SUPERIOR RESERVE

ENGINEERING & CONSULTING

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Full Reserve Study

Wood-Haven Bridges, Inc.



Greenfield, Wisconsin

July 20, 2020

Reference Number: 180078

Wood-Haven Bridges, Inc.

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Reserve Component List

	Engineering Data Section	Replacement Year (red font if in 5 years or less)	Age (N/A = not available)	Useful Life (years)	Remaining Useful Life (years)	Replacement Cost without Inflation	% Included (blue font if less than 100%)	$ Included	Number of Phases	Cost per Phase	Flexibility
2020-21 Reserve Expenses	-	2020	N/A	N/A	N/A	$58,800	100%	$58,800	1	$58,800	firm
Exterior Building Components											
Balconies at Second Floor - Waterproofing and Railings (1)	2.142	2044	2014	30	24	$201,600	100%	$201,600	1	$201,600	deferrable
Balconies at Third Floor - Waterproofing and Railings	2.145	2044	2014	30	24	$116,900	100%	$116,900	1	$116,900	firm
Bridges - Precast Concrete Slabs	2.147	2050	2010	40	30	$720,000	100%	$720,000	1	$720,000	deferrable
Bridge Railings - Painting	2.161	2031	2010	10	11	$26,500	100%	$26,500	1	$26,500	firm
Bridge Railings - Replacement	2.161	2021	2010	60	1	$70,000	100%	$70,000	1	$70,000	deferrable
Carport Renovation (remaining)	2.297	2021	original	N/A	1	$175,000	86%	$150,000	3	$50,000	deferrable
Gutters and Downspouts (1)	2.361	2036	2011	25	16	$53,500	100%	$53,500	2	$26,750	deferrable
Lighting - Exterior	2.381	2025	N/A	25	5	$4,400	100%	$4,400	4	$1,100	deferrable
Masonry Restoration (1)	2.421	2025	N/A	10	5	$59,000	100%	$59,000	4	$14,750	deferrable
Roofs - Asphalt Shingles (1)	2.441	2036	2011	25	16	$333,000	100%	$333,000	2	$166,500	firm
Siding - Metal, Wood and Plywood (1)	2.761	2025	original	35	5	$329,000	100%	$329,000	4	$82,250	deferrable
Soffits and Fascia - Plywood and Aluminum (1)	2.891	2025	varies	35	5	$173,000	100%	$173,000	4	$43,250	deferrable
Windows and Doors - Common	2.981	2025	original	40	5	$120,000	100%	$120,000	4	$30,000	deferrable
Interior Building Components											
Carpet - Stairs and Office	3.101	2026	2016	10	6	$69,000	100%	$69,000	1	$69,000	deferrable
Lighting - Stairs, Basements and Office (1)	3.421	2046	2016	30	26	$8,000	100%	$8,000	1	$8,000	deferrable
Mailboxes and Intercoms	3.541	2026	original	50	6	$14,840	100%	$14,840	1	$14,840	deferrable
Painting - Stairs, Basements and Office (1)	3.601	2026	2016	10	6	$63,800	100%	$63,800	1	$63,800	discretionary
Vinyl Flooring - Basements	3.791	2050	2016	40	30	$6,600	100%	$6,600	1	$6,600	deferrable
Building System Components											
Boilers - Building Heat	4.221	2033	2013	20	13	$154,000	100%	$154,000	1	$154,000	firm
Electrical System Main Panels	4.341	2041	original	70	21	$368,000	100%	$368,000	1	$368,000	deferrable
Fire Suppression System Heads	4.347	2022	original	50	2	$12,000	100%	$12,000	1	$12,000	deferrable
Laundry Washers and Dryers (10 of 28 every 4 years)	4.521	2023	varies	4	3	$36,400	36%	$13,000	1	$13,000	deferrable
Life Safety Systems	4.541	2022	original	30	2	$124,400	100%	$124,400	1	$124,400	firm
Lighting - Exit	4.561	2031	N/A	30	11	$7,700	100%	$7,700	1	$7,700	deferrable
Pipes - Domestic Water, Waste and Vent (1)	4.601	2041	original	70	21	$1,680,000	100%	$1,680,000	7	$240,000	deferrable
Piping and Valves at Incoming Water	4.607	2021	varies	50	1	$99,600	100%	$99,600	4	$24,900	deferrable
Pumps - Sump (1 of 7 every 3 years)	4.641	2021	varies	3	1	$53,200	14%	$7,600	1	$7,600	deferrable
Water Heaters (1 of 8 every 3 years)	4.801	2023	varies	3	3	$56,000	13%	$7,000	1	$7,000	firm

(1) See Property Engineering Review Page 1.201

Reserve Component List

	Engineering Data Section	Replacement Year (red font if in 5 years or less)	Age (N/A = not available)	Useful Life (years)	Remaining Useful Life (years)	Replacement Cost without Inflation	% Included (blue font if less than 100%)	$ Included	Number of Phases	Cost per Phase	Flexibility
Site Components											
Concrete Patios (3 of 28 every 5 years)	6.161	2025	varies	5	5	$19,600	11%	$2,100	1	$2,100	deferrable
Concrete Sidewalks (5% every 5 years)	6.181	2025	varies	5	5	$45,000	5%	$2,250	1	$2,250	deferrable
Fence - Wood	6.281	2031	N/A	30	11	$5,300	100%	$5,300	1	$5,300	deferrable
Landscape (5% every 5 years)	6.541	2025	2020	5	5	$90,000	5%	$4,500	1	$4,500	discretionary
Light Poles and Fixtures	6.601	2044	2019	25	24	$16,500	100%	$16,500	1	$16,500	deferrable
Pavement - Crack Repair, Patch and Stripe (1)	6.641	2024	2020	4	4	$25,500	75%	$19,125	1	$19,125	firm
Pavement Replacement (25% every 4 years)	6.661	2024	varies	4	4	$403,000	25%	$100,750	1	$100,750	deferrable
Walking Paths - Replace Asphalt with Concrete (remaining)	6.701	2022	original	N/A	2	$80,000	50%	$40,000	1	$40,000	deferrable
Pipes Serving Subsurface Utilities - Allowance (1)	-	2030	original	10	10	$8,000	100%	$8,000	1	$8,000	deferrable
Sign (1)	6.961	2021	N/A	25	1	$4,500	100%	$4,500	1	$4,500	deferrable
Pool Components											
Pool Deck Renovation	8.101	2031	2019	12	11	$7,200	100%	$7,200	1	$7,200	deferrable
Pool Fence	8.201	2031	original	60	11	$12,200	100%	$12,200	1	$12,200	deferrable
Pool Finish - Plaster	8.301	2031	2019	12	11	$32,500	100%	$32,500	1	$32,500	deferrable
Pool Equipment - Heater	8.501	2022	2002	20	2	$15,500	100%	$15,500	1	$15,500	deferrable
Pool Equipment - Pump (1)	8.501	2020	N/A	15	0	$2,000	100%	$2,000	1	$2,000	deferrable
Pool Equipment - Water Treatment Equipment	8.501	2031	N/A	15	11	$2,000	100%	$2,000	1	$2,000	deferrable
Pool Equipment - Filter	8.501	2020	N/A	15	0	$1,700	100%	$1,700	1	$1,700	deferrable
Pool Equipment - Electrical and Plumbing (1)	8.501	2031	N/A	30	11	$27,600	100%	$27,600	1	$27,600	deferrable

(1) See Property Engineering Review Page 1.201

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Wood-Haven Bridges, Inc.

Property and Service Summary

Location:	Greenfield, Wisconsin
Property type:	multi story condominium
Number of residential buildings:	4 with 14 separate entrances
Number of units:	112
Number of stories:	3
Year of construction:	1971
Date of inspection:	July 20, 2020
Type of service:	reserve study
Level of service:	Full Study
Length of analysis:	30 years
2020-21 budgeted reserve contribution:	$48,000
2021-22 recommended reserve contribution:	$116,500 = increase of $68,500 ($50.97 per home per month)
Exterior features:	concrete balconies, masonry veneer, metal, wood and plywood siding, asphalt shingle roofs
Interior features:	14 common stairwells, office
Building system features:	boilers for building heat, laundry washers and dryers, water heaters
Site features:	asphalt pavement, cabana, pool
Completed projects:	pool renovation, light poles and fixtures
Upcoming projects:	replacement of bridge railings, carport renovation, piping at valves and incoming water, life safety systems, replace remaining walking path asphalt with concrete


building overview


building overview


building overview


cabana and pool

Property Engineering Review

During our inspection of your property, we identify the following repairs and improvements that the property should consider:

Actionable recommendations - near term actions on these items will minimize future costs and maintain the comfort and security (See "Pages with Engineering Data" for more information where applicable):

The stairwell wall edges are prone to damage and scuffs. The property could install metal corner guards to minimize damage to the finishes.

We observed steep slopes and ruts from lawn care equipment. Lawn care equipment that continuously travels the same route minimizes the potential for grass regrowth and promotes erosion. The property could consider ground cover that does not require mowing at these locations to prevent erosion. The property could also request the lawn care company to use lighter equipment in these areas.

The pool equipment room does not have an exhaust fan. Proper ventilation is important where pool chemicals are stored. The lack of ventilation increases health hazards for the pool operator, increases the potential of a fire from toxic vapors and causes accelerated deterioration of metal components in the room. The property should install ventilation that complies with ASHRAE standards.

Green ideas - Opportunities for energy efficiency and best practices for sustainability. Acting on these recommendations will provide significant cost savings (See "Pages with Engineering Data" for more information where applicable):

The stairwell lights operate continuously. Consider installing occupancy sensors to minimize fixture operation or installing light dimmers to minimize energy use during off peak hours. For safety reasons, maintain a minimum light level at all times. Our experience indicates properties typically have one out of two lights operate continuously and the remaining are on sensors. Check with local code for specific requirements. The following manufacturer provides these products: http://www.xeleum.com/stairwell-low-occupancy-1.

Install motion sensors on mechanical, storage and laundry room light switches (or on the lights themselves) to minimize fixture operation. Motion sensing light switches are inexpensive: http://www.homedepot.com/b/Electrical-Dimmers-Switches-Outlets-Motion-Sensors/N-5yc1vZc32r/Ntk-Extended/Ntt-light+switch?Ntx=mode+matchpartialmax&NCNI-5.

The pipes adjacent to the water heaters are uninsulated resulting in heat loss. For energy efficiency, the property should insulate all accessible pipes (payback of approximately one year).

Rather than raking leaves in the fall and hauling them to the landfill, the property should mulch the leaves and allow them to decompose into the ground. The majority of the leaves will decompose during

the fall and winter. Once the leaf particles settle in, microbes and worms begin to recycle the debris (the application of nitrogen-rich fertilizer can help speed up the decomposition process). Whatever remains in the spring can be cleaned up and either used in planting beds or removed from the site. Mulching leaves will eliminate costs associated with hauling the leaves off the property and ease the burden placed on landfills. Mulching leaves will minimize weed control and nutrient application costs. Mulching leaves recycles a natural resource and provides a richer soil at no cost. The following website provides additional information: https://www.canr.msu.edu/news/smart_gardeners_mulch_fallen_leaves_into_lawn_to_save_money.

The property has seal coated the asphalt pavement in the past. It is our professional opinion that seal coating asphalt pavement does not extend the useful life of the pavement. Seal coats do not add structural strength to the pavement. Seal coating is also a source of environmental contamination. Many properties opt to save money by *not* seal coating their pavement. If the property decides to seal coat for aesthetic reasons, avoid the use of coal tar based pavement seal coats as they pollute waterways. Instead, consider a slurry coat of asphaltic emulsion to provide a sacrificial wearing surface to the pavement. Also, if the property chooses to seal coat, we recommend applying the seal coat in the spring rather than the fall. Snow removal equipment wears the seal coat. Application in the spring will provide the maximum visual enjoyment from a fresh seal coat. The property should fund this expense through the operating budget.

The property could consider the installation of solar lights to illuminate the property identification sign. The following website provides solar lights for signs: www.emberled.com.

The pool pump operates at a constant speed. When replacement comes due, replace the pool pump with a variable speed drive to minimize operational costs, provide a constant pressure and maximize the useful life of the pump. Preventing too high flow rates will also ensure proper filtration and minimize damage to the filter.

The following address provides links to incentives and rebates for energy conservation in your area: http://www.dsireusa.org/

Engineering solutions - reference this information for proper scope of work and best outcome on upcoming projects (See "Pages with Engineering Data" for more information where applicable):

The second floor balconies at the front elevations (elevations opposite of the bridge elevations) have a metallic waterproofing and metal perimeter fascia. Water flowing off the balcony waterproofing flows under the metal perimeter fascia rather than over. This will result in accelerated deterioration of the underlying concrete due to the misdirection of the storm water. The perimeter fascia should be installed under the balcony waterproofing at the time of replacement. The property could also install a liquid applied traffic coating to the topsides of the balconies, which is commonly done on concrete balconies. We recommend installing waterproofing at all second floor balconies (front and rear elevations) and our cost reflects this assumption.

A portion of the downspouts discharge into subterranean piping. Another portion of the downspouts discharge through long extensions on the surface which are unsightly, prone to damage and discharge within 10 feet of the foundations. We recommend the installation of subterranean downspout extensions that discharge 10 feet away from the buildings through pop-up drainage emitters in the landscape areas. We estimate a cost of $250 per downspout for this repair. We recommend subterranean PVC pipes with glued connections to elbows (similar to interior plumbing) to minimize the potential for root and dirt penetration at joints.

We note the use of caulk to repair mortar joints. Mortar allows any water within the wall to weep out. The application of caulk will trap moisture in the walls and result in accelerated deterioration of the masonry. The property should remove the caulk and repair any deteriorated joints with mortar.

Aluminum cladding was inappropriately installed over window and door lintels. Any storm water within the wall escaping at the lintel is trapped within the wall by the cladding. This will result in accelerated failure of the lintel and leaks. The property should remove the cladding and paint the exposed lintels.

Proper construction of masonry walls assumes that a certain amount of water will penetrate completely through the masonry. As the water flows down the inside of the masonry, flashing at penetrations, such as the windows and doors, directs storm water over the penetrations. Weep holes/cords at the flashing allow the water to wick to the face of the masonry. Masonry walls missing any of these materials (flashing and weeps) misdirect penetrated storm water resulting in unpredictable water drainage and potential leaks. We did not observe evidence of flashing or weeps at the lintels in masonry openings at the property. Installation of these materials is necessary at the time of lintel replacement and for windows that leak.

The brick mortar joints are raked, which allows for standing water and snow on the brick. This profile results in accelerated masonry deterioration. We recommend the property repoints all repair areas to have a concaved profile. Tooling with a trowel creates the concave profile and compresses the mortar to minimize the potential of water penetration.

The ridge vents lack external wind baffles. External wind baffles would direct airflow up and over the vent, creating an area of low pressure over the vent openings, pulling air out of the attic. Ridge vents that lack external wind baffles allow air to blow into the ridge rather than exhaust out of the attic. Replacement ridge vents should include external wind baffles.

The roofs throughout the property inappropriately utilize ridge and box vents. These vents used together result in attic ventilation short circuiting. Ideally, air is blown in through the soffit vents and exhaust hot attic air through the ridge vents. When box vents are used in the plane of the roof (not at the ridges), air is pulled from the box vents rather than the soffits. The ridge vents are adequate to provide the necessary attic ventilation. We recommend the discontinued use of the box vents. The following article provides additional information: http://www.roofingcontractor.com/articles/90692-ventilation-short-circuiting-how-short-circuiting-happens-and-how-to-correct-it.

Kick-out flashing is missing where roofs terminate at gutters adjacent to siding. Water flowing at the roof to wall intersections can bypass the gutters, penetrate the walls and increase the potential for water infiltration. Kick-out flashing should be installed at these locations, integrated with the shingles and step flashing.

The property should consider replacement of the metal, wood and plywood siding with vinyl siding. Vinyl siding is less costly (approximately 80% of the cost of metal) and is commonly used as a replacement of metal siding at condominiums.

Flashing is missing above the window and door openings. Flashing, in conjunction with building paper, would collect any water that gets behind the siding and direct it back to the exterior. The lack of flashing results in accelerated window and substrate deterioration, and increases the potential for water infiltration. Siding replacement should include flashing and building paper.

The partially vented soffits are inadequate to properly ventilate the attics. Soffit ventilation is necessary to allow air flow into the attics. This air flow helps reduce attic temperatures and maximizes the useful life of the shingles. Balanced air flow through the attics minimizes the potential for ice dams and reduces summer air conditioning costs. Shingle manufacturers recommend one square foot of attic ventilation for every 300 square feet of roof area, with half of this ventilation in the soffits and the other half at the rooftops. We recommend the installation of continuous soffit vents at the time of soffit and fascia replacement. We also recommend an inspection of the attics to ensure the vents are not blocked by insulation at the time of replacement.

The property could consider cladding the soffit with aluminum rather than replacing with wood as this would eliminate the need for painting. Also, fully vented aluminum soffits would provide the necessary attic ventilation. It is important that the existing wood soffits are COMPLETELY REMOVED prior to the installation of fully vented aluminum soffits. Cladding over the existing soffits WOULD NOT allow for proper ventilation. We estimate a payback after approximately four painting events.

With the exception of isolated locations, the pipes for domestic water, waste and vent are not visible. Even if these pipes were visible, the interior condition of the pipes (which is not visible) determines their remaining useful life. Therefore, we determine the condition and anticipated replacement times of the pipes based on interviews with individuals at the property, the age of the building, and our expertise with many other properties of similar age and plumbing systems.

Landscape replacement timing is discretionary. Annual operating budgets should include funds for mowing, trimming, flowers and replacement of a limited amount of dead landscape. We include an allowance for periodic partial replacements of landscape to include replacement of overgrown bushes or trees as the property sees necessary. Overgrown bushes and trees can cause damage to exterior building components or site elements such as roots causing damage to sidewalks or driveways and branches causing damage to roofs or siding. Although unpredictable, this allowance could also be used for any landscape that has died from drought, disease, etc.

The property has conducted appropriate prior repairs and maintenance to the pavement as evident during our inspection. However, additional repairs are needed. Continued maintenance including repairing all cracks and patching potholes in the pavement will prevent water infiltration. This will minimize deterioration of the pavement and underlying base, and maximize the life of the pavement.

Inspection of subsurface utility pipes requires specialized equipment and significant cost expense. Some properties that experience abnormal issues with pipe breaching opt to hire a contractor to perform an inspection. If the property opts to have this inspection, you may provide us the results and we will incorporate appropriate exact costs into the study. Alternatively, we include a budgetary allowance based on our vast experience with similar age/type properties in anticipation of periodic replacement of subterranean pipe sections.

Implementation of these repairs and improvements could increase the useful life of the components, minimize operating costs and provide guidance at the time of component replacement.

Reserve Study Overview

This reserve study is a *physical and financial analysis* of your property that determines what components of your property will eventually require either major repairs or restoration, or complete replacement. Large, one-time contributions (special assessments) for these projects can be eliminated with development of a *reserve* through relatively smaller annual contributions. The physical analysis determines the existing quantities, conditions, useful lives and costs of the components. The financial analysis determines the existing financial situation of your property and the reserves necessary to offset the future expenses.

Reserve Component

Components in this reserve study meet the following requirements:

- responsibility of the property
- limited useful life expectancy
- predictable *remaining* useful life expectancy
- above a minimum threshold cost

Components that do not fulfill the above requirements are not included in this study.

30 Year Analysis

The analysis for this reserve study encompasses the next 30 years. The components of the property age each year. Those who enjoy the use of each component are financially responsible for what they enjoyed. This length of an analysis is necessary to analyze the aging of nearly all the major components of the property. The expectation is not that the current Owners, Board of Directors and/or Management will be present at the property in 30 years. Rather, the future analysis aids in determining the most accurate *current* contribution for the aging components.

Funding Method

The funding method of this reserve study utilizes the *cash flow method*. With the cash flow method, contributions to the reserve fund are designed to offset variable annual expenditures. We experiment with different contribution scenarios until an ideal scenario is discovered to offset reserve expenditures. All expenses and contributions are *pooled* together. Our experience indicates that the cash flow method typically results in lower overall contributions than the *component method*, which typically segregates funds.

Funding Goal

The funding goal of this reserve study is to maintain a reserve balance above a minimum *threshold* during the years of major expenditures. We assume a contingency reserve balance of not less than

approximately ten percent (10%) of the expenditures in the **threshold funding year** (The year the reserve balance is at its lowest point. See Funding Plan Page 1.401 for the identification of this year). The property can determine if they prefer a higher or lower contingency.

The ideal situation is when the threshold funding year is in the last year of the analysis. This provides the maximum amount of time that the property can save up for major expenses. A critical situation is when the threshold funding year is in the first few years of the analysis. This situation requires major initial reserve contributions to offset near term expenditures.

Funding

This reserve study assumes an ideal situation where all future costs are offset by annual contributions to the reserve fund. *We understand that this is not always possible.* Our experience suggests that major projects are funded through multiple means such as partially through the reserve fund and partial through either additional assessments or bank loans. The specific funding of the projects is determined by the property at the time of the event (this is not something we can forecast). The goal of the property should be to follow the recommended funding plan outlined in this reserve study. If the recommended reserve contributions are not feasible as determined by the Board of Director's judgment, this reserve study should then be used, at a minimum, to justify the need for an *increase* over the *current* reserve fund contribution.

Flexibility

The time of replacement for each component involves a varying degree of deduction. To help understand the criticality of each replacement time, we provide the following replacement flexibility guide:

firm - Replacement time has little, if any, flexibility. Deferring the replacement time would have an adverse effect on the property.
deferrable - Replacement time has limited flexibility. Continually deferring the replacement time would eventually have an adverse effect on the property and raise aesthetic concerns.
discretionary - Replacement time has flexibility. Continually deferring the replacement time would either raise aesthetic concerns or the component does not affect the functionality of the property. The replacement costs for certain discretionary expenses can vary greatly as they are subject to improvements and expansions as desired by the property.

Reserve Study Requirements

Property Declarations occasionally define reserve study requirements. The state legislature may also define reserve study requirements. The following is a link to state reserve study requirements (the property should be aware more recent or pending legislation may exist since the date of this report):

http://docs.legis.wisconsin.gov/statutes/statutes/703/163/7

It is our intention that this reserve study complies with these requirements. The property should consult with their attorney on discrepancies between reserve study requirements. Contact us for any revision necessary to the reserve study to fulfill these requirements.

