit Lighting	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Lighting (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Lighting	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Lighting (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Smoke/Fire Detection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

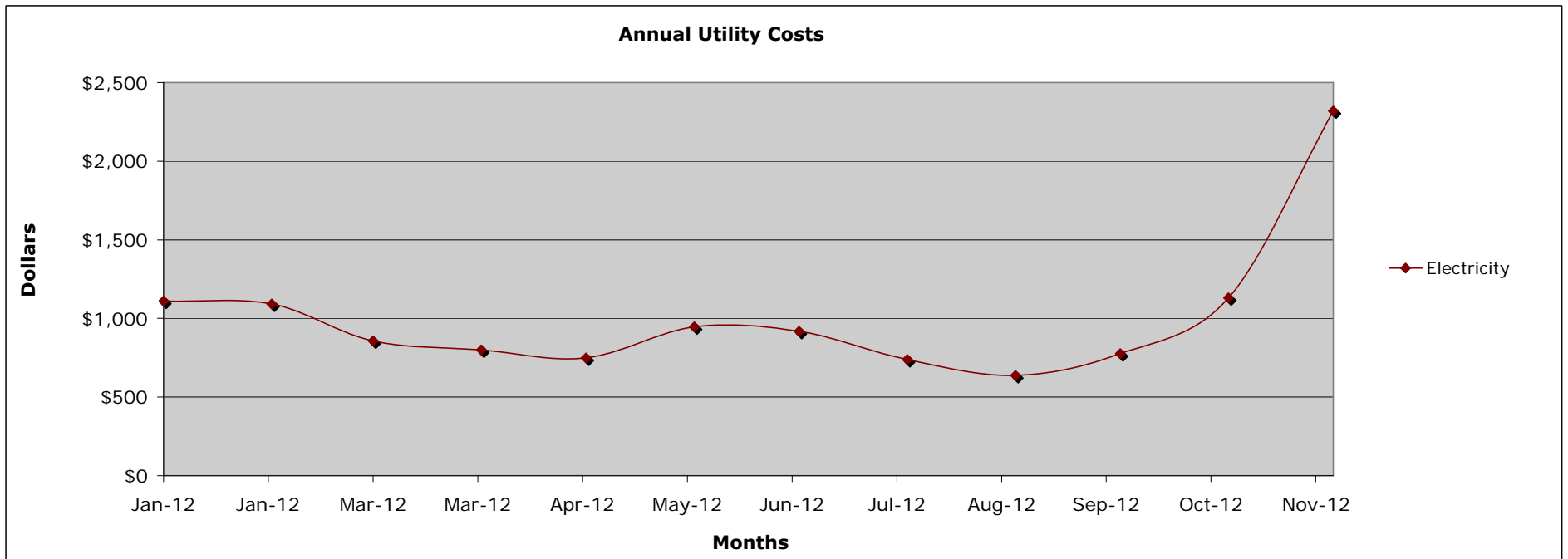
Energy Analysis

Utility Usage

Florence S. Lord

The energy analysis portion of this GCNA examines utility bills for the most recent 12 months to summarize at electricity, natural gas, and water/sewer use. The following table and charts show the utility information by utility source, and by month.

	ELECTRICITY		NATURAL GAS		WATER / SEWER				OIL		TOTAL
	kWh	\$	Therms	\$	Gallons	Water \$	Sewer \$	Total \$	Gallons	\$	
Dec-12	8,320	\$2,318									\$2,318
Nov-12	4,320	\$1,131									\$1,131
Oct-12	5,440	\$776									\$776
Sep-12	4,480	\$637									\$637
Aug-12	5,120	\$738									\$738
Jul-12	5,600	\$917									\$917
Jun-12	6,240	\$947									\$947
May-12	5,440	\$749									\$749
Apr-12	5,830	\$800									\$800
Mar-12	6,240	\$857									\$857
Feb-12	8,000	\$1,092									\$1,092
Jan-12	7,840	\$1,110									\$1,110
Total	72,870	\$12,073									\$12,073
Unit Cost		\$0.166									



