

Reserve Study  
for  
**MALVERN OF MADISON**



Prepared by  
**The Malvern of Madison, Inc.**  
**Reserve Study Committee**

Members:  
Barry Cliver  
Rick Collins, co-chair  
Joe Graham  
Wallace Harvey  
Ed Johnson, co-chair  
Don Nicholson  
T. J. Wright

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# Malvern of Madison – Reserve Study

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### INTRODUCTION

A reserve study should be considered a “dynamic” document. In other words, it’s a document that must be periodically revisited to confirm or modify as necessary the information it contains.

One of the purposes of a reserve study is to predict remaining life expectancy and replacement costs for our improvements – the roof on the clubhouse for example. Life expectancy can be based on an average of life expectancies for similar roofs. But perhaps our roof is subject to environmental conditions not typically associated with the average roof. So maybe its remaining life will be shorter or longer than originally predicted.

The same is true for cost. Predictions can be made based on some combination of the previous replacement cost, nationally published costs, current material costs, etc. But no one really knows how much a replacement roof will cost until the job is actually bid out. Even then there might be some additional costs that couldn’t be predicted until the shingles were removed.

Other factors include inflation and the price of oil. In the early 1980s inflation was above 10%. For the past 5 years it’s been as high as 3.8% and as low as -0.4%. Using a factor too high could result in higher than necessary annual assessments for current residents. Using a factor too low could result in the need for future loans or special assessments.

Similarly, oil prices can have significant fluctuations depending on world events. Since we maintain our streets, oil price fluctuations can have a significant impact on predicted future costs associated with repaving our streets.

**So the “dynamic” nature of this study means that periodic reviews and updates are required to validate the information contained herein. These reviews and updates should occur no less than annually at minimum and perhaps more often as new information and conditions may warrant.**

### RESERVE STUDY COMMITTEE

During the December 13, 2012 Board of Directors meeting, a reserve study committee was formed with the charge of researching and preparing an in-house reserve study. The committee was also charged to research and recommend whether to have an outside consultant prepare the reserve study. The committee was co-chaired by Rick Collins and Ed Johnson. Committee members included Barry Cliver, Joe Graham, Wallace Harvey, Don Nicholson, and T. J. Wright.

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## PURPOSE OF A RESERVE STUDY

A reserve study is a helpful tool which can be used as a reference to determine adequate funding levels to meet current and future reserve component expenditures. The study has two parts: a *physical analysis* and a *financial analysis*.

The *physical analysis* includes a listing of the component inventory, a condition assessment of each component based on visual inspection, and the anticipated remaining useful life and projected repair and/or replacement costs of each item.

The *financial analysis* offers recommendations for current and future reserve contribution rates which will guide members to a path on proper funding of their reserve account.

## REQUIREMENT FOR A RESERVE STUDY

In 2002, the following statute was passed requiring Homeowner Associations in the Commonwealth of Virginia to establish reserves for capital components:

*§ 55-514.1. Reserves for capital components.*

*A. Except to the extent otherwise provided in the declaration and unless the declaration imposes more stringent requirements, the board of directors shall:*

- 1. Conduct at least once every five years a study to determine the necessity and amount of reserves required to repair, replace and restore the capital components;*
- 2. Review the results of that study at least annually to determine if reserves are sufficient; and*
- 3. Make any adjustments the board of directors deems necessary to maintain reserves, as appropriate.*

*B. To the extent that the reserve study conducted in accordance with this section indicates a need to budget for reserves, the association budget shall include, without limitation:*

- 1. The current estimated replacement cost, estimated remaining life and estimated useful life of the capital components;*
- 2. As of the beginning of the fiscal year for which the budget is prepared, the current amount of accumulated cash reserves set aside, to repair, replace or restore capital components and the amount of the expected contribution to the reserve fund for that year; and*
- 3. A general statement describing the procedures used for the estimation and accumulation of cash reserves pursuant to this section and the extent to which the association is funding its reserve obligations consistent with the study currently in effect.*

## DESCRIPTION OF MALVERN OF MADISON

Malvern of Madison is a residential subdivision of single family homes located in Madison County, Virginia containing a total of 234 privately owned lots of which 192 lots are occupied and 42 lots are vacant.

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The development was begun in the very early 1970s by a developer who envisioned a rustic recreational community complete with tree-lined private roadways, two lakes, a riding stable, 10 miles of riding trails, clubhouse and community center, two tennis courts, swimming pool, beaches and boating center.

