



CAPITAL RESERVE STUDY



CATEGORY 2: UPDATE WITH ON-SITE REVIEW



CIVIL ENGINEERS

LAND SURVEYORS

PLANNERS

LANDSCAPE ARCHITECTS

RESERVE SPECIALISTS

ARCHITECTS

LEISURE KNOLL AT MANCHESTER HOMEOWNERS ASSOCIATION

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Fiscal Year: 2016

Fiscal Year Date Span: October 1 - September 30, 2017

Care of: Board of Trustees
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Manchester, NJ 08759

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Introduction & General Information

A Capital Reserve Study is a report prepared to estimate the amount of money which must be put aside for future repairs and replacements to the Association’s physical plant. The report is a tool for evaluating and establishing a stable level of reserve funding.

The primary reason to set aside reserve funds is to ensure that adequate funds are available for anticipated long-term maintenance of common areas. Reserve funding is a means of fairly distributing the costs of future replacement to the common elements among all owners. The reserve fund is integral to the Association’s administration of fiscal planning and budgeting. In addition, the reserve funding is an indicator of the financial strength of the Association which will affect the value of the units.

This Reserve Study consists of two (2) parts: the physical analysis and the financial analysis. This Capital Reserve Study was prepared in accordance with the “National Reserve Study Standards” of the Community Associations Institute (C.A.I.).

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

	Reserve Study Tasks:	Category I: Full	Category II: Update <small>with Site-Visit & On-Site Review</small>	Category III: Office Update <small>No Site-Visit & Off-Site Review</small>
Physical Analysis	Component Inventory	X (quantification)	X (verification only)	
	Condition Assessment	X (based upon on-site visual observations)	X (based upon on-site visual observations)	
Financial Analysis	Life & Valuation Estimates	X	X	X
	Fund Status	X	X	X
	Funding Plan	X	X	X

This report will analyze the future replacement costs for common elements which are capital items with a reasonably predictable useful life. The capital items will be limited to those items which have a useful life exceeding two (2) years. If a certain item requires replacement more often than every two (2) years, it should be included in the operating budget. Furthermore, items will be excluded if they have an insignificant cost or if they are permanent in nature. Items with an insignificant cost would be those that could be funded in the operating budget without any adverse financial impact. Items of a permanent nature are those which exceed the thirty (30) year study period and those which are integral to reconstruction of the entire project, such as; concrete footings, foundation walls, crawlspace and roof wood framing, in-wall utility services and stormwater piping. Since the remaining useful life estimates, inflation and interest need on-going review, it is recommended that the study be updated every three (3) to five (5) years. An older Association with a significant amount of repair and replacement activity may need to update its study annually.

Terms, Definitions, & Abbreviations

1. **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.
2. **Component:** The individual line items in the Reserve Study, developed or updated in the Physical Analysis. These elements form the building blocks for the Reserve Study. Components typically are:
 - a) Association responsibility
 - b) with limited Useful Life expectancies
 - c) predictable Remaining Useful Life expectancies
 - d) above a minimum threshold cost
 - e) as required by local codes.
3. **Component Inventory:** The task of selecting and quantifying Reserve Components. This task can be accomplished through on-site visual observations, review of association design and organizational documents, a review of established association precedents and discussion with appropriate Association representative(s).
4. **Component Method:** A method of developing a Reserve Funding Plan where the total contributions are based on the sum of contributions for individual components. See “Cash Flow” method.
5. **Condition Assessment:** The task of evaluating the current condition of the component based on observed or reported characteristics.
6. **Current Replacement Cost:** See “Replacement Cost.”
7. **Deficit:** An actual (or projected) Reserve Balance at the end of any fiscal year or at the end of the study which is less than the Fully Funded Balance. The opposite would be a Surplus.
8. **Effective Age:** The difference between the Useful Life and the Remaining Useful Life. Not always equivalent to chronological age, since some components age irregularly. Used primarily in computations.
9. **Financial Analysis:** The portion of a Reserve Study where current status of the Reserves (measured as cash or Percent Funded) and a recommended Reserve contribution rate (Reserve Funding Plan) are derived and the projected Reserve income and expense over time is presented. The Financial Analysis is one of the two parts of a Reserve Study.
10. **Fully Funded:** One-hundred (100%) percent Funded. When the actual (or projected) Reserve Balance is equal to the Fully Funded Balance
11. **Fully Funded Balance (FFB):** Total Accrued Depreciation. An indicator against which Actual (or projected) Reserve Balance can be compared. The Reserve Balance that is in direct proportion to the fraction of the life “used up” of the current Repair of Replacement cost. This number is calculated for each component, then summed together for an association total. Two (2) formulae can be utilized, depending on the provider’s sensitivity to interest and inflation effects.
 Note: Both yield identical results when interest and inflation are equivalent.

$$(FFB) = \text{CurrentCost} \times \frac{\text{EffectiveAge}}{\text{UsefulLife}}$$

or

$$(FFB) = \left(\text{CurrentCost} \times \frac{\text{EffectiveAge}}{\text{UsefulLife}} \right) + \frac{\text{CurrentCost} \times \frac{\text{EffectiveAge}}{\text{UsefulLife}}}{(1 + \text{InterestRate})^{\text{RemainingLife}}} - \frac{\text{CurrentCost} \times \frac{\text{EffectiveAge}}{\text{UsefulLife}}}{(1 + \text{InflationRate})^{\text{RemainingLife}}}$$

12. **Fund Status:** The status of the Reserve Fund as compared to an established benchmark such as percent funding.

13. **Funding Goals:** Independent of methodology utilized, the following represent the basic categories of Funding Plan goals:
 - a) **Baseline Funding:** Establishing a Reserve funding goal of keeping the Reserve cash balance above zero.
 - b) **Full Funding:** Setting a Reserve funding goal of attaining and maintaining Reserves at or near one-hundred (100%) percent funded.
 - c) **Statutory Funding:** Establishing a Reserve funding goal of setting aside the specific minimum amount of Reserves required by local statutes.
 - d) **Threshold Funding:** Establishing a Reserve funding goal of keeping the Reserve balance above a specified dollar or Percent Funded amount. Depending on the threshold, this may be more or less conservative than “Fully Funding”.
14. **Funding Plan:** An Association’s plan to provide income to a Reserve Fund to offset anticipated expenditures from that fund.
15. **Funding Principles:**
 - a) Sufficient Funds when Required
 - b) Stable Contribution Rate over the Years
 - c) Evenly Distributed Contributions over the Years
 - d) Fiscally Responsible
16. **Life and Valuation Estimates:** The task of estimating Useful Life, Remaining Useful Life and Repair or Replacement Costs for the Reserve components.
17. **Percent Funded:** The ratio, at a particular point of time (typically the beginning of the Fiscal Year), of the *actual (or projected)* Reserve Balance to the *Fully Funded Balance*, expressed as a percentage.
18. **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.
19. **Remaining Useful Life:** Also referred to as “Remaining Life”. The estimated time, in years, that a reserve component can be expected to continue to serve its intended function.
20. **Replacement Cost:** The cost of replacing, repairing or restoring a Reserve Component to its original functional condition. The Current Replacement Cost would be the cost to replace, repair or restore the component during that particular year.
21. **Reserve Balance:** Actual or projected funds as of a particular point in time that the Association has identified for use to defray the future replacement of those major components which the Association is obligated to maintain. Also known as Reserves, Reserve Accounts, Cash Reserves.
22. **Reserve Provider:** An individual that prepares Reserve Studies.
23. **Reserve Study:** A budget planning tool which identifies the current status of the reserve fund and a stable and equitable Funding Plan to offset the anticipated future major common area expenditures. The Reserve Study consists of two (2) parts: the Physical Analysis and the Financial Analysis.
24. **Special Assessment:** An assessment levied on the members of an Association in addition to regular assessments in anticipation of unexpected common element replacement and funding deficit. Special assessments are often regulated by governing documents or local statutes.
25. **Surplus:** An actual (or projected) Reserve Balance greater than the Fully Funded Balance. See “Deficit”.
26. **Useful Life (UL):** Total Useful Life or Depreciable Life. The estimated time, in years, that a reserve component can be expected to serve its intended function if properly constructed in its present application or installation.

Disclosures

At the time this reserve study was conducted FWH Associates, P.A. (FWH) has had no involvements with the Association, which could result in actual or perceived conflicts of interest.

Any on-site inspections performed as a part of this Capital Reserve Study are inclusive of all common areas within the community, and are non-destructive in nature.

The completeness of this Capital Reserve Study is dependent upon the agreement that all relevant information has been provided to FWH. Any materials that have not been disclosed would cause a distortion of the Association's situation. Information provided by the official representative of the Association regarding financial, physical, quantity, or historical issues will be deemed reliable by FWH.

The reserve study will be a reflection of information provided to FWH and assembled for the Association's use, not for the purpose of performing an audit, quality/forensic analysis, or background checks of historical records.

All information provided to FWH regarding reserve projects will be considered reliable. On-site inspections should not be considered project audits or quality inspections.

Association Physical Description

Leisure Knoll at Manchester is a community consisting of one thousand six hundred twenty-six (1626) single-family residential units located in Manchester Township, Ocean County, NJ.

There are two (2) entrances in which to access the community, both of which are private entrances on Buckingham Drive. All roads are the responsibility of the Leisure Knoll at Manchester Homeowners Association.

