



# Fundamentals of a Reserve Study And Reserve Funding Plans

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## **Introduction:**

This paper focuses on the fundamentals of a replacement-reserve study and reserve funding plan (Reserve Study). Discussions are based on nationally accepted standards, most specifically National Reserve Study Standards (NRSS).

The best practice in executing a Reserve Study is to first identify immediate and long-term needs by commissioning a comprehensive facility assessment of all fixed and movable assets (an assessment). Although not a mandate of NRSS, assessments should be performed by an independent consultant in accordance with the American Society for Testing and Materials (ASTM) e2018-2008 Standard Guide for Property Condition Assessments.

An experienced consultant will identify critical repairs, deficient and poorly executed construction details, and not only include them in the budgets, but also provide various options to complete or correct. Additionally, recommendations for improvements should be provided to improve marketability, safety, and efficiencies. For those wanting to be "Green", include an evaluation of energy use and environmental impact by commissioning audits such as the ASTM e2797-11 Building Energy Performance Assessment, ASHRAE Energy Audits, or a LEED-Existing Building Operations and Maintenance (LEED-EBOM) pre-screen assessment.

To digress slightly, the subsequent budgets and funding plans of a Reserve Study are entirely founded on the assessment data and, therefore, are no better than this data. Unfortunately, many reserve-study service companies elect to utilize junior staff members to conduct the field inspection/assessment, which is then reviewed in the corporate office by the more experienced staff member. This is a cost-saving technique for the service company that may result in substandard results for the client. The quality of an assessment correlates directly to "experience-experience-experience". To get the most accurate data, ensure the consultant conducting the field assessment has years of relevant field experience in construction, inspection, and assessment. I recommend engineers with a minimum of 20 years of directly related experience. Due to time and budget constraints, the consultant typically has just one opportunity to spot and recognize a problem. He will rely on his years of training and experience, and possibly his intuition, to know what areas of a building and systems to focus on, and most importantly, what exactly to look for.

Assessment data should be formatted in accordance with NRSS reporting standards. Furthermore, formatting should allow for filtering data by various factors and report parameters: unit costs, accounting codes, locations (buildings), various departments (cost centers), report terms, and interest and inflation rates. Implementing these reporting formats in conjunction with an assessment will not only provide an accurate funding plan, but also bring added value by identifying and minimizing repair costs, lowering operating expenses and environmental impact, and optimizing purchasing power. Such results will improve marketability, enhance margins, and help ensure goals or mission. Comprehensive assessments and the funding of reserves are the precursor to initiatives such as strategic short- and long-term planning, energy audit programs, and capital projects, such as planning and executing major improvement programs, renovations, expansions, or replacements.

Every property owner can benefit from assessments and reserve studies. The need to assess and fund replacement-reserves particularly applies to properties owned or maintained by a common interest realty association (CIRA) such as condominiums, time-shares, cooperatives, etc.; state or federal authorities; and many private sector owners. Most notable of the private sector include retirement communities, churches, schools and college campuses, hospitals, nursing and memory enhancement facilities, assisted living facilities, hotels, general assembly facilities, REITs, and other similar types of facilities and owners. Benefits apply to both for- and not-for-profit owners. These are owners with a commitment to long-term ownership, quality, and performance. HUD and the federal government mandate reserve studies for all their properties, and more and more progressive states, counties, cities, and corporations are getting on board.

Capital replacement funding plans by definition are limited to depreciable fixed and moveable assets. However, large ticket operating expenses that do not occur on an annual basis should also be included in the reserve funding plan; i.e. major infrastructure and building repairs, or equipment or system repairs, tune-ups and overhauls. These operating expenses still need to be accounted for, but cost segregated from the depreciable expenses for reporting purposes. This is probably the most common omission in forecasting future expenses. Accounting ledgers of fixed and moveable assets focus on depreciable assets with replacement planning mostly based on IRS depreciation schedules. This practice does not account for early capital replacements and more importantly, excludes some of the most significant expenses such as major repairs, overhauls, and tune-ups. If these expenses are not reported and funded, deferred maintenance and ultimately financial distress may result!

### **Pricing Methods:**

There are two fundamental pricing methods: (i) “documented pricing”, pricing based on actual historical data and local vendor and contractor pricing, and (ii) “published pricing”, pricing benchmarked to a national average and adjusted by a city index multiplier (such as RS Means); each method has its place and benefits. If you need pricing for each item and individual budget (or building) to prove accurate, then use documented pricing. For most all the above discussed property types, this is the best pricing method. Please note that there will be many similar items that have the same unit pricing, so not every item is a unique price. Consultants and owners familiar with historical data, and using software with the ability to pool unit pricing data and do automatic updates for inflation, prove most efficient in managing documented pricing.

For large portfolios where individual pricing for an item or for one budget (or building) total is not as critical, and what is most critical is the overall pricing total for the portfolio, then published pricing may be the best method. Published pricing brings consistency to the pricing process when (i) teams of people are pricing and (ii) when there are large portfolios of buildings, with a wide range of building types in various

cities. There can be large swings in some numbers, but in the long run, the numbers should average out. What is most critical here is that the city index multiplier must be accurate. If the city index multiplier is wrong, then every number will be affected. Here again, the best scenario is when the portfolio encompasses properties in multiple cities. Such an example would be a state authority with buildings in multiple cities of varying sizes, ages, and types. Pricing on some individual budget items or buildings or city indexes may prove high or low, but overall, the totals for the entire portfolio of properties should average out.

