

NOBLIN & ASSOCIATES, LLC

Consulting Engineers

**RESERVE BUDGET ANALYSIS
CHAPEL HILL WEST CONDOMINIUM
FRAMINGHAM, MASSACHUSETTS
PROJECT #18.10.511**

SUBMITTED TO: Chapel Hill West Condominium
c/o Brigs LLC
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**RESERVE BUDGET ANALYSIS
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1.0 INTRODUCTION

A Reserve Budget Study was performed by Noblin & Associates, LLC (Noblin) for the Chapel Hill West Condominium in Framingham, Massachusetts in Winter 2018. This study was performed pursuant to proposal P18.02.067 and consisted of a Study Update, which included an on-site review of the facilities.

The intent of this study is to provide the Condominium Association with information to establish a funding plan for replacement of Common Area components that will need to be addressed within a 30-year time frame.

Items with an expected remaining useful life of over thirty years, such as foundations, structural framing, etc., are not considered part of this Reserve Budget Analysis. Maintenance items, such as snow removal, landscaping, etc., are not considered Reserve components and are not included in this Reserve Budget Study.

The first phase of our study included review of the available Condominium documents, which provide a general description of the Condominium facilities and Unit boundaries. The Unit boundaries are used to differentiate between Common Areas, which the Condominium Association is responsible for maintaining, and individual Units, which Unit Owners are responsible for maintaining.

The second phase of our study included review of the maintenance history of the development with a representative of the Association, and review of the existing conditions to determine the remaining useful life of each component. It should be noted that, this is limited to a visual evaluation to determine the quantities and a representative sampling of the conditions of these components. Various additional factors beyond the scope of this visual review may affect replacement costs and service lives of these common area elements, including but not limited to latent construction defects, environmental hazards, future code or design changes, events outside human control, and other unpredictable events. The impact of these various factors related to future funding requirements are beyond the scope of our Reserve Budget Analysis.

Representative photographs have been included in this report to help the Association understand the current conditions of Common Area Components of the property. Specific funding calculations for Common Area Components, projected schedules and costs for capital projects, and projected Reserve Fund balances are also provided in table and chart form (Appendices A, B, C).

2.0 GENERAL

The Chapel Hill West Condominium consists of one hundred and sixty-eight (168) residential Units in a single seven (7)-story building. The building was constructed circa 1972. The construction would be classified as Residential Group R-2.

The "garden style" building is constructed of precast concrete planks and panels and rests on a poured concrete foundation. Most of the ground floor level of the building serves as a parking garage facility and a conditioned storage room. The roof is a gravel surfaced, built-up asphalt membrane, and the exterior walls are comprised of large precast reinforced concrete panels. The windows are aluminum framed fixed and sliding units. Exterior doors include the metal doors at the stairwell exits, and the metal and glass doors at the lobby entrances. Most of the Units are also serviced by concrete balconies.

Interior common areas include the two entrance lobbies and the interior corridors and stairwells. Interior common facilities include two laundry rooms, an office, a social room, an exercise room, a game room, and various mechanical and utility rooms. The building is serviced by two passenger elevators.

The roadway and parking areas are paved with bituminous concrete (asphalt), and an asphalt walkway extends along the rear of the building. A shared outdoor inground swimming pool and cabana is located between Chapel Hill West and Chapel Hill East. Several concrete retaining walls are located on site.



Photograph 1 – Aerial view of the Chapel Hill West Condominium looking south.

In addition to our physical inspections of the Condominium facilities, the following additional sources of information have been incorporated into this study:

- Review of the available maintenance history with Randy Poitras of Brigs, LLC, the current Property Manager for the Association;
- Review of the previous Reserve Study performed by Noblin in 2013.
- Condominium Documents including the Master Deed, which describe the Unit boundaries.

A review of the available Condominium documents indicates the Unit boundaries are as follows:

- Floors: *The upper surface of the finish floor.*
- Ceilings: *The plane of the lower surface of the ceiling.*
- Interior Building Walls: *The interior surface of the finish wall.*
- Corridor Walls: *The face of the interior wall studding.*
- Exterior Building Walls: *If said wall is constructed of solid concrete, the plane of the interior surface of the wall; if said wall contains steel studding then to the face of said studding.*
- Exterior Doors and Windows: *As to doors, the exterior surface thereof. As to windows, the exterior surfaces of the glass and of the window frames.*
- Balconies: *As to each unit with a balcony, there shall be included the entire balcony, measured from its exterior surfaces.*

Items serving only one Unit, whether located within or outside the boundary of a Unit, are part of the Unit.

The Condominium Association is responsible for all building and site elements outside the Unit boundaries. These include:

- Roadways and Paved Parking Areas
- Walkways
- Landscaped Areas
- Fencing
- Roofs
- HVAC Systems
- Swimming Pool
- Exterior Walls
- Exterior Site Lighting
- Facilities for Use by Residents

3.0 OVERVIEW OF FINANCIAL ANALYSIS METHODS

Two basic approaches to Reserve Fund calculations accepted in the industry include the following:

- *Component Method* - A method of calculating Reserve Contributions where the total reserve contribution is based on the sum of contributions for individual Reserve Components.
- *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.

Within these basic methods, the most common Reserve Budget Analysis Funding Goals can be described as follows:

- Full Funding: The Full Funding goal is designed to set aside Reserves for each Common Component so that funds are in place equivalent to the depreciated value (or Fully Funded Balance) of the Component. In general, the Full Funding goal provides a relatively conservative approach to capital reserve funding.

For a new component, a Reserve Contribution should be set aside annually, equal to the Current Replacement Cost of the component divided by its Useful Life. For example, the annual Reserve Contribution for a \$20,000 (Current Replacement Cost) roof with a Useful Life of 20 years would be \$1,000/yr. (\$20,000/20 yrs.). To be considered Fully Funded for the roof after 3 years, the Association should have \$3,000 set aside.

For a Component that has been in service for a number of years without being Fully Funded, a resulting Shortfall will need to be made up for in the remaining Useful Life to meet the objectives of the Full Funding goal. For example, a roof replacement project with a current Shortfall of \$10,000 and a remaining Useful Life of 5 years requires an additional Special Assessment of \$2,000/yr. (\$10,000/5 yrs.) to be Fully Funded by the time the roof needs to be replaced.

Our Reserve Budget Analysis includes calculations based on a Full Funding goal (see Section 5.0 and Appendix A).

- Baseline Funding: The Baseline Funding goal is designed to have sufficient reserves on hand so that the projected Reserve Fund balance never drops below zero. This method requires frequent review of the funding program to ensure adequate funds are in place for upcoming expenditures. Associations using the Baseline Funding goal may have higher instances of Special Assessments and/or deferred maintenance.

- Threshold Funding: The Threshold Funding goal is designed to have sufficient reserves on hand so that the Reserve Fund balance never drops below a predetermined level (either a dollar threshold or a percent funded threshold). For example, an Association may choose to set funding levels such that the projected Reserve Balances never fall below \$50,000 over a specified number of years. The Threshold Funding goal may produce lower annual contributions than Full Funding but should have less chance of requiring Special Assessments and/or deferred maintenance than Baseline Funding.