Other common elements that are the responsibility of the Leisure Knoll at Manchester Homeowners Association include curbs, concrete surfaces, fencing, exterior illumination, recreational facilities, utilities not located within easements or owned by the respective utility companies, and other miscellaneous items. Common elements related to the Leisure Knoll at Manchester Association buildings (Lakeside Lodge, Timberland Hall, Performing Arts Center, and Association Building) such as exterior and interior building amenities, mechanical and electrical components, office equipment, community vehicles, etc., are also considered to be the responsibility of the Association.



1 Buckingham Drive North, Manchester Township, NJ 08759
Courtesy of © 2016 Google Maps

Bibliography

1. Reserve Study Guidelines for Community Associations, Planned Developments, Condominiums by Richard Wyndhamsmith 1989, Wyndamhouse, Inc.
2. Reserve to Preserve, by Community Associations Institute Research Observation, 1991.
3. Gap #24. A Complete Guide to Reserve Funding and Reserve Investment Strategies, 3rd Edition by The Community Associations Institute.
4. R.S. Means Building Construction Cost Data - 2016, by Construction Consultants and Publishers.
5. R.S. Means Site Work and Landscape Cost Data - 2016, by Construction Consultants and Publishers.
6. National Reserve Study Standards of The Community Association Institute, 2014.
7. Capital Reserve Study, FWH Associates, October 2013.

Study Methodology & Assumptions

The common elements were identified through the previous capital reserve study. The quantities used in the replacement cost estimations of the common elements were taken from the previous capital reserve study. The remaining life expectancies of the common elements were determined by FWH through visual site inspections of the accessible common elements performed on May 25, 2016, through the experience of FWH, and by information provided by the Association. The Leisure Knoll at Manchester community was constructed in 1974, which is used as the base year of installation for the original common elements.

The current replacement costs were estimated utilizing published construction cost data, estimates provided by contractors, and cost data from recent similar projects performed by this firm. The useful life and remaining useful life were estimated based on field inspections of the items and on the assumption that adequate preventative maintenance exists and will be followed by the Association. Without proper maintenance, the common elements can deteriorate quickly and require funds from the reserves for replacement earlier than planned.

It should be noted that this data is an estimate based upon the experience of this firm. The work was performed pursuant to generally accepted standards of practice. Since accurate and detailed control over market conditions, usage, rate of deterioration, maintenance or weather conditions is not feasible, the actual costs and useful life expectancy will vary from the estimates presented. We cannot and do not represent or guarantee that the actual costs or useful life expectancy will not vary from those presented in this report. Periodic updates of the reserve study will make adjustments so that these variations will have no significant impact to the budget. It is recommended that the study be updated every three (3) to five (5) years.

The Capital Reserve Funding Plan developed within this report is based on the cash flow method. The cash flow method is 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 report uses the threshold funding method, in which the reserve balance is kept above a percent funded amount. The threshold amount is determined by taking a percentage of the total value of all scheduled item replacement costs and is identified in the notes section of this report.

Capital Replacement Items

1. Asphalt Roadways

All of the paved surfaces within the community are constructed of bituminous concrete paving. Bituminous roadway paving has a typical useful life of twenty (20) years, after which it is expected to receive a new two (2") inch thick asphalt wearing surface.

Prior to the installation of a new wearing course, milling, crack repair, and reconstruction of base course failure are expected to occur. The costs to perform these additional operations are included in the unit cost provided within the schedule.

The roadways are part of the existing pavement resurfacing schedule and were therefore not inspected as part of the preparation of this Capital Reserve Study. The pavement phasing is shown in the table below.

PHASE	ROADWAY
1.	Hexham Court, Knoll Circle, Sandhurst Street
2.	Blackthorn Place, Westgate Place, Frilham Lane
3.	Greenwich Avenue, Parking Lot (Assoc. Office), Normanton Avenue, Carol Court, Hastings Road, Kent Lane
4.	Mansfield Avenue (Hastings to Tarworth, Mansfield Avenue (Tarworth to Buckingham), Oakham Row, Parking Lot (Recycling Center), Dorset Road
5.	Appleby Place, Buckingham Drive (North of Knoll Circle), Red Hill Road
6.	Wycombe Way, Buckingham Cuts, Harrow Place, Parking Lot (Lakeside Lodge)
7.	Durham Avenue, Leighton Lane, Marston Row, Parking Lot (Timberland Hall), Turnbridge Row, Twyford Lane
8.	Association Road, Harrogate Lane, Kirby Lane, St. Paul Place, Tarworth Terrace, Wolverton Place
9.	Maidstone Way, Romford Lane, Buckingham Drive (South of Knoll Circle)
10.	Banbury Avenue, Gladstone Avenue, Lambeth Lane, Surrey Street
11.	Blythe Lane, Cromwell Court, Edgeware Place, Elmswell Avenue, Esher Court, Flintshire Terrace, Heath Lane, Marlow Avenue, Newberry Row, Reigate Lane, Weybridge Place, Woodstock Lane

2. Concrete Sidewalk & Servicewalk

The sidewalks at the community are constructed of Portland Cement concrete, which has a typical useful life of thirty (30) years. The sidewalk is installed along the roadways and throughout the recreational areas. Any areas of sidewalk posing possible trip or *safety* hazards should be replaced immediately to eliminate the hazard. The sidewalks and servicewalks are part of the existing pavement resurfacing schedule and were therefore not inspected as part of the preparation of this Capital Reserve Study.

3. Concrete Driveway Aprons

The driveway aprons, which is the area of concrete located between the end of each driveway and the roadway, are constructed of six (6") inch thick Portland Cement concrete. The replacement cost includes removal and disposal of the old apron. Any existing concrete aprons posing possible trip or *safety* hazards should be replaced immediately to eliminate the hazard. The driveway aprons are part of the existing pavement resurfacing schedule and were therefore not inspected as part of the preparation of this Capital Reserve Study.

4. Standard Concrete Curb and Gutter

The paved surfaces of the community are edged with combination curb and gutter which are constructed of Portland Cement. Portland Cement curbs and gutters have a typical useful life of forty-five (45) years. It is recommended that curb replacement is coordinated with the resurfacing of the roadways to avoid additional costs associated with the asphalt repairs necessary during curb replacement. The curb and gutter are part of the existing pavement resurfacing schedule and were therefore not inspected as part of the preparation of this Capital Reserve Study.

5. Swimming Pool

The pool area is enclosed by both a four (4') foot aluminum fence and a three (3') foot vinyl picket fence along the lakeside. These types of fencing have a twenty-five (25) year typical useful life. The four (4') foot fence was observed to be in average condition. The three (3') foot fence was observed to be in below average condition with many missing picket caps and some staining observed.



Swimming Pool

The interior marcite plaster surface of the pool requires resurfacing every seven (7) years to ensure a smooth watertight surface for swimmers. The pool is bordered with a decorative concrete pool coping and ceramic waterline tile, both of which have a typical useful life of twenty (20) years. The pool surface and border were observed to be in average condition with minor scraping observed on the brick coping.

The deck surrounding the swimming pool is constructed of concrete pavers, which have a thirty (30) year typical useful life. The deck was observed to be in average condition with minor staining observed. Trip hazards and areas presenting safety hazards should be replaced immediately through the operating budget.

The pool filtration system consists of sand filters and pumps. The Pentair Wisperflo pump was recently replaced and was observed to be in average condition. The sand filters are original and were observed to be in average

condition. The aerator pumps were observed to be in average condition.

The pool cover was not accessible during inspection.

The pool furniture consists of chairs and chaise lounges which have a typical useful life of fifteen (15) years. The furniture was observed to be in average condition for its age.

The pool area is supplied with a large canvas canopy supported by aluminum framing. The canopy was observed to be in average condition. It is anticipated that the framing will be re-used upon replacement of the canvas material.

The pool area gazebo roof is weatherproofed with architectural asphalt shingles which have a typical useful life of thirty (30) years. The roof was observed to be in average condition for its age.

6. **Tennis Courts**

Two (2) tennis courts are located within the community and are constructed of bituminous concrete. Funding for the resurfacing of the courts followed by replacement has been included in the schedule. It is recommended that the courts are recoated with a minimum of two coats of latex-acrylic paint every seven (7) years to seal minor cracks and deficiencies in the surface and also to rejuvenate surface. Tennis courts have a typical useful life of twenty (20) years, after which time they will require an overlay of new asphalt or full reconstruction, depending on their condition. The unit costs for tennis court recoating includes reconstruction of all significant cracks, crack sealing, application of a new color coat, etc. The replacement cost includes a complete removal and replacement of the asphalt courts. The tennis courts were observed to be in average condition with minor cracking, wear at edges, and minor water ponding noted.



Tennis Courts

The ten (10') foot vinyl-coated chain link fence surrounding the courts has a typical useful life of twenty-five (25) years, and was observed to be in below average condition with peeling paint on the framework and rusted fasteners observed.

The nets and post have a typical useful life of seven (7) years and were observed to be in average condition.