### **Funding Plans:**

Funding plans take into account annual capital expenses (and possibly other expenses), unit counts adjusted for occupancy rates, current reserve fund balances, and projections for inflation and interest rates. These are the data and parameters necessary to provide a complete funding plan.

The following discussions on Funding Methods and Funding Plan Types will help assist in understanding the fundamentals of the various funding plans developed in accordance with various national standards: Community Associations Institute (CAI) and their Reserve Professional Designation Committee (RPDC), National Reserve Study Standards (NRSS), Association of Professional Reserve Analysts (APRA), and US Department of Housing and Urban Development (HUD). Once completed, the funding plan should be reviewed and approved by certified professionals, especially when a funding plan is mandated by covenants or statutes.

### **Funding Methods:**

The above noted national standards recognize up to three (3) primary funding methods for developing a funding plan:

1. Component Method (aka Fully Funded Method): This method establishes individual reserve accounts for each component with funding based on accumulated depreciation; funds cannot be moved between accounts. Should the plan be determined to be underfunded, the shortfall is made up one of two ways: (i) underfunded components are funded per the "Catch-Up Period" of funding depreciation based on the remaining life, or (ii) by special assessment.
2. Cash Flow Method (aka Proportional Funding): This method provides the minimum level of required funding to meet peak years; something less than 100% fully funded. The funding level is determined by amortizing the aggregate pool of expenses over the specified term of years; funds are pooled into one account.
3. Special Assessment Method: This is essentially a pay-as-you-go plan, funding one year at a time.

Funding plans based on the Component and Cash Flow methods minimize the potential for special assessments and deferred maintenance, and are discussed below. Funding based solely on special assessments is highly susceptible to large variations in funding levels and increases the probability of deferred maintenance.

### **Funding Plan Types:**

The NRSS, CAI, RPDC, and APRA utilize the Component and Cash Flow methods for the four (4) funding plans they recognize and endorse. HUD utilizes the Component Method / Fully Funded Plan.

1. Fully Funded Plan: This 100% funded plan utilizes the Component Method, funding the accumulated depreciation of each component and account, and making up shortfalls by special assessment or utilizing the Catch-Up Period funding method.
2. Baseline Funding Plan: This plan utilizes the Cash Flow Funding Method, determined by setting minimum funding levels to fund expenses so the reserve balance never drops below zero dollars in the worst year(s) during a specified term of years, typically 20 years.
3. Threshold Funding Plan: This is the Baseline Funding Plan but with a specified minimum contingency threshold amount (reserve balance) in the worst year. The reserve fund balance in the worst year is the threshold amount adjusted for inflation versus a worst year Base Line zero reserve balance.
4. Statutory Funding Plan: This is a mandated plan based on a statute (mandate), which is a covenant, or a local or government statute. The statute may simply require compliance with any one of the nationally recognized funding plans detailed above, or it may specify other unique requirements.

There are benefits to each funding plan and each is subject to funding shortfalls as further explained in the below Summation, be aware of and account for this risk. Risk factors to consider are errors and omissions, quality of management and maintenance, premature failure, faulty workmanship, obsolescence, or factors beyond anyone's control such as vandalism, theft, weather, acts of God, and others.

### **Summation:**

The trend for reserve-study consultants is to recommend the Fully Funded Plan, with a contingency allowance budget to mitigate the risk of a shortfall, error, or omission. The Fully Funded Plan, assuming reasonable consideration has been given for contingencies, is the least likely to experience an underfunded event or shortfall. The fundamental reason for this is there are funds available for each item plus a contingency for variables or omissions. Therefore, the primary risks are a function of identifying all budget items and then assigning an accurate replacement schedule and pricing. Risk is offset by the contingency and possible savings in other accounts. This funding plan is believed to minimize, or even mitigate, the risk not only to managers and boards, but also to the consultant, as to possible lawsuits due to negligence or errors and omissions. However, the Fully Funded Plan requires the highest level of funding, and can unnecessarily tie-up valuable cash assets. Additionally, required annual contribution levels may vary significantly from year-to-year, where the preference is for consistent funding levels with annual adjustments for inflation.

The Cash Flow Method is most popular since funding levels typically are significantly less than the Component Method (Fully Funded). However, it is important to understand that when utilizing this method, funding is based solely on the amortization of the replacement expenses for only those items to be replaced during the specified budget term; there are no reserves for items scheduled for replacement beyond the specified term. Should an item beyond the funding term need replacement during the term, its replacement expense has not been included in the amortization.

Another peculiarity of the Cash Flow Method is that a "worst year" occurrence, on which the funding level is based upon, will in most all cases occur in a year other than the last year of the specified term. For the years following the worst year, the funding level resets to a lower funding level based on amortization of the remaining expenses over the remaining balance of years of the specified term. This lower funding level will cause a problem if major upcoming expenses do not fall within the remaining term. Therefore, the lower funding level should be re-evaluated by looking beyond the specified term, if the number is to be used for

funding purposes. Just how many years beyond the specified budget term should be evaluated becomes a judgment call; look out far enough to include all major items that occur over the next several years. If funding levels change significantly, then the budget term should be adjusted to include these major items. Work with the consultant to determine the best number of years to specify as the budget term and to determine the validity of the second funding level.