Cost estimates

We obtain the cost estimates for replacements from the following sources:

- published sources (*RS Means* based on standard union labor rate)
- historical costs
- proprietary information

Our estimates are not guarantees of actual replacement costs. We base our estimates on our calculation of expected market rate for your specific location and specific situation. Multiple contractor bids will result in multiple cost estimates. *Multiple* contractor estimates will inevitably vary from our *single* estimate. The property should verify the scope of work in the contractor's estimate is similar to what is noted on the Engineering Data page (Engineering Data pages are all the data pages subsequent to "Limiting Conditions", Page 1.701). Common reasons for cost discrepancies include varying scopes of work and improvements over the existing components. Technological improvements also cause cost discrepancies - what may have been current technology at the time of the study could be obsolete at the time of replacement. If the property receives an estimate that is higher than the estimate in this reserve study for the same scope of work, the property should use this study as a tool to negotiate a lower cost. If the property receives an estimate that is lower than the estimate in this reserve study for the same scope of work - the estimate is below the expected market rate.

Long Lived Components

There exists components at the property that will not require replacement during the 30 year analysis. Although these long lived components will eventually require replacement, they do not fall within the scope of the analysis. Periodic updates of the study will eventually include their replacement. Frequent updates of the study will ensure the property has up to 30 years to plan for their eventual replacement. The following is a list of ***common*** long lived components for the property:

- electrical system wiring
- fire suppression system piping

- foundations
- pipes for building heating
- pool structure and deck (major renovation in 2019)
- structural frames

Operating Budget

The operating budget provides funds necessary for the daily operation of the property. In general, the operating budget includes expenses that repeat from year to year, such as administrative expenses and cleaning. All the property components require maintenance. *This reserve study does not include maintenance costs that would traditionally fall under an operating budget.* We assume the property will fund normal annual maintenance through the operating budget. We also assume that the property will fund replacement of components below an estimated minimum threshold cost of

$4,000

through the operating budget. The following is a list of components that we assume the property will fund through the operating budget:

- cabana rest room
- electric heaters
- landscape annual maintenance
- office furniture
- painting exterior building wood and plywood surfaces (we assume the property will eventually replace all exterior painted wood and plywood surfaces with aluminum cladding)
- painting pool fence
- pool cover
- pool furniture
- pumps with a capacity of less than five horsepower
- rugs
- seal coating of the asphalt pavement (for aesthetic purposes if desired)
- smoke detectors
- valves with small diameters

The items in the list above have a minimal (if any) impact on our recommended reserve fund contribution. If the property chooses to fund these expenses through reserves, updates of this reserve study would account for these expenses.

Owner Responsibility

The property's Declaration assigns the responsibility of certain components to the owners. These are typically components where the use is solely enjoyed by the owner. The following is a list of components that are the responsibility of the owners as described to us during our meeting at the property:

- decking at third floor balconies
- electrical systems within the individual units
- heating, ventilating and air conditioning (HVAC) units serving the individual units
- interiors of the individual units
- pipes that branch off the common pipes to the individual unit plumbing fixtures
- windows and doors

We do not provide an opinion on the accuracy of this list. Historical practices for repairs and replacements occasionally conflict with what is stated in the Declaration. The property should consult with their attorney to verify the accuracy of the information in this list provided to us.

Although these components are maintained by the owners, Declarations typically allow the Board of Directors to have *architectural control* over replacement. This aids in keeping a uniform appearance throughout the property. Owner replacement projects with a high dollar value can be managed by the property but the expenses charged back to the owners. This simplifies complex projects by having one contractor and further ensures a uniform appearance.

Additional Assessments

The objective of properly planned operating budgets and reserve contributions is to avoid additional assessments. However, additional assessments are necessary for unplanned costs such as code change requirements, unobservable conditions, property improvements, etc. We *do not* recommend the property fund these expenses through reserves. The property should consult with an attorney to determine if the property Bylaws have a provision for these types of expenses.

Definitions and Supporting Information

Community Associations Institute (CAI) and the Association of Professional Reserve Analysts (APRA) are national organizations that provide requirements for reserve studies. The property should refer to these organizations for reserve study definitions and supporting information. The following are links to these organizations:

http://www.caionline.org

http://www.apra-usa.com/

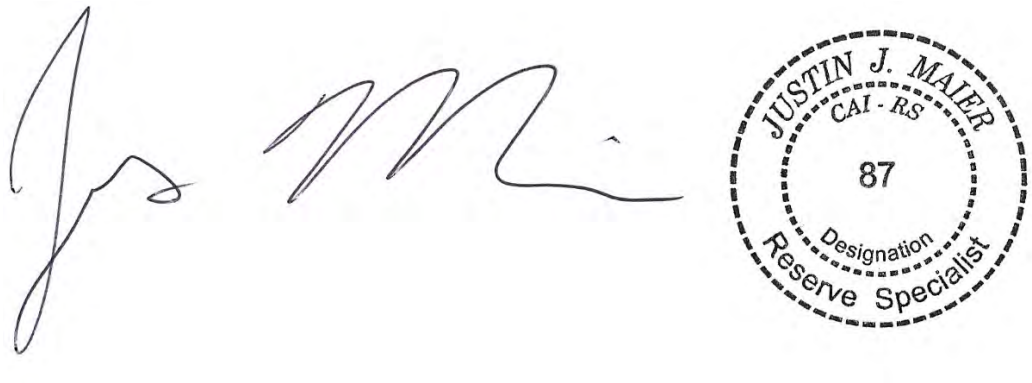
Reserve Fund Status

If the property were to fund all expenditures identified in this study through reserves, an increase in the reserve contributions is necessary. See Funding Plan Page 1.401 for our recommended reserve funding plan.

Updates

The reserve study is a static snap shot in time based on the date of the inspection. However, costs, inflation rates, interest rates and weather conditions are dynamic in that they are always changing. This necessitates periodic *updates* of the reserve study. An update is less costly than the original reserve study since there is less labor involved in gathering information on your property. We suggest updating the reserve study every three to six years. Factors that can determine when an update should occur are an upcoming major project, completion of a major project, major change to the property, known change in the interest and/or inflation rates compared to the last reserve study, etc. Please contact us for a reserve study update proposal when necessary.

Sincerely,



Justin J. Maier, RS
Partner
Superior Reserve Engineering & Consulting
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888-688-4560
Report submitted on: August 4, 2020

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Recommended Reserve Funding Plan

Wood-Haven Bridges, Inc.

Year	Inflated expenditures (2.9% annual)	Recommended reserve contributions	Ending reserve balance	Average $ per home per month (112 homes)**	$ increase per month from previous year	% increase from previous year
2020-21*	($62,500)	$48,000	$237,035	$35.71	-	-
2021-22	($161,553)	$116,500	$196,272	$86.68	$50.97	142.7%
***2022-23	($282,499)	$185,000	**$101,723**	$137.65	$50.97	58.8%
2023-24	($103,398)	$253,500	$255,360	$188.62	$50.97	37.0%
2024-25	($170,834)	$260,900	$351,434	$194.12	$5.51	2.9%
2025-26	($207,889)	$268,500	$419,680	$199.78	$5.65	2.9%
2026-27	($386,987)	$276,300	$316,279	$205.58	$5.80	2.9%
2027-28	($234,475)	$284,300	$372,929	$211.53	$5.95	2.9%
2028-29	($366,059)	$292,500	$306,092	$217.63	$6.10	2.9%
2029-30	($9,054)	$301,000	$607,080	$223.96	$6.32	2.9%
2030-31	($32,541)	$309,700	$899,151	$230.43	$6.47	2.9%
2031-32	($183,516)	$318,700	$1,053,670	$237.13	$6.70	2.9%
2032-33	($178,797)	$327,900	$1,225,337	$243.97	$6.85	2.9%
2033-34	($234,337)	$337,400	$1,353,937	$251.04	$7.07	2.9%
2034-35	$0	$347,200	$1,731,688	$258.33	$7.29	2.9%
2035-36	($72,626)	$357,300	$2,053,843	$265.85	$7.51	2.9%
2036-37	($739,856)	$367,700	$1,719,043	$273.59	$7.74	2.9%
2037-38	($338,162)	$378,400	$1,794,064	$281.55	$7.96	2.9%
2038-39	($36,386)	$389,400	$2,186,488	$289.73	$8.18	2.9%
2039-40	($35,462)	$400,700	$2,599,109	$298.14	$8.41	2.9%
2040-41	($242,190)	$412,300	$2,822,902	$306.77	$8.63	2.9%
2041-42	($1,169,283)	$424,300	$2,126,927	$315.70	$8.93	2.9%
2042-43	($493,468)	$436,600	$2,112,029	$324.85	$9.15	2.9%
2043-44	($564,906)	$449,300	$2,037,508	$334.30	$9.45	2.9%
2044-45	($1,393,891)	$462,300	$1,137,351	$343.97	$9.67	2.9%
2045-46	($554,210)	$475,700	$1,080,804	$353.94	$9.97	2.9%
2046-47	($845,434)	$489,500	$742,927	$364.21	$10.27	2.9%
2047-48	($594,501)	$503,700	$666,076	$374.78	$10.57	2.9%
2048-49	($316,670)	$518,300	$883,045	$385.64	$10.86	2.9%
2049-50	$0	$533,300	$1,439,339	$396.80	$11.16	2.9%
2050-51	($1,780,541)	$548,800	$224,067	$408.33	$11.53	2.9%

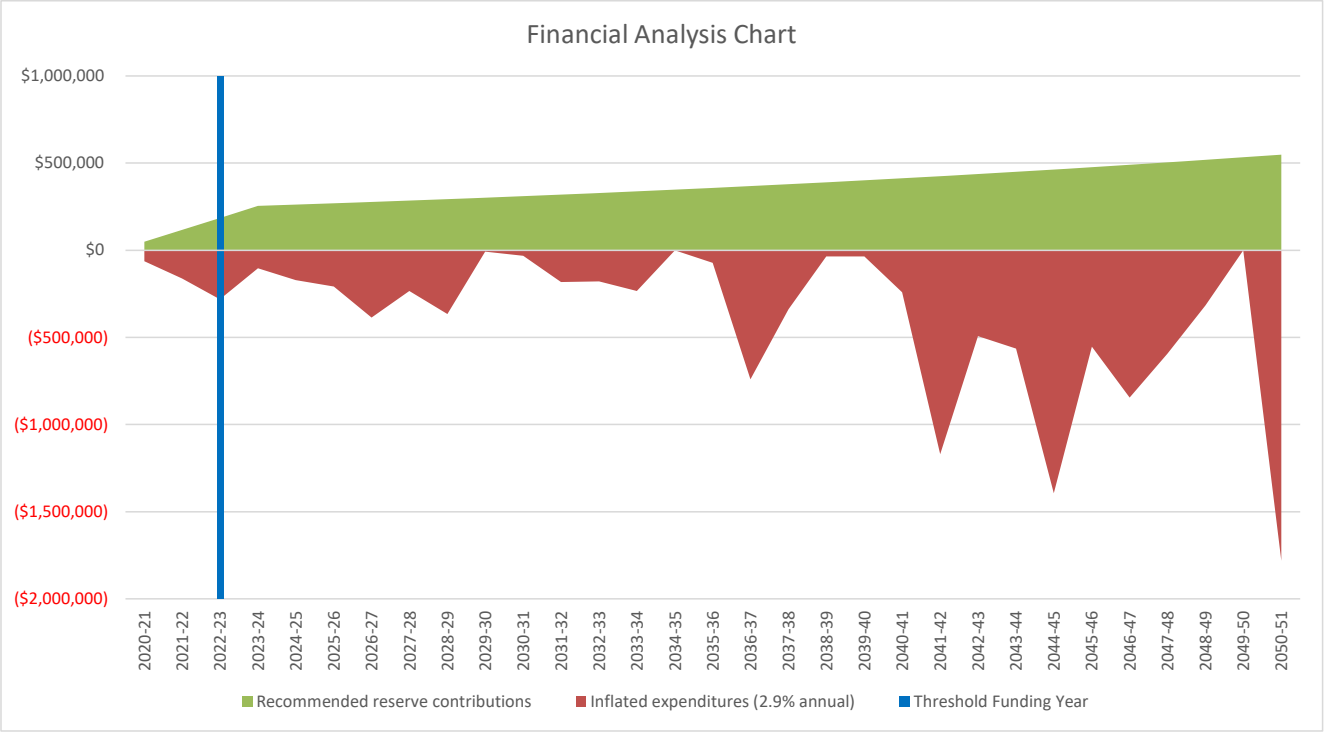
* reserve contributions are budgeted

**The costs in this column represent an AVERAGE $ only and is only intended to put the $ into perspective.

***2022-23 is the THRESHOLD FUNDING YEAR (the year the reserve balance is at its lowest point)

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Wood-Haven Bridges, Inc.



30 Year Expenditure Summary

These summary pages depict the INFLATED reserve expenses during the next 30 years. The costs on these pages SHOULD NOT be compared to current bid costs as these costs are inflated.

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Wood-Haven Bridges, Inc.			threshold funding year					
Fiscal year	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	100.0%	102.9%	105.9%	109.0%	112.1%	115.4%	118.7%	122.2%
Beginning balance (July 1, 2020)	$246,745	$237,035	$196,272	$101,723	$255,360	$351,434	$419,680	$316,279
Inflated expenditures (2.9% annual)	($62,500)	($161,553)	($282,499)	($103,398)	($170,834)	($207,889)	($386,987)	($234,475)
Recommended reserve contributions	$48,000	$116,500	$185,000	$253,500	$260,900	$268,500	$276,300	$284,300
Estimated interest earned (2.0% PROJECTED yield rate)	$4,790	$4,290	$2,950	$3,535	$6,008	$7,635	$7,287	$6,824
Ending reserve balance	$237,035	$196,272	$101,723	$255,360	$351,434	$419,680	$316,279	$372,929

Reserve Component List

Exterior Building Components								
Balconies at Second Floor - Waterproofing and Railings (1)								
Balconies at Third Floor - Waterproofing and Railings								
Bridges - Precast Concrete Slabs								
Bridge Railings - Painting								
Bridge Railings - Replacement		72,030						
Carport Renovation (remaining)		51,450	52,942	54,477				
Gutters and Downspouts (1)								
Lighting - Exterior						1,269	1,306	1,344
Masonry Restoration (1)						17,016	17,510	18,018
Roofs - Asphalt Shingles (1)								
Siding - Metal, Wood and Plywood (1)						94,888	97,640	100,472
Soffits and Fascia - Plywood and Aluminum (1)						49,896	51,343	52,832
Windows and Doors - Common						34,610	35,613	36,646
Interior Building Components								
Carpet - Stairs and Office							81,911	
Lighting - Stairs, Basements and Office (1)								
Mailboxes and Intercoms							17,617	
Painting - Stairs, Basements and Office (1)							75,738	
Vinyl Flooring - Basements								
Building System Components								
Boilers - Building Heat								
Electrical System Main Panels								
Fire Suppression System Heads			12,706					
Laundry Washers and Dryers (10 of 28 every 4 years)				14,164				15,880
Life Safety Systems			131,720					
Lighting - Exit								
Pipes - Domestic Water, Waste and Vent (1)								
Piping and Valves at Incoming Water		25,622	26,365	27,130	27,916			
Pumps - Sump (1 of 7 every 3 years)		7,820			8,521			9,284
Water Heaters (1 of 8 every 3 years)				7,627			8,310	

costs plus inflation

(1) See Property Engineering Review Page 1.201

30 Year Expenditure Summary

These summary pages depict the INFLATED reserve expenses during the next 30 years. The costs on these pages SHOULD NOT be compared to current bid costs as these costs are inflated.

SUPERIOR RESERVE ENGINEERING & CONSULTING

Wood-Haven Bridges, Inc.			threshold funding year					
Fiscal year	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	100.0%	102.9%	105.9%	109.0%	112.1%	115.4%	118.7%	122.2%
Beginning balance (July 1, 2020)	$246,745	$237,035	$196,272	$101,723	$255,360	$351,434	$419,680	$316,279
Inflated expenditures (2.9% annual)	($62,500)	($161,553)	($282,499)	($103,398)	($170,834)	($207,889)	($386,987)	($234,475)
Recommended reserve contributions	$48,000	$116,500	$185,000	$253,500	$260,900	$268,500	$276,300	$284,300
Estimated interest earned (2.0% PROJECTED yield rate)	$4,790	$4,290	$2,950	$3,535	$6,008	$7,635	$7,287	$6,824
Ending reserve balance	$237,035	$196,272	$101,723	$255,360	$351,434	$419,680	$316,279	$372,929

Reserve Component List

Site Components								
Concrete Patios (3 of 28 every 5 years)						2,423		
Concrete Sidewalks (5% every 5 years)						2,596		
Fence - Wood								
Landscape (5% every 5 years)						5,191		
Light Poles and Fixtures								
Pavement - Crack Repair, Patch and Stripe (1)					21,442			
Pavement Replacement (25% every 4 years)					112,955			
Walking Paths - Replace Asphalt with Concrete (remaining)			42,354					
Pipes Serving Subsurface Utilities - Allowance (1)								
Sign (1)		4,631						
Pool Components								
Pool Deck Renovation								
Pool Fence								
Pool Finish - Plaster								
Pool Equipment - Heater			16,412					
Pool Equipment - Pump (1)	2,000							
Pool Equipment - Water Treatment Equipment								
Pool Equipment - Filter	1,700							
Pool Equipment - Electrical and Plumbing (1)								

costs plus inflation

(1) See Property Engineering Review Page 1.201

30 Year Expenditure Summary

These summary pages depict the INFLATED reserve expenses during the next 30 years. The costs on these pages SHOULD NOT be compared to current bid costs as these costs are inflated.

Wood-Haven Bridges, Inc.

Fiscal year	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	125.7%	129.3%	133.1%	137.0%	140.9%	145.0%	149.2%	153.5%
Beginning balance (July 1, 2020)	$372,929	$306,092	$607,080	$899,151	$1,053,670	$1,225,337	$1,353,937	$1,731,688
Inflated expenditures (2.9% annual)	($366,059)	($9,054)	($32,541)	($183,516)	($178,797)	($234,337)	$0	($72,626)
Recommended reserve contributions	$292,500	$301,000	$309,700	$318,700	$327,900	$337,400	$347,200	$357,300
Estimated interest earned (2.0% PROJECTED yield rate)	$6,723	$9,041	$14,913	$19,335	$22,564	$25,537	$30,551	$37,481
Ending reserve balance	$306,092	$607,080	$899,151	$1,053,670	$1,225,337	$1,353,937	$1,731,688	$2,053,843

Reserve Component List

Exterior Building Components								
Balconies at Second Floor - Waterproofing and Railings (1)								
Balconies at Third Floor - Waterproofing and Railings								
Bridges - Precast Concrete Slabs								
Bridge Railings - Painting				36,292				
Bridge Railings - Replacement								
Carport Renovation (remaining)								
Gutters and Downspouts (1)								
Lighting - Exterior	1,383							
Masonry Restoration (1)	18,540							22,648
Roofs - Asphalt Shingles (1)								
Siding - Metal, Wood and Plywood (1)	103,385							
Soffits and Fascia - Plywood and Aluminum (1)	54,364							
Windows and Doors - Common	37,709							
Interior Building Components								
Carpet - Stairs and Office								
Lighting - Stairs, Basements and Office (1)								
Mailboxes and Intercoms								
Painting - Stairs, Basements and Office (1)								
Vinyl Flooring - Basements								
Building System Components								
Boilers - Building Heat						223,316		
Electrical System Main Panels								
Fire Suppression System Heads								
Laundry Washers and Dryers (10 of 28 every 4 years)				17,804				19,961
Life Safety Systems								
Lighting - Exit				10,545				
Pipes - Domestic Water, Waste and Vent (1)								
Piping and Valves at Incoming Water								
Pumps - Sump (1 of 7 every 3 years)			10,115			11,021		
Water Heaters (1 of 8 every 3 years)		9,054			9,865			10,748

Costs plus Inflation

(1) See Property Engineering Review Page 1.201

30 Year Expenditure Summary

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Wood-Haven Bridges, Inc.

Fiscal year	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	125.7%	129.3%	133.1%	137.0%	140.9%	145.0%	149.2%	153.5%
Beginning balance (July 1, 2020)	$372,929	$306,092	$607,080	$899,151	$1,053,670	$1,225,337	$1,353,937	$1,731,688
Inflated expenditures (2.9% annual)	($366,059)	($9,054)	($32,541)	($183,516)	($178,797)	($234,337)	$0	($72,626)
Recommended reserve contributions	$292,500	$301,000	$309,700	$318,700	$327,900	$337,400	$347,200	$357,300
Estimated interest earned (2.0% PROJECTED yield rate)	$6,723	$9,041	$14,913	$19,335	$22,564	$25,537	$30,551	$37,481
Ending reserve balance	$306,092	$607,080	$899,151	$1,053,670	$1,225,337	$1,353,937	$1,731,688	$2,053,843

Reserve Component List

Site Components								
Concrete Patios (3 of 28 every 5 years)			2,795					3,224
Concrete Sidewalks (5% every 5 years)			2,995					3,455
Fence - Wood				7,258				
Landscape (5% every 5 years)			5,989					6,909
Light Poles and Fixtures								
Pavement - Crack Repair, Patch and Stripe (1)	24,039				26,952			
Pavement Replacement (25% every 4 years)	126,639				141,981			
Walking Paths - Replace Asphalt with Concrete (remaining)								
Pipes Serving Subsurface Utilities - Allowance (1)			10,647					
Sign (1)								
Pool Components								
Pool Deck Renovation				9,861				
Pool Fence				16,708				
Pool Finish - Plaster				44,509				
Pool Equipment - Heater								
Pool Equipment - Pump (1)								3,071
Pool Equipment - Water Treatment Equipment				2,739				
Pool Equipment - Filter								2,610
Pool Equipment - Electrical and Plumbing (1)				37,799				

Costs Plus Inflation

(1) See Property Engineering Review Page 1.201

30 Year Expenditure Summary

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Wood-Haven Bridges, Inc.

