

Reserve Study

Hickory Woods HOA

Londonderry, NH



September 20, 2018
Version 3

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**Hickory Woods Condominiums
Londonderry, NH
Executive Summary**

- **Site and Grounds:** The property consists of 60 acres of land situated between West Road and Nashua Road in Londonderry, NH. There are privately owned septic tanks and commonly owned leachfields (total of 80). There are several rain gardens and retention ponds. The complex is serviced by Pennichuck Water Works, Inc. There are also several retaining walls, rock-lined slopes, metal chain link fencing, vinyl fencing, signage, and other miscellaneous grounds features.
- **Private Streets, Sidewalks and Curbs:** The Condominium Association maintains private roads named Quarry Road, Pepper Hill Road, Black Forest Circle, Tavern Hill Road and Church Lane with an approximate total lineal footage of 6150. The curbing consists of Cape Cod berm. There are sidewalks with granite curbing at the front of the Clubhouse. There is a large and lit parking lot (41 spaces) also in front of the Clubhouse. The driveways are privately owned and maintained.
- **Building Common Elements:** There are 98 detached single-family buildings and a Clubhouse. The Association is not responsible for the single-family buildings. The Clubhouse has a main level and finished lower level with an above average kitchen on the main level and Tavern on the lower level. There is also an exercise room with rubber flooring on the lower level, and a pool room on the main level.
- **Amenities:** There are exterior amenities associated with the Clubhouse, including tennis courts, basket ball court, driving cages, golfing green, and horse shoe and bocce courts.

The following people were interviewed during our study:

Tim Wege, New Star Property Management
Richard
Brian Wells

The following documents were made available to us and reviewed:

- Proposed site construction and clubhouse documents were provided and reviewed.
- Common Area Infrastructure Assessment by CLD Consulting Engineers
- Letter Rev. 5/23/17 prepared by Association regarding Transition Issues - Engineering/Compliance Concerns
- ByLaws of the Hickory Woods Unit Owners Association

OBSERVATIONS AND COMMENTS:

- **Leachfields:** There are reportedly 70 private leachfields, 9 shared leachfields, and the clubhouse leachfield. These are reported to be Presby Fields. There were no reported concerns. It is recommended that there be an inspection of leachfields in 5 to 10 years to anticipate repairs, if needed to extend their useful life, and to more accurately plan for replacements than can be anticipated in this study.
- **Paving and Flatwork:** Roadways, Clubhouse sidewalk and parking area are serviceable. The CLD Assessment report highlighted cracking of the pavement. Continued movement and cracking may occur. If it does, this should be addressed in a Reserve Study update. While marred, asphalt "Cape Cod" berms appeared to be performing their intended function for surface water control. These are anticipated to be replaced when a pavement overlay is installed. Settled catchbasins would also be raised at that time.
- **Landscaping and Drainage:** Landscaping is generally new. The area within 15 ft. of each single-family house is not Common land and thus, landscaping in this area is not included herein. As such, front yard plantings are the responsibility of the unit owners. Replacement of a limited number of aged trees (e.g., entry, vicinity of clubhouse, Church Lane) and new plantings are included herein. Retaining

walls are currently serviceable. Erosion is likely to continue to be a problem at rock-lined slopes given their design and site grades. Slopes, retaining walls, and drainage features should be inspected and maintained as indicated on your Construction Plans and/or in the CLD Assessment report.

- **Clubhouse:** The clubhouse is above average for this size community. It has architectural shingles, vinyl siding with vinyl accents, large kitchen with upscale cabinetry and granite countertops, lower level Tavern (a.k.a., bar), exercise room, and other function rooms. The finishes and plumbing in the Tavern are generally of lower quality than the bathrooms and kitchen. It is anticipated that the clubhouse is lightly used, particularly the Tavern.

Drywall in mechanical room is needed to cover Kraft facing; this is a fire safety concern that is not included in the Reserve fund budget.

- **Recreational Exterior Amenities:** The grounds to the rear and right side of the Clubhouse have tennis and basket ballcourts with a surface of a specialty synthetic/plastic mesh on concrete mat. The driving cages, golfing green, and bocce courts have synthetic turf. These are high end facilities that are in excellent condition. Manufacturer's information on the plastic mesh and turf should include maintenance guidelines. Replacements will be pricey. Note that there is cracking of the concrete mat under poles for the tennis court nets. These cracks should be repaired soon.

FUNDING STRATEGIES:

Cost figures for specific components are estimated values based upon our experience gathered from past work projects, as well as estimates from cost databases prepared by others, unless actual expenditure pricing has been provided to us. Based on the findings of this study, we find that under current allocations the Reserve Fund will be depleted in 2037 for the current expenditures.

We have used a threshold funding model with a minimum level of funding at 10%. This model predicts that monthly contributions must be increased to about \$6,700, which is about \$68/month/unit. This value is likely to increase with a Reserve Study update including projected expenditures for the components listed above.

The intent of the Reserve Study, as stated in the "Important Information" at the beginning of this report, is to aid your association with the planning purposes. The recommended funding levels are influenced by numerous factors, such as interest rates, inflationary changes, etc. Since the funding levels are not static, our recommendations do not specify a fixed number or goal.

It is important to note that funds identified as "Reserve" funds are intended for non-annual repairs and replacements. Please refer to page 1-3 and 1-4 in this report for a listing of typical expenses, such as exterior painting, which should be considered in the Association's annual operating budget.

Respectfully Submitted,

Nancy Nichols, PE, HI, LEED
Senior Engineer and Vice President

Eric Battey
Reviewer

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Important Information

This document has been provided pursuant to an agreement containing restrictions on its use. No part of this document may be copied or distributed, in any form or by any means, nor disclosed to third parties without the expressed written permission of **Team Engineering**. The client shall have the right to reproduce and distribute copies of this report, or the information contained within, as may be required for compliance with all applicable regulations.

This reserve analysis study and the parameters under which it has been completed are based upon information provided to us in part by representatives of the association, its contractors, assorted vendors, specialist and independent contractors, the Community Association Institute, and various construction pricing and scheduling manuals including, but not limited to: Marshall & Swift Valuation Service, RS Means Facilities Maintenance & Repair Cost Data, RS Means Repair & Remodeling Cost Data, National Construction Estimator, National Repair & Remodel Estimator, Dodge Cost Manual and McGraw-Hill Professional. Additionally, costs are obtained from numerous vendor catalogues, actual quotations or historical costs, and our own experience in the field of property management and reserve study preparation.

It has been assumed, unless otherwise noted in this report, that all assets have been designed and constructed properly and that each estimated useful life will approximate that of the norm per industry standards and/or manufacturer's specifications. In some cases, estimates may have been used on assets, which have an indeterminable but potential liability to the association. The decision for the inclusion of these as well as all assets considered is left to the client.

We recommend that your reserve analysis study be updated on a two to five year basis, as specified in this report, due to fluctuating interest rates, inflationary changes, and the unpredictable nature of the lives of many of the assets under consideration. All of the information collected during our inspection of the association and computations made subsequently in preparing this reserve analysis study are retained in our computer files. Therefore, annual updates may be completed quickly and inexpensively each year.

Team Engineering would like to thank you for using our services. We invite you to call us at any time, should you have questions, comments or need assistance. In addition, any of the parameters and estimates used in this study may be changed at your request, after which we will provide a revised study.

This reserve analysis study is provided as an aid for planning purposes and not as an accounting tool. Since it deals with events yet to take place, there is no assurance that the results enumerated within it will, in fact, occur as described.

Part I

Introduction

Preparing the annual budget and overseeing the association's finances are perhaps the most important responsibilities of board members. The annual operating and reserve budgets reflect the planning and goals of the association and set the level and quality of service for all of the association's activities.

Funding Options

When a major repair or replacement is required in a community, an association has essentially four options available to address the expenditure:

The first, and only logical means that the Board of Directors has to ensure its ability to maintain the assets for which it is obligated, is by **assessing an adequate level of reserves** as part of the regular membership assessment, thereby distributing the cost of the replacements uniformly over the entire membership. The community is not only comprised of present members, but also future members. Any decision by the Board of Directors to adopt a calculation method or funding plan which would disproportionately burden future members in order to make up for past reserve deficits, would be a breach of its fiduciary responsibility to those future members. Unlike individuals determining their own course of action, the board is responsible to the "community" as a whole.

Whereas, if the association was setting aside reserves for this purpose, using the vehicle of the regularly assessed membership dues, it would have had the full term of the life of the roof, for example, to accumulate the necessary moneys. Additionally, those contributions would have been evenly distributed over the entire membership and would have earned interest as part of that contribution.

The second option is for the association to **acquire a loan** from a lending institution in order to effect the required repairs. In many cases, banks will lend to an association using "future homeowner assessments" as collateral for the loan. With this method, the current board is pledging the future assets of an association. They are also incurring the additional expense of interest fees along with the original principal amount. In the case of a \$150,000 roofing replacement, the association may be required to pay back the loan over a three to five-year period, with interest.

The third option, too often used, is simply to **defer the required repair or replacement**. This option, which is not recommended, can create an environment of declining property values due to expanding lists of deferred maintenance items and the association's financial inability to keep pace with the normal aging process of the common area components. This, in turn, can have a seriously negative impact on sellers in the association by making it difficult, or even impossible, for potential buyers to obtain financing from lenders. Increasingly, lending institutions are requesting copies of the association's most recent reserve study before granting loans, either for the association itself, a prospective purchaser, or for an individual within such an association.

The fourth option is to pass a "**special assessment**" to the membership in an amount required to cover the expenditure. When a special assessment is passed, the association has the authority and responsibility to collect the assessments, even by means of foreclosure, if necessary. However, an association considering a special assessment cannot guarantee that an assessment, when needed, will be passed. Consequently, the association cannot guarantee its ability to perform the required repairs or replacements to those major components for which it is obligated when the need arises. Additionally, while relatively new communities require very little in the way of major "reserve" expenditures, associations reaching 12 to 15 years of age and older, find many components reaching the end of their effective useful lives. These required expenditures, all accruing at the same time, could be devastating

to an association's overall budget.

Types of Reserve Studies

Most reserve studies fit into one of three categories:

Full Reserve Study;

Update with site inspection; and

Update without site inspection.

In a **Full Reserve Study**, the reserve provider conducts a component inventory, a condition assessment (based upon on-site visual observations), and life and valuation estimates to determine both a "fund status" and "funding plan".

In an **Update with site inspection**, the reserve provider conducts a component inventory (verification only, not quantification unless new components have been added to the inventory), a condition assessment (based upon on-site visual observations), and life and valuation estimates to determine both the "fund status and "funding plan."

In an **Update without site inspection**, the reserve provider conducts life and valuation estimates to determine the "fund status" and "funding plan."

The Reserve Study: A Physical and a Financial Analysis

There are two components of a reserve study: a physical analysis and a financial analysis.

Physical Analysis

During the physical analysis, a reserve study provider evaluates information regarding the physical status and repair/replacement cost of the association's major common area components. To do so, the provider conducts a component inventory, a condition assessment, and life and valuation estimates.

Developing a Component List

The budget process begins with full inventory of all the major components for which the association is responsible. The determination of whether an expense should be labeled as operational, reserve, or excluded altogether is sometimes subjective. Since this labeling may have a major impact on the financial plans of the association, subjective determinations should be minimized. We suggest the following considerations when labeling an expense.