7. **Bocce & Shuffleboard**

There are three (3) bocce courts within the recreational area. The courts are surfaced with compacted sand laid over a compacted cinder base and edged with 6"x6" pressure treated wood framing. Funding for the replenishment of the clay surface followed by replacement has been included in the schedule. Bocce courts have a typical useful life of fifteen (15) years, after which time they will require full reconstruction, depending on their condition. The unit cost for court recoating includes reconstruction of all significant cracks, crack sealing, clay replenishment, etc. The replacement cost includes a complete removal and replacement of the aforementioned system as well as the course substrate and associated components. The courts were observed to be in average condition.



Shuffleboard

The bocce court timber edging has a typical useful life of fifteen (15) years and was observed to be in average condition with minor weathering observed.

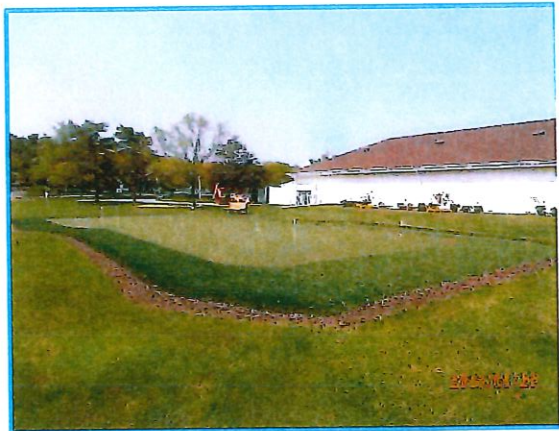
The bocce court awning has a typical useful life of fifteen (15) years and was observed to be in average condition.

Located behind the Clubhouse are eight (8) concrete shuffleboard courts. Shuffleboard courts have a typical useful life of thirty (30) years. The courts are original to the community and were observed to be in below average condition containing surface cracks and spalling.

The shuffleboard courts are provided with two (2) wood frame trellis structures set on concrete footings. The structures are constructed of 8"x8" posts supporting 2"x10" girders and 2"x10" joists. The components are in below average condition with surface splitting, loose nails, and minor rot observed. It is recommended that exterior wood products are weatherproofed every three (3) to five (5) years to ensure that premature replacement will not be required.

8. **Putting Greens**

The community is provided with two (2) putting greens. Putting greens have a typical useful life of fifteen (15) years. One putting green is located near the shuffleboard courts and was observed to be in below average condition. The second putting green is located near the Performing Arts Center and was observed to be in above average condition as it was recently replaced in 2015.



Putting Green

9. **Benches**

Composite benches are located throughout the community and were observed to be in varying condition. Composite benches have a typical useful life of twenty (20) years.



Benches

10. **Exterior Illumination**

Six (6') foot lantern fixtures on fiberglass posts are located along the walkway near the bocce courts. Exterior lighting has a typical useful life of twenty-five (25) years. The six (6') foot lantern fixtures were observed to be in average condition.

The tennis court lights were observed to be in below average condition with failing paint on the posts observed.

The site lighting throughout the community was observed to be in varying condition.



Walkway Lighting

11. **Common Area Irrigation**

The common areas of the Leisure Knoll at Manchester community are irrigated with an automatic sprinkler system. Water is supplied by the public water system. The replacement of clocks, timers and valves is included in this replacement cost. A line item has been added to fund for the replacement of the irrigation well pumps. Common areas include landscaping around Timberland Hall, Lakeside Lodge, The Performing Arts Center, and the Community Center parking areas and entrances.

12. **Boathouse**

A boathouse and boat ramp are located on the northern side of the lake. The structure provides seating and shelter for residents from the elements. It is constructed of 2"x6" deck boards, 2"x8" joists, and 2"x10" girders supported by wood piers. The gazebo, deck, and ramp were observed to be in below average condition. Surface splitting of boards, cupping, and general weathering were observed. The boathouse is provided with a three (3)-tab shingle roof that was observed to be in below average condition. Three (3)-tab shingles have a typical useful life of twenty (20) years. It is recommended that exterior wood products are weatherproofed every three (3) to five (5) years to ensure that premature replacement will not be required. The replacement cost includes funding for the deck components as well as the roofing. There are also aluminum boats which have a typical useful life of twenty-five (25) years and were observed to be in average condition.



Boathouse and Dock

13. **Lake Amenities**

Three (3) pond aerators are located in the lake. Water within the lake is replenished via a submersible pump located in the creek.

14. **Roofing**

The Lakeside Lodge building, Timber Hall building, Performing Arts Center, and gatehouses are roofed with architectural asphalt shingles. Shingles of this type have a thirty (30) year typical useful life. The roofing was observed to be in average condition.

The association offices and commercial building have corrugated fiberglass roofs that are scheduled to be replaced with architectural asphalt shingles. The roof was observed to be in below average condition.



Roofing Shingles

15. Siding

The Lakeside Lodge building, Timber Hall building, and Performing Arts Center are clad with vinyl siding. Vinyl siding has a typical useful life of forty-five (45) years. The siding was observed to be in average condition.



Vinyl Siding

16. Gutters and Leaders

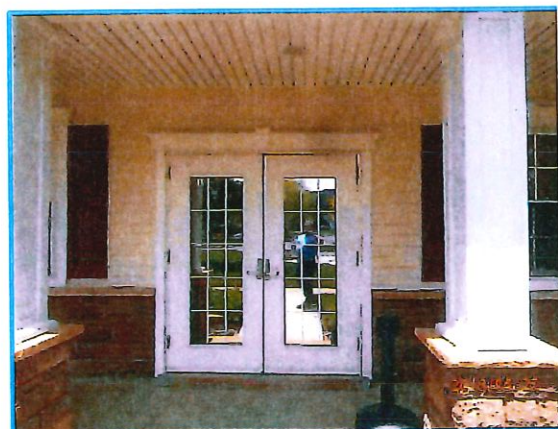
Aluminum gutters and leaders located on the community buildings were observed to be in average condition. Gutters and leaders have a typical useful life of twenty-five (25) years.



Gutters and Leaders

17. Doors & Windows

The exterior windows and doors of the Lakeside Lodge, Timberland Hall, and Performing Arts Center were observed to be in average condition for their age. Windows and doors have a typical useful life of forty (40) years.



Exterior Doors

18. **Interior Finishes**

The Leisure Knoll at Manchester Association is responsible for the funding of the interior finishes of the recreational and office buildings. The replacement of interior finishes is based largely on the element's appearance and not its functionality.

- a) **Carpet** – Low nap carpet exists in the Lakeside Lodge and portions of Timberland Hall. Depending on the quality of the loop and the degree of traffic, carpet has a typical useful life of eight (8) to eleven (11) years. The carpet was observed to be in average condition.
- b) **Wood Flooring** – Hardwood flooring located in the Performing Arts Center and wood parquet flooring located in the sewing and painting rooms in Timberland Hall appeared to be in average condition with usual wear observed. The unit cost within the schedule funds for replacement of the parquet floors and resurfacing of the hardwood.
- c) **Ceramic & Quarry Tile** – Ceramic floor and wall tile is located in all of the bathrooms of the recreational buildings and the ceramics room in Timberland Hall. Smaller 1" x 1" floor tile can be found in the men's and women's bathrooms with 4"x4" wainscot tile finishing the walls. Quarry tile is located in the entrances, hallways and sitting room of Timberland Hall. Ceramic and quarry tile have a typical useful life of thirty (30) years. The replacement cost includes removal of the old tile. The tile was observed to be in average condition.
- d) **Suspended Ceiling** – The ceiling in the Performing Arts Center is finished with a (2'x2') or (2'x4'), acoustical suspended or "drop" ceiling. The suspended ceiling has a typical useful life of thirty (30) years and was observed to be in average condition.
- e) **Illumination** – Illumination in the community buildings is achieved through various types of lighting including fluorescent troffers and high hats. Interior lighting has a twenty-five (25) year typical useful life. The lighting in the community buildings was observed to be in average condition.



Hardwood Floor

19. **Interior Amenities**

- a) **Billiard Equipment** – The Clubhouse at Leisure Knoll at Manchester is provided with a billiard room. Funding for the three (3) billiard tables and equipment has been included in the study. Billiards equipment has a typical useful life of ten (10) years and was observed to be in below average condition.
- b) **Exercise Equipment** – Equipment within the exercise room in the Timberland Hall is the responsibility of the Association. The exercise room is provided with treadmills, stationary bikes, universal stations, free weights, etc., which all contain a twenty (20) year useful life. The equipment was observed to be in average condition.
- c) **Kitchen Amenities** – The commercial appliances in the Performing Arts Center kitchen were observed to be in average condition. The kitchen contains dishwashers, stoves, ovens, freezers, icemakers, food warmers, and commercial coffee urns. Stainless steel table tops, sinks, and exhaust hoods possess long useful lives and are expected to perform beyond the scope of this study. Only kitchen items with significant replacement costs have been included in the study.



Billiards Table

20. **HVAC Systems**

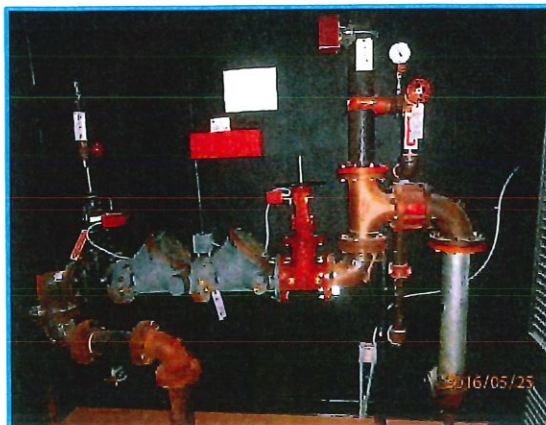
Heating throughout the recreational buildings is provided by separate gas-fired boilers in each building. Boilers of this type must be maintained on a regular basis to ensure they reach their full estimated useful life. Heat from the boilers is forced throughout the buildings utilizing blower units. Cooling of the community buildings is accomplished with exterior air conditioning condensers.