Fiscal year	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	158.0%	162.6%	167.3%	172.1%	177.1%	182.3%	187.6%	193.0%
Beginning balance (July 1, 2020)	$2,053,843	$1,719,043	$1,794,064	$2,186,488	$2,599,109	$2,822,902	$2,126,927	$2,112,029
Inflated expenditures (2.9% annual)	($739,856)	($338,162)	($36,386)	($35,462)	($242,190)	($1,169,283)	($493,468)	($564,906)
Recommended reserve contributions	$367,700	$378,400	$389,400	$400,700	$412,300	$424,300	$436,600	$449,300
Estimated interest earned (2.0% PROJECTED yield rate)	$37,355	$34,783	$39,411	$47,382	$53,683	$49,008	$41,970	$41,085
Ending reserve balance	$1,719,043	$1,794,064	$2,186,488	$2,599,109	$2,822,902	$2,126,927	$2,112,029	$2,037,508

Reserve Component List

Exterior Building Components								
Balconies at Second Floor - Waterproofing and Railings (1)								
Balconies at Third Floor - Waterproofing and Railings								
Bridges - Precast Concrete Slabs								
Bridge Railings - Painting						48,302		
Bridge Railings - Replacement								
Carport Renovation (remaining)								
Gutters and Downspouts (1)	42,264	43,490						
Lighting - Exterior								
Masonry Restoration (1)	23,304	23,980	24,676					
Roofs - Asphalt Shingles (1)	263,063	270,692						
Siding - Metal, Wood and Plywood (1)								
Soffits and Fascia - Plywood and Aluminum (1)								
Windows and Doors - Common								
Interior Building Components								
Carpet - Stairs and Office	109,017							
Lighting - Stairs, Basements and Office (1)								
Mailboxes and Intercoms								
Painting - Stairs, Basements and Office (1)	100,801							
Vinyl Flooring - Basements								
Building System Components								
Boilers - Building Heat								
Electrical System Main Panels						670,765		
Fire Suppression System Heads								
Laundry Washers and Dryers (10 of 28 every 4 years)				22,379				25,090
Life Safety Systems								
Lighting - Exit								
Pipes - Domestic Water, Waste and Vent (1)						437,456	450,142	463,196
Piping and Valves at Incoming Water								
Pumps - Sump (1 of 7 every 3 years)	12,008			13,083			14,254	
Water Heaters (1 of 8 every 3 years)			11,710			12,759		

Costs plus Inflation

(1) See Property Engineering Review Page 1.201

30 Year Expenditure Summary

These summary pages depict the INFLATED reserve expenses during the next 30 years. The costs on these pages SHOULD NOT be compared to current bid costs as these costs are inflated.

Wood-Haven Bridges, Inc.

Fiscal year	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	158.0%	162.6%	167.3%	172.1%	177.1%	182.3%	187.6%	193.0%
Beginning balance (July 1, 2020)	$2,053,843	$1,719,043	$1,794,064	$2,186,488	$2,599,109	$2,822,902	$2,126,927	$2,112,029
Inflated expenditures (2.9% annual)	($739,856)	($338,162)	($36,386)	($35,462)	($242,190)	($1,169,283)	($493,468)	($564,906)
Recommended reserve contributions	$367,700	$378,400	$389,400	$400,700	$412,300	$424,300	$436,600	$449,300
Estimated interest earned (2.0% PROJECTED yield rate)	$37,355	$34,783	$39,411	$47,382	$53,683	$49,008	$41,970	$41,085
Ending reserve balance	$1,719,043	$1,794,064	$2,186,488	$2,599,109	$2,822,902	$2,126,927	$2,112,029	$2,037,508

Reserve Component List

Site Components								
Concrete Patios (3 of 28 every 5 years)					3,720			
Concrete Sidewalks (5% every 5 years)					3,986			
Fence - Wood								
Landscape (5% every 5 years)					7,971			
Light Poles and Fixtures								
Pavement - Crack Repair, Patch and Stripe (1)	30,217				33,077			
Pavement Replacement (25% every 4 years)	159,181				178,465			
Walking Paths - Replace Asphalt with Concrete (remaining)								
Pipes Serving Subsurface Utilities - Allowance (1)					14,171			
Sign (1)								
Pool Components								
Pool Deck Renovation								13,896
Pool Fence								
Pool Finish - Plaster								62,724
Pool Equipment - Heater							29,072	
Pool Equipment - Pump (1)								
Pool Equipment - Water Treatment Equipment								
Pool Equipment - Filter								
Pool Equipment - Electrical and Plumbing (1)								

Costs plus Inflation

(1) See Property Engineering Review Page 1.201

30 Year Expenditure Summary

These summary pages depict the INFLATED reserve expenses during the next 30 years. The costs on these pages SHOULD NOT be compared to current bid costs as these costs are inflated.

Wood-Haven Bridges, Inc.

Fiscal year	2044-45	2045-46	2046-47	2047-48	2048-49	2049-50	2050-51
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	198.6%	204.4%	210.3%	216.4%	222.7%	229.1%	235.8%
Beginning balance (July 1, 2020)	$2,037,508	$1,137,351	$1,080,804	$742,927	$666,076	$883,045	$1,439,339
Inflated expenditures (2.9% annual)	($1,393,891)	($554,210)	($845,434)	($594,501)	($316,670)	$0	($1,780,541)
Recommended reserve contributions	$462,300	$475,700	$489,500	$503,700	$518,300	$533,300	$548,800
Estimated interest earned (2.0% PROJECTED yield rate)	$31,434	$21,962	$18,057	$13,951	$15,338	$22,994	$16,469
Ending reserve balance	$1,137,351	$1,080,804	$742,927	$666,076	$883,045	$1,439,339	$224,067

Reserve Component List

Exterior Building Components							
Balconies at Second Floor - Waterproofing and Railings (1)	400,368						
Balconies at Third Floor - Waterproofing and Railings	232,158						
Bridges - Precast Concrete Slabs							1,697,437
Bridge Railings - Painting							
Bridge Railings - Replacement							
Carport Renovation (remaining)							
Gutters and Downspouts (1)							
Lighting - Exterior							2,593
Masonry Restoration (1)		30,142	31,016	31,916	32,841		
Roofs - Asphalt Shingles (1)							
Siding - Metal, Wood and Plywood (1)							
Soffits and Fascia - Plywood and Aluminum (1)							
Windows and Doors - Common							
Interior Building Components							
Carpet - Stairs and Office			145,094				
Lighting - Stairs, Basements and Office (1)			16,822				
Mailboxes and Intercoms							
Painting - Stairs, Basements and Office (1)			134,159				
Vinyl Flooring - Basements							15,560
Building System Components							
Boilers - Building Heat							
Electrical System Main Panels							
Fire Suppression System Heads							
Laundry Washers and Dryers (10 of 28 every 4 years)				28,129			
Life Safety Systems							
Lighting - Exit							
Pipes - Domestic Water, Waste and Vent (1)	476,629	490,451	504,674	519,310			
Piping and Valves at Incoming Water							
Pumps - Sump (1 of 7 every 3 years)		15,531			16,922		
Water Heaters (1 of 8 every 3 years)	13,902			15,147			16,503

Costs plus inflation

(1) See Property Engineering Review Page 1.201

30 Year Expenditure Summary

These summary pages depict the INFLATED reserve expenses during the next 30 years. The costs on these pages SHOULD NOT be compared to current bid costs as these costs are inflated.

Wood-Haven Bridges, Inc.

Fiscal year	2044-45	2045-46	2046-47	2047-48	2048-49	2049-50	2050-51
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	198.6%	204.4%	210.3%	216.4%	222.7%	229.1%	235.8%
Beginning balance (July 1, 2020)	$2,037,508	$1,137,351	$1,080,804	$742,927	$666,076	$883,045	$1,439,339
Inflated expenditures (2.9% annual)	($1,393,891)	($554,210)	($845,434)	($594,501)	($316,670)	$0	($1,780,541)
Recommended reserve contributions	$462,300	$475,700	$489,500	$503,700	$518,300	$533,300	$548,800
Estimated interest earned (2.0% PROJECTED yield rate)	$31,434	$21,962	$18,057	$13,951	$15,338	$22,994	$16,469
Ending reserve balance	$1,137,351	$1,080,804	$742,927	$666,076	$883,045	$1,439,339	$224,067

Reserve Component List

Site Components							
Concrete Patios (3 of 28 every 5 years)		4,291					4,951
Concrete Sidewalks (5% every 5 years)		4,598					5,304
Fence - Wood							
Landscape (5% every 5 years)		9,196					10,609
Light Poles and Fixtures	32,768						
Pavement - Crack Repair, Patch and Stripe (1)	37,981				12,583		
Pavement Replacement (25% every 4 years)	200,085				224,324		
Walking Paths - Replace Asphalt with Concrete (remaining)							
Pipes Serving Subsurface Utilities - Allowance (1)							18,860
Sign (1)			9,463				
Pool Components							
Pool Deck Renovation							
Pool Fence							
Pool Finish - Plaster							
Pool Equipment - Heater							
Pool Equipment - Pump (1)							4,715
Pool Equipment - Water Treatment Equipment			4,206				
Pool Equipment - Filter							4,008
Pool Equipment - Electrical and Plumbing (1)							

Costs plus Inflation

(1) See Property Engineering Review Page 1.201

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2020-21

Hybrid Reserve Expenditures and Funding Plan

July 1, 2020 through June 30, 2021

Year of forecast:	0
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2020-21:	100.0%
Unaudited, provided, beginning reserve balance as of July 1, 2020:	$246,745
Budgeted reserve contribution: +	$48,000
Estimated interest earned (2.0% yield rate): +	$4,790
Total contributions: =	$52,790

Wood-Haven Bridges, Inc.

2020-21 Expenditures	Number of phases	Flexibility	Engineering Data Section	
2020-21 Reserve Expenses	1	firm	-	($58,800)
Pool Equipment - Pump (1)	1	deferrable	8.501	($2,000)
Pool Equipment - Filter	1	deferrable	8.501	($1,700)
Total expenditures:				($62,500)
			Ending reserve balance:	$237,035

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2021

2021-22

Hybrid Reserve Expenditures and Funding Plan

July 1, 2021 through June 30, 2022

Year of forecast:	1
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2021-22:	102.9%
Beginning reserve balance:	$237,035
Recommended reserve contribution: +	$116,500
Estimated interest earned (2.0% PROJECTED yield rate): +	$4,290
Total contributions: =	$120,790

Wood-Haven Bridges, Inc.

2021-22 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Bridge Railings - Replacement	1	deferrable	2.161	($72,030)
Carport Renovation (remaining)	3	deferrable	2.297	($51,450)
Piping and Valves at Incoming Water	4	deferrable	4.607	($25,622)
Pumps - Sump (1 of 7 every 3 years)	1	deferrable	4.641	($7,820)
Sign (1)	1	deferrable	6.961	($4,631)
Total expenditures:				($161,553)
			Ending reserve balance:	$196,272

1.404.2022

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2022-23 (Threshold)

Hybrid Reserve Expenditures and Funding Plan

July 1, 2022 through June 30, 2023

Year of forecast:	2
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2022-23 (Threshold):	105.9%
Beginning reserve balance:	$196,272
Recommended reserve contribution: +	$185,000
Estimated interest earned (2.0% PROJECTED yield rate): +	$2,950
Total contributions: =	$187,950

Wood-Haven Bridges, Inc.

2022-23 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Carport Renovation (remaining)	3	deferrable	2.297	($52,942)
Fire Suppression System Heads	1	deferrable	4.347	($12,706)
Life Safety Systems	1	firm	4.541	($131,720)
Piping and Valves at Incoming Water	4	deferrable	4.607	($26,365)
Walking Paths - Replace Asphalt with Concrete (remaining)	1	deferrable	6.701	($42,354)
Pool Equipment - Heater	1	deferrable	8.501	($16,412)
Total expenditures:				($282,499)
			Ending reserve balance:	$101,723

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2023

2023-24

Hybrid Reserve Expenditures and Funding Plan

July 1, 2023 through June 30, 2024

Year of forecast:	3
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2023-24:	109.0%
Beginning reserve balance:	$101,723
Recommended reserve contribution: +	$253,500
Estimated interest earned (2.0% PROJECTED yield rate): +	$3,535
Total contributions: =	$257,035

Wood-Haven Bridges, Inc.

2023-24 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Carport Renovation (remaining)	3	deferrable	2.297	($54,477)
Laundry Washers and Dryers (10 of 28 every 4 years)	1	deferrable	4.521	($14,164)
Piping and Valves at Incoming Water	4	deferrable	4.607	($27,130)
Water Heaters (1 of 8 every 3 years)	1	firm	4.801	($7,627)
Total expenditures:				($103,398)
			Ending reserve balance:	$255,360

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2024

2024-25

Hybrid Reserve Expenditures and Funding Plan

July 1, 2024 through June 30, 2025

Year of forecast:	4
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2024-25:	112.1%
Beginning reserve balance:	$255,360
Recommended reserve contribution: +	$260,900
Estimated interest earned (2.0% PROJECTED yield rate): +	$6,008
Total contributions: =	$266,908

Wood-Haven Bridges, Inc.

2024-25 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Piping and Valves at Incoming Water	4	deferrable	4.607	($27,916)
Pumps - Sump (1 of 7 every 3 years)	1	deferrable	4.641	($8,521)
Pavement - Crack Repair, Patch and Stripe (1)	1	firm	6.641	($21,442)
Pavement Replacement (25% every 4 years)	1	deferrable	6.661	($112,955)
Total expenditures:				($170,834)
			Ending reserve balance:	$351,434

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2025

2025-26

Hybrid Reserve Expenditures and Funding Plan

July 1, 2025 through June 30, 2026

Year of forecast:	5
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2025-26:	115.4%
Beginning reserve balance:	$351,434
Recommended reserve contribution: +	$268,500
Estimated interest earned (2.0% PROJECTED yield rate): +	$7,635
Total contributions: =	$276,135

Wood-Haven Bridges, Inc.

2025-26 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Lighting - Exterior	4	deferrable	2.381	($1,269)
Masonry Restoration (1)	4	deferrable	2.421	($17,016)
Siding - Metal, Wood and Plywood (1)	4	deferrable	2.761	($94,888)
Soffits and Fascia - Plywood and Aluminum (1)	4	deferrable	2.891	($49,896)
Windows and Doors - Common	4	deferrable	2.981	($34,610)
Concrete Patios (3 of 28 every 5 years)	1	deferrable	6.161	($2,423)
Concrete Sidewalks (5% every 5 years)	1	deferrable	6.181	($2,596)
Landscape (5% every 5 years)	1	discretionary	6.541	($5,191)
Total expenditures:				($207,889)
			Ending reserve balance:	$419,680

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2026

2026-27

Hybrid Reserve Expenditures and Funding Plan

July 1, 2026 through June 30, 2027

Year of forecast:	6
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2026-27:	118.7%
Beginning reserve balance:	$419,680
Recommended reserve contribution: +	$276,300
Estimated interest earned (2.0% PROJECTED yield rate): +	$7,287
Total contributions: =	$283,587

Wood-Haven Bridges, Inc.

2026-27 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Lighting - Exterior	4	deferrable	2.381	($1,306)
Masonry Restoration (1)	4	deferrable	2.421	($17,510)
Siding - Metal, Wood and Plywood (1)	4	deferrable	2.761	($97,640)
Soffits and Fascia - Plywood and Aluminum (1)	4	deferrable	2.891	($51,343)
Windows and Doors - Common	4	deferrable	2.981	($35,613)
Carpet - Stairs and Office	1	deferrable	3.101	($81,911)
Mailboxes and Intercoms	1	deferrable	3.541	($17,617)
Painting - Stairs, Basements and Office (1)	1	discretionary	3.601	($75,738)
Water Heaters (1 of 8 every 3 years)	1	firm	4.801	($8,310)
Total expenditures:				($386,987)
			Ending reserve balance:	$316,279

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2027

2027-28

Hybrid Reserve Expenditures and Funding Plan

July 1, 2027 through June 30, 2028

Year of forecast:	7
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2027-28:	122.2%
Beginning reserve balance:	$316,279
Recommended reserve contribution: +	$284,300
Estimated interest earned (2.0% PROJECTED yield rate): +	$6,824
Total contributions: =	$291,124

Wood-Haven Bridges, Inc.

2027-28 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Lighting - Exterior	4	deferrable	2.381	($1,344)
Masonry Restoration (1)	4	deferrable	2.421	($18,018)
Siding - Metal, Wood and Plywood (1)	4	deferrable	2.761	($100,472)
Soffits and Fascia - Plywood and Aluminum (1)	4	deferrable	2.891	($52,832)
Windows and Doors - Common	4	deferrable	2.981	($36,646)
Laundry Washers and Dryers (10 of 28 every 4 years)	1	deferrable	4.521	($15,880)
Pumps - Sump (1 of 7 every 3 years)	1	deferrable	4.641	($9,284)
Total expenditures:				($234,475)
			Ending reserve balance:	$372,929

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2028

2028-29

Hybrid Reserve Expenditures and Funding Plan

July 1, 2028 through June 30, 2029

Year of forecast:	8
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2028-29:	125.7%
Beginning reserve balance:	$372,929
Recommended reserve contribution: +	$292,500
Estimated interest earned (2.0% PROJECTED yield rate): +	$6,723
Total contributions: =	$299,223

Wood-Haven Bridges, Inc.

2028-29 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Lighting - Exterior	4	deferrable	2.381	($1,383)
Masonry Restoration (1)	4	deferrable	2.421	($18,540)
Siding - Metal, Wood and Plywood (1)	4	deferrable	2.761	($103,385)
Soffits and Fascia - Plywood and Aluminum (1)	4	deferrable	2.891	($54,364)
Windows and Doors - Common	4	deferrable	2.981	($37,709)
Pavement - Crack Repair, Patch and Stripe (1)	1	firm	6.641	($24,039)
Pavement Replacement (25% every 4 years)	1	deferrable	6.661	($126,639)
Total expenditures:				($366,059)
			Ending reserve balance:	$306,092

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2029

2029-30

Hybrid Reserve Expenditures and Funding Plan

July 1, 2029 through June 30, 2030

Year of forecast:	9
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2029-30:	129.3%
Beginning reserve balance:	$306,092
Recommended reserve contribution: +	$301,000
Estimated interest earned (2.0% PROJECTED yield rate): +	$9,041
Total contributions: =	$310,041

Wood-Haven Bridges, Inc.

2029-30 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Water Heaters (1 of 8 every 3 years)	1	firm	4.801	($9,054)
Total expenditures:				($9,054)
			Ending reserve balance:	$607,080

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2030-31

Hybrid Reserve Expenditures and Funding Plan

July 1, 2030 through June 30, 2031

Year of forecast:	10
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2030-31:	133.1%
Beginning reserve balance:	$607,080
Recommended reserve contribution: +	$309,700
Estimated interest earned (2.0% PROJECTED yield rate): +	$14,913
Total contributions: =	$324,613

Wood-Haven Bridges, Inc.

2030-31 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Pumps - Sump (1 of 7 every 3 years)	1	deferrable	4.641	($10,115)
Concrete Patios (3 of 28 every 5 years)	1	deferrable	6.161	($2,795)
Concrete Sidewalks (5% every 5 years)	1	deferrable	6.181	($2,995)
Landscape (5% every 5 years)	1	discretionary	6.541	($5,989)
Pipes Serving Subsurface Utilities - Allowance (1)	1	deferrable	-	($10,647)
Total expenditures:				($32,541)
			Ending reserve balance:	$899,151

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2031-32

Hybrid Reserve Expenditures and Funding Plan

July 1, 2031 through June 30, 2032

Year of forecast:	11
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2031-32:	137.0%
Beginning reserve balance:	$899,151
Recommended reserve contribution: +	$318,700
Estimated interest earned (2.0% PROJECTED yield rate): +	$19,335
Total contributions: =	$338,035

Wood-Haven Bridges, Inc.

2031-32 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Bridge Railings - Painting	1	firm	2.161	($36,292)
Laundry Washers and Dryers (10 of 28 every 4 years)	1	deferrable	4.521	($17,804)
Lighting - Exit	1	deferrable	4.561	($10,545)
Fence - Wood	1	deferrable	6.281	($7,258)
Pool Deck Renovation	1	deferrable	8.101	($9,861)
Pool Fence	1	deferrable	8.201	($16,708)
Pool Finish - Plaster	1	deferrable	8.301	($44,509)
Pool Equipment - Water Treatment Equipment	1	deferrable	8.501	($2,739)
Pool Equipment - Electrical and Plumbing (1)	1	deferrable	8.501	($37,799)
Total expenditures:				($183,516)
			Ending reserve balance:	$1,053,670

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2032-33

Hybrid Reserve Expenditures and Funding Plan

July 1, 2032 through June 30, 2033

Year of forecast:	12
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2032-33:	140.9%
Beginning reserve balance:	$1,053,670
Recommended reserve contribution: +	$327,900
Estimated interest earned (2.0% PROJECTED yield rate): +	$22,564
Total contributions: =	$350,464

Wood-Haven Bridges, Inc.

2032-33 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Water Heaters (1 of 8 every 3 years)	1	firm	4.801	($9,865)
Pavement - Crack Repair, Patch and Stripe (1)	1	firm	6.641	($26,952)
Pavement Replacement (25% every 4 years)	1	deferrable	6.661	($141,981)
Total expenditures:				($178,797)
			Ending reserve balance:	$1,225,337

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2033

2033-34

Hybrid Reserve Expenditures and Funding Plan

July 1, 2033 through June 30, 2034

Year of forecast:	13
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2033-34:	145.0%
Beginning reserve balance:	$1,225,337
Recommended reserve contribution: +	$337,400
Estimated interest earned (2.0% PROJECTED yield rate): +	$25,537
Total contributions: =	$362,937

Wood-Haven Bridges, Inc.

2033-34 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Boilers - Building Heat	1	firm	4.221	($223,316)
Pumps - Sump (1 of 7 every 3 years)	1	deferrable	4.641	($11,021)
Total expenditures:				($234,337)
			Ending reserve balance:	$1,353,937

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2034

2034-35

Hybrid Reserve Expenditures and Funding Plan

July 1, 2034 through June 30, 2035

Year of forecast:	14
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2034-35:	149.2%
Beginning reserve balance:	$1,353,937
Recommended reserve contribution: +	$347,200
Estimated interest earned (2.0% PROJECTED yield rate): +	$30,551
Total contributions: =	$377,751

Wood-Haven Bridges, Inc.

