



best practices

REPORT #1

Reserve Studies/ Management

best practices

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Reserve Studies & Reserve Management

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The Foundation for Community Association Research (FCAR) is a nonprofit affiliate of Community Associations Institute, the professional organization representing those who manage, govern, advise, and live in 350,000 common interest communities throughout the United States. The Foundation's mission is to provide authoritative and reliable research and reports on the operations of the common interest community industry and its community associations.

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Section I. Best Practices

What are best practices?

A best practice is a technique or method that has proven reliably to lead to a desired result or outcome. Business best practices are proven, repeatable, documented techniques that deliver measurable performance management improvements. These practices are industry-based and may be adapted to fit a unique organization or business. Benchmarking is a systematic process used to identify and implement best practices. The term best practice is most common in the fields of health care, government administration, higher education, business management, and technology.

Best Practices for Community Associations

Identifying and promoting best practices in the community association industry is a key goal of the Foundation for Community Association Research and its parent organization, Community Associations Institute (CAI).

The Foundation publishes Best Practices Reports related to operating and managing community associations and common interest ownership communities. Topic areas for Best Practices Reports are selected by the Foundation, working with CAI leaders, staff, and members.

Benefits of using best practices include: improved quality and performance, better planning and evaluation methods, innovative approaches to operations and management, and increased organizational accountability. The Best Practices Reports provide:

- function-specific practices that have been documented and verified
- case studies of community associations that use these best practices
- rising trends and new industry practices in the topic area

Best Practices in Association Reserves

For additional information on the analysis, management, funding, and forecasting of association reserves, we recommend the CAI Guide for Association Practitioners (GAP) publication, *Reserve Funds*, and the professional management development program courses, M-206: *Financial Management* and M-201: *Facilities Management*.

What are community associations and why do they need best practices?

Since the early 1970s, community associations—which include condominium associations, cooperatives, homeowner, and property owner associations—have experienced exponential growth. This growth is expected to continue for the foreseeable future in the United States and in other countries.

Approximately 25 percent of U.S. housing inventory exists in planned or managed residential communities, generally referred to as common interest ownership communities with some form of community association. CAI estimates that there are 350,000 established community associations in the U.S. representing 30 million housing units and 75 million homeowners. Community associations are also a growing trend in Europe, Australia, and the Middle East.

Section II. Overview

What are Association Reserves and Why Do They Exist?

Community associations come in all sizes. They vary by age, type, amenities provided, and maintenance obligations. Careful planning for future repairs and replacement is not only in the best interests of the community association, but it is also required by law in many states. Maintaining an adequate reserve fund not only meets the legal, fiduciary, and professional requirements of associations, but it also minimizes the need for special assessments and enhances resale home values in the community.

Every association should have a specific amount of cash in a separate account to fund necessary repairs or replacement projects. These funds are normally known as the reserve account.

There are several reasons as to why associations need reserves, namely:

- **Protect and Enhance Assets:** Funding of reserves protects and enhances the physical assets in the community, as well as the investment that each owner made by purchasing property in the community. By making sure that worn components can be replaced when needed, associations carry out one of their primary functions – good fiscal planning.
- **Fairness:** The most equitable means to fund reserves is to have a process where every homeowner contributes their fair share over the period where they benefit from the common assets.
- **Sound Financial Planning:** Funding for eventual replacement of the commonly-owned components should be part of every annual budget. If the reserve funding is not properly planned, special assessments or borrowing will be needed.
- **Fiduciary Duty:** The board has a legal and fiduciary responsibility to the association members (property owners), similar to that of all corporate board members. By not including reserve funding in the association's annual budget, board members are not demonstrating prudent judgment and sound business practices, and they could be (personally or as a group) liable for breach of fiduciary duty.
- **Statutory Requirement:** A growing number of states have laws requiring community associations to conduct reserve studies, including Virginia, Ohio, Illinois, California, Florida, Hawaii, Washington, and Nevada. Similar legislation is pending in other states.

Background

The concept of reserves—community-wide assessments to fund the replacement of common elements—dates back to 1947 before the first condominium was created in the United States. The establishment of uniform standards for reserve funds did not occur until the late 1990s with publication of the “National Reserve Study Standards of the Community Associations Institute” (“National Standards”). The National Standards are reproduced in the Appendix.

According to the National Standards, an association's reserve funds are used to repair or replace major physical components which make up the common elements of the association. A collection of reserve funds is not limited to any specific type of association, but rather pertains to any association where there are physical assets for which the association is responsible for replacement.

Best Practice:

COMMUNITY ASSOCIATIONS SHOULD conduct regular reserve studies to assist community leaders in determining the appropriate amount of reserves needed to fund replacement costs and the most useful funding mechanism for their reserves.

Definition: Reserve Funds

RESERVE FUNDS ARE actual or projected funds at a particular point in time which the association has identified for use to defray the repair or replacement of major components which the association is obligated to maintain. Other terms used for reserve funds include: reserves, reserve accounts, and cash reserves. Accounting for reserve funds is based upon voluntary information provided by an association and not necessarily audited data.

In addition to the National Standards, many states have implemented statutory requirements about reserves.

The National Reserve Study Standards were updated in December 2017. Key changes include:

1. Addition of a preliminary study for budgetary purposes before construction of the community
2. Removal of the definition of surplus and deficit to reflect individual statutory requirements
3. Prioritization of funding plans
4. Clarification and consolidation of terms and definitions

Federal Regulations for Condominiums

In addition to the National Standards, federal regulatory agencies, including the Federal Housing Administration (FHA), the Federal Mortgage Loan Corporation (Freddie Mac) and the Federal National Mortgage Association (Fannie Mae) established reserve requirements for condominium associations where homeowner financing is provided through banks regulated by that agency. Before 2008, the number of community associations falling within these requirements was quite small, but today that number is estimated to be in the range of 60% of all U.S. condominium associations.

The current requirement for lenders governed by FHA, Fannie Mae, and Freddie Mac is that the condominium association must "provide for funding of replacement reserves and deferred maintenance in an account representing at least 10 percent of the budget or have in place a current (defined as not more than 24 months old) reserve study prepared by a qualified, independent professional company."

