

CRITERIUM[®] ENGINEERS

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Via e-mail: tldepuey@bresnan.net

April 1st, 2018

Attn: Thane De Puey

Lake Forest HOA

c/o Kevin Lovett
Summit Resource Group

Property: Lake Forest
Lake View Terrace-Frisco, CO

Service: Full Reserve Study

Attachment: Final Report

Dear Mr. De Puey and members of the Board,

As requested by Summit Resource Group on your behalf, Criterion Engineers has completed a Full Reserve Study for the Lake Forest HOA. We submit our final report herewith for the Board's consideration and review.

We appreciate your careful review of our submittal.

This Full Reserve Study has been performed in general accordance with Community Association Institute (CAI) National Reserve Study Standards. However, Criterion's scope of service has exceeded CAI's guidelines with regard to our engineering evaluation of the property's condition, identification of current deficiencies, and consideration of appropriate capital expenditures.

I was on site and observed the property on 10/17/17. During that site visit, I met with Thane De Puey of Lake Forest HOA and Keith McBrearty-site maintenance.

We have reviewed the condominium covenants and original construction layout drawings for the property.

The report herewith should be reviewed in its entirety, including its Appendices which contain the financial analysis, captioned photographs, and reference documents.

In this report, one alternate funding plan is presented for the Board's consideration. We look forward to working with you to develop a satisfactory plan for adoption.

Typically, our final report published for review by the Association's general membership would include only the projections of the current funding plan and the adopted plan. However, we will also include some or all of the preliminary alternates as the Board directs.

As a result of our on-site inspections and other investigations, we find the common components of your community to be in good general condition and well-maintained. However, we did observe some deficiencies and some deferred repairs which are noted in the report.

In reviewing the engineering assumptions, cost estimates and projected fund values herein, please understand that their accuracy diminishes greatly beyond Year 5. Long range facility maintenance projections are intended only to indicate the likely pattern of capital expenditures and to guide financial planning. Criterium agrees with CAI's recommendation that reserve studies should be updated regularly to allow periodic adjustment of facility plans and funding strategies.

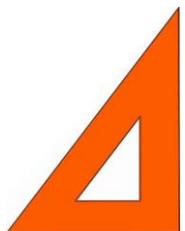
If you have any questions or would like to discuss next steps then please contact John Cona at 720-788-6680.

Criterium Engineers appreciates this opportunity to assist the Board in support of the Association's facility and financial planning.

Thank you.

CRITERIUM-CONA ENGINEERS

John A Cona, Colorado PE-0036481 President



Lake Forest HOA
Lake View Terrace

FRISCO, COLORADO

Prepared for:
BOARD OF DIRECTORS

As requested by Thane De Puey-HOA President

Prepared by:



Site Inspection 10/17//17
INITIAL DRAFT submitted: 11/17/17
FINAL REPORT Submitted 4/1/18



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1.0 INTRODUCTION

Following authorization by the Lake Forest HOA Lake's Board of Directors, Criterium Engineers has conducted a Full Reserve Study of your 73-unit residential community located in Frisco, Colorado.

This report must be reviewed in its entirety to understand our findings and their limitations. The Appendices are an integral part of this report and must be included in any review. Please refer to Appendix D for definitions of common terms of reference used herein.

We have conducted the study in general accordance with the National Reserve Study Standards published by the Community Association Institute (CAI). Please refer to Appendix D which contains a copy of the CAI standard.

This study was conducted by licensed Professional Engineers and other qualified staff working under the responsible charge of a CAI-certified Reserve Specialist. Please refer to Appendix E for the qualifications of the project team.

Criterium Engineers' John Cona-PE, performed the site study.

In reviewing the engineering assumptions, cost estimates and projected fund values herein, please understand that their accuracy diminishes greatly beyond Year 5. Long range facility maintenance projections are intended only to indicate the likely pattern of capital expenditures and to guide financial planning. Criterium agrees with CAI's recommendation that reserve studies should be updated regularly to allow periodic adjustment of facility plans and funding strategies.

2.0 EXECUTIVE SUMMARY

In summary, as a result of our on-site inspections and other investigations, we find the common components of the property to be in good general condition and well-maintained.

We observed some deficiencies and some deferred repairs which are noted herein.

We have updated an inventory of Association-responsible common components which are likely to require periodic repair or replacement or other recurrent capital investment.

We have formed an opinion of the remaining useful life of each component. We have estimated the current cost of required capital expenditures for their repair or replacement. We have projected annual capital budgets over a 30-year planning period.

We have also interviewed the Board President to learn of any planned facility improvements which will require capital expenditures.

The property management company has provided us with information on the Association's Capital Reserve Fund and the current funding plan. Our initial financial analysis was based on the data supplied.

Given the projected \$38,535 starting balance of the Capital Reserve Fund on 1/1/18, the current annual rate of contribution of \$98,064 and an anticipated average rate of return on investment of 1% per year, our financial analysis indicates that the Association's current funding will not be adequate to meet future needs.

We have provided one option for increased funding. Alternate 1 includes the sale of the rental unit owned by the HOA in 2019 and a one-time assessment of \$1,150,000 in 2019. The current annual payment could be reduced by 27% in 2020.

3.0 PURPOSE & SCOPE

3.1 OBJECTIVES

The purpose of this reserve study is to determine a capital needs plan for the Association, to evaluate the current rate of contribution to the capital reserve fund, and, if required, to suggest alternate funding strategies.

This report is intended to be used as a tool by the Association's Board for considering and managing its future financial obligations, for determining appropriate capital reserve fund allocations, and for informing the individual Owners of the Association's required capital expenditures and the resulting financial plan.

For purposes of financial planning, Association-responsible expenses are typically divided into two categories:

- Operation and maintenance (O&M) of commonly-held elements of real property and other assets. These O&M expenses usually include taxes, insurance, property management costs and other service fees.
- Capital expenditures for major periodic repairs or replacement of commonly-held elements.

Normal, recurring O&M costs are typically paid by the individual Owners through periodic assessments or service fees equal to their share of the annual budget, which is estimated based on cost projections of either actual or average levels of expense.

Some additional contingency amount may be included in annual O&M budgets to result in a yearend surplus which is carried forward year-to-year to cover variations in annual costs or any uninsured losses. This carry-over is often referred to as an operating reserve.

These O&M costs, their funding and operating reserves are not typically considered by a Reserve Study.

Long-term capital expenditures, their funding plan and ensuring adequate Capital Reserve Fund balances are the focus of this Reserve Study.

Studies of this nature are important to ensure that a community will have sufficient funds for long-term, periodic capital expenditure requirements. This helps preserve the value of the community and the units within it.

Anticipating significant expenditures over an extended period of time will assist the Association in determining appropriate levels of present and ongoing contribution to a capital reserve fund which will result in adequate balances to cover these expenses as they arise without any need for borrowing or special assessments.

Of course, borrowing or special assessments may be part of some capital plans. However, our study will not consider these sources of revenue unless directed to do so by the Board. We caution our clients to check state regulations which may limit or preclude these options.

Our capital expenditure forecast is more reliable over its first few years than in later years.

History demonstrates that, as time progresses, property conditions and management strategies will change. As a result, planned scopes of work may be altered or deferred. Actual cost in the marketplace will vary from estimates. Actual rates of inflation and returns on investment will vary from projections.

For these reasons, we concur with the Community Association Institute guidelines and recommend that this reserve study be updated every three to five years.

3.2 LEVEL OF SERVICE

The Community Association Institute (CAI) identifies three levels of service for Reserve Studies:

- I. Full Reserve Study, with site visit
- II. Reserve Study Update, with site visit
- III. Reserve Study Update, without site visit (never recommended)

All may be appropriate for a community, depending on the condition of the facility and the phase of their planning cycle. The CAI National Reserve Study Standard in Appendix D contains more detail on these levels of service and the scope of study of each of them.