Operational Expenses

Occur at least annually, no matter how large the expense, and can be budgeted for effectively each year. They are characterized as being reasonably predictable, both in terms of frequency and cost. Operational expenses include all minor expenses, which would not otherwise adversely affect an operational budget from one year to the next. Examples of **operational expenses** include:

Utilities:	Insurance(s)	Repair Expenses:
Electricity	Dues & Publications	Tile Roof Repairs
Gas	Licenses, Permits & Fees	Painting
Water	Services:	Equipment Repairs
Telephone	Street Sweeping	Minor Concrete Repairs
Cable TV	Landscaping	Operating Contingency
Administrative:	Pool Maintenance	
Supplies	Chimney Cleaning \ Inspection	
Bank Service Charges	Accounting	

Reserve Expenses

These are major expenses that occur other than annually, and which must be budgeted for in advance in order to ensure the availability of the necessary funds in time for their use. Reserve expenses are reasonably predictable both in terms of frequency and cost. However, they may include significant assets that have an indeterminable but potential liability that may be demonstrated as a likely occurrence. They are expenses that, when incurred, would have a significant effect on the smooth operation of the budgetary process from one year to the next, if they were not reserved for in advance. Examples of reserve expenses include:

Roof Replacements	Park/Play Equipment
Interior Furnishings	Pool/Spa Re-plastering
Deck Resurfacing	Pool Equipment Replacement
Fencing Replacement	Pool Furniture Replacement
Asphalt Seal Coating	Tennis Court Resurfacing
Asphalt Repairs	Lighting Replacement
Asphalt Overlays	Insurance(s)
Equipment Replacement	Reserve Study

Budgeting is Normally Excluded for:

Repairs or replacements of assets which are deemed to have an estimated useful life equal to or exceeding the estimated useful life of the facility or community itself or exceeding the legal life of the community as defined in an association's governing documents. Examples include the complete replacement of elevators, tile roofs, wiring and plumbing. Also excluded are insignificant expenses that may be covered either by an operating or reserve contingency, or otherwise in a general maintenance fund. Expenses that are necessitated by acts of nature, accidents or other occurrences that are more properly insured for, rather than reserved for, are also excluded.

Financial Analysis

The financial analysis assesses the association's reserve balance or "fund status" (measured in cash or as percent fully funded) to determine a recommendation for the appropriate reserve contribution rate in the future, known as the "funding plan".

Preparing the Reserve Study

Once the reserve assets have been identified and quantified, their respective replacement costs, useful lives and remaining lives must be assigned so that a funding schedule can be constructed. Replacement costs and useful lives can be found in published manuals such as construction estimators, appraisal handbooks, and valuation guides. Remaining lives are calculated from the useful lives and ages of assets and adjusted according to conditions such as design, manufactured quality, usage, exposure to the elements and maintenance history.

By following the recommendations of an effective reserve study, the association should avoid any major shortfalls. However, to remain accurate, the report should be updated on an annual basis to reflect such changes as shifts in economic parameters, additions of phases or assets, or expenditures of reserve funds. The association can assist in simplifying the reserve analysis update process by keeping accurate records of these changes throughout the year.

Funding Methods

From the simplest to the most complex, reserve analysis providers use many different computational processes to calculate reserve requirements. However, there are two basic processes identified as industry standards: the cash flow method and the component method.

The cash flow method develops a reserve-funding plan 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 actual anticipated schedule of reserve expenses until the desired funding goal is achieved. This method sets up a "window" in which all future anticipated replacement costs are computed, based upon the individual lives of the components under consideration. The **Team Engineering** Threshold and the **Team Engineering** Current Assessment funding models are based upon the cash flow method.

The component method develops a reserve-funding plan where the total contribution is based upon the sum of contributions for individual components. The component method is the more conservative of the two funding options and assures that the association will achieve and maintain an ideal level of reserve over time. This method also allows for computations on individual components in the analysis. The **Team Engineering** Component Funding model is based upon the component methodology.

Funding Strategies

Once an association has established its funding goals, the association can select an appropriate funding plan. There are four basic strategies from which most associations select. It is recommended that associations consult professionals to determine the best strategy or combination of plans that best suit the association's need. Additionally, associations should consult with their financial advisor to determine the tax implications of selecting a particular plan. Further, consultation with the American Institute of Certified Public Accountants (AICPA) for their reporting requirements is advisable. The four funding plans and descriptions of each are detailed below. Associations will have to update their reserve studies more or less frequently depending on the funding strategy they select.

Full Funding---Given that the basis of funding for reserves is to distribute the costs of the replacements over the lives of the components in question, it follows that the ideal level of reserves would be proportionately related to those lives and costs. If an association has a component with an expected estimated useful life of ten years, it would set aside approximately one-tenth of the replacement cost each year. At the end of three years, one would expect three-tenths of the replacement cost to have accumulated, and if so, that component would be "fully-funded." This model is important in that it is a measure of the adequacy of an association's reserves at any one point of time and is independent of any particular method which may have been used for past funding or may be under consideration for future funding. This formula represents a snapshot in time and is based upon current replacement cost, independent of future inflationary or investment factors:

Fully Funded Reserves = **Age divided by Useful Life the results multiplied by Current Replacement Cost**

When an association's total accumulated reserves for all components meet this criterion, its reserves are considered "fully-funded."

The Team Engineering Threshold Funding Model (Minimum Funding). The goal of this funding method is to keep the reserve cash balance above zero. This means that while each individual component may not be fully funded, the reserve balance overall does not drop below zero during the projected period. An association using this funding method must understand that even a minor reduction in a component's remaining useful life can result in a deficit in the reserve cash balance.

The Team Engineering Threshold Funding Model. This method is based upon the cash flow funding concept. The minimum reserve cash balance in threshold funding, however, is set at a predetermined dollar amount (other than \$0).

The Team Engineering Current Assessment Funding Model. This method is also based upon the cash flow funding concept. The initial reserve assessment is set at the association's current fiscal year funding level and a 30-year projection is calculated to illustrate the adequacy of the current funding over time.

The Team Engineering Component Funding Model. This is a straight-line funding model. It distributes the cash reserves to individual reserve components and then calculates what the reserve assessment and interest contribution (minus taxes) should be, again by each reserve component. The current annual assessment is then determined by summing all the individual component assessments, hence the name "Component Funding Model". This is the most conservative funding model. It leads to or maintains the fully funded reserve position. The following details this calculation process.

Component Funding Model Distribution of Accumulated Reserves

The "Distribution of Accumulated Reserves Report" is a "Component Funding Model" calculation. This distribution **does not** apply to the cash flow funding models.

When calculating reserves based upon the component methodology, a beginning reserve balance must be allocated for each of the individual components considered in the analysis, before the individual calculations can be completed. When this distribution is not available, or of sufficient detail, the following method is suggested for allocating reserves:

The first step the program performs in this process is subtracting, from the total accumulated reserves, any amounts for assets that have predetermined (fixed) reserve balances. The user can “fix” the accumulated reserve balance within the program on the individual asset’s detail page. If, by error, these amounts total more than the amount of funds available, then the remaining assets are adjusted accordingly. A provision for a contingency reserve is then deducted by the determined percentage used, and if there are sufficient remaining funds available.

The second step is to identify the ideal level of reserves for each asset. As indicated in the prior section, this is accomplished by evaluating the component’s age proportionate to its estimated useful life and current replacement cost. Again, the equation used is as follows:

Fully Funded Reserves = (Age/Useful Life) x Current Replacement Cost

The  Reserve Analyst® software program performs the above calculations to the actual month the component was placed-in-service. The program projects that the accumulation of necessary reserves for repairs or replacements will be available on the first day of the fiscal year in which they are scheduled to occur.

The next step the program performs is to arrange all of the assets used in the study in ascending order by remaining life, and alphabetically within each grouping of remaining life items. These assets are then assigned their respective ideal level of reserves until the amount of funds available is depleted, or until all assets are appropriately funded. If any assets are assigned a zero remaining life (scheduled for replacement in the current fiscal year), then the amount assigned equals the current replacement cost and funding begins for the next cycle of replacement. If there are insufficient funds available to accomplish this, then the software automatically adjusts the zero remaining life items to one year, and that asset assumes its new grouping position alphabetically in the final printed report.

If, at the completion of this task, there are additional moneys that have not been distributed, the remaining reserves are then assigned, in ascending order, to a level equal to, but not exceeding, the current replacement cost for each component. If there are sufficient moneys available to fund all assets at their current replacement cost levels, then any excess funds are designated as such and are not factored into any of the report computations. If, at the end of this assignment process there are designated excess funds, they can be used to offset the monthly contribution requirements recommended, or used in any other manner the client may desire.

Assigning the reserves in this manner defers the make-up period for any under-funding over the longest remaining life of all assets under consideration, thereby minimizing the impact of any deficiency. For example, if the report indicates an under funding of \$50,000, this under-funding will be assigned to components with the longest remaining lives in order to give more time to “replenish” the account. If the \$50,000 under-funding were to be assigned to short remaining life items, the impact would be felt immediately.

If the reserves are under-funded, the monthly contribution requirements, as outlined in this report, can be expected to be higher than normal. In future years, as individual assets are replaced, the funding requirements will return to their normal levels. In the case of a large deficiency, a special assessment may be considered. The program can easily generate revised reports outlining how the monthly contributions would be affected by such an adjustment, or by any other changes that may be under consideration.

Funding Reserves

Three assessment and contribution figures are provided in the report, the “Monthly Reserve Assessment Required”, the “Average Net Monthly Interest Earned” contribution and the “Total Monthly Allocation to Reserves.” The association should allocate the “Monthly Reserve Assessment Required” amount to reserves each month when the interest earned on the reserves is left in the reserve accounts as part of the contribution. Any interest earned on reserve deposits, must be left in reserves and only amounts set aside for taxes should be removed.

The second alternative is to allocate the “Total Monthly Allocation” to reserves (this is the member assessment plus the anticipated interest earned for the fiscal year). This method assumes that all interest earned will be assigned directly as operating income. This allocation takes into consideration the anticipated interest earned on accumulated reserves regardless of whether or not it is actually earned. When taxes are paid, the amount due will be taken directly from the association’s operating accounts as the reserve accounts are allocated only those moneys net of taxes.

Users’ Guide to your Reserve Analysis Study

Part II of your **Team Engineering** Report contains the reserve analysis study for your association. There are seven types of reports in the study as described below.

Report Summaries

The Report Summary for all funding models lists all of the parameters that were used in calculating the report as well as the summary of your reserve analysis study.

Index Reports

The **Distribution of Accumulated Reserves** report lists all assets in remaining life order. It also identifies the ideal level of reserves that should have accumulated for the association as well as the actual reserves available. This information is valid only for the “Component Funding Model” calculation.

The **Component Listing/Summary** lists all assets by category (i.e. roofing, painting, lighting, etc.) together with their remaining life, current cost, monthly reserve contribution, and net monthly allocation.

Detail Reports

The Detail Report itemizes each asset and lists all measurements, current and future costs, and calculations for that asset. Provisions for percentage replacements, salvage values, and one-time replacements can also be utilized. These reports can be sorted by category or group.

The numerical listings for each asset are enhanced by extensive narrative detailing factors such as design, manufactured quality, usage, exposure to elements and maintenance history.

The **Team Engineering** Detail Index is an alphabetical listing of all assets, together with the page number of the asset's detail report, the projected replacement year, and the asset number.

Projections

Thirty-year projections add to the usefulness of your reserve analysis study.

Definitions

Report I.D.

