FULL RESERVE STUDY

Park Tower
Condominium Association

Chicago, Illinois
February 13, 2020

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Corporate Office
Reserve Advisors, LLC
735 N. Water Street, Suite 175
Milwaukee, WI 53202

Park Tower Condominium Association
Chicago, Illinois

Dear Board of Directors of Park Tower Condominium Association:

At the direction of the Board that recognizes the need for proper reserve planning, we have conducted a *Full Reserve Study* of Park Tower Condominium Association in Chicago, Illinois and submit our findings in this report. The effective date of this study is the date of our visual, noninvasive inspection, February 13, 2020.

This *Full Reserve Study* exceeds the Association of Professional Reserve Analysts (APRA) standards fulfilling the requirements of a "Level I Full Reserve Study."

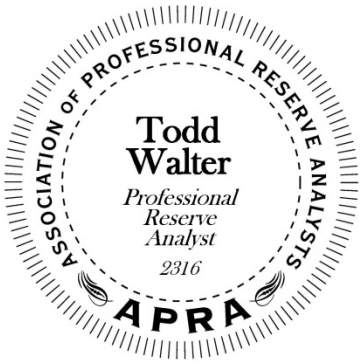
An ongoing review by the Board and an Update of this Reserve Study are necessary to ensure an equitable funding plan since a Reserve Study is a snapshot in time. We recommend the Board budget for an Update to this Reserve Study in two- to three-years. We look forward to continuing to help Park Tower Condominium Association plan for a successful future.

As part of our long-term thinking and everyday commitment to our clients, we are available to answer any questions you may have regarding this study.

Respectfully submitted on May 20, 2020 by

Reserve Advisors, LLC

Visual Inspection and Report by: Todd M .Walter, RS[1], PRA[2]
Review by: Alan M. Ebert, RS, PRA, Director of Quality Assurance



[1] RS (Reserve Specialist) is the reserve provider professional designation of the Community Associations Institute (CAI) representing America's more than 300,000 condominium, cooperative and homeowners associations.
[2] PRA (Professional Reserve Analyst) is the professional designation of the Association of Professional Reserve Analysts. Learn more about APRA at http://www.apra-usa.com.

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1. RESERVE STUDY EXECUTIVE SUMMARY

Client: Park Tower Condominium Association (Park Tower)
Location: Chicago, Illinois
Reference: 91089

Property Basics: Park Tower Condominium Association is a condominium style development consisting of 728 residential and 16 commercial units in a 54-story building. The building was built in 1974 and was converted to condominiums in 1979.

Reserve Components Identified: 117 Reserve Components.

Inspection Date: February 13, 2020. We conducted previous inspections in 1992, 1994, 1996, 2007, 2014 and 2016.

Funding Goal: The Funding Goal of this Reserve Study is to maintain reserves above an adequate, not excessive threshold during one or more years of significant expenditures. Our recommended Funding Plan recognizes this threshold funding year in 2029 due to replacement of the building heat boilers and piping systems.

Cash Flow Method: We use the Cash Flow Method to compute the Reserve Funding Plan. This method offsets future variable Reserve Expenditures with existing and future stable levels of reserve funding. Our application of this method also considers:

- Current and future local costs of replacement
- 2.0% anticipated annual rate of return on invested reserves
- 2.2% future Inflation Rate for estimating Future Replacement Costs

Sources for *Local* Costs of Replacement: Our proprietary database, historical costs and published sources, i.e., R.S. Means, Incorporated.

Cash Status of Reserve Fund:

- $1,876,412 as of February 29, 2020[1]
- 2021 budgeted Reserve Contributions of $1,791,100

Project Prioritization: We note anticipated Reserve Expenditures for the next 30 years in the ***Reserve Expenditures*** tables and include a ***Five-Year Outlook*** table following the ***Reserve Funding Plan*** in Section 3. We recommend the Association prioritize the following projects in the next five years based on the conditions identified:

- Systematic replacement of curtain wall system sealants to minimize the potential for water infiltration
- Replacement of the remaining original domestic hot water risers to minimize the potential for leaks
- Renovation of the hallways to improve the overall interior aesthetics
- Garage renovation to minimize water infiltration through the elevated garage floor

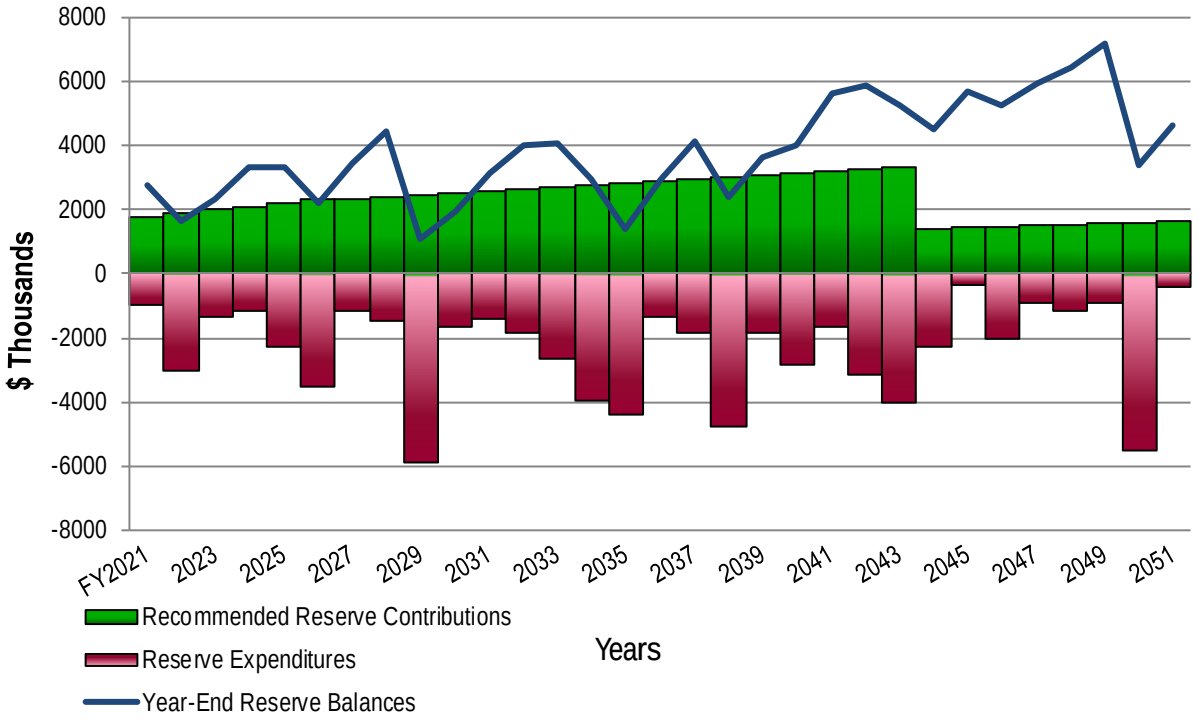
Recommended Reserve Funding: We recommend the following in order to achieve a stable and equitable Funding Plan:

[1] The Fiscal Year (FY 2021) for Park Tower begins March 1, 2020 and ends February 28, 2021. For brevity, we refer to the Fiscal Year by its ending year, i.e. Fiscal Year 2010-21 is FY 2021 or simply 2021.

- Phased increases of $101,000 from 2022 through 2026 and annual inflationary increases through 2043
- Decrease to $1,400,000 by 2044 due to fully funding for replacement of the remaining original piping systems
- Inflationary increases through 2051, the limit of this study's Cash Flow Analysis
- Initial adjustment in Reserve Contributions of $101,000 represents an average monthly increase of $11.31 per homeowner and about an one percent (1.4%) adjustment in the 2021 total Operating Budget of $7,435,600.

Park Tower
Recommended Reserve Funding Table and Graph

Year	Reserve Contributions ($)	Reserve Balances ($)	Year	Reserve Contributions ($)	Reserve Balances ($)	Year	Reserve Contributions ($)	Reserve Balances ($)
2022	1,892,100	1,641,931	2032	2,616,300	3,992,006	2042	3,252,300	5,842,761
2023	1,993,100	2,339,184	2033	2,673,900	4,097,904	2043	3,323,900	5,264,444
2024	2,094,100	3,325,523	2034	2,732,700	2,954,546	2044	1,400,000	4,494,102
2025	2,195,100	3,336,781	2035	2,792,800	1,412,613	2045	1,430,800	5,674,927
2026	2,296,100	2,174,249	2036	2,854,200	2,974,561	2046	1,462,300	5,229,687
2027	2,346,600	3,431,633	2037	2,917,000	4,101,019	2047	1,494,500	5,913,235
2028	2,398,200	4,423,512	2038	2,981,200	2,379,579	2048	1,527,400	6,415,281
2029	2,451,000	1,068,877	2039	3,046,800	3,645,120	2049	1,561,000	7,183,050
2030	2,504,900	1,945,495	2040	3,113,800	4,003,899	2050	1,595,300	3,358,821
2031	2,560,000	3,138,690	2041	3,182,300	5,617,500	2051	1,630,400	4,657,496



2. RESERVE STUDY REPORT

At the direction of the Board that recognizes the need for proper reserve planning, we have conducted a *Full Reserve Study* of

Park Tower Condominium Association

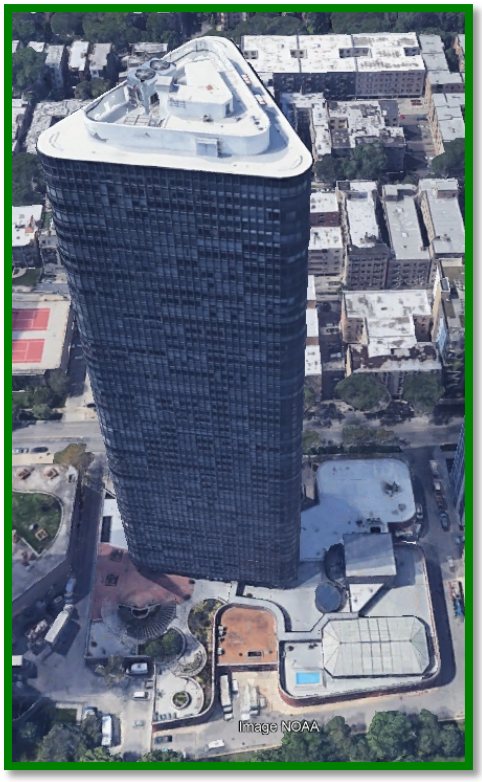
Chicago, Illinois

and submit our findings in this report. The effective date of this study is the date of our visual, noninvasive inspection, February 13, 2020. We conducted previous inspections in 1992, 1994, 1996, 2007, 2014 and 2016.

We present our findings and recommendations in the following report sections and spreadsheets:

- **Identification of Property -** Segregates all property into several areas of responsibility for repair or replacement
- **Reserve Expenditures -** Identifies reserve components and related quantities, useful lives, remaining useful lives and future reserve expenditures during the next 30 years
- **Reserve Funding Plan -** Presents the recommended Reserve Contributions and year-end Reserve Balances for the next 30 years
- **Five-Year Outlook -** Identifies reserve components and anticipated reserve expenditures during the first five years
- **Reserve Component Detail -** Describes the reserve components, includes photographic documentation of the condition of various property elements, describes our recommendations for repairs or replacement, and includes detailed solutions and procedures for replacements for the benefit of current and future board members
- **Methodology -** Lists the national standards, methods and procedures used to develop the Reserve Study
- **Definitions -** Contains definitions of terms used in the Reserve Study, consistent with national standards
- **Professional Service Conditions -** Describes Assumptions and Professional Service Conditions
- **Credentials and Resources**

IDENTIFICATION OF PROPERTY



Our investigation includes Reserve Components or property elements as set forth in your Declaration. The Expenditure tables in Section 3 list the elements contained in this study. Our analysis begins by segregating the property elements into several areas of responsibility for repair and replacement.

Our process of identification helps assure that future boards and the management team understand whether reserves, the operating budget or Homeowners fund certain replacements and assists in preparation of the annual budget. We derive these segregated classes of property from our review of the information provided by the Association and through conversations with Management. These classes of property include:

- Reserve Components
- Long-Lived Property Elements
- Operating Budget Funded Repairs and Replacements
- Property Maintained by Homeowners
- Property Maintained by Others

We advise the Board conduct an annual review of these classes of property to confirm its policy concerning the manner of funding, i.e., from reserves or the operating budget. The Reserve Study identifies Reserve Components as set forth in your Declaration or which were identified as part of your request for proposed services. Reserve Components are defined by CAI as property elements with:

- Park Tower responsibility
- Limited useful life expectancies
- Predictable remaining useful life expectancies
- Replacement cost above a minimum threshold

Long-Lived Property Elements may not have predictable Remaining Useful Lives or their replacement may occur beyond the 30-year scope of the study. The operating budget should fund infrequent repairs. Funding untimely or unexpected replacements from reserves will necessitate increases to Reserve Contributions. Periodic updates of this Reserve Study will help determine the merits of adjusting the Reserve Funding Plan. We identify the following Long-Lived Property Elements as excluded from reserve funding at this time.

- Electrical Systems, Wires and Bus Bars, Common (Indeterminate Remaining Useful Life)
- Foundation
- Pipes, Interior Building, Fire Standpipes and Gas Supply (Indeterminate Remaining Useful Life)
- Pipes, Subsurface Utilities
- Pool Structures, Main and Outdoor
- Roof Anchors/Davits and Remaining Track System (Installed 2017) (We assume timely inspections and repairs through the operating budget.)

Roof anchor and original track system

- Storage Tank, Domestic Hot Water, at Boiler Room (Replaced Recently)
- Structural Frame
- Trash Chute and Doors (Replaced 2005 to 2014)
- Walls, Curtain Wall (Indeterminate Remaining Useful Life) (We opine that aggregate replacement of system components other than the sealants if necessary would require the use of means other than reserves to fund.)

The operating budget provides money for the repair and replacement of certain Reserve Components. The Association may develop independent criteria for use of operating and reserve funds. For purposes of calculating appropriate Reserve

Contributions, we identify the following list of Operating Budget Funded Repairs and Replacements:

- General Maintenance to the Common Elements
- Expenditures less than $23,000 (These relatively minor expenditures have a limited effect on the recommended Reserve Contributions.)
- Air Conditioning and Heating Systems, Miscellaneous (Including Common Fan Coil Units, Baseboard Radiators and Window Units)
- Air Handling and Condensing Units, Elevator Rooms

Condensing unit for elevator room

- Air Handling Unit, Laundry Room (Coils Replaced 2014) (Including Return Air Fan)
- Asphalt Pavement, Crack Repair, Patch and Seal Coat Applications
- Boiler Stack
- Boilers, Main, Condensate System
- Chemical Treatment Systems
- Column Cladding (The Association maintains the cladding through an annual service contract.)

Damage at column cladding

- Doors, Automatic Openers/Closers
- Doors, Interior and Miscellaneous Exterior
- Duct Cleaning
- Electrical System, Thermoscans
- Elevator Cab Finishes, Refuse
- Engineer's Apartment (Classified as Operating Budget funded at the direction of Management)
- Examinations, Periodic Ground Level Inspections of the Exterior Walls as Required by the Chicago Exterior Facade Ordinance
- Exhaust Systems (Except Garage, Main Kitchen and Main Rest Room)
- Fences, Metal, East Perimeter
- Fire Hoses and Extinguishers
- Floors, Terrazzo, Interim Honing
- Garage, Foyers
- Garage, Vehicular Doors
- Hallway, 2nd Floor
- Landscape
- Light Fixtures, Building Exterior, Miscellaneous
- Loading Dock
- Motors
- Paint Finishes, Touch Up
- Pipes, Annual Expenditures (Including Rodding, Replacement of Horizontal Branch Pipes during Renovations and Sprinkler System Components at the Garage.)
- Pipes, Garage Drains (Classified as Operating Budget Funded per Management)
- Plaza, Annual Repairs and Seal Applications
- Pool, Furnishings
- Pools, Paint Finishes and Interim Repairs
- Pumps Less Than Five-HP (horsepower)

- Racquetball Court (Classified as Operating Budget funded at the direction of Management)
- Seepage Investigation, Garage Lower Level, East and West Walls (Future updates of this Reserve Study will include expenditures for remediation based on the results of the investigation.)

Seepage at garage lower level wall

- Service Areas
- Signage, Miscellaneous
- Smoke Damper System (Indeterminate Remaining Useful Life)
- Snow Removal Equipment (Including tractor)

Tractor

- Soffits (Paint finishes and repairs through the operating budget per Management)

Soffit paint finish deterioration

- Staff Areas
- Stairwells, Paint Finishes and Light Fixtures (Classified as Operating Budget funded at the direction of Management)
- Storage Areas
- Sun Deck, Brick Pavers
- Sun Deck, Furnishings and Grills
- Sun Deck, Wood Decking, Pergolas and Siding, Interim Repairs and Stain Applications
- Valves, Small Diameter (Including Riser Shut Off) (We assume replacement as needed in lieu of an aggregate replacement of all of the small diameter valves as a single event.)
- Variable Frequency Drives, Interim

Variable frequency drives

- Walls, Curtain Wall, Annual Repairs (Including Interior Gaskets and Handles)
- Other Repairs normally funded through the Operating Budget

Certain items have been designated as the responsibility of the homeowners to repair or replace at their cost. Property Maintained by Homeowners, including items billed back to Homeowners, relates to unit:

- Doors
- Electrical Systems (Including Circuit Protection Panels and Wires from Meters to Units)
- Heating, Ventilating and Air Conditioning (HVAC) Units (Fan Coil Units and Fin Tube Baseboard Radiation at Corner Units)
- Interiors
- Pipes (Within Units, Horizontals)
- Walls, Curtain Wall, Screens

Certain items have been designated as the responsibility of others to repair or replace. Property Maintained by Others relates to:

- Commercial Interiors (Except Market) and HVAC (Commercial Entities)
- Laundry Equipment and Room Finishes (Vendor) (We assume that the vendor will at least partially fund replacement of room finishes.)
- Parking Area, Southeast (Commercial Entity)
- Sidewalk and Driveway, South Perimeter (Neighboring Entity)
- Sidewalks, Public (Municipality) (We assume that the Association will fund any shared expenses as needed through the operating budget.)

3. RESERVE EXPENDITURES and FUNDING PLAN

The tables following this introduction present:

Reserve Expenditures

- Line item numbers
- Total quantities
- Quantities replaced per phase (in a single year)
- Reserve component inventory
- Estimated first year of event (i.e., replacement, application, etc.)
- Life analysis showing
  - useful life
  - remaining useful life
- 2021 local cost of replacement
  - Per unit
  - Per phase
  - Replacement of total quantity
- Total future costs of replacement anticipated during the next 30 years
- Schedule of estimated future costs for each reserve component including inflation

Reserve Funding Plan

- Reserves at the beginning of each year
- Total recommended reserve contributions
- Estimated interest earned from invested reserves
- Anticipated expenditures by year
- Anticipated reserves at year end

Five-Year Outlook

- Line item numbers
- Reserve component inventory of only the expenditures anticipated to occur within the first five years
- Schedule of estimated future costs for each reserve component anticipated to occur within the first five years

The purpose of a Reserve Study is to provide an opinion of reasonable annual Reserve Contributions. Prediction of exact timing and costs of minor Reserve Expenditures typically will not significantly affect the 30-year cash flow analysis. Adjustments to the times and/or costs of expenditures may not always result in an adjustment in the recommended Reserve Contributions.

Financial statements prepared by your association, by you or others might rely in part on information contained in this section. For your convenience, we have provided an electronic data file containing the tables of ***Reserve Expenditures*** and ***Reserve Funding Plan***.

Years 2021 to 2036

RESERVE EXPENDITURES

Park Tower
Condominium Association
Chicago, Illinois

Explanatory Notes:

1) 2.2% is the estimated Inflation Rate for estimating Future Replacement Costs.
2) FY2021 is Fiscal Year beginning March 1, 2020 and ending February 28, 2021.