Our Reserve Budget Analysis includes calculations based on a Threshold Funding goal (see Section 5.0 and Appendices C and F).

- Statutory Funding: The Statutory Funding method maintains Reserve Funds as described or required by local statutes or codes. The State of Massachusetts requires that all condominiums maintain an adequate replacement reserve fund. However, “adequate” replacement reserves are not defined.
- Funding Based on Operating Income: Quasi-governmental lending agencies such as FHA and Fannie Mae require that condominiums set aside at least 10% of their operating income towards their capital reserve accounts.

4.0 COMMON AREA ELEMENTS

The following items have been included in our Reserve Budget Analysis.

The construction cost estimates provided below are based upon the conditions noted during our survey. These figures have not been prepared by a professional cost estimator, but rather our experience with past projects of similar type and magnitude. The construction cost estimates have been compiled from various sources and may vary from actual construction costs. Noblin has no control over those variables affecting the construction costs such as bid climate, contractor workload, and labor/material costs at the time of contractor bidding. Therefore, Noblin does not recommend using these values for sensitive budgeting purposes.

It has been assumed that the original design and construction of the Chapel Hill West Condominium development are adequate except for items where obvious deficiencies have been noted. Replacement of the original common construction elements with matching materials has been assumed, with the exception of items where obvious deficiencies have been recognized. Replacement costs for any such deficient items include the costs for upgrading the original components as noted.

For Components where specific conditions, Current Replacement Costs and remaining Useful Life cannot be determined (i.e. underground utilities, etc.), a reasonable allowance has been assumed. The presumed ages include specific information where available, or approximate ages based on the conditions noted during our survey. Estimated costs presented in the text below are provided in current prices. Costs provided for future projects include the effects of an assumed inflation rate (see Appendix B).

ANNUAL ALLOWANCES

- Underground Utilities - An annual allowance of \$2,000 has been included for miscellaneous repairs of the underground water, wastewater and utility lines. Quantities of underground utility systems have been based on the size and configuration of the development.
- Concrete Balconies - An annual allowance of \$4,000 has been included to provide funds for repair of balcony concrete surfaces (i.e. crack repair, sealant joints, coating, etc.).
- Exterior Walls - An annual allowance of \$3,000 has been included to provide funds for repair of exterior concrete panel surfaces (i.e. crack repair, spall repair, etc.).

Note: Annual allowances should be periodically reviewed and adjusted according to the actual costs incurred for this building.

SITE WORK

- Pavement - The asphalt pavement of the roadway, parking areas, and fire lane is a two-layer system consisting of a base course covered with a secondary "wear" course, which was reportedly installed circa 2015. The walkway and fire lane at the rear of the building also consists of asphalt pavement. The pavement appears to be in generally good condition with some minor cracking noted. The pavement has been seal coated, which is scheduled to be refreshed in the near future. An

allowance of \$154,030 has been included for repaving of the roadway, parking areas, and fire lane in 2045. An allowance of \$3,510 has been included for repaving of the walkway in 2042. An allowance of \$9,000 has been included for pavement seal coating in 2017.

Fencing - Fencing around the property includes chain link fences on the concrete retaining walls near the front of the property, which are in fair condition, and metal fencing around the pool perimeter, which is in good condition (Photographs 2 & 3). An allowance of \$9,300 has been included in 2034 for replacement of the chain link fencing, and an allowance of \$13,950 has been included in 2045 for replacement of the pool fence.



Photograph 2 – View of the chain link fence.



Photograph 3 – View of the pool area with the perimeter metal fence in the background. Note the crack in the concrete pool deck (arrow).

Guardrails - Steel and wood guardrails are located along the edge of the north and east sides of the parking area. The wood guardrail is in good condition and the steel guardrail is in fair condition (Photographs 4 & 5). Allowances of \$12,400 in 2043 and \$5,600 in 2029 have been included for replacement of the wood and steel guardrails, respectively.



Photograph 4 – Example of the wood guardrail.



Photograph 5 – Example of the steel guardrail.

Main Sign- The main property sign is located at the east end of the parking area, which is in good condition (Photograph 6). An allowance of \$4,000 has been included for refurbishment of the sign and base in 2027.



Photograph 6 – View of the main sign.



Photograph 7 – Diagonal cracks near the outside corner are indicative of structural deterioration.

Retaining Walls - A cast-in-place concrete retaining wall is located along the south side of the main entrance ramp. This wall has been slowly deteriorating for more than a decade and has been regularly monitored. It is showing signs of severe deterioration (Photograph 7) and its replacement should be anticipated in the near future. An allowance of \$500,000 has been included in 2022 for replacement of the wall.

A segmental retaining wall was installed in 2010 to replace an original cast-in-place concrete wall. The segmental wall appears to be in good condition. An allowance of \$175,000 has been included in 2040 for replacement of this wall.

Pool Surfaces - Allowances have been included for refurbishment of the pool area surfaces. These include replacement of the coping (\$8,000 in 2039), replacement of the concrete pool deck (\$101,580 in 2031), and restoration of the pool inner surfaces (\$30,000 in 2038).

BUILDING ENVELOPE

Main Roof - The main roof consists of a Tremco gravel surfaced, built-up asphalt roof system, which was installed in 2000 (Photograph 8). At the time of our review, the roof and visible flashings appeared to be in serviceable condition and no significant deficiencies were reported. An allowance of \$576,086 has been included in 2020 for replacement of the roof. Reroofing with a single-ply membrane adhered to thermal insulation underlayment has been assumed. Reroofing is assumed to include removal of the existing roof system to allow inspection of the underlying structural deck.

Cabana Roof - The cabana roof was replaced in 2016 with a new asphalt shingle roof. An allowance of \$3,955 has been included in 2041 for replacement of the shingle roof.



Photograph 8 – View of the main roof.



Photograph 9 – Example of the exterior wall concrete panels.

Exterior Walls - The exterior wall system on the building (consisting of large precast concrete panels) is constructed as a barrier wall system (Photograph 9). This type of construction is intended to form a complete waterproof skin to prevent water infiltration beyond the exterior surface of the wall. The panels are vulnerable to water infiltration through their joints and any cracks that may develop. An annual allowance of \$3,000 has been included for repair of cracks and an allowance of \$175,000 has been included for regular replacement of joint sealant with the next iteration in 2027.

Cabana Siding/Trim - The cabana exterior walls are finished with textured plywood siding and wood trim. An allowance of \$15,000 has been included in 2038 for replacement of the siding and trim.

Balcony Railings - The balconies are provided with aluminum railing systems with wood board top rails (Photographs 10 & 11). The wood and aluminum components are in fair condition. An allowance of \$182,000 has been included in 2023 for complete replacement of the railings.



Photograph 10 – Example of typical aluminum balcony railing components.



Photograph 11 – Example of a typical balcony wood top rail.

Garage
Ceilings - The ceilings in the garages are finished with acoustical panels in metal frames. Many panels have been water damaged and the frame is corroded in most locations (Photograph 12). An allowance of \$171,000 has been included in 2020 for replacement of the garage ceilings.