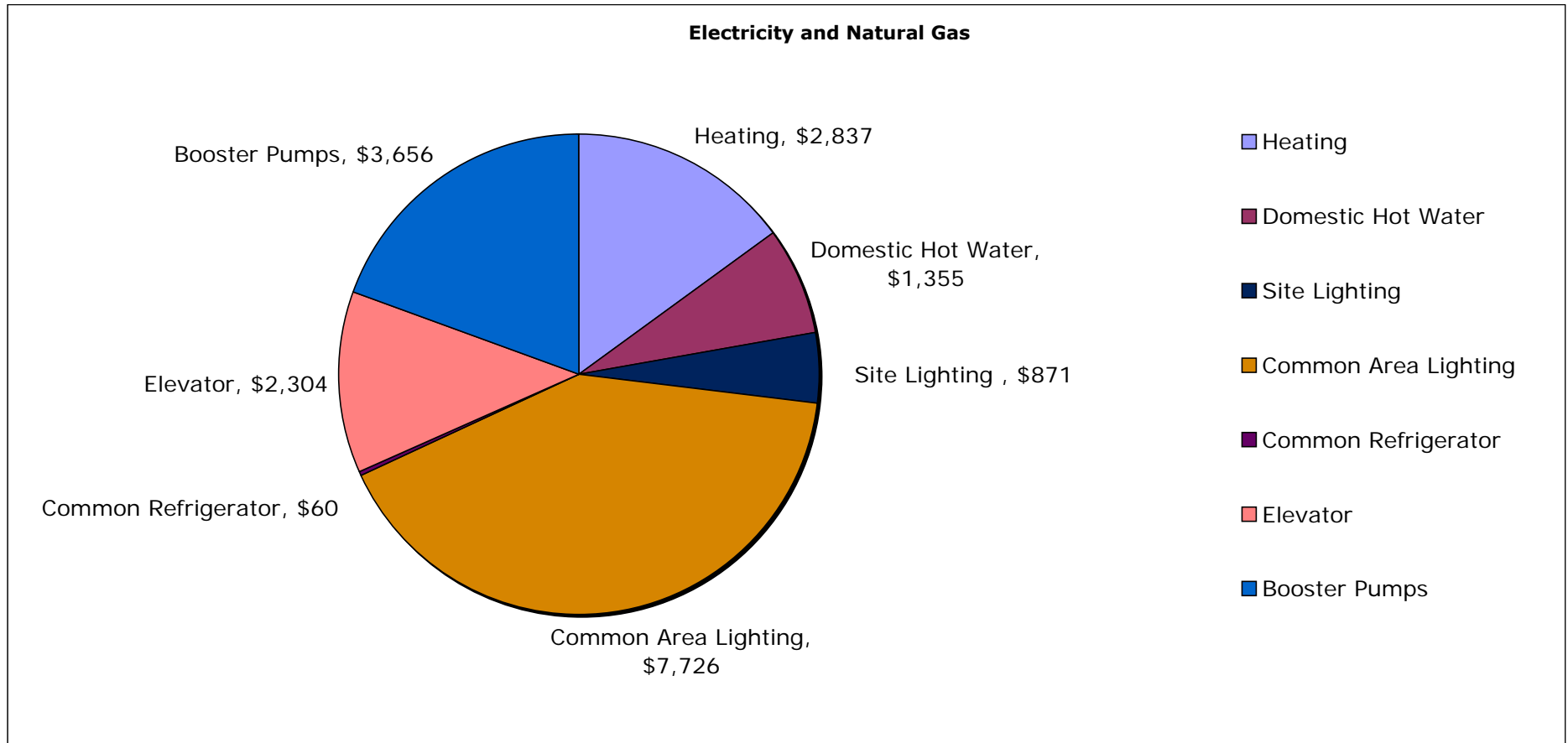
*March, April, June, July, and August consumption was estimated using 2011 billing data.

Energy Analysis

Disaggregated End Uses

Florence S. Lord

Electricity is used for space heating, domestic hot water generation and all other services and appliances. The following chart illustrates the disaggregated costs based on the end uses. Please note: the estimated end uses are base



End Use	Utility	Annual Cost	Annual Usage (kWh)	Annual Usage (therms)	Annual Usage (btu)
Heating	Electricity	\$2,837	17,122.55		58,422,127
Domestic Hot Water	Electricity	\$1,355	8,180.43		27,911,638
Site Lighting	Electricity	\$871	5,256.00		17,933,472
Common Area Lighting	Electricity	\$7,726	46,632		159,108,384
Common Refrigerator	Electricity	\$60	363		1,238,556
Elevator	Electricity	\$2,304	13,909		47,457,508
Booster Pumps	Electricity	\$3,656	22,066		75,289,192

Energy Analysis

Notes

Florence S. Lord

Below are notes regarding the property metering schedule, general billing information, and specific usage details by utility type.

General

The property is master metered for common area electricity (hallways, office, community spaces). The dwelling units are individually metered for electricity consumption.

Natural Gas

Natural Gas is not used at the development.

Electricity

Electricity is generally higher in the winter months, presumably to a higher demand for lighting caused by daylight savings time.