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years Useful	Remaining	Costs, $ Unit (2021)	Per Phase (2021)	Total (2021)	30-Year Total (Inflated)	RUL = 0 FY2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028	8 2029	9 2030	10 2031	11 2032	12 2033	13 2034	14 2035	15 2036
				Exterior Building Elements																							
1.260	1	**1**	Allowance	Lighting System, Main Roof Level (Proposed)	2023	to 20	2	56,700.00	56,700	56,700	**148,769**			59,222													
1.400	10,300	**10,300**	Square Feet	Roofs, Tower, Main and Mechanical Penthouse, Modified Bitumen	2036	15 to 20	15	59.00	607,700	607,700	**842,273**															842,273
1.401	800	**800**	Square Feet	Roof, Lobby Canopy, Thermoplastic	2031	15 to 20	10	36.00	28,800	28,800	**89,936**											35,802				
1.402	900	**900**	Square Feet	Roofs, 2nd Floor Walkway (Incl. Gutter System)	2021	15 to 20	0	66.50	59,850	59,850	**150,496**	60,000														
1.403	2,200	**2,200**	Square Feet	Roofs, 2nd Floor, Racquetball Court and Exercise Room	2027	15 to 20	6	32.00	70,400	70,400	**201,515**							80,219								
1.404	2,600	**2,600**	Square Feet	Roof, 2nd Floor, Center/East, Thermoplastic	2037	15 to 20	16	30.00	78,000	78,000	**110,486**															
1.405	9,500	**9,500**	Square Feet	Roof, 2nd Floor, Northwest, Thermoplastic	2029	15 to 20	8	26.00	247,000	247,000	**738,470**									293,971						
1.406	2,100	**2,100**	Square Feet	Roof, 2nd Floor, Southwest, Thermoplastic	2035	15 to 20	14	30.00	63,000	63,000	**85,438**														85,438	
1.407	15,000	**15,000**	Square Feet	Roof, 2nd Floor, Concrete, Waterproof Coating and Repairs	2025	10 to 15	4	14.00	210,000	210,000	**912,791**					229,099										
1.408	2,300	**2,300**	Square Feet	Roof, 2nd Floor, Sun Deck, Planters	2042	to 30	21	90.00	207,000	207,000	**326,918**															
1.409	1	**1**	Allowance	Roof, 2nd Floor, Sun Deck, Wood Decking (Incl. Pergolas, Siding)	2027	to 25	6	300,000.00	300,000	300,000	**905,737**							341,843								
1.410	340	**340**	Linear Feet	Roof, 2nd Floor, Sun Deck, Steel Railings (Incl. East of Pool Enclosure)	2026	to 45	5	150.00	51,000	51,000	**56,862**						56,862									
1.411	3,900	**3,900**	Square Feet	Roof, 2nd Floor, Membrane (Beneath Decking and Pavers)	2027	15 to 20	6	28.00	109,200	109,200	**316,716**							124,431								
1.412	4,700	**4,700**	Square Feet	Roof, Pool Enclosure, Inspections, Sealants and Repairs	2032	10 to 15	11	10.00	47,000	47,000	**135,572**												59,711			
1.413	4,700	**4,700**	Square Feet	Roof, Pool Enclosure, Replacement	2021	to 40	0	58.00	272,600	272,600	**272,600**	272,600														
1.660	7,000	**7,000**	Square Feet	Walls, Concrete, Mechanical Penthouse, Repairs and Coating	2029	to 12	8	8.50	59,500	59,500	**268,276**									70,815						
1.729	1	**1**	Allowance	Walls, Curtain Wall, Inspections and Infiltration Remediation	2021	to 2	0	41,000.00	41,000	41,000	**925,227**	38,600		42,824		44,729		46,719		48,797		50,967		53,235		55,603	
1.730	203,000	**203,000**	Square Feet	Walls, Curtain Wall, Inspections, Partial Sealants and Capital Repairs	2026	to 12	5	12.00	2,436,000	2,436,000	**10,821,318**						2,716,012									
1.819	1	**1**	Allowance	Walls, Masonry, Near Term Remaining Flashing Installation	2021	n/a	0	150,000.00	150,000	150,000	**150,000**	150,000														
1.820	23,000	**23,000**	Square Feet	Walls, Masonry, Inspections and Repairs, Subsequent	2025	to 8	4	6.00	138,000	138,000	**796,792**					150,551								179,180		
1.844	5,500	**5,500**	Square Feet	Walls, Metal Siding, Racquetball Court, Exercise Room and Mall Atrium	2033	to 45	12	29.00	159,500	159,500	**207,096**													207,096		
1.980	2	**2**	Each	Windows and Doors, Lobby, Revolving Doors	2029	to 45	8	50,000.00	100,000	100,000	**119,016**									119,016						
1.981	4,300	**4,300**	Square Feet	Windows and Doors, Lobby, Party Room and Aerobic Exercise Room	2029	to 60	8	105.00	451,500	451,500	**537,359**									537,359						
1.982	2,100	**2,100**	Square Feet	Windows and Doors, 2nd Floor Walkway and Weight Exercise Room	2025	to 45	4	85.00	178,500	178,500	**194,734**					194,734										
1.983	1,700	**1,700**	Square Feet	Windows and Doors, Pool	2025	to 45	4	95.00	161,500	161,500	**176,188**					176,188										
1.984	1,000	**1,000**	Square Feet	Windows and Doors, Mall (Entrances and Standard Windows)	2025	to 60	4	85.00	85,000	85,000	**92,730**					92,730										
1.985	1	**1**	Allowance	Windows and Doors, Mall, Skylight	2030	to 40	9	70,000.00	70,000	70,000	**85,144**										85,144					
				Interior Building Elements																							
2.100	4	**4**	Each	Elevator Cab Finishes, Traction, Passenger	2022	to 20	1	20,000.00	80,000	80,000	**208,105**		81,760														
2.101	2	**2**	Each	Elevator Cab Finishes, Traction, Service	2024	to 20	3	18,000.00	36,000	36,000	**97,813**				38,429												
2.102	2	**2**	Each	Elevator Cab Finishes, Hydraulic, Garage	2024	to 20	3	16,000.00	32,000	32,000	**86,945**				34,159												
2.155	1	**1**	Allowance	Exercise Equipment, Cardiovascular	2022	to 5	1	44,000.00	44,000	44,000	**360,299**		44,968					50,137					55,900				
2.165	1	**1**	Allowance	Exercise Equipment, Strength Training	2031	to 15	10	43,000.00	43,000	43,000	**127,541**											53,454				
2.180	1	**1**	Allowance	Exercise Rooms, Renovations	2027	to 15	6	65,000.00	65,000	65,000	**295,099**							74,066								
2.200	6,200	**6,200**	Square Yards	Floor Coverings, Carpet, Hallways	2022	8 to 12	1	82.00	508,400	508,400	**2,070,164**		519,585												674,632	
2.300	2,800	**2,800**	Square Feet	Floor Coverings, Vinyl, 2nd Floor Walkway and Pool Area	2024	to 15	3	35.00	98,000	98,000	**427,632**				104,611												
2.301	52	**52**	Floors	Floor Coverings, Vinyl, Service Elevator Foyers/Trash Areas, Residential Floors	2027	to 25	6	1,500.00	78,000	78,000	**88,879**							88,879								
2.560	620	**620**	Each	Light Fixtures, Hallways	2022	to 25	1	325.00	201,500	201,500	**538,321**		205,933														
2.600	1	**1**	Allowance	Lobby, Renovation	2028	to 20	7	120,000.00	120,000	120,000	**346,499**								139,745								

Years 2037 to 2051

RESERVE EXPENDITURES

Park Tower
Condominium Association
Chicago, Illinois

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years Useful	Remaining	Costs, $ Unit (2021)	Per Phase (2021)	Total (2021)	30-Year Total (Inflated)	16 2037	17 2038	18 2039	19 2040	20 2041	21 2042	22 2043	23 2044	24 2045	25 2046	26 2047	27 2048	28 2049	29 2050	30 2051
				Exterior Building Elements																						
1.260	1	**1**	Allowance	Lighting System, Main Roof Level (Proposed)	2023	to 20	2	56,700.00	56,700	56,700	**148,769**						89,547									
1.400	10,300	**10,300**	Square Feet	Roofs, Tower, Main and Mechanical Penthouse, Modified Bitumen	2036	15 to 20	15	59.00	607,700	607,700	**842,273**															
1.401	800	**800**	Square Feet	Roof, Lobby Canopy, Thermoplastic	2031	15 to 20	10	36.00	28,800	28,800	**89,936**														54,134	
1.402	900	**900**	Square Feet	Roofs, 2nd Floor Walkway (Incl. Gutter System)	2021	15 to 20	0	66.50	59,850	59,850	**150,496**				90,496											
1.403	2,200	**2,200**	Square Feet	Roofs, 2nd Floor, Racquetball Court and Exercise Room	2027	15 to 20	6	32.00	70,400	70,400	**201,515**									121,296						
1.404	2,600	**2,600**	Square Feet	Roof, 2nd Floor, Center/East, Thermoplastic	2037	15 to 20	16	30.00	78,000	78,000	**110,486**	110,486														
1.405	9,500	**9,500**	Square Feet	Roof, 2nd Floor, Northwest, Thermoplastic	2029	15 to 20	8	26.00	247,000	247,000	**738,470**											444,499				
1.406	2,100	**2,100**	Square Feet	Roof, 2nd Floor, Southwest, Thermoplastic	2035	15 to 20	14	30.00	63,000	63,000	**85,438**															
1.407	15,000	**15,000**	Square Feet	Roof, 2nd Floor, Concrete, Waterproof Coating and Repairs	2025	10 to 15	4	14.00	210,000	210,000	**912,791**	297,463											386,229			
1.408	2,300	**2,300**	Square Feet	Roof, 2nd Floor, Sun Deck, Planters	2042	to 30	21	90.00	207,000	207,000	**326,918**						326,918									
1.409	1	**1**	Allowance	Roof, 2nd Floor, Sun Deck, Wood Decking (Incl. Pergolas, Siding)	2027	to 25	6	300,000.00	300,000	300,000	**905,737**														563,894	
1.410	340	**340**	Linear Feet	Roof, 2nd Floor, Sun Deck, Steel Railings (Incl. East of Pool Enclosure)	2026	to 45	5	150.00	51,000	51,000	**56,862**															
1.411	3,900	**3,900**	Square Feet	Roof, 2nd Floor, Membrane (Beneath Decking and Pavers)	2027	15 to 20	6	28.00	109,200	109,200	**316,716**											192,285				
1.412	4,700	**4,700**	Square Feet	Roof, Pool Enclosure, Inspections, Sealants and Repairs	2032	10 to 15	11	10.00	47,000	47,000	**135,572**							75,861								
1.413	4,700	**4,700**	Square Feet	Roof, Pool Enclosure, Replacement	2021	to 40	0	58.00	272,600	272,600	**272,600**															
1.660	7,000	**7,000**	Square Feet	Walls, Concrete, Mechanical Penthouse, Repairs and Coating	2029	to 12	8	8.50	59,500	59,500	**268,276**			88,030									109,431			
1.729	1	**1**	Allowance	Walls, Curtain Wall, Inspections and Infiltration Remediation	2021	to 2	0	41,000.00	41,000	41,000	**925,227**	58,076		60,660		63,358		66,176		69,120		72,195		75,407		78,761
1.730	203,000	**203,000**	Square Feet	Walls, Curtain Wall, Inspections, Partial Sealants and Capital Repairs	2026	to 12	5	12.00	2,436,000	2,436,000	**10,821,318**		3,526,489											4,578,817		
1.819	1	**1**	Allowance	Walls, Masonry, Near Term Remaining Flashing Installation	2021	n/a	0	150,000.00	150,000	150,000	**150,000**															
1.820	23,000	**23,000**	Square Feet	Walls, Masonry, Inspections and Repairs, Subsequent	2025	to 8	4	6.00	138,000	138,000	**796,792**					213,254								253,807		
1.844	5,500	**5,500**	Square Feet	Walls, Metal Siding, Racquetball Court, Exercise Room and Mall Atrium	2033	to 45	12	29.00	159,500	159,500	**207,096**															
1.980	2	**2**	Each	Windows and Doors, Lobby, Revolving Doors	2029	to 45	8	50,000.00	100,000	100,000	**119,016**															
1.981	4,300	**4,300**	Square Feet	Windows and Doors, Lobby, Party Room and Aerobic Exercise Room	2029	to 60	8	105.00	451,500	451,500	**537,359**															
1.982	2,100	**2,100**	Square Feet	Windows and Doors, 2nd Floor Walkway and Weight Exercise Room	2025	to 45	4	85.00	178,500	178,500	**194,734**															
1.983	1,700	**1,700**	Square Feet	Windows and Doors, Pool	2025	to 45	4	95.00	161,500	161,500	**176,188**															
1.984	1,000	**1,000**	Square Feet	Windows and Doors, Mall (Entrances and Standard Windows)	2025	to 60	4	85.00	85,000	85,000	**92,730**															
1.985	1	**1**	Allowance	Windows and Doors, Mall, Skylight	2030	to 40	9	70,000.00	70,000	70,000	**85,144**															
				Interior Building Elements																						
2.100	4	**4**	Each	Elevator Cab Finishes, Traction, Passenger	2022	to 20	1	20,000.00	80,000	80,000	**208,105**						126,345									
2.101	2	**2**	Each	Elevator Cab Finishes, Traction, Service	2024	to 20	3	18,000.00	36,000	36,000	**97,813**								59,384							
2.102	2	**2**	Each	Elevator Cab Finishes, Hydraulic, Garage	2024	to 20	3	16,000.00	32,000	32,000	**86,945**								52,786							
2.155	1	**1**	Allowance	Exercise Equipment, Cardiovascular	2022	to 5	1	44,000.00	44,000	44,000	**360,299**	62,326					69,490					77,478				
2.165	1	**1**	Allowance	Exercise Equipment, Strength Training	2031	to 15	10	43,000.00	43,000	43,000	**127,541**										74,087					
2.180	1	**1**	Allowance	Exercise Rooms, Renovations	2027	to 15	6	65,000.00	65,000	65,000	**295,099**			96,168												124,865
2.200	6,200	**6,200**	Square Yards	Floor Coverings, Carpet, Hallways	2022	8 to 12	1	82.00	508,400	508,400	**2,070,164**										875,947					
2.300	2,800	**2,800**	Square Feet	Floor Coverings, Vinyl, 2nd Floor Walkway and Pool Area	2024	to 15	3	35.00	98,000	98,000	**427,632**	138,816													184,205	
2.301	52	**52**	Floors	Floor Coverings, Vinyl, Service Elevator Foyers/Trash Areas, Residential Floors	2027	to 25	6	1,500.00	78,000	78,000	**88,879**															
2.560	620	**620**	Each	Light Fixtures, Hallways	2022	to 25	1	325.00	201,500	201,500	**538,321**								332,388							
2.600	1	**1**	Allowance	Lobby, Renovation	2028	to 20	7	120,000.00	120,000	120,000	**346,499**										206,754					

Years 2021 to 2036

RESERVE EXPENDITURES

Park Tower
Condominium Association
Chicago, Illinois

Explanatory Notes:

1) 2.2% is the estimated Inflation Rate for estimating Future Replacement Costs.
2) FY2021 is Fiscal Year beginning March 1, 2020 and ending February 28, 2021.

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, $				RUL = 0 FY2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028	8 2029	9 2030	10 2031	11 2032	12 2033	13 2034	14 2035	15 2036
						Useful	Remaining	Unit (2021)	Per Phase (2021)	Total (2021)	30-Year Total (Inflated)																
2.700	728	**728**	Units	Mailboxes (Residential)	2028	to 35	7	150.00	109,200	109,200	**127,168**								127,168							
2.711	1	**1**	Allowance	Mall, Corridors, Renovations	2023	to 25	2	100,000.00	100,000	100,000	**269,405**			104,448												
2.712	1	**1**	Allowance	Mall, Market, Renovations	2027	to 15	6	90,000.00	90,000	90,000	**408,598**							102,553								
2.713	1	**1**	Allowance	Mall, Office, Renovations	2023	to 10	2	38,000.00	38,000	38,000	**218,116**			39,690									48,277			
2.714	2	**2**	Each	Mall, Rest Rooms, Renovations	2039	to 25	18	19,000.00	38,000	38,000	**56,221**															
2.800	220,000	**220,000**	Square Feet	Paint Finishes, Hallways (Incl. Elevator Foyer Wall Coverings)	2022	8 to 12	1	1.30	286,000	286,000	**1,164,569**		292,292											379,514		
2.840	2	**1**	Allowance	Party Room, Renovations, Phased	2023	to 20	2 to 11	38,000.00	38,000	76,000	**218,116**			39,690									48,277			
2.900	2	**2**	Each	Rest/Locker Rooms, 2nd Floor, Renovations	2040	to 25	19	25,000.00	50,000	50,000	**75,603**															
2.911	1	**1**	Allowance	Signage (Phased in Near Term)	2022	to 25	1	80,000.00	80,000	80,000	**220,868**		15,000	65,000												
				Building Services Elements																						
3.020	2	**2**	Each	Air Handling Units, Residential Corridors, Capital Repairs	2022	to 35	1	65,000.00	130,000	130,000	**132,860**		132,860													
3.021	1	**1**	Each	Air Handling Unit, Lobby, Capital Repairs (Incl. Return Air Fan)	2025	to 35	4	46,000.00	46,000	46,000	**50,184**					50,184										
3.022	1	**1**	Each	Air Handling Unit, Mall Corridors (Replacement)	2025	to 35	4	80,000.00	80,000	80,000	**87,276**					87,276										
3.023	2	**2**	Each	Air Handling Units, Party Room and Basement (Replacement)	2025	to 35	4	45,000.00	90,000	90,000	**98,185**					98,185										
3.024	1	**1**	Each	Air Handling Unit, Pool (Incl. Return Air Fan) (Replacement)	2027	to 30	6	85,000.00	85,000	85,000	**96,856**							96,856								
3.025	1	**1**	Each	Air Handling Unit, Racquetball Court, Rooftop Unit	2025	to 25	4	24,000.00	24,000	24,000	**68,443**					26,183										
3.105	2	**2**	Each	Boilers, Building Heat, 29,291-MBH	2029	to 60	8	1,400,000.00	2,800,000	2,800,000	**3,332,462**								3,332,462							
3.106	1	**1**	Allowance	Boilers, Building Heat, Feed Water System (Tank and Pumps)	2029	to 35	8	64,000.00	64,000	64,000	**76,171**								76,171							
3.160	4	**4**	Each	Boilers, Domestic Hot Water, Residential, High Zone, 800-MBH	2030	to 15	9	45,000.00	180,000	180,000	**515,865**									218,943						
3.161	3	**3**	Each	Boilers, Domestic Hot Water, Residential, Low Zone, 1,255-MBH (2 in 2020)	2021	to 15	0	50,000.00	150,000	150,000	**558,889**	100,000											194,761			
3.162	2	**2**	Each	Boilers, Domestic Hot Water, Commercial, 660-MBH	2023	to 15	2	28,000.00	56,000	56,000	**239,101**			58,491												77,616
3.170	1	**1**	Allowance	Building Automation System	2025	to 15	4	150,000.00	150,000	150,000	**390,450**					163,642										
3.200	2	**2**	Each	Chillers, 600-tons, Capital Repairs	2025	to 10	4	60,000.00	120,000	120,000	**333,217**					130,914										
3.205	2	**2**	Each	Chillers, 600-tons, Replacement	2035	to 35	14	700,000.00	1,400,000	1,400,000	**1,898,631**														1,898,631	
3.260	1	**1**	Each	Cooling Tower, Residential, 1,051-tons, Capital Repairs	2024	10 to 15	3	72,000.00	72,000	72,000	**183,381**				76,857											
3.265	1	**1**	Each	Cooling Tower, Residential, 1,051-tons, Replacement	2043	to 35	22	550,000.00	550,000	550,000	**887,733**															
3.266	1	**1**	Each	Cooling Tower, Commercial, Replacement	2048	to 35	27	75,000.00	75,000	75,000	**134,969**															
3.300	1	**1**	Allowance	Electrical System, Main Panels	2040	to 70+	19	450,000.00	450,000	450,000	**680,424**															
3.320	2	**2**	Each	Elevators, Hydraulic, Garage, Pumps and Controls	2036	to 35	15	85,000.00	170,000	170,000	**235,620**															235,620
3.321	2	**2**	Each	Elevators, Hydraulic, Garage, Cylinders	2046	to 45	25	60,000.00	120,000	120,000	**206,754**															
3.322	1	**1**	Each	Elevator, Hydraulic, Refuse, Controls	2021	to 35	0	150,000.00	150,000	150,000	**150,000**	150,000														
3.323	1	**1**	Each	Elevator, Hydraulic, Refuse, Pump and Cylinder	2040	to 35	19	70,000.00	70,000	70,000	**105,844**															
3.360	4	**4**	Each	Elevators, Traction, Passenger, Controls and Equipment	2034	to 35	13	330,000.00	1,320,000	1,320,000	**1,751,603**													1,751,603		
3.361	2	**2**	Each	Elevators, Traction, Service, Controls and Equipment	2035	to 35	14	470,000.00	940,000	940,000	**1,274,795**														1,274,795	
3.380	2	**2**	Each	Exhaust Fans, Main Kitchen and Rest Room (Near Term is Kitchen Modifications)	2022	to 45	1	80,000.00	160,000	160,000	**345,497**		146,600									198,897					
3.393	7	**7**	Each	Expansion Tanks (Main Building Heating and Cooling System)	2029	to 60	8	22,000.00	154,000	154,000	**183,285**								183,285							
3.460	2	**2**	Each	Heat Exchangers, Building Heating, Main (Near Term is Valves)	2021	to 35	0	85,000.00	170,000	170,000	**232,328**	30,000							202,328							
3.461	3	**3**	Each	Heat Exchangers, Remaining (Pool Air Handler, Fin Tubes, Low Level)	2029	to 35	8	33,500.00	100,500	100,500	**119,612**								119,612							
3.555	1	**1**	Allowance	Life Safety System, Central Panels	2023	to 15	2	65,000.00	65,000	65,000	**161,989**			67,891												
3.560	1	**1**	Allowance	Life Safety System, Devices	2030	to 25	9	220,000.00	220,000	220,000	**267,597**									267,597						