Photograph 12 – Example of a deteriorated garage ceiling area.

DOORS & WINDOWS

Windows - Common area windows include aluminum fixed and sliding units. An allowance of \$24,000 has been included in 2042 for replacement of the common area windows.

Doors - Common area doors include the aluminum-framed lobby entrance doors, metal-skinned exterior doors, metal-skinned interior doors, wood interior doors, and interior fire doors. Allowances of \$56,000 in 2034, \$16,000 in 2032, \$33,600 in 2029, \$5,000 in 2029, and \$85,000 in 2029 have been included for replacement of the lobby doors, metal exterior doors, metal interior doors, wood interior doors, and interior fire doors, respectively.

SPECIALTIES

Mailboxes - Mailbox stations are located in each of the lobbies. An allowance of \$4,000 has been included in 2025 for replacement of the mailboxes.

Hallway
Surfaces - Common hallway walls are covered by wallpaper and floors are finished with carpet. Full hallway restoration occurred in 2018. An allowance of \$190,000 has been included in 2033 for carpet replacement and an allowance of \$150,000 has been included in 2048 for wallpaper replacement.

Lobby
Renovation - An allowance of \$90,000 has been included in 2024 for refurbishment of the entrance lobbies. This includes floor and wall finishes, replacement of fixtures, and replacement of furnishings.

Common
Facilities
Renovation - Common facilities include a game room, fitness center, social room, and laundry rooms. Allowances of \$10,000, \$25,000, \$14,000, and \$8,000 have been included for replacement of the game room finishes and equipment in 2023, replacement of the fitness center finishes and equipment in 2026, replacement of

the social room finishes including the adjacent bathroom finishes in 2019, and replacement of the laundry room finishes in 2035.

Office Renovation - An allowance of \$8,000 has been included in 2024 for replacement of the office finishes and equipment.

CONVEYING

Elevator Modernization - Two passenger elevators provide access to upper floors of the building. An allowance of \$300,000 has been included in 2036 for replacement of the primary mechanical and control components.

Elevator Cab Renovation - An allowance of \$30,000 has been included in 2026 for renovation of the elevator cab's surfaces.

MECHANICAL

Hot Water Systems - The systems that provide hot water for heating and consumption in the Units and common areas include gas-fired boilers, storage tanks, and circulator pumps. Most of these system components were installed in 2018 and are reportedly operating properly. Two allowances of \$134,000 have been included in 2043 for replacement of the boilers and storage tanks. Two allowances of \$10,400 have also been included for replacement of the circulator pumps, with one in 2029 and one in 2030.

Chilled Water Systems - Chilled water for air conditioning is provided by a cooling loop consisting of, chillers, cooling towers, and chilled water pumps. Allowances of \$240,000 in 2034, \$20,000 in 2024, and \$90,000 in 2030 have been included for replacement of the chillers, pumps, and cooling towers, respectively.

Fan Coil Units - Fan coil units deliver heated and cooled air to the common areas, which are reportedly original to the construction of the building and in poor condition. An allowance of \$56,000 has been included in 2020 for replacement of the common area fan coil units.

Laundry HVAC - Ductless mini-split systems provide heat and air conditioning in the laundry rooms. An allowance of \$12,000 has been included in 2035 for replacement of the systems.

Trash Compactors - Trash compactors are provided on each side of the building for solid waste disposal. An allowance of \$60,000 has been included in 2022 for replacement of the trash compactors.

Pool Mechanicals - An allowance of \$6,000 has been included in 2031 for replacement of the pool mechanical system including pumps and filters.

ELECTRICAL

- Exterior Bldg. Lights - Exterior lighting includes wall-mounted fixtures at the building entrances and lights mounted on the walls between Unit balconies. An allowance of \$41,000 has been included in 2040 for replacement of the lights. Reuse of existing wiring is assumed in this price.
- Parking Area Lights - Pole mounted lights illuminate the roadway and parking area. An allowance of \$20,000 has been included in 2034 for replacement of the light fixtures and poles. Reuse of existing wiring is assumed in this price.
- Garage Lights - LED light fixtures are installed in the garage ceiling to illuminate the parking areas. An allowance of \$8,400 has been included in 2038 for replacement of the lights. Reuse of existing wiring is assumed in this price.
- Stairwell Lights - Fluorescent fixtures illuminate the stairwells. An allowance of \$4,200 has been included in 2030 for replacement of the stairwell lights. Reuse of existing wiring is assumed in this price.
- Intercom/Entry Systems - Intercom systems are provided at the front entrance lobbies to allow Residents to provide access to building visitors. An allowance of \$8,000 has been included in 2029 for replacement of the systems. Reuse of existing wiring is assumed in this price.
- Keyless Entry System - The building is provided with a keyless entry system that allows access through locked doors to those in possession of an electronic fob. An allowance of \$10,000 has been included in 2022 for replacement of the system.
- Security Camera System - A closed circuit video surveillance system consisting of remote cameras and a central viewing and recording station are provided for building security. An allowance of \$25,000 has been included in 2024 for replacement of the system.
- Fire Alarm System - The building is equipped with a fire detection and alarm system that consists of a central 24-zone fire alarm control panel and alert horns, smoke detectors, and pull stations in the hallways, lobby, stairwells, and parking garage. An allowance of \$55,000 has been included in 2031 for replacement of the fire alarm system components. Reuse of existing wiring is assumed in this price.
- Emergency Generator - An emergency generator located at the rear of the building provides power to the elevators and emergency systems during power outages. An allowance of \$60,000 has been included in 2039 for replacement of the generator and transfer switch.

5.0 FINANCIAL ANALYSIS

Based on our review of the types, grades and quantities of common area components for this development, we have prepared Reserve Funding recommendations based on both a Fully Funded goal, and a Threshold Funding goal as described below.

Funding calculations using the Component Method are listed in **Appendix A**. The Existing Reserves have been distributed between the various Components. These calculations have been broken down into the simple Reserve Contribution (**\$182,217**) which equals the Current Replacement Cost divided by the Useful Life for each Component. If these funding levels are maintained from the first year throughout the life of the Association, it should always be Fully Funded.

Where an Association is not currently Fully Funded, a Special Assessment is calculated by dividing the Shortfall by the remaining Useful Life for each Component. In this case, the calculated total Special Assessment is **\$685,435**, which combined with the Reserve Contribution (**\$182,217**) should be adequate to maintain the Association's Reserve Fund at a Fully Funded level.

Comparing the Existing Reserves (**\$1,316,524**) to the Fully Funded Balance (**\$2,342,119**) shows that the Reserve Fund is presently funded at **56%**.

Appendix B shows the projected expenditures for replacement and refurbishment of the Reserve Components over the next thirty (30) years in tabular and chart forms. It should be noted that some projects that have been shown as single expenditures in a given year might actually be disbursed over a number of years. As more accurate schedules for the work are developed as part of the on-going management program for the property, these schedules should be incorporated into updated versions of this study.