2034-35 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Total expenditures:				$0
			Ending reserve balance:	$1,731,688

SUPERIOR RESERVE
ENGINEERING & CONSULTING

1.404.2035

2035-36

Hybrid Reserve Expenditures and Funding Plan

July 1, 2035 through June 30, 2036

Year of forecast:	15
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2035-36:	153.5%
Beginning reserve balance:	$1,731,688
Recommended reserve contribution: +	$357,300
Estimated interest earned (2.0% PROJECTED yield rate): +	$37,481
Total contributions: =	$394,781

Wood-Haven Bridges, Inc.

2035-36 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Masonry Restoration (1)	4	deferrable	2.421	($22,648)
Laundry Washers and Dryers (10 of 28 every 4 years)	1	deferrable	4.521	($19,961)
Water Heaters (1 of 8 every 3 years)	1	firm	4.801	($10,748)
Concrete Patios (3 of 28 every 5 years)	1	deferrable	6.161	($3,224)
Concrete Sidewalks (5% every 5 years)	1	deferrable	6.181	($3,455)
Landscape (5% every 5 years)	1	discretionary	6.541	($6,909)
Pool Equipment - Pump (1)	1	deferrable	8.501	($3,071)
Pool Equipment - Filter	1	deferrable	8.501	($2,610)
Total expenditures:				($72,626)
			Ending reserve balance:	$2,053,843

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2036-37

Hybrid Reserve Expenditures and Funding Plan

July 1, 2036 through June 30, 2037

Year of forecast:	16
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2036-37:	158.0%
Beginning reserve balance:	$2,053,843
Recommended reserve contribution: +	$367,700
Estimated interest earned (2.0% PROJECTED yield rate): +	$37,355
Total contributions: =	$405,055

Wood-Haven Bridges, Inc.

2036-37 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Gutters and Downspouts (1)	2	deferrable	2.361	($42,264)
Masonry Restoration (1)	4	deferrable	2.421	($23,304)
Roofs - Asphalt Shingles (1)	2	firm	2.441	($263,063)
Carpet - Stairs and Office	1	deferrable	3.101	($109,017)
Painting - Stairs, Basements and Office (1)	1	discretionary	3.601	($100,801)
Pumps - Sump (1 of 7 every 3 years)	1	deferrable	4.641	($12,008)
Pavement - Crack Repair, Patch and Stripe (1)	1	firm	6.641	($30,217)
Pavement Replacement (25% every 4 years)	1	deferrable	6.661	($159,181)
Total expenditures:				($739,856)
			Ending reserve balance:	$1,719,043

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2037-38

Hybrid Reserve Expenditures and Funding Plan

July 1, 2037 through June 30, 2038

Year of forecast:	17
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2037-38:	162.6%
Beginning reserve balance:	$1,719,043
Recommended reserve contribution: +	$378,400
Estimated interest earned (2.0% PROJECTED yield rate): +	$34,783
Total contributions: =	$413,183

Wood-Haven Bridges, Inc.

2037-38 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Gutters and Downspouts (1)	2	deferrable	2.361	($43,490)
Masonry Restoration (1)	4	deferrable	2.421	($23,980)
Roofs - Asphalt Shingles (1)	2	firm	2.441	($270,692)
Total expenditures:				($338,162)
			Ending reserve balance:	$1,794,064

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2038-39

Hybrid Reserve Expenditures and Funding Plan

July 1, 2038 through June 30, 2039

Year of forecast:	18
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2038-39:	167.3%
Beginning reserve balance:	$1,794,064
Recommended reserve contribution: +	$389,400
Estimated interest earned (2.0% PROJECTED yield rate): +	$39,411
Total contributions: =	$428,811

Wood-Haven Bridges, Inc.

2038-39 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Masonry Restoration (1)	4	deferrable	2.421	($24,676)
Water Heaters (1 of 8 every 3 years)	1	firm	4.801	($11,710)
Total expenditures:				($36,386)
			Ending reserve balance:	$2,186,488

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2039-40

Hybrid Reserve Expenditures and Funding Plan

July 1, 2039 through June 30, 2040

Year of forecast:	19
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2039-40:	172.1%
Beginning reserve balance:	$2,186,488
Recommended reserve contribution: +	$400,700
Estimated interest earned (2.0% PROJECTED yield rate): +	$47,382
Total contributions: =	$448,082

Wood-Haven Bridges, Inc.

2039-40 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Laundry Washers and Dryers (10 of 28 every 4 years)	1	deferrable	4.521	($22,379)
Pumps - Sump (1 of 7 every 3 years)	1	deferrable	4.641	($13,083)
Total expenditures:				($35,462)
			Ending reserve balance:	$2,599,109

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2040-41

Hybrid Reserve Expenditures and Funding Plan

July 1, 2040 through June 30, 2041

Year of forecast:	20
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2040-41:	177.1%
Beginning reserve balance:	$2,599,109
Recommended reserve contribution: +	$412,300
Estimated interest earned (2.0% PROJECTED yield rate): +	$53,683
Total contributions: =	$465,983

Wood-Haven Bridges, Inc.

2040-41 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Concrete Patios (3 of 28 every 5 years)	1	deferrable	6.161	($3,720)
Concrete Sidewalks (5% every 5 years)	1	deferrable	6.181	($3,986)
Landscape (5% every 5 years)	1	discretionary	6.541	($7,971)
Pavement - Crack Repair, Patch and Stripe (1)	1	firm	6.641	($33,877)
Pavement Replacement (25% every 4 years)	1	deferrable	6.661	($178,465)
Pipes Serving Subsurface Utilities - Allowance (1)	1	deferrable	-	($14,171)
Total expenditures:				($242,190)
			Ending reserve balance:	$2,822,902

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2041-42

Hybrid Reserve Expenditures and Funding Plan

July 1, 2041 through June 30, 2042

Year of forecast:	21
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2041-42:	182.3%
Beginning reserve balance:	$2,822,902
Recommended reserve contribution: +	$424,300
Estimated interest earned (2.0% PROJECTED yield rate): +	$49,008
Total contributions: =	$473,308

Wood-Haven Bridges, Inc.

2041-42 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Bridge Railings - Painting	1	firm	2.161	($48,302)
Electrical System Main Panels	1	deferrable	4.341	($670,765)
Pipes - Domestic Water, Waste and Vent (1)	7	deferrable	4.601	($437,456)
Water Heaters (1 of 8 every 3 years)	1	firm	4.801	($12,759)
Total expenditures:				($1,169,283)
			Ending reserve balance:	$2,126,927

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2042-43

Hybrid Reserve Expenditures and Funding Plan

July 1, 2042 through June 30, 2043

Year of forecast:	22
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2042-43:	187.6%
Beginning reserve balance:	$2,126,927
Recommended reserve contribution: +	$436,600
Estimated interest earned (2.0% PROJECTED yield rate): +	$41,970
Total contributions: =	$478,570

Wood-Haven Bridges, Inc.

2042-43 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Pipes - Domestic Water, Waste and Vent (1)	7	deferrable	4.601	($450,142)
Pumps - Sump (1 of 7 every 3 years)	1	deferrable	4.641	($14,254)
Pool Equipment - Heater	1	deferrable	8.501	($29,072)
Total expenditures:				($493,468)
			Ending reserve balance:	$2,112,029

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2043-44

Hybrid Reserve Expenditures and Funding Plan

July 1, 2043 through June 30, 2044

Year of forecast:	23
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2043-44:	193.0%
Beginning reserve balance:	$2,112,029
Recommended reserve contribution: +	$449,300
Estimated interest earned (2.0% PROJECTED yield rate): +	$41,085
Total contributions: =	$490,385

Wood-Haven Bridges, Inc.

2043-44 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Laundry Washers and Dryers (10 of 28 every 4 years)	1	deferrable	4.521	($25,090)
Pipes - Domestic Water, Waste and Vent (1)	7	deferrable	4.601	($463,196)
Pool Deck Renovation	1	deferrable	8.101	($13,896)
Pool Finish - Plaster	1	deferrable	8.301	($62,724)
Total expenditures:				($564,906)
			Ending reserve balance:	$2,037,508

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2044-45

Hybrid Reserve Expenditures and Funding Plan

July 1, 2044 through June 30, 2045

Year of forecast:	24
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2044-45:	198.6%
Beginning reserve balance:	$2,037,508
Recommended reserve contribution: +	$462,300
Estimated interest earned (2.0% PROJECTED yield rate): +	$31,434
Total contributions: =	$493,734

Wood-Haven Bridges, Inc.

2044-45 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Balconies at Second Floor - Waterproofing and Railings (1)	1	deferrable	2.142	($400,368)
Balconies at Third Floor - Waterproofing and Railings	1	firm	2.145	($232,158)
Pipes - Domestic Water, Waste and Vent (1)	7	deferrable	4.601	($476,629)
Water Heaters (1 of 8 every 3 years)	1	firm	4.801	($13,902)
Light Poles and Fixtures	1	deferrable	6.601	($32,768)
Pavement - Crack Repair, Patch and Stripe (1)	1	firm	6.641	($37,981)
Pavement Replacement (25% every 4 years)	1	deferrable	6.661	($200,085)
Total expenditures:				($1,393,891)
			Ending reserve balance:	$1,137,351

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2045-46

Hybrid Reserve Expenditures and Funding Plan

July 1, 2045 through June 30, 2046

Year of forecast:	25
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2045-46:	204.4%
Beginning reserve balance:	$1,137,351
Recommended reserve contribution: +	$475,700
Estimated interest earned (2.0% PROJECTED yield rate): +	$21,962
Total contributions: =	$497,662

Wood-Haven Bridges, Inc.

2045-46 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Masonry Restoration (1)	4	deferrable	2.421	($30,142)
Pipes - Domestic Water, Waste and Vent (1)	7	deferrable	4.601	($490,451)
Pumps - Sump (1 of 7 every 3 years)	1	deferrable	4.641	($15,531)
Concrete Patios (3 of 28 every 5 years)	1	deferrable	6.161	($4,291)
Concrete Sidewalks (5% every 5 years)	1	deferrable	6.181	($4,598)
Landscape (5% every 5 years)	1	discretionary	6.541	($9,196)
Total expenditures:				($554,210)
			Ending reserve balance:	$1,080,804

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2046-47

Hybrid Reserve Expenditures and Funding Plan

July 1, 2046 through June 30, 2047

Year of forecast:	26
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2046-47:	210.3%
Beginning reserve balance:	$1,080,804
Recommended reserve contribution: +	$489,500
Estimated interest earned (2.0% PROJECTED yield rate): +	$18,057
Total contributions: =	$507,557

Wood-Haven Bridges, Inc.

2046-47 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Masonry Restoration (1)	4	deferrable	2.421	($31,016)
Carpet - Stairs and Office	1	deferrable	3.101	($145,094)
Lighting - Stairs, Basements and Office (1)	1	deferrable	3.421	($16,822)
Painting - Stairs, Basements and Office (1)	1	discretionary	3.601	($134,159)
Pipes - Domestic Water, Waste and Vent (1)	7	deferrable	4.601	($504,674)
Sign (1)	1	deferrable	6.961	($9,463)
Pool Equipment - Water Treatment Equipment	1	deferrable	8.501	($4,206)
Total expenditures:				($845,434)
			Ending reserve balance:	$742,927

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2047-48

Hybrid Reserve Expenditures and Funding Plan

July 1, 2047 through June 30, 2048

Year of forecast:	27
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2047-48:	216.4%
Beginning reserve balance:	$742,927
Recommended reserve contribution: +	$503,700
Estimated interest earned (2.0% PROJECTED yield rate): +	$13,951
Total contributions: =	$517,651

Wood-Haven Bridges, Inc.

2047-48 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Masonry Restoration (1)	4	deferrable	2.421	($31,916)
Laundry Washers and Dryers (10 of 28 every 4 years)	1	deferrable	4.521	($28,129)
Pipes - Domestic Water, Waste and Vent (1)	7	deferrable	4.601	($519,310)
Water Heaters (1 of 8 every 3 years)	1	firm	4.801	($15,147)
Total expenditures:				($594,501)
			Ending reserve balance:	$666,076

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2048-49

Hybrid Reserve Expenditures and Funding Plan

July 1, 2048 through June 30, 2049

Year of forecast:	28
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2048-49:	222.7%
Beginning reserve balance:	$666,076
Recommended reserve contribution: +	$518,300
Estimated interest earned (2.0% PROJECTED yield rate): +	$15,338
Total contributions: =	$533,638

Wood-Haven Bridges, Inc.

2048-49 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Masonry Restoration (1)	4	deferrable	2.421	($32,841)
Pumps - Sump (1 of 7 every 3 years)	1	deferrable	4.641	($16,922)
Pavement - Crack Repair, Patch and Stripe (1)	1	firm	6.641	($42,583)
Pavement Replacement (25% every 4 years)	1	deferrable	6.661	($224,324)
Total expenditures:				($316,670)
			Ending reserve balance:	$883,045

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2049-50

Hybrid Reserve Expenditures and Funding Plan

July 1, 2049 through June 30, 2050

Year of forecast:	29
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2049-50:	229.1%
Beginning reserve balance:	$883,045
Recommended reserve contribution: +	$533,300
Estimated interest earned (2.0% PROJECTED yield rate): +	$22,994
Total contributions: =	$556,294

Wood-Haven Bridges, Inc.

2049-50 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Total expenditures:				$0
			Ending reserve balance:	$1,439,339

SUPERIOR RESERVE
ENGINEERING & CONSULTING

2050-51

Hybrid Reserve Expenditures and Funding Plan

July 1, 2050 through June 30, 2051

Year of forecast:	30
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2050-51:	235.8%
Beginning reserve balance:	$1,439,339
Recommended reserve contribution: +	$548,800
Estimated interest earned (2.0% PROJECTED yield rate): +	$16,469
Total contributions: =	$565,269

Wood-Haven Bridges, Inc.

2050-51 Expenditures (inflated)	Number of phases	Flexibility	Engineering Data Section	
Bridges - Precast Concrete Slabs	1	deferrable	2.147	($1,697,437)
Lighting - Exterior	4	deferrable	2.381	($2,593)
Vinyl Flooring - Basements	1	deferrable	3.791	($15,560)
Water Heaters (1 of 8 every 3 years)	1	firm	4.801	($16,503)
Concrete Patios (3 of 28 every 5 years)	1	deferrable	6.161	($4,951)
Concrete Sidewalks (5% every 5 years)	1	deferrable	6.181	($5,304)
Landscape (5% every 5 years)	1	discretionary	6.541	($10,609)
Pipes Serving Subsurface Utilities - Allowance (1)	1	deferrable	-	($18,860)
Pool Equipment - Pump (1)	1	deferrable	8.501	($4,715)
Pool Equipment - Filter	1	deferrable	8.501	($4,008)
Total expenditures:				($1,780,541)
			Ending reserve balance:	$224,067

WoodhavenCondominiums

2020-2021

Budget /By Unit Size

	2020-2021 Yearly Budget	2020-2021 Monthly Budget	Size 0.750%	Size 0.796%	Size 0.986%	Size 1.109%	Size 1.171%
Utilities							
01 Water	14,000.00	1,166.67	8.75	9.29	11.50	12.94	13.66
02 Sewer	23,000.00	1,916.67	14.38	15.26	18.90	21.26	22.44
03 Electric	22,000.00	1,833.33	13.75	14.59	18.08	20.33	21.47
04 Gas	45,000.00	3,750.00	28.13	29.85	36.98	41.59	43.91
05 Refuse	19,000.00	1,583.33	11.88	12.60	15.61	17.56	18.54
06 Telephone	325.00	27.08	0.20	0.22	0.27	0.30	0.32
Total Utilities	**123,325.00**	**10,277.08**	**77.08**	**81.81**	**101.33**	**113.97**	**120.34**
Maintenance General							
07 Snow	22,000.00	1,833.33	13.75	14.59	18.08	20.33	21.47
08 Grounds Maintenance	36,046.50	3,003.88	22.53	23.91	29.62	33.31	35.18
09 Janitorial	6,500.00	541.67	4.06	4.31	5.34	6.01	6.34
10 Pest Control	2,844.00	237.00	1.78	1.89	2.34	2.63	2.78
11 Pool	6,000.00	500.00	3.75	3.98	4.93	5.55	5.86
12 Fire Extinguishers	1,000.00	83.33	0.63	0.66	0.82	0.92	0.98
13 Misc. Expenses	22,000.00	1,833.33	13.75	14.59	18.08	20.33	21.47
14 Carpet Cleaning	2,000.00	166.67	1.25	1.33	1.64	1.85	1.95
14A Beautification Fund	1,500.00	125.00	0.94	1.00	1.23	1.39	1.46
Total Maintenance General	**99,890.50**	**8,324.21**	**62.43**	**66.26**	**82.08**	**92.32**	**97.48**
Maintenance Repair							
15 Plumbing	5,000.00	416.67	3.13	3.32	4.11	4.62	4.88
16 Electrical	2,500.00	208.33	1.56	1.66	2.05	2.31	2.44
17 Intercoms	1,500.00	125.00	0.94	1.00	1.23	1.39	1.46
19 Contract Labor	16,000.00	1,333.33	10.00	10.61	13.15	14.79	15.61
20 Boiler	12,000.00	1,000.00	7.50	7.96	9.86	11.09	11.71
Total Maintenance Repair	**37,000.00**	**3,083.33**	**23.13**	**24.54**	**30.40**	**34.19**	**36.11**
Administrative							
21 Mailings & meeting	750.00	62.50	0.47	0.50	0.62	0.69	0.73
22 Accounting/Management	3,528.00	294.00	2.21	2.34	2.90	3.26	3.44
23 Legal Expenses	2,000.00	166.67	1.25	1.33	1.64	1.85	1.95
24 Petty Cash	2,400.00	200.00	1.50	1.59	1.97	2.22	2.34
25 Misc.	4,000.00	333.33	2.50	2.65	3.29	3.70	3.90
26 Insurance	24,000.00	2,000.00	15.00	15.92	19.72	22.18	23.42
Total Administrative	**36,678.00**	**3,056.50**	**22.92**	**24.33**	**30.14**	**33.90**	**35.79**
Reserve Accounts							
27 Capital Reserve	48,000.00	4,000.00	30.00	31.84	39.44	44.36	46.84
Total Reserve Accounts	**48,000.00**	**4,000.00**	**30.00**	**31.84**	**39.44**	**44.36**	**46.84**
Total Expenses	**344,893.50**	**28,741.13**	**215.56**	**228.78**	**283.39**	**318.74**	**336.56**
2020-2021 Monthly Fee			**216.00**	**229.00**	**283.00**	**319.00**	**337.00**

Wood-Haven Bridges Condominium

Meeting Minutes

July 21, 2020

****Call to order**

Tim Quigley called to order the regular meeting of the Board of Directors at Wood-Haven Condominiums at 8:25 a.m. on July 21, 2020

****Roll Call**

These people were present: Tim Quigley, Al Jelinek, Pat Hildenbrand, Sherry Quigley, Brad Gollman, Tom Wood (Maintenance), John Komas (accountant)
Absent: Judy Hinze

****Approval of minutes from last meeting**

Minutes read and approved.

****Approval of financial report**

John Komas read financial report for the month of July 2020. Report Approved.

Associated Bank for Washer & Dryer	$ ~~16,721.92~~ 22,266.74
Waukesha State Bank for Checkbook	$ 48,152.56
Waukesha State Bank for Reserve	$ 120,286.17
Landmark CU for Reserve #8	$ 5.00
Landmark CU for Reserve #12	$ 26,315.85
Landmark CU for Reserve #13	$ 26,216.81
Landmark CU for Reserve #14	$ 26,263.67
Landmark CU for Reserve #15	$ 25,390.62
Total Funds Available	**~~$ 289,352.60~~** 294,892.42

*****NOTICE:** To date there are three unit owners with delinquent maintenance payments.

****Homeowner's concerns:** No homeowners concerns brought to meeting.

****Committee's Reports**

a. Rules & Regulations: A brief Rules & Regulations overview will be distributed to everyone as a reminder of some of the Rules that need to be reviewed at this time. All Annual Emergency Contact forms must be turned in and updated if necessary. Remember that this info is for the Boards use only but is extremely important if an emergency occurs.

6/30/20 Reserve 246,744.86

Summary of Qualifications

Justin J. Maier, P.E., RS
Partner



Services

Justin J. Maier is a partner and co-founder of Superior Reserve Engineering and Consulting. Justin J. Maier provides *expert* reserve and transition studies, and property engineering reviews. Properties that have benefited from his experience include townhome associations, condominium associations, planned unit developments, marinas, resorts, hotels, churches and country clubs. These properties vary from complex high rise buildings to vintage buildings of historical significance. He has provided these services to *more than* 1,900 properties throughout the United States and worldwide.

Prior Experience

Prior to co-founding Superior Reserve with Nik J. Clark, Mr. Maier had conducted reserve and transition studies with Reserve Advisors for 14 years. During this time, he was the Director of Product Development where he oversaw the development, improvement and production efficiency of reserve and transition studies for the firm. He was the leading producer of reserve and transition studies. Mr. Maier was instrumental in improving the quality of reports both in content, clarity and appearance. Reserve Advisors experienced tremendous success based on the standard of reserve and transition study quality that he implemented.

Mr. Maier was a structural engineer for Wausau Window and Wall Systems. There he analyzed stresses in horizontal and vertical components of aluminum frame curtain wall window systems in projects throughout the United States for both wind pressure and suction loads. He was involved in field work to correct improperly installed system components.

Mr. Maier was an Assistant Engineer for Crest Consulting Engineers. His services required on-site field investigation of architectural and structural failures, analysis of the preexisting design and conditions, and determination of the design shortfalls or owner modifications that caused the failures. He designed remedial repairs, produced cost estimates for the repairs, prepared the specifications and oversaw the implementation of the repairs.

Expert Witness

Through the expert witness of Mr. Maier, the Villages at Cumberland Trail in Columbus, Ohio and The Retreat Homeowners Association in Indianapolis, Indiana were able to successfully negotiate a settlement for their construction defects.