These requirements are under review and changes could be made at any time. Updated information can be obtained from the FHA website at https://www.hud.gov/program_offices/housing/sfh/ins/sfh_ins_condominiums.

Condominium Mortgage Insurance Federal Housing Administration

Section 203 (b) of the National Housing Act provides authority to insure any mortgage covering a one-family unit in a project coupled with an undivided interest in the common areas and facilities which serve the project. Eligible projects are those that have been declared and exist in full compliance with applicable state law requirements of the jurisdiction in which the condominium project is located, including good standing with the state, and with all other applicable laws and regulations.

FHA insures condominium single unit loans for up to 30-year terms to purchase or refinance a unit in an FHA-approved condominium project. The condominium project must be primarily residential, contain at least two dwelling units and can be detached, semi-detached, a row house, a walk-up, mid-rise, high-rise, including those with or without an elevator, or manufactured housing.

Section III. Reserve Study Basics

A RESERVE STUDY is a budget planning tool which identifies the components that the association is responsible to maintain or replace, 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.

Reserve Example:

IF THE COMPONENT will cost \$100,000 to replace and replacement is anticipated to occur in 20 years, the association should set aside \$5,000 per year for 20 years, at which time they will accumulate the \$100,000 needed to replace the component. This analysis requires knowledge of cost estimating as well as the economic life of the component.

While the concept is relatively simple when only one component is considered, it becomes more complicated when there are multiple components, and each has a different replacement cost and useful lifespan. It becomes even more difficult when the components are not new, and the person doing the reserve study must assess the condition of each component and estimate its remaining life. See Table 1 for a Sample Reserve Study Component Inventory.

Table 1. Example of Reserve Study Component Inventory

Component	Quantity	Unit Cost	Current Replacement Cost	Estimated Useful Life	Estimated Remaining Useful Life
Pavement Overlay	28,000 SY	\$22.00	\$616,000	20	12
Pavement Seal Coat	28,000 SY	\$2.00	\$56,000	5	2
Concrete Walkways	34,000 SF	\$12.00	\$408,000	30	22
Brick Pavers	4,000 SF	\$19.00	\$76,000	25	17
6' Wood Fence	900 LF	\$48.00	\$43,200	20	12
TOTAL			\$1,199,200		

The Reserve Study: Required Contents and Disclosures

A reserve study should contain:

- Summary of the association's number of units
- Description of the community and association (legal or physical narrative)
- General statement or opinion describing the association's current reserve fund status
- General statement describing the methods and objectives utilized in computing or evaluating the association's reserve fund status (percent funded or otherwise)
- Time period (fiscal year start/end) in which the reserve study was prepared
- Projection of starting reserve cash balance (as-of start date)
- General statement describing development or computation of the association's starting reserve fund balance

- Recommended reserve contributions (minimum 20 years)
- Projected reserve expenses (minimum 20 years)
- Projected ending reserve fund balance (minimum 20 years)
- Tabular listing of all assets (components) in the reserve study
- Tabular listing of the component quantities or identifying descriptions
- Tabular listing showing each component's useful life
- Tabular listing of each component's remaining useful life (RUL), where RUL=0 for the initial year
- Tabular listing showing current replacement cost for each component
- General statement describing method (cash flow, component, etc.) and goals (full threshold or baseline) for the funding plan, using National Standard terminology
- Identification of source(s) for component repair or replacement cost estimates
- Statement confirming which reserve study "level of service" (i.e., full, update with-site-visit, update no-site-visit, preliminary, community not yet constructed) was performed
- Statement of assumptions used for interest and inflation (zero or otherwise)

Best Practice:

THE MOST CRITICAL decision in conducting a reserve study is selecting which components to include. This requires analysis of the association's governing documents, application of the National Reserve Study Standards four-part test, and applicable state statutes and civil codes in addition to the physical inspection of each component.

The reserve study should also contain the following disclosures:

- A written statement of the credentials (state or organizational licenses/credentials) held by the individual who prepared the reserve study or oversight
- A statement disclosing the consultant's other involvement(s) with the association which could result in actual or perceived conflicts of interest
- A narrative description of the physical analysis detailing how the on-site observations were performed, i.e. representative sampling vs. all common areas, destructive testing or not, field measurements vs. drawing take-offs, etc.
- A description of the assumptions utilized for interest and inflation, tax rates, and other outside factors affecting the financial analysis
- A report on how the current work relies on the validity of prior reserve studies
- Discussion of material issues which, if not disclosed, could distort the association's situation
- Reliable information provided by the association's official representative regarding financial, physical, quantity, or historical issues. 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 analyses, or background checks of historical records.
- The actual or projected reserve balance total presented in the reserve study based upon information provided
- A reliable description of reserve projects. Any on-site inspection should not be considered a project audit or quality inspection.
- Any disclosures required by individual state statutes

Best Practice:

IT IS RECOMMENDED all associations (that have reserve components) have their reserve studies updated on a frequency that allows for the reserve components and funding plan to be adjusted in the best interests of the association or accordance with local statutes.

Types of Reserve Studies

Reserve studies fit into one of four categories, also called the level of service, ranging from exhaustive to minimal:

- In a **Full Reserve Study**, the study preparer develops a component inventory and condition assessment which is based upon on-site visual observations, and is the basis for the estimated remaining-useful-life of the components as well as their replacement cost. This information is used to develop the Financial Analysis which includes the fund status and funding plan.
- In an **Update, With-Site-Visit/On-Site Review**, the study preparer conducts an onsite verification of the component inventory included within the study being updated (not quantification) as well as performing a condition assessment), which is the basis for the estimated remaining-useful-life of the components and their replacement costs. This information is used to develop the Financial Plan which includes the fund status and funding plan.
- In an **Update, No-Site-Visit/Off-Site Review**, the study preparer updates the remaining-useful-life of the components based on age and not condition as a site visit is not performed. The replacement costs are also updated. This information is used to develop the Financial Plan which includes the fund status and funding plan.
- In a **Preliminary, Community Not Yet Constructed**, a reserve study is prepared before construction and is used for budget estimates. It is based on design documents such as the architectural and engineering plans. The following three tasks are performed to prepare this type of study.
 1. Component Inventory
 2. Life and Valuation Estimates
 3. Funding Plan

Best Practice:

ASSOCIATIONS SHOULD review the reserve study periodically to ensure the information presented is accurate and updated.