Appendix C shows a table and chart of the projected Reserve Fund balance over this same thirty (30) year period given the recommended levels of funding and projected expenditures. It should be noted that the Special Assessment, as listed in **Appendix A**, has been eliminated. This is possible because with the level of Existing Reserves (**\$1,316,524**), the projected Closing Balance is maintained at an adequate level through the 30-year study period with only the recommended Reserve Contribution (**\$182,217**).

Assumed interest and inflation rates have been factored into these calculations as noted in **Appendix C**. Although interest and inflation tend to offset each other, they will have some effect on Reserve Budget funding requirements. However, given the fact that both interest and inflation will likely fluctuate over the 30-year span of this study, predicting this effect is not practical. Furthermore, changes in construction technologies and other factors over the course of 30 years will likely have more effect on Reserve Budget funding requirements than interest and inflation.

It should be noted that this study includes various estimated values, including Current Replacement Costs, estimated Useful Life of Components, etc. These estimated values are used to provide a realistic model of the anticipated Capital Improvement Projects for this development. These estimated values have been based on our limited visual surveys, information provided by the managing agent and other representatives of the property, information regarding on-going maintenance for the development, and other background information provided for the purposes of our study.

It should also be noted that in addition to the costs for labor and materials, the actual costs for Capital Improvement Projects will include a number of extra costs, such as permitting fees, the cost for investigation and design, project administration, contingencies, etc. These costs do not fall within the strict definition of Reserve Components, and therefore are not included in our estimates.

Pricing for investigation, design and project administration will vary based on the scope and type of construction. For a simple project (i.e. carpet replacement) there may be no need for these services. For more complicated projects (i.e. roof replacement), it may be advisable to include an allowance of 10% to 15% to the budget for these professional services.

Budgeting for major Capital Improvement Projects should also include a reasonable construction contingency to cover latent conditions encountered during the work (i.e. roof deck replacement discovered as a failed roof is removed). For major building renovations, a contingency of between 15% and 20% may be realistic and should be included in the project budget.

The purpose of this study was to provide recommendations for establishing adequate funds for anticipated replacement and refurbishment of the Condominium's physical infrastructure. This study has been prepared solely for the use of the Association in establishing adequate Reserve Funds for these anticipated replacement and refurbishment needs and should not be considered a detailed Condition Survey of the development or individual Reserve Components, or to have included destructive testing, subsurface investigation, or other analysis beyond that specifically described in Section 4.0.

Actual replacement schedules for the various elements included in this study must be determined as part of the on-going maintenance program for the development. Actual costs must be determined from actual bid prices for the work. As this information becomes available, it should be incorporated into updated versions of this study. We recommend reviewing this study annually, and updating it on a regular basis, typically every three to five (3 - 5) years.

We recommend that this study be reviewed by the Association's legal and financial professionals, particularly with regard to any tax implications.