As sales of lots began the developer completed the clubhouse and community center, 1 of the 2 lakes, the swimming pool and stable. Unfortunately though after only a few years the developer was unable to attract enough buyers to sustain adding additional amenities and in fact subsequently relinquished his control of unsold lots to the bank that held the loans.

Suffice it to say that the early lot owners through a concerted effort, patience, negotiation and hard work turned Malvern into what it has become today. Starting in 1975 they negotiated agreements whereby many roads that were not yet begun would be cleared and graded including construction of a permanent all-weather crossing over Dark Run.

Then over the next 30 years, the residents managed completion of the roadway infrastructure until finally in 2006, the last roads in Malvern were paved. Along the way some of the originally envisioned amenities were forced to be abandoned due to lack of funds and interest. For example, the riding trails were not built because there was little interest for residents to have horses. The stable lot was sold to a private owner in 2000 to generate funds for road improvements. The tennis courts were not built. The second lake was never started. In 1991, the residents began paying a special assessment of \$125 per lot for completion of the roadway system. This special assessment stayed through 2008. In 2010, the easement for the second lake and bridle trails were vacated.

But fortunately what has survived through the many years since 1975 is the community spirit to volunteer time, services, and talents in an effort to minimize expenses for work that many other communities would otherwise have to pay for through higher yearly assessments. These efforts have allowed Malvern to remain a self-managed homeowner association since its beginnings.

### PREVIOUS RESERVE PLANNING

The Board of Directors focused on the Virginia statute starting in 2007. At this time Malvern had about \$40,000 in cash and owed over \$210,000 for repayment of road and dam loans.

The methodology was to list the various common components in Malvern. Then professional advice was sought to determine approximate costs for maintenance and repairs. It was also recognized that reserve funds must be established once our final loan was paid in 2011.

All of the information was then compiled into what was called the 5-year plan. This plan was presented to the membership on April 26, 2008 where the minutes state, "a 5 year plan is required by the State of VA to show that any HOA has a financial plan for future costs that will be sustained by membership dues, not by loans."

On October 18, 2008, the 5-year plan was used to justify to the membership the need to raise regular dues from \$300 to \$525 per lot per year. The \$125 special assessment was rescinded at that time.

Since 2008, the 5-year plan has been reviewed and modified on a yearly basis prior to membership approval of the budget for the upcoming year.

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### RESERVE FUNDING

Operational expenses and reserve funding is paid from annual regular dues assessed to each lot owner. In 2009, regular dues increased to \$525 per lot per year. This amount multiplied by a total of 234 lots generates \$122,850 per year. Other income sources increase total typical income to approximately \$130,000 per year. However recent economic difficulties experienced by some resident's shows that lost revenue from non-payment of dues is approximately \$5,000 per year. So for the foreseeable future it is felt prudent to expect total income to be \$125,000.

The 5-year plan prepared in 2008 budgeted \$40,000 to be placed into a reserve account in 2011, which is the year Malvern completed loan repayments. In fact the cash position in 2011 allowed this amount plus an additional \$20,000 to be allotted for the reserve fund. An additional \$40,000 was budgeted for the reserve fund in 2012. Again, the cash position allowed this amount plus an additional \$10,000 to be added to the reserve account.

The approved budget for 2013 shows that \$30,000 will be added to the reserve fund. Then, in accordance with the current 5-year plan, an additional \$46,000 is forecast to be added in 2014. Based on the projections contained in this report, it will be necessary to increase the contribution to the reserve fund starting in 2015 and continuing thereafter. Table 3 summarizes the reserve funding contributions needed to maintain a positive balance in the reserve fund.

### RESERVE COMPONENTS IN MALVERN

A *reserve component* is a commonly owned item which requires a reserve balance for maintenance, repair and replacement. Malvern's *reserve components* are as follows:

1. Roads: approximately 8.5 miles including lake access off Ashlawn, plus clubhouse parking area, twin box culvert and approximately 50 iron or corrugated metal pipe culverts, roadside ditches, gravel shoulders, and guardrail
2. Lake including 2 docks, spillway and dam
3. Clubhouse
4. Pool
5. Playground equipment
6. Mailbox structure and mailbox clusters
7. Newspaper boxes
8. Entrance sign
9. Road signs and community signs
10. Common grounds

**Roads:** all roadways in Malvern are now paved. Many of the roadways were paved in 2000 others in 2004 and remaining roads in 2006. Pavement width varies between 12 feet on several side roads to a maximum of 20 feet on main roadways. Shoulder width is minimal along most roads as are ditches. There is no curb and gutter in the subdivision. Roads were constructed without a design standard so pavement, base and sub-base depths are unknown. The majority of roads are located within a 50 foot access easement.