The *Preliminary, Community Not Yet Constructed* category was added to the CAI National Standards in 2017. See Exhibit 2 of the Appendix for more information.

Physical and Financial Analysis

The **Physical Analysis** is the first of two parts of a reserve study. For the Physical Analysis, the preparer evaluates information regarding the current physical status and replacement cost of the common area components. The preparer conducts a component inventory, condition assessment, and life and valuation estimates.

Although an association may be tempted to obtain the reserve study through an assessment of plans and photographs, only an on-site visit by the Reserve Specialist can truly assess the useful life and overall condition of the reserve components. This should be considered when obtaining pricing on your reserve study from the specialist.

As more associations have been created, the way in which recommended yearly contributions to reserves is derived has become more sophisticated. Reserve study preparers now recognize that a comprehensive reserve study must include not only a Physical Analysis but also a Financial Analysis—which includes a fund status and funding plan.

The second of the two parts of a reserve study is the **Financial Analysis**. This is critical to the **Reserve Study** as it takes the Physical Analysis as its basis and adds a fund status and funding plan. **The Funding Plans** are based on three different **Funding Goals** which are listed below and are presented in order of greatest risk to least risk. Risk includes, but is not limited to, special assessments and borrowing if enough funds are not available at the time of replacement of a component.

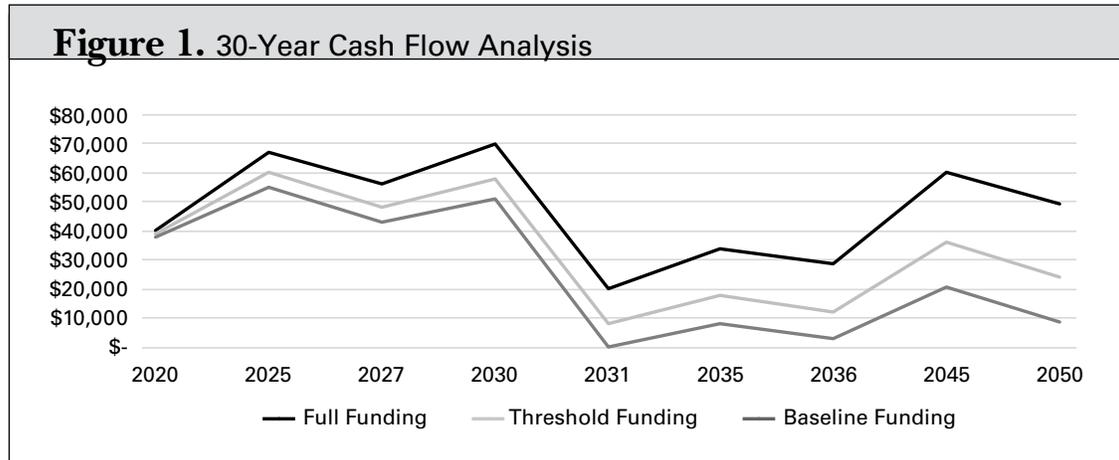
The **Funding Goals** are:

1. **Baseline Funding:** Establishing a reserve funding goal of allowing the reserve cash balance to be at or near zero during the cash flow projection. This is the funding goal with the greatest risk due to the variabilities encountered in the timing of component replacements and repair and replacement costs.
2. **Threshold Funding:** Establishing a reserve funding goal of keeping the reserve balance above a specified dollar or percent funded amount. Depending on the threshold selected, this funding goal may be weaker or stronger than “fully funded” with respective higher risk or less risk of cash problems.
3. **Full Funding:** Setting a reserve funding goal to attain and maintain reserves at or near 100 percent funded. This is often the most conservative funding goal.

It should be noted that in certain states there may be statutory funding requirements that would dictate the minimum requirements for funding reserves.

A graphical presentation of the funding plans is shown here.

Funding Plan Examples



Funding Plan Terminology

In reserve study jargon, terms such as “cash flow,” “component method,” and “baseline” are often discussed in a confusing manner. But these and other related terms have very specific meanings. Knowing the difference between a method and a goal will go a long way to demonstrating subject knowledge. Let’s start with the funding methods.

There are two major types of funding plan methods: cash flow and component method.

- **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. This method has also been called “pooling” and depending on the funding goal, can be less or more conservative than the component method.
- **Component Method:** A reserve funding plan where the total contribution is based on the sum of the contributions for the individual components. Prior to the adoption of the CAI National Standards, the term widely used was “Straight Line.” This is a very conservative approach to funding reserves. It requires that each item on the component inventory is established as its own account, so the yearly funding covers the total cost of replacement. Simply stated, you take the total cost of the component (less any existing reserve amount) and divide it by the remaining life of the component.

In addition to these funding methods, there are three major funding goals: baseline, threshold and full funding (outlined below). And there may be a fourth funding goal depending on any local statutes requiring minimum funding requirements. These goals exist regardless of which funding method is used.

It is correct to say, “Our association’s funding goal is *full funding* within five years using

the *cash flow method*." Conversely it would be incorrect to say: "Our association is looking for a bid to prepare our reserve study using a cash flow goal."

Prior to choosing a goal, a funding plan needs to be chosen. Not all reserve analysts prepare studies using both the cash flow and component method, so this is a decision that should be made prior to going out to bid, or be a parameter in the request for proposal.

As the reserve component inventory grows into dozens, hundreds, or thousands of components, the power of the cash flow method becomes apparent. With large variances in component costing and differences in useful and remaining lives, it is not necessary to fully fund each component so long as an adequate threshold is maintained in the reserve fund. This "adequacy" can be addressed by using any one or more of available funding goals. For example, a funding goal could be a fixed number developed by the board and analyst. Or a minimum percent funded number can be adopted.