Education

Milwaukee School of Engineering (MSOE) - Bachelors of Science in Architectural Engineering

Professional Affiliations

Professional Engineer (P.E.) - licenses held in WI, IL, OH, NY, TX, DC, VA, MD, MI, MN, PA
Reserve Specialist (RS) - credential awarded by Community Association's Institute (CAI)
Certified Pool / Spa Operator - issued by the National Swimming Pool Foundation

Terms, Conditions and Limitations

1) Superior Reserve Engineering & Consulting (SREC) will perform a visual inspection of the property. While due diligence will be exercised during the onsite inspection, we make no representations regarding latent or hidden defects not observable from a visual inspection. We do not conduct invasive or destructive testing nor provide an exhaustive review of building code compliance. Material testing, core sampling, performance testing of building or site elements and equipment is not part of the scope of work.
2) Our opinions of estimated costs and remaining useful lives are not a guarantee of the actual costs of replacement, a warranty of the common elements or other property elements, or a guarantee of remaining useful lives.
3) SREC may rely on information provided to us, by the client named in this contract, in our report. We assume information provided to us by the client to be correct and assume no liability for the accuracy of information provided to us by the client. You agree to indemnify and hold us harmless against and from any and all losses, claims, actions, damages, expenses or liabilities, including reasonable attorneys' fees, to which we may become subject in connection with this engagement, because of any false, misleading or incomplete information which we have relied upon as supplied by you or others under your direction, or which may result from any improper use or reliance on the report by you or third parties under your control or direction.
4) Our Reserve Study Report in whole or part is not and cannot be used as a design specification, design engineering services or an appraisal.
5) Substances such as asbestos, urea-formaldehyde foam insulation, other chemicals, toxic wastes, environmental mold or other potentially hazardous materials could, if present, adversely affect the validity of this study. Unless otherwise stated in this report, the existence of hazardous substance, that may or may not be present on or in the property, was not considered. Our opinions are predicated on the assumption that there are no hazardous materials on or in the property. We assume no responsibility for any such conditions. We are not qualified to detect such substances, quantify the impact, or develop the remedial cost.
6) In the event of errors in our report, SREC's liability is limited to the cost of this study.

SUPERIOR RESERVE
ENGINEERING & CONSULTING

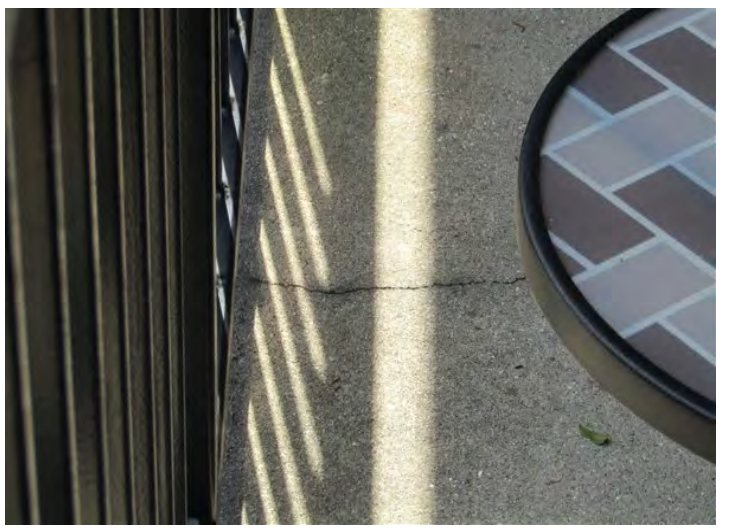
Balconies at Second Floor - Waterproofing and Railings

Materials:	precast concrete slabs, metal railings and metallic waterproofing
Overall condition:	good to fair
Specific condition:	cracks in concrete
Quantity (square feet):	3,200
Quantity (each):	56
Railing height:	43 inches (satisfies the 36 inch minimum height code requirement)
Railing picket spacing:	3.75 inches edge to edge (satisfies the 4 inch maximum spacing code requirement)
Replacement cost ($/s.f.):	$63
Replacement cost ($/each):	$3,600
Replacement total cost:	**$201,600**
Operating expenses:	annual inspections to repair unsafe conditions, securing of loose connections, replacement of deteriorated components, washing and painting
Anticipated expenses:	topside concrete replacement (1%) concrete crack repairs metallic waterproofing on topsides caulk joint at buildings railings fascia
Soffit replacement:	see Page 2.891

Engineering solutions: The second floor balconies at the front elevations (elevations opposite of the bridge elevations) have a metallic waterproofing and metal perimeter fascia. Water flowing off the balcony waterproofing flows under the metal perimeter fascia rather than over. This will result in accelerated deterioration of the underlying concrete due to the misdirection of the storm water. The perimeter fascia should be installed under the balcony waterproofing at the time of replacement. The property could also install a liquid applied traffic coating to the topsides of the balconies, which is commonly done on concrete balconies. We recommend installing waterproofing at all second floor balconies (front and rear elevations) and our cost reflects this assumption.



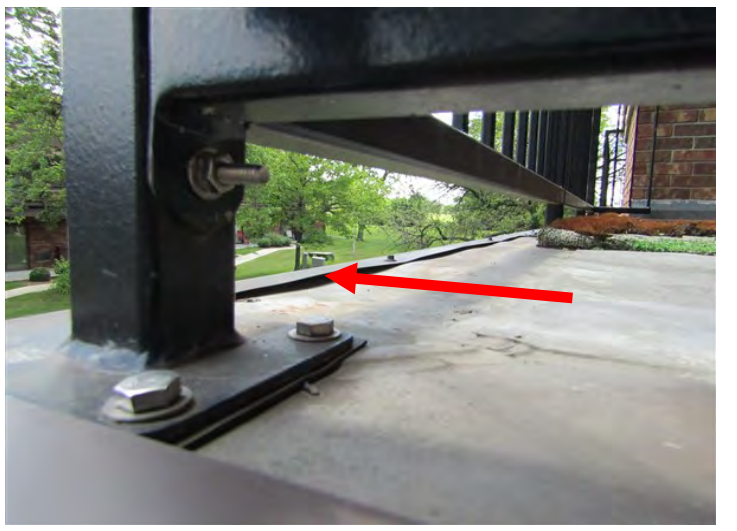
concrete balconies with metal railings (no metallic waterproofing on balconies at bridge elevations)



crack in concrete at balcony without metallic waterproofing



metallic waterproofing



water can flow between metallic waterproofing and fascia

SUPERIOR RESERVE
ENGINEERING & CONSULTING

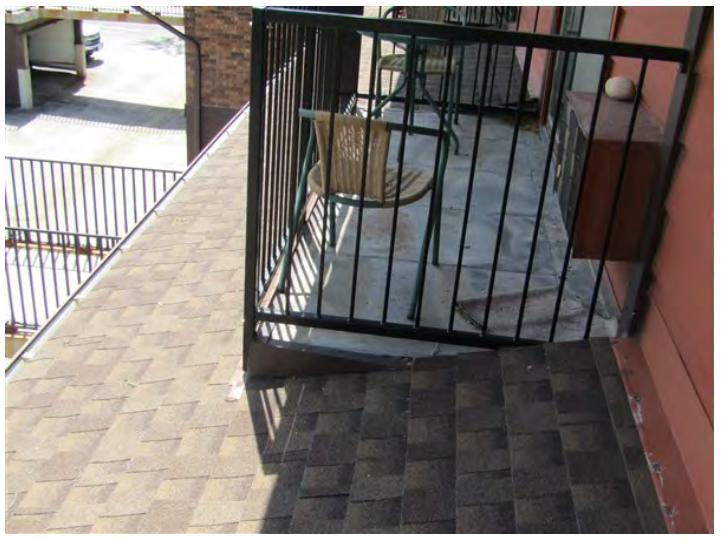
Balconies at Third Floor - Waterproofing and Railings

Roofing material:	EPDM
Height of roof (stories):	3
Overall condition:	good
Specific condition:	no visible deterioration
Leaks:	no known leaks
Quantity (each):	28
Cost each:	$4,200
Current total cost:	**$116,900**
Anticipated expenses:	remove existing roofing replace roof insulation (see building code) replace flashing 45 mils sheet EPDM roofing height/access difficulties replace railings
Homeowner responsibility:	decking


third floor balcony


waterproofing beneath wood deck


third floor balcony

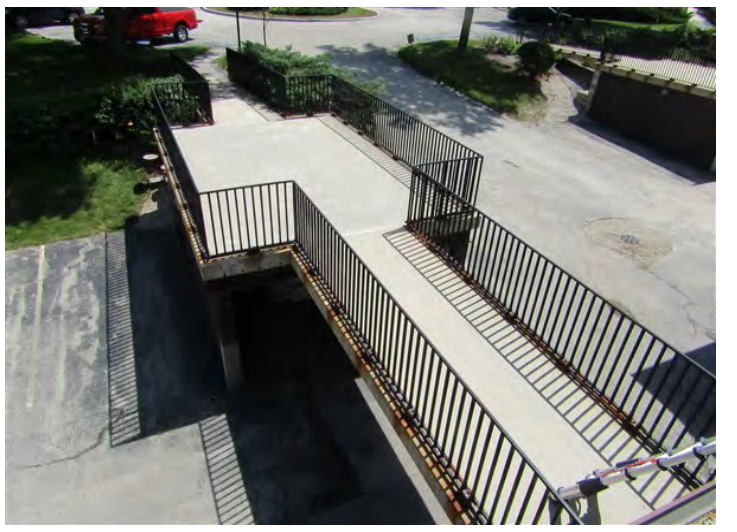

third floor balcony

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Bridges - Precast Concrete Slabs

Material: precast concrete

Drip edge at underside: Surface tension allows storm water to flow down the edge and to the underside of the balconies. The concrete balconies properly include a formed drip edge at the undersides to minimize damage from this storm water.


concrete bridge

Drainage configuration: bridges drain water over the edge

Overall condition: good to fair

Specific condition: isolated locations of chipped concrete and stains from railing rust

Quantity (each): 14

Quantity (square feet): 7,100

Cost ($/square foot): $101

Cost ($/each): $51,400

Current total cost: **$720,000**

Cost per home: $6,429

Anticipated expenses: mobilization
consulting fees
replace concrete

Replacement of railings: see Page 2.161


concrete bridge

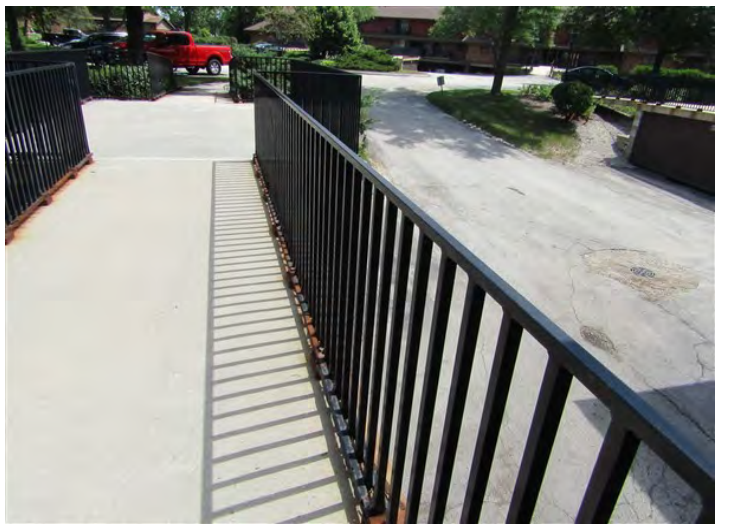

isolated chipped concrete


underside of bridge

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Bridge Railings

Material:	steel
Overall condition:	**poor**
Specific condition:	rust and peeling paint
Quantity (linear feet):	1,900
Connection:	bolted
Railing height:	42 inches (satisfies the 36 inch minimum height code requirement)
Picket spacing:	3.5 inches edge to edge (satisfies the 4 inch maximum spacing code requirement)
Picket orientation:	vertical (ideal)
Cost to paint ($/foot):	$14
Current paint cost:	**$26,500**
Cost to paint per home:	$237
Cost to replace ($/foot):	$37
Current replacement cost:	**$70,000**
Cost to replace per home:	$625
Operating expenses:	securing of loose connections, touch up painting



steel railings



peeling paint



major rust



rust and peeling paint

SUPERIOR RESERVE
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Carport Renovation

Materials: concrete bocks and metal frames

Overall condition: **new to poor**

Specific condition: deterioration of concrete block supporting bridges, rust at metal frames and two carports have been renovated

Quantity (each): 14

Cost ($/each): $12,500

Current total cost: **$175,000**

Cost per home: $1,563

Anticipated expenses: shoring of bridges
replace concrete block w/ metal framing
replace metal framing
rebuild stud walls


deterioration of concrete block at carport supporting bridge


rust at metal framing


block replaced with metal frame


new metal framing

SUPERIOR RESERVE
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Gutters and Downspouts

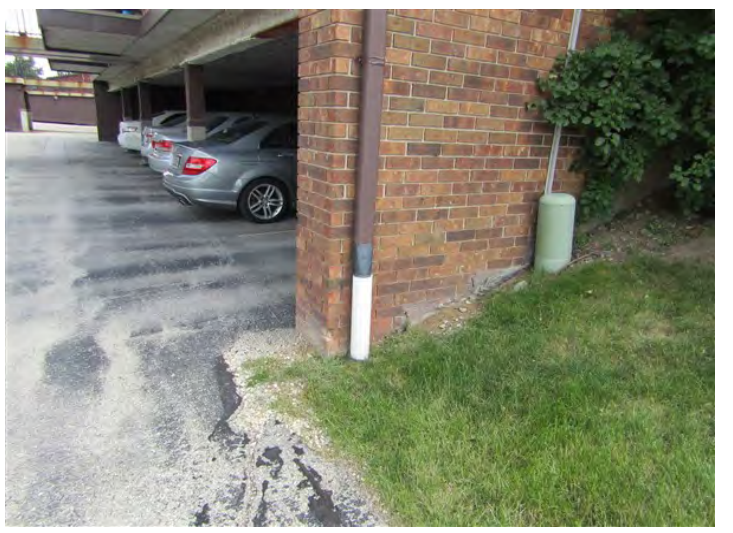
Material:	aluminum
Gutter profile:	6 inch seamless K-style
Gutter fasteners:	screws
Downspout size:	3 by 4 inch (adequate)
Discharge configuration:	into subterranean piping and within 10 feet of foundations
Overall condition:	good to fair
Specific condition:	normal weathering
Quantity (linear feet):	5,300
Quantity also includes:	cabana
Per home (linear feet):	50
Cost ($/linear foot):	$10.10
Current total cost:	**$53,500**
Cost per home:	$478
Coordinate with:	roofs
Operating expenses:	semiannual inspections, repairs at seams and fastening points, cleaning and verification that the downspouts discharge away from foundations
Cost includes:	remove gutters and downspouts install 6 inch gutters (.027 thick) install 3 by 4 inch gutters (.020 thick) mobilization



aluminum 6 inch gutters and 3 by 4 inch downspouts



gutters attached with screws



downspouts discharge into subterranean piping

Engineering solutions: A portion of the downspouts discharge into subterranean piping. Another portion of the downspouts discharge through long extensions on the surface which are unsightly, prone to damage and discharge within 10 feet of the foundations. We recommend the installation of subterranean downspout extensions that discharge 10 feet away from the buildings through pop-up drainage emitters in the landscape areas. We estimate a cost of $250 per downspout for this repair. We recommend subterranean PVC pipes with glued connections to elbows (similar to interior plumbing) to minimize the potential for root and dirt penetration at joints.



long downspout extensions but downspouts still discharge within 10 feet of the foundations

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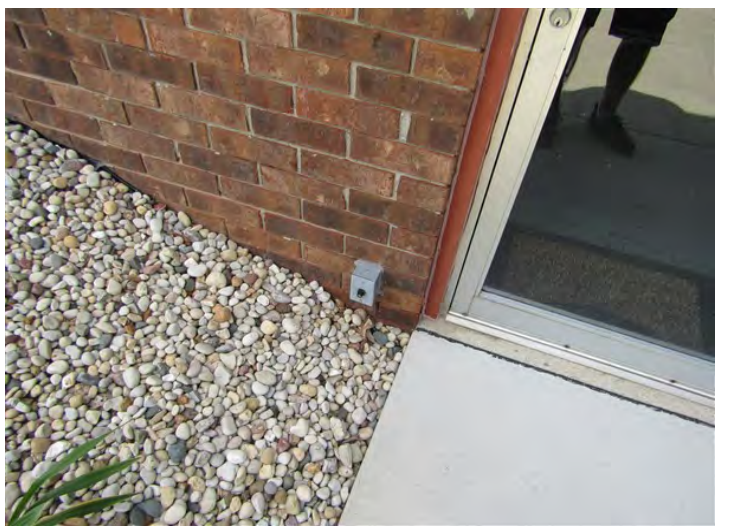
Lighting - Exterior

Material:	metal
Glass type:	opaque
Number of bulbs per fixture:	1
Daylight sensors:	exist (energy efficient)
Overall condition:	good to fair
Specific condition:	normal weathering
Quantity (each):	44
Quantity also includes:	cabana
Cost ($ each):	$100
Current total cost:	**$4,400**
Cost per home:	$39
Assumptions:	reuse of existing wiring and access for replacement is from the interior


metal light fixture with opaque glass


daylight sensor


light at office


lights at entrances

SUPERIOR RESERVE
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Masonry Restoration

Construction:

3 by 9.5 inch masonry units
painted concrete block at lower level
running bond pattern
mortar joints are raked (not ideal for climate)
brick sills (higher maintenance cost)
lintel (note 1) weeps and flashing not visible



cladding and caulking inappropriately installed over lintel

Overall condition: **good to poor**

Specific conditions:

efflorescence (note 2) is evident
masonry units exhibit cracks
mortar exhibits step cracks
spalled masonry is not evident
lintels exhibit rust jacking (note 3)
caulking exhibits deterioration
previous repairs are evident



chimney crown

Quantity (square feet): 39,000

Per home (square feet): 350

Cost ($/square foot): $1.50

Current total cost: **$59,000**

Cost per home: $527

Anticipated work:

mobilization
replace lintels (5%)
paint lintels
repoint (note 4) masonry (5%)
replace masonry (limited amount)
paint concrete block
caulk at windows and doors (50%)
chimney crown repairs



brick sill and cracked caulk

Engineering solutions: We note the use of caulk to repair mortar joints. Mortar allows any water within the wall to weep out. The application of caulk will trap moisture in the walls and result in accelerated deterioration of the masonry. The property should remove the caulk and repair any deteriorated joints with mortar.



crack in block

(note 1) Structural supports above openings in masonry that transfer the above weight onto the main structural system.

(note 2) White, powdery deposit of soluble salts carried to the surface of masonry by moisture. The moisture evaporates, leaving the residue.

(note 3) Cracks in the masonry due to rusting and expanding of the lintel steel.

(note 4) Raking and cutting out defective mortar to a depth of not less than ½ inch nor more than ¾ inch and replacing it with new mortar. Face grouting is the process of placing mortar over top of the existing mortar. We advise against face grouting.

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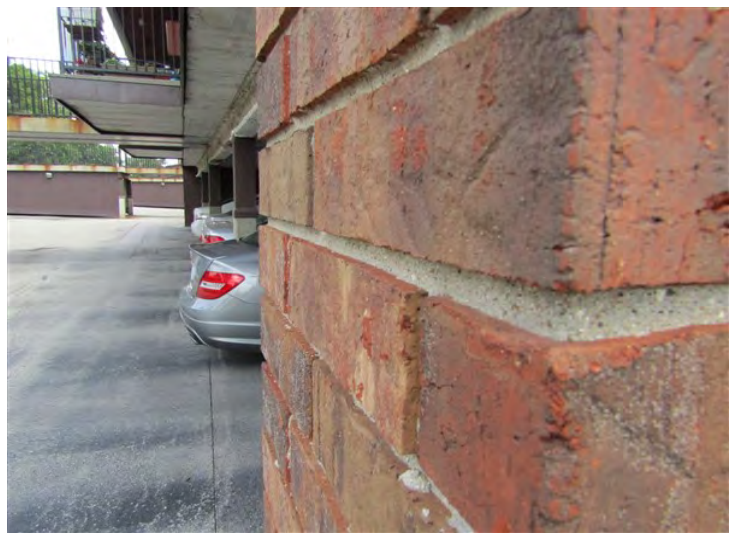
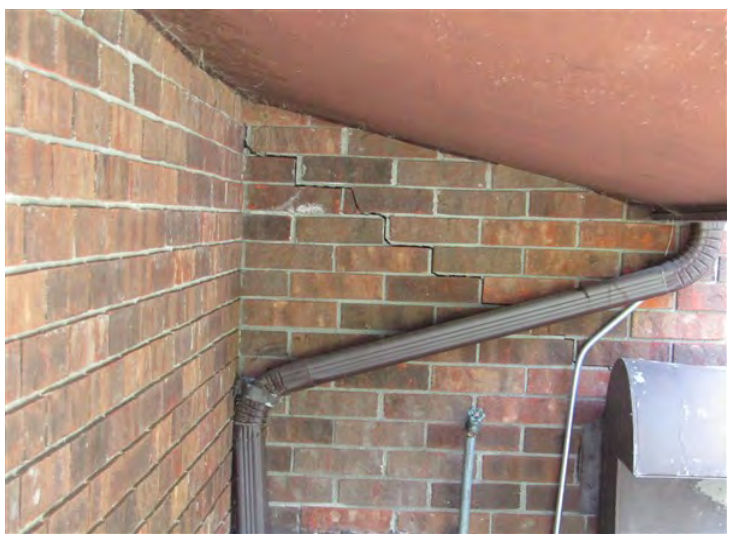
painted block



raked mortar joints - not ideal for northern climate as this allows for accumulation of snow and ice which can damage the masonry



cracked brick at office



inappropriate use of caulk at mortar joints



rust at lintel



cracked brick



cracks in mortar due to lintel rust jacking



efflorescence

SUPERIOR RESERVE
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Roofs - Asphalt Shingles

Roof composition:
laminated architectural asphalt shingles
Boston style ridge shingles
metal drip edge (note 1)
ridge vents (adequate)
rubber and plastic flashing at vent pipes
sealed nail heads (proper)
self adhering underlayment at gutter edge


roof with laminated architectural asphalt shingles

Overall condition: good to fair

Specific condition: history of leaks, granule loss, isolated damage and sagging structure


shingle overview

Quantity in squares(note 2): 680

Quantity also includes: cabana shingle and flat roofs

Per home (squares): 6

Cost ($/square): $490

Current total cost: **$333,000**

Cost per home: $2,973

Operating expenses: semi annual inspections and repairs

Anticipated expenses:
total removal of existing roofing (note 3)
structural and sheathing repair contingency
metal drip edge at roof perimeters
lead boot flashing at waste pipes
#15 felt underlayment
self adhering underlayment at roof edges
Class A 240-260 pounds/square shingles
rooftop ventilation
bathroom vents discharge through roofs
cabana flat roof
height/access difficulties


granule loss at shingle edges

Engineering solutions: See the Property Engineering Review (Section 1.201) for our observations on the condition of the roofs.


overview of roof - notice box vents are not at the ridges

(note 1) Metal flashing at the perimeter of the roof that directs water away from the structure. The absence of this roofing component increases the likelihood of water infiltration.