**APPENDIX A
COMMON ELEMENT
COSTS & SERVICE LIVES**

**CHAPEL HILL WEST CONDOMINIUM
COMMON ELEMENT COSTS & SERVICE LIVES**

ITEM #	COMPONENT	PRICE	QUANTITY	CURRENT REPLACEMENT COST	USEFUL LIFE	YEAR REPLACED	AGE	REMAIN. LIFE (1)	RESERVE CONTRIBUTION	FULLY FUNDED BALANCE	EXISTING RESERVES	SHORTFALL	SPECIAL ASSESSMENT		
ANNUAL ALLOWANCES															
1	Underground Utilities	\$2,000.00 (lump sum)	1	\$2,000	1				\$2,000	\$2,000	\$625	\$1,375	(\$625)		
2	Concrete Balconies	\$4,000.00 (lump sum)	1	\$4,000	1				\$4,000	\$4,000	\$1,251	\$2,749	(\$1,251)		
3	Exterior Walls	\$3,000.00 (lump sum)	1	\$3,000	1				\$3,000	\$3,000	\$938	\$2,062	(\$938)		
SITWORK															
4	Asphalt Pavement	\$180 (per sf)	85572 (sf)	\$154,030	30	2015	4	26	\$5,134	\$20,537	\$48,162	(\$27,625)	(\$1,063)		
5	Walkway Pavement	\$180 (per sf)	1950 (sf)	\$3,510	30	2012	7	23	\$117	\$819	\$1,098	(\$279)	(\$12)		
6	Pavement Seal Coating	\$9,000.00 (lump sum)	1	\$9,000	4	2017	2	2	\$2,550	\$4,500	\$2,814	\$1,686	\$843		
7	Chainlink Fence	\$20.00 (per lf)	465 (lf)	\$9,300	40	2015	4	15	\$233	\$5,813	\$2,905	\$2,908	(\$194)		
8	Pool Fence	\$45.00 (per lf)	310 (lf)	\$13,950	40	2015	4	26	\$465	\$1,860	\$4,362	(\$2,502)	(\$96)		
9	Guardrail (wood)	\$40.00 (per lf)	310 (lf)	\$12,400	40	2003	16	24	\$400	\$4,960	\$3,877	\$1,083	\$45		
10	Guardrail (steel)	\$40.00 (per lf)	140 (lf)	\$5,600	40	2029	4	10	\$140	\$4,200	\$1,751	\$2,449	\$245		
11	Main Sign	\$4,000.00 (lump sum)	1	\$4,000	15	2012	7	8	\$267	\$1,867	\$1,251	\$616	\$77		
12	Retaining Wall (concrete)	\$500,000.00 (lump sum)	40	\$500,000	40	2022	3	2022	\$12,500	\$462,500	\$156,342	\$306,158	\$102,053		
13	Retaining Wall (segmental)	\$70.00 (per sf)	2500 (sf)	\$175,000	30	2010	9	21	\$6,833	\$52,500	\$54,720	(\$2,220)	(\$106)		
14	Pool Surface Refurbishment	\$30,000.00 (lump sum)	1	\$30,000	20	2018	1	19	\$30,000	\$1,500	\$9,360	(\$7,860)	(\$415)		
15	Pool Coping	\$8,000.00 (lump sum)	1	\$8,000	20	2019	20	2039	\$400	\$6,000	\$2,501	(\$2,501)	(\$125)		
16	Pool Deck	\$12,000 (per sf)	8485 (sf)	\$101,580	40	2021	4	12	\$2,940	\$71,106	\$31,762	\$39,344	\$3,279		
BUILDING ENVELOPE															
17	Main Roof	\$14.00 (per sf)	41149 (sf)	\$576,086	30	2012	7	23	\$800	\$5,600	\$7,504	(\$1,904)	(\$63)		
18	Cabana Roof	\$7.00 (per sf)	565 (sf)	\$3,955	25	2016	3	22	\$158	\$475	\$1,237	(\$762)	(\$55)		
19	Exterior Walls	\$175,000.00 (lump sum)	1	\$175,000	15	2012	7	8	\$11,667	\$81,667	\$54,720	\$26,947	\$3,368		
20	Cabana Siding & Trim	\$10.00 (per sf)	1500 (sf)	\$15,000	25	2013	6	19	\$900	\$3,600	\$4,690	(\$1,090)	(\$57)		
20	Balcony Railings	\$70.00 (per sf)	2600 (sf)	\$182,000	40	2028	4	2038	\$4,550	\$163,800	\$56,908	\$106,892	\$26,723		
21	Garage Suspended Ceiling	\$5.00 (per sf)	34200 (sf)	\$171,000	40	2017	7	10	\$4,275	\$166,725	\$53,469	\$113,256	\$113,256		
DOORS & WINDOWS															
22	Common Area Windows	\$1,600.00 (per unit)	15	\$24,000	30	2012	7	23	\$800	\$5,600	\$7,504	(\$1,904)	(\$63)		
23	Lobby Entrance Doors	\$28,000.00 (per unit)	2	\$56,000	25	2009	10	15	\$2,800	\$22,400	\$17,510	\$4,890	\$326		
24	Exterior Metal Doors	\$2,000.00 (lump sum)	8	\$16,000	30	2002	17	13	\$633	\$9,067	\$5,003	\$4,064	\$313		
25	Interior Metal Doors	\$1,200.00 (lump sum)	28	\$33,600	40	2029	4	10	\$940	\$25,200	\$10,506	\$14,694	\$1,469		
26	Interior Wood Doors	\$1,000.00 (lump sum)	5	\$5,000	40	2019	4	10	\$125	\$3,750	\$1,563	\$2,187	\$219		
27	Interior Fire Doors	\$1,500.00 (lump sum)	56	\$84,000	40	2029	4	10	\$2,100	\$63,000	\$26,265	\$36,735	\$3,673		
28	Mailbox Stations	\$2,000.00 (per unit)	2	\$4,000	30	1995	24	6	\$133	\$3,200	\$1,251	\$1,949	\$325		
29	Hallway Carpet	\$190,000.00 (lump sum)	1	\$190,000	15	2018	1	14	\$12,667	\$12,667	\$46,410	(\$46,743)	(\$3,359)		
30	Hallway Wallpaper	\$150,000.00 (lump sum)	1	\$150,000	30	2018	1	29	\$5,000	\$46,902	\$46,902	(\$1,445)	(\$1,445)		
31	Lobby Renovation	\$45,000.00 (lump sum)	2	\$90,000	15	2009	10	5	\$6,000	\$60,000	\$28,141	\$31,859	\$6,372		
32	Game Room Refurbishment	\$10,000.00 (lump sum)	1	\$10,000	12	2011	8	4	\$633	\$6,667	\$3,127	\$3,540	\$885		
33	Fitness Center Refurbishment	\$25,000.00 (lump sum)	1	\$25,000	15	2011	8	7	\$1,667	\$13,333	\$7,817	\$5,516	\$768		
34	Social Room Refurbishment	\$14,000.00 (lump sum)	1	\$14,000	12	2008	11	2019	\$1,167	\$14,000	\$4,378	\$9,622	\$8,546		
35	Laundry Room Refurbishment	\$8,000.00 (lump sum)	1	\$8,000	20	2015	4	16	\$400	\$1,600	\$2,501	(\$901)	(\$56)		
36	Office Refurbishment	\$8,000.00 (lump sum)	1	\$8,000	20	2024	?	5	\$400	\$6,000	\$2,501	\$3,499	\$700		
37	Elevator Modernization	\$150,000.00 (per unit)	2	\$300,000	30	2006	13	17	\$10,000	\$130,000	\$93,805	\$36,195	\$2,129		
38	Elevator Cab Renovation	\$15,000.00 (per unit)	2	\$30,000	20	2006	13	7	\$1,500	\$1,500	\$9,360	\$10,120	\$1,446		
CONVEYING															
39	Boilers & Storage Tanks (A side)	\$34,000.00 (lump sum)	1	\$34,000	25	2018	1	24	\$5,360	\$5,360	\$41,900	(\$36,540)	(\$1,522)		
40	Boilers & Storage Tanks (B side)	\$134,000.00 (lump sum)	1	\$134,000	25	2018	1	24	\$5,360	\$5,360	\$41,900	(\$36,540)	(\$1,522)		
41	Circulator Pumps (A side)	\$10,400.00 (lump sum)	1	\$10,400	12	2018	1	11	\$867	\$867	\$3,252	(\$2,385)	(\$217)		
42	Circulator Pumps (B side)	\$10,400.00 (lump sum)	1	\$10,400	12	2017	2	10	\$867	\$1,733	\$3,252	(\$1,519)	(\$152)		
43	Condenser Water Pumps	\$120,000.00 (per unit)	2	\$240,000	20	2014	5	15	\$12,000	\$60,000	\$75,044	(\$15,044)	(\$1,003)		
44	Chillers	\$45,000.00 (per unit)	2	\$90,000	25	2005	14	11	\$3,600	\$50,400	\$28,141	\$22,259	\$2,024		
45	Cooling Towers	\$45,000.00 (per unit)	2	\$90,000	25	2005	14	11	\$3,600	\$50,400	\$28,141	\$22,259	\$2,024		
46	Fan Coil Units	\$6,000.00 (per unit)	7	\$42,000	40	2020	4	16	\$1,867	\$54,133	\$17,510	\$36,623	\$36,623		
47	Laundry HVAC	\$6,000.00 (per unit)	2	\$12,000	30	2015	4	16	\$600	\$2,400	\$3,752	(\$1,352)	(\$65)		
48	Trash Compactors	\$30,000.00 (per unit)	2	\$60,000	30	2022	4	3	\$2,000	\$54,000	\$18,761	\$35,239	\$11,746		
49	Pool Mechanicals	\$6,000.00 (per unit)	1	\$6,000	15	2016	3	12	\$400	\$1,200	\$1,876	(\$676)	(\$56)		
ELECTRICAL															
50	Parking Area Lights	\$2,000.00 (per unit)	10	\$20,000	25	2009	10	15	\$800	\$6,000	\$6,254	\$1,746	\$116		
51	Exterior Building Lights	\$41,000.00 (lump sum)	1	\$41,000	25	2015	4	21	\$1,640	\$6,560	\$6,560	(\$6,260)	(\$298)		
52	Garage Lights	\$350.00 (per unit)	24	\$8,400	20	2018	1	19	\$420	\$420	\$2,627	(\$2,207)	(\$122)		
53	Stairwell Lights	\$175.00 (per unit)	24	\$4,200	30	2000	19	11	\$140	\$2,660	\$1,313	\$1,347	\$122		
54	Intercom/Entry Systems	\$4,000.00 (per unit)	2	\$8,000	20	2009	10	10	\$400	\$4,000	\$2,501	\$1,499	\$150		
55	Keyless Entry System	\$10,000.00 (lump sum)	1	\$10,000	15	2007	12	3	\$667	\$6,000	\$3,127	\$4,873	\$1,624		
56	Security Camera System	\$25,000.00 (lump sum)	1	\$25,000	15	2009	10	5	\$2,500	\$16,667	\$7,817	\$8,850	\$1,770		
57	Fire Alarm System	\$55,000.00 (lump sum)	1	\$55,000	20	2011	8	12	\$2,750	\$22,000	\$17,198	\$4,802	\$400		
58	Emergency Generator	\$60,000.00 (lump sum)	1	\$60,000	30	2009	10	20	\$2,000	\$20,000	\$18,761	\$1,239	\$62		
Totals:										\$4,210,411	\$182,217	\$2,341,119	\$1,316,524	\$1,024,595	\$685,435