Note: There is one example where the two methods converge—the rare circumstance where there is only one reserve component. In both methods, there will need to be funds added each year so that the anticipated cost for the one reserve expense is available at the end of the component's useful life.

Consider a fountain that costs \$1,000 to replace with a useful life of 10 years. Using the component method, the reserve collected for this item under the component method should have been \$100 per year (\$1,000 divided by 10 years). Since the fountain is now eight years old, the reserve account would need to have \$800 presently to fully fund this component.

In all examples and definitions, the impact of inflation on reserve components and interest earned on reserve funds are not being considered. When inflation and interest are added to the reserve study, the formulas vary slightly, but the methodology does not change.

Key Terms

Reserve Balance: Actual or projected funds at a particular point in time.

Full Funding: Setting a reserve funding goal to attain and maintain reserves at or near 100 percent funded. Risk assessment: Generally, this is the most conservative, although not always.

Threshold Funding: Establishing a reserve funding goal of keeping the reserve balance above a specified dollar or percent funded amount. Risk assessment: Risk varies

Baseline Funding: Establishing a reserve funding goal of allowing the reserve cash balance to be at or near zero during the cash flow projection. Risk assessment: Greatest risk

Section IV. Hiring a Reserve Study Professional

ASSOCIATION BOARDS are not well served to prepare their own reserve study. It should be recognized that while the accounting skills required to perform a reserve study are somewhat straightforward, there is a significant amount of professional expertise required to understand unit pricing, component selection, and quantification as well as to establish component conditions.

Reserve Specialist

One of the most important responsibilities of any board member and manager is the hiring of vendors and business partners for the community, including the Reserve Specialist (RS). As this relationship will likely continue with your association for multiple years, the hiring of a competent well-seasoned Reserve Specialist should be done methodically and with a well-thought-out intent by the board. Any shortcomings could result in a special assessment, expensive loans, or general loss in the value of the property.

To properly execute a reserve study as well as funding plan for a community, the Reserve Specialist must possess a wide variety of skills and competence in financial modeling. A professional manager or volunteer board member, although capable, does not typically have the level of expertise necessary to prepare a reserve study even for a smaller community. Every association should look for the Reserve Specialist designation as the minimum criteria for choosing this business partner for the community.

Other issues to consider when narrowing your choice of a reserve study specialist include:

- Have they earned the RS designation with CAI? What other designations do they hold as a reserve analyst?
- Does the firm have other professional licenses such as professional engineer, general contractor, architectural, CPA, or other credentials demonstrating competency?
- Will all work performed in the study be completed by employees of the firm?
- What other professional organizations is the reserve company involved with?
- What type of insurance does the reserve study specialist carry? Do they have Errors and Omissions Insurance?
- Can you view a sample study from the firm?
- What level of study is being offered?
- Is the study in conformance with the National Reserve Study Standards of CAI as well as any statutory requirements?

Best Practice:

THE ASSOCIATION SHOULD consult a qualified reserve study professional to determine the best reserve funding plan or combination of plans for the association.

The CAI Reserve Specialist designation is for those who have proven expertise and leadership to develop reserve studies in compliance with nationally accepted standards.

The community association is ultimately responsible for the reserve study disclosures. In deciding which reserve study specialist to hire, the board should consider its potential liability if the study does not meet the statutory information requirements or the National Standards.

To find individuals with the RS designation, visit the CAI Directory of Credentialed Professionals at www.caionline.org/Pages/Credentials-Directory.aspx and search for "RS."

Best Practice:

Given the nature of the desired results, and the need to affirm the board and management fiduciary responsibilities, CAI recommends the use of a professional holding the Reserve Specialist (RS) designation.

Section V. Trends in Reserves and Reserves Management

Trends: Aging Facilities and Infrastructure

Much has been written on the impact of aging members and residents and how their communities are adapting to meet a graying demographic. The same type of evolution is also underway with the association's major components.

For example, an association built in the late 1970s is approximately 40 years old as of 2019. With reserve studies having a prospective term of 20-30 years, this 1970s era community now has component maintenance obligations for items projected to be 40-70+ years old. A 1970s era community's component list may look entirely different from a component inventory of a community association built in 2010. This expanded component list might contain infrastructure items that are starting to show signs of failure such as storm drain systems, domestic water systems, irrigation piping, etc. There may be safety issues with balconies and cantilevered decking areas requiring further inspection by engineers or other specialists to augment the reserve study.

Best Practice:

THE ASSOCIATION SHOULD work with their Reserve Specialist to confirm the component inventory reflects the aging of components over 30 years. For communities that are more than 30 years old, the board should consider investigating the possibility that other experts, such as a structural engineer, may be needed for the long-term viability of the reserve components. This type of review should be performed as part of updates for communities as they age to make sure that any component that now falls within the funding plan projection period is added to the component list.

Trends: Innovation and Energy

Reserve studies are an excellent tool to bring innovation, energy savings, and technological advances to the community association—along with cost savings and benefits to the environment. Drought conditions in many areas of the country have caused an increase in governmental regulations on watering, reducing turf, etc. Using innovation techniques when replacing reserve components can provide relief to regulations and provide a return on investment for the association's operating and reserve budget.

Best Practice:

THE ASSOCIATION SHOULD work with their service providers, contractors, and Reserve Specialist to adapt the reserve study components to utilize innovation and technology. It can be very beneficial to evaluate not only the cost of replacement but also the cost of energy usage so that the cost of budgeted components can be offset against energy cost savings and potential incentives.

Trends: Curb Appeal and Project Staging is Appealing to Everyone

Often community associations miss the opportunity to do a makeover of the facilities from a curb appeal and property value standpoint. It costs the same to paint a home the wrong color as opposed to the right color. This is true with roofing and siding materials and their coloring and other design elements in the common areas. If the community is looking at doing several building exterior skin projects in the near future, why not hire a consultant to help coordinate the various projects into a cohesive aesthetic. Commercial building owners do this, and so do apartment building owners who rely on first impressions of prospective tenants and buyers. Spending \$5,000 for professional designers proves to be money well spent when the board is engaging contractors costing the association millions of dollars' worth of work. The coordination of these major projects can transform a 1980s flavor community into a new millennium showcase increasing home re-sale prices and making members proud of their community.