Years 2037 to 2051

RESERVE EXPENDITURES

Park Tower
Condominium Association
Chicago, Illinois

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years Useful	Remaining	Costs, $ Unit (2021)	Per Phase (2021)	Total (2021)	30-Year Total (Inflated)	16 2037	17 2038	18 2039	19 2040	20 2041	21 2042	22 2043	23 2044	24 2045	25 2046	26 2047	27 2048	28 2049	29 2050	30 2051
2.700	728	**728**	Units	Mailboxes (Residential)	2028	to 35	7	150.00	109,200	109,200	**127,168**															
2.711	1	**1**	Allowance	Mall, Corridors, Renovations	2023	to 25	2	100,000.00	100,000	100,000	**269,405**								164,957							
2.712	1	**1**	Allowance	Mall, Market, Renovations	2027	to 15	6	90,000.00	90,000	90,000	**408,598**			133,155												172,890
2.713	1	**1**	Allowance	Mall, Office, Renovations	2023	to 10	2	38,000.00	38,000	38,000	**218,116**					58,722									71,427	
2.714	2	**2**	Each	Mall, Rest Rooms, Renovations	2039	to 25	18	19,000.00	38,000	38,000	**56,221**			56,221												
2.800	220,000	**220,000**	Square Feet	Paint Finishes, Hallways (Incl. Elevator Foyer Wall Coverings)	2022	8 to 12	1	1.30	286,000	286,000	**1,164,569**										492,763					
2.840	2	**1**	Allowance	Party Room, Renovations, Phased	2023	to 20	2 to 11	38,000.00	38,000	76,000	**218,116**					58,722									71,427	
2.900	2	**2**	Each	Rest/Locker Rooms, 2nd Floor, Renovations	2040	to 25	19	25,000.00	50,000	50,000	**75,603**				75,603											
2.911	1	**1**	Allowance	Signage (Phased in Near Term)	2022	to 25	1	80,000.00	80,000	80,000	**220,868**											140,868				
				Building Services Elements																						
3.020	2	**2**	Each	Air Handling Units, Residential Corridors, Capital Repairs	2022	to 35	1	65,000.00	130,000	130,000	**132,860**															
3.021	1	**1**	Each	Air Handling Unit, Lobby, Capital Repairs (Incl. Return Air Fan)	2025	to 35	4	46,000.00	46,000	46,000	**50,184**															
3.022	1	**1**	Each	Air Handling Unit, Mall Corridors (Replacement)	2025	to 35	4	80,000.00	80,000	80,000	**87,276**															
3.023	2	**2**	Each	Air Handling Units, Party Room and Basement (Replacement)	2025	to 35	4	45,000.00	90,000	90,000	**98,185**															
3.024	1	**1**	Each	Air Handling Unit, Pool (Incl. Return Air Fan) (Replacement)	2027	to 30	6	85,000.00	85,000	85,000	**96,856**															
3.025	1	**1**	Each	Air Handling Unit, Racquetball Court, Rooftop Unit	2025	to 25	4	24,000.00	24,000	24,000	**68,443**											42,260				
3.105	2	**2**	Each	Boilers, Building Heat, 29,291-MBH	2029	to 60	8	1,400,000.00	2,800,000	2,800,000	**3,332,462**															
3.106	1	**1**	Allowance	Boilers, Building Heat, Feed Water System (Tank and Pumps)	2029	to 35	8	64,000.00	64,000	64,000	**76,171**															
3.160	4	**4**	Each	Boilers, Domestic Hot Water, Residential, High Zone, 800-MBH	2030	to 15	9	45,000.00	180,000	180,000	**515,865**								296,922							
3.161	3	**3**	Each	Boilers, Domestic Hot Water, Residential, Low Zone, 1,255-MBH (2 in 2020)	2021	to 15	0	50,000.00	150,000	150,000	**558,889**											264,128				
3.162	2	**2**	Each	Boilers, Domestic Hot Water, Commercial, 660-MBH	2023	to 15	2	28,000.00	56,000	56,000	**239,101**														102,994	
3.170	1	**1**	Allowance	Building Automation System	2025	to 15	4	150,000.00	150,000	150,000	**390,450**				226,808											
3.200	2	**2**	Each	Chillers, 600-tons, Capital Repairs	2025	to 10	4	60,000.00	120,000	120,000	**333,217**									202,303						
3.205	2	**2**	Each	Chillers, 600-tons, Replacement	2035	to 35	14	700,000.00	1,400,000	1,400,000	**1,898,631**															
3.260	1	**1**	Each	Cooling Tower, Residential, 1,051-tons, Capital Repairs	2024	10 to 15	3	72,000.00	72,000	72,000	**183,381**			106,524												
3.265	1	**1**	Each	Cooling Tower, Residential, 1,051-tons, Replacement	2043	to 35	22	550,000.00	550,000	550,000	**887,733**							887,733								
3.266	1	**1**	Each	Cooling Tower, Commercial, Replacement	2048	to 35	27	75,000.00	75,000	75,000	**134,969**												134,969			
3.300	1	**1**	Allowance	Electrical System, Main Panels	2040	to 70+	19	450,000.00	450,000	450,000	**680,424**				680,424											
3.320	2	**2**	Each	Elevators, Hydraulic, Garage, Pumps and Controls	2036	to 35	15	85,000.00	170,000	170,000	**235,620**															
3.321	2	**2**	Each	Elevators, Hydraulic, Garage, Cylinders	2046	to 45	25	60,000.00	120,000	120,000	**206,754**										206,754					
3.322	1	**1**	Each	Elevator, Hydraulic, Refuse, Controls	2021	to 35	0	150,000.00	150,000	150,000	**150,000**															
3.323	1	**1**	Each	Elevator, Hydraulic, Refuse, Pump and Cylinder	2040	to 35	19	70,000.00	70,000	70,000	**105,844**				105,844											
3.360	4	**4**	Each	Elevators, Traction, Passenger, Controls and Equipment	2034	to 35	13	330,000.00	1,320,000	1,320,000	**1,751,603**															
3.361	2	**2**	Each	Elevators, Traction, Service, Controls and Equipment	2035	to 35	14	470,000.00	940,000	940,000	**1,274,795**															
3.380	2	**2**	Each	Exhaust Fans, Main Kitchen and Rest Room (Near Term is Kitchen Modifications)	2022	to 45	1	80,000.00	160,000	160,000	**345,497**															
3.393	7	**7**	Each	Expansion Tanks (Main Building Heating and Cooling System)	2029	to 60	8	22,000.00	154,000	154,000	**183,285**															
3.460	2	**2**	Each	Heat Exchangers, Building Heating, Main (Near Term is Valves)	2021	to 35	0	85,000.00	170,000	170,000	**232,328**															
3.461	3	**3**	Each	Heat Exchangers, Remaining (Pool Air Handler, Fin Tubes, Low Level)	2029	to 35	8	33,500.00	100,500	100,500	**119,612**															
3.555	1	**1**	Allowance	Life Safety System, Central Panels	2023	to 15	2	65,000.00	65,000	65,000	**161,989**		94,098													
3.560	1	**1**	Allowance	Life Safety System, Devices	2030	to 25	9	220,000.00	220,000	220,000	**267,597**															

Years 2021 to 2036

RESERVE EXPENDITURES

Park Tower
Condominium Association
Chicago, Illinois

Explanatory Notes:

1) 2.2% is the estimated Inflation Rate for estimating Future Replacement Costs.
2) FY2021 is Fiscal Year beginning March 1, 2020 and ending February 28, 2021.

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years Useful	Remaining	Costs, $ Unit (2021)	Per Phase (2021)	Total (2021)	30-Year Total (Inflated)	RUL = 0 FY2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028	8 2029	9 2030	10 2031	11 2032	12 2033	13 2034	14 2035	15 2036
3.580	470	**470**	Each	Light Fixtures, Exit and Emergency	2025	to 25	4	280.00	131,600	131,600	**380,395**					143,569										
3.599	1	**1**	Allowance	Pipes, Risers, Building Heating, Cooling and Condensate, Invasive Study	2026	n/a	5	35,000.00	35,000	35,000	**35,000**						35,000									
3.600	2,454	**307**	Each	Pipes, Riser Sections, Building Heating, Cooling and Condensate, Phased	2028	to 80+	7 to 14	2,400.00	736,200	5,889,600	**7,410,712**								857,338	876,199	895,476	915,176	935,310	955,887	976,917	998,409	
3.601	1	**1**	Allowance	Pipes, Building Heating and Cooling, 06 Tier Insulation	2022	n/a	1	88,000.00	88,000	88,000	**89,936**		89,936													
3.604	5	**1**	Allowance	Pipes, Riser Sections, Domestic Hot Water, Remaining Phased	2022	to 70+	1 to 5	500,000.00	500,000	2,500,000	**2,716,500**		500,000	578,800	607,700	580,000	450,000										
3.605	2,754	**344**	Each	Pipes, Riser Sections, Domestic Cold Water, Waste and Vent, Phased	2037	to 70+	16 to 23	2,300.00	791,775	6,334,200	**9,694,466**															
3.700	2	**2**	Each	Pumps, Building Cooling, Commercial at Cooling Tower, 7.5-HP (Incl. Controls, VFDs)	2041	to 25	20	15,000.00	30,000	30,000	**46,360**															
3.701	1	**1**	Each	Pump, Building Cooling, Residential, Cooling Tower, 75-HP (Incl. Controls)	2036	to 30	15	44,000.00	44,000	44,000	**60,984**															60,984
3.702	2	**2**	Each	Pumps, Building Heating, Commercial, 10-HP (Incl. Controls)	2028	to 30	7	18,000.00	36,000	36,000	**41,924**								41,924							
3.703	3	**3**	Each	Pumps, HVAC, Residential, Fan Coil Loop/Dual Temperature, 100-HP (Incl. Controls, VFDs)	2023	to 35	2	54,000.00	162,000	162,000	**169,206**			169,206													
3.704	2	**2**	Each	Pumps, Building Heating, Residential, Fin Tubes, 10-HP (Incl. Controls)	2021	to 30	0	15,000.00	30,000	30,000	**82,826**	30,000														
3.705	3	**3**	Each	Pumps, Domestic Cold Water, 30- to 75-HP (Incl. Controls) (Near Term are 2)	2022	to 25	1	60,000.00	180,000	180,000	**395,170**		60,000	63,000													
3.706	2	**2**	Each	Pumps, Fire Suppression, 40- to 100-HP (Incl. Controls)	2033	to 60	12	96,000.00	192,000	192,000	**249,294**													249,294		
3.707	2	**2**	Each	Pumps, Gas Booster, 10-HP (Incl. Controls, VFDs) (2020 is 1)	2021	to 25	0	36,000.00	72,000	72,000	**144,868**	36,000														
3.708	2	**2**	Each	Pumps, Sewage Ejection, 10-HP (Incl. Controls)	2039	to 25	18	12,000.00	24,000	24,000	**35,508**															
3.820	3	**1**	Allowance	Security System, Phased (Cameras, Monitors, Card Readers)	2024	to 15	3 to 11	33,000.00	33,000	99,000	**325,040**				35,226				38,430				41,925			45,738
3.860	1	**1**	Each	Storage Tank, Domestic Hot Water, at Main Boiler Room	2024	to 45	3	219,000.00	219,000	219,000	**233,774**				233,774											
3.861	1	**1**	Each	Storage Tank, Domestic Hot Water, High Zone	2028	to 45	7	120,000.00	120,000	120,000	**139,745**								139,745							
3.900	1	**1**	Each	Trash Compactor	2040	to 25	19	15,500.00	15,500	15,500	**23,437**															
3.920	30	**10**	Each	Valves, Large Diameter, Phased (Fire Pumps, Main Water, Main Mech.)	2025	to 50	4 to 6	7,500.00	75,000	225,000	**250,903**					81,821	83,621	85,461								
				Property Site Elements																						
4.045	1,750	**1,750**	Square Yards	Asphalt Pavement, East and North (Shared), Total Replacement	2021	15 to 20	0	29.00	50,750	50,750	**121,887**	50,000														
4.140	1	**1**	Allowance	Concrete, On-Grade at Site, Partial Replacements	2021	to 50	0	18,000.00	18,000	18,000	**153,436**	18,000						20,511					23,371			
4.959	1	**1**	Allowance	Plaza, Waterproof Membrane and Concrete, Interim Repairs/Sealants (Incl. Circle Drive)	2023	to 8	2	45,000.00	45,000	45,000	**248,758**			47,002								55,940				
4.960	11,000	**11,000**	Square Feet	Plaza, Waterproof Membrane and Concrete, Replacement (Incl. Circle Drive)	2043	to 30	22	96.00	1,056,000	1,056,000	**1,704,447**															
4.961	1,500	**1,500**	Square Feet	Plaza, Waterproof Membrane, Planters (Except at Lobby Entrance)	2034	to 30	13	82.00	123,000	123,000	**163,218**													163,218		
				Pool Elements																						
6.553	1	**1**	Allowance	Hot Tub (Jacuzzi), Insert (Near Term is Platform/Tile/Walls)	2021	to 20	0	29,000.00	29,000	29,000	**101,935**	20,000						33,045								
6.600	2	**1**	Allowance	Mechanical Equipment, Phased	2024	to 15	3 to 9	31,000.00	31,000	62,000	**218,510**				33,091						37,707					42,966
6.800	2,100	**2,100**	Square Feet	Pool, Main, Vinyl Liner and Repairs	2030	to 15	9	60.00	126,000	126,000	**352,254**										153,260					
6.801	1	**1**	Allowance	Pool, Outdoor, Plaster Finish and Repairs (Kiddie Pool)	2026	8 to 12	5	22,000.00	22,000	22,000	**92,926**						24,529									30,492
				Garage Elements																						
7.299	1	**1**	Allowance	Concrete and Traffic Coating, Near Term Restoration Project	2022	n/a	1	950,000.00	950,000	950,000	**950,000**		950,000													
7.300	63,000	**63,000**	Square Feet	Concrete, Elevated Floor, Inspections and Capital Repairs (1P Level)	2032	to 10	11	2.20	138,600	138,600	**394,978**											176,085				
7.360	63,000	**3,150**	Square Feet	Concrete, On-grade, Partial (2P Level)	2032	to 90	11 to 30+	23.00	72,450	1,449,000	**206,466**											92,045				
7.400	6	**6**	Each	Doors and Operators, Fire	2026	to 50	5	22,000.00	132,000	132,000	**147,173**						147,173									
7.460	1	**1**	Allowance	Exhaust System (Fans, Louvers and Carbon Monoxide Detectors)	2031	to 30	10	86,000.00	86,000	86,000	**106,907**											106,907				
7.500	126,000	**126,000**	Square Feet	Fire Suppression System	2033	to 60	12	4.80	604,800	604,800	**785,276**													785,276		

Years 2037 to 2051

RESERVE EXPENDITURES

Park Tower
Condominium Association
Chicago, Illinois

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years Useful	Remaining	Costs, $ Unit (2021)	Per Phase (2021)	Total (2021)	30-Year Total (Inflated)	16 2037	17 2038	18 2039	19 2040	20 2041	21 2042	22 2043	23 2044	24 2045	25 2046	26 2047	27 2048	28 2049	29 2050	30 2051
3.580	470	**470**	Each	Light Fixtures, Exit and Emergency	2025	to 25	4	280.00	131,600	131,600	**380,395**												236,826			
3.599	1	**1**	Allowance	Pipes, Risers, Building Heating, Cooling and Condensate, Invasive Study	2026	n/a	5	35,000.00	35,000	35,000	**35,000**															
3.600	2,454	**307**	Each	Pipes, Riser Sections, Building Heating, Cooling and Condensate, Phased	2028	to 80+	7 to 14	2,400.00	736,200	5,889,600	**7,410,712**															
3.601	1	**1**	Allowance	Pipes, Building Heating and Cooling, 06 Tier Insulation	2022	n/a	1	88,000.00	88,000	88,000	**89,936**															
3.604	5	**1**	Allowance	Pipes, Riser Sections, Domestic Hot Water, Remaining Phased	2022	to 70+	1 to 5	500,000.00	500,000	2,500,000	**2,716,500**															
3.605	2,754	**344**	Each	Pipes, Riser Sections, Domestic Cold Water, Waste and Vent, Phased	2037	to 70+	16 to 23	2,300.00	791,775	6,334,200	**9,694,466**	1,121,543	1,146,217	1,171,434	1,197,206	1,223,544	1,250,462	1,277,972	1,306,088							
3.700	2	**2**	Each	Pumps, Building Cooling, Commercial at Cooling Tower, 7.5-HP (Incl. Controls, VFDs)	2041	to 25	20	15,000.00	30,000	30,000	**46,360**					46,360										
3.701	1	**1**	Each	Pump, Building Cooling, Residential, Cooling Tower, 75-HP (Incl. Controls)	2036	to 30	15	44,000.00	44,000	44,000	**60,984**															
3.702	2	**2**	Each	Pumps, Building Heating, Commercial, 10-HP (Incl. Controls)	2028	to 30	7	18,000.00	36,000	36,000	**41,924**															
3.703	3	**3**	Each	Pumps, HVAC, Residential, Fan Coil Loop/Dual Temperature, 100-HP (Incl. Controls, VFDs)	2023	to 35	2	54,000.00	162,000	162,000	**169,206**															
3.704	2	**2**	Each	Pumps, Building Heating, Residential, Fin Tubes, 10-HP (Incl. Controls)	2021	to 30	0	15,000.00	30,000	30,000	**82,826**											52,826				
3.705	3	**3**	Each	Pumps, Domestic Cold Water, 30- to 75-HP (Incl. Controls) (Near Term are 2)	2022	to 25	1	60,000.00	180,000	180,000	**395,170**				272,170											
3.706	2	**2**	Each	Pumps, Fire Suppression, 40- to 100-HP (Incl. Controls)	2033	to 60	12	96,000.00	192,000	192,000	**249,294**															
3.707	2	**2**	Each	Pumps, Gas Booster, 10-HP (Incl. Controls, VFDs) (2020 is 1)	2021	to 25	0	36,000.00	72,000	72,000	**144,868**				108,868											
3.708	2	**2**	Each	Pumps, Sewage Ejection, 10-HP (Incl. Controls)	2039	to 25	18	12,000.00	24,000	24,000	**35,508**			35,508												
3.820	3	**1**	Allowance	Security System, Phased (Cameras, Monitors, Card Readers)	2024	to 15	3 to 11	33,000.00	33,000	99,000	**325,040**				49,898				54,436				59,387			
3.860	1	**1**	Each	Storage Tank, Domestic Hot Water, at Main Boiler Room	2024	to 45	3	219,000.00	219,000	219,000	**233,774**															
3.861	1	**1**	Each	Storage Tank, Domestic Hot Water, High Zone	2028	to 45	7	120,000.00	120,000	120,000	**139,745**															
3.900	1	**1**	Each	Trash Compactor	2040	to 25	19	15,500.00	15,500	15,500	**23,437**				23,437											
3.920	30	**10**	Each	Valves, Large Diameter, Phased (Fire Pumps, Main Water, Main Mech.)	2025	to 50	4 to 6	7,500.00	75,000	225,000	**250,903**															
				Property Site Elements																						
4.045	1,750	**1,750**	Square Yards	Asphalt Pavement, East and North (Shared), Total Replacement	2021	15 to 20	0	29.00	50,750	50,750	**121,887**	71,887														
4.140	1	**1**	Allowance	Concrete, On-Grade at Site, Partial Replacements	2021	to 50	0	18,000.00	18,000	18,000	**153,436**			26,631					30,345							34,578
4.959	1	**1**	Allowance	Plaza, Waterproof Membrane and Concrete, Interim Repairs/Sealants (Incl. Circle Drive)	2023	to 8	2	45,000.00	45,000	45,000	**248,758**			66,578								79,238				
4.960	11,000	**11,000**	Square Feet	Plaza, Waterproof Membrane and Concrete, Replacement (Incl. Circle Drive)	2043	to 30	22	96.00	1,056,000	1,056,000	**1,704,447**							1,704,447							
4.961	1,500	**1,500**	Square Feet	Plaza, Waterproof Membrane, Planters (Except at Lobby Entrance)	2034	to 30	13	82.00	123,000	123,000	**163,218**															
				Pool Elements																						
6.553	1	**1**	Allowance	Hot Tub (Jacuzzi), Insert (Near Term is Platform/Tile/Walls)	2021	to 20	0	29,000.00	29,000	29,000	**101,935**								48,890							
6.600	2	**1**	Allowance	Mechanical Equipment, Phased	2024	to 15	3 to 9	31,000.00	31,000	62,000	**218,510**						48,959						55,787			
6.800	2,100	**2,100**	Square Feet	Pool, Main, Vinyl Liner and Repairs	2030	to 15	9	60.00	126,000	126,000	**352,254**						198,994									
6.801	1	**1**	Allowance	Pool, Outdoor, Plaster Finish and Repairs (Kiddie Pool)	2026	8 to 12	5	22,000.00	22,000	22,000	**92,926**									37,905						
				Garage Elements																						
7.299	1	**1**	Allowance	Concrete and Traffic Coating, Near Term Restoration Project	2022	n/a	1	950,000.00	950,000	950,000	**950,000**															
7.300	63,000	**63,000**	Square Feet	Concrete, Elevated Floor, Inspections and Capital Repairs (1P Level)	2032	to 10	11	2.20	138,600	138,600	**394,978**						218,893									
7.360	63,000	**3,150**	Square Feet	Concrete, On-grade, Partial (2P Level)	2032	to 90	11 to 30+	23.00	72,450	1,449,000	**206,466**						114,421									
7.400	6	**6**	Each	Doors and Operators, Fire	2026	to 50	5	22,000.00	132,000	132,000	**147,173**															
7.460	1	**1**	Allowance	Exhaust System (Fans, Louvers and Carbon Monoxide Detectors)	2031	to 30	10	86,000.00	86,000	86,000	**106,907**															
7.500	126,000	**126,000**	Square Feet	Fire Suppression System	2033	to 60	12	4.80	604,800	604,800	**785,276**															

Years 2021 to 2036

RESERVE EXPENDITURES

Park Tower
Condominium Association
Chicago, Illinois

Explanatory Notes:

1) 2.2% is the estimated Inflation Rate for estimating Future Replacement Costs.
2) FY2021 is Fiscal Year beginning March 1, 2020 and ending February 28, 2021.