For reference, the last cost for major road paving (not road maintenance) occurred in 2006 where the cost per square yard ranged from \$7.80 to \$8.20.

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In 2012, cost for road maintenance was \$23,536 and was performed by Roger Robertson, Inc. The work included a 132 x 17 foot patch on Old Forge, an 11 x 16, 66 x 16 and 30 x 8 foot patch on Sleigh Bell, paving over the culvert installed at the intersection of Sylvan Lane and Malvern Drive, an 18 x 7 foot patch plus drainage improvement on Ashlawn Drive, an 8 x 130 foot patch on Liberty lane, a 133 x 15 patch on Aroda Road, and approximately 16,000 lineal feet of crack filling throughout the subdivision.

In 2010, cost for road maintenance was \$27,252 and was performed by Roger Robertson, Inc. The work included miscellaneous patching on Old Forge, Liberty, Sleigh Bell, Covered Bridge, Aroda, Surrey, Powder Horn, Sylvan Lane, Turkey Trot and on Liberty over the 36 inch culvert replacement. Approximately 600 x 20 feet of Old Forge was repaved. A product called Flo-Mix Pourable Asphalt was used to see whether it would be effective in sealing alligator and other type cracks and potholes.

In 2007, cost for road maintenance was \$4,950 and was performed by Roger Robertson, Inc. The work consisted of miscellaneous patching along several roads within Malvern.

In 2006, cost for road maintenance was \$33,831 and was performed by S. L. Williamson Company, Inc. The work included repaving approximately 230 feet of the entrance, placing shoulder gravel, overlay 130 x 6 feet on Turkey Trot, 600 x 16 feet on Old Forge, several patches on Old Forge, overlay of the clubhouse parking and connecting road.

In 2004, cost for road maintenance was \$33,837 and was performed by S. L. Williamson Company, Inc. The work included patching on Malvern, Butter Churn, Covered Bridge, Liberty Lane, Surrey Court, Turkey Trot and Old Forge, and overlay of 1,978 x 20 feet on Covered Bridge.

With proper management of drainage and shoulders along with periodic repairs in defined areas, Malvern Drive from the entrance to Covered Bridge and Covered Bridge to Liberty Lane are expected to have a 20-year life before a major resurfacing of large portions of these roads are necessary. The remainder of the roads and the clubhouse parking area are expected to have a 30-year life before similar major resurfacing becomes necessary.

In 2012 the Roads Committee began discussions on road treatment alternatives that may help to extend the amount of time before resurfacing is required by 5 to 7 years. These alternatives are under study at this time.

At the October 2012 membership meeting the Board was charged with providing the membership with an estimate to remove trees causing pavement damage in the parking area and to then repave the affected area.

**Twin concrete box culverts:** these are located where Dark Run flows under Covered Bridge Drive. The culverts were installed in 1981 at a cost of about \$90,000. An engineering report prepared in 1977 shows the culverts to have been designed to pass the 25 year storm. This means larger storms could overtop the roadway surface and in fact was the case during the flash flood that hit Madison County in 1995. The culverts performed as expected and without damage. However the roadway surface was affected such that repairs needed to be made once the storm had passed and contractors were again available. Fortunately the quick thinking reactions of a few residents allowed that limited access remained open until the subsequent repairs were scheduled and completed.

It is expected that the culverts have a lifespan greater than 30 years and so this component is not included as requiring reserve funds.

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In 2012 the Roads Committee began discussions on contingency plans should another storm damage the roadway. There is no progress as of this date.

**Culverts:** there are about 50 other smaller culverts crossing under roadways throughout Malvern. This does not include driveway culverts which are a responsibility of the corresponding owner. Most culverts are between 15 and 24 inch diameter or the equivalent elliptical pipe size. A 36 inch culvert on Liberty Lane was replaced in 2009 for a total cost of about \$16,000. A smaller pipe was replaced on Sylvan Lane where it intersects with Malvern Drive in 2011.

These culverts should be periodically inspected but repair or replacement costs would typically fall into the annual road maintenance allotment.

**Guardrail:** located on both sides of Covered Bridge where it crosses over Dark Run. A small section that had been damaged in 2012 has been repaired. Approximately 140 lineal feet of guardrail was added to the east side of Covered Bridge as it approaches the Dark Run in an attempt to prevent cars from sliding into the woods when snow or ice is present. This additional guardrail was added in May, 2012 at a cost of \$5,000.

**Lake:** this is a private lake for Malvern residents and their guests only. Construction began in 1971 and was completed in 1972. Original design plans can't be found.