Also, the Reserve Specialist should stage the major component work so major projects happen in the proper order. For example, if drainage work needs to be done in the roadway, perform that work before asphalt sealing and repairs, not afterwards. If the underground loops at a vehicle gate are starting to fail, replace the loops before dealing with the asphalt surface covering the loops. Community associations can rely on their Reserve Specialist to assist with this coordination.

Best Practice:

THE ASSOCIATION SHOULD investigate the use of design professionals when spending large sums on reserve projects. Also, the reserve study should be checked so major projects are staged in the correct order, so no harm is done to components not yet replaced.

Section VI. Conclusions

THERE ARE MANY new methodologies and strategies available to board members and managers that can improve and preserve the financial well-being of the association. In both new and established associations, the reserve study provides valuable information for the overall budgeting process.

The reserve study can also help the board to evaluate the adequacy of the association's reserve funding plan or address deficiencies in current reserves. An updated reserve study provides an opportunity to review the association's expenditures for energy, utilities, and maintenance. The reserve study is primarily a budgeting tool, but it can be useful in making decisions about major capital projects and association investments.

Reserve funds should not be viewed as a financial safety net for unexpected breakdowns or damage. This is an important fact to share with all association members, so they have a correct understanding that reserve assessments are to be used for predictable repair and replacement projects. Using a CAI credentialed Reserve Specialist will help ensure the board has the best tools available in their board member tool box.

Section VII. Case Studies

case study #1

Addison Reserve Master Property Owners Association (ARMPOA)

Established: 1997

Size: 718 homes

Location: Delray Beach, FL

An essential element of financial planning in a community association is recognition of the future deterioration of fixed assets. This recognition is applicable to both hard assets (hardscape and infrastructure) and soft assets (softscape). Most boards are reluctant to confront such future costs and commonly fail to do so. This failure is commonly caused by a desire to reduce assessments and, as a result, appear more frugal to the owners who are their social friends. In fact, the opposite is true and the failure to provide for future repair and replacement of assets creates a liability for all owners at some point in the future. An experienced treasurer (commonly a CPA) will often recognize the planning failure and take steps to require that the board address the situation. Failing to fund reserves or its lesser relative, partial underfunding, is a fault that must be avoided.

Community associations are commonly lulled into a sense of security by adequate maintenance that is easily provided in early years when assets are new and, it appears, substantial reserve funding is not required. Not all underfunding in reserves comes in the early life of the community; most occur in later years when asset deterioration is more evident. Some communities thrive very well the first few years of adequate budgets created by the declarant prior to turn over while community assets are still young. Such was the instance at Addison Reserve, a large luxury scale golf course community in south Florida.

Developed in 1997 and turned over from the developer in 2003, the ARMPOA board was fortunate enough to have the funds needed to perform all the typical maintenance over the early years and operate on a \$3.5 million-dollar operating budget. However, after 14 years of wear and tear, the board and owners mutually felt the property was in need of some upgrading, both mechanical and appearance. Plans were underway to make a series of improvements but like many projects, funding could only be done by special assessment.

In early 2013 a major flood occurred on the site which demonstrated to the board an urgent need to make improvements to the infrastructure while at the same time updating some other curb appeal projects.

Under the direction of a new group of board members, the nine-member board took a long hard look at where they were positioned. Funds were adequate in the operating budget for repairs; however, not sufficient to provide any monies remaining to do any substantial repairs or replacements on the common areas or beautification projects. Contingency monies for storm damage, common in south Florida, had not been suf-

case study #1, continued

ficiently allocated, and, at 18 years old, the maintenance of the property was beginning to suffer. Underground drainage had begun to deteriorate, 27 majestic lakes had erosion issues, and the technology over the years on the perimeter security system needed updating and improvements.

In addition to the age of the community, the recent economic downturn in 2007-2011 in the housing market had left them with unpaid delinquent assessments from owners who had not been able to survive the housing market crunch. An aggressive program to collect delinquent assessments was necessary.

In 2013, with an ambitious and business-oriented board, the board members laid out their goals:

- Commit to a strategic plan knowing that board members may change as well as their ideas
- Commit to a comprehensive reserve study
- Commit to preparing the membership for the assessment increases necessary to fund the reserve study conclusions

The strategic plan was initiated and as part of the plan, important information was derived from the study completed by the strategic planner as to why owners bought within the community. Critical for the south Florida marketplace, purchasers had a high level of regard for the natural landscape and common property the developer had maintained in a pristine manner. Also, the owners themselves agreed that to maintain strong property values, a sound system of ongoing maintenance and replacement must be put in place.

From the strategic plan came a group of strategic goals the board wanted to accomplish in regard to achieving financial stability for the community. The following points were deemed critical:

1. Calculate a funding plan based on a completed reserve study that was highly comprehensive regarding the community assets and infrastructure.
2. Identify immediate and long-term infrastructure repair or replacement items that need to be repaired/replaced and fund for them.
3. Employ a qualified reserve funding specialist and complete an accurate reserve funding study that could be given to all owners.
4. Construct an annual budget to accurately reflect not only the operational aspects of the community but give strong support to reserve funding as well.
5. Publish the current needs and goals of the strategic plan to the residents and communicate with them to determine the future needs of new residents who will be buying into the community over the next 10 years.

case study #1, continued

After researching its options, the board ultimately hired John Frazer, a reserve study engineer, to identify the issues. John studied all of the needs that the board determined were critical from discussions with the board and strategic planner in the community. With an extensive landscape and 27 retention lakes, it was recognized that some of the refurbishment funding needed to cover "soft costs" and not just hard infrastructure needs. In addition, reserve funding was set aside to cover plant material the owners felt was critical even though not extensively funded in most reserve budgets.

In addition, the board took on the task of both written and personal communication plans to explain the matter to the membership. For six months the board repeatedly communicated the needs of the community and the correction plan as shown by the study. It was no secret the board leadership gave the membership confidence the plan was a sound one. It was agreed that a special assessment for a two-year period, paid quarterly, would place the reserve funding in a firmer financial position. The special assessment easily passed.