(note 2) One square equals 100 square feet.

(note 3) Benefits of total replacement (rather than overlay/shingle over) include: 1) replacement of deteriorated sheathing, and proper flashing at penetrations and roof perimeters 2) ensuring the new shingles will lay properly 3) ensuring the useful life of the new shingles will not be diminished due to continued deterioration of underlying shingles 4) cost of removal will not be deferred to future budgets.



cabana flat roof



missing kick-out flashing



sagging structure



self adhering underlayment at gutter edge



roof overview



ridge shingles



shingle damage



cupped shingle

SUPERIOR RESERVE
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Siding - Metal, Wood and Plywood

Material:	metal, wood and plywood
Profile:	lap with 8-inch exposure
J channel (note 1):	exists at windows, doors and other penetrations (proper)
Gap between siding & roof:	does not exist (note 3)
Flashing at openings:	does not exist
Overall condition:	**fair to poor**
Specific condition:	weathering and faded color
Quantity (square feet):	31,000
Quantity also includes:	cabana and carports
Per home (square feet):	280
Cost ($/square foot):	$10.60
Current total cost:	**$329,000**
Cost per home:	$2,938
Coordinate with:	soffits and fascia
Operating expenses:	cleaning and repairs
Anticipated costs:	remove siding install building paper (note 3) and flashing replace with .019 inch thick metal replace address identification height/access difficulties


metal lap siding with 8-inch exposure


color fade


missing flashing


wood siding at entrance

Engineering solutions: The property should consider replacement of the metal, wood and plywood siding with vinyl siding. Vinyl siding is less costly (approximately 80% of the cost of metal) and is commonly used as a replacement of metal siding at condominiums.

(note 1) Trim that conceals the thermal expansion and contraction of siding at end joints. Caulk would typically fail at these locations due to the excessive movement of the siding.
(note 2) The siding throughout the property is in direct contact with the roof. This condition impedes drainage and makes replacement of the shingles more difficult. We recommend a 1/2" gap at these locations. It is our opinion that repairs to these conditions are not necessary at this time. While immediate remediation isn't required, future repairs and replacement should include a 1/2" gap.

(note 3) Siding is an exterior cladding that is not watertight. Water-vapor permeable building paper is necessary to prevent water from contacting sheathing and interior finishes. Lack of building paper will result in water penetration and deterioration of building substrate.

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plywood siding at cabana



plywood siding at cabana



plywood siding deterioration



vinyl siding at cabana



color fade



siding at carport



siding and framing at carport temporarily removed during carport renovation



siding cost includes replacement of address identification

SUPERIOR RESERVE
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Soffits and Fascia - Plywood and Aluminum

Soffit material:	plywood
Ventilation type:	undereave 16x4 soffit vents
Ventilation status:	insufficient
Fascia material:	aluminum
Overall condition:	**fair to poor**
Specific condition:	weathering, peeling paint and damage
Quantity (square feet):	20,900
Per home (square feet):	190
Cost ($/square foot):	$8.30
Current total cost:	**$173,000**
Cost per home:	$1,545
Coordinate with:	siding
Operating expenses:	securing/replacement of loose pieces, clearing vents
Anticipated costs:	remove soffits and fascia 5/8" plywood soffit with continuous vents install .032 inch fascia cladding remove and reinstall gutters height/access difficulties


plywood soffits and aluminum fascia


soffit at second floor balcony


missing fascia cladding

Engineering solutions: The partially vented soffits are inadequate to properly ventilate the attics. Soffit ventilation is necessary to allow air flow into the attics. This air flow helps reduce attic temperatures and maximizes the useful life of the shingles. Balanced air flow through the attics minimizes the potential for ice dams and reduces summer air conditioning costs. Shingle manufacturers recommend one square foot of attic ventilation for every 300 square feet of roof area, with half of this ventilation in the soffits and the other half at the rooftops. We recommend the installation of continuous soffit vents at the time of soffit and fascia replacement. We also recommend an inspection of the attics to ensure the vents are not blocked by insulation at the time of replacement.

Engineering solutions: The property could consider cladding the soffit with aluminum rather than replacing with wood as this would eliminate the need for painting. Also, fully vented aluminum soffits would provide the necessary attic ventilation. It is important that the existing wood soffits are COMPLETELY REMOVED prior to the installation of fully vented aluminum soffits. Cladding over the existing soffits WOULD NOT allow for proper ventilation. We estimate a payback after approximately four painting events.


missing trim piece

SUPERIOR RESERVE
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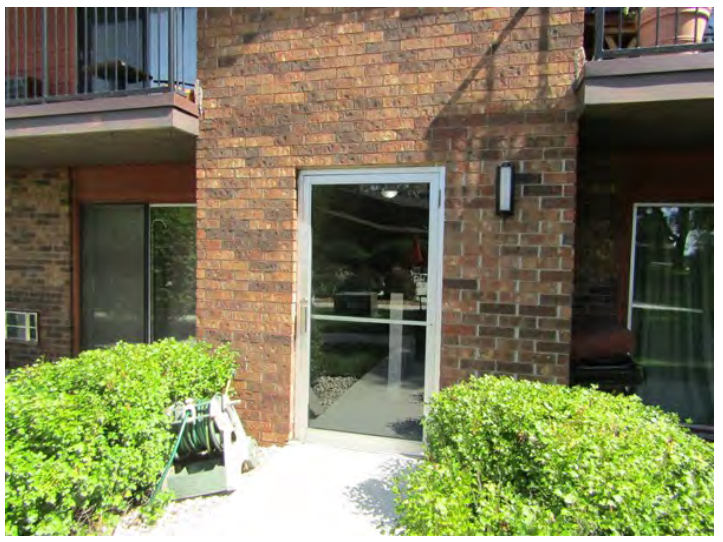
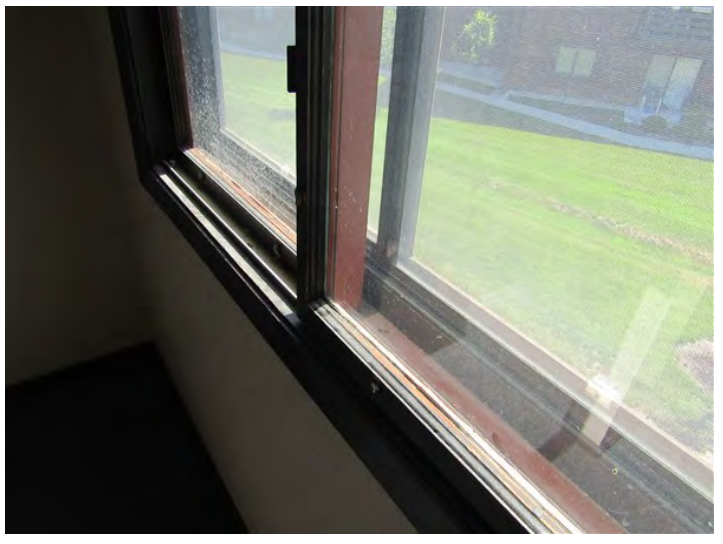
Windows and Doors - Common

Characteristics:	aluminum and wood frames single pane glass (energy inefficient) hinged doors manufactured by *Pittco Architectural Metal*
Overall condition:	fair
Specific condition:	corrosion of metal at door frame and
Quantity (square feet):	1,400
Quantity (each):	48
Locations of common windows and doors:	entrances, stairwells, office, cabana
Cost ($/square foot):	$86
Average cost ($/each):	$2,500
Current total cost:	**$120,000**
Cost per home:	$1,071
Coordinate with:	siding


common door


corrosion of metal at door frame


single pane glass

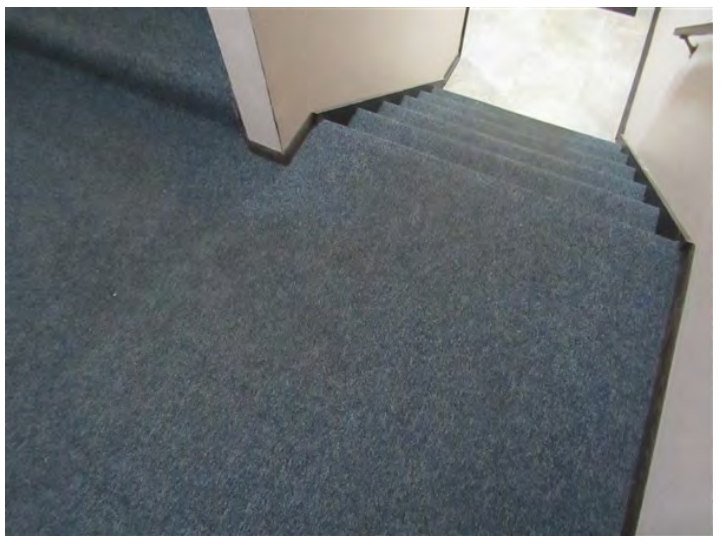

stairwell window

Carpet - Stairs and Office

Locations:	stairs and office
Description:	broadloom loop pile carpet
Patterned layout:	no
Carpet pad:	no
Overall condition:	fair
Specific condition:	stains and wear
Quantity (square yards):	1,300
Per home (square yards):	12
Cost ($/square yard):	$53
Current total cost:	**$69,000**
Cost per home:	$616
Operating expenses:	vacuuming, spot removal and periodic cleanings
Assumptions:	medium traffic weight nylon carpet with 36 ounces of fiber per square yard



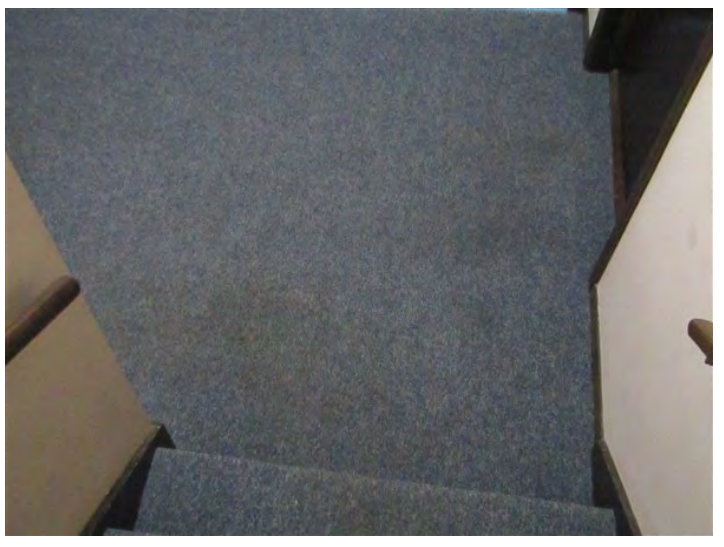
broadloom loop pile carpet typical of the stairs



stains



carpet stains



carpet wear

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Lighting - Stairs, Basements and Office

Locations:	stairs, basements and office
Mounted on:	ceiling
Overall condition:	satisfactory
Average light level (lux):	90 (200 is ideal)
Quantity (each):	160
Cost ($ each):	$50
Current total cost:	**$8,000**
Cost per home:	$71
Assumptions:	reuse of existing wiring
Operating expenses:	bulb replacement

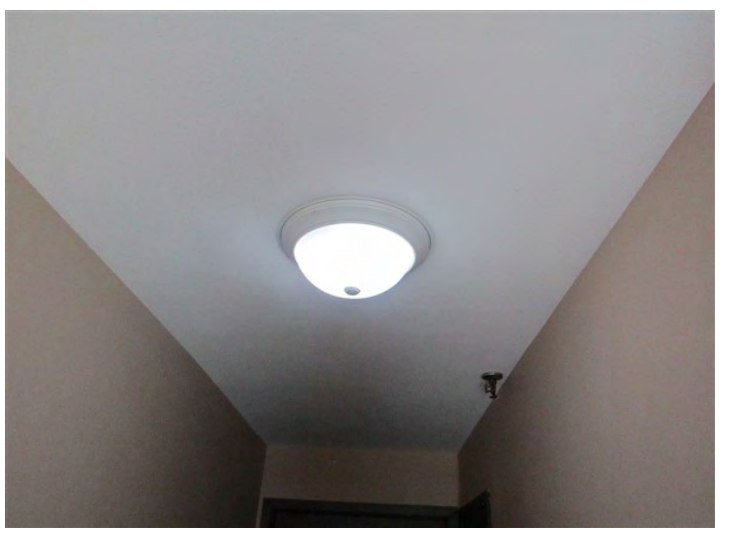
Green ideas: The stairwell lights operate continuously. Consider installing occupancy sensors to minimize fixture operation or installing light dimmers to minimize energy use during off peak hours. For safety reasons, maintain a minimum light level at all times. Our experience indicates properties typically have one out of two lights operate continuously and the remaining are on sensors. Check with local code for specific requirements. The following manufacturer provides these products: http://www.xeleum.com/stairwell-low-occupancy-1.



typical lighting



ceiling light



ceiling light

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Mailboxes and Intercoms

Locations:	front entrances
Manufacturer:	*Auth Electric Co., Inc.*
Size:	15 inches x 4 inches
Overall condition:	fair
Specific condition:	normal wear
Quantity (each):	112
Cost ($/box):	$130
Current total cost:	**$14,840**
Operating expenses:	lock replacement, refinishing



mailboxes and intercom



mailboxes

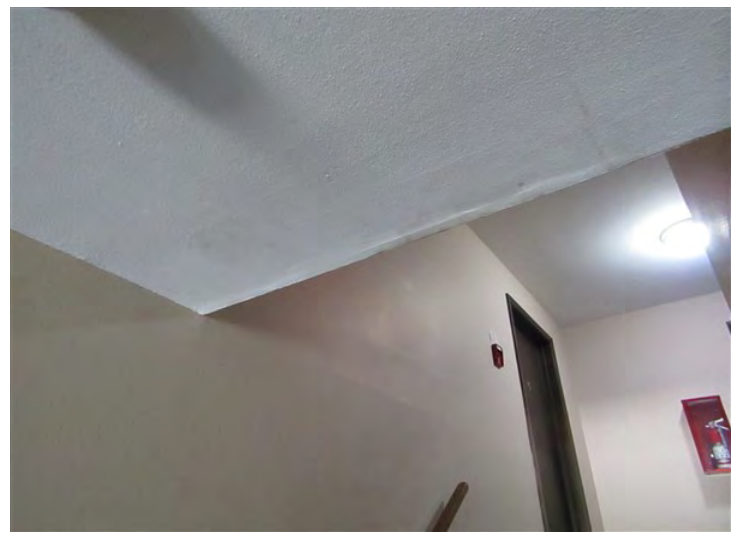


mailboxes

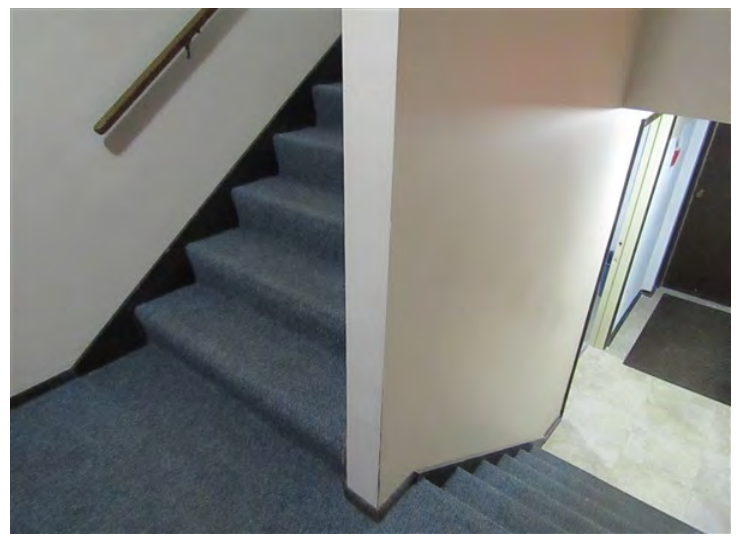
Painting - Stairs, Basements and Office

Locations:	stairs, basements and office
Surfaces:	walls and ceilings
Color scheme:	two tone
Overall condition:	good to fair
Specific condition:	scuffs
Quantity (square feet):	58,000
Per home (square feet):	520
Cost ($/square foot):	$1.10
Current total cost:	**$63,800**
Cost per home:	$570
Operating expenses:	interim paint touch ups and wall repairs
Assumptions:	two coats of paint

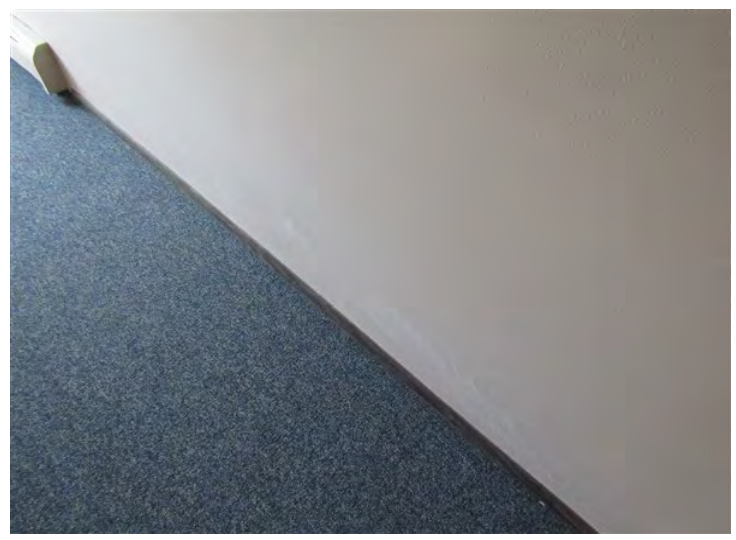
Actionable recommendations: The stairwell wall edges are prone to damage and scuffs. The property could install metal corner guards to minimize damage to the finishes.



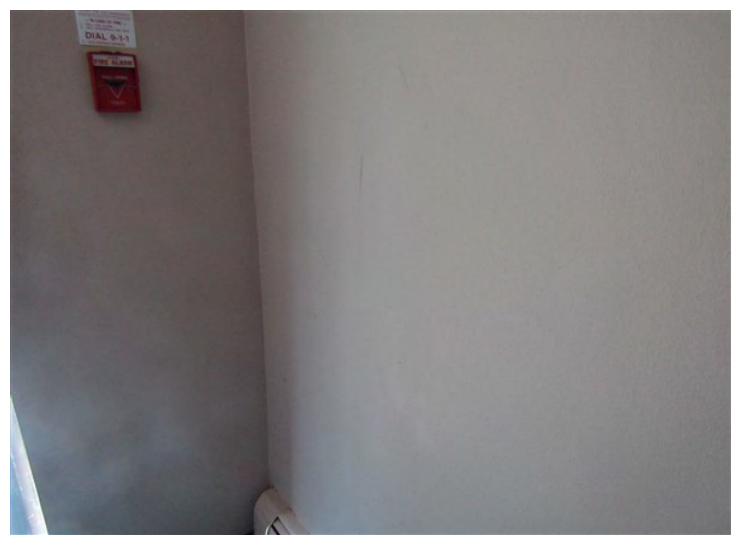
two tone paint finish typical of the stairs



wall edges are prone to damage



wall scuffs



scuffs

SUPERIOR RESERVE
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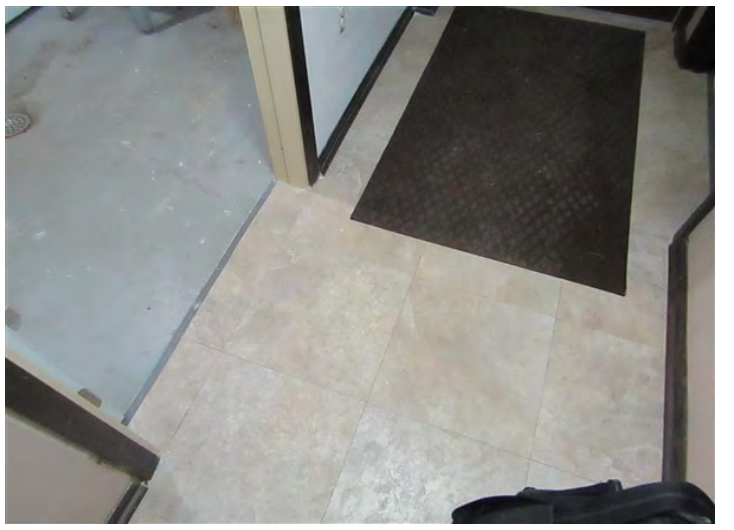
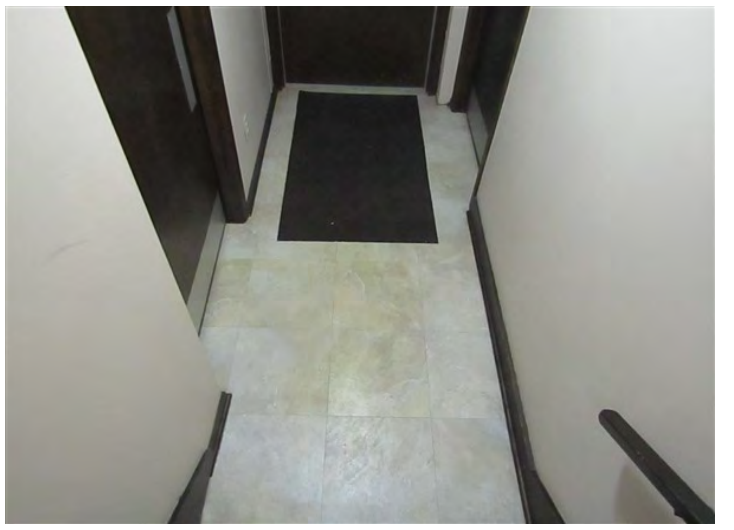
Vinyl Flooring - Basements