To manage risks associated with the Cash Flow Method, there are three fundamental practices to employ: (i) as a minimum, set the funding levels based on no less than 20 years; (ii) adhere to NRSS recommendations for Level 1 and Level 2 updates; and (iii) look beyond the specified budget term for the occurrence of all other major expenses and their effect on funding levels. Adherence to these practices should adequately manage the risk associated with an unexpected or unfunded expense, not tie-up valuable cash assets, and provide consistent funding levels adjusted annually for inflation.

When working with your consultant, make your own decision on the best funding plan. Base this decision on factors pertinent to your business model taking into account the previously discussed risk factors and funding plan concepts. Consider the needs and capabilities to fund potential special assessments. These practices coupled with proper management should provide the best funding plan and results.

Funding plans should not be a static one-time report, but should be a dynamic process. NRSS recommends first a Level 1 study; the inspection and budget study are completed by a consultant and subsequent years annual updates by the owner. Additionally, NRSS recommends a Level 2 update every three years; the funding plan is reviewed by the consultant based on a site inspection. A Level 3 is an update by the consultant, without a site inspection. Every situation is unique; therefore, depending on various factors, updates may or may not justify a site inspection.

Below is a list of questions to help clarify when an update merits a Level 2 consultant update and site inspection:

- Has any significant maintenance been deferred?
  - Did annual funding contributions occur as planned?
  - Did all significant expenses occur as planned?
  - Has the reserve balance deviated more than 5% from the desired percent-funded goal?
  - Has local pricing or inflation been significantly impacted?
  - Has a significant building code citation been received?
  - Have there been any new mandated changes of significance made to the building codes?
  - Have any major systems or equipment become obsolete?
  - Has there been any extreme wear or tear to major components or critical systems?
  - Have any major systems or components been added, overhauled, or replaced?
  - Are any developer, contractor, or critical manufacturer warranties set to expire?
  - Are there new technologies or product developments that may impact operations?
  - Have any environmental/geological events occurred that may have a negative impact?
  - Has there been any significant change in demographics or competition?
  - Has there been a change in service vendors, property managers, or senior level executives?
  - Has there been a change in the leadership or membership of the board or trustees?
  - Is there a plan to refinance, apply for accreditation, renovate, expand, sell, or merge?
  - Is there any significant change to corporate goals or mission?
- Has it been three years since the assessment and funding plan was completed (note: NRSS recommends every three years)?

"Risk management" factors into literally every business decision, whether your business plan is margin or mission driven. Funding replacement-reserves minimizes maintenance risk, one of the principal risks in property ownership. Choosing to manage maintenance risk by funding reserves is a fundamental and sound business practice that will help ensure your mission and long-term goals are achieved!

**Sample Funding Plan Reports:**

On the following pages are sample sets of reports produced by FacilityForecast® Software, demonstrating various reports and funding plans. A review of these reports and plans will assist in understanding the various NRSS funding plans and benefits, so you can identify the funding plan that best meets your business model.

## FUNDING SUMMARY REPORT

This report summarizes the required report parameters and the first-year results for the various NRSS funding plans.



### Funding Plan Summary

All Budgets  
Table V-A

20110: Isleworth Glen, Concord, NH

Report Parameters		Report Parameters	
Begin Year:	2011	Budget Types:	Expense
Report Term:	20 years	Divisions:	AI
Inflation:	3.00%	Minimum unit cost:	0.00
Area Type:	Gross SF		
Classifications:	CAP		

#### Client Provided Data and General Information

2011	For Fiscal Year Only
478	Number of Units
1,600,000	Initial Reserve Balance
1.50%	Assumed Annual Interest Rate
3.00%	Assumed Annual Inflation Rate
95.00%	Estimated Percent Occupancy
2.00%	Threshold Minimum of Total Replacement Cost
12,323,487	Total Replacement Cost

#### Table V-B.1: Current Funding Plan for This Fiscal Year

183.51	Per Unit Monthly Contribution
30.92%	Percent Funded
2018	First Year Under Funded

#### Table V-C.1: Fully Funding Plan (Component Method) for This Fiscal Year

418.50	Per Unit Monthly Contribution
58.09%	Percent Funded
2022	First Year at +99% Funded

#### Table V-D.1: Baseline Funding Plan (Cash Flow Method) for This Fiscal Year

212.81	Per Unit Monthly Contribution
34.31%	Percent Funded
2021	First Year Reserve Balance at \$0
2031	First Year Under Funded (projecting the Annual Contribution from the final year)

#### Table V-E.1: Threshold Funding Plan (Cash Flow Method) for This Fiscal Year

217.58	Per Unit Monthly Contribution
34.86%	Percent Funded
246,470	Minimum Reserve in Current Year Dollars
2020	First Year Reserve Balance at Specified Threshold Minimum
2038	First Year Under Funded (projecting the Annual Contribution from the final year)

#### Table V-G.1: Modified Funding Plan for This Fiscal Year

201.86	Per Unit Monthly Contribution
33.04%	Percent Funded
2021	First Year under Funded

Below are sample table and chart report sets for each NRSS funding plan based on 3% inflation, 1.5% interest earnings, and 95% occupancy. Please note for CIRA-type properties, such as condominiums, time-shares, and cooperatives, use 100% occupancy since every unit has an owner.