After collection of the special assessment began, the board quickly realized that a threshold had to be created for the reserve account fund so that projects that required funding would not deplete the reserve account below acceptable levels. Six months after the reserve study had been completed, the board went back to the Reserve Specialist to add threshold funding to the economic scheme, setting a minimum funded level. If the minimum level is breached, the board is placed on notice that supplemental funding is necessary.

With many pressing needs, it became important to put together a long-range spending plan with input from a long-range planning committee and the manager to prioritize the projects that would be completed over the next five years and create a schedule of reserve fund projects and reserve fund spending. In addition, a schedule of reserve fund assessments (inflow) and reserve fund spending (outflow) is now presented to the board at regular intervals as part of the financial report.

Like most reserve plans, this one constantly needs a little tweaking. The threshold funding approach created a need for a larger pool of funds. Even with a five-year spending plan and a special assessment, the board realized they needed to fund the reserves to a much higher level. As a result, at the end of the two-year special assessment, the board again communicated the need for an additional assessment to the owners, and, as a result, the owners provided the additional funding needed to satisfy the threshold funding.

Once again, thanks to sound communication and a board-based plan, the increases were approved throughout the membership. The additional funding is now in place and working well. The long-range committee will continue its efforts to watch and tightly control the project work to ensure that funding for the normal day-to-day projects and larger, more strategic projects are completed timely as a result of the new reserve funding. The good news is that the community now possesses a reserve account well over the million-dollar mark in less time than anticipated.

case study #2

Manor Community Association (MCA)

Established: 1992
Size: 130 Lots
Location: Rancho Cordova, California

Manor Community Association is a planned community association located in eastern Sacramento County, California. MCA, which was constructed in the early 1990s, consists of 130 homes contained in several, non-typical 2-3-unit buildings. MCA is also a member of a master association with strict architectural guidelines when it comes to roofing. There are public streets and a private roadway serving the rear facing garages. The association's reserve components include the following:

- Rear alley (asphalt)
- Roofs (originally pitched medium cedar shingle)
- Paint (woodwork and tubular steel railings)
- Fencing (masonry)
- Lighting (walkways only)
- Landscaping (irrigation system, tree trimming)
- Signage

Robert Browning, RS, started working with MCA in the mid-1990s and has continued uninterrupted to this day. The initial reserve studies indicated the pitched roofing, constructed of medium cedar shakes, were wearing at an accelerated rate. Although there were warranties in place in excess of 20 years, there was evidence the roofing would not make it to the 20-year mark. In addition, the wood siding was being coated with stain, not a full body stain or acrylic product.

In 1993, the reserve fund was not adequately funded, and the reserve analyst recommended increases to the contribution in the 7% - 9% range until the roofing was replaced.

Two things were occurring in the late 1990s:

1. The roofs were deteriorating at an even faster rate than originally anticipated and were in imminent danger of causing water intrusion into the units.
2. The past boards had not raised the reserve contribution as recommended.

A new board was elected in approximately 1999/2000. They determined a crisis was on the horizon if the roofing was not addressed immediately.

The new board hosted a meeting with the roofing contractors, reserve analyst, and management to discuss re-roof material options and costs. Due to strict architectural guidelines from the master association, roofing material choices were limited. Sample material boards were built, and the members were asked to attend planning meetings to provide feedback on the roofing choices available to the association.

case study #2, continued

The board started talking with lenders to determine if bank financing was feasible to help pay for the roofing. In addition, the reserve analyst provided several reserve study scenarios with alternative funding plans to pay for the roofing and recommended a program to rebuild the reserves.

After several meetings between all the related parties, a town hall meeting was planned with all of the 130 association members and the association's "team" to lead the community through this arduous process. This team included the following:

- Board president who led the meeting using visual aids, PowerPoint, and a sense of humor
- Board members
- Roofing committee members
- Management
- Reserve analyst
- Association legal counsel
- Construction manager
- Roofing contractor
- Banking representatives

The team met earlier to rehearse the presentation and throughout this process, the members had been kept in the loop through mailings, newsletters and roofing committee meetings. (The internet did not yet exist!) By having all the team members available at this town hall meeting, there was always an objective answer for every question a member could think of.

Despite some tense moments—after the members learned they faced a large special assessment and increase in reserve contribution—the team received a standing ovation from the members.

The roofing project proceeded with the normal hiccups common to all projects and as of 2017, the roofing is approximately 15 years old and still going strong with several years of serviceable life remaining. Also, soon after the new board was installed in 2000, the association switched to an acrylic based paint for the exterior surfaces and the siding maintenance was no longer an issue.

Lessons Learned

- Keep members in the loop right from the start. Educated members are an asset.
- Empower the members to provide input so they are part of the solution.
- Focus on the future! Assessing blame on the past is a waste of resources.
- The board should rely on its vendors to create a team for success.
- Members appreciate and will follow strong leadership.
- Communicate, communicate, communicate!

Submitted by Robert W. Browning, RS, PCAM, Browning Reserve Group

best practices

Section VIII. Appendix

EXHIBIT 1—Summary of Best Practices

EXHIBIT 2—National Reserve Study Standards

EXHIBIT #1

Summary of Best Practices

Best Practice:

Community associations should conduct regular reserve studies to assist community leaders in determining the appropriate amount of reserves needed to fund replacement costs and the most useful funding mechanism for their reserves.

Best Practice:

The most critical decision in conducting a reserve study is selecting which components to include. This requires analysis of the association's governing documents, application of the National Reserve Study Standards four-part test, and applicable state statutes and civil codes in addition to the physical inspection of each component.

Best Practice:

It is recommended all associations (that have reserve components) have their reserve studies updated on a frequency that allows for the reserve components and funding plan to be adjusted in the best interests of the association or accordance with local statutes.

Best Practice:

Associations should review the reserve study periodically to ensure the information presented is accurate and updated.

Best Practice:

The association should consult a qualified reserve study professional to determine the best reserve funding plan or combination of plans for the association.

Best Practice:

Given the nature of the desired results, and the need to affirm the board and management fiduciary responsibilities, CAI recommends the use of a professional holding the Reserve Specialist (RS) designation.