Water and Sewer

The development does not have municipally supplied water or sewer service.

Simple Payback Analysis

EWCM #1 Exterior Lighting - Site

Replacement Costs

A. Total cost to convert the high pressure sodium fixtures to LED models:

\$22,102.00

Utility Cost

Electricity: \$0.17
Natural Gas: \$0.00

Existing Types / Usage

	Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1:	150 watt HPS fixtures	150	8	12	365	5,256	\$870.80
Type 2:	75 watt wall pack	75	7	12	365	2,300	\$380.97
Type 3:						0	\$0.00
Type 4:						0	\$0.00
Type 5:						0	\$0.00
Total:						7,556	\$1,251.77

Proposed Green Types / Usage

	Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1:	60 watt LED	60	8	12	365	2,102	\$348.32
Type 2:	42 watt LED	42	7	12	365	1,288	\$213.34
Type 3:						0	\$0.00
Type 4:						0	\$0.00
Type 5:						0	\$0.00
Total:						3,390	\$561.66

Annual Electric Savings

14,212,277 BTUs
4,165.38 kWh
Savings = 4,165.38 x \$0.17 = \$690.11/yr

Annual Natural Gas Savings¹

0 BTUs
0.00 therms
Savings = 0.00 x \$0.00 = \$0.00/yr

Annual Net Cost Savings

\$690.11 + \$0.00 = \$690.11

5. Simple Payback

\$22,102.00 / \$690.11 = 32.03 yrs

Simple Payback Analysis

EWCM #2 Install Hallway Heat Pumps

Description:

The hallways are heated with suspended electric space heaters. This worksheet evaluates the potential benefit from replacing the existing space heaters with air source electric heat pumps.

Replacement Costs

	Type	Cost
A. Proposed Conventional:	In-Kind Replacement	\$4,900.00
B. Proposed Green:	Install Heat Pumps	\$18,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$13,100.00

Annual Utility Cost, Heating

	Existing	Conventional	Green
	Electric	Electric	Electric
	58,422,127 btus	58,422,127 btus	27,931,135 btus
	17122.55 kWhs	17122.55 kWhs	8186.15 kWhs
Utility Cost	\$0.17 /kWh	\$0.17 /kWh	\$0.17 /kWh
Heating Cost	\$2,836.80	\$2,836.80	\$1,356.25

Annual Utility Cost, Cooling

	Existing	Conventional	Green
	Electric	Electric	Electric
	0.00 btus	0.00 btus	0.00 btus
	0.00 kWhs	0.00 kWhs	0.00 kWhs
Utility Cost	\$0.17 /kWh	\$0.17 /kWh	\$0.17 /kWh
Cooling Cost	\$0.00	\$0.00	\$0.00

Annual Savings: Existing to Conventional

Savings = \$2,836.80 - \$2,836.80 = \$0.00/yr

Annual Savings: Conventional to Green

Savings = \$2,836.80 - \$1,356.25 = \$1,480.55/yr

Annual Savings: Existing to Green

Savings = \$0.00 + \$1,480.55 = \$1,480.55/yr

Simple Payback: Conventional

\$4,900.00 / \$0.00 = N/A yrs

Simple Payback: Green

\$18,000.00 / \$1,480.55 = 12.2 yrs

Incremental Payback: Conventional to Green

\$13,100.00 / \$1,480.55 = 8.8 yrs

Simple Payback Analysis

EWCM #3 Replace Pump Motors

Description: This worksheet calculates the annual savings and simple payback of replacing existing pump motors with comparable premium efficient motors.

Methodology: Energy usage for each motor is calculated by converting the motor's horsepower (hp) rating to kilowatts (kW), and multiplying the kW value by the annual hours of use, and dividing this amount by the motor's efficiency:

$$\{ (\text{hp}) \times (0.746 \text{ kW/hp}) \times (\text{hours}) \} \div (\text{Motor efficiency})$$

Replacement Costs

	Type	Cost
A. Proposed Conventional:	In-Kind Replacement	\$8,600.00
B. Proposed Green:	Premium Efficiency Motors	\$9,245.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$645.00

Utility Cost

Electricity: \$0.17

Existing Conditions

Existing Motor	Quantity	Size: hp	Conversion Factor kW/hp	kW per Motor	Usage hrs/Yr	Load	Existing Efficiency	Total Usage kWh	Operational Cost \$
Heat P1	2	2	.746	1.4920	5694	100%	77.0%	22,066	\$3,656
Heat P2			.746	0.0000		100%		0	\$0
Heat P3			.746	0.0000		100%		0	\$0
Heat P4			.746	0.0000		100%		0	\$0
DHW P1			.746	0.0000		100%		0	\$0
DHW P2			.746	0.0000		100%		0	\$0
DHW P3			.746	0.0000		100%		0	\$0
Totals:								22,066	\$3,656