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, $				RUL = 0 FY2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028	8 2029	9 2030	10 2031	11 2032	12 2033	13 2034	14 2035	15 2036
						Useful	Remaining	Unit (2021)	Per Phase (2021)	Total (2021)	30-Year Total (Inflated)																
7.600	200	**200**	Each	Light Fixtures	2035	to 30	14	240.00	48,000	48,000	**65,096**														65,096	
7.660	150,000	**150,000**	Square Feet	Paint Finishes	2028	to 20	7	0.80	120,000	120,000	**355,696**								139,745							
7.799	26,000	**26,000**	Square Feet	Traffic Coating, Elevated Floor, Overlay at Drive Lanes (1P Level)	2032	to 10	11	6.00	156,000	156,000	**198,191**											198,191				
7.800	63,000	**63,000**	Square Feet	Traffic Coating, Elevated Floor, Total Replacement (1P Level)	2042	to 20	21	7.00	441,000	441,000	**696,478**															
7.900	1	**1**	Allowance	Unit Heaters (Replacement of Remaining Original)	2032	to 30	11	140,000.00	140,000	140,000	**177,864**											177,864				
		1	Allowance	**Reserve Study Update with Site Visit**	2022	2	1	13,000.00	13,000	13,000	**13,000**		13,000													
				Anticipated Expenditures, By Year							**$71,654,985**	955,200	3,051,934	1,335,264	1,163,847	2,249,805	3,513,197	1,144,720	1,484,095	5,860,015	1,658,127	1,417,143	1,833,585	2,648,100	3,945,884	4,377,972	1,335,689

Years 2037 to 2051

RESERVE EXPENDITURES

Park Tower
Condominium Association
Chicago, Illinois

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years Useful	Remaining	Costs, $ Unit (2021)	Per Phase (2021)	Total (2021)	30-Year Total (Inflated)	16 2037	17 2038	18 2039	19 2040	20 2041	21 2042	22 2043	23 2044	24 2045	25 2046	26 2047	27 2048	28 2049	29 2050	30 2051
7.600	200	**200**	Each	Light Fixtures	2035	to 30	14	240.00	48,000	48,000	**65,096**															
7.660	150,000	**150,000**	Square Feet	Paint Finishes	2028	to 20	7	0.80	120,000	120,000	**355,696**												215,951			
7.799	26,000	**26,000**	Square Feet	Traffic Coating, Elevated Floor, Overlay at Drive Lanes (1P Level)	2032	to 10	11	6.00	156,000	156,000	**198,191**															
7.800	63,000	**63,000**	Square Feet	Traffic Coating, Elevated Floor, Total Replacement (1P Level)	2042	to 20	21	7.00	441,000	441,000	**696,478**						696,478									
7.900	1	**1**	Allowance	Unit Heaters (Replacement of Remaining Original)	2032	to 30	11	140,000.00	140,000	140,000	**177,864**															
		1	Allowance	**Reserve Study Update with Site Visit**	2022	2	1	13,000.00	13,000	13,000	**13,000**															
				Anticipated Expenditures, By Year							**$71,654,985**	1,860,597	4,766,804	1,840,909	2,830,754	1,663,960	3,140,507	4,012,189	2,266,961	350,658	2,015,506	921,278	1,147,419	927,868	5,523,904	411,094

RESERVE FUNDING PLAN

CASH FLOW ANALYSIS
Park Tower
Condominium Association
Chicago, Illinois

Individual Reserve Budgets & Cash Flows for the Next 30 Years

		FY2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
	Reserves at Beginning of Year (Note 1)	1,876,412	2,758,199	1,641,931	2,339,184	3,325,523	3,336,781	2,174,249	3,431,633	4,423,512	1,068,877	1,945,495	3,138,690	3,992,006	4,097,904	2,954,546	1,412,613
	Total Recommended Reserve Contributions (Note 2)	**1,791,100**	**1,892,100**	**1,993,100**	**2,094,100**	**2,195,100**	**2,296,100**	**2,346,600**	**2,398,200**	**2,451,000**	**2,504,900**	**2,560,000**	**2,616,300**	**2,673,900**	**2,732,700**	**2,792,800**	**2,854,200**
Plus	**Estimated Interest Earned, During Year (Note 3)**	45,887	43,566	39,417	56,086	65,963	54,565	55,504	77,774	54,380	29,845	50,338	70,601	80,098	69,826	43,239	43,437
Less	**Anticipated Expenditures, By Year**	(955,200)	(3,051,934)	(1,335,264)	(1,163,847)	(2,249,805)	(3,513,197)	(1,144,720)	(1,484,095)	(5,860,015)	(1,658,127)	(1,417,143)	(1,833,585)	(2,648,100)	(3,945,884)	(4,377,972)	(1,335,689)
	Anticipated Reserves at Year End	$2,758,199	$1,641,931	$2,339,184	$3,325,523	$3,336,781	$2,174,249	$3,431,633	$4,423,512	$1,068,877	$1,945,495	$3,138,690	$3,992,006	$4,097,904	$2,954,546	$1,412,613	$2,974,561
										(NOTE 5)							

(continued)

Individual Reserve Budgets & Cash Flows for the Next 30 Years, Continued

		2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
	Reserves at Beginning of Year	2,974,561	4,101,019	2,379,579	3,645,120	4,003,899	5,617,500	5,842,761	5,264,444	4,494,102	5,674,927	5,229,687	5,913,235	6,415,281	7,183,050	3,358,821
	Total Recommended Reserve Contributions	**2,917,000**	**2,981,200**	**3,046,800**	**3,113,800**	**3,182,300**	**3,252,300**	**3,323,900**	**1,400,000**	**1,430,800**	**1,462,300**	**1,494,500**	**1,527,400**	**1,561,000**	**1,595,300**	**1,630,400**
Plus	**Estimated Interest Earned, During Year**	70,055	64,164	59,650	75,733	95,261	113,468	109,972	96,619	100,683	107,966	110,326	122,065	134,637	104,375	79,369
Less	**Anticipated Expenditures, By Year**	(1,860,597)	(4,766,804)	(1,840,909)	(2,830,754)	(1,663,960)	(3,140,507)	(4,012,189)	(2,266,961)	(350,658)	(2,015,506)	(921,278)	(1,147,419)	(927,868)	(5,523,904)	(411,094)
	Anticipated Reserves at Year End	$4,101,019	$2,379,579	$3,645,120	$4,003,899	$5,617,500	$5,842,761	$5,264,444	$4,494,102	$5,674,927	$5,229,687	$5,913,235	$6,415,281	$7,183,050	$3,358,821	$4,657,496
																(NOTE 4)

Explanatory Notes:

1) Year 2021 starting reserves are as of February 29, 2020; FY2021 starts March 1, 2020 and ends February 28, 2021.
2) Reserve Contributions for 2021 are budgeted; 2022 is the first year of recommended contributions.
3) 2.0% is the estimated annual rate of return on invested reserves.
4) Accumulated year 2051 ending reserves consider the need to fund for replacement of the remaining original electrical system components shortly after 2051, and the age, size, overall condition and complexity of the property.
5) Threshold Funding Year (reserve balance at critical point).

*Refer to the Reserve Expenditures pages for the full list of reserve elements

FIVE-YEAR OUTLOOK

Park Tower
Condominium Association
Chicago, Illinois

Line Item	Reserve Component Inventory	RUL = 0 FY2021	1 2022	2 2023	3 2024	4 2025	5 2026
	Exterior Building Elements						
1.260	Lighting System, Main Roof Level (Proposed)			59,222			
1.402	Roofs, 2nd Floor Walkway (Incl. Gutter System)	60,000					
1.407	Roof, 2nd Floor, Concrete, Waterproof Coating and Repairs					229,099	
1.410	Roof, 2nd Floor, Sun Deck, Steel Railings (Incl. East of Pool Enclosure)						56,862
1.413	Roof, Pool Enclosure, Replacement	272,600					
1.729	Walls, Curtain Wall, Inspections and Infiltration Remediation	38,600		42,824		44,729	
1.730	Walls, Curtain Wall, Inspections, Partial Sealants and Capital Repairs						2,716,012
1.819	Walls, Masonry, Near Term Remaining Flashing Installation	150,000					
1.820	Walls, Masonry, Inspections and Repairs, Subsequent					150,551	
1.982	Windows and Doors, 2nd Floor Walkway and Weight Exercise Room					194,734	
1.983	Windows and Doors, Pool					176,188	
1.984	Windows and Doors, Mall (Entrances and Standard Windows)					92,730	
	Interior Building Elements						
2.100	Elevator Cab Finishes, Traction, Passenger		81,760				
2.101	Elevator Cab Finishes, Traction, Service				38,429		
2.102	Elevator Cab Finishes, Hydraulic, Garage				34,159		
2.155	Exercise Equipment, Cardiovascular		44,968				
2.200	Floor Coverings, Carpet, Hallways		519,585				
2.300	Floor Coverings, Vinyl, 2nd Floor Walkway and Pool Area				104,611		
2.560	Light Fixtures, Hallways		205,933				
2.711	Mall, Corridors, Renovations			104,448			
2.713	Mall, Office, Renovations			39,690			
2.800	Paint Finishes, Hallways (Incl. Elevator Foyer Wall Coverings)		292,292				
2.840	Party Room, Renovations, Phased			39,690			
2.911	Signage (Phased in Near Term)		15,000	65,000			
	Building Services Elements						
3.020	Air Handling Units, Residential Corridors, Capital Repairs		132,860				
3.021	Air Handling Unit, Lobby, Capital Repairs (Incl. Return Air Fan)					50,184	
3.022	Air Handling Unit, Mall Corridors (Replacement)					87,276	
3.023	Air Handling Units, Party Room and Basement (Replacement)					98,185	
3.025	Air Handling Unit, Racquetball Court, Rooftop Unit					26,183	

FIVE-YEAR OUTLOOK

Park Tower
Condominium Association
Chicago, Illinois

Line Item	Reserve Component Inventory	RUL = 0 FY2021	1 2022	2 2023	3 2024	4 2025	5 2026
3.161	Boilers, Domestic Hot Water, Residential, Low Zone, 1,255-MBH (2 in 2020)	100,000					
3.162	Boilers, Domestic Hot Water, Commercial, 660-MBH			58,491			
3.170	Building Automation System					163,642	
3.200	Chillers, 600-tons, Capital Repairs					130,914	
3.260	Cooling Tower, Residential, 1,051-tons, Capital Repairs				76,857		
3.322	Elevator, Hydraulic, Refuse, Controls	150,000					
3.380	Exhaust Fans, Main Kitchen and Rest Room (Near Term is Kitchen Modifications)		146,600				
3.460	Heat Exchangers, Building Heating, Main (Near Term is Valves)	30,000					
3.555	Life Safety System, Central Panels			67,891			
3.580	Light Fixtures, Exit and Emergency					143,569	
3.599	Pipes, Risers, Building Heating, Cooling and Condensate, Invasive Study						35,000
3.601	Pipes, Building Heating and Cooling, 06 Tier Insulation		89,936				
3.604	Pipes, Riser Sections, Domestic Hot Water, Remaining Phased		500,000	578,800	607,700	580,000	450,000
3.703	Pumps, HVAC, Residential, Fan Coil Loop/Dual Temperature, 100-HP (Incl. Controls, VFDs)			169,206			
3.704	Pumps, Building Heating, Residential, Fin Tubes, 10-HP (Incl. Controls)	30,000					
3.705	Pumps, Domestic Cold Water, 30- to 75-HP (Incl. Controls) (Near Term are 2)		60,000	63,000			
3.707	Pumps, Gas Booster, 10-HP (Incl. Controls, VFDs) (2020 is 1)	36,000					
3.820	Security System, Phased (Cameras, Monitors, Card Readers)				35,226		
3.860	Storage Tank, Domestic Hot Water, at Main Boiler Room				233,774		
3.920	Valves, Large Diameter, Phased (Fire Pumps, Main Water, Main Mech.)					81,821	83,621
	Property Site Elements						
4.045	Asphalt Pavement, East and North (Shared), Total Replacement	50,000					
4.140	Concrete, On-Grade at Site, Partial Replacements	18,000					
4.959	Plaza, Waterproof Membrane and Concrete, Interim Repairs/Sealants (Incl. Circle Drive)			47,002			
	Pool Elements						
6.553	Hot Tub (Jacuzzi), Insert (Near Term is Platform/Tile/Walls)	20,000					
6.600	Mechanical Equipment, Phased				33,091		
6.801	Pool, Outdoor, Plaster Finish and Repairs (Kiddie Pool)						24,529
	Garage Elements						
7.299	Concrete and Traffic Coating, Near Term Restoration Project		950,000				
7.400	Doors and Operators, Fire						147,173

*Refer to the Reserve Expenditures pages for the full list of reserve elements

FIVE-YEAR OUTLOOK

Park Tower
Condominium Association
Chicago, Illinois

Line Item	Reserve Component Inventory	RUL = 0 FY2021	1 2022	2 2023	3 2024	4 2025	5 2026
	Reserve Study Update with Site Visit		13,000				
	Anticipated Expenditures, By Year	955,200	3,051,934	1,335,264	1,163,847	2,249,805	3,513,197

4. RESERVE COMPONENT DETAIL

The Reserve Component Detail of this *Full Reserve Study* includes enhanced solutions and procedures for select significant components. This section describes the Reserve Components, documents specific problems and condition assessments, and may include detailed solutions and procedures for necessary capital repairs and replacements for the benefit of current and future board members. We advise the Board use this information to help define the scope and procedures for repair or replacement when soliciting bids or proposals from contractors. *However, the Report in whole or part is not and should not be used as a design specification or design engineering service*.

Exterior Building Elements

South/west elevations

North/east elevations

East/south elevations

Lighting System, Main Roof Level

Line Item: 1.260

Component Detail Notes: We include a Management provided cost in the near term to install a lighting system at the main roof level.

Useful Life: We assume a useful life of up to 20 years for the fixtures. However, future updates will adjust the useful life based on the exact fixture installed.

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Roofs (Including Sun Deck Components)

Line Item: 1.400 through 1.411

Quantity, History and Condition: Park Tower maintains the following roofing systems and 2nd floor sun deck components:

- Tower, Main and Mechanical Penthouse – 10,300 square feet of modified bitumen roofing, replaced 2016, good overall
- Lobby Canopy – 800 square feet of flat membrane roofing, replaced 2012
- 2nd Floor Walkway – 900 square feet of modified bitumen roofing, installed 1999, the Association will replace in the near term (including the gutter system)
- 2nd Floor, Racquetball Courts and Exercise Room – 2,200 square feet of flat membrane roofing, replaced approximately 2010
- 2nd Floor, Center/East – 2,600 square feet of thermoplastic roofing, replaced 2018, good condition
- 2nd Floor, Northwest – 9,500 square feet of thermoplastic roofing, installed 2012, exhibits areas that lack drainage and membrane bulge
- 2nd Floor, Southwest – 2,100 square feet of thermoplastic roofing, replaced approximately 2016, good overall
- 2nd Floor, Concrete - approximately 15,000 square feet of concrete roofing systems at the 2nd floor with a surface applied waterproof coating, surface coating replaced in 2013, coating exhibits areas of unrepaired cracks, fair overall
- 2nd Floor, Sun Deck, Planters - approximately 2,300 square feet (excluding the two integral planters at the wood deck area), planters include landscaping with underlying waterproof membranes, waterproof membranes replaced from 2017 to 2019
- 2nd Floor, Sun Deck, Wood Decking - 3,800 square feet of wood decking with 1,800 square feet of wood pergolas, also includes wood siding at the planter walls, includes two integral planters, installed 1997, significant partial replacement of the wood in 2007, Association stains and repairs the wood regularly through the operating budget, wood decking deterioration/weathering is evident

- 2nd Floor, Sun Deck, Steel Railings - approximately 340 linear feet of steel railings south and east of the sun deck and east of the pool area (pool area railings include glass panels), railings are original and exhibit areas of corrosion, primarily at mounts at the sun deck area railings, the inset mounts accelerate masonry damage and steel corrosion, the railings east of the pool area exhibit extensive corrosion
- 2nd Floor, Membrane (beneath decking) – 3,900 square feet of flat membrane roofing beneath the wood decking and brick pavers, installed 2007

Main level roof system at perimeter termination

Lack of drainage at main level roof system

Perimeter sealant at main level roof

Roof membrane at lobby canopy

Roof system at 2nd floor center/east

Roof system at perimeter at 2nd floor northwest

Lack of drainage at roof at 2nd floor northwest

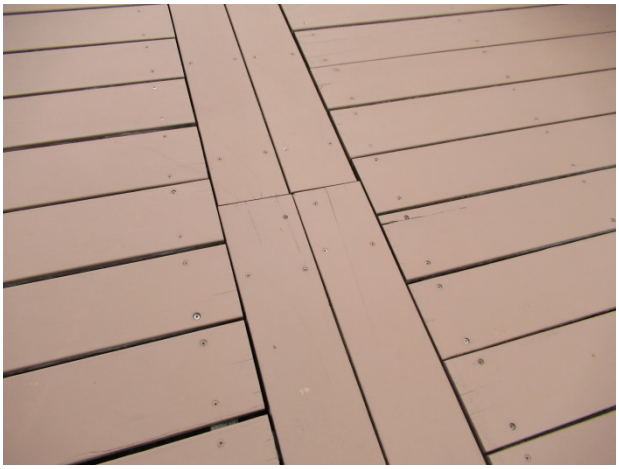
Roof system at 2nd floor southwest

Crack at waterproof coating at 2nd floor concrete roof system

Crack repairs at waterproof coating at 2nd floor concrete roof system

Recently replaced waterproofing system at 2nd floor planter

Recently replaced planter at 2nd floor roof



Weathered wood at 2nd floor sun deck

Wood at planter wall at 2nd floor sun deck

Frame corrosion at railing east of pool area

Inset post and steel rust at 2nd floor roof perimeter

Useful Life:

- Tower, Main and Mechanical Penthouse – 15- to 20-years

- Lobby Canopy – 15- to 20-years
- 2nd Floor Walkway, Racquetball Courts and Exercise Room – 15- to 20-years
- 2nd Floor, Center/East – 15- to 20-years
- 2nd Floor, Northwest – 15- to 20-years
- 2nd Floor, Southwest – 15- to 20-years
- 2nd Floor, Concrete – 10- to 15-years
- 2nd Floor, Sun Deck, Planters – up to 30 years.
- 2nd Floor, Sun Deck, Wood Decking – up to 25 years
- 2nd Floor, Sun Deck, Steel Railings – up to 45 years
- 2nd Floor, Membrane (beneath decking) – 15- to 20-years

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Roof, Pool Enclosure

Line Items: 1.411 and 1.412

Quantity, History and Condition: The pool enclosure was installed in 1997 and includes approximately 4,700 square feet of *Kalwall* translucent panels with a steel structure. The pool structure exhibits evidence of water infiltration. We include a Building Engineer provided cost to replace the panels in the near term.

Pool enclosure roof system

Evidence of water infiltration at pool enclosure

Useful Life: The enclosure panels have a useful life of up to 40 years with the benefit of repairs and replacement of sealants every 10- to 15-years. The structural frame has an indeterminate remaining useful life.

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Walls, Concrete, Mechanical Penthouse

Line Item: 1.660

Quantity, History and Condition: The Park Tower mechanical penthouse exterior includes approximately 7,000 square feet of concrete façade. The Association completed concrete repairs and coating application in 2018. The concrete exhibits isolated unrepaired cracks.

Repaired cracks at penthouse concrete

Repaired cracks at penthouse concrete

Useful Life: We recommend concrete inspections, coating applications and repairs up to every 12 years.

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. We recommend the Association budget for the following work per repair event:

- Complete inspection
- Partial depth replacement of a limited amount of concrete
- Crack repairs as needed
- Coating application

Walls, Curtain Wall

Line Items: 1.729 and 1.730

Quantity, History and Condition: The envelope of the building comprises approximately 203,000 square feet of curtain wall system at the residential units. The system includes:

- Single pane glazing (fixed and operable windows)
- Aluminum frames, frame covers and mullions
- Prefinished spandrel panels
- Approximately 228,000 linear feet of wet sealants at metal/metal and metal/glass interfaces

The Association completed an extensive restoration of the curtain wall system, including replacement of the sealants, in 2010. Management informs us of a limited recent history of water infiltration from the curtain wall system. We include a Management provided cost in the near term to inspect the curtain wall system.

The curtain wall system exhibits areas of sealant deterioration. The spandrel panels and frames exhibit dirt/pollutant build-up.

Residential unit curtain wall system at operable window

Residential unit curtain wall system at interior seals

Sealants at base of vertical mullion

Sealant deterioration at metal/metal interface

Sealant at metal/glass and metal/metal interfaces

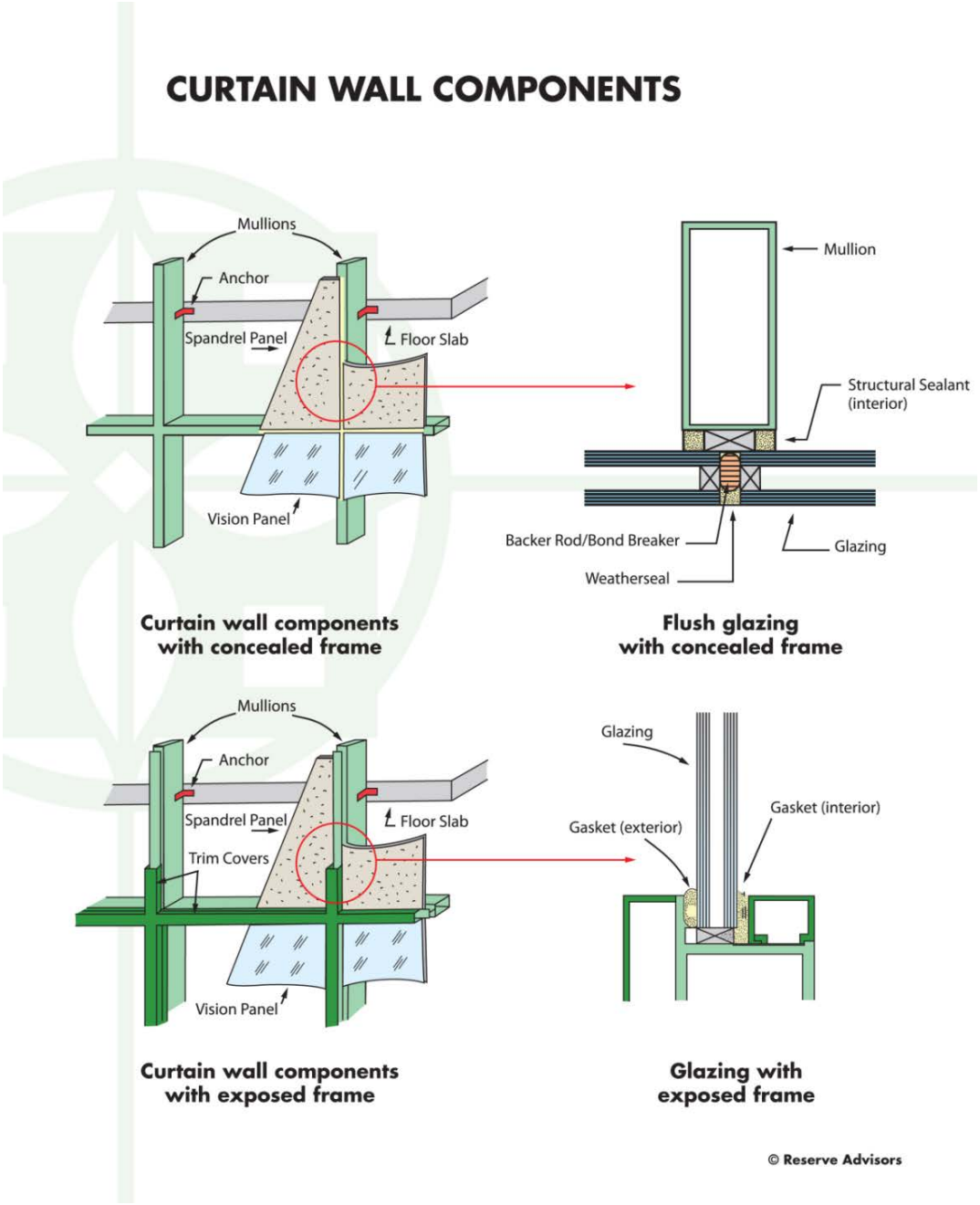
Sealant at metal/glass and metal/metal interfaces

Spandrel panel dirt build-up

Frame color variations/dirt build-up

Useful Life: Properly maintained curtain walls have an indeterminate remaining useful life with the benefit of timely maintenance and repairs. We recommend inspections, sealant replacements and repairs up to every 12 years. We also include periodic expenditures for inspections and interim water infiltration remediation. We opine that complete replacement would require means other than reserves to fund.