## CURRENT FUNDING PLAN REPORTS

This is an analysis of a Current Funding Plan. In best case, the current plan is designed to meet a business model and complies with a NRSS funding plan. Worst case, it is nothing more than a "pay-as-you-go" special assessment plan. The Current Funding Plan report answers the fundamental question "does the current plan meet funding needs, are we over or under-funded?" In this example, under-funding is experienced starting at \$697,378 in year 2018.

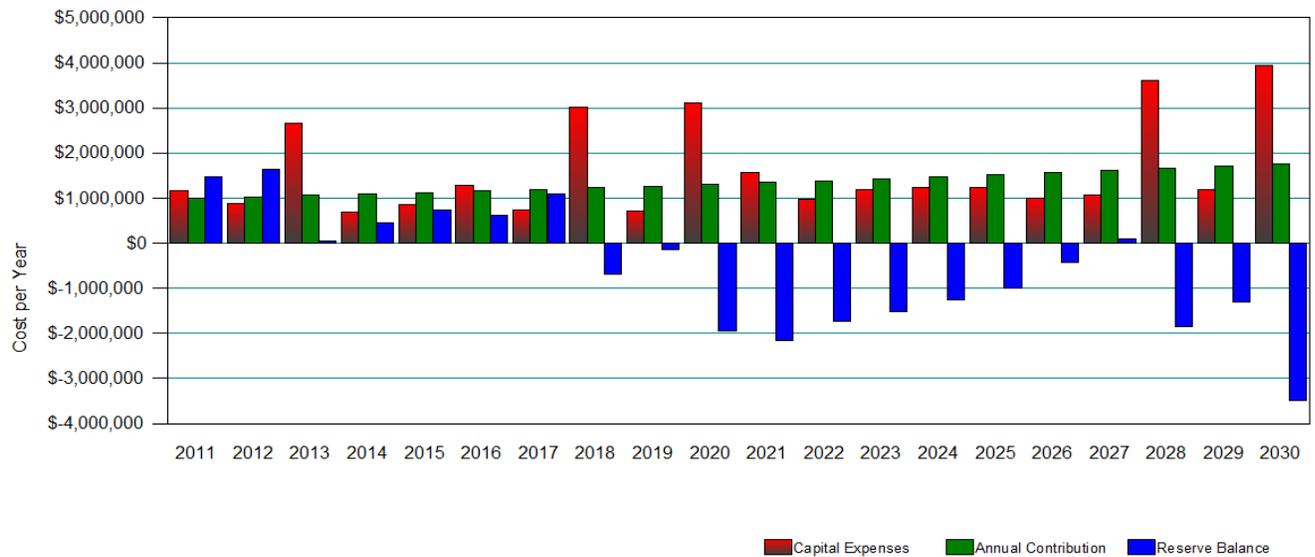


### Current Funding Plan

All Budgets  
Chart V-B

20110: Isleworth Glen, Concord, NH

Report Parameters		Report Parameters	
Begin Year:	2011	Budget Types:	Expense
Report Term:	20 years	Divisions:	All
Inflation:	3.00%	Minimum unit cost:	0.00
Area Type:	Gross SF		
Classifications:	CAP		



Year	Fully Funded Balance - 100% Funded	Reserve Balance	Percent Funded	Interest Income	Capital Expenses	Annual Contributions	Per Unit Per Year at 95 % Occup	Per Unit Per Month at 95 % Occup
2011	4,748,274	1,468,251	30.92%	22,841	1,154,590	1,000,000	2,202.16	183.51
2012	5,296,807	1,634,446	30.86%	23,097	886,902	1,030,000	2,268.22	189.02
2013	4,097,415	57,734	1.41%	12,597	2,650,209	1,060,900	2,336.27	194.69
2014	4,881,514	453,399	9.29%	3,805	700,866	1,092,727	2,406.36	200.53
2015	5,567,050	743,844	13.36%	8,912	843,977	1,125,509	2,478.55	206.55
2016	5,856,030	627,398	10.71%	10,208	1,285,928	1,159,274	2,552.90	212.74
2017	6,701,637	1,091,086	16.28%	12,793	743,156	1,194,052	2,629.49	219.12
2018	5,316,736	(697,378)	-13.12%	2,931	3,021,269	1,229,874	2,708.38	225.70
2019	6,298,427	(130,007)	-2.06%	4,224	703,622	1,266,770	2,789.63	232.47
2020	4,919,056	(1,938,918)	-39.42%		3,113,685	1,304,773	2,873.32	239.44
2021	5,145,268	(2,154,902)	-41.88%		1,559,900	1,343,916	2,959.52	246.63
2022	6,015,144	(1,737,378)	-28.88%	3,108	969,818	1,384,234	3,048.30	254.03
2023	6,716,589	(1,502,673)	-22.37%	1,747	1,192,804	1,425,761	3,139.75	261.65
2024	7,432,689	(1,266,669)	-17.04%	1,757	1,234,286	1,468,534	3,233.94	269.50
2025	8,204,132	(989,469)	-12.06%	2,064	1,237,453	1,512,590	3,330.96	277.58
2026	9,282,477	(418,065)	-4.50%	4,254	990,817	1,557,967	3,430.89	285.91
2027	10,332,868	109,725	1.06%	3,929	1,080,845	1,604,706	3,533.82	294.48
2028	8,924,690	(1,840,777)	-20.63%		3,603,350	1,652,848	3,639.83	303.32
2029	10,006,478	(1,311,182)	-13.10%	3,942	1,176,780	1,702,433	3,749.03	312.42
2030	8,400,993	(3,489,484)	-41.54%		3,931,808	1,753,506	3,861.50	321.79