A major dam repair was performed in 2005 at a cost of approximately \$160,000. Malvern secured funds for the repair with a loan from a local bank. This loan was paid off in 2011.

The dam was recertified by Virginia Department of Conservation and Recreation as of September 30, 2011. The classification of the dam remains as a low hazard dam. A 6-year permit was issued at that time. A recertification will need to be submitted to DCR at least 90-days prior to the expiration of the permit in 2017. Malvern should budget \$10,000 for engineering services required for the recertification.

The expected lifespan of the dam is indefinite and reserve funds need not accumulate for this purpose. It is assumed the DCR classification of a low hazard dam will remain on subsequent recertifications. Should the dam classification change it will be necessary to allot funds to upgrade the dam and spillway to meet higher standards.

Lifespan is predicated on vigilant maintenance. Inspection of the embankment and spillway should occur no less than monthly. Spillway blockages and rodent damage should be addressed immediately. Trees and brush must not be allowed to grow in or near the embankment. The embankment should be mowed at least twice per year. Inspections need to confirm that leaks are not occurring. Inspections should occur prior to predicted storm events and immediate steps taken to remedy any blockage that could prevent free outflow of water through the spillway. Likewise, inspections should occur immediately after a large storm event or earthquake to evaluate whether damage has occurred.

**Docks:** the lake has 2 wooden docks. The northern dock is accessed via an easement off of Ashlawn Drive. The southern dock is accessed via the clubhouse property. Replacement of the wooden decking on the northern dock and ladders will occur in 2013.

It appears from old pictures that the docks have been in place since 1972. No original design plans or specifications have been found. The dock structure is a wooden deck built on steel trusses, held by steel beams resting on steel piers driven into the lake bottom. From visual inspection, the understructure

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appears to be functioning properly and will continue to do so for the foreseeable future. Nevertheless, prudence dictates reserving \$40,000 over the next 20 years for eventual major repairs to the docks.

**Clubhouse:** the age is unknown but is assumed to have been built in the 1950s. The clubhouse contains 2 bedrooms, a living room capable of accommodating most membership meetings, a large dining area, kitchen, an office used for informal meetings and storage of corporate records, restroom facilities including a bathroom that can be accessed via an exterior door, storage space and a large separate room (sometimes referred to as the teen center) that is rarely used at this time.

The exterior of the clubhouse was changed to vinyl siding beginning in 2001 and completed in 2004. Materials were purchased in 2001 for about \$5,600 (from minutes). The project began using volunteers in 2001 and was finally completed by a contractor in 2004 at an additional cost of about \$6,500. The roof was also replaced in 2004 at a cost of \$13,000. Gutters and downspouts were replaced in 2005 for a cost of \$2,100. Windows on the main clubhouse building were replaced as funds allowed between 2002 and 2006. Sliding doors off the dining area and living room were replaced in 2011.

It is expected the lifespan of the roof is 20 years and the siding is 30 years. The building structure is expected to have an indefinite lifespan.

Utility service is a well located in the pool house, overhead electric lines to a service panel located in the teen center, telephone service meant to be used for emergency purposes and other local calling, and a gravity septic system for sewage disposal.

The well pump was replaced in 2011 after 23 years of service. The pump is at a depth of 340 feet and is rated at 7 gallons per minute. The well services both the clubhouse and the pool. During the summer months when the pool is open, clubhouse and pool water usage needs must be coordinated so that the clubhouse maintains adequate pressure.

There are approximately 60 rental days per year plus and an additional 20 days of community usage for meetings and functions. The bathroom accessed from the exterior is used during the summer months only by members and their guests using the pool. These facts are mentioned to show where the sole source of waste water (toilets and sinks) is generated and that it is mostly limited in volume. There are no visual indications of septic field failure. It is anticipated the septic field piping and distribution system are expected to have an indefinite lifespan. The septic tank was last pumped in 2005.

The heating, air conditioning and ventilating system is all electric using a heat pump. The system was installed in 2010. The oil furnace that had been used for heating was removed, oil from the underground tank was removed and the tank was abandoned in place. Ductwork in the attic was also replaced. The total cost was about \$18,000. The lifespan of the new system is expected to be 18 years.

New 28 ounce carpeting with a felt pad was installed in the living and dining rooms 2012 for a cost of approximately \$4,200.

**Pool:** the pool is intended for use by community members in good standing and their invited guests. The pool is typically open from Memorial Day until a week or so after Labor Day. The pool is not rented for private parties. Pool usage is not a part of clubhouse rental.