Component Detail Notes: The following details depict typical components of a curtain wall although it may not reflect the actual configuration at Park Tower:



Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. The exact amount of repairs and thus the exact cost is indeterminate pending the physical inspection of the elevations at the time of the expenditures. Rather than complete replacement, we assume the following activities per event:

- Complete inspection of the curtain wall
- Replacement of sixty percent (60%) of the wet sealants
- Replacement of a limited amount of glazings

- Invasive inspection of a limited amount of anchors and refastening of aluminum components as needed
- Cleaning of the spandrel panels
- Touch-up finish applications
- Sidewalk protection
- Engineering allowance

Walls, Masonry

Line Items: 1.819 and 1.820

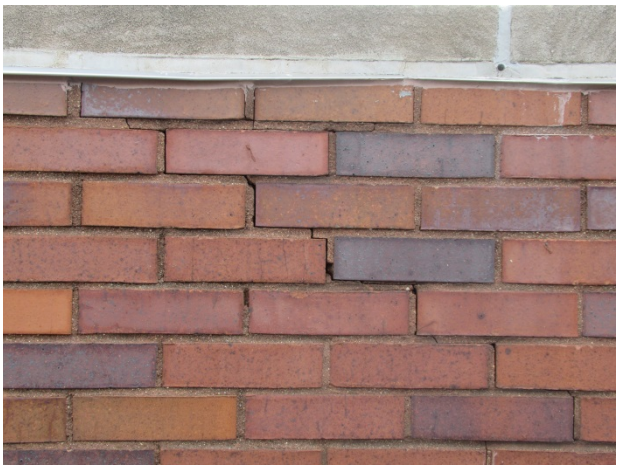
Quantity, History and Condition: Masonry comprises approximately 23,000 square feet of the base structure exterior walls. The Association completed significant restoration of the masonry walls at the west elevation concurrent with replacement of the plaza from 2016 to 2017. We include a Management provided expenditure in the near term to install base through wall flashings at the bike room and garage perimeters.

We note the following components and conditions of the masonry:

- Face brick masonry
- Caps include varied flashing/weep systems
- Masonry exhibits areas of joint deterioration, cracks and damage at elevations not addressed during the plaza project
- Sealant deterioration is evident at control joints
- Parapet walls exhibit evidence of water infiltration and isolated deflection

Flashing installed at base of masonry wall

Masonry deterioration and lack of flashing at wall base



Masonry crack at parapet wall

Masonry deflection at parapet wall

Evidence of water infiltration at masonry wall

Evidence of water infiltration at masonry wall

Evidence of water infiltration at masonry wall

Evidence of water infiltration at masonry wall and lack of base flashing

Useful Life: We advise a complete inspection of the masonry and related masonry repairs up to every eight years to forestall deterioration.

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. Our cost includes the following activities:

- Complete inspection of the masonry
- Repointing of up to fifteen percent (15%) of the masonry
- Replacement of a limited amount of masonry
- Flashing and weep installation/replacement at caps and shelf angles as needed

Walls, Metal Siding

Line Item: 1.844

Quantity, History and Condition: The exterior elevations of the racquetball courts and mall atrium include approximately 5,000 square feet of prefinished metal siding. The siding is in good to fair overall condition. Areas of finish damage/deterioration at evident.

Metal siding finish damage

Metal siding

Useful Life: Up to 45 years

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Windows and Doors

Line Items: 1.980 through 1.985

Quantity, History and Condition: The Association maintains the following window and door systems:

- Lobby, Revolving Doors - two total, likely original with a varied history of repairs and component replacements
- Lobby, Party Room and Weight Exercise Room - 4,300 square feet of single pane aluminum frame systems at the 1st and 2nd Floors, primarily original
- 2nd Floor Walkway and Aerobic Exercise Room - 2,100 square feet of dual pane aluminum frame systems, likely date to 1997, isolated seal failure is evident
- Pool - 1,700 square feet of dual pane aluminum frame systems, sliding glass doors, fair condition with seal failures evident
- Mall - 1,000 square feet of single pane aluminum frame systems at entrances and commercial unit windows, primarily original
- Mall, Skylight - dual pane aluminum frame system, reported satisfactory condition

The Association constructed an enclosure at the north lobby door in 2016.

Lobby revolving door

Lobby window system

Window system at 2nd floor at sun deck area

Window system at walkway to pool

Pool sliding glass door system

Pool sliding glass door system

Mall window system

Mall skylight system

Useful Life:

- Lobby, Revolving Doors – up to 45 years
- Lobby, Party Room and Weight Exercise Room - up to 60 years

- 2nd Floor Walkway and Aerobic Exercise Room - up to 45 years
- Pool - up to 45 years
- Mall - up to 60 years
- Mall, Skylight - up to 40 years

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

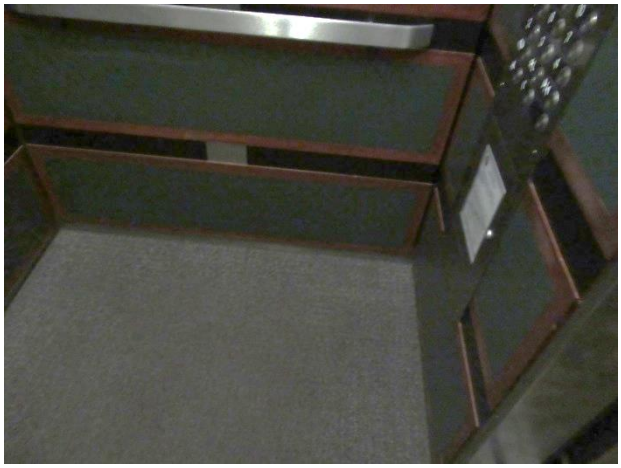
Interior Building Elements

Elevator Cab Finishes

Line Items: 2.100 through 2.102

Quantity, History and Condition: The building includes the following elevator cab finishes:

- Traction, Passenger – four elevators, Association refinished the walls in 2014, we include a Management provided cost to replace the finishes in the near term
- Traction, Service – two elevators, finishes vary in age
- Hydraulic, Garage – two elevators, finishes are in fair condition



Traction passenger elevator cab finishes

Useful Life: Up to 20 years

Component Detail Notes: The passenger traction elevator cab finishes consist of:

- Carpet floor coverings
- Laminate wall coverings
- Metal ceiling with light fixtures

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. We recommend the Association funds interim replacement of the carpet floor coverings through the operating budget.

Exercise Equipment

Line Items: 2.155 and 2.165

Quantity: The aerobic exercise room contains the following types of cardiovascular aerobic training equipment:

- Ellipticals
- Stationary cycles
- Stepper
- Rowing machine
- Treadmills

The weight exercise room contains the following types of strength training equipment:

- Benches
- Dumbbells
- Weight training machines

History: Replaced 2016

Conditions: Conditions vary

Weight exercise room

Aerobic exercise room

Useful Life: The useful life of cardiovascular equipment is up to five years. The useful life of strength training equipment is up to 15 years.

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Exercise Rooms

Line Item: 2.180

History: The Association completed an extensive renovation of the aerobic and weight exercise rooms in 2016, including expansion of the weight area.

Condition: Good overall

Useful Life: Renovation up to every 15 years

Component Detail Notes: The exercise room components include:

- Rubber floor covering
- Ceiling tile system at the aerobic room
- Mirrors
- Paint finishes
- Light fixtures

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Floor Coverings, Carpet, Hallways

Line Item: 2.200

Quantity: Approximately 6,200 square yards at the hallways (Contractor measurements will vary from the actual floor area due to standard roll lengths, patterns and installation waste.)

History: Replaced 2013 (We include a Management provided cost for replacement in the near term.)

Condition: Fair overall with areas of stains, deterioration at seams and wear evident

Residential hallway

Carpet at residential hallway

Useful Life: 8- to 12-years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Floor Coverings, Vinyl, 2nd Floor Walkway and Pool Area

Line Item: 2.300

Quantity: 2,800 square feet in the 2nd floor walkway and pool area

History: Replaced 2011

Condition: Good to fair overall

Raised seam at walkway flooring

Useful Life: Up to 15 years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Floor Coverings, Vinyl, Service Elevator Foyers/Trash Areas

Line Item: 2.301

Quantity: Vinyl flooring at the 52 residential floor service elevator foyers/trash areas

History: Flooring is possibly original

Condition: Fair overall

Flooring at service elevator foyer

Useful Life: Up to 25 years (The adjacent storage room flooring has an indeterminate remaining useful life.)

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Light Fixtures, Hallways

Line Item: 2.560

Quantity: Approximately 620 interior ceiling mounted light fixtures located throughout the hallways

History: Replaced 1988 (We include a Management provided cost for replacement in the near term.)

Fixtures at hallway

Useful Life: Up to 25 years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Lobby

Line Item: 2.600

History: The lobby components vary in age and condition. These components comprise the following:

- Terrazzo floors
- Paint finishes
- Doorman's station
- Furnishings and rugs
- Light fixtures

The Association replaced the doorman's station in 2011.

Condition: Reported satisfactory

Lobby

Useful Life: Renovation up to every 20 years (including honing of the terrazzo floors)

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

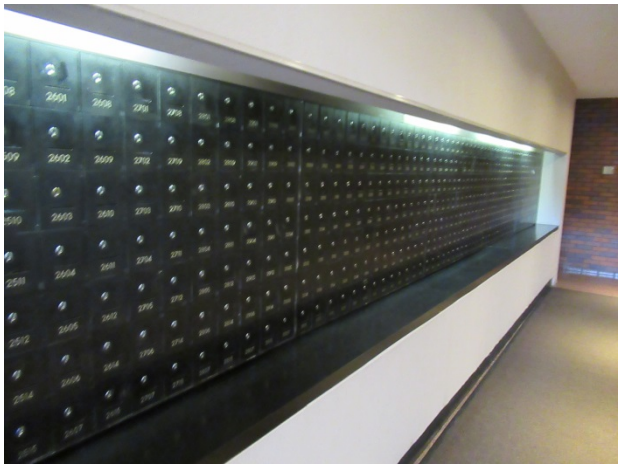
Mailboxes

Line Item: 2.700

Quantity: 728 residential unit mailboxes

History: Original

Condition: The mailboxes have limited capacities. The Building Engineer informs us of a limited history of issues.



Mailboxes

Useful Life: Up to 35 years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Mall

Line Items: 2.711 through 2.714

Quantity, History and Condition: The Association maintains the following at the mall:

- Corridors – 5,500 square feet of terrazzo floor and ceiling tile system with light fixtures, the ceiling tile system exhibits areas of stains/damage
- Market (Store) – concrete floor, ceiling tile system, light fixtures and paint finishes, the Association removed the floor coverings in 2016, the ceiling tile system exhibits areas of stains/damage
- Office – renovated in 2012
- Rest Rooms – two total, renovated in 2019

Mall corridor

Market at mall

Condominium office

Useful Lives:

- Corridors – renovations up to every 25 years
- Market (Store) – renovations up to every 15 years
- Office – renovations up to every 10 years
- Rest Rooms – renovations up to every 25 years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

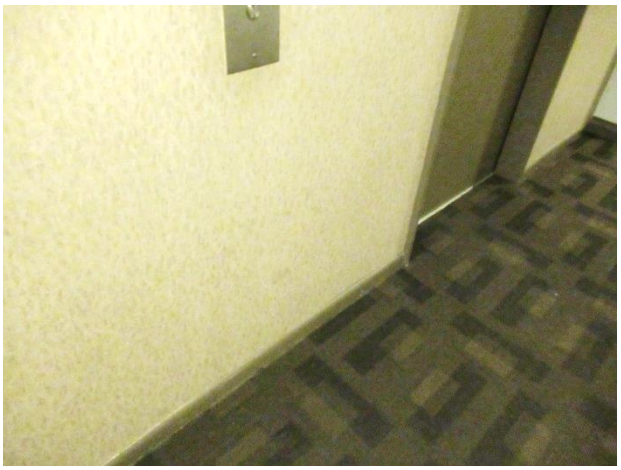
Paint Finishes, Hallways

Line Item: 2.800

Quantity and History: The common area hallways have approximately 220,000 square feet of paint finishes on the walls and ceilings. The hallways also include vinyl wall coverings at the elevator foyers that likely date to 2007. The paint finishes date to 2013.

Condition: The paint finishes exhibit areas of scuffs. The wall coverings exhibit areas of damage and separation at seams.

Typical scuff at hallway wall



Typical damage at elevator foyer wall covering

Useful Life: 8- to 12-years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Party Room

Line Item: 2.840

History: The common area amenities include a party room on the 2nd floor. The party room components vary in age and include:

- Tile and wood laminate floor coverings (installed 2013)
- Paint finishes
- Light fixtures
- Furnishings
- Kitchen

Condition: Reported satisfactory

Party room

Useful Life: Renovation up to every 20 years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Rest/Locker Rooms, 2nd Floor

Line Item: 2.900

Quantity, History and Condition: The Association maintains two common area rest/locker rooms located at the 2nd floor. The rest/locker rooms include the following:

- Tile floor and wall coverings
- Paint finishes
- Light fixtures
- Plumbing fixtures
- Partitions
- Lockers

The Association renovated these rest rooms in 2019.

Useful Life: Renovation up to every 25 years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Signage

Line Item: 2.911

Component Detail Notes: We include Management provided expenditures to replace the signage from 2P through the 2nd floor in fiscal year 2021 and at the remaining floors in fiscal year 2022.

Useful Life: We assume a useful life of up to 25 years.

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Building Services Elements

Air Handling Units

Line Items: 3.020 through 3.025

Quantity and History: The Association utilizes the following major air handling units:

- Residential Corridors - two units, 37,800-CFM (Cubic Feet per Minute) each, one set of coils possibly recently replaced, system includes louvers and recirculation coils
- Lobby - one unit, 18,950-CFM, original coils, system includes a return air fan
- Mall Corridors - one unit, 9,215-CFM, original coils
- Party Room, Basement and Laundry - three units, 2,900- to 4,245-CFM each, laundry room unit coils replaced in 2014, remaining coils are original
- Pool - one unit, includes a return air fan, 9,370-CFM, coils replaced 2012
- Racquetball Courts - one *Goodman* packaged rooftop unit, replaced 2003

Conditions: Reported satisfactory (An exception is the dampers. The Building Engineer informs us of the likely need to replace several dampers in the near term.)

Corridor air handling unit

Basement level and party room air handling units

Lobby air handling unit

Mall air handling unit

Pool air handling unit

Racquetball court air handling unit

Useful Life: For purposes of this Reserve Study, we assume replacement of components in lieu of total replacement for large capacity built-up air handling units such as the corridor units. These component replacements or capital repairs may

include replacement of the coils, controls, motors and dampers. The need for total replacement of the large capacity units is indeterminate at this time. For purposes of this Reserve Study, we assume total replacement of limited capacity units.

- Residential Corridors – capital repairs up to every 35 years
- Lobby - capital repairs up to every 35 years
- Mall Corridors - up to 35 years
- Party Room, Basement and Laundry - up to 35 years
- Pool - up to 30 years
- Racquetball Courts – up to 25 years

Preventative Maintenance Notes: We recommend the building obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the building maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Monthly:
  - Change or clean air filters as needed
- Semi-annually:
  - Lubricate motors and bearings
  - Inspect base pan, cabinet and clear obstructions as necessary
  - Check belt tension and alignment
- Annually:
  - Clean drain pans, clean fan assembly, inspect fan drive system and controls
  - Inspect and clean accessible ductwork as needed
  - Replace belts
  - Clear burners of debris if applicable

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Boilers, Building Heat

Line Items: 3.105 and 3.106

Quantity: Two *Cleaver Brooks* gas-fired steam boilers (The system also includes a feed water tank and pumps.)

History: The boilers are original. The Association replaced the burners and controls in 2013. The Association replaces tubes as needed. The boiler feed water system pumps and tank are primarily original with a varied history of repairs and component replacements.

Condition: Reported satisfactory without operational deficiencies

Building heat boilers

Boiler feed water system

Useful Life: Up to 60 years for the boilers and up to 35 years for complete replacement of the feed water tank/pumps (In our experience, the majority of Associations replace their dated boiler systems prior to 60 years of age, primarily in consideration of improved energy efficiencies. The system was likely original designed to provide domestic water and building heat. Complete replacement may allow for replacement with energy efficient and lessor capacity systems.)

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Weekly:
  - Inspect for leaking water around boilers
  - Check temperature readings
  - Verify vent is unobstructed
  - Conduct boiler blowdown to minimize corrosion and remove suspended solids in system
  - Clean pilot and burner assemblies
- Monthly:
  - Check water and pressure levels
  - Check controls and switches for proper operating
  - Check and inspect condensate drain
  - Check all gaskets for tight sealing
- Annually:
  - Conduct full inspection of burners and flues
  - Clean and inspect tubes to reduce scaling
  - Inspect any pressure relief valves
  - Clean and recondition feed water pumps
  - Inspect electrical terminals and controls
  - Seal doors/access panels

- Adjust air/fuel ratios as needed

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Boilers, Domestic Hot Water

Line Items: 3.160 through 3.162

Quantity and History:

- Residential High Zone – four *Lochinvar* boilers, 800-MBH each, replaced 2016
- Residential Low Zone – one Lochinvar boiler with a capacity of 1,255-MBH replaced in 2019, two *Raypak* boilers with a capacity of 1,337-MBH each that were replaced from 1988 to 1992, we include a Management provided cost for replacement of the remaining dated boilers in the near term
- Commercial – two *A.O. Smith* boilers with capacities of 660-MBH, replaced 2005

Condition: Reported satisfactory without operational deficiencies

High zone domestic water boilers

Low zone domestic water boilers

Commercial domestic water boilers

Useful Life: Up to 15 years

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Weekly:
  - Inspect for leaking water around boilers
  - Check temperature readings
  - Verify vent is unobstructed
  - Conduct boiler blowdown to minimize corrosion and remove suspended solids in system
  - Clean pilot and burner assemblies
- Monthly:
  - Check water and pressure levels
  - Check controls and switches for proper operating
  - Check and inspect condensate drain
  - Check all gaskets for tight sealing
- Annually:
  - Conduct full inspection of burners and flues
  - Clean and inspect tubes to reduce scaling
  - Inspect any pressure relief valves
  - Inspect electrical terminals and controls

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. Our estimate of cost includes an allowance for replacement of controls.

Building Automation System

Line Item: 3.170

History: *Andover* system installed in 2011

Condition: Reported satisfactory (However, the Building Engineer informs us that the system has limited capabilities. The Association conducts partial improvements to the system concurrent with replacement of the equipment.)

BAS panel

Useful Life: Up to 15 years

Component Detail Notes: The building automation system (or energy management system) monitors and controls the mechanical systems.

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan and maintain a maintenance contract with a qualified professional. We recommend the Association periodically inspect for loose wiring and verify controls and sensors are operational to maximize the remaining useful life.

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Chillers

Line Items: 3.200 and 3.205

Quantity: Two *York* 600-ton capacity chillers

History: Replaced 2000

Condition: Reported satisfactory without operational deficiencies

Chiller

Useful Life: Replacement up to every 35 years with capital repairs up to every 10 years

Component Detail Notes: The centrifugal chillers provides chilled water for air conditioning the building and use R-123 refrigerant. Per the EPA, production of new equipment utilizing R-123 will cease as of January 1, 2020, and no production or importing of any HCFC refrigerants for equipment servicing will be allowed after January 1, 2030. While R-123 is still available, the cost will likely increase as phase-out begins. Since chillers have a useful life of 25 to 35 years, the Association should consider replacement with equipment that does not utilize the refrigerants mentioned above.

Proper maintenance includes the following:

- Eddy current tests. The eddy current test compares known discontinuities in the magnetic fields between a known calibration tube and the actual tube being tested. The test probes create the two necessary magnetic fields in each tube for the comparison.
- Capital repairs or partial machine disassembly (invasive inspection of interior machine components or tear down inspections) to evaluate the condition of the chiller tubes for defects such as permeability and cracks.