Updated: 1/17/2019

Notes:

- (1) The Remaining Useful Life for various items has been adjusted to reflect noted deficiencies and assumed premature replacement.
- (2) The date of construction for this development is : 1972
- (3) Funding and maintenance based on this study will be assumed to begin in: 2019
- (4) The Reserve Fund Balance (site & buildings) is: \$1,316,524 as of December 2018
- (5) For the purposes of this study, inflation will be assumed to be: 2.0%
- (6) For the purposes of this study, interest will be assumed to be: 1.5%
- (7) For the purposes of this study, interest will be assumed to be: 1.5%

*The Percent Funded (Existing Reserves/Fully Funded Balance)= 56%

**APPENDIX B
30-YEAR REPLACEMENT/
REFURBISHMENT SCHEDULE**

**CHAPEL HILL WEST CONDOMINIUM
30 YEAR REPLACEMENT/REFURBISHMENT SCHEDULE**

COMPONENT		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
ANNUAL ALLOWANCES	Underground Utilities	\$2,000	\$2,040	\$2,081	\$2,122	\$2,165	\$2,208	\$2,252	\$2,297	\$2,343	\$2,390
	Concrete Balconies	\$4,000	\$4,080	\$4,162	\$4,245	\$4,330	\$4,416	\$4,505	\$4,595	\$4,687	\$4,780
	Exterior Walls	\$3,000	\$3,060	\$3,121	\$3,184	\$3,247	\$3,312	\$3,378	\$3,446	\$3,515	\$3,585
SITEWORK	Asphalt Pavement										
	Walkway Pavement										
	Pavement Seal Coating			\$9,364				\$10,135			
	Chainlink Fence										
	Pool Fence										
	Guardrail (wood)										
	Guardrail (steel)										
	Main Sign									\$4,687	
	Retaining Wall (concrete)				\$530,604						
	Retaining Wall (segmental)										
Pool Surface Refurbishment											
Pool Coping											
Pool Deck											
BUILDING ENVELOPE	Main Roof		\$587,608								
	Cabana Roof										
	Exterior Walls									\$205,040	
	Cabana Siding & Trim										
	Balcony Railings					\$197,003					
Garage Suspended Ceiling		\$174,420									
DOORS & WINDOWS	Common Area Windows										
	Lobby Entrance Doors										
	Exterior Metal Doors										
	Interior Metal Doors										
	Interior Wood Doors										
Interior Fire Doors											
SPECIALTIES	Mailbox Stations							\$4,505			
	Hallway Carpet										
	Hallway Wallpaper										
	Lobby Renovation						\$99,367				
	Game Room Refurbishment					\$10,824					
	Fitness Center Refurbishment								\$28,717		
	Social Room Refurbishment	\$14,000									
Laundry Room Refurbishment											
Office Refurbishment							\$8,833				
CONVEYING	Elevator Modernization										
	Elevator Cab Renovation								\$34,461		
MECHANICAL	Boilers & Storage Tanks (A side)										
	Boilers & Storage Tanks (B side)										
	Circulator Pumps (A side)										
	Circulator Pumps (B side)										
	Condenser Water Pumps						\$22,082				
	Chillers										
	Cooling Towers										
	Fan Coil Units		\$57,120								
	Laundry HVAC										
	Trash Compactors				\$63,672						
Pool Mechanicals											
ELECTRICAL	Parking Area Lights										
	Exterior Building Lights										
	Garage Lights										
	Stairwell Lights										
	Intercom/Entry Systems										
	Keyless Entry System				\$10,612						
	Security Camera System						\$27,602				
	Fire Alarm System										
	Emergency Generator										
Totals:		\$23,000	\$828,328	\$18,727	\$614,439	\$217,569	\$167,820	\$24,776	\$73,516	\$220,272	\$10,756
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028

Updated: 1/17/2019

Note: The assumed annual inflation rate is: 2%

**CHAPEL HILL WEST CONDOMINIUM
30 YEAR REPLACEMENT/REFURBISHMENT SCHEDULE**

COMPONENT		2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
ANNUAL ALLOWANCES	Underground Utilities	\$2,438	\$2,487	\$2,536	\$2,587	\$2,639	\$2,692	\$2,746	\$2,800	\$2,856	\$2,914
	Concrete Balconies	\$4,876	\$4,973	\$5,073	\$5,174	\$5,278	\$5,383	\$5,491	\$5,601	\$5,713	\$5,827
	Exterior Walls	\$3,657	\$3,730	\$3,805	\$3,881	\$3,958	\$4,038	\$4,118	\$4,201	\$4,285	\$4,370
SITEWORK	Asphalt Pavement										
	Walkway Pavement										
	Pavement Seal Coating	\$10,971				\$11,875				\$12,854	
	Chainlink Fence						\$12,517				
	Pool Fence										
	Guardrail (wood)										
	Guardrail (steel)	\$6,826									
	Main Sign										
	Retaining Wall (concrete)										
	Retaining Wall (segmental)										
	Pool Surface Refurbishment										\$43,704
	Pool Coping										
	Pool Deck			\$128,828							
BUILDING ENVELOPE	Main Roof										
	Cabana Roof										
	Exterior Walls										
	Cabana Siding & Trim										\$21,852
	Balcony Railings										
	Garage Suspended Ceiling										
DOORS & WINDOWS	Common Area Windows										
	Lobby Entrance Doors						\$75,369				
	Exterior Metal Doors				\$20,698						
	Interior Metal Doors	\$40,958									
	Interior Wood Doors	\$6,095									
	Interior Fire Doors	\$102,396									
SPECIALTIES	Mailbox Stations										
	Hallway Carpet					\$250,701					
	Hallway Wallpaper										
	Lobby Renovation										
	Game Room Refurbishment							\$13,728			
	Fitness Center Refurbishment										
	Social Room Refurbishment			\$17,755							
Laundry Room Refurbishment							\$10,982				
	Office Refurbishment										
CONVEYING	Elevator Modernization								\$420,072		
	Elevator Cab Renovation										
MECHANICAL	Boilers & Storage Tanks (A side)										
	Boilers & Storage Tanks (B side)										
	Circulator Pumps (A side)		\$12,931								
	Circulator Pumps (B side)	\$12,678									
	Condenser Water Pumps							\$28,005			
	Chillers						\$323,008				
	Cooling Towers		\$111,904								
	Fan Coil Units										
	Laundry HVAC							\$16,473			
	Trash Compactors										
	Pool Mechanicals			\$7,609							
ELECTRICAL	Parking Area Lights						\$26,917				
	Exterior Building Lights										
	Garage Lights										\$12,237
	Stairwell Lights		\$5,222								
	Intercom/Entry Systems	\$9,752									
	Keyless Entry System									\$14,282	
	Security Camera System										
	Fire Alarm System			\$69,753							
		Emergency Generator									
Totals:		\$200,646	\$141,247	\$235,360	\$32,340	\$274,452	\$449,924	\$53,539	\$460,679	\$39,991	\$90,905
		2029	2030	2031	2032	2033	2034	2035	2036	2037	2038