Includes the Report Date (example: November 15, 1992), Account Number (example: 9773), and Version (example: 1.0). Please use this information (displayed on the summary page) when referencing your report.

Budget Year Beginning/Ending

The budgetary year for which a report is prepared. For associations with fiscal years ending December 31st, the monthly contribution figures indicated are for the 12-month period beginning 1/1/20xx and ending 12/31/20xx.

Number of Units and/or Phases

If applicable, the number of units and/or phases included in this version of a report.

Inflation

This figure is used to approximate the future cost to repair or replace each component in the report. The current cost for each component is compounded on an annual basis by the number of remaining years to replacement, and the total is used in calculating the monthly reserve contribution that will be necessary to accumulate the required funds in time for replacement.

Annual Assessment Increase

This represents the percentage rate at which the association will increase its assessment to reserves at the end of each year. For example, in order to accumulate \$10,000 in 10 years, you could set aside \$1,000 per year. As an alternative, you could set aside \$795 the first year and increase that amount by 5% each year until the year of replacement. In either case you arrive at the same amount. The idea is that you start setting aside a lower amount and increase that number each year in accordance with the planned percentage. Ideally this figure should be equal to the rate of inflation. It can, however, be used to aide those associations that have not set aside appropriate reserves in the past, by making the initial year's allocation less formidable.

Investment Yield Before Taxes

The average interest rate anticipated by the association based upon its current investment practices.

Taxes on Interest Yield

The estimated percentage of interest income that will be set aside to pay income taxes on the interest earned.

Projected Reserve Balance

The anticipated reserve balance on the first day of the fiscal year for which this report has been prepared. This is based upon information provided and not audited.

Percent Fully Funded

The ratio, at the beginning of the fiscal year, of the actual (or projected) reserve balance to the calculated fully funded balance, expressed as a percentage.

Phase Increment Detail and/or Age

Comments regarding aging of the components on the basis of construction date or date of acceptance by the association.

Monthly Assessment

The assessment to reserves required by the association each month.

Interest Contribution (After Taxes)

The interest that should be earned on the reserves, net of taxes, based upon their beginning reserve balance and monthly contributions for one year. This figure is averaged for budgeting purposes.

Total Monthly Allocation

The sum of the monthly assessment and interest contribution figures.

Group and Category

The report may be prepared and sorted either by group (location, building, phase, etc.) or by category (roofing, painting, etc.). The standard report printing format is by category.

Percentage of Replacement or Repairs

In some cases, an asset may not be replaced in its entirety or the cost may be shared with a second party. Examples are budgeting for a percentage of replacement of streets over a period of time or sharing the expense to replace a common wall with a neighboring party.

Placed-In-Service Date

The month and year that the asset was placed-in-service. This may be the construction date, the first escrow closure date in a given phase, or the date of the last servicing or replacement.

Estimated Useful Life

The estimated useful life of an asset based upon industry standards, manufacturer specifications, visual inspection, location, usage, association standards and prior history. All of these factors are taken into consideration when tailoring the estimated useful life to the particular asset. For example, the carpeting in a hallway or elevator (a heavy traffic area) will not have the same life as the identical carpeting in a seldom-used meeting room or office.

Adjustment to Useful Life

Once the useful life is determined, it may be adjusted, up or down, by this separate figure for the current cycle of replacement. This will allow for a current period adjustment without affecting the estimated replacement cycles for future replacements.

Estimated Remaining Life

This calculation is completed internally based upon the report's fiscal year date and the date the asset

was placed-in-service.

Replacement Year

The year that the asset is scheduled to be replaced. The appropriate funds will be available by the first day of the fiscal year for which replacement is anticipated.

Annual Fixed Reserves

An optional figure which, if used, will override the normal process of allocating reserves to each asset.

Fixed Assessment

An optional figure which, if used, will override all calculations and set the assessment at this amount. This assessment can be set for monthly, quarterly or annually as necessary.

Salvage Value

The salvage value of the asset at the time of replacement, if applicable.

One-Time Replacement

Notation if the asset is to be replaced on a one-time basis.

Current Replacement Cost

The estimated replacement cost effective at the beginning of the fiscal year for which the report is being prepared

Future Replacement Cost

The estimated cost to repair or replace the asset at the end of its estimated useful life based upon the current replacement cost and inflation.

Component Inventory

The task of selecting and qualifying reserve components. This task can be accomplished through on-site visual, review of association design and organizational documents, a review of established association precedents, and discussion with appropriate association representative(s).

A Multi-Purpose Tool

Your **Team Engineering** Report is an important part of your association's budgetary process. Following its recommendations should ensure the association's smooth budgetary transitions from one fiscal year to the next, and either decrease or eliminate the need for "special assessments".

In addition, your **Team Engineering** reserve study serves a variety of useful purposes:

- Following the recommendations of a reserve study performed by a professional consultant can protect the Board of Directors in a community from personal liability concerning reserve components and reserve funding.
- A reserve analysis study is required by your accountant during the preparation of the association's annual audit.
- The **Team Engineering** reserve study is often requested by lending institutions during the process of loan applications, both for the community and, in many cases, the individual owners.
- Your **Team Engineering** Report is also a detailed inventory of the association's major assets and serves as a management tool for scheduling, coordinating and planning future repairs and replacements.
- Your **Team Engineering** Report is a tool that can assist the Board in fulfilling its legal and fiduciary obligations for maintaining the community in a state of good repair. If a community is operating on a special assessment basis, it cannot guarantee that an assessment, when needed, will be passed. Therefore, it cannot guarantee its ability to perform the required repairs or replacements to those major components for which the association is obligated.
- Since the **Team Engineering** reserve analysis study includes measurements and cost estimates of the client's assets, the detail reports may be used to evaluate the accuracy and price of contractor bids when assets are due to be repaired or replaced.
- The **Team Engineering** reserve study is an annual disclosure to the membership concerning the financial condition of the association and may be used as a "consumers' guide" by prospective purchasers.
- Your **Team Engineering** Report provides a record of the time, cost, and quantities of past reserve replacements. At times the association's management company and board of directors are transitory which may result in the loss of these important records.

Hickory Woods HOA
 Londonderry, NH
Team Engineering Current Assessment Funding Model Summary

Report Date	September 20, 2018
Version	3
Budget Year Beginning	January 1, 2019
Budget Year Ending	December 31, 2019
Total Units	98

<i>Report Parameters</i>	
Inflation	3.00%
Annual Assessment Increase	3.00%
Interest Rate on Reserve Deposit	2.00%
Contingency	10.00%
2019 Beginning Balance	\$170,000

<i>Current Assessment Funding Model Summary of Calculations</i>	
Required Month Contribution <i>\$19.00 per unit monthly</i>	\$1,862.00
Average Net Month Interest Earned	<u>\$295.69</u>
Total Month Allocation to Reserves <i>\$22.02 per unit monthly</i>	\$2,157.69

Hickory Woods HOA
Team Engineering Current Assessment Funding Model Projection

Beginning Balance: \$170,000

Year	Current Cost	Annual Contribution	Annual Interest	Annual Expenditures	Projected Ending Reserves
2019	2,090,125	22,344	3,548	6,275	189,617
2020	2,152,829	23,014	4,078		216,710
2021	2,217,414	23,705	4,633		245,047
2022	2,283,936	24,416	5,212		274,675
2023	2,352,454	25,148	5,727	4,502	301,049
2024	2,423,028	25,903	5,852	25,098	307,706
2025	2,495,719	26,680	6,244	12,776	327,853
2026	2,570,590	27,480	6,917		362,250
2027	2,647,708	28,305	7,620		398,175
2028	2,727,139	29,154	7,870	24,008	411,191
2029	2,792,826	30,028	5,928	133,720	313,428
2030	2,876,611	30,929	6,446	10,797	340,006
2031	2,962,909	31,857	7,210		379,073
2032	3,051,797	32,813	8,009		419,895
2033	3,143,350	33,797	7,713	56,041	405,363
2034	3,237,651	34,811	8,404	7,790	440,789
2035	3,334,781	35,856	8,157	56,004	428,798
2036	3,434,824	36,931	8,557	24,793	449,493
2037	3,537,869	38,039		591,595	-104,063
2038	3,644,005	39,180		153,169	-218,051
2039	3,753,325	40,356		262,067	-439,762
2040	3,865,925	41,566		314,483	-712,679
2041	3,981,902	42,813		225,334	-895,199
2042	4,101,359	44,098		438,926	-1,290,027
2043	4,224,400	45,421		325,450	-1,570,056
2044	4,351,132	46,783		454,559	-1,977,832
2045	4,481,666	48,187		325,861	-2,255,506
2046	4,616,116	49,632		261,224	-2,467,097
2047	4,754,600	51,121		269,060	-2,685,036
2048	4,897,238	52,655		286,558	-2,918,940

Hickory Woods HOA
Londonderry, NH
Team Engineering Threshold Funding Model Summary

Report Date	September 20, 2018
Version	3
Budget Year Beginning	January 1, 2019
Budget Year Ending	December 31, 2019
Total Units	98

Report Parameters	
Inflation	3.00%
Annual Assessment Increase	3.00%
Interest Rate on Reserve Deposit	2.00%
Contingency	10.00%
2019 Beginning Balance	\$170,000

Threshold Funding Model Summary of Calculations

Required Month Contribution	\$6,695.57
<i>\$68.32 per unit monthly</i>	
Average Net Month Interest Earned	<u>\$348.37</u>
Total Month Allocation to Reserves	\$7,043.94
<i>\$71.88 per unit monthly</i>	

Hickory Woods HOA
Team Engineering Threshold Funding Model Projection

Beginning Balance: \$170,000

Year	Current Cost	Annual Contribution	Annual Interest	Annual Expenditures	Projected Ending Reserves
2019	2,090,125	80,347	4,180	6,275	248,252
2020	2,152,829	82,757	5,913		336,922
2021	2,217,414	85,240	7,730		429,892
2022	2,283,936	87,797	9,634		527,323
2023	2,352,454	90,431	11,538	4,502	624,791
2024	2,423,028	93,144	13,120	25,098	705,956
2025	2,495,719	95,938	15,037	12,776	804,155
2026	2,570,590	98,816	17,308		920,280
2027	2,647,708	101,781	19,685		1,041,746
2028	2,727,139	104,834	21,685	24,008	1,144,257
2029	2,792,826	107,979	21,574	133,720	1,140,091
2030	2,876,611	111,219	24,006	10,797	1,264,519
2031	2,962,909	114,555	26,772		1,405,847
2032	3,051,797	117,992	29,662		1,553,501
2033	3,143,350	121,532	31,550	56,041	1,650,541
2034	3,237,651	125,178	34,522	7,790	1,802,451
2035	3,334,781	128,933	36,656	56,004	1,912,036
2036	3,434,824	132,801	39,540	24,793	2,059,585
2037	3,537,869	136,785	31,121	591,595	1,635,896
2038	3,644,005	140,889	31,464	153,169	1,655,079
2039	3,753,325	145,115	29,699	262,067	1,567,827
2040	3,865,925	149,469	26,927	314,483	1,429,740
2041	3,981,902	153,953	25,988	225,334	1,384,347
2042	4,101,359	158,571	20,811	438,926	1,124,804
2043	4,224,400	163,329	17,915	325,450	980,597
2044	4,351,132	168,228	12,451	454,559	706,717
2045	4,481,666	173,275	9,576	325,861	563,708
2046	4,616,116	178,474	8,051	261,224	489,008
2047	4,754,600	183,828	6,443	269,060	410,219
2048	4,897,238	189,343	4,560	286,558	317,563