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Daily
  - Check pressure at evaporator, condenser, oil tank and oil discharge
  - Check oil level and compile logs
  - Check motor operating temperatures

- Routine visual and audial assessments to determine if any unusual noises or vibrations are coming from the unit
- Weekly:
  - Check water quality and chemical levels
  - Inspect for refrigerant leaks and adjust levels accordingly
- Quarterly:
  - Clean all water strainers in the water piping system
- Semi-Annually:
  - Lubricate bearings, balls joints, pivot points and valve O-rings
  - Drain contents of rupture disk and purge discharge
  - Apply oil to exposed metal to prevent corrosion
- Annually:
  - Test compressor and motor
  - Check oil and replace if needed (oil useful life of one- to five-years)
  - Inspect starter contracts
  - Inspect for scaling in the condenser and evaporator
  - Brush tubes with machine (condenser side annually, evaporator side every three years)
  - Check for refrigerant or oil leaks
  - Purge the unit
  - Clean and repair exterior painted surfaces
  - Conduct vibration analysis test
- Three-Year Cycles:
  - Clean all water strainers in the water piping system
  - Conduct eddy current test

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. Our estimate of cost includes an allowance for replacement of controls.

Cooling Towers

Line Items: 3.260, 3.265 and 3.266

Quantity: One *Evapco* cooling tower for the residential unit system and one *CTS* cooling tower for the commercial system

History: The residential unit system cooling tower was replaced in 2008. The Association replaced the commercial unit system cooling tower in 2018.

Condition: Reported satisfactory without operational deficiencies

Residential unit cooling tower

Commercial cooling tower

Useful Life: Replacement up to every 35 years with capital repairs every 10- to 15-years (We assume capital repairs to the commercial cooling tower through the operating budget.)

Component Detail Notes: The residential unit cooling tower has a capacity of 1,051-tons. Proper maintenance includes the following:

- Keeping all areas free of debris and build-up
- Effective water treatment program
- Seasonal testing of valves and controls for proper operation
- Inspection, adjustment and repairs of mechanical components as recommended by the manufacturer
- Annual inspection of components for corrosion or decay
- Capital repairs every 10- to 15-years

Capital repairs include a complete inspection of the cooling tower, pumps, motor drives and controls, replacement of the fill media, spray nozzles and any corroded areas, application of an internal protective coating and structural repairs. In addition, capital repairs may include partial or complete replacement of the motors, pumps, controls and valves.

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Daily:
    - Routine visual and audial assessments to determine if any unusual noises or vibrations are coming from the unit
    - Check basin water and operating oil levels and adjust as needed

- Check surroundings and ensure paths to the cooling tower are clear of obstructions and trip hazards

- Weekly:
  - Inspect air inlet louvers/shields for blockages
  - Check for water leakage
- Monthly:
  - Inspect for fill media for displacement, damage, dry spots and obstructions. Dry spots may indicate cracks or clogs with the spray nozzles.
  - Check oil seals and oil static levels
  - Check make-up valve, bleed rate and belt condition
  - Conduct water treatment analysis
- Quarterly:
  - Inspect cold water basin and spray nozzles
  - Inspect the fill media for scale buildups. Descaling will increase energy conservations.
  - Flush water distribution system, drain basin and piping
  - Adjust belt tension
  - Lubricate fan shaft bearings and motor base
  - Check motor voltage and current
  - Clean fan motor exterior
  - Check fan drain holes for obstructions
  - Check fan clearance and balance
- Annually:
  - Complete inspection of components for corrosion or decay
  - Check drive alignment
  - Coat steel shafts with corrosion inhibitor as needed
  - Pressure wash components including fill and basin
- Seasonal
  - Drain and sanitize

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Electrical System

Line Item: 3.300

History: Primarily original to construction (The Association replaced a limited number of circuit protection panels, such as for the pool mechanical equipment.)

Condition: Reported satisfactory

Electrical distribution panels

Useful Life: Up to and sometimes beyond 70 years

Component Detail Notes: The system includes:

- Breaker type circuit protection panels for low ampacity circuits (except fuse type for emergency systems)
- Copper wires
- 70-Amps on average to the units

We give a brief overview of electrical system components in the following sections of this narrative.

Primary Switchgear - The primary switchgear is located where the electric supply comes into the building. Switchgear can include associated controls, regulating, metering and protective devices, and is used for the transmission, distribution and conversion of electric power for use within the building. Switchgear components have a useful life of up to and sometimes beyond 70 years. Replacement is often determined by a desired upgrade of the entire electrical system.

Transformer - A transformer is an electric device with two or more coupled windings used to convert a power supply from one voltage to another voltage. Transformers within a building lower the supplied electrical voltage to a level that can be utilized by the building's equipment and unit owners. Transformers do not utilize mechanical components and therefore have a long useful life. However, the Association should anticipate periodic replacement of a limited quantity of transformers.

Distribution Panel - The distribution panel is an electric switchboard or panel used to control, energize or turn off electricity in total or for individual circuits. The panel also distributes electricity to individual and controllable circuits. One or more distribution panels may exist and further distribute electricity to individual panel boards for each unit. The distribution panel is enclosed in a box and

contains circuit breakers, fuses and switches. Distribution panels have a useful life of up to and sometimes beyond 70 years.

Bus Bar - A bus bar is an electric conductor that serves as a common connection for two or more circuits and carries a large current. The metal enclosure contains factory assembled conductors, usually copper or aluminum bars or tubes. Bus bars typically convey electricity in a vertical riser to the multiple stories in the building. This component has an indefinite useful life and would rarely require replacement in total unless an upgrade of the capacity of the electrical system is desired.

Circuit Protection - Once electricity is distributed throughout the building and is at a usable voltage level, the electricity is divided into circuits. Each circuit requires circuit protection. Circuit protection is necessary to prevent injury and fires, and minimize damage to electrical components and disturbances to the electrical system. Abnormalities in the circuit can include overloads, short circuits and surges. Circuit protection devices are commonly referred to as circuit breakers and fuses. For the protection of the circuits in the units and common areas, we recommend the use of only circuit breakers as they are safer than fuses. However, the use of fuses is common for equipment like emergency systems and individual items of equipment. Fuses with a low capacity rating can easily be replaced with fuses of a higher rating resulting in an unprotected, overloaded and unsafe circuit. The circuit protection panels have a useful life of up to and sometimes beyond 70 years.

Conductors - Conductors are the electrical wires that convey electricity to the units, light fixtures, receptacles and appliances. Conductors in typical high and low capacity circuits are copper, as is reported the case at Park Tower. Copper conductors have an indefinite useful life.

Conductor Insulation and Conduit - Conductor insulation provides protection against the transfer of electricity. Conductor insulation can eventually become brittle and damaged from rodents or heat from many years of service. Conductor conduit is a pipe or tube used to enclose insulated electric wires to protect them from damage. Steel conductor conduit, although galvanized, will eventually rust if used in damp conditions. The useful life of conductor insulation and conduit is indeterminate.

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Annually:
  - Inspect system for signs of electrical overheating, deterioration, and/or panel corrosion

- Clean and vacuum exterior and interior switchboards
- Five-Year Cycles:
  - Check power meters, lamps, indicators, and transformers for deficiencies
  - Inspect wiring, relays, power supply units, and timers
  - Verify surge protection is intact
- As-needed:
  - Test outlets and ground-fault circuit interrupters(GFCI's) for faulty components
  - Examine the insulation at switchgears for signs of deterioration or cracking
  - Ensure all conductors are clean and dry with no moisture build-up
  - Check and inspect for loose wire connections
  - Clean and clear dust and debris away from system components
  - Check for flickering or dimming light fixtures as these could indicate a short in the wiring, arcing, or an over-extension of the electrical system
  - Conduct thermal image scanning if system experiences numerous or consistent outages
  - Keep an accurate record of all repairs to the electrical system

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. We recommend the Association budget to replace the main switchgear, distribution and circuit protection panels. Updates of this Reserve Study will consider possible changes in the scope and times of component replacements based on the conditions, including the need for replacement of the wires.

We recommend the Association conduct thermoscans of the distribution panels and circuit protection panels, and inspections of the transformers for any indications of arcing, burning or overheating on a regular basis, funded through the operating budget. Verification of the integrity of all connection points minimizes the potential for arcing and fires.

Elevators, Hydraulic

Line Items: 3.320 through 3.323

Quantity and History: Park Tower utilizes two hydraulic passenger elevators for the garage. The garage hydraulic elevator system components were replaced from 2006 to 2007, including the pumps, controls and cylinders.

Park Tower also utilizes a hydraulic elevator to transport refuse containers. The pump and cylinder were replaced in 2015. The main, floor and cab control panels predate the 2015 project. We include a Management provided cost to replace the remaining dated equipment in the near term.

Condition: Reported satisfactory and service interruptions are reportedly infrequent.

Power unit housing for the refuse elevator

Power unit housings for the garage elevators

Useful Life: Pumps and controls have a useful life of up to 35 years. Cylinders have a useful life of up to 45 years.

Component Detail Notes: Major components in a hydraulic elevator system include the pump, controls, cylinder, fluid reservoir and a valve between the cylinder and reservoir. Once activated by the elevator controls, the pump forces hydraulic fluid from the reservoir into the cylinder. The piston within the cylinder rises lifting the elevator cab. The elevator cab lowers at a controlled rate when the controls open the valve.

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Ongoing:
  - Maintain a maintenance contract with a qualified professional for the elevator(s) and follow the manufacturer's specific recommended maintenance plan adhering to local, state, and/or federal inspection guidelines
- As-needed:
  - Keep an accurate log of all repairs and inspection dates
  - Inspect and adjust misaligned door operators
  - Check for oil leaks or stains near the pump housing and confirm oil levels are adequate
  - Clear and remove any items located in the elevator machine room(s) not associated with the elevator components (These rooms should never be used for storage)
  - Lubricate the hydraulic cylinders
  - Inspect electrical components for signs of overheating or failure

- Inspect spring buffers in elevator pit for signs of corrosion or loose attachments
- Ensure air temperature and humidity of machine/pump housing room meets the designated specified range for proper operation
- Ensure all call buttons are in working condition
- Check elevator cabs for leveling accuracy to prevent tripping hazards

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. We anticipate the following hydraulic elevator system components will require replacement:

- Cab control panels
- Door operators
- Hallway panels/buttons
- Microprocessor based controllers
- Pumps (Power Unit)

These costs may vary based on the desired scope of the actual replacements, changes in technology and requirements of local codes or ordinances at the actual times of replacements. However, we judge our estimated costs sufficient to budget appropriate reserves at this time. The Association should require the contractor to verify that elevator component replacements include all of the necessary features for the latest in elevator code compliance.

Elevators, Traction

Line Items: 3.360 and 3.361

Quantity: The building utilizes four *Otis* traction passenger elevators and two traction service elevators (#5 and #6).

History: The Association replaced the controls and restored the machines from 2003 to 2007.

Condition: Reported satisfactory and service interruptions are reportedly infrequent.

Traction elevator controls

Useful Life: Up to 35 years however, the scarcity of parts, and the potential frequency and duration of service interruption makes controls replacement more desirable as the components age.

Component Detail Notes: The elevators utilize programmable logic computer controls.

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Ongoing:
  - Maintain a maintenance contract with a qualified professional for the elevator(s) and follow the manufacturer's specific recommended maintenance plan adhering to local, state, and/or federal inspection guidelines
- As-needed:
  - Keep an accurate log of all repairs and inspection dates
  - Inspect and adjust misaligned door operators
  - Clear and remove any items located in the elevator machine room(s) not associated with the elevator components (These rooms should never be used for storage)
  - Inspect electrical components for signs of overheating or failure
  - Inspect controls
  - Lubricate the hoist cables
  - Inspect hoist cables and motors for signs of wear or deterioration
  - Ensure air temperature and humidity of machine/pump housing room meets the designated specified range for proper operation
  - Ensure all call buttons are in working condition

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. We anticipate replacement of the following traction elevator system components:

- Cab control panels
- Door operators
- Hallway panels/buttons
- Hoists and motors
- Microprocessor based controllers

Exhaust Fans

Line Item: 3.380

Quantity: The Association maintains two in line exhaust fans to remove exhaust from the residential kitchens and bathrooms. The exhaust fans have capacities of 57,980- to 66,980-CFM each.

History: The fans are original with a varied history of repairs and component replacements. The Association completed component replacements and modifications to the rest room fan in 2015. We include a Management provided cost in the near term for similar modifications, including vibration eliminators, to the kitchen fan in the near term.

Condition: Reported satisfactory without operational deficiencies

Exhaust fan

Useful Life: Up to 45 years

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age,

operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Monthly:
  - Check unit for unusual noises and vibrations
- Quarterly:
  - Inspect belts for wear, adjust tension and replace as needed
  - Inspect/clean fan blades
  - Inspect/replace anti-vibration mounts as needed
  - Check motors for proper operation
  - Replace filters as applicable
- Semi-annually:
  - Lubricate fan and motor bearings if bearings are not sealed according to manufacturer's recommendation
  - Inspect/clean inlets, shafts and outlets
  - Ensure louvers and dampers are unclogged and operable

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. The Association should fund interim replacements of belts, motors and other components through the operating budget as needed.

Expansion Tanks

Line Item: 3.393

Quantity, History and Condition: The building includes seven large capacity expansion tanks for the high and low level building heating system, and the fin tube loop system. The expansion tanks are original and have capacities of primarily 317- to 564-gallons each.

Expansion tanks

Useful Life: Highly variable useful life of up to 60 years

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Heat Exchangers

Line Items: 3.460 and 3.461

Quantity: The building utilizes five shell and tube heat exchangers for the residential building heating systems, pool air handling unit and low level/commercial heating system.

The two heat exchanges for the residential fan coil loop heating system have a capacity of 2,500-GPM (gallons per minute) each. The pool air handling unit, fin tube loop and low level/commercial heating system heat exchangers have capacities of 297- to 625-GPM each.

History: Original (The Association replaced the bundles in the main building-heat heat exchangers in 2016. We include a cost in the near term to replace valves at the main building-heat heat exchangers in the near term.)

Condition: Reported satisfactory (The Building Engineer informs us that deferral of complete replacement of the heat exchangers is reasonable based on their current operation.)

Heat exchanger for residential unit heat

Heat exchanger for commercial heat

Useful Life: Up to 35 years

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the type of heat exchanger, unit's age, operational condition, or changes in technology. We note the

following select recommended preventative maintenance activities to conduct on an annual basis to maximize the remaining useful life:

- Remove and inspect tube bundles if possible
- Clean and inspect tubes for leaks or splits
- If sacrificial anodes are used, inspect and replace as needed
- Inspect and replace any damaged or worn gaskets

Component Detail Notes: The Association may choose to rebuild the heat exchangers prior to complete replacement. However, this activity becomes less desirable as heat exchangers age due to the scarcity of parts. We regard interim replacements of exchanger tubes as normal maintenance and base our estimates on complete replacements.

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Life Safety System

Line Items: 3.555 and 3.560

Quantity: The life safety system at Park Tower includes the following components:

- Audio/visual fixtures
- *Honeywell* control panels
- Detectors
- Voice communication system at the stairwells
- Wiring

History: System installed in 2007

Conditions: Reported satisfactory

Central control panel

Useful Life: Up to 25 years for the devices and up to 15 years for the control panels

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. In accordance with *NFPA 72* (National Fire Alarm and Signaling Code) we also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the age of the components, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Semi-annually:
  - Inspect and test all components and devices, including, but not limited to, control panels, annunciators, detectors, audio/visual fixtures, signal transmitters and magnetic door holders
  - Test backup batteries
- As-needed:
  - Ensure clear line of access to components such as pull stations
  - Ensure detectors are properly positioned and clean of debris

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. Changes in technology or building codes may make a replacement desirable prior to the end of the functional life. Our estimate of future cost considers only that amount necessary to duplicate the same functionality. Local codes or ordinances at the actual time of replacement may require a betterment as compared to the existing system. A betterment could result in a higher, but at this time unknown, cost of replacement.

Light Fixtures, Exit and Emergency

Line Item: 3.580

Quantity: Approximately 470 exit and emergency fixtures (including the remote emergency light fixtures)

History: The exit fixtures primarily date to 2001. The emergency fixtures vary in age. The Association replaces a significant amount of exit and emergency fixtures through Association staff on an as needed basis.

Condition: Reported satisfactory

Fixtures at hallway

Useful Life: Up to 25 years

Preventative Maintenance Notes: We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Monthly:
  - Inspect and repair broken or dislodged fixtures
  - Replace non-functional bulbs
  - In accordance with *NFPA 101* and local guidelines, conduct a 30-second functional test. For Self-Testing or Self-Diagnostic emergency and exit fixtures, ensure the indicator reads normal working condition
  - Keep written records of visual inspections, replacements and tests on file for the Authority Having Jurisdiction
- Annually:
  - In accordance with *NFPA 101* and local guidelines, conduct a 90-minute functional test. This may be conducted with the use of clamps, during extended outages or by temporary disruption of electrical power if feasible. For Self-Testing or Self-Diagnostic emergency and exit fixtures, activate a 90-minute self-test by manufacturer procedures
  - Keep written records of visual inspections, replacements and tests on file for the Authority Having Jurisdiction

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Pipes

Line Items: 3.599, 3.600, 3.601, 3.604 and 3.605

Quantity: Based on our review of the building plans and conversation with the Building Engineer, we estimate the following quantity of riser sections and types of pipe materials within Park Tower:

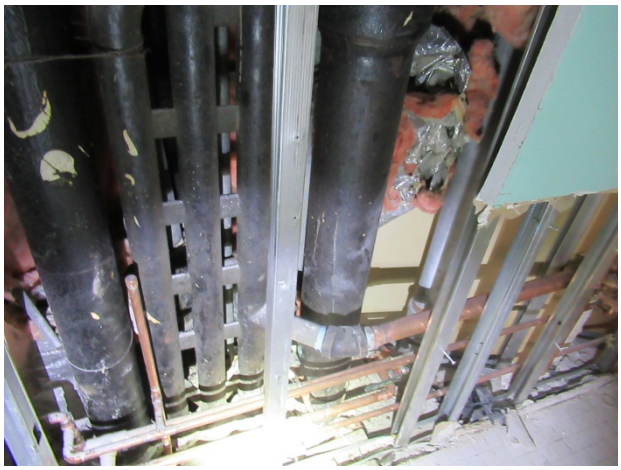
Type	Material	Risers	Floors	Riser Sections
Building heating, cooling and condensate (Fan Coil Tiers)	Black steel	45	54	**2,430**
Building heating (supply & return) (Fin Tubes)	Black steel	6	54	**324**
Domestic cold water	Galvanized steel	17	54	**918**
Domestic hot water (supply & return)	Galvanized steel	34	54	**1,836**
Sanitary waste disposal	Cast iron	17	54	**918**
Vent	Cast iron	17	54	**918**
			Total:	**7,344**

History and Conditions:

- Building Heating, Cooling and Condensate – The black steel building heating, cooling and condensate riser sections are original. The building includes building heating pipes for the fan coil tiers and the corner fin tube radiators. The building heating, cooling and condensate system at Park Tower utilizes a two-pipe system for the fan coil tiers. The previous Building Engineer informed us of a limited history of issues, primarily rust at the connections between the fan coil horizontals and the vertical risers. The current Building Engineer also informs us of a limited history of issues, primarily at expansion joints. We include a Management provided cost in the near term to conduct an invasive analysis of these pipes to determine their condition and the timing of possible replacement.
  The Association replaced the insulation at the building heating and cooling risers at the 11 and 01 tiers in approximately 2015. We include a Management provided cost in the near term at the 06 tier.

- Domestic Water, Supply and Return – The supply and return galvanized steel domestic water risers are original. The Association began replacement of the domestic hot water risers in 2010 due to leaks and occlusions. The domestic hot water riser replacement program includes the following:
    - Replacement of the supply and return domestic hot water risers
    - Replacement of the horizontal branch piping for the domestic hot water system
    - Replacement of the horizontal branch piping for the domestic cold water system
    - Insulation installation
    - Replacement of damaged finishes and cabinets in the units

  We include Management provided costs in the near term to replace the remaining original domestic hot water risers. Management and the Building Engineer inform us that the domestic cold water pipe risers are in satisfactory condition. The Building Engineer does not report a recent history of domestic cold water, waste or vent pipe failures.
- Sanitary Waste Disposal and Vent – The cast iron sanitary waste disposal and vent riser sections are original. The Building Engineer informs us of a limited history of issues, primarily pipe deterioration at horizontal sections.



Domestic water system risers

Component Detail Notes:

Building Heating, Cooling and Condensate - The black steel pipes have a useful life of up to and sometimes beyond 80 years.

Domestic Water - The useful life of galvanized domestic supply and return pipes is up to and sometimes beyond 70 years. The first piping system usually to experience problems is domestic hot water. The rate of build-up varies based on flow rates, minerals in the water and temperature. Occlusions from deposits eventually develop, reduce water pressure and clog pipes. Galvanized pipe is zinc coated steel which slows oxidation or rusting. The galvanized pipe provides

a surface texture for minerals such as calcium and magnesium (water hardness minerals) to adhere. These minerals build-up at a faster rate on galvanized piping when compared to copper piping. Also, corrosion of these pipes will eventually result in pitting of the interior surface and pinhole leaks. We recommend the Association budget funds to replace the galvanized water piping with copper piping. Copper piping is the predominant type of pipe used in new construction for domestic water piping.

Sanitary Waste Disposal and Vent - The cast iron pipes typically deteriorate from the inside out as a result of sewer gases, condensation and rust.

Valves - The piping systems include various valves. Identification of a typical useful life and remaining useful life for individual valves is difficult. Associations typically replace valves on an as needed basis in our experience.

Pipes, Remaining - We anticipate a useful life of up to and sometimes beyond 100 years for the fire standpipes and gas supply lines. Therefore, we do not foresee the need to budget for replacement of these pipes within the 30-year scope of this study. Future updates of this study will revisit the need to include partial replacement of these pipes.