Our current study is a Full Reserve Study.

Criterion's actual scope of service is enhanced and exceeds the CAI standard in two principal ways:

- Our investigation and evaluation of the property is performed by experienced professional engineers
- After preparing and submitting our initial analysis, we engage in an iterative review process with the Board and their Property Manager, toward developing a financial plan more responsive to the needs of the HOA.

3.3 SOURCES OF INFORMATION

The following people were interviewed during our study:

Board members:

1. Thane De Puey

Property management staff at Summit Resource Group.

2. Kevin Lovett

Site Maintenance

3. Keith McBrearty

4.0 PHYSICAL ANALYSIS

4.1 PROPERTY DESCRIPTION

Please refer to Appendix C for captioned photographs and site plan.

The Lake Forest HOA property is located in Summit County and consists of 6 wood framed condominium buildings with multiple garage structures built in 1997.

This is a residential property with 73 units located North of Lake Dillon and East of Frisco, CO. One of the units is a rental unit owned and managed by the HOA.

The site is accessed from Dillon Dam Road from the South side of the property.

The property generally slopes from the North to South-East direction.

Building layout drawings and Plat plans from the original survey are available for review.



There is forested land on an upslope elevation to the North of the property with Hwy 70 past the forested land. Open land to the East and West. Dillon Dam Road and Lake Dillon to the South.

This is a 73-unit condominium complex composed of six 3-story buildings. There are single story independent garage structures with assigned spaces for unit owners. There is a clubhouse with 3 hot tubs and a bathroom under a covered roof.

Building E & F have garages located on the ground floor of the building.



The main entrance off of Dillon Dam Road has facility signage. There is only one entrance to the property.

The buildings have typical underground utility services including public water and sewer, electric, natural gas and telephone.

Electrical & natural gas unit meters are mounted on outside of each building in a covered area.



The site landscaping appears to be in good condition with mature trees and vegetation. The grass is well maintained. There is a park area adjacent to the clubhouse and 7 barbecue grills on the site available to residents.

4.2 COMMON COMPONENTS

Please refer to Appendix A for the Common Component Inventory.

Association-responsible common components include:

- Asphalt-paved roads and unit parking areas
- Storm water transport systems.
- Sanitary sewers
- Landscaping & irrigation system
- Rock and railroad tie retaining walls
- Club house with bathroom
- Clubhouse area mechanical, electrical & plumbing systems
- Fences – clubhouse area
- Site lighting
- Signage
- Unit foundations
- Unit roofing – Building and garages
- Unit siding & trim- various materials

- Unit stairs & breezeways
- 3 hot tub spas and associated equipment
- The underground water, electrical services & pad-mount transformers and on-property low-voltage telephone appear to be owned and maintained by the utility carriers.
- Fire control centers-supply to sprinkler head
- Fire place chimneys
- Barbecue grills

Individual Unit Owners are responsible for maintenance & repairs of their own garage doors, window glass and entrance doors.

4.3 CONDITION ASSESSMENT

4.3.1 Site-General

Description & Observations

Roof and surface storm water runoff drain through gutters, downspouts, concrete drainage swales and underground storm water drainage outlets.

The buildings have partial gutters and downspouts designed to move water away from the foundations. No areas of surface standing water were observed although there were drainage issues present on the property. There were some areas of storm water erosion observed primarily at the railroad tie retaining walls.

Overall, the storm drainage system appears to need some improvement to protect the property for the future.

The asphalt is in fair condition with evidence of crack sealing and topcoat application around 2014.

The asphalt roadway and parking areas have not been striped.

No handicapped access was observed on the property and access to the units involved stairs in all locations.

Fire hydrants and fire alarm control panels were observed in each building on the property. Fire alarm panel is monitored and located in lower level stairwells. The supply piping to individual units is the POZ-LOK system in A, B, E and F building that has been recalled by the manufacturer. This system has not developed any problems to date, but there is a lawsuit in progress.

There is a wood framed trash receptacle building located centrally on the property with an aluminum overhead door to allow access to the metal dumpster.



4.3.2 Condo Building & Garage Structure Exterior

Description & Observations

The building foundations are constructed of cast-in-place stem wall and spread footer reinforced concrete. The building's structural support systems appear to be well designed and constructed with no visible movement observed. Visibility was limited to external building structural and visible inspection in stairwells and first floor units.

There was cracking evident in the foundation on the east side of building A. This foundation wall did not show any evidence of bulging or movement and the recommendation is to monitor with no repair required at this time. This cracking is insignificant and not an indication of foundation settlement issues.



The buildings' walls are finished with 4” or 8” beveled lapped wood siding materials. The siding material and trim boards are stained. Building exteriors are showing signs of environmental wear from 20 years of Summit County weather conditions. There is an intact Tyvex-type wrap behind the external wood covering that protects the structure. The lower 2 ft. of the wood siding has been replaced in some areas on the South side of building A-D. This replacement appears to be in areas where snow is in contact with the siding for extended periods in the winter months.

The wood siding needs to be removed and replaced in several areas where there is visible cupping or buckling of the exterior boards. This can be performed on an as-needed basis or part of an overall upgrade to the property. We have evaluated complete siding replacement for buildings and garages as part of this reserve study.

The building wrap will not last for an extended period of time after being exposed to the elements. Wind, sun rain and snow will damage the wrap material if not properly protected by the wood siding.

The garage doors are wood composite with electric garage door openers. The doors and openers are the responsibility of the individual owners.

There are standing walls on the South side of building A and B that are not properly constructed and are open to the environment on top of the wall as shown in the following photo. These should be repaired and capped to prevent any further deterioration.



The buildings were originally constructed with gaps in the trim that allow bats to enter the attic spaces. Site maintenance has been closing these gaps with a mesh material as an ongoing project.



The sloped roofs on condo buildings and garages are surfaced with a standing seam metal roof installed in 2007. These sloped roofs have typical metal flashing installed. Ridge exhaust venting was observed on the metal roofs but very limited soffit inlet vents were visible. Good inlet and outlet airflow is important in roof design to eliminate moisture and heat buildup that can damage roofing materials.

There are numerous chimney, plumbing and HVAC vent penetrations through the building roofs. It is important to inspect these penetrations approximately every 5 years. The plumbing vents are susceptible to cracking of the rubber boot as these deteriorate with age and UV damage. Early detection can prevent costly leakage into the condo units. All of the units have fireplaces and natural gas fired forced air heating units with exhausts through the roof.

The sloped asphalt shingle roofs on the garages and the clubhouse are showing deterioration and need replacement in 2018. The clubhouse roof is currently missing shingles in 3 places and this should be repaired in 2017.

Flat rolled EPDM roofing material is present on the garage roofs.

4.3.3 Condo Building Interior

Description & Observations

This section of the report addresses the rental unit D101 interior and breezeways.

Rental Unit

The rental unit in Building D is D101. The refrigerator is 1 year old, the stove and dishwasher are approximately 10 years old. The furnace, counters, cabinets and bathroom fixtures are original. The carpeting is 7 years old and the water heater was replaced in 2017.

The rental unit is in good condition and no damage to ceiling or wall drywall was observed.



Breezeways

There are breezeways located in each building. The breezeways have staircases in each building that access the individual units. The common area breezeways are wood framed walkways accessing the first, second and third floor units. Breezeway lighting including chandeliers is provided and the breezeway is open on one end with no heating or cooling.

The breezeways have lapped wood siding and stairs with wood risers and stairs. Metal handrails are installed. Fire extinguishers were observed in breezeway area.