Hickory Woods HOA
Team Engineering Annual Expenditure Detail

Description	Expenditures
Replacement Year 2019	
Asphalt, Sealcoat & striping - Parking and Sidewalk	5,000
Rock-lined Swale, 29 Black Forest	1,275
Total for 2019	\$6,275
<i>No Replacement in 2020</i>	
<i>No Replacement in 2021</i>	
<i>No Replacement in 2022</i>	
Replacement Year 2023	
Reserve Study Update	4,502
Total for 2023	\$4,502
Replacement Year 2024	
Asphalt, Sealcoat & striping - Parking and Sidewalk	5,796
Carpet	19,302
Total for 2024	\$25,098
Replacement Year 2025	
Pavement Survey	4,179
Shrubs	2,388
Wastewater, Sewage Pump	1,791
Water Heater	4,418
Total for 2025	\$12,776
<i>No Replacement in 2026</i>	
<i>No Replacement in 2027</i>	
Replacement Year 2028	
Interior Wood Door Replacement	3,131
Leachfield Inspections	15,657
Reserve Study Update	5,219
Total for 2028	\$24,008
Replacement Year 2029	
Asphalt Overlay- Tavern Hill and Church	127,000
Asphalt, Sealcoat & striping - Parking and Sidewalk	6,720
Total for 2029	\$133,720

Hickory Woods HOA
Team Engineering Annual Expenditure Detail

Description	Expenditures
Replacement Year 2030	
Appliances	10,797
Total for 2030	\$10,797
<i>No Replacement in 2031</i>	
<i>No Replacement in 2032</i>	
Replacement Year 2033	
Carpet	25,185
HVAC	21,781
Reserve Study Update	6,050
Walkways, Flagstone & Patio	3,025
Total for 2033	\$56,041
Replacement Year 2034	
Asphalt, Sealcoat & striping - Parking and Sidewalk	7,790
Total for 2034	\$7,790
Replacement Year 2035	
Fence- Tennis, BasketBall & Driving Range	25,515
Fence- White Vinyl	7,703
Pavement Survey	5,616
Shrubs	3,209
Signs	5,616
Wastewater, Sewage Pump	2,407
Water Heater	5,937
Total for 2035	\$56,004
Replacement Year 2036	
Ornamental Trees	24,793
Total for 2036	\$24,793
Replacement Year 2037	
Asphalt, Overlay - Black Forest, Pepper Hill and Quarry	572,018
Fence, Chain-Link	19,578
Total for 2037	\$591,595

Hickory Woods HOA
Team Engineering Annual Expenditure Detail

Description	Expenditures
Replacement Year 2038	
Courts, Miscellaneous Phase 1	83,029
Reserve Study Update	7,014
Rubberized Flooring	63,126
Total for 2038	\$153,169
Replacement Year 2039	
Asphalt, Sealcoat & striping - Parking and Sidewalk	9,031
Leachfield Replacements first 5 - Phase 1	212,399
Tavern Refurbishing	40,638
Total for 2039	\$262,067
Replacement Year 2040	
Ceramic Tile	3,721
Composite Tile	2,325
Fire Alarm System	13,952
Gas Log Unit and Chimney	6,511
Leachfield Replacements first 5 - Phase 2	218,771
Lighting	13,022
Pole Lights	18,975
Retaining Walls	37,206
Total for 2040	\$314,483
Replacement Year 2041	
Leachfield Replacements first 5 - Phase 3	225,334
Total for 2041	\$225,334
Replacement Year 2042	
Asphalt, Replacement - Parking and Sidewalk	80,522
Carpet	32,860
Courts, Miscellaneous Phase 2	93,449
Leachfield Replacements first 5 - Phase 4	232,094
Total for 2042	\$438,926
Replacement Year 2043	
Leachfield Replacements first 5 - Phase 5	239,057
Reserve Study Update	8,131
Roof, Resurfacing	78,263
Total for 2043	\$325,450

Hickory Woods HOA
Team Engineering Annual Expenditure Detail

Description	Expenditures
Replacement Year 2044	
Asphalt Overlay- Tavern Hill and Church	197,862
Asphalt, Sealcoat & striping - Parking and Sidewalk	10,469
Leachfield Replacements second 5 - Phase 1	246,228
Total for 2044	\$454,559
Replacement Year 2045	
Appliances	16,821
Elevator Machinery and Cab	32,349
Leachfield Replacements second 5 - Phase 2	253,615
Pavement Survey	7,548
Shrubs	4,313
Wastewater, Sewage Pump	3,235
Water Heater	7,979
Total for 2045	\$325,861
Replacement Year 2046	
Leachfield Replacements second 5 - Phase 3	261,224
Total for 2046	\$261,224
Replacement Year 2047	
Leachfield Replacements second 5 - Phase 4	269,060
Total for 2047	\$269,060
Replacement Year 2048	
Leachfield Replacements second 5 - Phase 5	277,132
Reserve Study Update	9,426
Total for 2048	\$286,558

Hickory Woods HOA

Team Engineering Detail Report by Category

Fence, Chain-Link - 2037

		460 LF	@ \$25.00
		Asset Cost	\$11,500.00
Site/Grounds/Campus		Percent Replacement	100%
Fencing/Security		Future Cost	\$19,577.98
Placed in Service	January 2017	Assigned Reserves	\$1,150.00
Useful Life	20		
Replacement Year	2037	Monthly Assessment	\$9.68
Remaining Life	18	Interest Contribution	\$2.04
		Reserve Allocation	\$11.72



There are 3- to 4-foot-tall chain link fences above the rock-lined slope and associated retaining wall to the north of Pepper Hill Road.

The fencing is in good condition. It will likely need maintenance before replacement. This should be a relatively low cost.

Hickory Woods HOA

Team Engineering Detail Report by Category

Fence- Tennis, BasketBall & Driving Range - 2035

		530 LF	@ \$30.00
		Asset Cost	\$15,900.00
Site/Grounds/Campus		Percent Replacement	100%
Fencing/Security		Future Cost	\$25,514.83
Placed in Service	January 2015	Assigned Reserves	\$3,180.00
Useful Life	20		
Replacement Year	2035	Monthly Assessment	\$13.11
Remaining Life	16	Interest Contribution	<u>\$5.49</u>
		Reserve Allocation	\$18.60



The tennis courts, basketball court, and driving ranges are mostly surrounded by 10-foot high, coated chain link fencing.

The chain link fencing is in good condition.

Hickory Woods HOA

Team Engineering Detail Report by Category

Fence- White Vinyl - 2035

		160 LF	@ \$30.00
		Asset Cost	\$4,800.00
Site/Grounds/Campus		Percent Replacement	100%
Fencing/Security		Future Cost	\$7,702.59
Placed in Service	January 2015	Assigned Reserves	\$960.00
Useful Life	20		
Replacement Year	2035	Monthly Assessment	\$3.96
Remaining Life	16	Interest Contribution	\$1.66
		Reserve Allocation	\$5.61



There are eight 20-foot-long white vinyl fences near the entry to the complex, including the fence above the Church Road retaining wall. These are in good condition and relatively maintenance free.

**Hickory Woods HOA
Team Engineering Detail Report by Category**

Fencing/Security - Total Current Cost	\$32,200
Assigned Reserves	\$5,290
Fully Funded Reserves	\$5,290

Hickory Woods HOA

Team Engineering Detail Report by Category

Pole Lights - 2040

		6 each	@ \$1,700.00
		Asset Cost	\$10,200.00
Site/Grounds/Campus		Percent Replacement	100%
Lighting		Future Cost	\$18,975.00
Placed in Service	October 2015	Assigned Reserves	\$1,632.00
Useful Life	25		
Replacement Year	2040	Monthly Assessment	\$7.39
Remaining Life	21	Interest Contribution	\$2.83
		Reserve Allocation	\$10.22



Site lighting is in good condition.

**Hickory Woods HOA
Team Engineering Detail Report by Category**

Lighting - Total Current Cost	\$10,200
Assigned Reserves	\$1,632
Fully Funded Reserves	\$1,632

Hickory Woods HOA

Team Engineering Detail Report by Category

Appliances - 2030

		1 project	@ \$7,800.00
		Asset Cost	\$7,800.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$10,797.02
Placed in Service	October 2015	Assigned Reserves	\$2,080.00
Useful Life	15		
Replacement Year	2030	Monthly Assessment	\$7.80
Remaining Life	11	Interest Contribution	\$3.58
		Reserve Allocation	\$11.38



Useful life for the clubhouse appliances assumes low use, with the exception of refrigerators that are operated continually.

2-door kitchen refrigerator	\$3,000
electric oven	\$1,000
microwave	\$500
2 small refrigerators	\$1,000
1 wine refrigerator	\$1,000
dishwasher	\$1,500

Total: \$7,800

Note that the appliances in the bar area need to be better secured.

Hickory Woods HOA

Team Engineering Detail Report by Category

Carpet - 2024

		333 SY	@ \$50.00
		Asset Cost	\$16,650.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$19,301.91
Placed in Service	October 2015	Assigned Reserves	\$7,400.00
Useful Life	9		
Replacement Year	2024	Monthly Assessment	\$24.73
Remaining Life	5	Interest Contribution	\$12.72
		Reserve Allocation	\$37.45



There is carpet in the first floor of the clubhouse. Unit cost assumes replacement with commercial grade carpet.

Hickory Woods HOA

Team Engineering Detail Report by Category

Ceramic Tile - 2040

		200 SF	@ \$10.00
		Asset Cost	\$2,000.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$3,720.59
Placed in Service	October 2015	Assigned Reserves	\$320.00
Useful Life	25		
Replacement Year	2040	Monthly Assessment	\$1.45
Remaining Life	21	Interest Contribution	\$0.55
		Reserve Allocation	\$2.00



There is 14" ceramic tile in the clubhouse vestibule, hall and kitchen. This component is for replacement of the tile in the vestibule and hall. Replacement of the tile in the kitchen is included with kitchen refurbishing.

Hickory Woods HOA
Team Engineering Detail Report by Category

Composite Tile - 2040		125 SF	@ \$10.00
		Asset Cost	\$1,250.00
Clubhouse		Percent Replacement	100%
Building Components		Future Cost	\$2,325.37
Placed in Service	October 2015	Assigned Reserves	\$200.00
Useful Life	25		
Replacement Year	2040	Monthly Assessment	\$0.91
Remaining Life	21	Interest Contribution	\$0.35
		Reserve Allocation	\$1.25

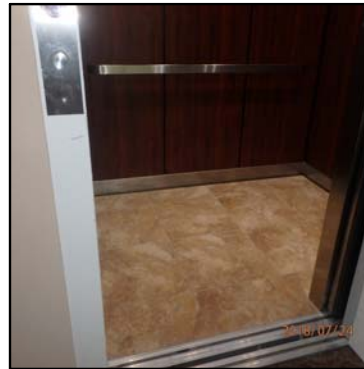
There is composite tile in the lower level Tavern and Hall. This is for replacement of the hall tile. Replacement of the tile in the tavern is included with kitchen refurbishing.

Hickory Woods HOA

Team Engineering Detail Report by Category

Elevator Machinery and Cab - 2045

		1 project	@ \$15,000.00
		Asset Cost	\$15,000.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$32,348.87
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	30		
Replacement Year	2045	Monthly Assessment	\$11.09
Remaining Life	26	Interest Contribution	\$0.12
		Reserve Allocation	\$11.21



This component is for replacement of machinery and the cab interior, assuming light use.