## FULLY FUNDED PLAN REPORTS

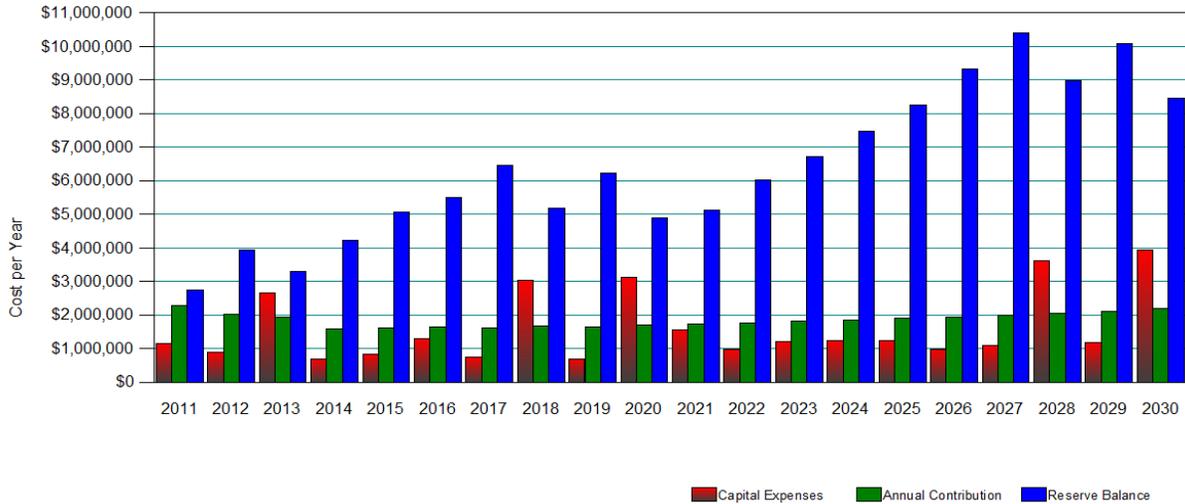
This example complies as a Fully Funded Plan per NRSS even though the plan is underfunded in the first two years, significantly below 100%. The plan complies since it addresses the shortfall by using the "Catch-Up Periods" funding method. Note the percent funded in 2011 is 59.08% and ramps up until achieving approximately 100% funded in year 2022. This is achieved by funding depreciation based on the "remaining life" of each underfunded item until each is fully funded. The other option to make up the shortfall is by a one-time \$3.148M special assessment, which this owner did not find acceptable. Note, this is still a huge jump in annual contributions from \$1M to \$2.28M in the first year of this plan, which most organizations would not find acceptable.



### Fully Funded Plan All Budgets Chart V-C

20110: Isleworth Glen, Concord, NH

Report Parameters		Report Parameters	
Begin Year:	2011	Budget Types:	Expense
Report Term:	20 years	Divisions:	All
Inflation:	3.00%	Minimum unit cost:	0.00
Area Type:	Gross SF		
Classifications:	CAP		



Year	Fully Funded Balance - 100% Funded	Reserve Balance	Percent Funded	Interest Income	Capital Expenses	Annual Contributions	Per Unit Per Year at 95 % Occup	Per Unit Per Month at 95 % Occup
2011	4,748,274	2,758,330	58.09%	32,444	1,154,590	2,280,475	5,021.97	418.50
2012	5,296,807	3,941,552	74.41%	49,875	886,902	2,020,249	4,448.91	370.74
2013	4,097,415	3,288,063	80.25%	53,818	2,650,209	1,942,901	4,278.58	356.55
2014	4,881,514	4,228,848	86.63%	55,957	700,866	1,585,694	3,491.95	291.00
2015	5,567,050	5,065,671	90.99%	69,190	843,977	1,611,610	3,549.02	295.75
2016	5,856,030	5,499,381	93.91%	78,648	1,285,928	1,640,990	3,613.72	301.14
2017	6,701,637	6,459,730	96.39%	89,026	743,156	1,614,479	3,555.34	296.28
2018	5,316,736	5,189,760	97.61%	86,721	3,021,269	1,664,578	3,665.66	305.47
2019	6,298,427	6,219,303	98.74%	84,931	703,622	1,648,235	3,629.67	302.47
2020	4,919,056	4,888,104	99.37%	82,685	3,113,685	1,699,801	3,743.23	311.94
2021	5,145,268	5,134,569	99.79%	74,610	1,559,900	1,731,753	3,813.59	317.80
2022	6,015,144	6,017,789	100.04%	83,020	969,818	1,770,019	3,897.86	324.82
2023	6,716,589	6,731,552	100.22%	94,908	1,192,804	1,811,658	3,989.56	332.46
2024	7,432,689	7,460,290	100.37%	105,646	1,234,286	1,857,377	4,090.24	340.85
2025	8,204,132	8,244,750	100.50%	116,911	1,237,453	1,905,002	4,195.12	349.59
2026	9,282,477	9,331,470	100.53%	130,840	990,817	1,946,697	4,286.93	357.24
2027	10,332,868	10,389,979	100.55%	146,810	1,080,845	1,992,545	4,387.90	365.66
2028	8,924,690	8,989,059	100.72%	144,261	3,603,350	2,058,168	4,532.41	377.70
2029	10,006,478	10,074,662	100.68%	141,914	1,176,780	2,120,469	4,669.61	389.13
2030	8,400,993	8,473,048	100.86%	138,072	3,931,808	2,192,122	4,827.40	402.28