The breezeways are protected from the weather and in good condition. The roof and windows protecting the stairs in building A-D were installed after 1997 to protect these stairs and appear to have weathered well.

CLUBHOUSE

4.3.4 Clubhouse Interior

Interior of clubhouse is finished with good quality materials and fixtures, which appear to be in satisfactory condition. The roof is an open wood beam design with an asphalt shingle roof.

There is a bathroom with toilet and sink. The walls are drywall and ceramic tile with a ceramic tile floor.

4.3.5 Clubhouse Mechanical

Description & Observations

There is a small natural gas fired hot water heater 35-50 gallons capacity located under the floor. The heater appears to be over 10 years old.

4.3.6 Clubhouse Amenities

Description & Observations

Amenities for the clubhouse includes 3 hot tub spas and one restroom under an open roof.

The spa equipment room was inspected and the major elements were included on the component list. This includes heaters, pumps and filtering equipment. The pool equipment room appeared to be well laid out and maintained.

4.4 CURRENT DEFICIENCIES

Based on the Board's list of concerns and our own observations, we identified design & construction deficiencies and deferred repairs which may require near-term repair, corrective action or improvements:

Correction of some of these items do not represent expense over \$1000.00 and should be covered by normal operations & maintenance budgets. We have not made any allowance for these "de minimis" items in the capital expenditure budget projection.

4.5 LIFE & VALUATION

4.5.1 Opinions of Useful Life

Simply stated, for components which require periodic capital expenditures (CapEx) for their repairs or replacement, the frequency of work equals the typical, industry accepted expected useful life (EUL) for the type of feature:

- Component's Frequency of CapEx = Component's EUL

And, the remaining useful life (RUL) of a component before the next capital expenditure for its repair or replacement is equal to the difference between its EUL and its age:

- $RUL = EUL - \text{Age}$

Of course, the condition and rate of deterioration of actual site improvements and building elements rarely conform to such simple analysis. And, often, a property's history and available documentation does not provide any record of a particular component's actual age.

In our experience, the effective age and actual RUL of an installed item vary greatly from its actual age and calculated RUL. These variances depend on the quality of its original materials and workmanship, level of service, climatic exposure, and ongoing maintenance. As part of Criterium's work on this reserve study, we have determined our opinion of the effective age, EUL and RUL of each common component based on our evaluation of its existing condition and considering those factors.

As a result, in preparing the CapEx schedule for reserve studies, we often:

- Accelerate the schedule of work for components found to be in poorer condition than expected for their age.
- Defer work for components observed to be in unusually good condition.

In reality, capital repair and replacement work for some components is often spread over a number of years. This may be done because not all on-site installations of a particular type of component age or deteriorate at the same rate. Or, work may be scheduled in phases to limit disruption or ease cash flow.

For these reasons, when it seems appropriate we will spread some budgets over multiple years. However, it is beyond the scope of this reserve study to prioritize the need for work between a number of buildings or installed locations or to closely specify or breakdown phased work packages.

In summary, we have based our opinion of the remaining service life and expected frequency and schedule of repair for each common component on some or all of the following:

- Actual or assumed age
- Observed existing condition
- Association's or Property Manager's maintenance history and plan
- Our experience with actual performance of such components under similar service and exposure
- Our experience managing the repairs and replacements of such components

We use the following documentation to guide our considerations:

- Fannie Mae - Expected Useful Life Tables
- National Association of Home Builders - Life Expectancy of Components
- Marshall & Swift Valuation Service Expected Life Expectancies

4.5.2 Cost Estimating

In developing our estimate of capital expenditure for most common components, we have estimated a quantity of each item and also a unit cost for its repair or replacement. In some cases, it is more appropriate to estimate a lump sum cost for a required work package or 'lot'.

Unless directed to take a different approach, we assume that contract labor will perform the work and apply appropriate installer's mark-ups on supplied material and equipment. When required, our estimated costs include demolition and disposal of existing materials, and protection of other portions of the property.

When appropriate for large capital projects, we will also include soft costs for design and project management, and typical general contractor's cost for general conditions, supervision, overhead and profit.

We have based our opinion of unit and lump sum costs on some or all of the following:

- Records of previous maintenance expenses
- Previously solicited Vendor quotations or Contractor proposals.
- Provided capital budgets developed by others.
- Our project files on repairs and replacements at other properties

We use the following publications to guide our considerations:

- On-Line R S Means - Construction Cost Data
- Marshall & Swift Valuation Service Facility Cost Index

Annual aggregated capital expenditure budgets have been calculated for all years during the study period by inflating the annual tallies of current dollar cost estimates, and compounding for inflation at 2.5 % per year.

Of course, it is impossible to accurately predict inflation fluctuation. Three percent is close to the average annual values of both consumer and construction cost increases since the US Bureau of Labor Statistics started publishing data approximately 85 years ago.

5.0 FINANCIAL ANALYSIS

Please refer to Appendix A which contains tables and graphs illustrating the findings following below.

5.1 CAPITAL EXPENDITURE PROJECTION

Based on our investigations and estimates described in Section 4 of this report, we have identified likely capital expenditures throughout the study period.

The Board did not identify other planned new amenities or other improvements to the property which will require any capital expenditures by the Trust over the 30-year study period.

Please note that we have assumed that the cost of minor repair & replacement work valued at less than \$1000.00 will be covered by normal Operations & Maintenance budgets. Such “de minimis” costs may be for one-time work on a single item, or aggregated repairs of a type of component over a year.

We have not included any capital budget allowances for repair of casualty damage by vehicle impact, severe storm action, etc. It is assumed that such expenses would be defrayed by proceeds of insurance claims.

5.2 CURRENT FUNDING

5.2.1 Board-Provided Information

At the time we were retained to provide this study, we were provided with initial information on the Trust's Capital Reserve Fund and its funding plan.

Our initial financial analysis was based on the data supplied.

For Designated Year:	2018
Starting Fund Balance:	\$38,535.00
On Date:	1/1/18
Current Contribution:	\$98,064/yr.
Planned Increases:	none

Special Assessments: none

Projected Average Return on Investment: 1%

Projected Rate of inflation: 2.5%

Financial data, records of past expenses, and cost estimates provided by others have been taken in good faith and at face value. No audit or other verification has been performed.

5.2.2 Current Funding Plan Projection

Our initial analysis was a projection of the Association's current rate of contribution forward over 30 years with no increases.

For detailed data, please refer to the Appendix A. tables and graphs titled "Capital Reserve Fund - 30-Year Cash flow Projection - Current Funding Plan"

5.3 ALTERNATE FUNDING PLANS

In this draft report, we are planning to maintain a minimum threshold reserve fund balance of \$50,000.

We have prepared one alternate funding plan for the Board's consideration:

- ALTERNATE 1- includes the sale of the rental unit owned by the HOA in 2019 and a one-time assessment of \$1,150,000 in 2019. The current annual payment could be reduced by 27% in 2020.

We look forward to working with the Board to develop a satisfactory plan for their adoption.

5.4 FUNDING METHODOLOGIES (Background Information)

The following sections of the report are general in nature and most are not specific to your Association.

They are included to provide a framework for consideration of the study, and to explain our approach to the funding analysis. We also recommend the Board review the Community Association Institute (CAI) National Reserve Study Standards attached hereto in Appendix D.

The Community Association Institute (CAI) recognizes several funding methodologies, all of which may be used to satisfy these goals:

- Fiscally Responsible
- Maintains Property Values

- Sufficient Funds Available When Required
- Stable Contribution Rate over the Years
- Evenly Distributed Contributions over the Years

Some of the more common methods are outlined below

For this reserve study, Criterium has utilized a cash flow based funding approach as described in Section 5.4.3 below.

