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Consulting Engineers

RESERVE BUDGET ANALYSIS

**FARRWOOD GREEN II CONDOMINIUM
HAVERHILL, MASSACHUSETTS**

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RESERVE BUDGET ANALYSIS

FARRWOOD GREEN II CONDOMINIUM HAVERHILL, MASSACHUSETTS

1.0 INTRODUCTION

In June and July of 2008, a Reserve Budget Analysis was performed by Noblin & Associates, L. L. C. for the Farrwood Green II Condominium in Haverhill, Massachusetts.

The purpose of this study was to determine the funding requirements for anticipated replacement and refurbishment of the Condominium common facilities.

The first phase of our study included review of the available Condominium documents, which provide a general description of the Condominium facilities and Unit boundaries. These boundaries are used to differentiate between common areas, which the Condominium Association is responsible for maintaining, and individual Units, which Unit Owners are responsible for maintaining.

The second phase of our study included inspection of the development to determine the types, grades and quantities of common area elements. It should be noted that, these inspections are limited to visual inspections to determine the general conditions of these items. These inspections are not intended to provide a detailed analysis of the various items and may not identify latent or other subsurface conditions.

In addition, the available maintenance history of the development was reviewed with the Condominium management personnel.

Reserve items to be included as part of this analysis are major building and site components with an expected useful life of thirty years or less. Items with an expected useful life of over thirty years, such as foundations, structural framing, etc., are not considered part of this Reserve Budget Analysis. Maintenance items, such as painting, snow removal, etc., are not considered Reserve Items and are not included in this Reserve Budget Analysis.

It should be noted that this study incorporates various estimated values, including replacement costs, service lives, interest and inflation rates, etc. These values have been incorporated into the study to provide a realistic model of the anticipated maintenance requirements for this development. Actual replacement schedules for the various elements included in this study must be determined as part of the on-going maintenance program of the development. Actual costs must be determined from actual bid prices for the work. As this information becomes available, it should be incorporated into updated versions of this study. We recommend updating of this study on a regular basis, typically every one to three years.

We would recommend that this study be reviewed by the Association's legal and financial professionals, particularly with regard to any tax implications.

2.0 GENERAL

The Farrwood Green II Condominium consists of 128 separate townhouse Units in 18 separate buildings. The development was constructed in various phases between 1978 and 1982. For the purposes of this study, the date of construction for this development will be assumed to be 1980.

The buildings consist of two and two and one half story wood framed structures set on concrete foundations. The construction would be classified as Residential Group R-3, Type V (attached single family, light wood framed). Roofs consist of fiberglass shingles with a moderate pitch and mansard style sections with metal panels. Exterior walls are masonry veneer. Windows and doors are metal framed units. Each Unit is supplied with an elevated deck and/or exterior patio.

The development includes wooded and landscaped areas. Access throughout the development is provided with paved bituminous roadways. The development is provided with town water and sewer facilities.

Review of the available Condominium documents indicates the Unit boundaries are as follows:

Lower Boundaries: Top Surface of Concrete Floor Slab.

Upper Boundaries: Lower Surface of the Rafters.

Vertical Boundaries: Interior Surface of Walls Studs.
Interior Surface of Concrete Walls.

Windows & Doors: Exterior Surface of Windows and Doors.

Unit Owners are responsible for maintaining all building elements within these boundaries. This includes mechanical or electrical components contained within or exclusively servicing one Unit, such as exterior heat pumps and Unit lights.

The Condominium Association is responsible for all building and site elements outside the Unit boundaries. These include:

- Paved Roadways
- Landscaped and Recreational Areas
- Roofs
- Exterior Walls
- Limited Common Facilities and Structures (Decks, Patios, etc.)
- Utilities Servicing More Than One Unit
- Exterior Site Lighting

3.0 SUMMARY

Funding calculations, using current dollar values, are listed in Appendix A. The Existing Reserves have been distributed between the various common elements for the purpose of these calculations. The required annual contribution for each element is calculated by dividing the Required Funds (Replacement Cost less Existing Reserves) by the Remaining Life. Based on these calculations, the total recommended Annual Contribution is \$571,478.00.