A/C Condenser

21. **Fire Suppression System**

Timberland Hall and the Performing Arts Center are provided with fire suppression systems. Components of these systems include the fire control panel, fire pump, jockey pump, panel relay, and the sprinkler heads. These systems must be periodically maintained and inspected by qualified personnel.



Fire Suppression Equipment

22. Security System

Lakeside Lodge, Timberland Hall and the Performing Arts Center are each protected by an alarm system. A line item has been added to fund for the replacement of each system's control panels.

23. Water Heaters

Hot water is supplied to the community buildings with electric water heaters, which possess a typical useful life of ten (10) years.



Water Heater

24. Community Vehicles

The Leisure Knoll at Manchester community utilizes vehicles in order to perform its daily maintenance functions. These vehicles were purchased at different times and possess varying degrees of usage. The remaining useful lives and estimated replacement costs are expressed in the schedule of reserve items.

Excluded Items

1. **Residential Units**
The individual dwelling units are a “fee simple” type of ownership. The replacement of all individual unit items is the responsibility of the unit owners.
2. **Power Washing**
Power washing is recommended to remove dirt and staining fungi from the buildings elevations and is deferred to a maintenance item.
3. **Masonry Retaining Walls**
Stone masonry retaining walls are located around the bar-b-q pit area. The retaining walls are expected to perform beyond the scope of this study. Repointing of the stone should be performed through the preventative maintenance budget.
4. **Street Lights**
Lighting located throughout the community right-of-ways is the responsibility of the local power company.
5. **Furniture and Amenities**
All interior furniture, amenities, and appliances such as chairs, couches, desks, tables, shelves, televisions, VCR's, copiers, fax machines, typewriters, computer stations, dishwashers, microwaves and refrigerators shall be replaced through the operating budget.

Financial Analysis & Funding Plan

The estimated reserve amount effective as of October 1, 2016 has been projected into the future based on the existing funding plan and information provided by the Association. It is the opinion of FWH Associates, P.A. that the Association's current reserve fund status is *inadequate*. By 2018, the Association's reserve fund status will be adequate.

The following calculations are based upon the occupancy of 1626 units.

Previous Fiscal Year Summary:

The 2015 total annual reserve contribution amounted to: \$819,504.

Current Fiscal Year Summary:

The 2016 total annual reserve contribution amounts to: \$819,504.

Appendix A: Reserve Component Inventory

The replacement reserve schedule (Appendix A) lists all the capital expense items with useful life, estimated remaining useful life, quantity and current replacement value.

Appendix B: Yearly Expense Projection

The yearly expense projection schedule provides an annual synopsis of when items are to be replaced. It also depicts which items will require replacement more than once throughout the course of the thirty (30) year study.

An annual inflation rate of 2.5% is applied to the projected capital reserve expenses.

Appendix C: Funding Plan

The projected starting reserve balance (as of the Fiscal Year start date) was computed based on the existing funding plan and via information provided by the Association. The actual or projected reserve balance total presented in the Reserve Study is based upon information provided and was not audited.

The cash flow chart (Appendix C) estimates the total expenses to be spent annually over the thirty (30) year study period, and the yearly contribution.

The cash flow chart has been prepared to allow the Association to maintain a yearly ending balance at or above the ten (10%) percent minimum threshold of \$763,262, with the exception of 2016.

It should be noted that fiscal years 2016 and 2017 are critical years, as the ending balances are below or at the ten (10%) percent minimum threshold.

The reserve contributions increase through 2017, then remain steady thereafter.

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REPLACEMENT RESERVE COMPONENT INVENTORY
Effective as of October 1, 2016

1626 Buildings
1626 Units

Projected Reserve Balance: \$1,415,549

Item	Year Installed/ Replaced	Typical Useful Life	Estimated Remaining Useful Life	Estimated Quantity	Unit Cost	Current Replacement Cost
SITWORK						
Paved Surfaces						
Asphalt						
1. Appleby Place (3621 SY)	1984	20	1	1 LS	\$92,891	\$92,891
2. Association Road (1156 SY)	1974	20	1	1 LS	\$17,831	\$17,831
3. Banbury Avenue (5003 SY)	2004	20	8	1 LS	\$81,442	\$81,442
4. Blackthorn Place (3228 SY)	2013	20	17	1 LS	\$97,986	\$97,986
5. Blythe Lane (696 SY)	2004	20	8	1 LS	\$10,881	\$10,881
6. Buckingham Cuts (3600 SY)	1974	20	1	1 LS	\$64,631	\$64,631
7. Buckingham Drive (north of Knoll) (9387 SY)	2004	20	8	1 LS	\$167,308	\$167,308
8. Buckingham Drive (south of Knoll) (21,120 SY)	1974	20	1	1 LS	\$344,589	\$344,589
9. Carol Court (861 SY)	1987	20	1	1 LS	\$14,725	\$14,725
10. Cromwell Court (2100 SY)	1999	20	3	1 LS	\$31,533	\$31,533
11. Dorset Road (8151 SY)	1980	20	1	1 LS	\$156,955	\$156,955
12. Dorset Road (973 SY)	2013	20	17	1 LS	\$21,895	\$21,895
13. Durham Avenue (4200 SY)	1988	20	1	1 LS	\$70,554	\$70,554
14. Edgware Place (2841 SY)	2004	20	8	1 LS	\$41,503	\$41,503
15. Elmswell Avenue (4614 SY)	2005	20	9	1 LS	\$70,171	\$70,171
16. Esher Court (1200 SY)	2004	20	8	1 LS	\$18,617	\$18,617
17. Flintshire Terrace (4620 SY)	2005	20	9	1 LS	\$70,733	\$70,733
18. Frilham Lane (2100 SY)	2013	20	17	1 LS	\$42,138	\$42,138
19. Gladstone Avenue (4764 SY - no curb repl.)	2008	20	12	1 LS	\$76,243	\$76,243
20. Greenwich Avenue (5055 SY)	1988	20	1	1 LS	\$109,636	\$109,636
21. Harrogate Lane (2607 SY)	1987	20	1	1 LS	\$59,266	\$59,266
22. Harrow Place (3024 SY)	1988	20	1	1 LS	\$55,730	\$55,730
23. Hastings Road (5487 SY)	2015	20	19	1 LS	\$165,814	\$165,814
24. Heath Lane (798 SY)	2008	20	12	1 LS	\$13,404	\$13,404
25. Hexham Court (531 SY - no curb repl.)	2012	20	16	1 LS	\$21,273	\$21,273
26. Kent Lane (744 SY)	1993	20	1	1 LS	\$16,638	\$16,638
27. Kirby Lane (4500 SY - no curb repl.)	1999	20	3	1 LS	\$65,790	\$65,790
28. Knoll Circle (4944 SY)	2012	20	16	1 LS	\$147,177	\$147,177
29. Lambeth Lane (1800 SY - no curb repl.)	2005	20	9	1 LS	\$26,737	\$26,737
30. Leighton Lane (5034 SY - no curb repl.)	2004	20	8	1 LS	\$75,114	\$75,114
31. Maidstone Way (3064 SY - no curb repl.)	2005	20	9	1 LS	\$44,904	\$44,904
32. Mansfield Avenue (Hastings to Tarworth) (6549 SY - no curb repl.)	1988	20	1	1 LS	\$100,114	\$100,114
33. Mansfield Avenue (Tarworth to Buckingham) (3374 SY - no curb repl.)	1999	20	3	1 LS	\$51,555	\$51,555
34. Marlow Avenue (2892 SY - no curb repl.)	2009	20	13	1 LS	\$42,087	\$42,087
35. Marston Row (2301 SY - no curb repl.)	1983	20	1	1 LS	\$34,484	\$34,484
36. Newbury Row (2091 SY - no curb repl.)	2008	20	12	1 LS	\$30,429	\$30,429
37. Normanton Avenue (3753 SY)	1987	20	1	1 LS	\$70,875	\$70,875
38. Oakham Row (2820 SY - no curb repl.)	1983	20	1	1 LS	\$43,456	\$43,456
39. Parking Lot (Lakeside Lodge) (3000 SY - no curb repl.)	1996	20	5	1 LS	\$45,176	\$45,176
40. Parking Lot (Association Office) (6000 SY - no curb repl.)	2004	20	1	1 LS	\$92,661	\$92,661
41. Parking Lot (Recycling Center) (2560 SY - no curb repl.)	1974	20	1	1 LS	\$43,100	\$43,100
42. Parking Lot (Timberland Hall) (2760 SY - no curb repl.)	1974	20	3	1 LS	\$42,041	\$42,041
43. Red Hill Road (11,535 SY - no curb repl.)	2016	20	20	1 LS	\$239,452	\$239,452
44. Reigate Lane (1434 SY - no curb repl.)	2008	20	12	1 LS	\$20,869	\$20,869
45. Romford Lane (1521 SY - no curb repl.)	1987	20	1	1 LS	\$22,528	\$22,528
46. Sandhurst Street (5139 SY)	2012	20	16	1 LS	\$105,645	\$105,645
47. St Paul Place (4068 SY - no curb repl.)	1980	20	1	1 LS	\$60,443	\$60,443
48. Surrey Street (1380 SY - no curb repl.)	2004	20	8	1 LS	\$20,314	\$20,314
49. Tarworth Terrace (3837 SY - no curb repl.)	1999	20	3	1 LS	\$58,597	\$58,597
50. Turnbridge Row (3210 SY - no curb repl.)	1988	20	1	1 LS	\$50,308	\$50,308
51. Twyford Lane (3483 SY - no curb repl.)	1988	20	1	1 LS	\$53,750	\$53,750
52. Westgate Place (5379 SY - no curb repl.)	2013	20	17	1 LS	\$108,868	\$108,868
53. Weybridge Place (2277 SY - no curb repl.)	2009	20	13	1 LS	\$33,138	\$33,138
54. Wolverton Place (2556 SY - no curb repl.)	1983	20	1	1 LS	\$38,775	\$38,775
55. Woodstock Lane (2991 SY - no curb repl.)	2009	20	13	1 LS	\$43,528	\$43,528
56. Wycombe Way (3141 SY)	1987	20	1	1 LS	\$56,784	\$56,784