5.4.1 Statutory Funding

Some states regulate the management of home owner associations, including the fiduciary responsibility of its Officers or Board regarding reserve funding.

To our knowledge, Colorado does not require any particular funding criteria.

5.4.2 Covenantal Funding

The legal documents which originally establish a homeowner's association may set forth guidelines for its reserve funding.

5.4.3 Cash Flow Based Funding

Criterium's recommended approach to reserve planning utilizes a cash flow model.

A cash flow based funding plan is prepared so that contributions to capital reserves are selected to be sufficient to offset future variable annual capital expenditures.

Our engineering evaluation and planning yields a projected annual capital expenditure (CapEx) budget schedule over the planning period. This CapEx plan and the Association's current rate of contribution to reserves is entered into our computer model.

The model allows us to determine whether the Association's current rate of contribution will prove sufficient to meet capital obligations over the planning period.

And, if not, our computer model allows us to develop alternate contribution strategies for the Association's consideration.

Baseline Funding

The goal of baseline funding is to maintain positive year-end balances throughout the planning period.

Threshold Funding

One strategy to ensure there will be sufficient funds available to cover unplanned emergencies is to maintain prudent minimum threshold reserve balances. In the face of unusual and uninsured expenses, this may eliminate the need for either making a special assessment or borrowing money.

Often, the initial threshold is established as some multiple of the average annual CapEx budget in current dollars, and then projected ahead at the selected rate of inflation.

Maintaining significant threshold balances has the additional benefit of allowing the association to generate greater returns on investments and thereby reduce the rate of Owners' contribution to reserves.

Of course, the benefits of establishing larger threshold balance values must be weighed against Unit Owners' preference to control their own funds.

5.4.4 Component Based

A component-based funding plan is based on calculated incremental savings toward the eventual repair or replacement of each individual common component.

The accounting concept underlying component-based funding is that an Association should save for repair or replacement of each of their common assets at an annual incremental amount equal to the annual straight-line depreciation of the item. In this way, it will accumulate its full value in capital reserves at the time it is fully depreciated and funds may be required for a capital expenditure.

In our experience, a component-based funding plan based on a comprehensive common component inventory will produce a very conservative funding strategy for an Association.

5.4.5 Special Assessments

The goal of nearly all reserve studies is to establish a regular, periodic rate of contribution to reserves which ensures there will be sufficient funds when required.

However, sometimes it is necessary to boost the reserve balance quickly, before there is adequate time to accumulate funds through regular savings. In those cases, assuming the Unit Owners' personal finances can support it, it is expeditious to assess a lump sum special payment.

Special assessments are often tied to, or ear-marked for, some particular capital expenditure. This may be a periodic but unusually high expense such as re-paving or re-roofing. Or, it may be to collect funds to pay for some desired new amenity, such as a new tennis court or an elevator.

Although it is unusual, if the individual Unit Owners who form an Association all have sufficient means, the membership may prefer to manage their own investments and contribute to capital expenses only on the basis of annual special assessments.

5.4.6 Borrowing

The goal of nearly all reserve studies is to establish a regular, periodic rate of contribution to reserves which ensures there will be sufficient funds when required.

However, sometimes it is necessary to boost the reserve balance quickly, before there is adequate time to accumulate funds through regular savings. In those cases, if the Unit Owners' personal finances cannot support a special assessment, then the Association may need to borrow the funds.

Borrowing is often justified to obtain funds for some particular capital expenditure. This may be a periodic but unusually high expense such as re-paving or re-roofing. Or, a loan may be taken to obtain funds to pay for some desired new feature, such as a tennis court or enhanced interior furnishings.

When funds are borrowed, then part of regular, periodic contributions of the membership in the following years will be ear-marked for repaying the loan.

6.0 LIMITATIONS

This information in this study is not to be considered a warranty of condition, quality, compliance or cost. No warranty is implied.

Financial data, records of past expenses, and cost estimates provided by others have been taken in good faith and at face value. No audit or other verification has been performed.

The observations described in this study are valid on the dates of the investigation and have been made under the conditions noted in the report.

This study is limited to the visual observations made during our inspection. We did not undertake any excavation conduct any destructive or invasive testing, remove surface materials or finishes, or displace furnishings or equipment.

Except as specifically noted, we did not observe or inspect the following areas and items:

- Buried foundations, utility services and infrastructure
- Locked or inaccessible or confined spaces

In the absence of other information such as records from construction or previous inspections, or indirect evidence of concealed conditions, we cannot form any opinion on unobserved portions of the facility.

However, our opinion regarding concealed portions of the property and their condition are informed by our experience with other similar facilities.

In some cases, we inspected only a representative sample of site improvements and building spaces, components, systems or equipment. We cannot be responsible for unobserved aberrations.

We did not perform any computations or other engineering analysis as part of this study, nor did we conduct a comprehensive code compliance investigation.

We did not undertake to completely assess the structural stability of the buildings or the underlying foundations and soils. Similarly, we performed no seismic assessment.

We did not undertake a comprehensive environmental assessment of the facility, nor perform any sampling or testing for hazardous materials.

Capital budgets are opinions of likely expense based on rough cost estimates. We have not obtained competitive quotations or estimates from contractors. Actual costs can vary significantly, based on the eventually determined scope of work, availability of materials and qualified contractors, and many other variables. We cannot be responsible for variances.

Criterion Engineers prepared this confidential report for the review and use of the Board of the Association. We do not intend any other individual or party to rely upon this study without our express written consent. If another individual or party relies on this study, they shall indemnify, defend and hold Criterion Engineers, its subsidiaries, affiliates, officers, directors, members, shareholders, partners, agents, employees and such other parties in interest specified by Criterion

Engineers harmless for any damages, losses, or expenses they may incur as a result of its use. Any use or reliance of the report by an individual or party other than shall constitute acceptance of these terms and conditions.

Criterion Engineers does not offer financial counseling services. Although reasonable rates of inflation and return on investment must be assumed to calculate projected balances, no one can accurately predict actual economic performance. Although reserve fund management and investment may be discussed during the course of the study, we do not purport to hold any special qualifications in this area.

We recommend that the Board also seek other professional guidance before finalizing their current capital reserve fund planning activity. Depending on issues which may arise, an appropriate team of consultants to aid decision-making might include their property manager, accountant, financial counselor and attorney.

7.0 CONCLUSION

Criterion Engineers appreciates this opportunity to assist the Board in support of the facility and financial planning. We are pleased to present this report for the Board's consideration and use.

To the best of our ability, we have attempted to work in the best interest of the Board toward fulfillment of their fiduciary responsibilities and obligations to the individual Unit Owners who comprise the association's membership.

In our professional opinion, and within the limitations disclosed elsewhere herein, all information contained herein is reliable and appropriate to guide the Board's deliberations and decision-making.

All of Criterion's work for this study has been carried out in strict accordance with the CAI Code of Ethics. We consider our report confidential, and will not share its content with anyone but the Board without its knowledge and release.

We are unaware of any other involvement or business relationship between Criterion Engineers and the Developer, or individual Unit Owners, or members of the Board.

If you have any further questions or would like to direct additional, follow-on services then please contact John Cona, P.E. at 720-788-6680

Criterion Engineers appreciates this opportunity to assist the Board in support of the association's facility and financial planning. Thank you.

Thank you.