Best Practice:

The association should work with their Reserve Specialist to confirm the component inventory reflects the aging of components over 30 years. For communities that are more than 30 years old, the board should consider investigating the possibility that other experts, such as a structural engineer, may be needed for the long-term viability of the reserve components. This type of review should be performed as part of updates for communities as they age to make sure that any component that now falls within the funding plan projection period is added to the component list.

Best Practice:

The association should work with their service providers, contractors, and Reserve Specialist to adapt the reserve study components to utilize innovation and technology. It can be very beneficial to evaluate not only the cost of replacement but also the cost of energy usage so that the cost of budgeted components can be offset against energy cost savings and potential incentives.

Best Practice:

The association should investigate the use of design professionals when spending large sums on reserve projects. Also, the reserve study should be checked so major projects are staged in the correct order, so no harm is done to components not yet replaced.

EXHIBIT #2**NATIONAL RESERVE STUDY STANDARDS****General Information About Reserve Studies**

One of the primary responsibilities of the board of directors of a community association is to protect, maintain, and enhance the assets of the association. To accomplish this objective, associations must develop multi-year plans to help them anticipate and responsibly prepare for the timely repair and replacement of common area components such as roofs, roads, mechanical equipment, and other portions of the community's common elements.

Originally published in 1998, the National Reserve Study Standards provide a consistent set of terminology, calculations, and expectations so reserve study providers and those they serve together can build a successful future for millions of community association homeowners across the country.

A reserve study is made up of two parts, the physical analysis and the financial analysis. The physical analysis includes 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 estimate change from year to year.

The financial analysis is made up of an analysis of the client's current reserve fund status (measured in cash or as percent funded) and a recommendation for an appropriate reserve contribution rate (a funding plan).

Physical analysis

Component inventory

Condition assessment

Life and valuation estimates

Financial analysis

Fund status

Funding plan

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

IV. **Preliminary, Community Not Yet Constructed.** A reserve study prepared before construction that is generally used for budget estimates. It is based on design documents such as the architectural and engineering plans. The following three tasks are performed to prepare this type of study.

- Component inventory
- Life and valuation estimates
- Funding plan

Terms and Definitions

CAPITAL IMPROVEMENTS: Additions to the association's common elements that previously did not exist. While these components should be added to the reserve study for future replacement, the cost of construction should not be taken from the reserve fund.

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. These components comprise the common elements of the community and typically are: 1. association responsibility, 2. with limited useful life expectancies, 3. predictable remaining useful life expectancies, and 4. above a minimum threshold cost. It should be noted that in certain jurisdictions there may be statutory requirements for including components or groups of components in the reserve study.

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, review of association precedents, and discussion with appropriate representative(s) of the association.

COMPONENT METHOD: A method of developing a reserve funding plan where the total contribution is based on the sum of contributions for the individual components.

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

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 the current status of the reserves (measured as cash or percent funded) and a recommended reserve contribution rate (funding plan) are derived, and the projected reserve income and expense over a period of time are presented. The financial analysis is one of the two parts of a reserve study.

FULLY FUNDED: 100 percent funded. When the actual (or projected) reserve balance is equal to the fully funded balance.

FULLY FUNDED BALANCE (FFB): An indicator against which the 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, and then summed for an association total.

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

Example: For a component with a \$10,000 current replacement cost, a 10-year useful life and effective age of 4 years the fully funded balance would be \$4,000.

FUND STATUS: The status of the reserve fund reported in terms of cash or percent funded.

FUNDING GOALS: Independent of methodology used, the following represent the basic categories of funding plan goals. They are presented in order of greatest risk to least risk. Risk includes, but is not limited to, cash problems, special assessments, and deferred maintenance.

Baseline Funding: Establishing a reserve funding goal of allowing the reserve cash balance to never be below zero during the cash flow projection. This is the funding goal with the greatest risk due to the variabilities encountered in the timing of component replacements and repair and replacement costs.

Threshold Funding: Establishing a reserve funding goal of keeping the reserve balance above a specified dollar or percent funded amount. Depending on the threshold selected, this funding goal may be weaker or stronger than "Fully Funded" with respective higher risk or less risk of cash problems.

Full Funding: Setting a reserve funding goal to attain and maintain reserves at or near 100 percent funded. This is the most conservative funding goal.

It should be noted that in certain jurisdictions there may be statutory funding requirements that would dictate the minimum requirements for funding.

FUNDING PLAN: An association's plan to provide income to a reserve fund to offset anticipated expenditures from that fund. The plan must be a minimum of twenty (20) years.

FUNDING PRINCIPLES: The reserve provider must provide a funding plan addressing these principles.

- Sufficient funds when required
- Stable contribution rate over the years
- Equitable contribution rate over the years
- Fiscally responsible

LIFE AND VALUATION ESTIMATES: The task of estimating useful life, remaining useful life, and current repair or replacement costs for the reserve components.

PERCENT FUNDED: The ratio, at a particular point in time related to the fiscal year end, of the actual (or projected) reserve balance to the fully funded balance, expressed as a percentage. While percent funded is an indicator of an association's reserve fund size, it should be viewed in the context of how it is changing due to the association's reserve funding plan in light of the association's risk tolerance.

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 serve its intended function. Projects expected to occur in the initial year have zero remaining useful life.

REPLACEMENT COST: The cost to replace, repair, or restore the component to its original functional condition during that particular year, including all related expenses (including but not limited to shipping, engineering and design, permits, installation, disposal, etc.).

RESERVE BALANCE: Actual or projected funds, as of a particular point in time that the association has identified, to defray the future repair or replacement cost of those major components that the association is obligated to maintain or replace. Also known as reserves, reserve accounts, cash reserves. Based on information provided and not audited.

RESERVE PROVIDER: An individual who prepares reserve studies. In many instances the reserve provider will possess a specialized designation such as the Reserve Specialist (RS) designation provided by Community Associations Institute (CAI). This designation indicates that the provider has shown the necessary skills to perform a reserve study that conforms to these standards.

RESERVE PROVIDER FIRM: A company that prepares reserve studies as one of its primary business activities.