## BASELINE FUNDING PLAN REPORTS

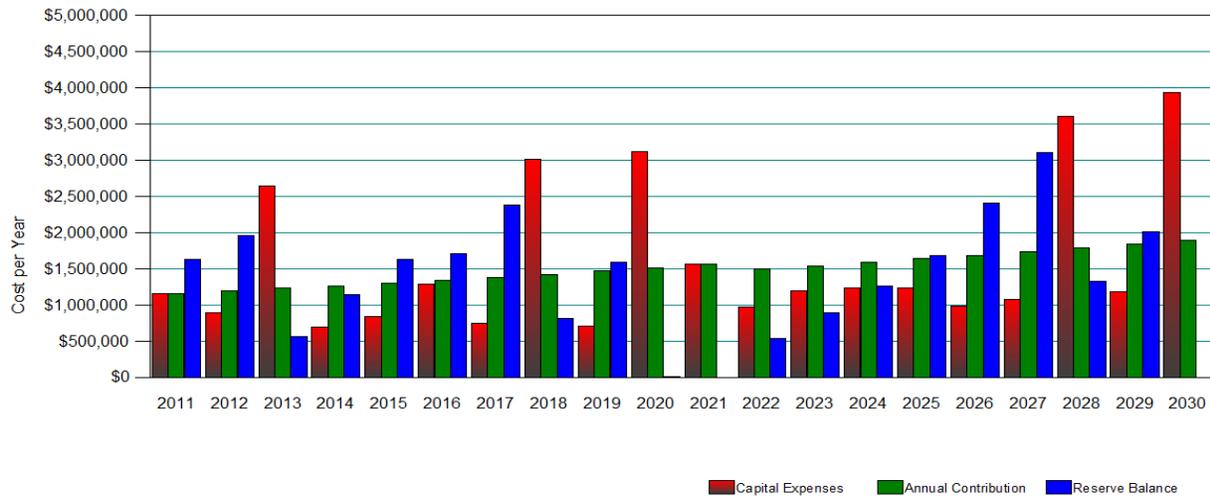
The two fundamental benefits of this plan are to: (i) minimize annual contribution requirements, and (ii) avoid tying up valuable cash assets unnecessarily. The maximum reserve level totals \$3,109,419, versus the Fully Funded Plan at \$10,389,979, both occurring in year 2027. However, note that in two of the years, the reserve balance drops to zero dollars; this can prove risky. This risk can be minimized by conducting recommended NRSS Level 1 and 2 updates, setting the budget term long enough to capture all major expenses, and by funding a one-time contingency budget line item. Note, based on the original funding level of \$1M, this is an increase of 14% to \$1,159,658 in the first year, a tolerable increase for most.



### Baseline Funding Plan All Budgets Chart V-D

2010: Isleworth Glen, Concord, NH

Report Parameters		Report Parameters	
Begin Year:	2011	Budget Types:	Expense
Report Term:	20 years	Divisions:	All
Inflation:	3.00%	Minimum unit cost:	0.00
Area Type:	Gross SF		
Classifications:	CAP		



Year	Fully Funded Balance - 100% Funded	Reserve Balance	Percent Funded	Interest Income	Capital Expenses	Annual Contributions	Per Unit Per Year at 95% Occup	Per Unit Per Month at 95% Occup
2011	4,748,274	1,629,106	34.31%	24,038	1,154,590	1,159,658	2,553.75	212.81
2012	5,296,807	1,963,394	37.07%	26,743	886,902	1,194,447	2,630.36	219.20
2013	4,097,415	562,268	13.72%	18,801	2,650,209	1,230,281	2,709.27	225.77
2014	4,881,514	1,141,272	23.38%	12,681	700,866	1,267,189	2,790.55	232.55
2015	5,567,050	1,623,079	29.16%	20,578	843,977	1,305,205	2,874.27	239.52
2016	5,856,030	1,706,296	29.14%	24,784	1,285,928	1,344,361	2,960.50	246.71
2017	6,701,637	2,378,237	35.49%	30,406	743,156	1,384,692	3,049.31	254.11
2018	5,316,736	806,912	15.18%	23,711	3,021,269	1,426,233	3,140.79	261.73
2019	6,298,427	1,590,153	25.25%	17,844	703,622	1,469,020	3,235.01	269.58
2020	4,919,056	1,406		11,848	3,113,685	1,513,090	3,332.06	277.67
2021	5,145,268	0		10	1,559,900	1,558,483	3,432.03	286.00
2022	6,015,144	532,383	8.85%	3,963	969,818	1,498,238	3,299.36	274.95
2023	6,716,589	893,379	13.30%	10,614	1,192,804	1,543,185	3,398.34	283.19
2024	7,432,689	1,264,638	17.01%	16,065	1,234,286	1,589,481	3,500.29	291.69
2025	8,204,132	1,686,318	20.55%	21,967	1,237,453	1,637,165	3,605.30	300.44
2026	9,282,477	2,412,291	25.99%	30,511	990,817	1,686,280	3,713.46	309.45
2027	10,332,868	3,109,419	30.09%	41,105	1,080,845	1,736,869	3,824.86	318.74
2028	8,924,690	1,328,077	14.88%	33,033	3,603,350	1,788,975	3,939.61	328.30
2029	10,006,478	2,018,856	20.18%	24,915	1,176,780	1,842,644	4,057.79	338.15
2030	8,400,993	0		15,029	3,931,808	1,897,923	4,179.53	348.29