Proposed Green Conditions

Existing Motor	Quantity	Size: hp	Conversion Factor kW/hp	kW per Motor	Usage hrs/Yr	Load	Proposed Efficiency	Total Usage kWh	Operational Cost \$
Heat P1	2	2	.746	1.4920	5694	100%	88.0%	19,308	\$3,199
Heat P2			.746	0.0000		100%		0	\$0
Heat P3			.746	0.0000		100%		0	\$0
Heat P4			.746	0.0000		100%		0	\$0
DHW P1			.746	0.0000		100%		0	\$0
DHW P2			.746	0.0000		100%		0	\$0
DHW P3			.746	0.0000		100%		0	\$0
Totals:								19,308	\$3,199

Annual Savings: Existing to Proposed Green

$$\text{Savings} = \$3,655.83 - \$3,198.85 = \$456.98 / \text{yr}$$

Simple Payback: Existing to Proposed Green

$$\$645.00 / \$456.98 = 1.4 \text{ yrs}$$

Simple Payback Analysis

EWCM #4 Convert Lighting and Add Occupancy Controls - Common Area

Replacement Costs

A. Total cost to convert T8 Lamps to LED and add occupancy controls:

\$20,690.00

Utility Cost

Electricity: \$0.17
Natural Gas: \$0.00

Existing Types / Usage

	Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1:	Twenty-four hour T8s	34	130	24	365	38,719	\$6,414.86
Type 2:	Support Room T8s	34	150	1	250	1,275	\$211.24
Type 3:	Hallway T8 (Typically off)	34	52	0.5	365	323	\$53.46
Type 4:						0	\$0.00
Type 5:						0	\$0.00
Total:						40,317	\$6,679.56

Proposed Green Types / Usage

	Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day ¹	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1:	LED Lamps	15	130	24	365	17,082	\$2,830.09
Type 2:	LED Lamps	15	150	1	250	563	\$93.19
Type 3:	LED Lamps	15	52	0.5	365	142	\$23.58
Type 4:						0	\$0.00
Type 5:						0	\$0.00
Total:						17,787	\$2,946.86

Annual Electric Savings

76,872,394 BTUs

22,530.01 kWh

Savings = 22,530.01 x \$0.17 = \$3,732.69 /yr

Annual Natural Gas Savings²

0 BTUs

0.00 therms

Savings = 0.00 x \$0.00 = \$0.00 /yr

Annual Net Cost Savings

\$3,732.69 + \$0.00 = \$3,732.69

5. Simple Payback

\$20,690.00 / \$3,732.69 = 5.54 yrs

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 1

Convert Lighting - Site

Pole Mounted High Pressure Sodium

vs.

LED Fixtures

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product:

Pole Mounted High Pressure Sodium

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	In-Kind Replacement	8	ea	\$2,570.00	\$20,560	20	1	1.0	\$20,560	\$20,560
Utility Cost	Electricity	7,556	kWh	\$0.17	\$1,252	1	1	20.0	\$33,638	\$16,562

Total Life Cycle Cost \$54,198 \$37,122

Energy Savings

Net Life Cycle Cost after Energy Savings									\$54,198	\$37,122

Green Product:

LED Fixtures

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	LED Fixtures	8	ea	\$2,762.75	\$22,102	20	1	1.0	\$22,102	\$22,102
Utility Cost	Electricity	3,390	kWh	\$0.17	\$562	1	1	20.0	\$15,092	\$7,431

Total Life Cycle Cost \$37,194 \$29,533

Energy Savings

Net Life Cycle Cost after Energy Savings									\$37,194	\$29,533

ECONOMIC RETURN ANALYSIS

Green NPV	\$7,589
Green IRR	86.5%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: LED Fixtures

Override with Green Product? No

Final Product Choice

Green Product: LED Fixtures

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 1
Convert Lighting - Site
STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

4

Replacement Year

5

Final Product Choice

Green Product:

LED Fixtures

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	LED Fixtures	8	ea	\$2,762.75	\$22,102	20	1	1.0	\$22,102	\$22,102
Utility Cost	Electricity	3,390	kWh	\$0.17	\$562	1	1	20.0	\$15,092	\$7,431
Total Life Cycle Cost									\$37,194	\$29,533

Energy Savings

Net Life Cycle Cost after Energy Savings									\$37,194	\$29,533

Replacement at End of Remaining Useful Life

Year

5

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	LED Fixtures	8	ea	\$2,762.75	\$22,102	20	5	0.8	\$17,125	\$16,489
Utility Cost	Electricity	3,390	kWh	\$0.17	\$562	1	5	16.0	\$12,742	\$5,335

Expenses for Current Product Through Useful Life

Total Life Cycle Cost									\$29,867	\$21,824

Energy Savings

Net Life Cycle Cost after Energy Savings									\$29,867	\$21,824

ECONOMIC RETURN ANALYSIS

Timing NPV

(\$7,709)

Timing IRR

n/a

TIMING RECOMMENDATION

Replacement Year:

5

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 2

Install Hallway Heat Pumps

Electric Space Heaters

vs.