Available records indicate the pool was built in 1971. This means it was installed as one of the planned amenities by a contractor for the original Developer. The pool is generally rectangular with dimensions

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of approximately 22 feet by 55.5. The perimeter is 143 feet. The pool depth varies from 3 feet to 9.5 feet.

The pool is surrounded by concrete decking. There are wooden steps leading to an upper open concrete deck. There is a utility room below the upper deck that houses the pump and chlorinator plus is a storage area.

The perimeter of the pool is surrounded by an 8 foot chain link fence with barbed wire at the top. Access is through a keyed gate. There is a second gate for maintenance access that is secured with a chain and padlock. Both gates are chained and padlocked during non-summer months.

Daily general maintenance, cleaning and chlorination has typically been provided by a paid resident.

Tile work and replastering of the inside of the pool was performed in 2009 by Aqua-Clean Pool Service, Inc. Additional work at that time included replacing the anti-entrapment drains, replacing the 4 skimmers, refilling the pool and purchasing several pieces of furniture. This work was done for a cost of about \$22,000. It is expected the resurfacing has a lifespan of 15 years.

A new pool cover was purchased in 2010 for about \$3,000 from Payne Pools & Spas. The pool pump was replaced in June, 2012. These items are expenses from the operations budget.

**Playground:** the playground area is located near the pool and across the parking lot from the clubhouse. Old playground equipment was removed in 2012 and replaced with commercial grade equipment made by Miracle Recreation Equipment Company, model 718-S069, for a total installed cost of about \$25,200. Lifespan for the new equipment is expected to be greater than 30 years with proper maintenance. The previous swing set and spring “chickens” were relocated in the playground area. Installation of the equipment was performed by members of the community.

**Mailbox structure and clusters:** the mailbox clusters reside under a roofed wooden structure installed by volunteers for around \$7,000 in 1999. Some of the metal mailbox clusters were purchased in 1991. The remaining clusters were purchased in 1999. The current understanding is that the mailbox clusters are owned and maintained by the Post Office. It is expected that the building can be maintained within the annual maintenance funds for buildings and grounds.

**Newspaper boxes:** these are located near the mailbox structure. There are currently 3 boxes which were built by a Malvern resident as needed. This same Malvern resident administers the boxes. These boxes can be maintained or replaced on an as-needed basis using the annual maintenance funds for buildings and grounds.

**Entrance sign:** this is the monument sign located at the entrance to Malvern. It consists of a wooden sign, between stone pillars in a raised dirt and pea gravel island that is held in place by concrete blocks that do not require mortar. The sign is illuminated by lights located in the island. The sign and its components can be maintained on an as-needed basis using the annual maintenance funds for buildings and grounds.

**Road signs and interior community signs:** Road signs consist of street signs, stop signs, speed limit signs, and keep right signs. The stop and speed limit signs were all replaced in 2008. There are a total of 24 stop signs measuring 30 inches by 30 inches and a total of 12 speed limit signs measuring 24 inches by 30 inches. Each sign is held in place using 4 inch by 4 inch pressure treated wooden posts. The total cost

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for signs, hardware, posts and concrete was approximately \$1,900. There are 2 keep right signs purchased in 2010 for a total installed cost of approximately \$150. Installation of the stop, speed and keep right signs was performed by volunteers.

The signs should give many years of service. Eventually the signs will need to be replaced when the luminosity has degraded to a point where the signs are difficult to see at night. Additionally the posts may need to be replaced and unfortunately vandalism would be another cause for replacement.

Other signs include a no trespassing sign at the entrance, signs displaying pool and lake rules, no trespassing signs, and no dumping signs.

Annual operational budgets are sufficient to replace signs as needed.

**Common grounds:** the clubhouse is located on a 6.7 acre parcel. There is a median along a portion of Malvern Drive. Most of the median is privately owned by adjacent owners. However, the median is treated as common area for maintenance. There is a 0.697 acre parcel along the east side of Covered Bridge near Dark Run which is mowed during the summer months. There is an unmaintained 0.346 acre parcel at the end of Carriage Lane. These areas will mostly involve mowing and landscaping in selected areas, which funds will be budgeted periodically from annual operations.

### INFLATION RATE:

The 10-year average inflation rate from 2003 through 2012 is 2.5%. This information is from the website, <http://www.usinflationcalculator.com/inflation/historical-inflation-rates/>.

It will be important that periodic reviews of the reserve study address inflation since it can have such a significant impact on future costs.

### ASSUMPTIONS:

Estimating useful life and remaining useful life of any component is a guess. Consulting with contractors and other specialists could result in better estimates.