RESERVE STUDY: A budget planning tool which identifies the components that the association is responsible to maintain or replace, 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.

RESPONSIBLE CHARGE: A Reserve Specialist (RS) in responsible charge of a reserve study shall render regular and effective supervision to those individuals performing services that directly and materially affect the quality and competence of services 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 or she 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; and
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: A temporary assessment levied on the members of an association in addition to regular assessments. Note that special assessments are often regulated by governing documents or local statutes.

USEFUL LIFE (UL): 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 Contents

The following is a list of the minimum contents to be included in the Reserve Study.

1. A summary of the association's number of units, physical description and reserve fund financial condition.
2. A projection of reserve starting balance, recommended reserve contributions, projected reserve expenses, and projected ending reserve fund balance for a minimum of 20 years.
3. A tabular listing of the component inventory, component quantity or identifying descriptions, useful life, remaining useful life and current replacement cost.

4. A description of methods and objectives utilized in computing the Fund Status and development of the Funding Plan.
5. Source(s) utilized to obtain component repair or replacement cost estimates.
6. A description of the level of service by which the Reserve Study was prepared.
7. Fiscal year for which the Reserve Study is prepared.

Disclosures

The following are the minimum disclosures to be included in the Reserve Study:

1. **General:** Description of the other involvement(s) with the association, which could result in actual or perceived conflicts of interest.
2. **Physical Analysis:** Description of how thorough the on-site observations were performed: representative samplings vs, all common areas, destructive testing or not, field measurements vs. drawing take-offs, etc.
3. **Financial Analysis:** Description of assumptions utilized for interest and inflation, tax and other outside factors.
4. **Personnel Credentials:** State or organizational licenses or credentials carried by the individual responsible for Reserve Study preparation or oversight.
5. **Update Reports:** Disclosure of how the current work is reliant on the validity of prior Reserve Studies.
6. **Completeness:** Material issues which, if not disclosed, would cause a distortion of the association's situation.
7. **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 and assembled for the association's use, not for the purpose of performing an audit, quality/forensic analysis, or background checks of historical records.
8. **Reserve Balance:** The actual or projected total presented in the Reserve Study is based upon information provided and was not audited.
9. **Component Quantities:** For update with site visit and update no site visit levels of service, the client is considered to have deemed previously developed component quantities as accurate and reliable.
10. **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.

Section IX. Additional Resources

CAI PROVIDES many guides, articles, and resources on reserve studies, including:

Reserve Specialist Code of Ethics: https://www.caionline.org/LearningCenter/credentials/Documents/ethics_reserve.pdf

Foundation for Community Association research Aging Infrastructure Research Project: <https://foundation.caionline.org/research/aging-infrastructure/>

The CAI Member-Only Research Library contains more than 3,000 articles on community association issues: <https://www.caionline.org/LearningCenter/ResLib/Pages/default.aspx>

CAI's library of on-demand webinars include many reserve-specific programs. To review the catalog, visit www.caionline.org/webinars

An Explanation of Reserve Study Standards, Based on the National Reserve Study Standards (NRSS): <https://www.caionline.org/LearningCenter/credentials/Documents/NRSSClarificationArticles.pdf>

The CAI education courses, M-206: *Financial Management* and M-201: *Facilities Management*, overview and analyze association reserves. To learn more or register, visit www.caionline.org/m201 and www.caionline.org/m206.

Books available from CAI

Accounting for Managers, by William H. Webster, 2004.

The Board Treasurer: Roles and Responsibilities in Community Associations, 2nd Ed., by Howard Goldklang, 2014.

Community Association Finances, Common Sense from Common Ground: A Collection of Articles from CAI's Award-Winning Magazine, 2005.

How to Draft a Budget: A Guide for Community Associations, 2017.

Reserve Funds: How & Why Community Associations Invest Assets, by Mitchell H. Frumkin, PE, CGP, RS and Nico F. March, CFM, RRP, editors, 2009.

Tips for Protecting Association Finances, CAI Press

To place an order or request the CAI Press catalog, call 888-224-4321 or visit CAI's online bookstore: www.caionline.org/shop.

Best Practices Reports

The Best Practices Reports, published by the Foundation for Community Association Research, cover the following topics and are available for sale in the CAI online bookstore at www.caionline.org/shop and as a free download at <https://foundation.caionline.org>.

Community Harmony & Spirit

Community Security

Energy Efficiency

Ethics

Financial Operations

Governance

Green Communities

Natural Disasters

Reserve Studies & Reserves Management

Strategic Planning

Transition

About the Foundation for Community Association Research

Our mission—with your support—is to provide research-based information for homeowners, association board members, community managers, developers and other stakeholders. Since the Foundation's inception in 1975, we've built a solid reputation for producing accurate, insightful and timely information, and we continue to build on that legacy. Visit foundation.caionline.org.



About Community Associations Institute (CAI)

Since 1973, Community Associations Institute (CAI) has been the leading provider of resources and information for homeowners, volunteer board leaders, professional managers, and business professionals in 350,000 community associations, condominiums, and co-ops in the United States and millions of communities worldwide. With more than 40,000 members, CAI works in partnership with 64 affiliated chapters within the U.S, Canada, United Arab Emirates, and South Africa, as well as with housing leaders in several other countries including Australia, Spain, Saudi Arabia, and the United Kingdom.

A global nonprofit 501(c)(6) organization, CAI is the foremost authority in community association management, governance, education, and advocacy. Our mission is to inspire professionalism, effective leadership, and responsible citizenship—ideals reflected in community associations that are preferred places to call home. Visit us at www.caionline.org and follow us on Twitter and Facebook @CAISocial.



DEVELOPING FUNCTION-SPECIFIC BEST PRACTICES in the community association industry has been a goal of Community Associations Institute and the Foundation for Community Association Research for several years. The Foundation has developed best practices in select topic areas using a variety of sources, including, but not limited to, recommendations from industry experts and various industry-related publications. The outcomes of the Best Practices project include:

- Documented criteria for function-specific best practices.
- Case studies of community associations that have demonstrated success in specific areas.
- A showcase on community excellence.



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