Install Electric Heat Pumps

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

20

Conventional Product:

Electric Space Heaters

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	In-Kind Replacement	4	ea	\$1,225.00	\$4,900	20	1	1.0	\$4,900	\$4,900
Utility Cost	Electricity	17,123	kWh	\$0.17	\$2,837	1	1	20.0	\$76,226	\$37,531
Total Life Cycle Cost									\$81,126	\$42,431

Energy Savings

Net Life Cycle Cost after Energy Savings									\$81,126	\$42,431

Green Product:

Install Electric Heat Pumps

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	Electric Heat Pumps	4	ea	\$4,500.00	\$18,000	15	1	1.3	\$25,001	\$21,965
Utility Cost	Electricity	8,186	kWh	\$0.17	\$1,356	1	1	20.0	\$36,443	\$17,943
Total Life Cycle Cost									\$61,444	\$39,908

Energy Savings

Net Life Cycle Cost after Energy Savings									\$61,444	\$39,908

ECONOMIC RETURN ANALYSIS

Green NPV	\$2,523
Green IRR	10.8%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Install Electric Heat Pumps

Override with Green Product? No

Final Product Choice

Green Product: Install Electric Heat Pumps

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 2

Install Hallway Heat Pumps

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

Final Product Choice

Green Product:

Install Electric Heat Pumps

Immediate Replacement

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Electric Heat Pumps	4	ea	\$4,500.00	\$18,000	15	1	1.3	\$25,001	\$21,965
Utility Cost	Electricity	8,186	kWh	\$0.17	\$1,356	1	1	20.0	\$36,443	\$17,943
Total Life Cycle Cost									\$61,444	\$39,908
<i>Energy Savings</i>										
Net Life Cycle Cost after Energy Savings									\$61,444	\$39,908

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 3

Replace Pumps

Standard Efficiency Pumps

vs.

Premium Efficiency Pumps

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

20

Conventional Product:

Standard Efficiency Pumps

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Pump Motors	2	ea	\$4,300.00	\$8,600	20	1	1.0	\$8,600	\$8,600
Utility Cost	Electricity	22,066	kWh	\$0.17	\$3,656	1	1	20.0	\$98,233	\$48,367
Total Life Cycle Cost									\$106,833	\$56,967

Energy Savings

Net Life Cycle Cost after Energy Savings									\$106,833	\$56,967

Green Product:

Premium Efficiency Pumps

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Premium Pump Motors	2	ea	\$4,622.50	\$9,245	20	1	1.0	\$9,245	\$9,245
Utility Cost	Electricity	19,308	kWh	\$0.17	\$3,199	1	1	20.0	\$85,955	\$42,321
Total Life Cycle Cost									\$95,200	\$51,566

Energy Savings

Net Life Cycle Cost after Energy Savings									\$95,200	\$51,566

ECONOMIC RETURN ANALYSIS

Green NPV	\$5,400
Green IRR	253.3%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Premium Efficiency Pumps

Override with Green Product? No

Final Product Choice

Green Product: Premium Efficiency Pumps

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 3
Replace Pumps
STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product
Replacement Year

17
18

Final Product Choice

Green Product: Premium Efficiency Pumps

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Premium Pump Motors	2	ea	\$4,622.50	\$9,245	20	1	1.0	\$9,245	\$9,245
Utility Cost	Electricity	19,308	kWh	\$0.17	\$3,199	1	1	20.0	\$85,955	\$42,321
Total Life Cycle Cost									\$95,200	\$51,566

Energy Savings

Net Life Cycle Cost after Energy Savings									\$95,200	\$51,566

Replacement at End of Remaining Useful Life

Year

18

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Premium Pump Motors	2	ea	\$4,622.50	\$9,245	20	18	0.2	\$1,501	\$937
Utility Cost	Electricity	19,308	kWh	\$0.17	\$3,199	1	18	3.0	\$16,342	\$4,092

Expenses for Current Product Through Useful Life

Total Life Cycle Cost									\$17,843	\$5,029

Energy Savings

Net Life Cycle Cost after Energy Savings									\$17,843	\$5,029

ECONOMIC RETURN ANALYSIS

Timing NPV	(\$46,538)
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	18
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 4

Convert Interior Lighting - Common Area

T8 Fluorescent Lamps

vs.