A component could fail sooner or later than the time it is scheduled to be repaired or replaced. A component failing sooner could burden the reserve fund balance.

The twin box culverts at Dark Run, the Dam and the clubhouse structure are predicted to have an indefinite lifespan with proper maintenance. Should any of these components fail there will be no funds set aside for their repair or replacement.

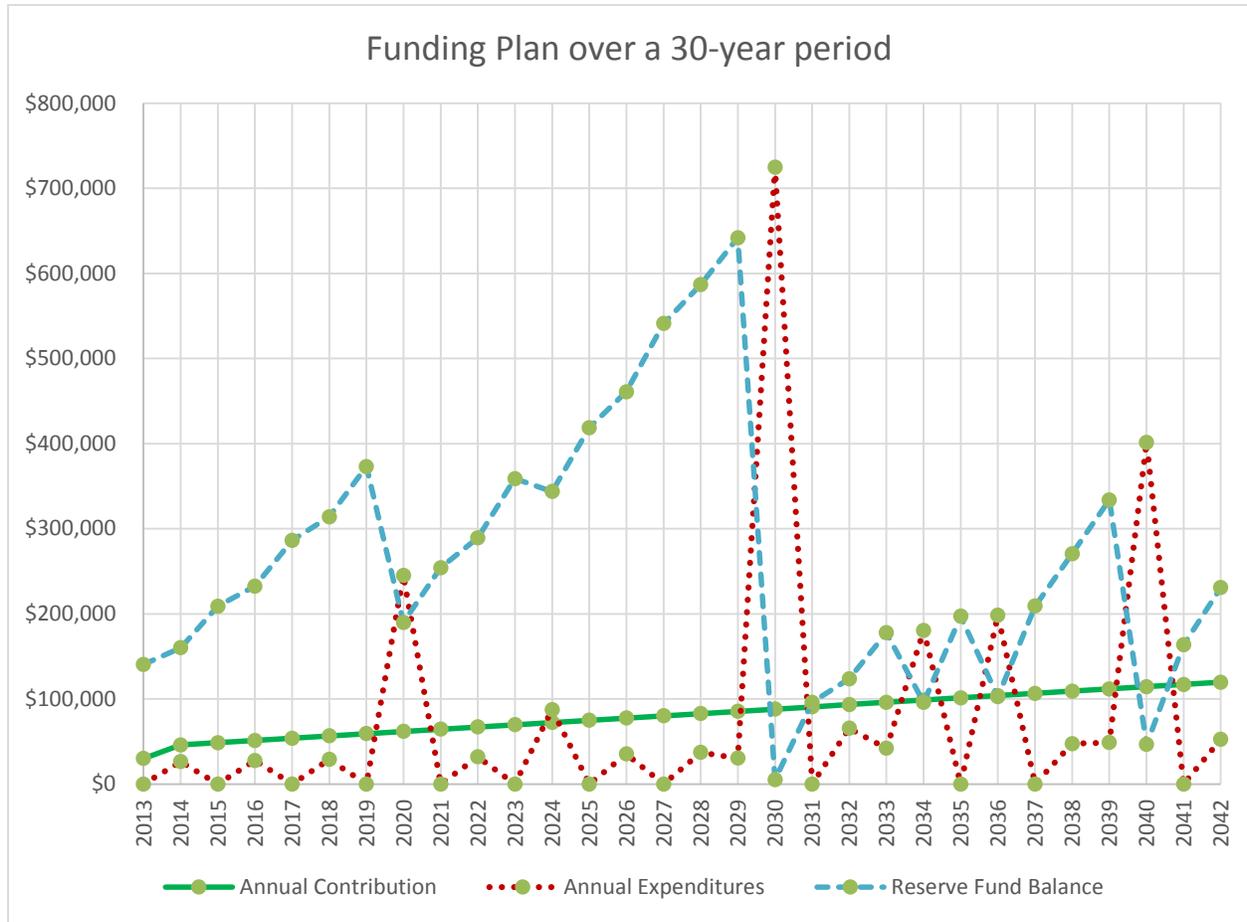
Major pavement resurfacing in 2020, 2030, 2034 and 2036 predicts only 75% of the total road surface will be resurfaced. The assumption is that periodic road patching negates the need to resurface 100% of the total road surface.

An operational budget threshold of \$5,000. This means items less than \$5,000 will be paid from annual operation funds and not from reserve funds. The operational threshold amount is a decision that will have to be established.