Respectfully submitted,

CRITERIUM-CONA ENGINEERS

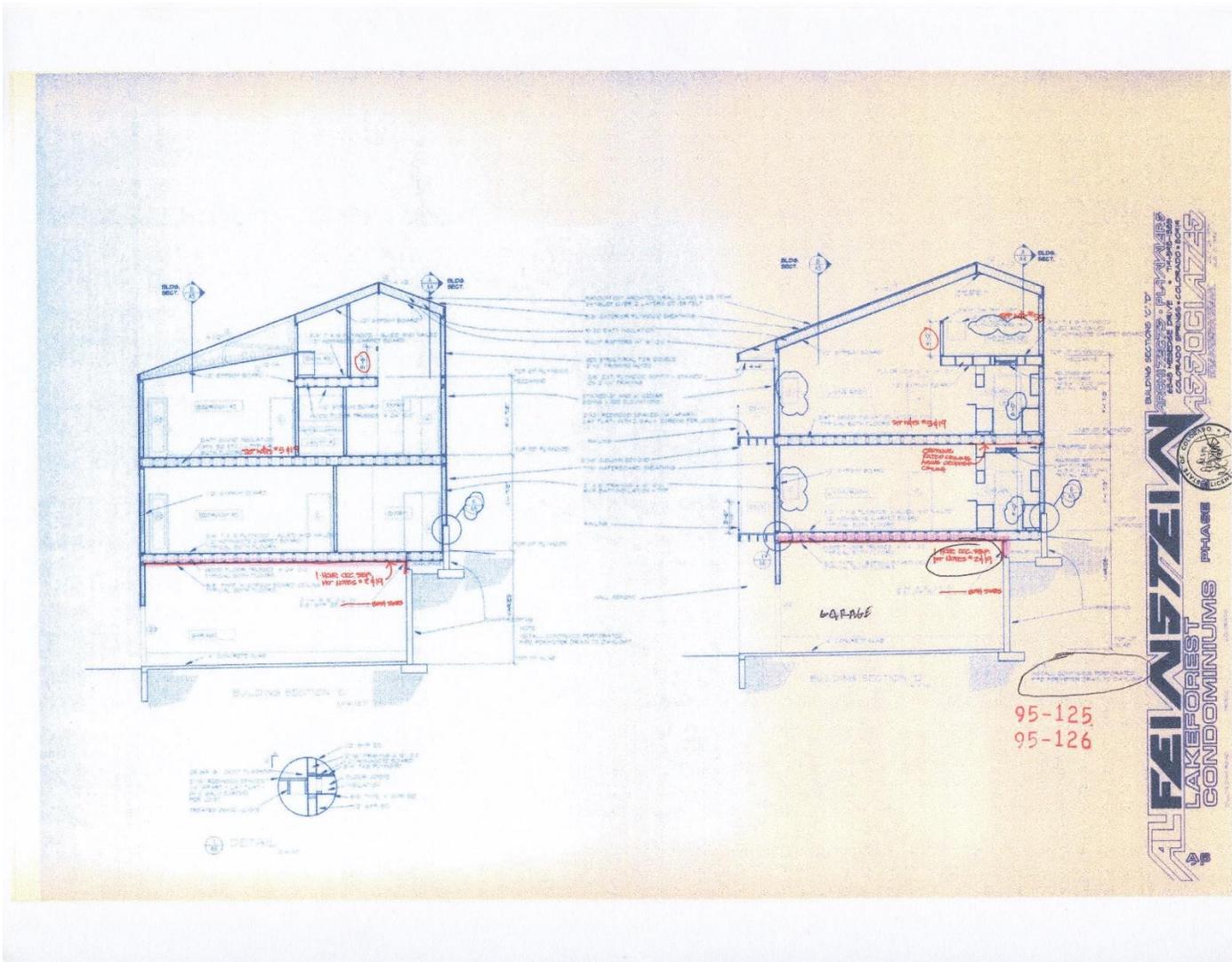
John A Cona, Colorado PE-0036481
President

APPENDIX A: FINANCIAL EXHIBITS

See Attached Financial documentation



Imagery ©2017 Google, Map data ©2017 Google 100 ft



Lake Forest HOA
Frisco, CO

Photos taken by:
John Cona- PE #0036481

Date-Oct. 17,2017

APPENDIX C: PHOTOGRAPHS

Lake Forest HOA
Frisco, CO

Photos taken by:
John Cona- PE #0036481

Date-Oct. 17,2017

Photo Number

1

Description:

Typical garage structure-
asphalt shingle roof on steep
slope area, lapped wood
siding.



Lake Forest HOA
Frisco, CO

Photo taken by:
John Cona- PE #0036481

Date-Oct. 17,2017



Photo Number

2

Description: Sloped roof over utility meters- needs to be properly attached and new flashing added. Flashing should be attached to wall and loose over top of roof.



Photo Number

3

Description: Damage from uncapped standing wall as described in 4.3.2.



Photo Number

4

Description: Concrete drainage in front of B-building garages.



Photo Number

5

Description: Typical drain in floor of Building A-D. These drains are critical to remove any water that gets into the stairwell. Some drains were not functioning and there was no indication that they were draining outside the building.



Photo Number

6

Description: General building photo of Building F



Photo Number

7

Description: Typical water damage in B-building garage. Water came in under door during rain event.



Photo Number

8

Description: Clubhouse roof damage



Photo Number

9

Description: Insulated walls and piping under spa deck



Photo Number

10

Description: Clubhouse roof structure- Posts supported by concrete piers.



Photo Number

11

Description: Typical deck and metal railing Building D



Photo Number

12

Description: Breezeway-Building E



Photo Number

13

Description: Typical concrete damage.

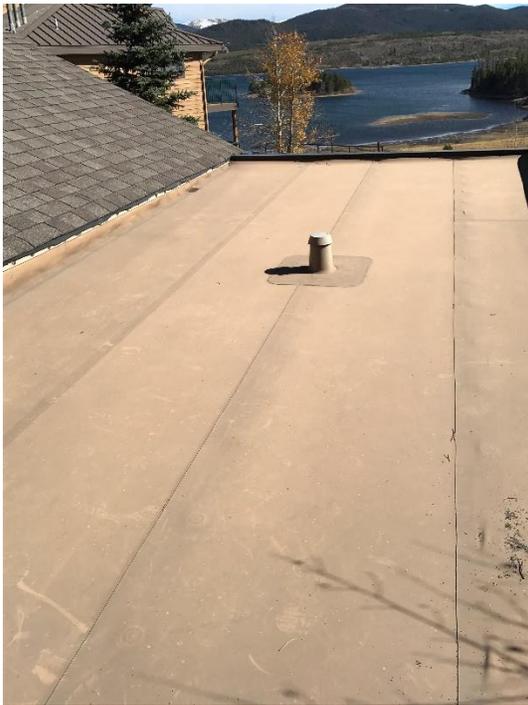


Photo Number

14

Description: Typical EPDM roof on garage.



Photo Number

15

Description: Damage to asphalt shingle roof on garage from environmental wear and foot traffic.