Hickory Woods HOA

Team Engineering Detail Report by Category

Gas Log Unit and Chimney - 2040

		1 unit	@ \$3,500.00
		Asset Cost	\$3,500.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$6,511.03
Placed in Service	October 2015	Assigned Reserves	\$560.00
Useful Life	25		
Replacement Year	2040	Monthly Assessment	\$2.54
Remaining Life	21	Interest Contribution	\$0.97
		Reserve Allocation	\$3.51



The gas log unit has a fully enclosed metal fire box and a metal chimney, Replacement of the gas log unit and possibly also the chimney should be expected in 25 or more years.

Hickory Woods HOA

Team Engineering Detail Report by Category

HVAC - 2033

		4 each	@ \$3,600.00
		Asset Cost	\$14,400.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$21,781.29
Placed in Service	October 2015	Assigned Reserves	\$3,200.00
Useful Life	18		
Replacement Year	2033	Monthly Assessment	\$12.70
Remaining Life	14	Interest Contribution	\$5.52
		Reserve Allocation	\$18.22



There are 4 Split system natural gas forced hot air systems with Compressor/condensers in the exterior. There are 2 furnaces/air exchanger units in the attic and 2 in the basement.

Attic units have metal chimneys. Basement units have PVC vents for exhaust and supply air.

Unit cost assumes that they are 3 Ton units

Hickory Woods HOA

Team Engineering Detail Report by Category

Interior Wood Door Replacement - 2028

		8 each	@ \$300.00
		Asset Cost	\$2,400.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$3,131.46
Placed in Service	January 2015	Assigned Reserves	\$738.46
Useful Life	50		
Adjustment	-37	Monthly Assessment	\$2.66
Replacement Year	2028	Interest Contribution	\$1.27
Remaining Life	9	Reserve Allocation	\$3.94



The wood doors in the lower level are of low quality. It cannot be determined whether the glazing is tempered glass. This should be verified. When untempered glass breaks, it can cause serious injury and so should be upgraded as soon as possible.

This component assumes that the glazing is adequate and upgrade of the doors in 10 years.

Hickory Woods HOA

Team Engineering Detail Report by Category

Kitchen and Baths Refurbishing - 2049

		750 SF	@ \$75.00
		Asset Cost	\$56,250.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$136,533.51
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	30		
Adjustment	4	Monthly Assessment	\$38.85
Replacement Year	2049	Interest Contribution	\$0.42
Remaining Life	30	Reserve Allocation	\$39.27



Refurbishing of the kitchen, bar and bathrooms includes upgrades or repair of all surfaces, plumbing fixtures, and electrical distribution. The expected useful life assumes light use.

Hickory Woods HOA

Team Engineering Detail Report by Category

Lighting - 2040

		1 project	@ \$7,000.00
		Asset Cost	\$7,000.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$13,022.06
Placed in Service	October 2015	Assigned Reserves	\$1,120.00
Useful Life	25		
Replacement Year	2040	Monthly Assessment	\$5.07
Remaining Life	21	Interest Contribution	\$1.94
		Reserve Allocation	\$7.01



The clubhouse is well lit with a variety of stylish fixtures, as follows:

	Estimated Installed Cost
. 4 small (approx. 1 ft diameter) mound ceiling lights	\$150/ea
. 2 ceiling fan/lights	\$350/ea
. 5 wall sconces	\$150/ea
. 8 large (30 in. diameter) mound ceiling lights	\$350/ea
. 4 hanging fixtures	\$350/ea
. Several ceiling cans (not in kitchens, bar and bath)	\$750

Kitchen, bar and bath lighting is included in the component for refurbishing.

Hickory Woods HOA

Team Engineering Detail Report by Category

Mechanical Room Drywall		0 LF	@ \$0.00
		Asset Cost	
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	
Placed in Service	January 2015	Assigned Reserves	<i>none</i>
No Useful Life			
<i>No Future Assessments</i>			



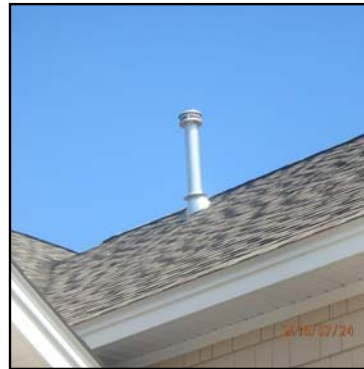
There is fiberglass batt insulation on exterior walls of the lower level mechanical rooms. The paper (a.k.a., Kraft) facing is exposed in the room interiors. This is a fire hazard due to the combustion appliances in the same rooms. The facing should be covered with drywall that is taped and mudded. This should not be a Reserve expense.

Hickory Woods HOA

Team Engineering Detail Report by Category

Roof, Resurfacing - 2043

		5,500 SF	@ \$7.00
		Asset Cost	\$38,500.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$78,262.57
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	30		
Adjustment	-2	Monthly Assessment	\$29.71
Replacement Year	2043	Interest Contribution	\$0.32
Remaining Life	24	Reserve Allocation	\$30.04



The clubhouse roof surface is architectural shingles, which appear to be in good condition. The shingles appear to be of average quality.

Hickory Woods HOA

Team Engineering Detail Report by Category

Rubberized Flooring - 2038

		3,000 SF	@ \$12.00
		Asset Cost	\$36,000.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$63,126.22
Placed in Service	October 2015	Assigned Reserves	\$6,260.87
Useful Life	20		
Adjustment	3	Monthly Assessment	\$27.31
Replacement Year	2038	Interest Contribution	\$10.83
Remaining Life	19	Reserve Allocation	\$38.13



Fitness Room and Gym have a rubberized floor. Use of the flooring is light, but age will deteriorate it without use. Refer to manufacturer's guidance on maintenance and clearing to maximize its life span.

Hickory Woods HOA

Team Engineering Detail Report by Category

Tavern Refurbishing - 2039

		900 SF	@ \$25.00
		Asset Cost	\$22,500.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$40,637.50
Placed in Service	October 2015	Assigned Reserves	\$3,750.00
Useful Life	25		
Adjustment	-1	Monthly Assessment	\$16.67
Replacement Year	2039	Interest Contribution	\$6.49
Remaining Life	20	Reserve Allocation	\$23.15



Refurbishing of the bar includes upgrades or repair of surfaces, plumbing fixtures, and electrical distribution. The expected useful life assumes light use.

The quality of tavern finishes, appliances, and plumbing is of lower quality than the kitchen and bathrooms. As such, replacements are anticipated to be sooner.

Cabinetry improvements are needed in the near term for improved support of appliances. Installations are deficient. This should not be a reserve expense.

Hickory Woods HOA

Team Engineering Detail Report by Category

Water Heater - 2025

		1 each	@ \$3,700.00
		Asset Cost	\$3,700.00
	Clubhouse	Percent Replacement	100%
	Building Components	Future Cost	\$4,417.99
Placed in Service	October 2015	Assigned Reserves	\$1,480.00
Useful Life	10		
Replacement Year	2025	Monthly Assessment	\$5.04
Remaining Life	6	Interest Contribution	\$2.54
		Reserve Allocation	\$7.59



There is a propane fired 75-gallon water heater in the basement.

Upon replacement of this tank, you may wish to install a direct fired unit for the clubhouse to reduce energy loss from a standby tank, and to provide as much hot water as needed on the few occasions when it is needed. The cost provided is for the 75-gallon tank.

**Hickory Woods HOA
Team Engineering Detail Report by Category**

Building Components - Total Current Cost	\$226,950
Assigned Reserves	\$27,109
Fully Funded Reserves	\$41,227

Hickory Woods HOA

Team Engineering Detail Report by Category

Flag Pole - 2050

		1 each	@ \$1,500.00
		Asset Cost	\$1,500.00
	Site/Grounds/Campus	Percent Replacement	100%
	Grounds Components	Future Cost	\$3,750.12
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	35		
Replacement Year	2050	Monthly Assessment	\$1.02
Remaining Life	31	Interest Contribution	\$0.01
		Reserve Allocation	\$1.03



Even the flag pole will need to be replaced eventually.

Hickory Woods HOA

Team Engineering Detail Report by Category

Ornamental Trees - 2036

		100 project	@ \$150.00
		Asset Cost	\$15,000.00
Site/Grounds/Campus		Percent Replacement	100%
Grounds Components		Future Cost	\$24,792.71
Placed in Service	January 2016	Assigned Reserves	\$2,250.00
Useful Life	20		
Replacement Year	2036	Monthly Assessment	\$12.49
Remaining Life	17	Interest Contribution	\$3.92
		Reserve Allocation	\$16.41



There are trees located throughout the campus that serve aesthetic and shading purposes. Regular care and pruning is considered an operational expense.

Ornamental trees have relatively short life span and require occasional replacement. This component provides funding for long term replacement. Generally, there is a lower cost per tree for younger and evergreen trees.

Hickory Woods HOA

Team Engineering Detail Report by Category

Retaining Walls - 2040

		1,000 sf	@ \$20.00
		Asset Cost	\$20,000.00
Site/Grounds/Campus		Percent Replacement	100%
Grounds Components		Future Cost	\$37,205.89
Placed in Service	October 2015	Assigned Reserves	\$3,200.00
Useful Life	25		
Replacement Year	2040	Monthly Assessment	\$14.49
Remaining Life	21	Interest Contribution	\$5.54
		Reserve Allocation	\$20.03



There is an approximate 100 ft.-long interlocking concrete block (ICB) retaining wall behind 14 and 16 Tavern Hill Road. There are up to 5 courses of block. Blocks measure 18" x 24" x 24". There is rock-lined slope above it. Maintenance should include removal of vegetation from the stone on the slope.

The CLD assessment report indicated that there were no engineered plans or permit found for the ICB wall, although its height exceeds 4 ft. While it appears in good condition, there is no guarantee that it will continue to serve its intended purpose for the duration of this study. A ballpark estimate for replacement of the wall is included herein.

There is also a cast-in-place concrete retaining wall with stone facing at the rear, right corner of the clubhouse for grade change at the lower level walkout area. The club house wall is 3 to 7 ft tall, 8 ft. long, and retains 5 ft of soil. There is slight displacement of the wall relative to the corner of the foundation stem wall. The wall is in good condition Weep holes were not observed; these should be installed so that water pressure behind the wall does not damage the wall or push it further out.

There is a low approximate 50 ft.-long drystack field stone retaining wall on Church Lane. This and all walls should be monitored for movement and small repairs made as part of operational expenses.

Hickory Woods HOA

Team Engineering Detail Report by Category

Rock-lined Swale, 29 Black Forest - 2019

		85 LF	@ \$15.00
		Asset Cost	\$1,275.00
Site/Grounds/Campus		Percent Replacement	100%
Grounds Components		Future Cost	\$1,275.00
Placed in Service	October 2018	Assigned Reserves	\$1,275.00
Useful Life	30		
Adjustment	-29	Monthly Assessment	\$0.88
Replacement Year	2019	Interest Contribution	\$0.01
Remaining Life	0	Reserve Allocation	\$0.89



There is flooding occurring behind 29 Black Forest. This can likely be mitigated with the installation of a rock-lined swale that curves around the right rear corner of this building.