REPLACEMENT RESERVE COMPONENT INVENTORY
Effective as of October 1, 2016

1626 Buildings
1626 Units

Projected Reserve Balance: \$1,415,549

Item	Year Installed/ Replaced	Typical Useful Life	Estimated Remaining Useful Life	Estimated Quantity	Unit Cost	Current Replacement Cost
Concrete Sidewalks						
57. Concrete Sidewalks [2012] (Hexham, Knoll, Sandhurst)	2012	30	26	24,330 SF	\$9.00	\$218,970
58. Concrete Sidewalks [2013] (Blackthorn, Frilham, Westgate)	2013	30	27	11,533 SF	\$9.00	\$103,797
59. Concrete Sidewalks [2014]	2013	30	27	26,353 SF	\$9.00	\$237,177
60. Concrete Sidewalks [2015]	2015	30	29	8,476 SF	\$9.00	\$76,284
61. Concrete Sidewalks [2016]	2016	30	30	7,261 SF	\$9.00	\$65,349
62. Appleby Place	2015	30	29	120 SF	\$9.00	\$1,080
63. Association Road	1974	30	1	160 SF	\$9.00	\$1,440
64. Banbury Avenue	2015	30	29	80 SF	\$9.00	\$720
65. Blackthorn Place (partially replaced in 2013)	1988	30	2	560 SF	\$9.00	\$5,040
66. Blythe Lane	2004	30	18	120 SF	\$9.00	\$1,080
67. Buckingham Cuts	1974	30	1	180 SF	\$9.00	\$1,620
68. Buckingham Drive (north of Knoll)	2004	30	18	160 SF	\$9.00	\$1,440
69. Buckingham Drive (south of Knoll)	1974	30	1	240 SF	\$9.00	\$2,160
70. Carol Court	2015	30	29	80 SF	\$9.00	\$720
71. Cromwell Court	1999	30	13	160 SF	\$9.00	\$1,440
72. Dorset Road	2015	30	29	2,880 SF	\$9.00	\$25,920
73. Durham Avenue	1988	30	2	560 SF	\$9.00	\$5,040
74. Edgeware Place	2015	30	29	142 SF	\$9.00	\$1,278
75. Elmswell Avenue	2015	30	29	520 SF	\$9.00	\$4,680
76. Esher Court	2015	30	29	200 SF	\$9.00	\$1,800
77. Flintshire Terrace	2015	30	29	600 SF	\$9.00	\$5,400
78. Frilham Lane (partially replaced in 2013)	1983	30	1	240 SF	\$9.00	\$2,160
79. Gladstone Avenue	2008	30	22	238 SF	\$9.00	\$2,144
80. Greenwich Avenue	2015	30	29	1,920 SF	\$9.00	\$17,280
81. Harrogate Lane	2014	30	28	2,400 SF	\$9.00	\$21,600
82. Harrow Place	2015	30	29	1,120 SF	\$9.00	\$10,080
83. Hastings Road	2014	30	28	2,480 SF	\$9.00	\$22,320
84. Heath Lane	2008	30	22	320 SF	\$9.00	\$2,880
85. Hexham Court (included in line 57)	2012	30	26	0 SF	\$9.00	\$0
86. Kent Lane	2015	30	29	640 SF	\$9.00	\$5,760
87. Kirkby Lane	1999	30	13	225 SF	\$9.00	\$2,025
88. Knoll Circle (included in line 57)	2012	30	26	0 SF	\$9.00	\$0
89. Lambeth Lane	2005	30	19	90 SF	\$9.00	\$810
90. Leighton Lane	2015	30	29	252 SF	\$9.00	\$2,265
91. Maidstone Way	2005	30	19	153 SF	\$9.00	\$1,379
92. Mansfield Avenue (Hastings to Tarworth)	2015	30	29	327 SF	\$9.00	\$2,947
93. Mansfield Avenue (Tarworth to Buckingham)	2015	30	29	169 SF	\$9.00	\$1,518
94. Marlow Avenue	2009	30	23	145 SF	\$9.00	\$1,301
95. Marston Row	1983	30	1	115 SF	\$9.00	\$1,035
96. Newbury Row	2008	30	22	105 SF	\$9.00	\$941
97. Normanton Avenue	1987	30	1	2,560 SF	\$9.00	\$23,040
98. Oakham Row	1983	30	1	141 SF	\$9.00	\$1,269
99. Red Hill Road	2016	30	30	577 SF	\$9.00	\$5,191
100. Reigate Lane	2008	30	22	72 SF	\$9.00	\$645
101. Romford Lane	2015	30	29	76 SF	\$9.00	\$684
102. Sandhurst Street (included in line 57)	2012	30	26	0 SF	\$9.00	\$0
103. St Paul Place	1980	30	1	203 SF	\$9.00	\$1,831
104. Surrey Street	2004	30	18	69 SF	\$9.00	\$621
105. Tarworth Terrace	1999	30	13	192 SF	\$9.00	\$1,727
106. Turnbridge Row	2015	30	29	161 SF	\$9.00	\$1,445
107. Twyford Lane	2015	30	29	174 SF	\$9.00	\$1,567
108. Westgate Place (included in line 58)	2013	30	27	0 SF	\$9.00	\$0
109. Weybridge Place	2009	30	23	114 SF	\$9.00	\$1,025
110. Wolverton Place	2015	30	29	128 SF	\$9.00	\$1,150
111. Woodstock Lane	2009	30	23	150 SF	\$9.00	\$1,346
112. Wycombe Way	1987	30	1	1,680 SF	\$9.00	\$15,120

REPLACEMENT RESERVE COMPONENT INVENTORY
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1626 Buildings
1626 Units