## THRESHOLD FUNDING PLAN REPORTS

This is essentially a Baseline Funding Plan with a contingency. The contingency is the threshold amount adjusted for inflation. In this example, the threshold amount is calculated by taking 2% of the total one-time replacement cost of \$12,323,487; these parameters are noted in the above Funding Plan Summary Report. A potential shortfall of this concept of funding contingency is that the threshold amount is funded over the term of years up to the worst year or combination of years, 2020 and 2021. Therefore, the largest amount of contingency occurs in the worst year. If risk is higher in earlier years, years that also may have a low reserve balance, then the Baseline Funding Plan with a one-time contingency budget line item in those specific worst years may prove a better choice. Risk is further managed following the same recommendations made for a Baseline Funding Plan. Note, based on the original funding level of \$1M, this is an increase of 16% to \$1,185,653 in the first year, a tolerable increase for most.

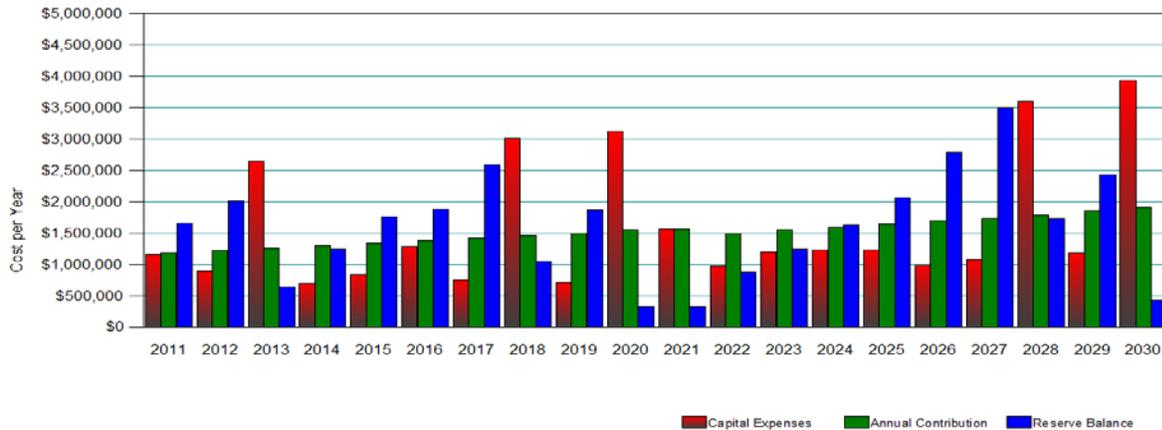


**20110: Isleworth Glen, Concord, NH**

**Report Parameters**  
 Begin Year: 2011  
 Report Term: 20 years  
 Inflation: 3.00%  
 Area Type: Gross SF  
 Classifications: CAP

**Threshold Funding Plan**  
 All Budgets  
 Chart V-E

**Report Parameters**  
 Budget Types: Expense  
 Divisions: All  
 Minimum unit cost: 0.00



Year	Fully Funded Balance - 100% Funded	Reserve Balance	Percent Funded	Interest Income	Capital Expenses	Annual Contributions	Per Unit Per Year at 95 % Occup	Per Unit Per Month at 95 % Occup
2011	4,748,274	1,655,296	34.86%	24,233	1,154,590	1,185,653	2,611.00	217.58
2012	5,296,807	2,016,954	38.08%	27,337	886,902	1,221,223	2,689.33	224.11
2013	4,097,415	644,416	15.73%	19,812	2,650,209	1,257,860	2,770.01	230.83
2014	4,881,514	1,253,272	25.67%	14,127	700,866	1,295,595	2,853.11	237.76
2015	5,567,050	1,766,236	31.73%	22,478	843,977	1,334,463	2,938.70	244.89
2016	5,856,030	1,881,963	32.14%	27,158	1,285,928	1,374,497	3,026.86	252.24
2017	6,701,637	2,587,813	38.61%	33,274	743,156	1,415,732	3,117.67	259.81
2018	5,316,736	1,051,842	19.78%	27,094	3,021,269	1,458,204	3,211.20	267.60
2019	6,298,427	1,871,935	29.72%	21,765	703,622	1,501,950	3,307.53	275.63
2020	4,919,056	321,587	6.54%	16,329	3,113,685	1,547,009	3,406.76	283.90
2021	5,145,268	331,235	6.44%	4,860	1,559,900	1,564,688	3,445.69	287.14
2022	6,015,144	873,555	14.52%	8,969	969,818	1,503,170	3,310.22	275.85
2023	6,716,589	1,244,786	18.53%	15,769	1,192,804	1,548,265	3,409.52	284.13
2024	7,432,689	1,626,587	21.88%	21,375	1,234,286	1,594,713	3,511.81	292.65
2025	8,204,132	2,059,125	25.10%	27,437	1,237,453	1,642,554	3,617.16	301.43
2026	9,282,477	2,796,283	30.12%	36,144	990,817	1,691,831	3,725.68	310.47
2027	10,332,868	3,504,930	33.92%	46,907	1,080,845	1,742,586	3,837.45	319.79
2028	8,924,690	1,735,454	19.45%	39,010	3,603,350	1,794,863	3,952.57	329.38
2029	10,006,478	2,438,454	24.37%	31,071	1,176,780	1,848,709	4,071.15	339.26
2030	8,400,993	432,186	5.14%	21,370	3,931,808	1,904,170	4,193.28	349.44