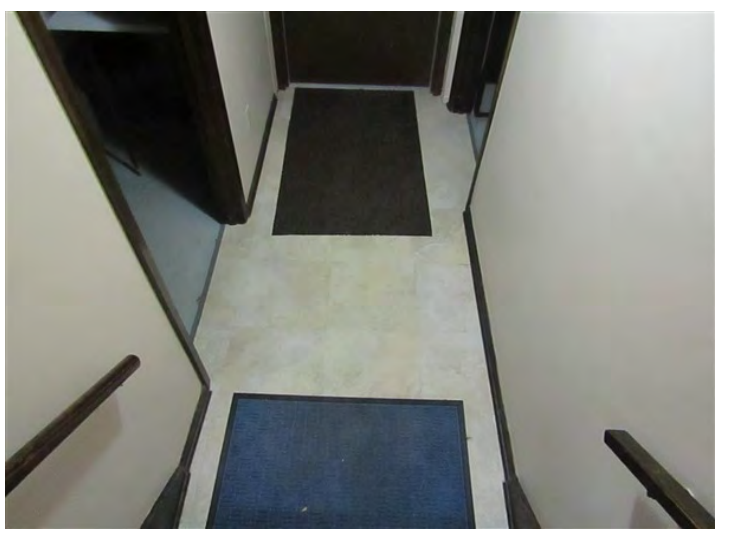
Location:	basements
Material:	vinyl tile
Tile size:	12 inch by 12 inch
Floor to wall transition:	vinyl trim
Overall condition:	good to fair
Specific condition:	normal wear
Quantity (square yards):	60
Cost ($/square yard):	$110
Current total cost:	**$6,600**
Cost per home:	$59



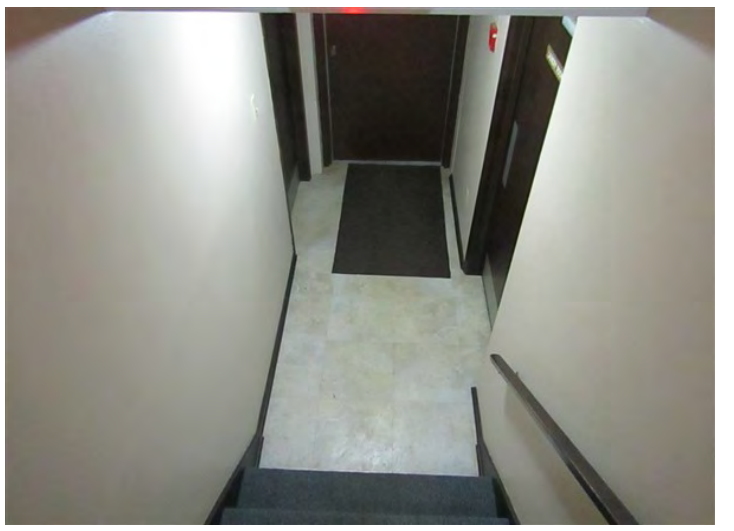
12 inch by 12 inch tile typical of the basements with vinyl trim transition at floor to wall



vinyl flooring



overview of flooring



vinyl flooring

SUPERIOR RESERVE
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Boilers - Building Heat

Manufacturer:	*Burnham*
Quantity (each):	14
Purpose:	building heat
Location:	basements
Energy source:	gas-fired
Type:	fire-tube
Heating input capacity in MBH (note 1):	320 (14 each)
Efficiency:	80%
Operational condition:	satisfactory
Physical condition:	no visible deterioration
Replacement accessibility:	relatively easy
Replacement $ per boiler:	$11,000
Current replacement cost:	**$154,000**
Cost per home:	$1,375
Operating expenses:	interim replacement of expansion tanks, valves and circulation pumps less than five-HP
Cost includes:	remove existing boilers install new boilers install new controls replace valves replace adjacent piping replace circulating pumps replace exhaust ductwork



Burnham 320 MBH gas-fired boiler for building heat



burners



boiler



boiler

(note 1) thousand British Thermal Units per hour

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Electrical System Main Panels

Panel manufacturer: *I-T-E*

Wiring material: copper wires for low ampacity circuits (assumed)

Circuit protection type: circuit breaker panels for low ampacity circuits

Operational condition: satisfactory

Physical condition: no visible deterioration

Quantity of panels (each): 130

Current total cost: **$368,000**

Cost per home: $3,286

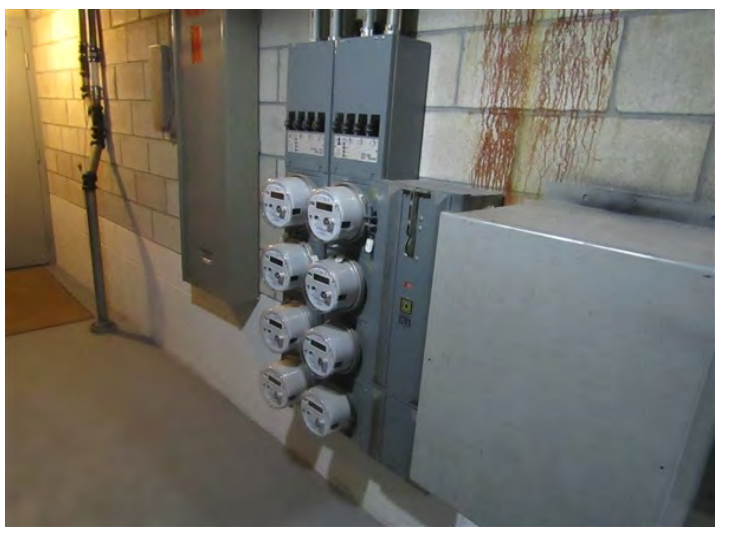
Operating expenses: periodic thermoscans and partial replacements

Assumptions: wiring will not require replacement

Unit responsibility: electrical system within the unit


circuit breaker panel


electrical equipment


electrical equipment


circuit breaker panel

SUPERIOR RESERVE
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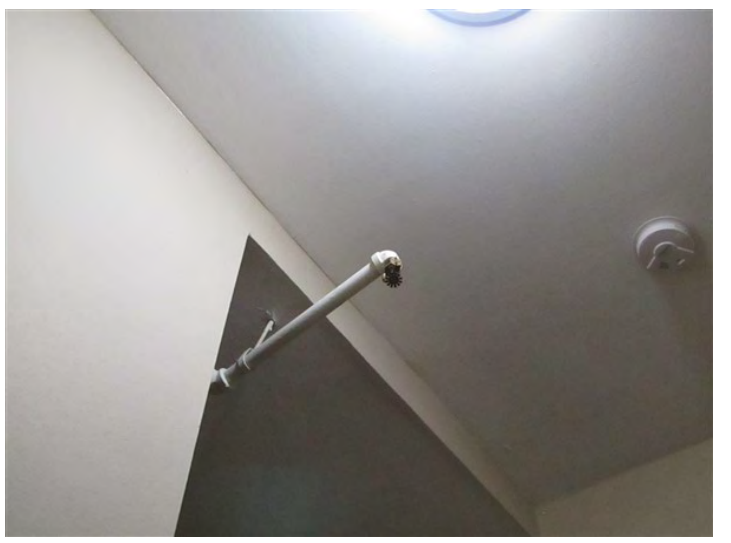
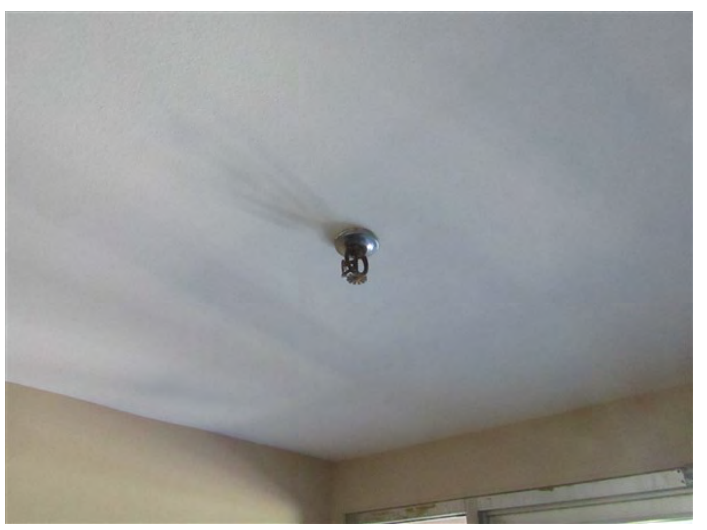
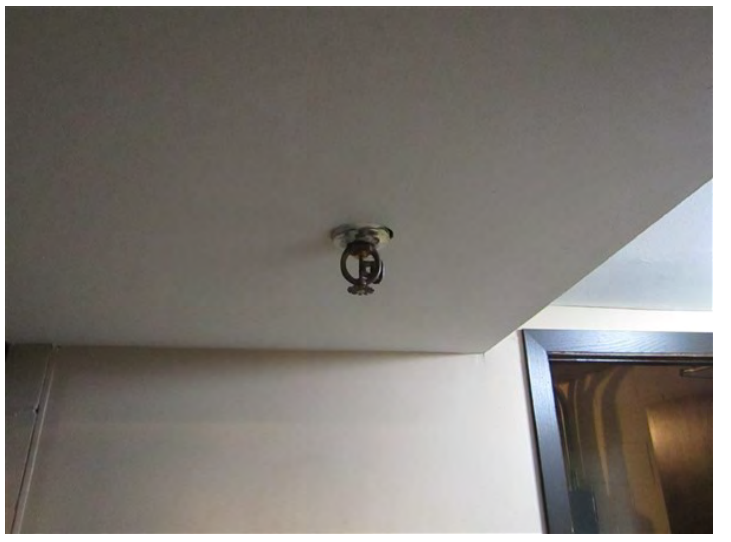
Fire Suppression System Heads

Overall condition:	satisfactory
Specific condition:	no known deficiencies
Quantity (each):	200
Cost ($/each):	$60
Current total cost:	**$12,000**
Cost per home:	$107
Operating expenses:	testing, interim head replacements
Cost includes:	replacement of heads only (We assume the piping will not require replacement during the next 30 years.)


fire suppression head


fire suppression head


fire suppression head


fire suppression head

SUPERIOR RESERVE
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Laundry Washers and Dryers

Manufacturers:	*Maytag and Speed Queen*
Number of washers (each):	14
Number of dryers (each):	14
Dryer heat source:	electric
Equipment grade:	commercial
Location of equipment:	basements
Operational condition:	satisfactory
Physical condition:	no known deficiencies
Cost each:	$1,300
Current total cost:	**$36,400**
Cost per home:	$325
Operating expenses:	interim replacement of belts and other components


washer and dryer


washer and dryer


washer and dryer


washer and dryer

SUPERIOR RESERVE
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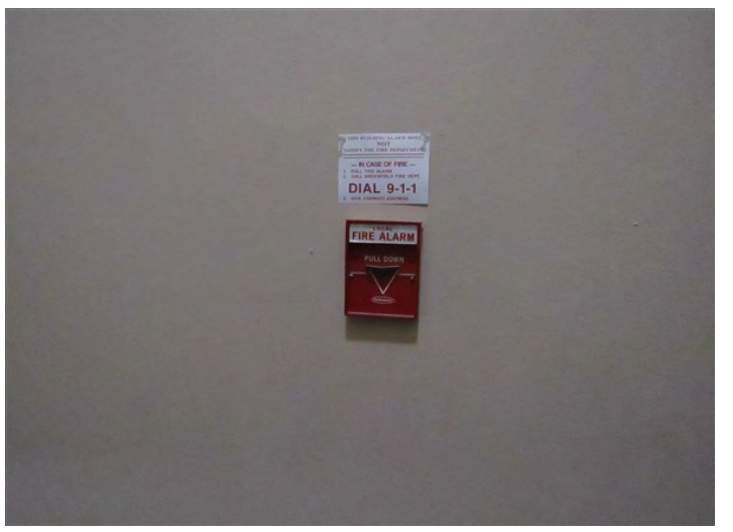
Life Safety Systems

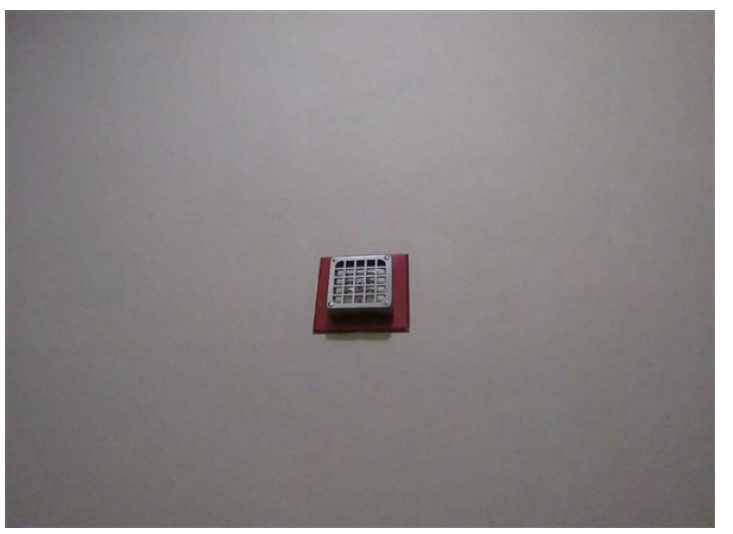
Location of main panels:	laundry rooms
Operational condition:	satisfactory
Current device cost:	$108,600
Current control panel cost:	$15,800
Current total cost:	**$124,400**
Cost per home:	$1,111
Operating expenses:	testing of devices
Assumptions:	Reuse of existing wiring, replacement cost includes only that amount necessary to recreate the same functionality. An upgrade would result in a higher replacement cost.
Unit responsibility:	We assume the units are responsible for the emergency devices within their residences. We assume the units will be back-charged for the cost to replace their components when the components in the common areas are replaced.
Types of devices:	pull stations (98) audio/visual fixtures (29) control panels (4)



fire alarm panel



pull station


audio fixture


audio fixture

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Lighting - Exit

Exit lights (each):	70
Operational condition:	satisfactory
Cost per fixture:	$110
Current total cost:	**$7,700**
Cost per home:	$69
Operating expenses:	testing of devices, replacement of bulbs
Assumptions:	reuse of existing wiring



exit light fixture



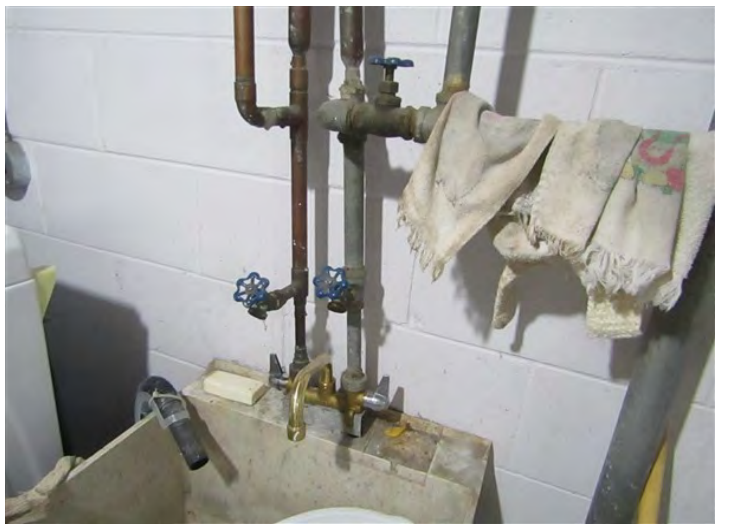
exit light fixture

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Pipes - Domestic Water, Waste and Vent

Pipe purpose:	circulate domestic hot, supply domestic cold, convey waste, vent plumbing fixtures
Locations:	in plumbing chase behind wall finishes
Pipe materials:	galvanized steel and copper for domestic, and galvanized steel and cast iron for waste and vent
Insulation:	uninsulated
Functional condition:	satisfactory
Reported condition:	no known deficiencies
Current total cost:	**$1,680,000**
Cost per home:	$15,000
Cost also includes:	basic wall finishes, pipe insulation, valves
Assumptions:	homeowners are responsible for the horizontal piping from the risers to their plumbing fixtures
Operating expenses:	interim replacements

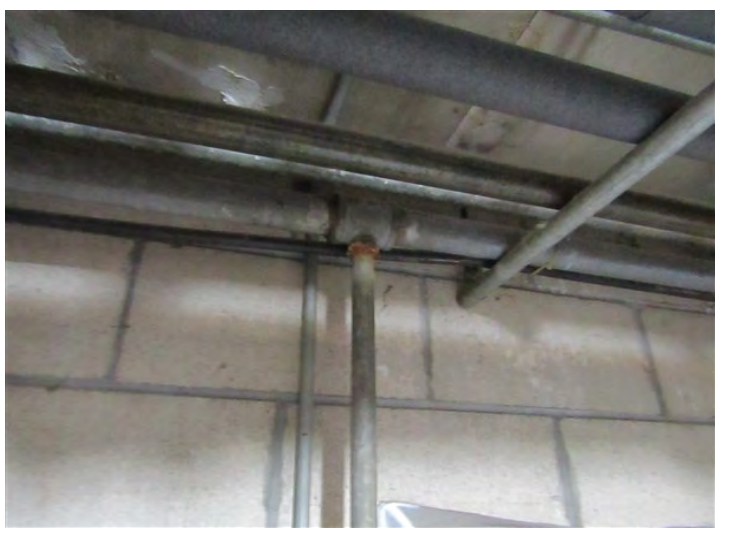
Engineering solutions: With the exception of isolated locations, the pipes for domestic water, waste and vent are not visible. Even if these pipes were visible, the interior condition of the pipes (which is not visible) determines their remaining useful life. Therefore, we determine the condition and anticipated replacement times of the pipes based on interviews with individuals at the property, the age of the building, and our expertise with many other properties of similar age and plumbing systems.



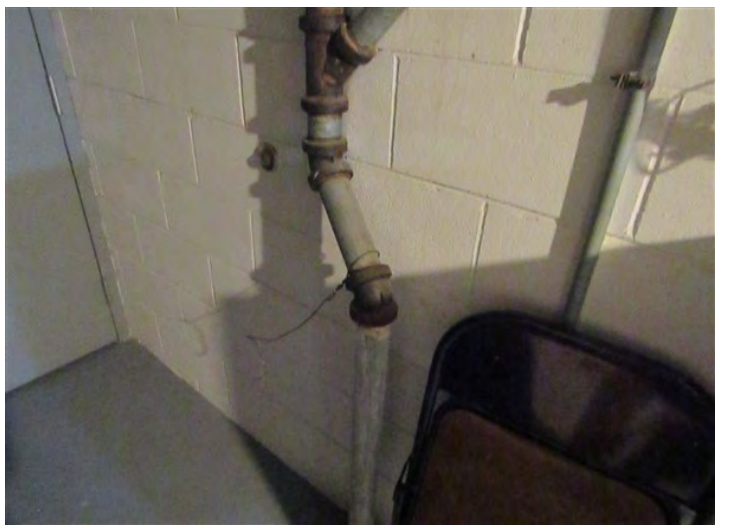
galvanized steel and copper domestic water pipes



galvanized steel and copper domestic water pipes



galvanized steel pipes



waste pipe

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Piping and Valves at Incoming Water

Overall condition: satisfactory

Specific condition: portions of components have been replaced

Quantity (each): 4

Cost ($/each): $24,900

Current total cost: **$99,600**

Cost per home: $889



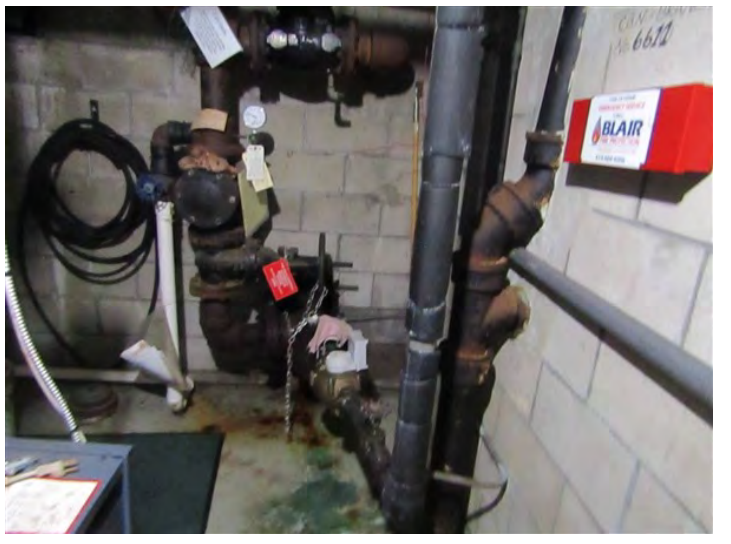
piping and valves at incoming water



piping and valves at incoming water



piping and valves at incoming water



piping and valves at incoming water

SUPERIOR RESERVE
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Pumps - Sump

Purpose:	eject storm water
Quantity (each):	7
Type:	centrifugal
Capacity (horsepower):	5
Location:	garages
Operational condition:	satisfactory
Physical condition:	no known deficiencies
Controls:	yes
Cost per pump:	$7,600
Current total cost:	**$53,200**
Cost per home:	$475
Operating expenses:	rebuilding and component replacements



pump located beneath grate



controls



piping

SUPERIOR RESERVE
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Water Heaters

Manufacturer:	*Rheem*
Quantity (each):	8
Purpose:	domestic hot water
Location:	basements
Energy source:	gas-fired
Capacity (gallons):	80
Heating input capacity in MBH (note 1):	156 (8 each)
MBH per home:	11 (capacity less than 12 MBH per home results in a shorter water heater life)
Operational condition:	satisfactory
Physical condition:	no visible deterioration
Replacement accessibility:	**relatively easy**
Cost each:	$7,000
Current total cost:	**$56,000**
Cost per home:	$500

Green ideas: The pipes adjacent to the water heaters are uninsulated resulting in heat loss. For energy efficiency, the property should insulate all accessible pipes (payback of approximately one year).