Photo Number

16

Description: Erosion at East end of retaining wall behind Building F



Photo Number

17

Description: Balcony support post deterioration Building E



Photo Number

18

Description: Surface corrosion
stair joist hangers Building B

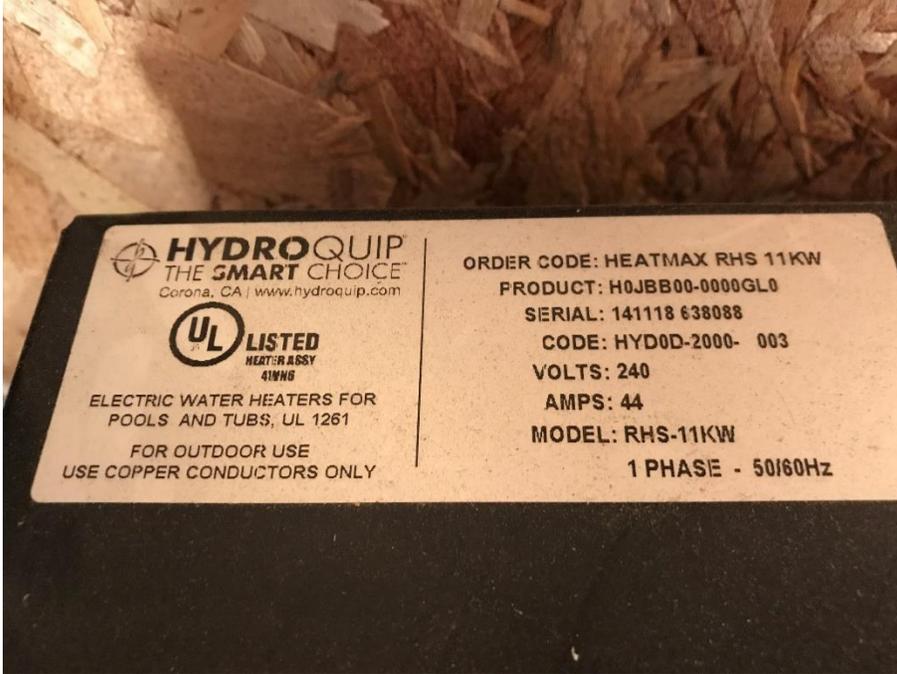


Photo Number

19

Pool heater



Photo 20: Utility markings



Photo 21: Utility markings



Photo 22: Spa pumps-tag not readable



Photo 23: Triton II spa sand filter

APPENDIX D: REFERENCE DOCUMENTS
CAI RESERVE STUDY STANDARDS

11/2014

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Reserve Specialist (RS) Code of Ethics	Appendix 1

General Information

Reserve Study

A Reserve Study is made up of two parts, 1) the information about the physical status and repair/ replacement cost of the major common area components the association is obligated to maintain (Physical Analysis), and 2) the evaluation and analysis of the association's Reserve balance, income, and expenses (Financial Analysis). The Physical Analysis is comprised of the Component Inventory, Condition Assessment, and Life and Valuation Estimates. The Component Inventory should be relatively "stable" from year to year, while the Condition Assessment and Life and Valuation Estimates will necessarily change from year to year. The Financial Analysis is made up of a finding of the client's current Reserve Fund Status (measured in cash or as Percent Funded) and a recommendation for an appropriate Reserve contribution rate (Funding Plan).

Physical Analysis

- Component Inventory Fund Status
- Condition Assessment Funding Plan
- Life and Valuation Estimates

Financial Analysis

-
-

Levels of Service

The following three categories describe the various types of Reserve Studies, from exhaustive to minimal.

- I. **Full:** A Reserve Study in which the following five Reserve Study tasks are performed:
 - Component Inventory
 - Condition Assessment (based upon on-site visual observations)
 - Life and Valuation Estimates
 - Fund Status
 - Funding Plan

- II. **Update, With-Site-Visit/On-Site Review:** A Reserve Study update in which the following five Reserve Study tasks are performed:
 - Component Inventory (verification only, not quantification)
 - Condition Assessment (based on on-site visual observations)
 - Life and Valuation Estimates
 - Fund Status
 - Funding Plan

- III. **Update, No-Site-Visit/Off Site Review:** A Reserve Study update with no on-site visual observations in which the following three Reserve Study tasks are performed:
 - Life and Valuation Estimates
 - Fund Status
 - Funding Plan

Terms and Definitions

CASH FLOW METHOD: A method of developing 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 anticipated schedule of Reserve expenses until the desired Funding Goal is achieved.

COMPONENT: The individual line items in the Reserve Study, developed or updated in the Physical Analysis. These elements form the building blocks for the Reserve Study. Components typically are: 1) Association responsibility, 2) with limited Useful Life expectancies, 3) predictable Remaining Useful Life expectancies, 4) above a minimum threshold cost, and 5) as required by local codes.

COMPONENT INVENTORY: The task of selecting and quantifying Reserve Components. This task can be accomplished through on-site visual observations, review of association design and organizational documents, a review of established association precedents, and discussion with appropriate association representative(s) of the association or cooperative.

COMPONENT METHOD: A method of developing a Reserve Funding Plan where the total contribution is based on the sum of contributions for individual components. See "Cash Flow Method."

CONDITION ASSESSMENT: The task of evaluating the current condition of the component based on observed or reported characteristics.

CURRENT REPLACEMENT COST: See "Replacement Cost."

DEFICIT: An actual (or projected) Reserve Balance less than the Fully Funded Balance. The opposite would be a Surplus.

EFFECTIVE AGE: The difference between Useful Life and Remaining Useful Life. Not always equivalent to chronological age, since some components age irregularly. Used primarily in computations.

FINANCIAL ANALYSIS: The portion of a Reserve Study where current status of the Reserves (measured as cash or Percent Funded) and a recommended Reserve contribution rate (Reserve Funding Plan) are derived, and the projected Reserve income and expense over time is presented. The Financial Analysis is one of the two parts of a Reserve Study.

FULLY FUNDED: 100% Funded. Then the actual (or projected) Reserve balance is equal to the Fully Funded Balance.

FULLY FUNDED BALANCE (FFB): Total Accrued Depreciation. An indicator against which Actual (or projected) Reserve balance can be compared. The Reserve balance that is in direct proportion to the fraction of life "used up" of the current Repair or Replacement cost. This number is calculated for each component, then summed together for an association total. Two formulae can be utilized, depending on the provider's sensitivity to interest and inflation effects. Note: Both yield identical results when interest and inflation are equivalent.

$$\text{FFB} = \text{Current Cost} \times \text{Effective Age} / \text{Useful Life}$$

or

$$\text{FFB} = (\text{Current Cost} \times \text{Effective Age} / \text{Useful Life}) + [(\text{Current Cost} \times \text{Effective Age} / \text{Useful Life}) / (1 + \text{Interest Rate})^{\text{Remaining Life}}] - [(\text{Current Cost} \times \text{Effective Age} / \text{Useful Life}) / (1 + \text{Inflation Rate})^{\text{Remaining Life}}]$$

FUND STATUS: The status of the reserve fund as compared to an established benchmark such as percent funding.

FUNDING GOALS: Independent of Methodology utilized, the following represent the basic categories of Funding Plan goals:

Baseline Funding: Establishing a Reserve funding goal of keeping the Reserve cash balance above zero.

Full Funding: Setting a Reserve funding goal of attaining and maintaining Reserves at or near 100% funded.

Statutory Funding: Establishing a Reserve funding goal of setting aside the specific minimum amount of Reserves required by local statutes.

Threshold Funding: Establishing a Reserve funding goal of keeping the Reserve balance above a specified dollar or Percent Funded amount. Depending on the threshold, this may be more or less conservative than "Fully Funding".

FUNDING PLAN: An association's plan to provide income to a Reserve fund to offset anticipated expenditures from that fund.

FUNDING PRINCIPLES:

- Sufficient Funds When Required
- Stable Contribution Rate over the Years
- Evenly Distributed Contributions over the Years Fiscally
- Responsible

LIFE AND VALUATION ESTIMATES: The task of estimating Useful Life, Remaining Useful Life, and Repair or Replacement Costs for the Reserve components.

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

PHYSICAL ANALYSIS: The portion of the Reserve Study where the Component Inventory, Condition Assessment, and Life and Valuation Estimate tasks are performed. This represents one of the two parts of the Reserve Study.

REMAINING USEFUL LIFE (RUL): Also referred to as "Remaining Life" (RL). The estimated time, in years, that a reserve component can be expected to continue to serve its intended function. Projects anticipated to occur in the initial year have "zero" Remaining Useful Life.