Projected Reserve Balance: \$1,415,549

Item	Year Installed/ Replaced	Typical Useful Life	Estimated Remaining Useful Life	Estimated Quantity	Unit Cost	Current Replacement Cost
Concrete Surfaces						
113. Concrete Sidewalks (Recreational Areas)	1974	30	1	13,352 SF	\$9.00	\$120,168
114. Concrete Driveway Aprons (over 3 years)	1974	30	1	1,033 SF	\$10.00	\$10,330
115. Concrete Driveway Aprons (over 5 years)	1974	30	1	7,482 SF	\$10.00	\$74,820
116. Concrete Driveway Aprons (over 5 years)	1974	30	1	7,482 SF	\$10.00	\$74,820
117. Concrete Driveway Aprons (over 5 years)	1974	30	1	7,482 SF	\$10.00	\$74,820
118. Concrete Driveway Aprons [2012]	2012	30	26	4,957 SF	\$10.00	\$49,570
119. Concrete Driveway Aprons [2013]	2013	30	27	1,492 SF	\$10.00	\$14,920
120. Concrete Driveway Aprons [2014]	2014	30	28	2,060 SF	\$10.00	\$20,600
121. Concrete Access Road (PAC)	1986	30	1	1,128 SF	\$10.00	\$11,280
122. Concrete Deck (Picnic Area)	2005	30	19	1,800 SF	\$8.75	\$15,750
123. Concrete Slab (Recycling Area)	1974	30	1	355 SF	\$8.75	\$3,106
124. Concrete Curb and Gutter	2007	45	36	4,500 LF	\$0.00	\$0
125. Concrete Curb and Gutter	2008	45	37	2,854 LF	\$0.00	\$0
126. Concrete Curb and Gutter	2009	45	38	3,537 LF	\$0.00	\$0
127. Concrete Curb and Gutter	2010	45	39	1,492 LF	\$0.00	\$0
128. Concrete Curb and Gutter	2011	45	40	1,911 LF	\$0.00	\$0
129. Concrete Curb and Gutter [2012]	2012	45	41	4,915 LF	\$0.00	\$0
130. Concrete Curb and Gutter [2013]	2013	45	42	2,695 LF	\$0.00	\$0
131. Concrete Curb and Gutter [2014]	2014	45	43	2,807 LF	\$0.00	\$0
Recreational						
Swimming Pool						
132. 4' Aluminum Picket Fence (Pool)	2011	25	20	312 LF	\$44.87	\$14,000
133. 3' Vinyl Picket Fence (Pool)	2006	25	15	125 LF	\$32.50	\$4,063
134. Pool Resurfacing (Marcite)	2016	7	7	1 LS	\$64,170	\$64,170
135. Pool Coping (Brick)	2009	20	13	234 LF	\$25.00	\$5,850
136. Concrete Pool Deck (Pavers)	2004	30	18	10,076 SF	\$17.25	\$173,811
137. Pool Filtration System (Sand Filters and Aerator Pumps)	2016	15	15	1 EA	\$4,500	\$4,500
138. Wisperflo Pool Pump	2016	15	15	1 EA	\$3,010	\$3,010
139. Pool Cover	2016	10	10	1 EA	\$4,800	\$4,800
140. Pool Furniture	2011	15	10	1 EA	\$3,027	\$3,027
141. Pool Furniture	2017	15	16	1 EA	\$3,027	\$3,027
142. Pool Canvas Canopy	2012	15	11	1 EA	\$2,492	\$2,492
143. Wood Gazebo (Pool Area) - Roof Replacement	2004	30	18	1 EA	\$2,862	\$2,862
Tennis Courts						
144. 10' Vinyl Chainlink Fence (Tennis Court)	2009	25	18	456 LF	\$38.43	\$17,524
145. Tennis Court (Replacement)	1994	20	6	2 EA	\$46,000	\$92,000
146. Tennis Court (Resurface)	2012	7	3	2 EA	\$14,643	\$29,286
147. Tennis Court Nets and Posts (Replacement)	2012	7	4	2 EA	\$885	\$1,770
Bocce & Shuffleboard						
148. Bocce: Timber Edging	2012	15	11	420 LF	\$91.71	\$38,520
149. Bocce: Awnings	2011	15	10	1 LS	\$14,387	\$14,387
150. Bocce: Resurfacing (Stones, etc)	2012	20	10	1 LS	\$11,162	\$11,162
151. Shuffleboard Court (Tile Overlay)	2017	30	2	8 EA	\$1,500	\$12,000
152. Pressure Treated Trellis Structure (Shuffleboard Court)	2017	15	2	2 EA	\$8,280	\$16,560
Miscellaneous						
153. Putting Green	2015	15	14	1 LS	\$37,832	\$37,832
154. Benches-Composite	2017	20	10	24 EA	\$502	\$12,052
155. Benches	2012	20	10	26 EA	\$502	\$13,057
Exterior Illumination						
156. 6' Lantern Fixtures on Fiberglass Post	2011	25	20	5 EA	\$1,410	\$7,050
157. 400 Watt MV on 30' Pole (Dbl Fixture)	1988	25	2	4 EA	\$4,199	\$16,797
158. Site Lighting (Timberland, Lakeside, PAC)	2013	25	22	13 EA	\$665	\$8,642
159. Site Lighting (Association Road)	2013	25	22	4 EA	\$673	\$2,691
160. Site Lighting (Recycling Area)	2000	25	9	4 EA	\$605	\$2,422
161. Site Lighting (Bocce Court)	2013	25	15	2 EA	\$673	\$1,346

REPLACEMENT RESERVE COMPONENT INVENTORY
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1626 Units

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Item	Year Installed/ Replaced	Typical Useful Life	Estimated Remaining Useful Life	Estimated Quantity	Unit Cost	Current Replacement Cost
Miscellaneous						
162. Front Entrance Sign	2016	20	20	1 EA	\$4,729	\$4,729
Irrigation						
163. Common Area	2011	25	20	60 MSF	\$285	\$17,100
164. Common Area (over 5 years)	1974	25	2	506 MSF	\$285	\$144,210
165. Well Pumps	1974	25	2	2 EA	\$3,805	\$7,610
166. Well Pumps	2000	25	9	2 EA	\$3,805	\$7,610
167. Well Pump (Front gate)	2015	25	24	1 EA	\$3,805	\$3,805
Boathouse						
168. Fishing Gazebo, Boathouse, Dock, and Ramp (Roofing & Structural Comp.)	1974	20	2	1 LS	\$36,225	\$36,225
169. Aluminum Rowboats (Boathouse)	2000	25	9	3 EA	\$1,723	\$5,170
Lake Amenities						
170. Lake Pump (1 HP)	2017	10	11	1 EA	\$900	\$900
171. Aerators (Fountain)	2008	10	2	1 EA	\$3,750	\$3,750
172. Aerators (Bubbler)	2008	10	2	2 EA	\$3,750	\$7,500
STRUCTURES						
Lakeside Lodge						
Exterior						
173. Dimensional Roof Shingles - (replace)	2008	30	22	90 SQ	\$425	\$38,250
174. Vinyl Siding/ Fascia & Soffit	2011	45	40	14 SQ	\$0.00	\$0
175. Aluminum Gutters	2011	25	20	260 LF	\$8.86	\$2,304
176. Aluminum Leaders	2011	25	20	120 LF	\$8.30	\$996
177. Double Doors, 1 Set (ACE)	2011	40	35	1 SET	\$2,898	\$0
178. Airlock Entryway (McBG)	2013	40	37	1 LS	\$0.00	\$0
179. Windows	2011	40	35	20 EA	\$825	\$0
Interior						
180. Carpet	2012	11	7	2,415 SY	\$58.95	\$142,364
181. Bathroom Renovations - ADA Compliance	2012	30	26	1 LS	\$31,050	\$31,050
182. Interior Lighting Fixtures	2012	30	26	1 LS	\$6,210	\$6,210
183. Interior Amenities Replacement Allowance (Furniture, AV, Cabinets)	2012	40	36	1 LS	\$0.00	\$0
Mechanical						
184. A.C. unit (5 Ton)	2011	20	15	1 EA	\$8,694	\$8,694
185. A.C. unit (6.25 Ton)	2011	20	15	1 EA	\$12,938	\$12,938
186. A.C. unit (5 Ton)	2012	20	16	1 EA	\$16,697	\$16,697
187. Boiler- Propane (366 MBTU)	1995	35	14	1 EA	\$7,064	\$7,064
188. Alarm System Control Panel	2012	20	16	1 EA	\$3,372	\$3,372
Timberland Hall						
Exterior						
189. Dimensional Roof Shingles - (replace)	2008	30	22	127 SQ	\$425	\$53,975
190. Vinyl Siding/ Fascia & Soffit	2011	45	40	19 SQ	\$0.00	\$0
191. Aluminum Gutters	2011	25	20	421 LF	\$8.86	\$3,730
192. Aluminum Leaders	2011	25	20	210 LF	\$8.30	\$1,743
193. Exterior Doors (3 Single, 6 Double)	2011	40	35	1 LS	\$0.00	\$0
194. Exterior Doors (7 Double)	2013	40	37	7 SETS	\$0.00	\$0
195. Exterior Doors	2013	40	37	1 LS	\$0.00	\$0
196. Windows	2011	40	35	17 EA	\$0.00	\$0