Preventative Maintenance Notes: The required preventative maintenance may vary in frequency and scope based on the building's age and demands of the piping systems. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Quarterly:
  - Inspect all visible piping for corrosion and leaks, including common areas or areas immediately surrounding pipes such as insulation, ceiling tiles or the floor for moisture, water accumulation, mold or mildew
- Annually:
  - Verify system pressure is sufficient (pressurized piping systems)
  - Check accessible valves for proper operation
  - Test backflow prevention devices
  - Inspect and obtain certification for pressure relief valves
  - Test drain line flow rates
  - Mechanically or chemically clean waste lines as needed

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. Our cost for a single riser section assumes replacement of all pipes located within each wall opening, associated branch piping, fittings and minimal interior finishes. However, the cost does not include temporary housing for affected residents, pipes within the units or significant interior finishes.

An invasive analysis of the piping systems will provide various replacement options. Replacement of the systems as an aggregate event will likely require the use of special assessments or loans to fund the replacements.

Although it is likely that the times of replacement and extent of repair costs may vary from the budgetary allowance, Park Tower could budget sufficient reserves for the beginning of these pipe replacements and have the opportunity to adjust its future reserves up or down to meet any changes to these budgetary estimates. Updates of this Reserve Study would incorporate changes to budgetary costs through a continued historical analysis of the rate of deterioration and actual pipe replacements to budget sufficient reserves.

We recommend the Association budget for replacement of the following items through the operating budget:

- Replacement of valves on an as-needed basis
- Minor pipe repairs and replacements
- Invasive investigation of the condition of the piping system prior to beginning more aggregate replacements
- Rodding of waste pipe systems

Pumps

Line Items: 3.700 through 3.708

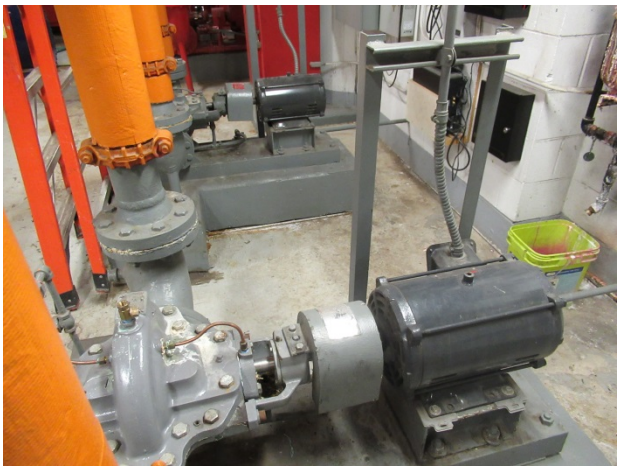
Quantity, History and Conditions: Park Tower utilizes the following major pumps:

- Building Cooling, Commercial – 7.5-HP, two each located near the cooling tower, replaced 2018, reported satisfactory
- Building Cooling, Residential, Cooling Tower - 75-HP, one each, replaced 2008, reported satisfactory
- Building Heating, Commercial - 10-HP, two each, motors likely recently replaced, reported satisfactory
- HVAC, Residential, Fan Coil Loop/Dual Temperature - 100-HP, three each, original, include variable frequency drives, reported satisfactory
- Building Heating, Residential, Fin Tubes - 10-HP, two each, motors likely recently replaced, we include an expenditure for near term replacement per Management
- Domestic Cold Water - two 75-HP each, one 45-HP, three total, one pump recently replaced, we include Management provided costs in the near term to replace the remaining two pumps, reported satisfactory
- Fire Suppression - one 100-HP, one 40-HP, two total, original, controls replaced in the 1990s, reported satisfactory
- Gas Booster - 10-HP, two each, one replaced 2019, we include a Management provided cost to replace the remaining pump in the near term, include variable frequency drives, reported satisfactory
- Sewage Ejection - 10-HP, two each, replaced 2018, reported satisfactory

Pumps for commercial cooling system at cooling tower

Pumps for commercial building heating system

Dual temperature/fan coil loop pumps



Pumps for fin tube radiators

Domestic cold water pumps

Fire suppression pumps

Gas booster pump

Sewage ejection pumps

Useful Lives:

- Building Cooling, Commercial – up to 25 years
- Building Cooling, Residential, Cooling Tower - up to 30 years
- Building Heating, Commercial - up to 30 years
- Building Heating, Residential, Fan Coil Loop - up to 35 years
- Building Heating, Residential, Fin Tubes - up to 30 years
- Domestic Cold Water - up to 25 years
- Fire Suppression - up to 60 years
- Gas Booster - up to 25 years
- Sewage Ejection - up to 25 years

Component Detail Notes: Major pumps included in this Reserve Study are those with a motor drive of at least five-HP. The Association should replace or repair all pumps with motor drives less than five-HP as needed and fund this ongoing maintenance activity through the operating budget. The Association may choose to rebuild pumps prior to complete replacement. However, this activity becomes less desirable as pumps age due to the scarcity of parts. We regard interim replacements of motors and component parts as normal maintenance and base our estimates on complete replacements. An exact replacement time for each individual pump is difficult, if not impossible, to estimate.

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. Valuable motor information to note in a preventative maintenance plan or schedule includes age of unit and last time of repair, horsepower and rpm (revolutions per minute), bearing type and conditions surrounding motor/pump. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Weekly:
  - Check/adjust controls

- Check/adjust pressure levels
- Check for leaks
- Conduct churn tests

- Quarterly:
  - Inspect/clean motors
  - Inspect mountings and connections for proper alignment, torque and condition
  - Inspect/replace pump packing as needed, consider replacement with mechanical seals
  - Check for appropriate oil levels
- Semi-annually:
  - Lubricate pumps, motors and motor bearings
- Annually:
  - Inspect belts for wear and/or replace belts
  - Clean filters if present
  - Assess proper internal component performance and replace damaged or malfunction components as necessary, and tighten fittings
  - Access temperature and vibration performance of motors in accordance with the intended design

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Security System

Line Item: 3.820

Quantity: Park Tower utilizes the following security system components:

- Automated card reading system (16 access points)
- Cameras (52)
- Multiplexers (4)
- Recorders (2)

History: System components primarily replaced in 2017

Condition: Reported satisfactory

Useful Life: Up to 15 years

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Monthly:
  - Check cameras for proper focus, fields of view are unobstructed and camera and lenses are clean and dust-free
  - Check recording equipment for proper operation
  - Verify monitors are free from distortion with correct brightness and contrast
- Annually:
  - Check exposed wiring and cables for wear, proper connections and signal transmission
  - Check power connections, and if applicable, functionality of battery power supply systems

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Storage Tanks, Domestic Hot Water

Line Items: 3.860 and 3.861

Quantity: Three insulated storage tanks

History: One tank at the boiler room recently replaced. We include a Management provided cost to replace the main storage tank in the boiler room in the near term. The high zone tank is original.

Condition: Reported satisfactory

High zone domestic hot water storage tank

Recently installed storage tank at boiler room

Useful Life: Up to 45 years

Preventative Maintenance Notes: The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in

technology. We note the following select recommended preventative maintenance activities to conduct on an annual basis to maximize the remaining useful life:

- Inspect for leakage and corrosion
- Inspect and repair/replace valves including any pressure relief valves

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Trash Compactor

Line Item: 3.900

Quantity: One each

History: Replaced 2019

Condition: Reported satisfactory without operational deficiencies

Trash compactor

Useful Life: Up to 25 years

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Weekly:
  - Check hydraulic oil level with cylinder fully retracted to make sure oil is at appropriate level

- Check hydraulic hoses for kinks, leaks or other damage
- Check to make sure all safety guards and access covers are secure and in place

- Monthly:
  - Make sure lower door hinges and lock assembly are properly greased
  - Check all nut and bolt connections to make sure they are tight and secure
  - Clean the power unit and keep unit clear of debris
- Annually:
  - Have all electrical connections inspected by a licensed electrician to ensure proper connectivity and safe connections. The motor draw should be checked and recorded to help prevent failure.
  - The hydraulic system should be inspected and repaired, including draining and refilling the hydraulic fluid reservoir.
  - The oil filter should be changed after a maximum of 250 hours of operation. The oil filter should be changed more frequently for compactors located in hotter environments with more dust present.

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Valves, Large Diameter

Line Item: 3.920

Quantity: The building utilizes approximately 30 large valves at the main water connection, fire pumps, chiller room and boiler room.

History: Primarily original

Condition: Reported satisfactory (An exception includes a large diameter valve for the building heating system in the boiler room that will require replacement in the near term, as noted in the narrative "**Heat Exchangers**".)

Valves at main water connection

Valve to be replaced in near term

Useful Life: Up to 50 years

Preventative Maintenance Notes: We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Monthly:
  - Inspect the valves (if valve is readily accessible)
    - Confirm tightness of connections/fasteners
    - Confirm lack of leaks
- Semi-annually:
  - Clean the valves (including the valve stem) (if valve is readily accessible)
  - Open/close the valves to ensure operation (if valve is readily accessible)
- Annually:
  - Remove, clean and repair select valves as needed (including replacement of components as needed) (frequency and feasibility of rebuilds will vary greatly) (if valve is readily accessible)

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Property Site Elements

Asphalt Pavement, East and North

Line Item: 4.045

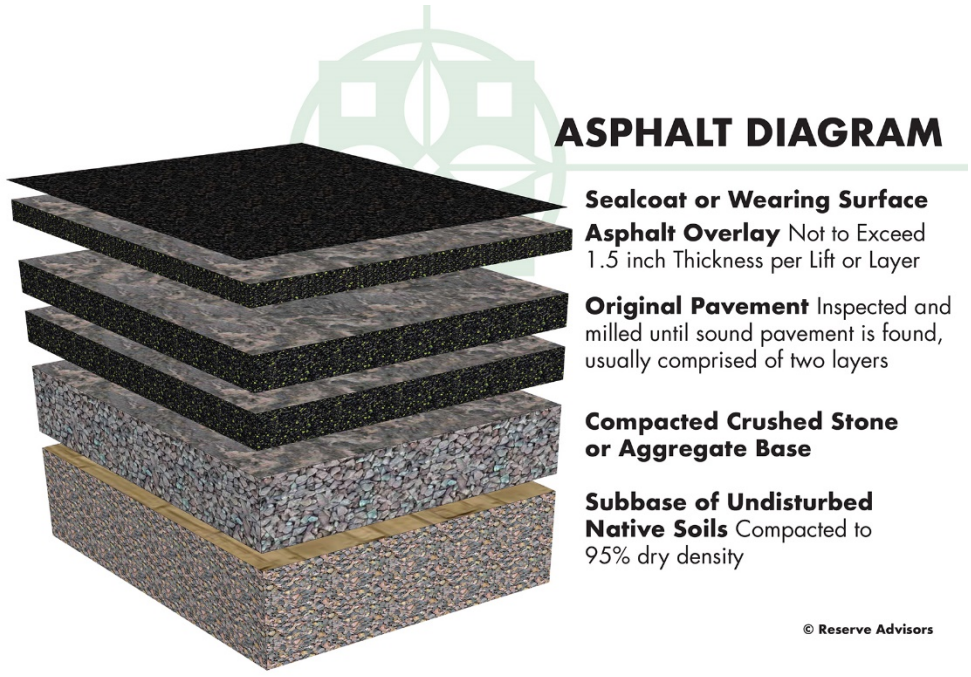
Quantity, History and Condition: The development includes approximately 1,750 square yards of asphalt pavement at the east and north perimeters. The Association shares responsibility of the north pavement with the adjacent building. The pavement was replaced 2013. We note a significant amount of cracks and overall deterioration. We opine that the type and amount of traffic will likely result in a diminished useful life. We include a Management provided cost in the near term to replace the pavement.

Pavement deterioration at north perimeter

Pavement deterioration at east perimeter

Useful Life: 15- to 20-years with the benefit of timely crack repairs and patching through the operating budget

Component Detail Notes: The initial installation of asphalt uses at least two lifts, or two separate applications of asphalt, over the base course. The first lift is the binder course. The second lift is the wearing course. The wearing course comprises a finer aggregate for a smoother more watertight finish. The following diagram depicts the typical components although it may not reflect the actual configuration at Park Tower:



The manner of repaving is either a mill and overlay or total replacement. A mill and overlay is a method of repaving where cracked, worn and failed pavement is mechanically removed or milled until sound pavement is found. A new layer of asphalt is overlaid atop the remaining base course of pavement. Total replacement includes the removal of all existing asphalt down to the base course of aggregate and native soil followed by the application of two or more new lifts of asphalt. We recommend mill and overlayment on asphalt pavement that exhibits normal deterioration and wear. We recommend total replacement of asphalt pavement that exhibits severe deterioration, inadequate drainage, pavement that has been overlaid multiple times in the past or where the configuration makes overlayment not possible. Based on the apparent visual condition and configuration of the asphalt pavement, we recommend the total replacement method of repaving at Park Tower.

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. We include an allowance in the unit cost for partial replacement of concrete curbs and gutters.

Concrete, On-grade at Site

Line Item: 4.140

Component Detail Notes: The development includes various on-grade concrete at the site, including sidewalks, pavement and curbs/gutters. We include a Management provided cost for partial replacement of the concrete at the north, northwest and northeast perimeters.

The concrete varies greatly in condition. We therefore include similar periodic allowances for partial replacements as the development ages.

Concrete settlement

Concrete cracks

Useful Life: Up to 50 years

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Plaza

Line Items: 4.959 through 4.961

Quantity: The plaza at Park Tower is pedestrian and vehicular areas atop an underlying concrete structure. The plaza includes approximately 11,000 square feet of concrete areas, including the planter at the lobby entrance and the circle drive, and 1,500 square feet of landscape at the two main planters. Due to the non-invasive nature of our inspection, we are unable to determine the exact composition of the plaza. Based on our visual inspection, experience with similar construction and knowledge of replacement/capital repair projects of this type, we surmise the plaza comprises the following elements:

- Concrete pavement
- Concrete sidewalks with a standard finish
- Concrete sidewalks with an exposed aggregate finish
- Landscape planter at the lobby entrance and two main planters
- Sealants
- Perimeter flashing
- Underlying waterproof membrane atop the structure
- Elevated structural concrete

History: The Association replaced the plaza primarily from 2014 to 2016. The Association replaced the membrane at the two main planters in 2007.

Condition: The concrete exhibits areas of cracks and joint sealant deterioration. The ceiling beneath the plaza exhibits isolated evidence of water infiltration.

Plaza at drain

Sealants at plaza joints

Crack in concrete at plaza

Sealant deterioration at plaza

Crack in concrete plaza

Sealant deterioration at circle driveway

Planter at circle driveway

Planter at lobby entrance area

Useful Life: Waterproof membranes serving these types of areas generally have useful lives of up to 30 years with the benefit of interim repairs and sealant replacements up to every eight years. The Association also conducts annual repairs, cleaning and seal applications.

The interim repairs will likely include:

- Replacement of sealants
- Crack repairs as needed
- Replacement of a limited amount of concrete topping
- Replacement of a limited amount of membrane

Component Detail Notes: As the membrane ages and deteriorates, water infiltration through the structure and leaks into the space beneath will become more frequent and widespread. Deterioration of the concrete structure beneath the membrane is also probable due to membrane leaks and normal aging of the concrete.

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. Our costs for replacement include an allowance for capital repairs to the underlying concrete structure.

Pool Elements

Hot Tub (Jacuzzi)

Line Item: 6.553

Quantity: The main pool area includes a hot tub, or Jacuzzi or spa.

History: Insert replaced in 2007. We include a Management provided cost to rebuild the surrounding platform and to replace the post lighting in the near term.

Condition: The hot tub insert is in reported satisfactory condition.

Hot tub

Useful Life: Up to 20 years for the hot tub insert

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Mechanical Equipment

Line Item: 6.600

Quantity:

- Automatic chlorinators
- Controls

- Filters
- Heaters
- Interconnected pipe, fittings and valves
- Pumps

History: Ages vary

Condition: Conditions vary

Pool mechanical equipment

Useful Life: Up to 15 years

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. Failure of the pool mechanical equipment as a single event is unlikely. Therefore, we include replacement of up to fifty percent (50%) of the equipment per event. We consider interim replacement of motors and minor repairs as normal maintenance.

Pools

Line Items: 6.800 and 6.801

Quantity and History: The main pool comprises a concrete structure of approximately 2,100 square feet based on the horizontal surface area. The Association replaced the gutter system in the main pool in 2006 and installed a vinyl liner in 2017. The outdoor, or kiddie, pool includes a plaster finish. The plaster finish and tile were replaced in 2016.

Condition: Reported satisfactory

Indoor pool

Liner at indoor pool

Outdoor pool

Useful Life: up to 15 years for the main pool liner and 8- to 12-years for the outdoor pool plaster finish (The structures have an indeterminate remaining useful life.)

Component Detail Notes: Removal and replacement provides the opportunity to inspect the structures and to allow for partial repairs of the underlying surfaces as needed.

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Garage Elements

Concrete, Elevated Floor

Line Items: 7.299 and 7.300

Quantity: The 1P, or upper, garage floor comprises approximately 63,000 square feet of elevated cast in place concrete floor structure.

Condition and History: The Association completed significant concrete repairs and replacement of the traffic coating in 2006. The traffic coating exhibits areas of wear and deterioration/damage, primarily at turning radius and drains. The ceiling beneath the elevated floor exhibits isolated evidence of infiltration and deterioration of previous repairs. We include a Management provided cost in the near term for primarily the following:

- Repairs to the 1P elevated garage floor top and underside concrete
- Replacement of the traffic coating at the 1P garage floor
- Cracks repairs and patching at the 2P garage floor
- Drain repairs

Traffic coating deterioration/damage at elevated garage floor

Traffic coating deterioration/damage at elevated garage floor

Traffic coating deterioration/damage at elevated garage floor at drain

Evidence of water infiltration beneath elevated garage floor

Evidence of water infiltration beneath elevated garage floor

Typical concrete repairs beneath elevated garage floor

Useful Life: Repairs to the various concrete surfaces up to every10 years

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. Our cost includes:

- Complete inspection of the garage concrete
- Partial depth concrete replacement of a limited amount of the surface area of the concrete floor
- Partial depth concrete replacement of a limited amount of the surface area of the elevated structural concrete ceiling
- Remediation of structural concrete columns and beams as needed
- Crack repairs on all surfaces as needed

Concrete, On-grade

Line Item: 7.360

Quantity: Park Tower maintains approximately 63,000 square feet of on-grade concrete at the 2P, or lower, garage level.

Condition: Conditions vary with areas of cracks and surface spall evident (We note near term repairs in the narrative "**Concrete, Elevated Floor**".)

Concrete floor cracks and surface spall

Useful Life: Up to 90 years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. Expenditures assume:

- Complete inspection of the floor
- Selective cut out and replacement of up to five percent (5%), or 3,150 square feet, of the on-grade concrete
- Crack repairs as needed

Doors and Operators, Fire

Line Item: 7.400

Quantity: Six rolling fire doors

History: The doors are likely original. The Association installed an enclosure around the doors in 2009.

Condition: Reported satisfactory

Garage fire door

Useful Life: Up to 50 years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. The Association should fund interim replacements of components through the operating budget.

Exhaust System

Line Item: 7.460

Quantity: System includes:

- Carbon monoxide detectors
- Exhaust fans (two, 55,500-CFM each, propeller type)
- Louvers

History: The Association replaced the fan motors and the carbon monoxide system in 2019. The remaining fan components are likely original.

Condition: Reported satisfactory

Garage exhaust fan

Garage CO detector

Useful Life: Up to 30 years for the fans

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. We regard interim repairs or partial replacements of components, including CO detectors, as normal maintenance.

Fire Suppression System

Line Item: 7.500

Quantity: Approximately 126,000 square feet of garage area

History: Original

Condition: Reported satisfactory

Fire suppression system pipes and head

Useful Life: Up to 60 years

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Light Fixtures

Line Item: 7.600

Quantity and History: Approximately 200 light fixtures illuminate the parking garage. The Association retrofitted the fixtures to primarily utilize LED (Light Emitting Diode) lamps in 2010.

Condition: Reported satisfactory

Useful Life: Up to 30 years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Paint Finishes

Line Item: 7.660

Quantity: Approximately 150,000 square feet on the walls and ceilings

History: Application dates to 2008

Condition: Conditions vary

Useful Life: Up to 20 years

Priority/Criticality: Per Board discretion

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Traffic Coating

Line Items: 7.799 and 7.800

Quantity: The 1P, or upper, garage floor comprises approximately 63,000 square feet of elevated cast in place concrete floor structure.

Condition and History: The Association completed significant concrete repairs and replacement of the traffic coating in 2006. The traffic coating exhibits areas of wear and deterioration/damage, primarily at turning radius and drains. The ceiling beneath the elevated floor exhibits isolated evidence of infiltration and deterioration of previous repairs. We include a Management provided cost in the near term for primarily the following:

- Repairs to the 1P elevated garage floor top and underside concrete
- Replacement of the traffic coating at the 1P garage floor
- Cracks repairs and patching at the 2P garage floor
- Drain repairs

Useful Life: Total replacement up to every 20 years with the benefit of interim overlayment at the drive lanes up to every 10 years

Component Detail Notes: In our experience, active periodic maintenance and protection with a traffic coating on elevated concrete structures results in a longer useful life, safer operation and a lower overall life cycle costs. Failure to maintain a traffic coating on elevated floors will result in accelerated concrete deterioration at concrete ceilings below the elevated floors and a higher overall capital investment in the parking structure over time.