REPLACEMENT COST: The cost of replacing, repairing or restoring a Reserve Component to its original functional condition. The Current Replacement Cost would be the cost to replace, repair, or restore the component during that particular year.

RESERVE BALANCE: Actual or projected funds as of a particular point in time that the association has identified for use to defray the future repair or replacement of those major components which the association is obligated to maintain. Also known as Reserves, Reserve Accounts, Cash Reserves. Based upon information provided and not audited.

RESERVE PROVIDER: An individual that Prepares Reserve Studies.

RESERVE STUDY: A budget planning tool which identifies the current status of the Reserve fund and a stable and equitable Funding Plan to offset the anticipated future major common area expenditures. The Reserve Study consists of two parts: the Physical Analysis and the Financial Analysis. "Our budget and finance committee is soliciting proposals to update our Reserve Study for next year's budget."

RESPONSIBLE CHARGE: A reserve specialist in responsible charge of a reserve study shall render regular and effective supervision to those individuals performing services which directly and materially affect the quality and competence rendered by the reserve specialist. A reserve specialist shall maintain such records as are reasonably necessary to establish that the reserve specialist exercised regular and effective supervision of a reserve study of which he was in responsible charge. A reserve specialist engaged in any of the following acts or practices shall be deemed not to have rendered the regular and effective supervision required herein:

1. The regular and continuous absence from principal office premises from which professional services are rendered; except for performance of field work or presence in a field office maintained exclusively for a specific project;
2. The failure to personally inspect or review the work of subordinates where necessary and appropriate;
3. The rendering of a limited, cursory or perfunctory review of plans or projects in lieu of an appropriate detailed review;
4. The failure to personally be available on a reasonable basis or with adequate advance notice for consultation and inspection where circumstances require personal availability.

SPECIAL ASSESSMENT: An assessment levied on the members of an association in addition to regular assessments. Special Assessments are often regulated by governing documents or local statutes.

SURPLUS: An actual (*or projected*) Reserve Balance greater than the Fully Funded Balance. See "Deficit".

USEFUL LIFE (UL): Total Useful Life or Depreciable Life. The estimated time, in years, that a reserve component can be expected to serve its intended function if properly constructed in its present application or installation.

Reserve Study Required Contents

Each Reserve Study prepared by a Reserve Specialist or Reserve Specialist applicant **must contain all of the following elements:**

PAGE	CONTENTS
_____	1. A summary of the association's number of units.
_____	2. Association physical description (legal or physical narrative).
_____	3. General statement or opinion describing the association's current reserve fund status (good/fair/poor, adequate or inadequate. Percent Funded, etc.).
_____	4. General statement describing the methods and objectives utilized in computing or evaluating the association's Reserve Fund status (Percent Funded or otherwise).
_____	5. Fiscal Year (start and end) for which the Reserve Study is prepared.
_____	6. A projection of starting reserve cash balance (as-of above start date).
_____	7. A general statement describing the development or computation of the association's starting Reserve Fund balance.
_____	8. Recommended reserve contributions (minimum of 20 years).
_____	9. Projected reserve expenses (minimum 20 years).
_____	10 . Projected ending reserve fund balance (minimum of 20 years).
_____	11 . A tabular listing of the components in the Reserve Study.
_____	12 . A tabular listing of the component quantities or identifying descriptions.
_____	13 . A tabular listing showing each component's Useful Life.
_____	14 . A tabular listing showing each component's Remaining Useful Life, where RUL- 0 = initial year.
_____	15 . A tabular listing showing each component's Current Replacement Cost.

_____	16 . A general statement describing the Methods (cash flow, component, etc.) and Goals (Full Funding, Threshold Funding, Baseline Funding) of the Funding Plan, using National Standard terminology.
_____	17 . Identification of the source(s) utilized to obtain component repair or replacement cost estimates.
_____	18 . A clear description of which one of the three Reserve Study "Levels of Service" (i.e: Full, Update With-Site-Visit, Update No-Site-Visit) was performed.
_____	19 . A clear statement of assumption used for Interest and inflation (whether zero or otherwise).

Applicants MUST INCLUDE THE ABOVE TABLE with their work product submission, noting the page number where all the above required elements can be found in their sample work product.

Reserve Study Required Disclosures

Each Reserve Study prepared by a Reserve Specialist or Reserve Specialist applicant must contain all of the following disclosures:

PAGE	DISCLOSURE
_____	1. General: Description of other involvement(s) with the association, which could result in actual or perceived conflicts of interest.
_____	2. Physical Analysis: Description of how through the on-site observations were performed: representative sampling vs. all common areas, destructive testing or not, field measurements vs. drawing take-offs, etc.
_____	3. Personnel Credentials: State or organizational licenses or credentials carried by the individual responsible for Reserve Study preparation or oversight.
_____	4. Completeness: Material issues which, if not disclosed, would cause a distortion of the association's situation.
_____	5. Reliance on Client Data: Information provided by the official representative of the association regarding financial, physical, quantity, or historical issues will be deemed reliable by the consultant.
_____	6. Scope: The Reserve Study will be a reflection of information provided to the consultant and assembled for the association's use, not for the purpose of performing an audit, quality/forensic analysis, or background checks of historical records.
_____	7. Reserve Balance: The actual or projected total presented in the Reserve Study is based upon information provided and not audited.

	<p>8. Reserve Projects: Information provided about reserve projects will be considered reliable. Any on-site inspection should not be considered a project audit or quality inspection.</p>
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APPENDIX 1:

Reserve Specialist Code of Ethics

COMMUNITY ASSOCIATIONS INSTITUTE PROFESSIONAL RESERVE SPECIALIST (RS) CODE OF ETHICS

The Reserve Specialist Shall:

1. Comply with current standards and practices as may be established from time to time by CAI, the Reserve Specialist (RS) Designation Review Board, subject to all federal, state and local laws, ordinances, and regulations, if any, in effect where the RS practices;
2. Participate in continuing professional education through CAI and other industry related organizations as required;
3. Act in the best interests of the client; refrain from making inaccurate or misleading representations or statements; not knowingly misrepresent facts to benefit the Specialist;
4. Undertake only those engagements they can reasonably expect to perform with professional competence;
5. Exercise due care and perform planning and supervision as specified in the written client engagement agreement;
6. Disclose all relationships in writing to the client regarding any actual, potential or perceived conflict of interest between the Specialist and other vendors, including, but not limited to, management companies, insurance carriers, contractors and legal counsel.
7. Provide written disclosure of any compensation, gratuity or other form of remuneration from individuals or companies who act or may act on behalf of the client;
8. Conduct himself or herself in accordance with the Reserve Specialist requirements;
9. Not represent to anyone as being a Reserve Specialist designee until such time as he or she receives written confirmation from the Reserve Specialist Designation Review Board or CAI of receipt of the designation;
10. Recognize the original records, files, plats and surveys that are the property of the client are returned to the client at the end of the Specialist engagement; maintain the duty of confidentiality to all current and former clients;
11. Refrain from criticizing competitors or their business practices; Act in the best interests of their Employers; Maintain a professional relationship with our peers and industry related professionals.
12. Conduct themselves in a professional manner at all times when acting in the scope of their employment.
13. Not engage in any form of price fixing, anti-trust, or anti-competition.
14. Not use the work products of colleagues or competing Reserve Specialist firms that are considered proprietary without the expressed written permission of the author or the reserve specialist firm.
15. Abide by the re-designation policy of CAI

Compliance with Professional Reserve Specialist Code of Ethics is further amplified in the Code Clarification Document provided by the Community Associations Institute.