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Interior						
197. Carpet	2013	11	8	509 SY	\$58.95	\$30,006
198. Ceramic Tile (Bathrooms)	2009	30	23	745 SF	\$12.47	\$9,291
199. Ceramic Tile (Ceramic Room)	1987	30	3	375 SF	\$12.47	\$4,677
200. Parquet Flooring Replacement	2008	25	8	900 SF	\$9.89	\$8,901
201. Acoustical Ceiling	2002	30	16	6,600 SF	\$3.15	\$20,790
202. Quarry Tile	1987	30	4	1,120 SF	\$14.08	\$15,770
203. Bathroom Renovations	2009	30	23	1 LS	\$31,050	\$31,050
204. Interior Lighting Fixtures	1974	30	4	1 LS	\$18,113	\$18,113
205. Exercise Equipment	2001	10	2	1 LS	\$16,063	\$16,063
206. Exercise Equipment (Partial 2012)	2012	10	6	1 LS	\$3,312	\$3,312
207. Treadmill	2014	10	8	1 EA	\$2,610	\$2,610
208. Treadmill	2015	10	9	1 EA	\$3,260	\$3,260
209. Billiard Equipment	2016	10	10	1 LS	\$15,525	\$15,525
210. Common Area Renovation Allowance	1974	30	2	1 LS	\$103,500	\$103,500
Mechanical						
211. Split System - Exercise Room	2017	20	21	1 EA	\$6,728	\$6,728
212. A.C. unit (10 Ton)	2005	20	9	1 EA	\$17,388	\$17,388
213. A.C. unit (15 Ton)	2005	20	9	1 EA	\$24,840	\$24,840
214. A.C. unit (7.5 Ton)	2008	20	12	1 EA	\$13,248	\$13,248
215. Boiler- Propane (450 MBTU)	1993	35	12	1 EA	\$26,910	\$26,910
216. Hot Water Heater (40 gal.)	2005	12	2	1 EA	\$1,346	\$1,346
217. Hot Water Heater: Kitchen	2013	12	9	1 EA	\$3,675	\$3,675
218. Dishwasher	2013	15	12	1 EA	\$531	\$531
219. Alarm System Control Panel	2009	20	13	1 EA	\$328	\$328
220. Fire System (Control Panel, Fire Pump & Controller, Jockey P & C)	2017	15	16	1 EA	\$5,279	\$5,279
Performing Arts Center						
Exterior						
221. Dimensional Roof Shingles - (replace)	2009	30	23	77 SQ	\$425	\$32,725
222. Built- Up Membrane Roofing - replace	2012	20	16	10 SQ	\$2,513	\$25,132
223. Vinyl Siding/ Fascia & Soffit	2011	45	40	27 SQ	\$0.00	\$0
224. Aluminum Gutters	2011	25	20	390 LF	\$8.86	\$3,455
225. Aluminum Leaders	2011	25	20	150 LF	\$8.30	\$1,245
226. Exterior Doors	2011	40	35	1 LS	\$0.00	\$0
Interior						
227. Ceramic Tile	2008	30	22	444 SF	\$12.47	\$5,537
228. Hardwood Flooring (Replacement then Resurface)	2014	25	23	3,415 SF	\$25.00	\$85,375
229. Floor Tile	2015	30	29	1 LS	\$1,092	\$1,092
230. Carpet Tile (Dressing Room)	2015	8	7	1 LS	\$1,167	\$1,167
231. Acoustical Ceiling (Complete Repl. then Panels only)	2006	30	20	4,144 SF	\$18.73	\$77,625
232. Bathroom Renovations	2015	30	29	1 LS	\$31,050	\$31,050
233. Interior Lighting Fixtures	2006	30	20	1 LS	\$11,670	\$11,670
234. Stage Lighting	2015	30	29	1 LS	\$1,139	\$1,139
235. Stage Flooring	2015	30	29	1 LS	\$5,175	\$5,175
236. Stage Curtains & Furnishings	2015	30	29	1 LS	\$20,700	\$20,700
237. Audio System	2015	30	29	1 LS	\$31,050	\$31,050
238. Molding Replacement Allowance: Door/Ceiling/Floor Trim, Chair Rails	2015	30	29	1 LS	\$34,880	\$34,880
239. Kitchen Stove- Vulcan- Nat Gas - 10 Burner	2017	15	16	1 EA	\$6,236	\$6,236
240. Cres-Cor Electric Food Warmer	1987	15	2	1 EA	\$6,728	\$6,728
241. Coffee Maker - 200 cup	2004	15	3	1 EA	\$2,950	\$2,950
242. Ice maker - Manitowac, Series 400	2012	15	11	1 EA	\$3,027	\$3,027

REPLACEMENT RESERVE COMPONENT INVENTORY
Effective as of October 1, 2016

1626 Buildings
1626 Units

Projected Reserve Balance: \$1,415,549

Item	Year Installed/ Replaced	Typical Useful Life	Estimated Remaining Useful Life	Estimated Quantity	Unit Cost	Current Replacement Cost
Mechanical						
243. HVAC Split System (1 Ton)	1987	20	2	1 EA	\$1,630	\$1,630
244. A.C. unit (5 Ton)	1987	20	2	1 EA	\$8,694	\$8,694
245. A.C. unit (40 Ton)	2005	20	9	1 EA	\$25,875	\$25,875
246. A.C. unit (7.5 Ton)	2007	20	11	1 EA	\$13,248	\$13,248
247. Boiler- Propane (500 MBTU)	1993	35	12	1 EA	\$26,910	\$26,910
248. Hot Water Heater (40 gal.)	2014	10	2	1 EA	\$1,346	\$1,346
249. Hot Water Heater (80 gal.)	2014	10	2	1 EA	\$2,691	\$2,691
250. Alarm System Control Panel	2009	20	13	1 EA	\$339	\$339
251. Stand Pipe Pump	1987	15	2	1 EA	\$5,848	\$5,848
252. Exhaust Vents (large)	2009	20	13	2 EA	\$2,675	\$5,351
253. Exhaust Vents (small)	2009	20	13	1 EA	\$807	\$807
Association Offices & Commercial Building						
Exterior						
254. Corrugated Fibergalss Roof (repl. w/ dimensional asphalt shingles)	1991	30	5	40 SQ	\$425	\$17,000
255. Aluminum Gutters	2011	25	20	90 LF	\$8.86	\$797
256. Aluminum Leaders	2011	25	20	45 LF	\$8.30	\$374
Renovation						
257. Office Computers	2012	10	6	1 LS	\$9,693	\$9,693
258. Office Furnishings	2013	12	9	1 LS	\$9,315	\$9,315
259. Interior & Exterior Renovation Allowance	1987	30	2	1 LS	\$27,945	\$27,945
Mechanical						
260. A.C. Condenser (3 ton)	2011	20	15	1 EA	\$7,038	\$7,038
New Office						
261. New Office (\$403,650)	2014	50	48	1 EA	\$0.00	\$0
Rear Gatehouse						
262. Dimensional Roof Shingles - (replace)	2003	25	12	3 SQ	\$425	\$1,275
263. Heat Pump	2012	20	16	1 EA	\$4,313	\$4,313
Front Gatehouse						
264. Dimensional Roof Shingles - (replace)	2008	25	17	3 SQ	\$425	\$1,275
265. HVAC Split System	2011	20	15	1 EA	\$1,630	\$1,630
266. Emergency Backup Power Generator- nat gas	2017	20	21	1 EA	\$8,280	\$8,280
MISCELLANEOUS						
Community Vehicles						
267. GMC Montana SV6 2500 Truck	2006	10	2	1 EA	\$22,231	\$22,231
268. Pickup Truck	2013	10	7	1 EA	\$41,400	\$41,400
269. Tractor	2012	10	6	1 EA	\$39,868	\$39,868
270. Walker Mower	2007	10	2	1 EA	\$13,455	\$13,455
271. Snow Blower	2006	10	2	1 EA	\$2,070	\$2,070
272. Tamper - Sled Mount	2007	15	6	1 EA	\$3,623	\$3,623
273. Salt Spreader	2010	15	9	1 EA	\$6,210	\$6,210
274. Cement Saw	2007	10	2	1 EA	\$2,070	\$2,070
275. 2011 Chevy Silverado K2500HD # 1GC2KVC3BZ207618	2011	10	5	1 EA	\$43,988	\$43,988
276. GMC 2500 Truck	2013	10	7	1 EA	\$41,400	\$41,400
277. Chipper	2013	10	7	1 EA	\$26,393	\$26,393
278. 2014 Chevy Silverado K2500HD # 1GB0KVC3BZ207618	2014	10	8	1 EA	\$40,350	\$40,350
279. 2015 Nissan Versa Note S/PLUS/S # 3N1CE2CPXFL359552	2015	10	9	1 EA	\$17,275	\$17,275
TOTAL:						\$7,632,616

YEARLY EXPENSE PROJECTION
Effective as of October 1, 2016

Item	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
SITING																														
Paved Surfaces																														
Asphalt																														
1. Randolph Place (321 SY)																														
2. Annandale Road (1156 SY)																														
3. Randolph Avenue (2622 SY)																														
4. Buckingham Place (222 SY)																														
5. Wythe Lane (856 SY)																														
6. Buckingham Circle (2622 SY)																														
7. Buckingham Drive (South of Knoll) (1387 SY)																														
8. Buckingham Drive (South of Knoll) (21, 120 SY)																														
9. Carl Court (851 SY)																														
10. Cranwick Court (1100 SY)																														
11. Dorset Road (851 SY)																														
12. Dorset Road (872 SY)																														
13. Durham Avenue (4200 SY)																														
14. Edgewood Place (2841 SY)																														
15. Elmwood Avenue (6814 SY)																														
16. Esplanade (1200 SY)																														
17. Fintona Terrace (4000 SY)																														
18. Fintona Lane (1000 SY)																														
19. Glendora Avenue (4184 SY - no curb repl.)																														
20. Greenwich Avenue (2655 SY)																														
21. Hawthorn Lane (2000 SY)																														
22. Harrow Place (2024 SY)																														
23. Hastings Road (548 SY)																														
24. Heath Lane (198 SY)																														
25. Heath Court (531 SY - no curb repl.)																														
26. Kent Lane (144 SY)																														
27. Kent Lane (4000 SY - no curb repl.)																														
28. Kent Ct dr (4344 SY)																														
29. Leitch Lane (1800 SY - no curb repl.)																														
30. Leitch Lane (5014 SY - no curb repl.)																														
31. Madeline Way (3024 SY - no curb repl.)																														
32. Mansfield Avenue (Buckingham to Tennessee) (6548 SY - no curb repl.)																														
33. Mansfield Avenue (Tennessee to Buckingham) (2374 SY - no curb repl.)																														
34. Marlow Avenue (2527 SY - no curb repl.)																														
35. Marlow Lane (1800 SY - no curb repl.)																														
36. Newbury Row (2091 SY - no curb repl.)																														
37. Northampton Avenue (1353 SY)																														
38. Oakham Row (2245 SY - no curb repl.)																														
39. Oakham Row (2245 SY - no curb repl.)																														
40. Oakham Row (2245 SY - no curb repl.)																														
41. Oakham Row (2245 SY - no curb repl.)																														
42. Oakham Row (2245 SY - no curb repl.)																														
43. Oakham Row (2245 SY - no curb repl.)																														
44. Oakham Row (2245 SY - no curb repl.)																														
45. Oakham Row (2245 SY - no curb repl.)																														
46. Oakham Row (2245 SY - no curb repl.)																														
47. Oakham Row (2245 SY - no curb repl.)																														
48. Oakham Row (2245 SY - no curb repl.)																														
49. Oakham Row (2245 SY - no curb repl.)																														
50. Oakham Row (2245 SY - no curb repl.)																														
51. Oakham Row (2245 SY - no curb repl.)																														
52. Oakham Row (2245 SY - no curb repl.)																														
53. Oakham Row (2245 SY - no curb repl.)																														
54. Oakham Row (2245 SY - no curb repl.)																														
55. Oakham Row (2245 SY - no curb repl.)																														
56. Oakham Row (2245 SY - no curb repl.)																														