Hickory Woods HOA

Team Engineering Detail Report by Category

Shrubs - 2025

		1 project	@ \$2,000.00
		Asset Cost	\$2,000.00
Site/Grounds/Campus		Percent Replacement	100%
Grounds Components		Future Cost	\$2,388.10
Placed in Service	October 2015	Assigned Reserves	\$800.00
Useful Life	10		
Replacement Year	2025	Monthly Assessment	\$2.73
Remaining Life	6	Interest Contribution	\$1.38
		Reserve Allocation	\$4.10



Shrubs have a life span that varies significantly. This component is for replacements of entire planting area. Individual plants that fade or die should be included in operational budget.

**Hickory Woods HOA
Team Engineering Detail Report by Category**

Grounds Components - Total Current Cost	\$39,775
Assigned Reserves	\$7,525
Fully Funded Reserves	\$7,696

Hickory Woods HOA

Team Engineering Detail Report by Category

Signs - 2035

		1 project	@ \$3,500.00
		Asset Cost	\$3,500.00
Site/Grounds/Campus		Percent Replacement	100%
Signs		Future Cost	\$5,616.47
Placed in Service	October 2015	Assigned Reserves	\$700.00
Useful Life	20		
Replacement Year	2035	Monthly Assessment	\$2.89
Remaining Life	16	Interest Contribution	\$1.21
		Reserve Allocation	\$4.09



There is the entry sign, which has a stone foundation/back board and lighting. The stone structure is about 40 ft. long and averages about 2 ft. high. This component cost assumes that only the entry wood sign & its lighting will need to be replaced within 20 years, and not the stone foundation and back board.

There are also about 17 stick signs, including road signs, stopping signs, and handicap spaces.

Entry signage and lights: \$950

Stick signs: \$2,550

**Hickory Woods HOA
Team Engineering Detail Report by Category**

Signs - Total Current Cost	\$3,500
Assigned Reserves	\$700
Fully Funded Reserves	\$700

Hickory Woods HOA

Team Engineering Detail Report by Category

Asphalt Overlay- Tavern Hill and Church - 2029

		37,800 SF	@ \$2.50
		Asset Cost	\$94,500.00
Site/Grounds/Campus		Percent Replacement	100%
Paving & Flatwork		Future Cost	\$127,000.10
Placed in Service	January 2014	Assigned Reserves	\$31,500.00
Useful Life	15		
Replacement Year	2029	Monthly Assessment	\$93.51
Remaining Life	10	Interest Contribution	\$54.00
		Reserve Allocation	\$147.52



Tavern Hil Road and Church Lane (appox. total of 1,350 sf) were constructed in the 1st phase and were driven over by heavy equipment. The typical width of roadway is 28 ft. CLD reported cracking, which is repaired by the contractor.

This component is for milling and overlay. This will likely require lifting of catchbasins, replacement of asphalt curbing and resetting of granite curbing. Miscellaneous striping will also be needed.

Timing and method/extent of repaving will depend on the findings of a pavement survey and should be changed in the Reserve Study Update.

Hickory Woods HOA

Team Engineering Detail Report by Category

Asphalt, Overlay - Black Forest, Pepper Hill and Quarry - 2037

		134,400 SF	@ \$2.50
		Asset Cost	\$336,000.00
Site/Grounds/Campus		Percent Replacement	100%
Paving & Flatwork		Future Cost	\$572,017.51
Placed in Service	January 2017	Assigned Reserves	\$33,600.00
Useful Life	20		
Replacement Year	2037	Monthly Assessment	\$282.74
Remaining Life	18	Interest Contribution	\$59.60
		Reserve Allocation	\$342.34



Black Forest Circle, Pepper Hill, and Quarry Road (approx. total of 4,800lf) have a typical width of 28 ft. This asphalt is in good condition.

This component is for milling and overlay. This will likely require lifting of catchbasins, replacement of asphalt curbing and resetting of granite curbing. Miscellaneous striping will also be needed.

Timing and method/extent of repaving will depend on the findings of a pavement survey and should be changed in the Reserve Study Update.

Hickory Woods HOA

Team Engineering Detail Report by Category

Asphalt, Replacement - Parking and Sidewalk - 2042

		16,320 SF	@ \$2.50
		Asset Cost	\$40,800.00
Site/Grounds/Campus		Percent Replacement	100%
Paving & Flatwork		Future Cost	\$80,522.33
Placed in Service	January 2017	Assigned Reserves	<i>none</i>
Useful Life	25		
Replacement Year	2042	Monthly Assessment	\$32.24
Remaining Life	23	Interest Contribution	<u>\$0.35</u>
		Reserve Allocation	\$32.60



Driveway, sidewalk, and parking area replacement need to be anticipated. Performance of pavement should be assessed during a Pavement Survey and timeframe of replacement adjusted appropriately.

Unit cost assumes a 3" wear course and subgrade compaction. Approx total of asphalt pavement is 80,000 sf. One phase includes 1/2 of the pavement.

Asphalt sealcoat will not be needed this year. Math model does not allow exemption of sealcoat for this 1 year.

Hickory Woods HOA

Team Engineering Detail Report by Category

Asphalt, Sealcoat & striping - Parking and Sidewalk - 2019

		1 project	@ \$5,000.00
		Asset Cost	\$5,000.00
Site/Grounds/Campus		Percent Replacement	100%
Paving & Flatwork		Future Cost	\$5,000.00
Placed in Service	January 2017	Assigned Reserves	\$5,000.00
Useful Life	5		
Adjustment	-3	Monthly Assessment	\$12.89
Replacement Year	2019	Interest Contribution	<u>\$0.14</u>
Remaining Life	0	Reserve Allocation	\$13.03



Sealcoating and striping is recommended for asphalt surfaces that do not receive significant wear (i.e., driveways, and clubhouse walkway and parking) in order to extend their surface live. This component is for periodic sealcoat and crack seal applications to all paved asphalt surfaces, to include restriping where needed.

Unit cost assumes the lower cost option of fog seal in most areas. Other seal coat options should be considered after inspection of actual wearing in several years. The extent of full depth cutting and patching should also be revised after inspection of actual pavement performance.

74,500	- Sealcoat asphalt surfaces	@	\$0.35 =	\$26,075.00
5000	- Cut and patch (revise during update)	@	0.65 =	4,000.00
43	- Stripe parking spaces	@	21.00 =	<u>903.00</u>
	Total =			\$31,000

Hickory Woods HOA

Team Engineering Detail Report by Category

Walkways, Flagstone & Patio - 2033

		1 Project	@ \$2,000.00
		Asset Cost	\$2,000.00
Site/Grounds/Campus		Percent Replacement	100%
Paving & Flatwork		Future Cost	\$3,025.18
Placed in Service	October 2015	Assigned Reserves	\$444.44
Useful Life	18		
Replacement Year	2033	Monthly Assessment	\$1.76
Remaining Life	14	Interest Contribution	\$0.77
		Reserve Allocation	\$2.53



Walkways at unit buildings include flagstone paving materials. The flagstone is generally 2-foot by 3-foot sections. This component is for replacement/restoration of the pavers.

The clubhouse rear patios are concrete. Their life expectancy exceeds this study.

The flagstone pavers require regular maintenance to ensure the walkway surfaces are level and even. These expenditures are expected to be operationally funded.

**Hickory Woods HOA
Team Engineering Detail Report by Category**

Paving & Flatwork - Total Current Cost	\$478,300
Assigned Reserves	\$70,544
Fully Funded Reserves	\$73,808

Hickory Woods HOA

Team Engineering Detail Report by Category

Fire Alarm System - 2040

		1 project	@ \$7,500.00
		Asset Cost	\$7,500.00
	Clubhouse	Percent Replacement	100%
Fire Protection / Life Safety		Future Cost	\$13,952.21
Placed in Service	October 2015	Assigned Reserves	\$1,200.00
Useful Life	25		
Replacement Year	2040	Monthly Assessment	\$5.43
Remaining Life	21	Interest Contribution	\$2.08
		Reserve Allocation	\$7.51



There is an addressable fire alarm controls system, with smoke and heat detectors and pull stations (4). There are also battery operated emergency lights (4) and exit signs. A heat detector in the attic needs repair.

The expected useful life of the fire alarm panel is 25 years. The alarm panel appears to be in good condition. Detection devices have a useful life of 10 years. Inspection and maintenance of the fire alarm system is required by applicable fire codes. Typically, detection devices replacement is recommended as part of recurring or annual inspection and would be considered an operational expenditure.

This component is for replacement/upgrade of the fire alarm panel, emergency lights, exit signs and pull stations. The timing of this replacement can be adjusted in future updates based upon assessments which should be part of annual inspection and testing of the fire alarm system.

**Hickory Woods HOA
Team Engineering Detail Report by Category**

Fire Protection / Life Safety - Total Current Cost	\$7,500
Assigned Reserves	\$1,200
Fully Funded Reserves	\$1,200

Hickory Woods HOA Team Engineering Detail Report by Category

Leachfield Replacements first 5 - Phase 1 - 2039

		49 each	@ \$12,000.00
		Asset Cost	\$117,600.00
Site/Grounds/Campus		Percent Replacement	20%
Plumbing		Future Cost	\$212,398.68
Placed in Service	October 2015	Assigned Reserves	\$19,600.00
Useful Life	24		
Replacement Year	2039	Monthly Assessment	\$87.10
Remaining Life	20	Interest Contribution	<u>\$33.92</u>
		Reserve Allocation	\$121.02



The cost is per unit, because shared leachfields are larger and more costly to replace. Cost information was provided by New Star. The leachfields are summarized as follows:

70 private leachfield

7 shared leachfields that require pumps

2 shared leachfields that do not require pumps

1 clubhouse leachfield

80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA

Team Engineering Detail Report by Category

Leachfield Replacements first 5 - Phase 2 - 2040

		49 each	@ \$12,000.00
		Asset Cost	\$117,600.00
Site/Grounds/Campus		Percent Replacement	20%
Plumbing		Future Cost	\$218,770.64
Placed in Service	October 2015	Assigned Reserves	\$4,672.13
Useful Life	24		
Adjustment	1	Monthly Assessment	\$94.84
Replacement Year	2040	Interest Contribution	\$8.89
Remaining Life	21	Reserve Allocation	\$103.73



The cost is per unit, because shared leachfields are larger and more costly to replace. Cost information was provided by New Star. The leachfields are summarized as follows:

70 private leachfield

7 shared leachfields that require pumps

2 shared leachfields that do not require pumps

1 clubhouse leachfield

80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA

Team Engineering Detail Report by Category

Leachfield Replacements first 5 - Phase 3 - 2041

		49 each	@ \$12,000.00
		Asset Cost	\$117,600.00
Site/Grounds/Campus		Percent Replacement	20%
Plumbing		Future Cost	\$225,333.76
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	24		
Adjustment	2	Monthly Assessment	\$95.35
Replacement Year	2041	Interest Contribution	<u>\$1.04</u>
Remaining Life	22	Reserve Allocation	\$96.39



The cost is per unit, because shared leachfields are larger and more costly to replace. Cost information was provided by New Star. The leachfields are summarized as follows:

70 private leachfield

7 shared leachfields that require pumps

2 shared leachfields that do not require pumps

1 clubhouse leachfield

80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA

Team Engineering Detail Report by Category

Leachfield Replacements first 5 - Phase 4 - 2042

		49 each	@ \$12,000.00
		Asset Cost	\$117,600.00
Site/Grounds/Campus		Percent Replacement	20%
Plumbing		Future Cost	\$232,093.77
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	24		
Adjustment	3	Monthly Assessment	\$92.94
Replacement Year	2042	Interest Contribution	<u>\$1.01</u>
Remaining Life	23	Reserve Allocation	\$93.95