**TERMS OF REFERENCE
RESERVE STUDY**

<i>Association</i>	The unit owners' association. May be referred to with different terminology in legal covenants of incorporation.
<i>Board</i>	Elected officers of the Association with fiduciary responsibility for the community's common holdings. May be referred to with different terminology in legal covenants of incorporation.
<i>Owner</i>	Individual Unit owner, a Member or the Association
<i>Property Manager</i>	Professional organization through which the Board delegates responsibilities for operations and maintenance of the community.
<i>Excellent</i>	Component or system is in "as new" condition, requiring no rehabilitation and should perform in accordance with expected performance.
<i>Good</i>	Component or system is sound and performing its function, although it may show signs of normal wear and tear. Some minor rehabilitation work may be required.
<i>Fair</i>	Component or system falls into one or more of the following categories: a)Workmanship not in compliance with commonly accepted standards, b)Evidence of previous repairs not in compliance with commonly accepted practice, c)Component or system is obsolete, d)Component or system approaching end of expected performance. Repair or replacement is required to prevent further deterioration or to prolong expected life.
<i>Poor</i>	Component or system has either failed or cannot be relied upon to continue performing its original function as a result of having exceeded its expected performance, excessive deferred maintenance, or state of disrepair. Present condition could contribute to or cause the deterioration of other adjoining elements or systems. Repair or replacement is required.
<i>Adequate</i>	A component or system is stable, has capacity to function as required, is sufficient for its service, is suitable for operation, and/or conforms to standard construction practices.
<i>Basis of Comparison</i>	Ratings are determined by comparison to other buildings of similar age and construction type.
<i>Left, Right, Front, Rear</i>	Directions are taken from the viewpoint of an observer standing at the property frontage and facing it. Or, for a building within a campus setting, the viewpoint of an observer standing in front of the principal entrance and facing it.
<i>Current deficiency Immediate expense</i>	We will note any observed or reported physical condition which requires immediate action to correct an existing or potential safety hazard, an enforceable building code violation, or the poor or deteriorated condition of a critical element or system. Also, to address any conditions which, if left "as is", would likely result in the failure of a critical element or system. Such items will be noted in our report even if they do not require a capital expenditure.
<i>Short-term capital expenditures</i>	Correction of physical deficiencies including deferred maintenance, which may not warrant immediate attention, but require repairs or replacements which should be undertaken on a priority basis, taking precedence over preventive maintenance work within a one-year time frame. Included are physical deficiencies resulting from improper design, faulty installation, and/or substandard quality of original systems or materials. Components or systems that have exceeded their expected useful life and require repair or replacement within a one-year time frame are also included. Observed minor issues which would typically be addressed as normal operations & maintenance work may not be noted in the report.

<i>Long-term capital expenditures</i>	Non-routine repairs, replacements or planned improvements that will require significant expenditure during the study period.. Included are items that will reach the end of their estimated useful life or which, in the opinion of the engineer, will require such expense during that time. If saving for longer-term expenditures is desired, then allowances or contingencies for such items may also be included. Observed minor issues which would typically be addressed as normal operations & maintenance work may not be noted in the report.
<i>Expected Useful Life (EUL)</i>	As components age, they wear and deteriorate at varying rates, depending on their service and exposure. Although it is an inexact science, various financial underwriters, data services and trade organizations publish guidance regarding the EULs of typical building materials and operating systems. For short-lived components, their EUL is used as the frequency between periodic repairs or replacements. Some systems' economic life may be shortened because improved equipment or materials has become available which is less costly to operate or maintain.
<i>Remaining Useful Life (RUL)</i>	The simple equation for determining remaining useful life before repair or replacement is: $EUL - Age = RUL$ However, based on our evaluation of a component and our professional judgment, we may assign a shorter or longer RUL to actual items being considered.

BUILDING SYSTEMS AND COMPONENTS COMMON ABBREVIATIONS AND ACRONYMS			
ACM	Asbestos Containing Material	HW	Hot Water
ACT	Acoustic Ceiling Tile	HWH	Hot Water Heater (domestic)
ADA	Americans with Disabilities Act	IBC	International Building Code
AHU	Air Handling Unit	IRC	International Residential Code
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers	KVA	Kilovolt-Ampere
ASTM	American Society for Testing and Materials	LF	Lineal Foot
BOCA	Building Officials Code Administrators International	MSL	Mean Sea Level
BTU	British Thermal Unit	NEC	National Electric Code
BTUH	British Thermal Unit / Hour	NFPA	National Fire Protection Association
CFM	Cubic Foot / Minute	MBH	Thousand British Thermal Units / Hour
CI	Cast Iron (piping)	MDP	Main Distribution Panel (electric power)
CIP	Cast In Place (concrete)	O&M	Operations & Maintenance
CMU	Concrete Masonry Unit (block)	OSB	Oriented Strand Board (sheathing or decking)
CPVC	Chlorinated Poly Vinyl Chloride (piping)	PCA	Property Condition Assessment
CW	Cold Water	PCR	Property Condition Report

DI	Ductile Iron (piping)	PE	Licensed Professional Engineer
EIFS	Exterior Insulating and Finishing System	PVC	Poly Vinyl Chloride (piping and siding)
EPDM	Ethylene Propylene Diene Monomer	PTAC	Packaged Terminal Air Conditioning Unit
EUL	Expected Useful Life	ROM	Rough Order of Magnitude
FCU	Fan Coil Unit	RUL	Remaining Useful Life
FEMA	Federal Emergency Management Agency	RTU	Roof Top Unit
FFE	Furniture, Fixtures and Equipment	SF	Square Foot
FHA	Forced Hot Air	SOG	Slab on Grade (concrete basement or ground floor)
FHAA	Fair Housing Act and Amendments	SQ	100 Square Feet
FHW	Forced Hot Water	SY	Square Yard
FIRM	Flood Insurance Rate Map	UBC	Uniform Building Code
FOIA	Freedom of Information Act	UL	Underwriters Laboratories
GFI	Ground Fault Interruption (circuit breaker)	VAC	Volts Alternating Current
GWB	Gypsum Wall Board (drywall or sheetrock)	VAV	Variable Air Volume box
HID	High Intensity Discharge (lamp, lighting fixture)	VCT	Vinyl Composition Tile
HVAC	Heating Ventilation and Air Conditioning	VWC	Vinyl Wall Covering



National Reserve Study Standards

APPENDIX E: PROJECT TEAM QUALIFICATIONS



John Cona- P.E. President Criterium-Cona Engineers

John Cona is a Mechanical Engineer with over 30 years of experience in Engineering related services. Mr. Cona has a wide range of experience in the building materials industry with a broad background of technical and management skills.

HIS EXPERIENCE INCLUDES

- I. Production Management- Plant Manager of fired clay brick and concrete roofing tile manufacturing plants with overall Facility Management responsibility.
- II. Energy management- Energy Engineer responsible for 26 brick manufacturing plant energy audits and experience writing corporate Best Management Practices.
- III. Varied experience with forensic failure analysis and conflict resolution.
- IV. Budget preparation and management. Capital project- propose, design and build with a strong background in construction quality monitoring.
- V. Project management- Roofing & Solar experience with hundreds of roof inspections as a HAAG certified inspector.
- VI. Surface mining expertise with a background evaluating drill logs for soil conditions and associated geology issues.
- VII. Extensive experience involving Safety and Labor considerations involving OSHA and MSHA regulatory agencies.
- VIII. Permitting background with air and surface water erosion /management experience.

Mr. Cona has a reputation for seeing both the forest and the trees and calmly assessing a problem and focusing on developing a workable solution.

Education

Southern Illinois University, Carbondale, IL

BS -Thermal & Environmental Engineering

Professional Licensing

Licensed Professional Engineer- Mechanical Engineering

State of Colorado- #0036481

State of Texas- #79714