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## RESERVE STUDY SUMMARY

**Read this if nothing else:** nothing lasts forever and without a reserve study Malvern owners will be completely unprepared when a major repair to one of our commonly owned components is required. A reserve study will help insulate us from this kind of risk. It achieves this by identifying the current status of each component and then creating a reasonable funding plan for future repair, restoration or replacement of the item.



This chart is a graphical representation of the reserve study showing a summary over a 30-year period of projected annual contributions to the reserve account (solid line), expenditures from the reserve account (dotted saw-tooth line) and the reserve account balance (dashed saw-tooth line).

**Outlook for future dues increases:** the current annual dues for each owner is currently \$525 per lot. In 2014, about \$196 of the \$525 per lot will be used to fund the reserve account. In 2042, based on projections contained herein, about \$512 per lot will be used to fund the reserve account. In other words, a clear indicator that periodic dues increases will be required. The goal however, which is shown above by the solid smooth line, is that annual dues increases are limited to about \$10 to \$15 or perhaps \$25 to \$40 every 2 to 3 years.

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### EXPLANATION OF TABLES:

Three interrelated tables follow. Table 1 lists the components identified in this report along with its units (square yards for roads or lump sum for other components), when the component was last addressed and what the estimated total useful lifespan, remaining lifespan, and current unit and total predicted replacement cost is for each component.

Table 2 summarizes and subtotals the costs of the components listed in Table 1 by predicted remaining lifespan. This table also shows future replacement cost based on the predicted inflation factor applied to current replacement cost and the predicted remaining lifespan of the corresponding component subtotal.

Note in table 2 that several items are listed twice. This is because a particular component will need to be addressed 2 times over the next 30 years.

Table 3 shows the affect that the annual contributions and expenditures (based on tables 1 and 2) will have on the total amount remaining in the reserve fund. The goal of table 3 is to not allow the reserve fund total to approach 0 or go into the negative.

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**Table 1 – Component History and Costs**

Component	Units	Last addressed	Estimated useful life	Estimated remaining life	Replacement Cost per unit	current replacement cost
Anvil Court	692 SY	2000	30	18	\$14	\$9,688
Aroda Road	859 SY	2000	30	18	\$14	\$12,026
Ashlawn Drive	9,962 SY	2000	30	18	\$14	\$139,468
Bee Gum Way HP to end	613 SY	2006	30	24	\$14	\$8,582
Bee Gum Way to HP	964 SY	2000	30	18	\$14	\$13,496
Butter Churn Way	1,282 SY	2000	30	18	\$14	\$17,948
Carriage Lane	4,026 SY	2006	30	24	\$14	\$56,364
Chestnut Rail Lane	1,380 SY	2000	30	18	\$14	\$19,320
Clubhouse parking	2,122 SY	2006	30	24	\$14	\$29,708
Covered Bridge to Liberty	8,700 SY	2000	20	8	\$14	\$121,800
Covered Bridge to Liberty	8,700 SY	2000	40	28	\$14	\$121,800
Covered Bridge to end	6,500 SY	2000	30	18	\$14	\$91,000
Half Penny Lane	1,283 SY	2004	30	22	\$14	\$17,962
Lake Access	828 SY	2004	30	22	\$14	\$11,592
Liberty Lane	8,850 SY	2000	30	18	\$14	\$123,900
Malvern Drive	10,456 SY	2000	20	8	\$14	\$146,384
Malvern Drive	10,456 SY	2000	40	28	\$14	\$146,384
Old Forge Way to Anvil	1,962 SY	2000	30	18	\$14	\$27,468
Old Forge Way Anvil to end	4,942 SY	2004	30	22	\$14	\$69,188
Pine Court	1,153 SY	2000	30	18	\$14	\$16,142
Pine Torch Lane	3,428 SY	2006	30	24	\$14	\$47,992
Powder Horn Drive	2,044 SY	2000	30	18	\$14	\$28,616
Sleigh Bell Lane	1,505 SY	2004	30	22	\$14	\$21,070
Surrey Court	1,291 SY	2000	30	18	\$14	\$18,074
Sylvan Court	255 SY	2006	30	24	\$14	\$3,570
Sylvan Lane	3,074 SY	2000	30	18	\$14	\$43,036
Thumblatck Lane	848 SY	2000	30	18	\$14	\$11,872
Turkey Trot Lane	1,645 SY	2000	30	18	\$14	\$23,030
Windmill Lane	1,747 SY	2000	30	18	\$14	\$24,458
HVAC	LS	2011	18	17	\$20,000	\$20,000
Roof	LS	2004	20	12	\$15,000	\$15,000
Siding	LS	2004	30	22	\$15,000	\$15,000
Docks	LS	1972	60	20	\$40,000	\$40,000
Pool	LS	2009	15	12	\$25,000	\$25,000
Pool	LS	2009	30	27	\$25,000	\$25,000