Install LED Lamps

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

20

Conventional Product:

T8 Fluorescent Lamps

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Replace T8 Lamps	332	ea	\$8.50	\$2,822	7	1	2.9	\$9,854	\$6,137
Utility Cost	Electricity	40,317	kWh	\$0.17	\$6,680	1	1	20.0	\$179,483	\$88,371
Total Life Cycle Cost									\$189,337	\$94,508

Energy Savings

Net Life Cycle Cost after Energy Savings									\$189,337	\$94,508

Green Product:

Install LED Lamps

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	LED Lamps	332	ea	\$60.00	\$19,920	20	1	1.0	\$19,920	\$19,920
Install/Replace	Occupancy Sensors	14	ea	\$55.00	\$770	20	1	1.0	\$770	\$770
Utility Cost	Electricity	17,787	kWh	\$0.17	\$2,947	1	1	20.0	\$79,184	\$38,987
Total Life Cycle Cost									\$99,874	\$59,677

Energy Savings

Net Life Cycle Cost after Energy Savings									\$99,874	\$59,677

ECONOMIC RETURN ANALYSIS

Green NPV	\$34,830
Green IRR	31.1%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product:	Install LED Lamps
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Override with Green Product? No

Final Product Choice

Green Product:	Install LED Lamps
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 4

Convert Interior Lighting - Common Area

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

Final Product Choice

Green Product:

Install LED Lamps

Immediate Replacement

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	LED Lamps	332	ea	\$60.00	\$19,920	20	1	1.0	\$19,920	\$19,920
Install/Replace	Occupancy Sensors	14	ea	\$55.00	\$770	20	1	1.0	\$770	\$770
Utility Cost	Electricity	17,787	kWh	\$0.17	\$2,947	1	1	20.0	\$79,184	\$38,987
Total Life Cycle Cost									\$99,874	\$59,677
<i>Energy Savings</i>										
Net Life Cycle Cost after Energy Savings									\$99,874	\$59,677

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Green Measure (GM):

1

Roof Covering

Composite Asphalt Shingles

vs.

Metal Tile Roof

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

50

Conventional Product:

Composite Asphalt Shingles

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Asphalt Shingles	14,259	sf	\$4.00	\$57,036	20	1	2.5	\$224,724	\$84,907
Total Life Cycle Cost									\$224,724	\$84,907

Energy Savings

Net Life Cycle Cost after Energy Savings									\$224,724	\$84,907

Green Product:

Metal Tile Roof

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Metal Tile Roof	14,259	sf	\$9.50	\$135,461	50	1	1.0	\$135,461	\$135,461
Total Life Cycle Cost									\$135,461	\$135,461

Energy Savings

Net Life Cycle Cost after Energy Savings									\$135,461	\$135,461

ECONOMIC RETURN ANALYSIS

Green NPV	(\$50,554)
Green IRR	3.4%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Conventional Product: Composite Asphalt Shingles

Override with Green Product? No

Final Product Choice

Conventional Product: Composite Asphalt Shingles

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Green Measure (GM):

1

Roof Covering

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

Final Product Choice

Conventional Product:

Composite Asphalt Shingles

Immediate Replacement

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Asphalt Shingles	14,259	sf	\$4.00	\$57,036	20	1	2.5	\$224,724	\$84,907
Total Life Cycle Cost									\$224,724	\$84,907
Energy Savings										
Net Life Cycle Cost after Energy Savings									\$224,724	\$84,907

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Green Measure (GM):

2

Install Linoleum Flooring

In-Kind Replacement

vs.

Linoleum

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

25

Conventional Product:

In-Kind Replacement

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Hallway Carpeting	2,496	sf	\$3.00	\$7,488	10	1	2.5	\$23,465	\$13,851
Install/Replace	Com. Rm/Office/Library	2,017	sf	\$3.00	\$6,051	10	1	2.5	\$18,962	\$11,193
Install/Replace	Stairwell Vinyl	1,600	sf	\$5.00	\$8,000	20	1	1.3	\$10,252	\$9,177
Install/Replace	Arts/Basement Vinyl	1,850	sf	\$5.00	\$9,250	15	1	1.7	\$17,393	\$12,805

Total Life Cycle Cost

\$70,072

\$47,024

Energy Savings

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Net Life Cycle Cost after Energy Savings