Updated: 1/17/2019

Note: The assumed annual inflation rate is: 2%

**CHAPEL HILL WEST CONDOMINIUM
30 YEAR REPLACEMENT/REFURBISHMENT SCHEDULE**

COMPONENT		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
ANNUAL ALLOWANCES	Underground Utilities	\$2,972	\$3,031	\$3,092	\$3,154	\$3,217	\$3,281	\$3,347	\$3,414	\$3,482	\$3,552
	Concrete Balconies	\$5,944	\$6,063	\$6,184	\$6,308	\$6,434	\$6,562	\$6,694	\$6,828	\$6,964	\$7,103
	Exterior Walls	\$4,458	\$4,547	\$4,638	\$4,731	\$4,825	\$4,922	\$5,020	\$5,121	\$5,223	\$5,328
SITEWORK	Asphalt Pavement							\$257,756			
	Walkway Pavement				\$5,535						
	Pavement Seal Coating			\$13,914				\$15,061			
	Chainlink Fence										
	Pool Fence							\$23,344			
	Guardrail (wood)					\$19,945					
	Guardrail (steel)										
	Main Sign				\$6,308						
BUILDING ENVELOPE	Retaining Wall (concrete)										
	Retaining Wall (segmental)		\$265,242								
	Pool Surface Refurbishment										
	Pool Coping	\$11,888									
BUILDING ENVELOPE	Pool Deck										
	Main Roof		\$673,154								
BUILDING ENVELOPE	Cabana Roof			\$6,114							
	Exterior Walls				\$275,957						
	Cabana Siding & Trim										
	Balcony Railings										
	Garage Suspended Ceiling										
DOORS & WINDOWS	Common Area Windows				\$37,846						
	Lobby Entrance Doors										
	Exterior Metal Doors										
	Interior Metal Doors										
	Interior Wood Doors										
SPECIALTIES	Interior Fire Doors										
	Mailbox Stations										
	Hallway Carpet										\$337,410
	Hallway Wallpaper										\$266,377
	Lobby Renovation	\$133,735									
	Game Room Refurbishment									\$17,410	
	Fitness Center Refurbishment			\$38,649							
Social Room Refurbishment					\$22,518						
CONVEYING	Laundry Room Refurbishment										
	Office Refurbishment						\$13,125				
CONVEYING	Elevator Modernization										
	Elevator Cab Renovation								\$51,207		
MECHANICAL	Boilers & Storage Tanks (A side)					\$215,531					
	Boilers & Storage Tanks (B side)					\$215,531					
	Circulator Pumps (A side)				\$16,400						
	Circulator Pumps (B side)			\$16,078							
	Condenser Water Pumps										\$35,517
	Chillers										
	Cooling Towers										
	Fan Coil Units										
	Laundry HVAC										
	Trash Compactors										
ELECTRICAL	Pool Mechanicals								\$10,241		
	Parking Area Lights										
	Exterior Building Lights		\$62,142								
	Garage Lights										
	Stairwell Lights										
	Intercom/Entry Systems										
	Keyless Entry System										
	Security Camera System	\$37,149									
	Fire Alarm System										
	Emergency Generator	\$89,157									
Totals:		\$285,302	\$1,214,179	\$88,670	\$356,237	\$488,000	\$27,890	\$311,222	\$76,810	\$33,079	\$655,287
		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048

Updated: 