## Malvern of Madison – Reserve Study

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**Table 2 – Component and Maintenance Summary**

<b>Inflation factor</b>	2.50%
<b>Future cost factor: roads</b>	75%
<b>Future cost factor: other</b>	100%

Component	Useful life	Remaining life	Current \$	Future \$	Future cost
<b>Roads:</b>					
Main roads	20	8	\$268,180	\$326,750	\$245,060
Side roads, 2000	30	18	\$619,540	\$966,270	\$724,700
Side roads, 2004	30	22	\$119,810	\$206,260	\$154,700
Side roads, 2006	30	24	\$146,220	\$264,470	\$198,350
Main roads	40	28	\$268,180	\$535,420	\$401,570
<b>Other:</b>					
Road maintenance		2	\$25,000	\$26,270	\$26,270
Road maintenance		4	\$25,000	\$27,600	\$27,600
Road maintenance		6	\$25,000	\$28,990	\$28,990
Road maintenance		10	\$25,000	\$32,000	\$32,000
Road maintenance		12	\$25,000	\$33,620	\$33,620
Road maintenance		14	\$25,000	\$35,320	\$35,320
Road maintenance		16	\$25,000	\$37,110	\$37,110
Road maintenance		21	\$25,000	\$41,990	\$41,990
Road maintenance		26	\$25,000	\$47,510	\$47,510
Road maintenance		30	\$25,000	\$52,440	\$52,440
Pool	15	12	\$25,000	\$33,620	\$33,620
Pool	30	27	\$25,000	\$48,700	\$48,700
HVAC	18	17	\$20,000	\$30,430	\$30,430
Roof	20	12	\$15,000	\$20,170	\$20,170
Siding	30	22	\$15,000	\$25,820	\$25,820
Dock	60	20	\$40,000	\$65,540	\$65,540

## Malvern of Madison – Reserve Study

### Table 3 – 30-year Reserve Fund Summary

Year	Year #	Annual Contribution	Annual Expenditures	Reserve Fund Balance	Task
			<b>Beginning balance</b>	<b>\$110,500</b>	
2013	1	\$30,000	\$0	\$140,500	
2014	2	\$46,000	(\$26,270)	\$160,230	Road maintenance
2015	3	\$48,630	\$0	\$208,860	
2016	4	\$51,260	(\$27,600)	\$232,520	Road maintenance
2017	5	\$53,890	\$0	\$286,410	
2018	6	\$56,520	(\$28,990)	\$313,940	Road maintenance
2019	7	\$59,150	\$0	\$373,090	
2020	8	\$61,780	(\$245,060)	\$189,810	Resurfacing Malvern, Covered Bridge
2021	9	\$64,410	\$0	\$254,220	
2022	10	\$67,040	(\$32,000)	\$289,260	Road maintenance
2023	11	\$69,670	\$0	\$358,930	
2024	12	\$72,300	(\$87,410)	\$343,820	Road maintenance, pool, roof
2025	13	\$74,930	\$0	\$418,750	
2026	14	\$77,560	(\$35,320)	\$460,990	Road maintenance
2027	15	\$80,190	\$0	\$541,180	
2028	16	\$82,820	(\$37,110)	\$586,890	Road maintenance
2029	17	\$85,450	(\$30,430)	\$641,910	HVAC
2030	18	\$88,080	(\$724,700)	\$5,290	Resurfacing side streets
2031	19	\$90,710	\$0	\$96,000	
2032	20	\$93,340	(\$65,540)	\$123,800	Docks
2033	21	\$95,970	(\$41,990)	\$177,780	Road maintenance
2034	22	\$98,600	(\$180,520)	\$95,860	Resurfacing side streets, siding
2035	23	\$101,230	\$0	\$197,090	
2036	24	\$103,860	(\$198,350)	\$102,600	Resurfacing side streets
2037	25	\$106,490	\$0	\$209,090	
2038	26	\$109,120	(\$47,510)	\$270,700	Road maintenance
2039	27	\$111,750	(\$48,700)	\$333,750	Pool
2040	28	\$114,380	(\$401,570)	\$46,560	Resurfacing Malvern, Covered Bridge
2041	29	\$117,010	\$0	\$163,570	
2042	30	\$119,640	(\$52,440)	\$230,770	Road maintenance

**\* Contributions to the reserve fund will increase \$11.25 per lot per year in years 2015 through 2042**