YEARLY EXPENSE PROJECTION
Effective as of October 1, 2016

Item	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Factor @ 2.5%	1.00	1.025	1.051	1.077	1.104	1.131	1.158	1.186	1.214	1.243	1.272	1.301	1.331	1.361	1.391	1.421	1.451	1.482	1.512	1.543	1.574	1.605	1.636	1.667	1.698	1.729	1.760	1.791	1.822	1.853
Concrete Sidewalks																														
57. Concrete Sidewalks (2012) (Hingham, Knoll, Southport)																														
58. Concrete Sidewalks (2013) (Buckham, Fisham, Westgate)																														
59. Concrete Sidewalks (2014)																														
60. Concrete Sidewalks (2015)																														
61. Concrete Sidewalks (2016)																														
62. Appleby Place		\$1,430																												
63. Association Road																														
64. Barbory Avenue																														
65. Bradburn Place (partially replaced in 2013)				\$5,166																										
66. Bythe Lane																														
67. Buckingham Circle																														
68. Buckingham Drive (north of Knoll)																														
69. Buckingham Drive (south of Knoll)																														
70. Canal Court																														
71. Cromwell Court																														
72. Daniel Road																														
73. Daphn Avenue																														
74. Edgewood Place																														
75. Elmwell Avenue																														
76. Esher Court																														
77. Fitzhugh Terrace																														
78. Fisham Lane (partially replaced in 2013)																														
79. Glafstone Avenue																														
80. Greenwich Avenue																														
81. Hamstead Lane																														
82. Harrow Place																														
83. Hastings Road																														
84. Heath Lane																														
85. Heatham Court (included in line 57)																														
86. Kent Lane																														
87. Kicker Lane																														
88. Knoll Circle (included in line 57)																														
89. Larchin Lane																														
90. Larchin Lane																														
91. Madisons Way																														
92. Mansfield Avenue (Madisons to Tenanth)																														
93. Mansfield Avenue (Tenanth to Buckingham)																														
94. Marlow Avenue																														
95. Marlow Row																														
96. Newbury Row																														
97. Normanston Avenue																														
98. Oakham Row																														
99. Red Hill Road																														
100. Reigate Lane																														
101. Sandford Lane																														
102. Sandford Street (included in line 57)																														
103. St Paul Place																														
104. Stone Street																														
105. Tenanth Terrace																														
106. Tenanth Row																														
107. Tenanth Lane																														
108. Westgate Place (included in line 59)																														
109. Westgate Place																														
110. Westgate Place																														
111. Westgate Lane																														
112. Wycombe Way																														

YEARLY EXPENSE PROJECTION
Effective as of October 1, 2016

Item	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Mechanical																														
243. HVAC Split System (1 Ton)			\$1,611																											
243. A.C. unit (3.5 Ton)			\$8,911																											
243. A.C. unit (40 Ton)								\$31,521																						
246. A.C. unit (7.5 Ton)									\$16,959																					
247. Boiler/Pump (500/1000)										\$35,303																				
248. Hot Water Heater (40 gal.)			\$1,349							\$1,765																				
249. Hot Water Heater (80 gal.)			\$7,758							\$3,531																				
250. Home System Control Panel											\$457																			
251. Stand Pipe Pump			\$5,594																											
252. Exhaust Vents (Roof)											\$7,185																			
253. Exhaust Vents (Wall)											\$1,085																			
Association Offices & Commercial Building																														
Exterior																														
254. Computerized Fiberglass Reef (incl. w/ dimensional splash shields)						\$18,385																								
255. Aluminum Gutters																														
256. Aluminum Leaders																														
Renovation																														
257. Office Computers							\$10,959																							
258. Office Furniture								\$11,249																						
259. Interior & Exterior Renovation Allowance			\$26,644																											
Mechanical																														
260. A.C. Condenser (3 ton)																														
New Office																														
261. New Office (1403 E50)																														
Roof Rehabilitation																														
262. Dimensional Reef Shingles - (replace)																														
263. Roof Pump																														
Roof Rehabilitation																														
264. Dimensional Reef Shingles - (replace)																														
265. HVAC Split System																														
266. Emergency Backup Power Generator - nat gas																														
MISCELLANEOUS																														
Community Vehicles																														
267. GMC Sierra SUV 2500 Truck			\$22,787																											
268. Pickup Truck							\$48,911																							
269. Tractor							\$45,107																							
270. Wheel Loader			\$13,791																											
271. Snow Blower			\$2,122																											
272. Tractor - Snow Mount							\$4,099																							
273. Snow Blower								\$7,555																						
274. Cement Saw			\$2,122																											
275. 2011 Chevy Silverado F2500HD # 10CJNVG0337201618							\$48,854																							
276. GMC 2500 Truck								\$46,811																						
277. Chipper								\$30,007																						
278. 2014 Chevy Silverado F2500HD # 10S0VW0045113623								\$47,863																						
279. 2015 Nissan Versa Note SP4US59 # 301VC32PAPL355592								\$21,844																						
TOTALS	\$1,800,793	\$69,407	\$45,072	\$107,791	\$154,873	\$200,641	\$267,200	\$340,830	\$430,871	\$542,429	\$678,751	\$838,039	\$1,022,126	\$1,232,203	\$1,474,667	\$1,746,426	\$2,049,375	\$2,395,471	\$2,835,418	\$3,366,511	\$3,996,113	\$4,737,064	\$5,597,860	\$6,589,879	\$7,729,157	\$8,999,844	\$10,418,161	\$11,999,814	\$13,752,814	\$15,695,167

Capital Reserve Study
LEISURE KNOLL AT MANCHESTER

November 2016
Appendix C

FUNDING PLAN

Effective as of October 1, 2016

Projected Reserve Balance: \$1,415,549

10% Threshold: \$763,262

1626 Units

Fiscal Year	Beginning Balance as of Oct 1	Reserve Contribution (Oct 1 - Sep 30)	Net Interest @ 0.000%	Annual Expenses	Ending Balance
2016	\$1,415,549	\$819,504	\$0	\$1,903,288	\$331,765
2017	\$331,765	\$840,995	\$0	\$409,497	\$763,262
2018	\$763,262	\$840,995	\$0	\$386,012	\$1,218,245
2019	\$1,218,245	\$840,995	\$0	\$117,797	\$1,941,443
2020	\$1,941,443	\$840,995	\$0	\$198,573	\$2,583,864
2021	\$2,583,864	\$840,995	\$0	\$200,641	\$3,224,218
2022	\$3,224,218	\$840,995	\$0	\$367,500	\$3,697,713
2023	\$3,697,713	\$840,995	\$0	\$590,830	\$3,947,877
2024	\$3,947,877	\$840,995	\$0	\$408,877	\$4,379,995
2025	\$4,379,995	\$840,995	\$0	\$92,429	\$5,128,561
2026	\$5,128,561	\$840,995	\$0	\$76,751	\$5,892,805
2027	\$5,892,805	\$840,995	\$0	\$368,689	\$6,365,110
2028	\$6,365,110	\$840,995	\$0	\$223,126	\$6,982,979
2029	\$6,982,979	\$840,995	\$0	\$152,203	\$7,671,770
2030	\$7,671,770	\$840,995	\$0	\$124,867	\$8,387,897
2031	\$8,387,897	\$840,995	\$0	\$596,429	\$8,632,463
2032	\$8,632,463	\$840,995	\$0	\$609,375	\$8,864,083
2033	\$8,864,083	\$840,995	\$0	\$589,447	\$9,115,630
2034	\$9,115,630	\$840,995	\$0	\$365,418	\$9,591,207
2035	\$9,591,207	\$840,995	\$0	\$696,821	\$9,735,381
2036	\$9,735,381	\$840,995	\$0	\$2,896,113	\$7,680,262
2037	\$7,680,262	\$840,995	\$0	\$392,064	\$8,129,193
2038	\$8,129,193	\$840,995	\$0	\$710,660	\$8,259,528
2039	\$8,259,528	\$840,995	\$0	\$17,673	\$9,082,850
2040	\$9,082,850	\$840,995	\$0	\$195,970	\$9,727,874
2041	\$9,727,874	\$840,995	\$0	\$919,664	\$9,649,205
2042	\$9,649,205	\$840,995	\$0	\$978,767	\$9,511,432
2043	\$9,511,432	\$840,995	\$0	\$1,206,614	\$9,145,813
2044	\$9,145,813	\$840,995	\$0	\$1,592,974	\$8,393,833
2045	\$8,393,833	\$840,995	\$0	\$395,967	\$8,838,861
TOTALS:		\$25,208,346	\$0	\$17,785,034	\$8,838,861