Note: The assumed annual inflation rate is: 2%

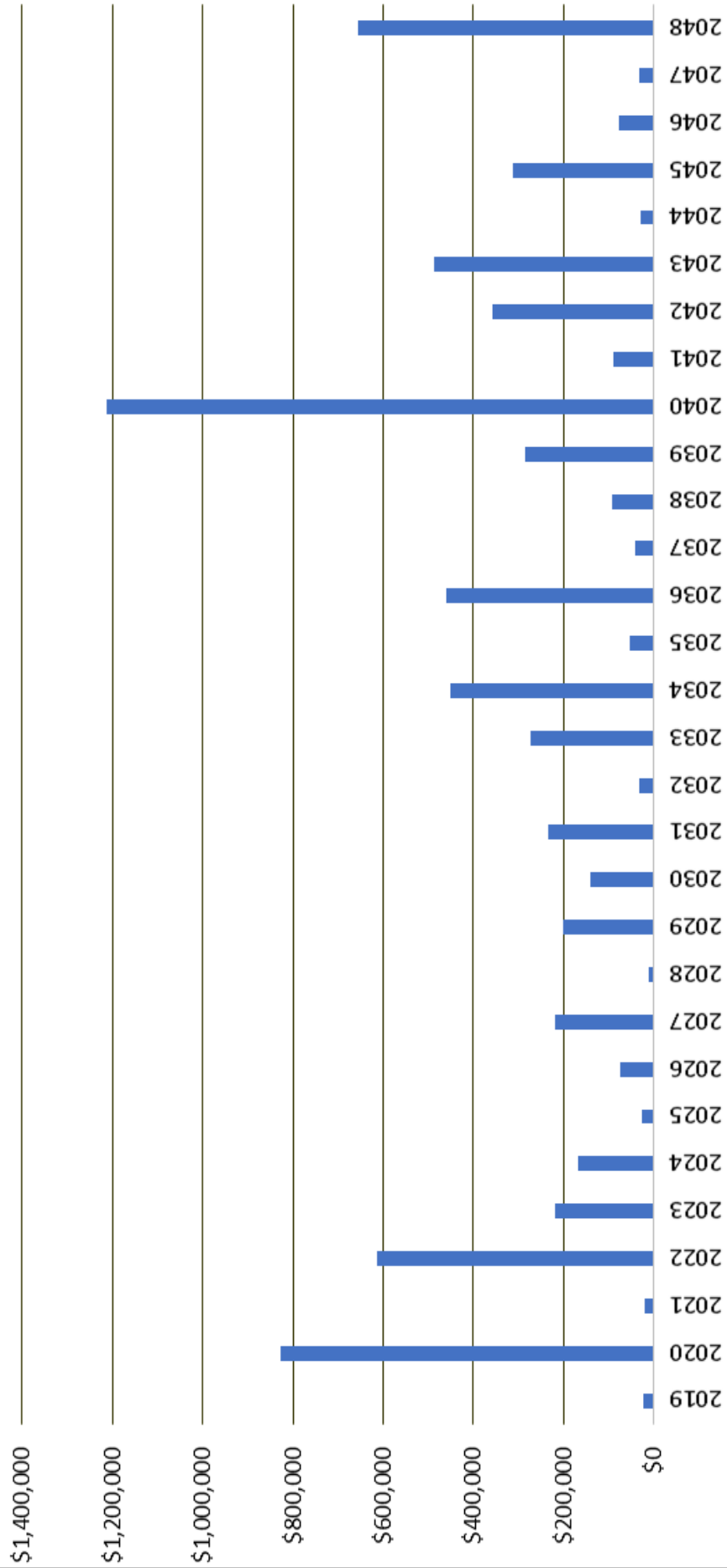


Figure 1 – Projected Annual Expenses During The 30-Year Study Period

**APPENDIX C
30-YEAR CASH FLOW
CHART & TABLE**

**CHAPEL HILL WEST CONDOMINIUM
30-YEAR CASH FLOW TABLE**

YEAR	OPENING BALANCE	RESERVE CONTRIBUTION	SPECIAL ASSESSMENT*	EXPENSES**	INTEREST INCOME ***	CLOSING BALANCE
2019	\$1,316,524	\$182,217		\$23,000	\$19,748	\$1,495,489
2020	\$1,495,489	\$185,862		\$828,328	\$22,432	\$875,456
2021	\$875,456	\$189,579		\$18,727	\$13,132	\$1,059,440
2022	\$1,059,440	\$193,371		\$614,439	\$15,892	\$654,262
2023	\$654,262	\$197,238		\$217,569	\$9,814	\$643,745
2024	\$643,745	\$201,183		\$167,820	\$9,656	\$686,764
2025	\$686,764	\$205,206		\$24,776	\$10,301	\$877,497
2026	\$877,497	\$209,311		\$73,516	\$13,162	\$1,026,454
2027	\$1,026,454	\$213,497		\$220,272	\$15,397	\$1,035,075
2028	\$1,035,075	\$217,767		\$10,756	\$15,526	\$1,257,612
2029	\$1,257,612	\$222,122		\$200,646	\$18,864	\$1,297,952
2030	\$1,297,952	\$226,565		\$141,247	\$19,469	\$1,402,739
2031	\$1,402,739	\$231,096		\$235,360	\$21,041	\$1,419,515
2032	\$1,419,515	\$235,718		\$32,340	\$21,293	\$1,644,186
2033	\$1,644,186	\$240,432		\$274,452	\$24,663	\$1,634,829
2034	\$1,634,829	\$245,241		\$449,924	\$24,522	\$1,454,668
2035	\$1,454,668	\$250,146		\$53,539	\$21,820	\$1,673,095
2036	\$1,673,095	\$255,148		\$460,679	\$25,096	\$1,492,661
2037	\$1,492,661	\$260,251		\$39,991	\$22,390	\$1,735,311
2038	\$1,735,311	\$265,456		\$90,905	\$26,030	\$1,935,892
2039	\$1,935,892	\$270,766		\$285,302	\$29,038	\$1,950,395
2040	\$1,950,395	\$276,181		\$1,214,179	\$29,256	\$1,041,652
2041	\$1,041,652	\$281,705		\$88,670	\$15,625	\$1,250,312
2042	\$1,250,312	\$287,339		\$356,237	\$18,755	\$1,200,168
2043	\$1,200,168	\$293,085		\$488,000	\$18,003	\$1,023,256
2044	\$1,023,256	\$298,947		\$27,890	\$15,349	\$1,309,662
2045	\$1,309,662	\$304,926		\$311,222	\$19,645	\$1,323,011
2046	\$1,323,011	\$311,025		\$76,810	\$19,845	\$1,577,071
2047	\$1,577,071	\$317,245		\$33,079	\$23,656	\$1,884,892
2048	\$1,884,892	\$323,590		\$655,287	\$28,273	\$1,581,469

Updated: 1/17/2019

* The Special Assesment calculated in Appendix A can be eliminated without causing the reserve fund to fall to unacctable levels.

** For the purposes of this study, annual inflation rates will be assumed to be: 2.0%
Inflation has been factored into the calculations for Expenses in future years.

To account for increased Expenses in future years due to inflation,
the Reserve Contribution has been adjusted annually to match the rate of inflation.

*** For the purposes of this study, annual interest rates will be assumed to be: 1.5%
Interest is applied to the full Opening Balance for the Year.

NOTE: The above Cash Flow Chart is intended as a model to show the relative level of Reserve Funding which will be necessary for the anticipated expenditures at this development. The expenditures, contributions and fund balances shown are projections based on the available information at this time. The actual values will vary, particularly in later years.

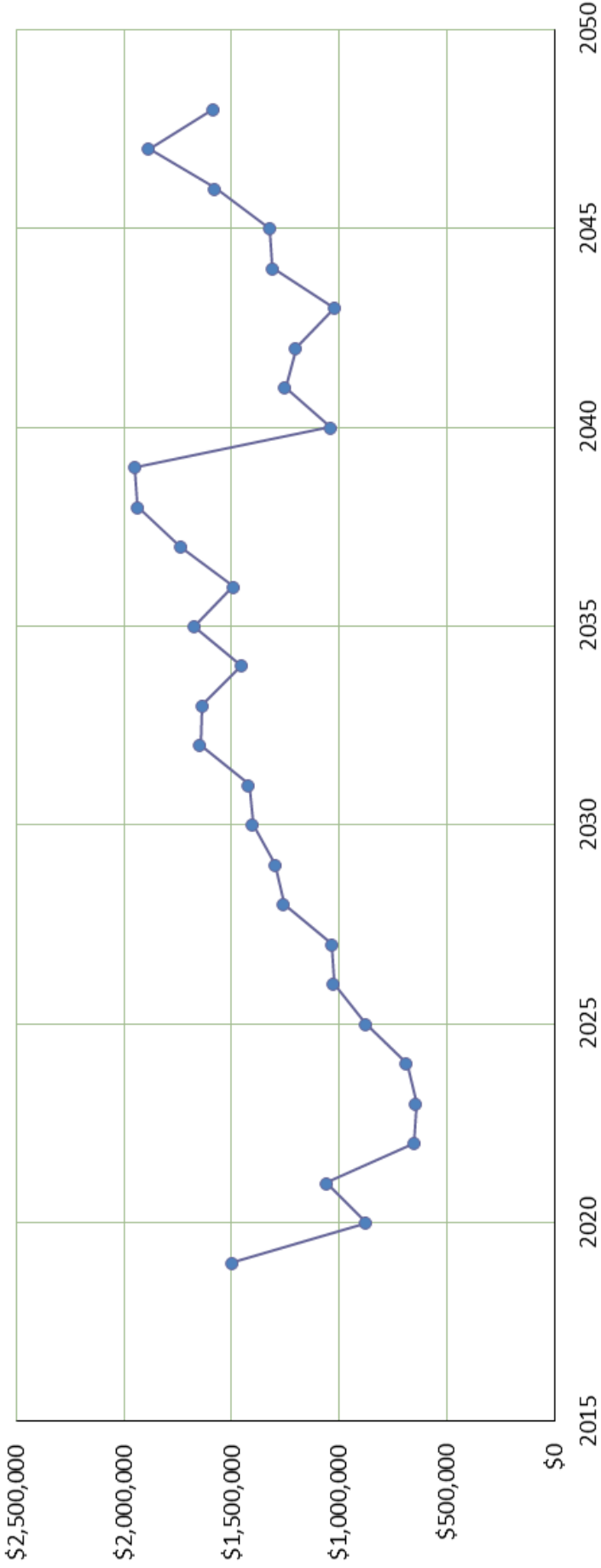


Figure 2 - Projected Closing Reserve Fund Balance During The 30-Year Study Period