Rheem 80 gallon, 156 MBH domestic water heater



water heaters



burners



uninsulated pipes

(note 1) thousand British Thermal Units per hour

SUPERIOR RESERVE
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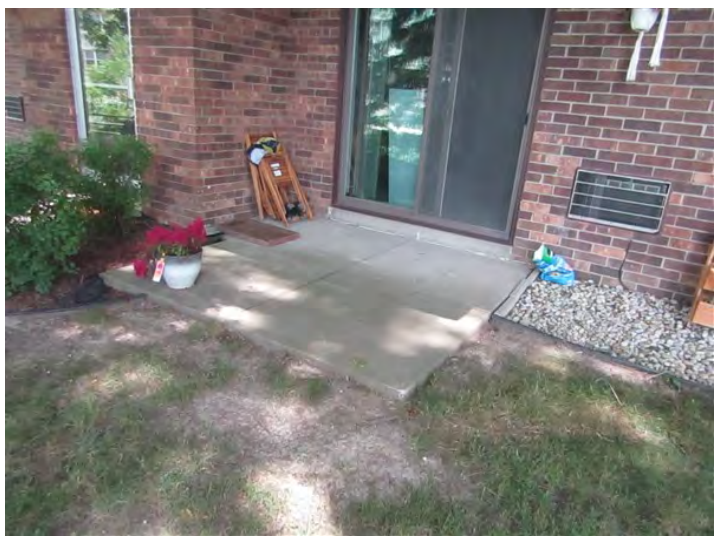
Patios

Material:	concrete
Overall condition:	good to fair
Specific condition:	newer patios at 2 buildings and patios scheduled for replacement with the walking paths at 2 buildings
Quantity (each):	28
Area each (square feet):	60
Cost ($/each):	$700
Current total cost (note 1):	**$19,600**
Assumptions:	4-inch thick, 3,000 psi replacement concrete with 6x6 - W1.4xW1.4 steel reinforcing mesh
Operating expenses:	interim replacements of deteriorated slabs, slab jacking
Coordinate with:	concrete sidewalks


concrete patio


concrete patio


concrete patio


concrete patio

(note 1) Concrete patios have a useful life of up to 60 years. Replacement of all the patios during a single event is unlikely. Instead, we assume periodic replacements of limited quantities.

SUPERIOR RESERVE
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Sidewalks

Material:	concrete
Finish:	plain
Overall condition:	**good to poor**
Specific condition:	isolated locations of deterioration
Locations:	throughout property
Length (linear feet):	1,800
Quantity (square feet):	7,000 (including asphalt walking paths that will be replaced with concrete)
Per home (square feet):	60
Cost ($/square foot):	$6.40
Current total cost (note 1):	**$45,000**
Assumptions:	4-inch thick, 3,000 psi replacement concrete with 6x6 - W1.4xW1.4 steel reinforcing mesh
Operating expenses:	marking of trip hazards, interim replacements of deteriorated sections, slab jacking (pumping grout under sections to lift them)
Coordinate with:	concrete patios



concrete sidewalks



deteriorated sidewalk near pool



concrete sidewalks



concrete sidewalks

(note 1) Concrete sidewalks have a useful life of up to 60 years. Replacement of all the sidewalks during a single event is unlikely. Instead, we assume periodic replacements of limited quantities.

SUPERIOR RESERVE
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Fence - Wood

Material:	wood 3 rail
Location:	southwest property line
Fence profile:	horizontal rail
Overall condition:	**fair to poor**
Specific condition:	weathering and broken rails
Quantity (linear feet):	230
Cost ($/linear foot):	$23
Current total cost:	**$5,300**
Cost per home:	$47
Replacement cost includes:	remove existing fence open rail, rustic, No. 1 cedar, 3 rails, 4' high



horizontal rail wood fence at southwest property line



wood fence

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Landscape

Location served: entire site

Landscaped acreage: 3.3

Estimated cost (note 1): **$90,000**

Cost per home: $804

Operating expenses: mowing, trimming, flowers, sod, mulch, etc.

Assumptions: We base our tree replacement cost on removal of the existing tree and replacement with a balled and burlapped tree, 8'-10' in height, 1" caliper.

Components: trees

bushes

Actionable recommendations: We observed steep slopes and ruts from lawn care equipment. Lawn care equipment that continuously travels the same route minimizes the potential for grass regrowth and promotes erosion. The property could consider ground cover that does not require mowing at these locations to prevent erosion. The property could also request the lawn care company to use lighter equipment in these areas.

Green ideas: Rather than raking leaves in the fall and hauling them to the landfill, the property should mulch the leaves and allow them to decompose into the ground. The majority of the leaves will decompose during the fall and winter. Once the leaf particles settle in, microbes and worms begin to recycle the debris (the application of nitrogen-rich fertilizer can help speed up the decomposition process). Whatever remains in the spring can be cleaned up and either used in planting beds or removed from the site. Mulching leaves will eliminate costs associated with hauling the leaves off the property and ease the burden placed on landfills. Mulching leaves will minimize weed control and nutrient application costs. Mulching leaves recycles a natural resource and provides a richer soil at no cost. The following website provides additional information:
https://www.canr.msu.edu/news/smart_gardeners_mulch_fallen_leaves_into_lawn_to_save_money.

Engineering solutions: Landscape replacement timing is discretionary. Annual operating budgets should include funds for mowing, trimming, flowers and replacement of a limited amount of dead landscape. We include an allowance for periodic partial replacements of landscape to include replacement of overgrown bushes or trees as the property sees necessary. Overgrown bushes and trees can cause damage to exterior building components or site elements such as roots causing damage to sidewalks or driveways and branches causing damage to roofs or siding. Although unpredictable, this allowance could also be used for any landscape that has died from drought, disease, etc.


landscape


landscape


ruts


removed tree

(note 1) Replacement of all the landscape in a single event is unlikely. Instead, we include an allowance for periodic partial replacements.

SUPERIOR RESERVE
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Light Poles and Fixtures

Pole material:	metal
Quantity of poles (each):	30
Pole height (feet):	8
Fixture material:	metal
Quantity of fixtures (each):	30
Overall condition:	new
Specific condition:	no visible deterioration
Location:	throughout property
Average cost ($/each):	$550
Current total cost:	**$16,500**
Cost per home:	$147
Assumptions:	reuse of existing subterranean electrical supply wiring
Operating expenses:	painting, bulb replacement
Cost includes:	remove existing install new light poles and fixtures


metal light pole with metal light fixture


light pole and fixture


fixture in traffic island


LED bulb

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Pavement - Crack Repair, Patch and Stripe

Location:	driveways and parking areas
Overall condition:	**good to poor**
Specific condition:	cracks, settlement and newer pavement
Quantity (square yards):	10,600
Per home (square yards):	95
Total cost ($/square yard):	$2.40
Current total cost:	**$25,500**
Total cost per home:	$228
Assumptions:	repair all open cracks (1/8 to 1 inch wide) and patch deteriorated pavement to minimize water penetration
Anticipated costs:	crack repair patch (4%) stripe parking areas repairs to catch basins (10 each)

Green ideas: The property has seal coated the asphalt pavement in the past. It is our professional opinion that seal coating asphalt pavement does not extend the useful life of the pavement. Seal coats do not add structural strength to the pavement. Seal coating is also a source of environmental contamination. Many properties opt to save money by *not* seal coating their pavement. If the property decides to seal coat for aesthetic reasons, avoid the use of coal tar based pavement seal coats as they pollute waterways. Instead, consider a slurry coat of asphaltic emulsion to provide a sacrificial wearing surface to the pavement. Also, if the property chooses to seal coat, we recommend applying the seal coat in the spring rather than the fall. Snow removal equipment wears the seal coat. Application in the spring will provide the maximum visual enjoyment from a fresh seal coat. The property should fund this expense through the operating budget.

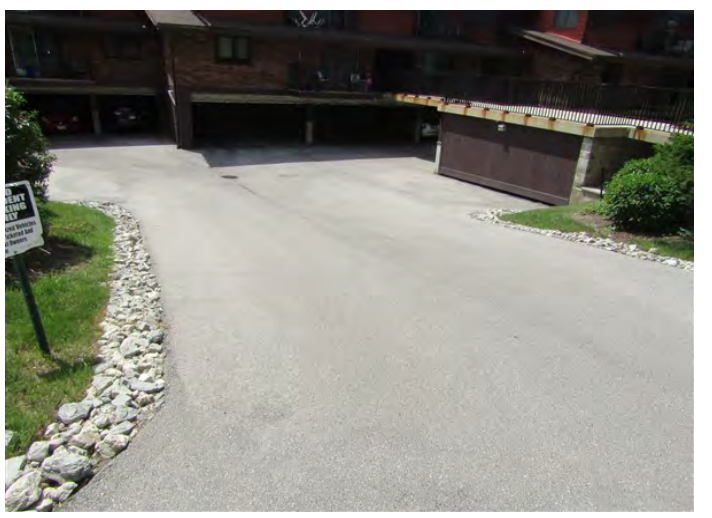
Engineering solutions: The property has conducted appropriate prior repairs and maintenance to the pavement as evident during our inspection. However, additional repairs are needed. Continued maintenance including repairing all cracks and patching potholes in the pavement will prevent water infiltration. This will minimize deterioration of the pavement and underlying base, and maximize the life of the pavement.



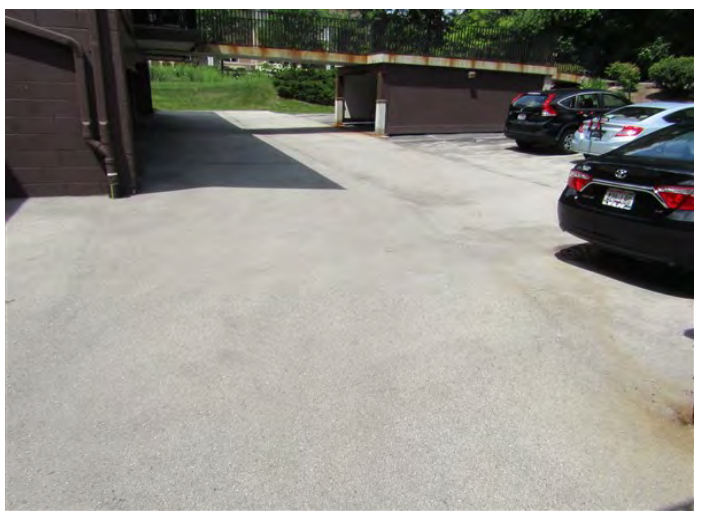
cracks in pavement



patched pavement



newer pavement



newer pavement

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Pavement Replacement - Driveways and Parking Areas

Material:	asphalt
Locations:	driveways and parking areas
Overall condition:	**good to poor**
Specific condition:	cracks, settlement and newer pavement
Typical traffic type:	residential vehicles and garbage trucks
Quantity (square yards):	10,600
Per home (square yards):	95
Quantity of catch basins:	10
Square yards of pavement per catch basin:	1,100 (reasonable amount of pavement per drain)
Repaving method:	replacement
Cost ($/square yard):	$38
Current total cost:	**$403,000**
Cost per home:	$3,598
Anticipated costs:	remove pavement, regrade & augment base install 4 inches of new pavement repairs to catch basins (10 each)



asphalt pavement at driveways



cracks in pavement



pavement cracks



pavement in need of repairs

SUPERIOR RESERVE
ENGINEERING & CONSULTING



pavement overview



pavement deterioration



newer pavement



pavement in good condition



pavement repairs necessary at catch basin



cracks in pavement



pavement overview



cracks in pavement

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Walking Paths - Replace Asphalt with Concrete

Material:	asphalt
Overall condition:	**poor**
Specific condition:	cracks and settlement
Length (linear feet):	1,800 (0.3 miles)
Quantity (square yards):	800
Repaving method:	replace asphalt with concrete
Cost ($/square yard):	$101
Current total cost:	**$80,000**
Cost per home:	$714
Anticipated expenses:	remove existing pavement install concrete replace concrete patios


asphalt walking path


walking path


walking path overview


pavement scheduled for replacement

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Sign

Purpose:	property identification
Material:	wood
Overall condition:	**poor**
Specific condition:	weathering and wood rot
Quantity (each):	1
Current total cost:	**$4,500**
Cost per home:	$40
Operating expenses:	painting
Anticipated costs:	plaque posts lighting



property identification sign


rear of sign

Green ideas: The property could consider the installation of solar lights to illuminate the property identification sign. The following website provides solar lights for signs: www.emberled.com

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Pool Deck Renovation

Deck material:	concrete
Deck pitch:	away from pool (proper)
Transition at deck and pool:	concrete coping
Overall condition:	new to fair
Specific condition:	cracks and concrete deterioration
Deck area (square feet):	5,500
Current total cost:	**$7,200**
Cost per home:	$64
Operating expenses:	interim repairs, marking of trip hazards
Anticipated expenses:	replacement of deck (5%) deck crack repairs caulk deck joints



concrete deterioration


cracks in concrete

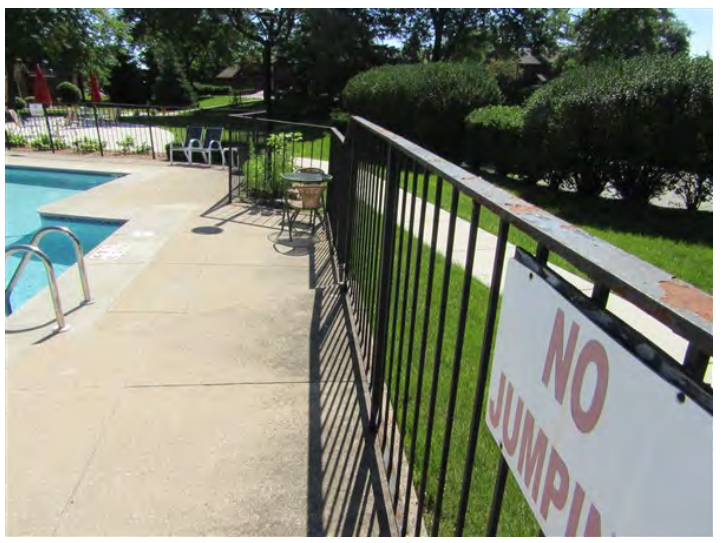

cracked concrete


newer concrete

SUPERIOR RESERVE
ENGINEERING & CONSULTING

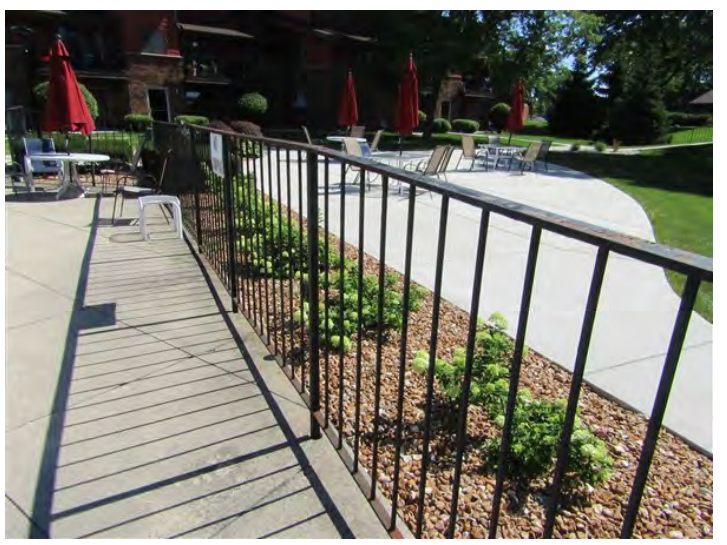
Pool Fence

Material:	metal
Location:	pool
Fence profile:	vertical picket
Fence height (inches):	53 inches (satisfies the 48 inch minimum height code requirement)
Picket spacing (inches):	5.5 (4 inch maximum picket spacing is required by code)
Overall condition:	**good (structure) to poor (paint)**
Specific condition:	rust and peeling paint
Quantity (linear feet):	300
Cost ($/linear foot):	$41
Current total cost:	**$12,200**
Cost per home:	$109
Operating expenses:	painting
Replacement cost includes:	remove existing fence new metal fence



vertical picket metal fence at pool


rust and peeling paint


metal fence

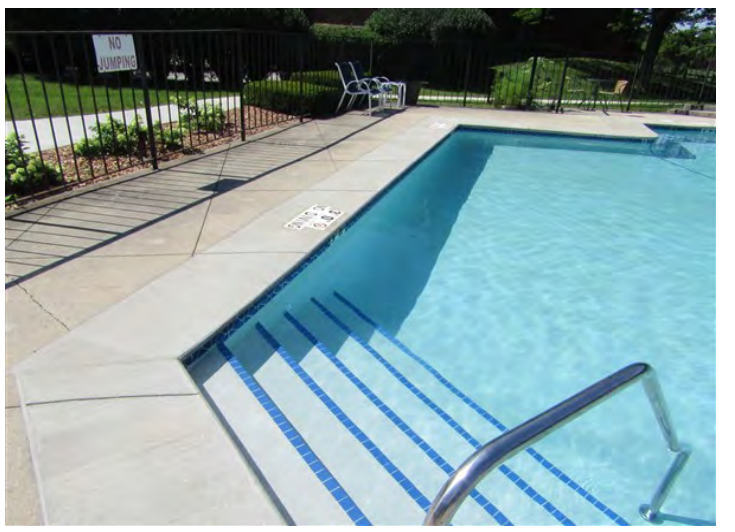

rust and peeling paint

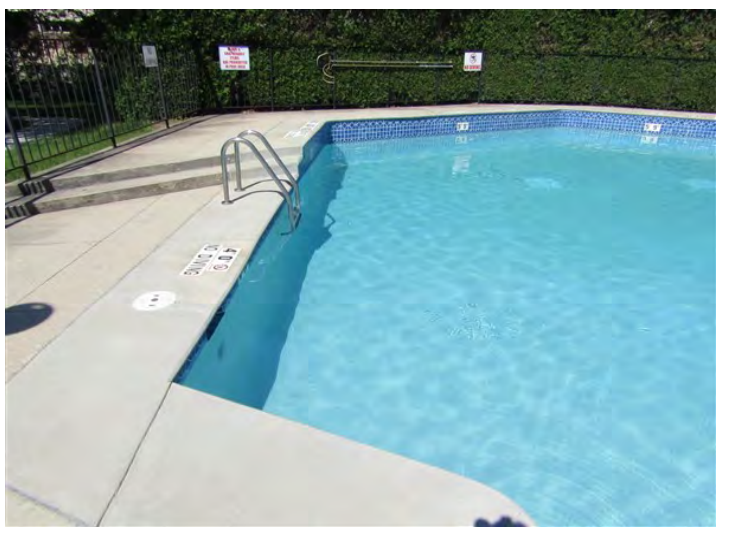
SUPERIOR RESERVE
ENGINEERING & CONSULTING

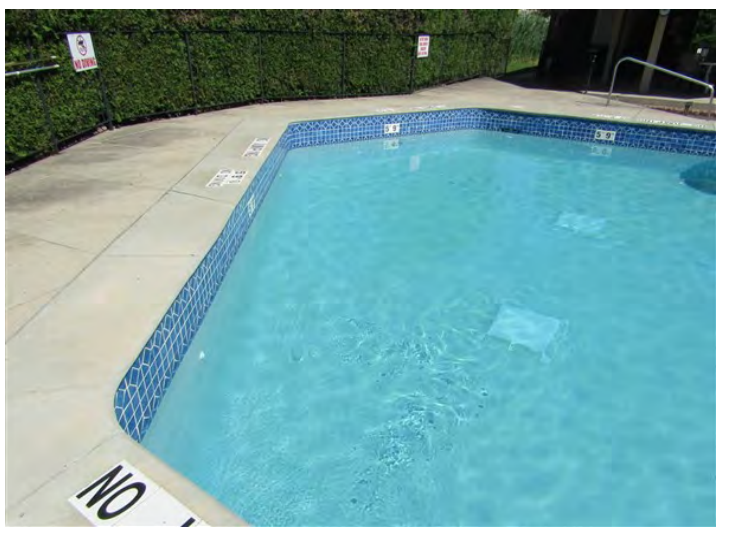
Pool Finish - Plaster

Wall finish type:	plaster
Floor finish type:	plaster
Horizontal surface area (square feet):	1,500
Capacity (gallons):	48,000
Pool purpose:	recreation
Minimum depth (feet):	3 feet 0 inches (complies with industry standard)
Maximum depth (feet):	5 feet 9 inches (complies with industry standard)
Surface water removal type:	skimmers
Overall condition:	good
Specific condition:	no visible deterioration
Cost ($/square foot):	$22
Current total cost:	**$32,500**
Cost per home:	$290
Operating expenses:	interim repairs and painting (if desired)
Anticipated expenses:	removal of the existing finish install new plaster tile replacement (10%) light replacement skimmer repairs


pool overview


recent pool renovation


pool overview


pool in good condition

SUPERIOR RESERVE
ENGINEERING & CONSULTING

Pool Equipment

Filter pressure (psi): 20-30

Backwash site glass: exists (ideal)

Overall condition: **good to poor**

Specific condition: reported that pump and filter require replacement

Current total cost: **$48,800**

Cost per home: $436

Operating expenses: interim pump rebuilding, filter media replacement

Equipment:
heater (1)
pump less than 5 HP (1)
water treatment equipment
filter (1)
electrical panel (1)
piping and major valves (12)

Actionable recommendations: The pool equipment room does not have an exhaust fan. Proper ventilation is important where pool chemicals are stored. The lack of ventilation increases health hazards for the pool operator, increases the potential of a fire from toxic vapors and causes accelerated deterioration of metal components in the room. The property should install ventilation that complies with ASHRAE standards.

Green ideas: The pool pump operates at a constant speed. When replacement comes due, replace the pool pump with a variable speed drive to minimize operational costs, provide a constant pressure and maximize the useful life of the pump. Preventing too high flow rates will also ensure proper filtration and minimize damage to the filter.


heater


filter


water treatment equipment


pump