\$70,072

\$47,024

Green Product:

Linoleum

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Hallway	2,496	sf	\$5.50	\$13,728	25	1	1.0	\$13,728	\$13,728
Install/Replace	Com. Rm/Office/Library	2,017	sf	\$5.50	\$11,094	25	1	1.0	\$11,094	\$11,094
Install/Replace	Stairwell	1,600	sf	\$5.50	\$8,800	25	1	1.0	\$8,800	\$8,800
Install/Replace	Arts/Basement	1,850	sf	\$5.50	\$10,175	25	1	1.0	\$10,175	\$10,175

Total Life Cycle Cost

\$43,797

\$43,797

Energy Savings

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Net Life Cycle Cost after Energy Savings

\$43,797

\$43,797

ECONOMIC RETURN ANALYSIS

Green NPV	\$3,228
Green IRR	10.0%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product:	Linoleum
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Override with Green Product?

No

Final Product Choice

Green Product:	Linoleum
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Green Measure (GM):

2

Install Linoleum Flooring

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

Final Product Choice

Green Product:

Linoleum

Immediate Replacement

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Hallway	2,496	sf	\$5.50	\$13,728	25	1	1.0	\$13,728	\$13,728
Install/Replace	Com. Rm/Office/Library	2,017	sf	\$5.50	\$11,094	25	1	1.0	\$11,094	\$11,094
Install/Replace	Stairwell	1,600	sf	\$5.50	\$8,800	25	1	1.0	\$8,800	\$8,800
Install/Replace	Arts/Basement	1,850	sf	\$5.50	\$10,175	25	1	1.0	\$10,175	\$10,175
Total Life Cycle Cost									\$43,797	\$43,797
Energy Savings										
Net Life Cycle Cost after Energy Savings									\$43,797	\$43,797

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Green Measure (GM):

3

Community Kitchen Cabinets

In-Kind Replacement

vs.

FSC Certified Wood

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

25

Conventional Product:

In-Kind Replacement

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	Plywood Cabinets	1	ea	\$3,375.00	\$3,375	25	1	1.0	\$3,375	\$3,375
Total Life Cycle Cost									\$3,375	\$3,375

Energy Savings

Net Life Cycle Cost after Energy Savings									\$3,375	\$3,375

Green Product:

FSC Certified Wood

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	FSC Certified Wood	1	ea	\$3,628.13	\$3,628	25	1	1.0	\$3,628	\$3,628
Total Life Cycle Cost									\$3,628	\$3,628

Energy Savings

Net Life Cycle Cost after Energy Savings									\$3,628	\$3,628

ECONOMIC RETURN ANALYSIS

Green NPV	(\$253)
Green IRR	n/a

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Conventional Product: In-Kind Replacement

Override with Green Product? No

Final Product Choice

Conventional Product: In-Kind Replacement

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Green Measure (GM):

3

Community Kitchen Cabinets

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

Final Product Choice

Conventional Product:

In-Kind Replacement

Immediate Replacement

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Plywood Cabinets	1	ea	\$3,375.00	\$3,375	25	1	1.0	\$3,375	\$3,375
Total Life Cycle Cost									\$3,375	\$3,375
<i>Energy Savings</i>										
Net Life Cycle Cost after Energy Savings									\$3,375	\$3,375

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Green Measure (GM):

4

Cabinetry - Dwelling Units

Plywood Models

vs.

FSC Certified Wood Cabinets

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

25

Conventional Product:

Plywood Models

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	Plywood Models	28	ea	\$2,700.00	\$75,600	25	1	1.0	\$75,600	\$75,600
Total Life Cycle Cost									\$75,600	\$75,600

Energy Savings

Net Life Cycle Cost after Energy Savings									\$75,600	\$75,600

Green Product:

FSC Certified Wood Cabinets

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	FSC Certified Wood	28	ea	\$2,902.50	\$81,270	25	1	1.0	\$81,270	\$81,270
Total Life Cycle Cost									\$81,270	\$81,270

Energy Savings

Net Life Cycle Cost after Energy Savings									\$81,270	\$81,270

ECONOMIC RETURN ANALYSIS

Green NPV	(\$5,670)
Green IRR	n/a

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Conventional Product: Plywood Models

Override with Green Product? No

Final Product Choice

Conventional Product: Plywood Models

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Green Measure (GM):

4

Cabinetry - Dwelling Units

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

Final Product Choice

Conventional Product:

Plywood Models

Immediate Replacement

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Plywood Models	28	ea	\$2,700.00	\$75,600	25	1	1.0	\$75,600	\$75,600
Total Life Cycle Cost									\$75,600	\$75,600
<i>Energy Savings</i>										
Net Life Cycle Cost after Energy Savings									\$75,600	\$75,600

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Green Measure (GM):

5

Install Ceramic Tile Countertops

Laminated Particleboard

vs.