Salts and moisture-driven chemical reactions are detrimental to the integrity of an elevated structural concrete garage floor. Road salts deposited as snow melts from vehicles or chlorides and moisture contained in ambient air penetrate the concrete surface. The dissolved chlorides and moisture then migrate to the imbedded reinforcing steel through pores in the concrete or directly through cracks. Once they reach the steel, salts and moisture cause expansive corrosion, ultimately causing the concrete to expand and “pop” or spall. Left unrepaired, additional chlorides and moisture will continue to infiltrate the concrete, eventually causing structural failure. This type of deterioration is progressive and costly to repair. The utilization of a traffic coating atop the concrete minimizes the infiltration of salts and moisture into the concrete thereby minimizing future capital repairs.

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3. Expenditures assume:

- Complete inspection of the garage concrete and concrete repairs as described in the previous narratives “Concrete, On-grade” and “Concrete, Elevated Floor”
- Preparation of the concrete surface
- Application of a urethane base coat, intermediate aggregate coating and top coat to the elevated floors
- Parking and directional line striping as needed

Unit Heaters

Line Item: 7.900

Quantity and History: The garage includes approximately 22 original *McQuay* hot water sourced unit heaters and recently installed *Modine* unit heaters. The Association installed the *Modine* unit heaters and repaired the original unit heaters in 2019. The majority of the unit heaters comprise the original style.

Condition: Reported satisfactory

Original garage heater

Recently installed unit heater

Useful Life: Up to 30 years

Priority/Criticality: Defer only upon opinion of independent professional or engineer

Expenditure Detail Notes: Expenditure timing and costs are depicted in the ***Reserve Expenditures*** table in Section 3.

Reserve Study Update

An ongoing review by the Board and an Update of this Reserve Study are necessary to ensure an equitable funding plan since a Reserve Study is a snapshot in time. Many variables change after the study is conducted that may result in significant overfunding or underfunding the reserve account. Variables that may affect the Reserve Funding Plan include, but are not limited to:

- Deferred or accelerated capital projects based on Board discretion
- Changes in the interest rates on reserve investments
- Changes in the *local* construction inflation rate
- Additions and deletions to the Reserve Component Inventory
- The presence or absence of maintenance programs
- Unusually mild or extreme weather conditions
- Technological advancements

Periodic updates incorporate these variable changes since the last Reserve Study or Update. We recommend the Board budget for an Update to this Reserve Study in two- to three-years. Budgeting for an Update demonstrates the Board's objective to continue fulfilling its fiduciary responsibility to maintain the commonly owned property and to fund reserves appropriately.

5. METHODOLOGY

Reserves for replacement are the amounts of money required for future expenditures to repair or replace Reserve Components that wear out before the entire facility or project wears out. Reserving funds for future repair or replacement of the Reserve Components is also one of the most reliable ways of protecting the value of the property's infrastructure and marketability.

Park Tower can fund capital repairs and replacements in any combination of the following:

1. Increases in the operating budget during years when the shortages occur
2. Loans using borrowed capital for major replacement projects
3. Level monthly reserve assessments annually adjusted upward for inflation to increase reserves to fund the expected major future expenditures
4. Special assessments

We do not advocate special assessments or loans unless near term circumstances dictate otherwise. Although loans provide a gradual method of funding a replacement, the costs are higher than if the Association were to accumulate reserves ahead of the actual replacement. Interest earnings on reserves also accumulate in this process of saving or reserving for future replacements, thereby defraying the amount of gradual reserve collections. We advocate the third method of *Level Monthly Reserve Assessments* with relatively minor annual adjustments. The method ensures that Homeowners pay their "fair share" of the weathering and aging of the commonly owned property each year. Level reserve assessments preserve the property and enhance the resale value of the homes.

This Reserve Study is in compliance with and exceeds the National standards[1] set forth by the Association of Professional Reserve Analysts (APRA) fulfilling the requirements of a "Level I Full Reserve Study." These standards require a Reserve Component to have a "predictable remaining Useful Life." Estimating Remaining Useful Lives and Reserve Expenditures beyond 30 years is often indeterminate. Long-Lived Property Elements are necessarily excluded from this analysis. We considered the following factors in our analysis:

- The Cash Flow Method to compute, project and illustrate the 30-year Reserve Funding Plan
- Local[2] costs of material, equipment and labor
- Current and future costs of replacement for the Reserve Components
- Costs of demolition as part of the cost of replacement
- Local economic conditions and a historical perspective to arrive at our estimate of long term future inflation for construction costs in Chicago,

[1] Identified in the APRA "Standards - Terms and Definitions" and the CAI "Terms and Definitions".
[2] See Credentials for additional information on our use of published sources of cost data.

Illinois at an annual inflation rate[3]. Isolated or regional markets of greater construction (development) activity may experience slightly greater rates of inflation for both construction materials and labor.

- The past and current maintenance practices of Park Tower and their effects on remaining useful lives
- Financial information provided by the Association pertaining to the cash status of the reserve fund and budgeted reserve contribution
- The anticipated effects of appreciation of the reserves over time in accord with a return or yield on investment of your cash equivalent assets. (We did not consider the costs, if any, of Federal and State Taxes on income derived from interest and/or dividend income).
- The Funding Plan excludes necessary operating budget expenditures. It is our understanding that future operating budgets will provide for the ongoing normal maintenance of Reserve Components.

Updates to this Reserve Study will continue to monitor historical facts and trends concerning the external market conditions.

[3] Derived from Marshall & Swift, historical costs and the Bureau of Labor Statistics.

6. CREDENTIALS

HISTORY AND DEPTH OF SERVICE

Founded in 1991, Reserve Advisors is the leading provider of reserve studies, insurance appraisals, developer turnover transition studies, expert witness services, and other engineering consulting services. Clients include community associations, resort properties, hotels, clubs, non-profit organizations, apartment building owners, religious and educational institutions, and office/commercial building owners in 48 states, Canada and throughout the world.

The **architectural engineering consulting firm** was formed to take a leadership role in helping fiduciaries, boards, and property managers manage their property like a business with a long-range master plan known as a Reserve Study.

Reserve Advisors employs the **largest staff of Reserve Specialists** with bachelor's degrees in engineering dedicated to Reserve Study services. Our principals are founders of Community Associations Institute's (CAI) Reserve Committee that developed national standards for reserve study providers. One of our principals is a Past President of the Association of Professional Reserve Analysts (APRA). Our vast experience with a variety of building types and ages, on-site examination and historical analyses are keys to determining accurate remaining useful life estimates of building components.

No Conflict of Interest - As consulting specialists, our **independent opinion** eliminates any real or perceived conflict of interest because we do not conduct or manage capital projects.

TOTAL STAFF INVOLVEMENT

Several staff members participate in each assignment. The responsible advisor involves the staff through a Team Review, exclusive to Reserve Advisors, and by utilizing the experience of other staff members, each of whom has served hundreds of clients. We conduct Team Reviews, an internal quality assurance review of each assignment, including: the inspection; building component costing; lifing; and technical report phases of the assignment. Due to our extensive experience with building components, we do not have a need to utilize subcontractors.

OUR GOAL

To help our clients fulfill their fiduciary responsibilities to maintain property in good condition.

VAST EXPERIENCE WITH A VARIETY OF BUILDINGS

Reserve Advisors has conducted reserve studies for a multitude of different communities and building types. We've analyzed thousands of buildings, from as small as a 3,500-square foot day care center to the 2,600,000-square foot 98-story Trump International Hotel and Tower in Chicago. We also routinely inspect buildings with various types of mechanical systems such as simple electric heat, to complex systems with air handlers, chillers, boilers, elevators, and life safety and security systems.

We're familiar with all types of building exteriors as well. Our well-versed staff regularly identifies optimal repair and replacement solutions for such building exterior surfaces such as adobe, brick, stone, concrete, stucco, EIFS, wood products, stained glass and aluminum siding, and window wall systems.

OLD TO NEW

Reserve Advisors' experience includes ornate and vintage buildings as well as modern structures. Our specialists are no strangers to older buildings. We're accustomed to addressing the unique challenges posed by buildings that date to the 1800's. We recognize and consider the methods of construction employed into our analysis. We recommend appropriate replacement programs that apply cost effective technologies while maintaining a building's character and appeal.

TODD M. WALTER, P.E., RS, PRA
Vice President of Engineering

CURRENT CLIENT SERVICES

Todd M. Walter, a Professional Engineer (P.E.), is the Vice President of Engineering for Reserve Advisors, which is dedicated to serving community associations, religious organizations, educational facilities, and public and private entities throughout the United States.

Todd Walter has conducted nearly 2,300 Reserve Studies since starting with Reserve Advisors in 1999, primarily in the Chicago area. The following is a partial list of clients served by Mr. Walter demonstrating his breadth of experiential knowledge of community associations in construction and related buildings systems.

Trump International Hotel and Tower - Located in Chicago, this is a premier luxury high rise development. The 90+ story development includes an extensive vaulted plaza/viaduct and stainless steel curtain wall system.

Edgewater Beach Apartment Corporation - Iconic vintage hotel/resort conversion at the far-north Edgewater community in Chicago. The Development includes extensive historic features and amenities including the garden south of the building.

Commodore Green Brier Landmark - Elegant, historic condominiums with original face brick, terra cotta and stone architecture that are located in Chicago.

Montgomery on Superior - Conversion of the former Montgomery Ward headquarters in Chicago into upscale residences. The tower includes travertine stone cladding and curtain wall systems.

The Carlyle - Vintage, prime real estate on Chicago's Lake Shore Drive at the north end of the Magnificent Mile, an elegant tower with expansive balconies that overlook Lake Michigan.

Optima Old Orchard Woods Development - Landmark development off I-94 at the Old Orchard exit in Skokie with three towers that include curtain wall systems and extensive landscaped roof terraces.

3550 Association - Twin 28-story towers with over 700 units on Lake Shore Drive in Chicago. Extensive lobbies and garage structure at the base of the towers.

Loring Green East and West - These two towers are two of the most recognized residential high rises in Minneapolis. The towers comprise entirely brick masonry facades with extensive amenities. The development includes a landscaped plaza roof system.

PRIOR RELEVANT EXPERIENCE

Before joining Reserve Advisors, Mr. Walter was a design engineer and on-site project manager for Owens-Illinois. He was responsible for the construction inspection of structural projects throughout the United States. He has designed structural components and prepared construction specifications for national and international engineering projects.

EDUCATION

Ohio University - B.S. Civil Engineering

PROFESSIONAL AFFILIATIONS

Professional Engineering License - Wisconsin 2003, Illinois 2003, Ohio 2009, Michigan 2009, Indiana 2009, Minnesota 2009, North Carolina 2019
LEED (Leadership in Energy and Environmental Design) Green Associate
American Society of Civil Engineers
Reserve Specialist (RS) - Community Associations Institute
Professional Reserve Analyst (PRA) - Association of Professional Reserve Analysts

ALAN M. EBERT, P.E., PRA, RS
Director of Quality Assurance

CURRENT CLIENT SERVICES

Alan M. Ebert, a Professional Engineer, is the Director of Quality Assurance for Reserve Advisors. Mr. Ebert is responsible for the management, review and quality assurance of reserve studies. In this role, he assumes the responsibility of stringent report review analysis to assure report accuracy and the best solution for Reserve Advisors' clients.

Mr. Ebert has been involved with thousands of Reserve Study assignments. The following is a partial list of clients served by Alan Ebert demonstrating his breadth of experiential knowledge of community associations in construction and related buildings systems.

Brownsville Winter Haven Located in Brownsville, Texas, this unique homeowners association contains 525 units. The Association maintains three pools and pool houses, a community and management office, landscape and maintenance equipment, and nine irrigation canals with associated infrastructure.

Rosemont Condominiums This unique condominium is located in Alexandria, Virginia and dates to the 1940's. The two mid-rise buildings utilize decorative stone and brick masonry. The development features common interior spaces, multi-level wood balconies and common asphalt parking areas.

Stillwater Homeowners Association Located in Naperville, Illinois, Stillwater Homeowners Association maintains four tennis courts, an Olympic sized pool and an upscale ballroom with commercial-grade kitchen. The community also maintains three storm water retention ponds and a detention basin.

Birchfield Community Services Association This extensive Association comprises seven separate parcels which include 505 townhome and single family homes. This Community Services Association is located in Mt. Laurel, New Jersey. Three lakes, a pool, a clubhouse and management office, wood carports, aluminum siding, and asphalt shingle roofs are a few of the elements maintained by the Association.

Oakridge Manor Condominium Association Located in Londonderry, New Hampshire, this Association includes 104 units at 13 buildings. In addition to extensive roads and parking areas, the Association maintains a large septic system and significant concrete retaining walls.

Memorial Lofts Homeowners Association This upscale high rise is located in Houston, Texas. The 20 luxury units include large balconies and decorative interior hallways. The 10-story building utilizes a painted stucco facade and TPO roof, while an on-grade garage serves residents and guests.

PRIOR RELEVANT EXPERIENCE

Mr. Ebert earned his Bachelor of Science degree in Geological Engineering from the University of Wisconsin-Madison. His relevant course work includes foundations, retaining walls, and slope stability. Before joining Reserve Advisors, Mr. Ebert was an oilfield engineer and tested and evaluated hundreds of oil and gas wells throughout North America.

EDUCATION

University of Wisconsin-Madison - B.S. Geological Engineering

PROFESSIONAL AFFILIATIONS/DESIGNATIONS

Professional Engineering License – Wisconsin, North Carolina, Illinois, Colorado
Reserve Specialist (RS) **-** Community Associations Institute
Professional Reserve Analyst (PRA) **-** Association of Professional Reserve Analysts

RESOURCES

Reserve Advisors utilizes numerous resources of national and local data to conduct its Professional Services. A concise list of several of these resources follows:

Association of Construction Inspectors, (ACI) the largest professional organization for those involved in construction inspection and construction project management. ACI is also the leading association providing standards, guidelines, regulations, education, training, and professional recognition in a field that has quickly become important procedure for both residential and commercial construction, found on the web at www.iami.org.

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., (ASHRAE) the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., devoted to the arts and sciences of heating, ventilation, air conditioning and refrigeration; recognized as the foremost, authoritative, timely and responsive source of technical and educational information, standards and guidelines, found on the web at www.ashrae.org. Reserve Advisors actively participates in its local chapter and holds individual memberships.

Community Associations Institute, (CAI) America's leading advocate for responsible communities noted as the only national organization dedicated to fostering vibrant, responsive, competent community associations. Their mission is to assist community associations in promoting harmony, community, and responsible leadership.

Marshall & Swift / Boeckh, (MS/B) the worldwide provider of building cost data, co-sourcing solutions, and estimating technology for the property and casualty insurance industry found on the web at www.marshallswift.com.

R.S. Means CostWorks, North America's leading supplier of construction cost information. As a member of the Construction Market Data Group, Means provides accurate and up-to-date cost information that helps owners, developers, architects, engineers, contractors and others to carefully and precisely project and control the cost of both new building construction and renovation projects found on the web at www.rsmeans.com.

Reserve Advisors' library of numerous periodicals relating to reserve studies, condition analyses, chapter community associations, and historical costs from thousands of capital repair and replacement projects, and product literature from manufacturers of building products and building systems.

7. DEFINITIONS

Definitions are derived from the standards set forth by the Community Associations Institute (CAI) representing America's 305,000 condominium and homeowners associations and cooperatives, and the Association of Professional Reserve Analysts, setting the standards of care for reserve study practitioners.

Cash Flow Method - A method of calculating Reserve Contributions where contributions to the reserve fund are designed to offset the variable annual expenditures from the reserve fund. Different Reserve Funding Plans are tested against the anticipated schedule of reserve expenses until the desired funding goal is achieved.

Component Method - A method of developing a Reserve Funding Plan with the total contribution is based on the sum of the contributions for individual components.

Current Cost of Replacement - That amount required today derived from the quantity of a *Reserve Component* and its unit cost to replace or repair a Reserve Component using the most current technology and construction materials, duplicating the productive utility of the existing property at current *local* market prices for *materials*, *labor* and manufactured equipment, contractors' overhead, profit and fees, but without provisions for building permits, overtime, bonuses for labor or premiums for material and equipment. We include removal and disposal costs where applicable.

Fully Funded Balance - The Reserve balance that is in direct proportion to the fraction of life "used up" of the current Repair or Replacement cost similar to Total Accrued Depreciation.

Funding Goal (Threshold) - The stated purpose of this Reserve Study is to determine the adequate, not excessive, minimal threshold reserve balances.

Future Cost of Replacement - *Reserve Expenditure* derived from the inflated current cost of replacement or current cost of replacement as defined above, with consideration given to the effects of inflation on local market rates for materials, labor and equipment.

Long-Lived Property Component - Property component of Park Tower responsibility not likely to require capital repair or replacement during the next 30 years with an unpredictable remaining Useful Life beyond the next 30 years.

Percent Funded - The ratio, at a particular point of time (typically the beginning of the Fiscal Year), of the actual (or projected) Reserve Balance to the Fully Funded Balance, expressed as a percentage.

Remaining Useful Life - The estimated remaining functional or useful time in years of a *Reserve Component* based on its age, condition and maintenance.

Reserve Component - Property elements with: 1) Park Tower responsibility; 2) limited Useful Life expectancies; 3) predictable Remaining Useful Life expectancies; and 4) a replacement cost above a minimum threshold.

Reserve Component Inventory - Line Items in ***Reserve Expenditures*** that identify a *Reserve Component*.

Reserve Contribution - An amount of money set aside or *Reserve Assessment* contributed to a *Reserve Fund* for future *Reserve Expenditures* to repair or replace *Reserve Components*.

Reserve Expenditure - Future Cost of Replacement of a Reserve Component.

Reserve Fund Status - The accumulated amount of reserves in dollars at a given point in time, i.e., at year end.

Reserve Funding Plan - The portion of the Reserve Study identifying the *Cash Flow Analysis* and containing the recommended Reserve Contributions and projected annual expenditures, interest earned and reserve balances.

Reserve Study - A budget planning tool that identifies the current status of the reserve fund and a stable and equitable Funding Plan to offset the anticipated future major common area expenditures.

Useful Life - The anticipated total time in years that a *Reserve Component* is expected to serve its intended function in its present application or installation.

8. PROFESSIONAL SERVICE CONDITIONS

Our Services - Reserve Advisors, LLC (RA) performs its services as an independent contractor in accordance with our professional practice standards and its compensation is not contingent upon our conclusions. The purpose of our reserve study is to provide a budget planning tool that identifies the current status of the reserve fund, and an opinion recommending an annual funding plan to create reserves for anticipated future replacement expenditures of the property.

Our inspection and analysis of the subject property is limited to visual observations, is noninvasive and is not meant to nor does it include investigation into statutory, regulatory or code compliance. RA inspects sloped roofs from the ground and inspects flat roofs where safe access (stairs or ladder permanently attached to the structure) is available. The report is based upon a "snapshot in time" at the moment of inspection. RA may note visible physical defects in our report. The inspection is made by employees generally familiar with real estate and building construction but in the absence of invasive testing RA cannot opine on, nor is RA responsible for, the structural integrity of the property including its conformity to specific governmental code requirements for fire, building, earthquake, and occupancy, or any physical defects that were not readily apparent during the inspection.

RA is not responsible for conditions that have changed between the time of inspection and the issuance of the report. RA does not investigate, nor assume any responsibility for any existence or impact of any hazardous materials, such as asbestos, urea-formaldehyde foam insulation, other chemicals, toxic wastes, environmental mold or other potentially hazardous materials or structural defects that are latent or hidden defects which may or may not be present on or within the property. RA does not make any soil analysis or geological study as part of its services; nor does RA investigate water, oil, gas, coal, or other subsurface mineral and use rights or such hidden conditions. RA assumes no responsibility for any such conditions. The Report contains opinions of estimated costs and remaining useful lives which are neither a guarantee of the actual costs of replacement nor a guarantee of remaining useful lives of any property element.

RA assumes, without independent verification, the accuracy of all data provided to it. You agree to indemnify and hold RA 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 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. Your obligation for indemnification and reimbursement shall extend to any director, officer, employee, affiliate, or agent of RA. Liability of RA and its employees, affiliates, and agents for errors and omissions, if any, in this work is limited to the amount of its compensation for the work performed in this engagement.

Report - RA completes the services in accordance with the Proposal. The Report represents a valid opinion of RA's findings and recommendations and is deemed complete. RA, however, considers any additional information made available to us within 6 months of issuing the Report if a timely request for a revised Report is made. RA retains the right to withhold a revised Report if payment for services was not tendered in a timely manner. All information received by RA and all files, work papers or documents developed by RA during the course of the engagement shall remain the property of RA and may be used for whatever purpose it sees fit.

Your Obligations - You agree to provide us access to the subject property for an on-site visual inspection You agree to provide RA all available, historical and budgetary information, the governing documents, and other information that we request and deem necessary to complete the Report. You agree to pay actual attorneys' fees and any other costs incurred to collect on any unpaid balance for RA's services.

Use of Our Report and Your Name - Use of this Report is limited to only the purpose stated herein. You hereby acknowledge that any use or reliance by you on the Report for any unauthorized purpose is at your own risk and you shall hold RA harmless from any consequences of such use. Use by any unauthorized third party is unlawful. The Report in whole or in part ***is not and cannot be used*** *as a design specification for design engineering purposes or as an appraisal.* You may show our Report in its entirety to the following third parties: members of your organization, your accountant, attorney, financial institution and property manager who need to review the information contained herein. Without the written consent of RA, you shall not disclose the Report to any other third party. The Report contains intellectual property developed by RA and ***shall not be reproduced or distributed to any party that conducts reserve studies without the written consent of RA.***

RA will include your name in our client lists. RA reserves the right to use property information to obtain estimates of replacement costs, useful life of property elements or otherwise as RA, in its sole discretion, deems appropriate.

Payment Terms, Due Dates and Interest Charges - Retainer payment is due upon authorization and prior to inspection. The balance is due net 30 days from the report shipment date. Any balance remaining 30 days after delivery of the Report shall accrue an interest charge of 1.5% per month. Any litigation necessary to collect an unpaid balance shall be venued in Milwaukee County Circuit Court for the State of Wisconsin.