## MODIFIED FUNDING PLAN REPORTS

When standard NRSS funding plans do not meet the need, a Modified Plan may be tailored. This owner discovered they could not tolerate the significant first year special assessment or required initial increase. Instead, they elected for incremental increases. In this example, the Threshold Funding Plan required \$1,185,653 in the first year, a 16% increase in the first year over the Current Plan of \$1M, with subsequent 3% annual increases. Instead, the owner elected to increase the first year by 10% (from \$1M to \$1.1M), with incremental compounded adjustments of approximately 4% for 4 more years, until funding is caught up with the Threshold Plan in year 2015. This is where the "Modified Funding Plan" model proves invaluable; an owner can vary increases to coincide with tolerance by modeling various scenarios until an acceptable solution is identified. This concept can also be applied to other plans assuming covenants or statutes allow for the variations.

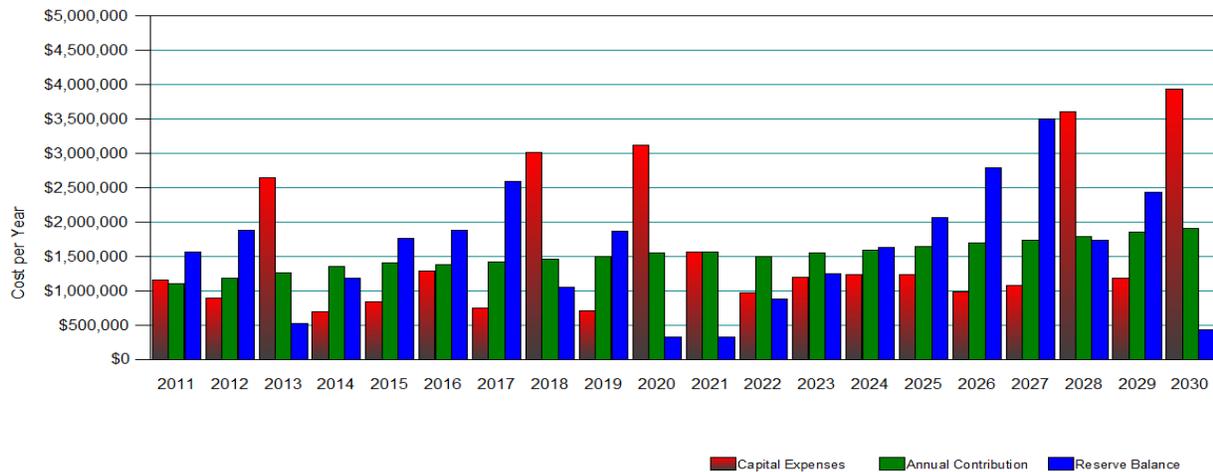


20110: Isleworth Glen, Concord, NH

### Modified Funding Plan

All Budgets  
Chart V-G

Report Parameters		Report Parameters	
Begin Year:	2011	Budget Types:	Expense
Report Term:	20 years	Divisions:	All
Inflation:	3.00%	Minimum unit cost:	0.00
Area Type:	Gross SF		
Classifications:	CAP		



Year	Fully Funded Balance - 100% Funded	Reserve Balance	Percent Funded	Interest Income	Capital Expenses	Annual Contributions	Per Unit Per Year at 95% Occup	Per Unit Per Month at 95% Occup
2011	4,748,274	1,569,001	33.04%	23,591	1,154,590	1,100,000	2,422.37	201.86
2012	5,296,807	1,886,139	35.61%	25,721	886,902	1,178,320	2,594.85	216.24
2013	4,097,415	516,029	12.59%	17,882	2,650,209	1,262,216	2,779.60	231.63
2014	4,881,514	1,179,873	24.17%	12,625	700,866	1,352,086	2,977.51	248.13
2015	5,567,050	1,766,237	31.73%	21,931	843,977	1,408,409	3,101.54	258.46
2016	5,856,030	1,881,963	32.14%	27,158	1,285,928	1,374,497	3,026.86	252.24
2017	6,701,637	2,587,813	38.61%	33,274	743,156	1,415,732	3,117.67	259.81
2018	5,316,736	1,051,842	19.78%	27,094	3,021,269	1,458,204	3,211.20	267.60
2019	6,298,427	1,871,935	29.72%	21,765	703,622	1,501,950	3,307.53	275.63
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2030	8,400,993	432,186	5.14%	21,370	3,931,808	1,904,170	4,193.28	349.44

**About the Author:**

John H. zumBrunnen is the CEO and founder of zumBrunnen, Inc., an independent building consulting firm based in Atlanta, Georgia ([www.zumbrunnen.com](http://www.zumbrunnen.com)). The recipient of a BS in mechanical engineering from the University of North Dakota and a member of LeadingAge, zumBrunnen has 35 plus years' experience in construction, assessment, and property development. He is the inventor of the FacilityForecast® software system and a respected speaker in the industry.