Ceramic Tile

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

25

Conventional Product:

Laminated Particleboard

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	In-Kind Replacement	28	ea	\$474.72	\$13,292	10	1	2.5	\$41,653	\$24,587
Total Life Cycle Cost									\$41,653	\$24,587

Energy Savings

Net Life Cycle Cost after Energy Savings									\$41,653	\$24,587

Green Product:

Ceramic Tile

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	Ceramic Tile	28	ea	\$900.00	\$25,200	25	1	1.0	\$25,200	\$25,200
Total Life Cycle Cost									\$25,200	\$25,200

Energy Savings

Net Life Cycle Cost after Energy Savings									\$25,200	\$25,200

ECONOMIC RETURN ANALYSIS

Green NPV	(\$613)
Green IRR	7.5%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Conventional Product: Laminated Particleboard

Override with Green Product? No

Final Product Choice

Conventional Product: Laminated Particleboard

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Green Measure (GM):

5

Install Ceramic Tile Countertops

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

Final Product Choice

Conventional Product:

Laminated Particleboard

Immediate Replacement

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	In-Kind Replacement	28	ea	\$474.72	\$13,292	10	1	2.5	\$41,653	\$24,587
Total Life Cycle Cost									\$41,653	\$24,587
Energy Savings										
Net Life Cycle Cost after Energy Savings									\$41,653	\$24,587

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Statement of Delivery

ON-SITE INSIGHT, Inc. (and/or its representatives) hereby certifies that, this Green Capital Needs Assessment (the “GCNA” or the “Report”) is delivered subject to the following terms and conditions:

1. This report and analysis are based upon observations for the visible and apparent condition of the building and its major components on the date of the fieldwork. Although care has been taken in the performance of this assessment, ON-SITE INSIGHT, Inc (and/or its representatives) makes no representations regarding latent or concealed defects that may exist and no warranty or guarantee is expressed or implied. This report is made only in the best exercise of our ability and judgment.
2. We have undertaken no formal evaluations of environmental concerns, including but not limited to asbestos containing materials (ACMs), lead based paint, chlorofluorocarbons (CFCs), polychlorinated biphenyls (PCBs), and mildew/mold.
3. Conclusions in this report are based on estimates of the age and normal working life of various items of equipment and/or statistical comparisons. Actual conditions can alter the useful life of any item. When an item needs immediate replacement depends on many factors, including previous use/misuse, irregularity of servicing, faulty manufacturer, unfavorable conditions, Acts of God and unforeseen circumstances. Certain components that may be working when we made our inspection might deteriorate or break in the future without notice.
4. To prepare this report, we used historic data on capital activities and costs, blueprints (when available), and current prices for capital actions. We have not independently verified this information, have assumed that it is reliable, but assume no responsibility for its accuracy.
5. Unless otherwise noted in the report, we assume that all building components meet code requirements in force when the property was built.
6. If accessibility issues are referenced in the report, the site elements, common areas, and dwelling units at the development were examined for compliance with the requirements of the Uniform Federal Accessibility Standards (UFAS), and for Massachusetts properties, the Massachusetts Architectural Accessibility Board (AAB). The methodology employed in undertaking this examination is adapted from a Technical Assistance Guide (TAG-88-11) titled “Supplemental Information About the Section 504 Transition Plan Requirements” published by the Coordination and Review section of the U.S. Department of Justice Civil Rights Division, and the AAB Rules and Regulations, 521 CMR effective July 10, 1987. The Guide also incorporates the requirements of UFAS, published, April 1, 1988 by the General Services Administration, the Department of Defense, the Department of Housing and Urban Development, and the U.S. Postal Service. Changes in legislation and/or regulations may make some observations moot.

7. Response Actions and estimated costs of responses were developed by ON-SITE INSIGHT, Inc. If additional structural work is necessary, costs for some Response Actions may exceed estimates. Whenever the Response Action is to remove, reposition, or modify walls, a competent structural engineer should be retained before any work is done, because such investigation may disclose that a Response Action is either more costly than estimated, or is not possible.
8. Conclusions reached in this report assume current and continuing responsible ownership and competent property management.
9. Regular updates of this plan are recommended to ensure careful monitoring of major building systems and to adjust the program to accommodate unanticipated circumstances surrounding the buildings, operations, and/or occupants.

Signed,



Signature

Daniel Iles
Name

Associate
Title

January 27, 2012
Date