The cost is per unit, because shared leachfields are larger and more costly to replace. Cost information was provided by New Star. The leachfields are summarized as follows:

70 private leachfield

7 shared leachfields that require pumps

2 shared leachfields that do not require pumps

1 clubhouse leachfield

80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA

Team Engineering Detail Report by Category

Leachfield Replacements first 5 - Phase 5 - 2043

		49 each	@ \$12,000.00
		Asset Cost	\$117,600.00
Site/Grounds/Campus		Percent Replacement	20%
Plumbing		Future Cost	\$239,056.59
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	24		
Adjustment	4	Monthly Assessment	\$90.76
Replacement Year	2043	Interest Contribution	<u>\$0.99</u>
Remaining Life	24	Reserve Allocation	\$91.75



The cost is per unit, because shared leachfields are larger and more costly to replace. Cost information was provided by New Star. The leachfields are summarized as follows:

70 private leachfield

7 shared leachfields that require pumps

2 shared leachfields that do not require pumps

1 clubhouse leachfield

80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA

Team Engineering Detail Report by Category

Leachfield Replacements second 5 - Phase 1 - 2044

		49 each	@ \$12,000.00
		Asset Cost	\$117,600.00
Site/Grounds/Campus		Percent Replacement	20%
Plumbing		Future Cost	\$246,228.28
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	29		
Replacement Year	2044	Monthly Assessment	\$88.78
Remaining Life	25	Interest Contribution	<u>\$0.97</u>
		Reserve Allocation	\$89.74



The cost is per unit, because shared leachfields are larger and more costly to replace. Cost information was provided by New Star. The leachfields are summarized as follows:

- 70 private leachfield
- 7 shared leachfields that require pumps
- 2 shared leachfields that do not require pumps
- 1 clubhouse leachfield
- 80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA

Team Engineering Detail Report by Category

Leachfield Replacements second 5 - Phase 2 - 2045

		49 each	@ \$12,000.00
		Asset Cost	\$117,600.00
Site/Grounds/Campus		Percent Replacement	20%
Plumbing		Future Cost	\$253,615.13
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	29		
Adjustment	1	Monthly Assessment	\$86.97
Replacement Year	2045	Interest Contribution	<u>\$0.95</u>
Remaining Life	26	Reserve Allocation	\$87.92



The cost is per unit, because shared leachfields are larger and more costly to replace. Cost information was provided by New Star. The leachfields are summarized as follows:

- 70 private leachfield
- 7 shared leachfields that require pumps
- 2 shared leachfields that do not require pumps
- 1 clubhouse leachfield

80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA

Team Engineering Detail Report by Category

Leachfield Replacements second 5 - Phase 3 - 2046

		49 each	@ \$12,000.00
		Asset Cost	\$117,600.00
Site/Grounds/Campus		Percent Replacement	20%
Plumbing		Future Cost	\$261,223.59
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	29		
Adjustment	2	Monthly Assessment	\$85.33
Replacement Year	2046	Interest Contribution	<u>\$0.93</u>
Remaining Life	27	Reserve Allocation	\$86.26



The cost is per unit, because shared leachfields are larger and more costly to replace. Cost information was provided by New Star. The leachfields are summarized as follows:

- 70 private leachfield
- 7 shared leachfields that require pumps
- 2 shared leachfields that do not require pumps
- 1 clubhouse leachfield
- 80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA

Team Engineering Detail Report by Category

Leachfield Replacements second 5 - Phase 4 - 2047

		49 each	@ \$12,000.00
		Asset Cost	\$117,600.00
Site/Grounds/Campus		Percent Replacement	20%
Plumbing		Future Cost	\$269,060.29
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	29		
Adjustment	3	Monthly Assessment	\$83.83
Replacement Year	2047	Interest Contribution	<u>\$0.91</u>
Remaining Life	28	Reserve Allocation	\$84.75



The cost is per unit, because shared leachfields are larger and more costly to replace. Cost information was provided by New Star. The leachfields are summarized as follows:

70 private leachfield

7 shared leachfields that require pumps

2 shared leachfields that do not require pumps

1 clubhouse leachfield

80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA

Team Engineering Detail Report by Category

Leachfield Replacements second 5 - Phase 5 - 2048

		49 each	@ \$12,000.00
		Asset Cost	\$117,600.00
Site/Grounds/Campus		Percent Replacement	20%
Plumbing		Future Cost	\$277,132.10
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	29		
Adjustment	4	Monthly Assessment	\$82.47
Replacement Year	2048	Interest Contribution	<u>\$0.90</u>
Remaining Life	29	Reserve Allocation	\$83.36



The cost is per unit, because shared leachfields are larger and more costly to replace. Cost information was provided by New Star. The leachfields are summarized as follows:

70 private leachfield

7 shared leachfields that require pumps

2 shared leachfields that do not require pumps

1 clubhouse leachfield

80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA

Team Engineering Detail Report by Category

Wastewater, Sewage Pump - 2025

		1 unit	@ \$1,500.00
		Asset Cost	\$1,500.00
	Clubhouse	Percent Replacement	100%
	Plumbing	Future Cost	\$1,791.08
Placed in Service	October 2015	Assigned Reserves	\$600.00
Useful Life	10		
Replacement Year	2025	Monthly Assessment	\$2.04
Remaining Life	6	Interest Contribution	\$1.03
		Reserve Allocation	\$3.08



Effluent pumps were not evaluated as part of this Study.

Useful life of effluent pumps is approximately 10 years.

This component is for replacement of the effluent pump for the clubhouse and its alarm.

Hickory Woods HOA
Team Engineering Detail Report by Category

Plumbing - Total Current Cost	\$1,177,500
Assigned Reserves	\$24,872
Fully Funded Reserves	\$167,360

Hickory Woods HOA

Team Engineering Detail Report by Category

Courts, Miscellaneous Phase 1 - 2038

		1 project	@ \$47,350.00
		Asset Cost	\$47,350.00
Site/Grounds/Campus		Percent Replacement	100%
Amenities		Future Cost	\$83,028.51
Placed in Service	October 2015	Assigned Reserves	\$8,234.78
Useful Life	20		
Adjustment	3	Monthly Assessment	\$35.92
Replacement Year	2038	Interest Contribution	\$14.24
Remaining Life	19	Reserve Allocation	\$50.16



This component is for replacement of basketball hoop pole and backboard, tennis court net poles; repair/replacement of horse shoe court and putting greens; and replacement of the synthetic mats on the courts and artificial turf. Replacement of nets is not included.

The longevity of these amenities depends on maintenance. We advise that you obtain and follow manufacturer's maintenance guidelines for these items, particularly the synthetic mat and artificial turf.

Replace plastic mat 55,500 sf @ \$5/sf = \$27,750

Replace turf 3,130 sf @ \$15/sf = \$46,950

Miscellaneous (hoops, nets,
striping, poles backboards,etc.) = \$20,000
Total = \$94,700

Hickory Woods HOA

Team Engineering Detail Report by Category

Courts, Miscellaneous Phase 2 - 2042

		1 project	@ \$47,350.00
		Asset Cost	\$47,350.00
Site/Grounds/Campus		Percent Replacement	100%
Amenities		Future Cost	\$93,449.32
Placed in Service	October 2015	Assigned Reserves	<i>none</i>
Useful Life	20		
Adjustment	7	Monthly Assessment	\$37.42
Replacement Year	2042	Interest Contribution	\$0.41
Remaining Life	23	Reserve Allocation	\$37.83



This component is for replacement of basketball hoop pole and backboard, tennis court net poles; repair/replacement of horse shoe court and putting greens; and replacement of the synthetic mats on the courts and artificial turf. Replacement of nets is not included.

The longevity of these amenities depends on maintenance. We advise that you obtain and follow manufacturer's maintenance guidelines for these items, particularly the synthetic mat and artificial turf.

Replace plastic mat 55,500 sf @ \$5/sf = \$27,750

Replace turf 3,130 sf @ \$15/sf = \$46,950

Miscellaneous (hoops, nets,
striping, poles backboards, etc.) = \$20,000
Total = \$94,700

Hickory Woods HOA
Team Engineering Detail Report by Category

Amenities - Total Current Cost	\$94,700
Assigned Reserves	\$8,235
Fully Funded Reserves	\$15,250

Hickory Woods HOA

Team Engineering Detail Report by Category

Leachfield Inspections - 2028

		80	@ \$150.00
		Asset Cost	\$12,000.00
Site/Grounds/Campus		Percent Replacement	100%
Special Studies		Future Cost	\$15,657.28
Placed in Service	October 2015	Assigned Reserves	\$3,692.31
Useful Life	10		
Adjustment	3	Monthly Assessment	\$13.33
Replacement Year	2028	Interest Contribution	\$6.36
Remaining Life	9	Reserve Allocation	\$19.68



The cost is per leachfield. Information provided by New Star indicates that the cost per leachfield does not increase for shared leachfields. The number of leachfields was determined as follows:

- 70 private leachfield
- 7 shared leachfields that require pumps
- 2 shared leachfields that do not require pumps
- 1 clubhouse leachfield

80 total leachfields

The expected useful life of the leachfields will need to be adjusted during future Reserve Studies after the Association has some experience with them. We recommend that the leachfields be inspected during a future Reserve Study update. If there are few problems with the septic systems over the next 10 years, then a comprehensive inspection can be performed in 10 years; otherwise, a comprehensive inspection should be performed sooner than 10 years. We understand that the pumps and septic tanks are the responsibility of the unit owners and so replacement costs for these are not included here.

Hickory Woods HOA
Team Engineering Detail Report by Category

Pavement Survey - 2025		1 3500	@ \$3,500.00
		Asset Cost	\$3,500.00
Site/Grounds/Campus		Percent Replacement	100%
Special Studies		Future Cost	\$4,179.18
Placed in Service	October 2015	Assigned Reserves	\$1,400.00
Useful Life	10		
Replacement Year	2025	Monthly Assessment	\$4.77
Remaining Life	6	Interest Contribution	\$2.41
		Reserve Allocation	\$7.18

This component assumes that an asphalt milling and overlay are performed at about 15 to 20 years age, and that there is no need for drilling & sampling as part of the survey.

Hickory Woods HOA
Team Engineering Detail Report by Category

Reserve Study Update - 2023

		1 project	@ \$4,000.00
		Asset Cost	\$4,000.00
Site/Grounds/Campus		Percent Replacement	100%
Special Studies		Future Cost	\$4,502.04
Placed in Service	January 2018	Assigned Reserves	\$800.00
Useful Life	5		
Replacement Year	2023	Monthly Assessment	\$10.21
Remaining Life	4	Interest Contribution	\$1.46
		Reserve Allocation	\$11.66

This component is for updating the existing Reserve Study. Future updates should be performed every 4 to 5 years.

From time to time, the assumptions of the current report should be reevaluated. This is due to actions that have been taken to address recommendations and repairs to existing components.

**Hickory Woods HOA
Team Engineering Detail Report by Category**

Special Studies - Total Current Cost	\$19,500
Assigned Reserves	\$5,892
Fully Funded Reserves	\$5,892

Hickory Woods HOA
Team Engineering Category Detail Index

Description	Replacement	Page
Appliances	2030	2-15
Asphalt Overlay- Tavern Hill and Church	2029	2-39
Asphalt, Overlay - Black Forest, Pepper Hill and Quarry	2037	2-40
Asphalt, Replacement - Parking and Sidewalk	2042	2-41
Asphalt, Sealcoat & striping - Parking and Sidewalk	2019	2-42
Carpet	2024	2-16
Ceramic Tile	2040	2-17
Composite Tile	2040	2-18
Courts, Miscellaneous Phase 1	2038	2-59
Courts, Miscellaneous Phase 2	2042	2-60
Elevator Machinery and Cab	2045	2-19
Fence, Chain-Link	2037	2-9
Fence- Tennis, BasketBall & Driving Range	2035	2-10
Fence- White Vinyl	2035	2-11
Fire Alarm System	2040	2-45
Flag Pole	2050	2-31
Gas Log Unit and Chimney	2040	2-20
HVAC	2033	2-21
Interior Wood Door Replacement	2028	2-22
Kitchen and Baths Refurbishing	2049	2-23
Leachfield Inspections	2028	2-62
Leachfield Replacements first 5 - Phase 1	2039	2-47
Leachfield Replacements first 5 - Phase 2	2040	2-48
Leachfield Replacements first 5 - Phase 3	2041	2-49
Leachfield Replacements first 5 - Phase 4	2042	2-50
Leachfield Replacements first 5 - Phase 5	2043	2-51
Leachfield Replacements second 5 - Phase 1	2044	2-52
Leachfield Replacements second 5 - Phase 2	2045	2-53
Leachfield Replacements second 5 - Phase 3	2046	2-54
Leachfield Replacements second 5 - Phase 4	2047	2-55
Leachfield Replacements second 5 - Phase 5	2048	2-56
Lighting	2040	2-24
Mechanical Room Drywall	Unfunded	2-25
Ornamental Trees	2036	2-32
Pavement Survey	2025	2-63
Pole Lights	2040	2-13
Reserve Study Update	2023	2-64
Retaining Walls	2040	2-33

Hickory Woods HOA
Team Engineering Category Detail Index

Description	Replacement	Page
Rock-lined Swale, 29 Black Forest	2019	2-34
Roof, Resurfacing	2043	2-26
Rubberized Flooring	2038	2-27
Shrubs	2025	2-35
Signs	2035	2-37
Tavern Refurbishing	2039	2-28
Walkways, Flagstone & Patio	2033	2-43
Wastewater, Sewage Pump	2025	2-57
Water Heater	2025	2-29
 Total Funded Assets	 46	
Total Unfunded Assets	<u>1</u>	
Total Assets	47	

Hickory Woods HOA
Team Engineering Annual Expenditure Spread Sheet, Threshold Funding Model

Description	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Fencing/Security										
Fence, Chain-Link										
Fence- Tennis, BasketBall & Driving Range										
Fence- White Vinyl										
Fencing/Security Total:										
Lighting										
Pole Lights										
Lighting Total:										
Building Components										
Appliances										
Carpet						19,302				
Ceramic Tile										
Composite Tile										
Elevator Machinery and Cab										
Gas Log Unit and Chimney										
HVAC										
Interior Wood Door Replacement										3,131
Kitchen and Baths Refurbishing										
Lighting										
Mechanical Room Drywall										
Roof, Resurfacing										
Rubberized Flooring										
Tavern Refurbishing										
Water Heater							4,418			
Building Components Total:						19,302	4,418			3,131
Grounds Components										
Flag Pole										
Ornamental Trees										
Retaining Walls										
Rock-lined Swale, 29 Black Forest										
Shrubs							2,388			
Grounds Components Total:		1,275					2,388			

Hickory Woods HOA
Team Engineering Annual Expenditure Spread Sheet, Threshold Funding Model

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Description										
Signs										
Signs										
Signs Total:										
Paving & Flatwork										
Asphalt Overlay- Tavern Hill and Church										
Asphalt, Overlay - Black Forest, Pepper Hill and Quarry										
Asphalt, Replacement - Parking and Sidewalk										
Asphalt, Sealcoat & striping - Parking and Sidewalk										
	5,000					5,796				
Walkways, Flagstone & Patio										
Paving & Flatwork Total:	5,000					5,796				
Fire Protection / Life Safety										
Fire Alarm System										
Fire Protection / Life Safety Total:										
Plumbing										
Leachfield Replacements first 5 - Phase 1										
Leachfield Replacements first 5 - Phase 2										
Leachfield Replacements first 5 - Phase 3										
Leachfield Replacements first 5 - Phase 4										
Leachfield Replacements first 5 - Phase 5										
Leachfield Replacements second 5 - Phase 1										
Leachfield Replacements second 5 - Phase 2										
Leachfield Replacements second 5 - Phase 3										
Leachfield Replacements second 5 - Phase 4										
Leachfield Replacements second 5 - Phase 5										
Wastewater, Sewage Pump							1,791			
Plumbing Total:							1,791			
Amenities										
Courts, Miscellaneous Phase 1										
Courts, Miscellaneous Phase 2										
Amenities Total:										

Hickory Woods HOA
Team Engineering Annual Expenditure Spread Sheet, Threshold Funding Model

Description	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Special Studies										
Leachfield Inspections										15,657
Pavement Survey							4,179			
Reserve Study Update					4,502					5,219
Special Studies Total:					4,502		4,179			20,876
Year Total:	6,275				4,502	25,098	12,776			24,008

Hickory Woods HOA
Team Engineering Annual Expenditure Spread Sheet, Threshold Funding Model

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Description										
Fencing/Security										
Fence, Chain-Link									19,578	
Fence- Tennis, BasketBall & Driving Range							25,515			
Fence- White Vinyl							7,703			
Fencing/Security Total:							33,217		19,578	
Lighting										
Pole Lights										
Lighting Total:										
Building Components										
Appliances		10,797								
Carpet					25,185					
Ceramic Tile										
Composite Tile										
Elevator Machinery and Cab										
Gas Log Unit and Chimney										
HVAC					21,781					
Interior Wood Door Replacement										
Kitchen and Baths Refurbishing										
Lighting										
Mechanical Room Drywall		<i>Unfunded</i>								
Roof, Resurfacing										
Rubberized Flooring										63,126
Tavern Refurbishing										
Water Heater							5,937			
Building Components Total:		10,797			46,966		5,937			63,126
Grounds Components										
Flag Pole										
Ornamental Trees								24,793		
Retaining Walls										
Rock-lined Swale, 29 Black Forest										
Shrubs							3,209			
Grounds Components Total:							3,209	24,793		

Hickory Woods HOA
Team Engineering Annual Expenditure Spread Sheet, Threshold Funding Model

Description	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Signs										
Signs							5,616			
Signs Total:							5,616			
Paving & Flatwork										
Asphalt Overlay- Tavern Hill and Church	127,000									
Asphalt, Overlay - Black Forest, Pepper Hill and Quarry										
									572,018	
Asphalt, Replacement - Parking and Sidewalk										
Asphalt, Sealcoat & striping - Parking and Sidewalk										
	6,720					7,790				
Walkways, Flagstone & Patio					3,025					
Paving & Flatwork Total:	133,720				3,025	7,790			572,018	
Fire Protection / Life Safety										
Fire Alarm System										
Fire Protection / Life Safety Total:										
Plumbing										
Leachfield Replacements first 5 - Phase 1										
Leachfield Replacements first 5 - Phase 2										
Leachfield Replacements first 5 - Phase 3										
Leachfield Replacements first 5 - Phase 4										
Leachfield Replacements first 5 - Phase 5										
Leachfield Replacements second 5 - Phase 1										
Leachfield Replacements second 5 - Phase 2										
Leachfield Replacements second 5 - Phase 3										
Leachfield Replacements second 5 - Phase 4										
Leachfield Replacements second 5 - Phase 5										
Wastewater, Sewage Pump							2,407			
Plumbing Total:							2,407			
Amenities										
Courts, Miscellaneous Phase 1										83,029
Courts, Miscellaneous Phase 2										
Amenities Total:										83,029

Hickory Woods HOA
Team Engineering Annual Expenditure Spread Sheet, Threshold Funding Model

Description	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Special Studies										
Leachfield Inspections										
Pavement Survey							5,616			
Reserve Study Update					6,050					7,014
Special Studies Total:					6,050		5,616			7,014
Year Total:	133,720	10,797			56,041	7,790	56,004	24,793	591,595	153,169

Hickory Woods HOA
Team Engineering Annual Expenditure Spread Sheet, Threshold Funding Model

Description	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Fencing/Security										
Fence, Chain-Link										
Fence- Tennis, BasketBall & Driving Range										
Fence- White Vinyl										
Fencing/Security Total:										
Lighting										
Pole Lights		18,975								
Lighting Total:		18,975								
Building Components										
Appliances							16,821			
Carpet				32,860						
Ceramic Tile		3,721								
Composite Tile		2,325								
Elevator Machinery and Cab							32,349			
Gas Log Unit and Chimney		6,511								
HVAC										
Interior Wood Door Replacement										
Kitchen and Baths Refurbishing										
Lighting		13,022								
Mechanical Room Drywall	<i>Unfunded</i>									
Roof, Resurfacing					78,263					
Rubberized Flooring										
Tavern Refurbishing	40,638									
Water Heater							7,979			
Building Components Total:	40,638	25,579		32,860	78,263		57,150			
Grounds Components										
Flag Pole										
Ornamental Trees										
Retaining Walls		37,206								
Rock-lined Swale, 29 Black Forest										
Shrubs							4,313			
Grounds Components Total:		37,206					4,313			

Hickory Woods HOA
Team Engineering Annual Expenditure Spread Sheet, Threshold Funding Model

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Description										
Signs										
Signs										
Signs Total:										
Paving & Flatwork										
Asphalt Overlay- Tavern Hill and Church						197,862				
Asphalt, Overlay - Black Forest, Pepper Hill and Quarry										
Asphalt, Replacement - Parking and Sidewalk				80,522						
Asphalt, Sealcoat & striping - Parking and Sidewalk	9,031					10,469				
Walkways, Flagstone & Patio										
Paving & Flatwork Total:	9,031			80,522		208,331				
Fire Protection / Life Safety										
Fire Alarm System		13,952								
Fire Protection / Life Safety Total:		13,952								
Plumbing										
Leachfield Replacements first 5 - Phase 1	212,399									
Leachfield Replacements first 5 - Phase 2		218,771								
Leachfield Replacements first 5 - Phase 3			225,334							
Leachfield Replacements first 5 - Phase 4				232,094						
Leachfield Replacements first 5 - Phase 5					239,057					
Leachfield Replacements second 5 - Phase 1						246,228				
Leachfield Replacements second 5 - Phase 2							253,615			
Leachfield Replacements second 5 - Phase 3								261,224		
Leachfield Replacements second 5 - Phase 4									269,060	
Leachfield Replacements second 5 - Phase 5										277,132
Wastewater, Sewage Pump							3,235			
Plumbing Total:	212,399	218,771	225,334	232,094	239,057	246,228	256,850	261,224	269,060	277,132
Amenities										
Courts, Miscellaneous Phase 1										
Courts, Miscellaneous Phase 2				93,449						
Amenities Total:				93,449						

Hickory Woods HOA
Team Engineering Annual Expenditure Spread Sheet, Threshold Funding Model

Description	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Special Studies										
Leachfield Inspections										
Pavement Survey							7,548			
Reserve Study Update					8,131					9,426
Special Studies Total:					8,131		7,548			9,426
Year Total:	262,067	314,483	225,334	438,926	325,450	454,559	325,861	261,224	269,060	286,558