It should be noted that, a substantial portion of this contribution is due to anticipated replacement of major items in the relatively near future. The required Annual Contribution will decrease as these items are replaced.

Replacement costs include estimated material and labor costs and are based on the conditions noted during our survey, our experience with similar construction and assumed levels of maintenance. Assumed ages include specific information wherever available, or estimated ages based on the conditions noted during our inspections.

Replacement of the original elements with matching materials has been assumed with the exception of items where obvious deficiencies have been noted. Replacement costs for any such deficient items include the costs for upgrading the original elements as noted. For items where specific conditions, replacement costs and remaining service lives can not be determined (i.e. underground utilities, etc.), a reasonable allowance has been assumed.

It should be noted that interest and inflation have not been factored into our funding calculations. This is due to the fact that interest and inflation rates will fluctuate, tending to rise and fall concurrently. As long as they do so, they tend to cancel out each other.

4.0 COMMON AREA ELEMENTS

Replacement costs include estimated material and labor costs and are based on the conditions noted during our survey, our experience with similar construction and assumed levels of maintenance. Replacement of the original elements with matching materials has been assumed with the exception of items where obvious deficiencies have been noted. Replacement costs for any such deficient items include the costs for upgrading the original elements as noted. For items where specific conditions, replacement costs and remaining service lives can not be determined (i.e. underground utilities, etc.), a reasonable allowance has been assumed.

Assumed ages include specific information wherever available, or estimated ages based on the conditions noted during our inspections. The following items have been included in our Reserve Budget Analysis.

SECTION 02 - SITEWORK

Site Utilities - An allowance has been included for miscellaneous repairs to the underground sewer, water and utility lines. Quantities of underground utility systems have been based on the size and configuration of the development.

Note: This allowance should be periodically reviewed and adjusted according to the actual site utility costs established for this development.

Irrigation System - An allowance has been included for periodic replacement of various irrigation system components including sprinkler heads, supply lines and distribution boxes.

Pavement - The existing roadways and parking facilities consist of bituminous pavement with 8" bituminous berms in some areas. The roadways and parking areas are pitched to catch basins connected to a subsurface storm drainage system.

At the time of our site inspections, the existing pavement appeared to be in generally fair to poor condition. Several deficiencies were noted including cracking of the pavement surface, potholes, damage to the bituminous berms and oil stains in various areas (see Photograph #1).

Removal and replacement of the existing pavement, with some subgrade preparation has been assumed. Lining of pavement at the time of repaving has been included.

Replacement of the existing entrance walkways with some subgrade preparation has been assumed.

Note: Estimated service life is based on periodic maintenance including sealing surface cracks to prevent water infiltration and subgrade deterioration.

Concrete Patios - Buildings are provided with cast-in-place concrete patios at the center front entrances as well as the rear of the buildings at grade level. Patios were noted to be in generally fair condition at the time of inspection. Minor to moderate cracking of the patios at front entrances was noted at several buildings. Significant cracking and heaving of the concrete patio was noted at the rear of Unit 128.

Replacement of the concrete patios has been assumed. This includes some subgrade preparation.

Concrete Stairs - Precast concrete stair assemblies are provided at most Unit entrances at the fronts of the buildings. Stairs were noted to be in generally fair condition at the time of inspection with minor to moderate spalling of the concrete edges and as well as minor settlement noted in various areas.

Replacement of the precast concrete stairs has been assumed.

Concrete Block - Walls Grade level patios at Buildings 65-80 and 145-160 are provided with concrete masonry unit (CMU) block partition walls to separate individual patios. CMU block walls were noted to be in generally fair to poor condition at the time of inspection. Cracking of the mortar joints and displacement of CMU block was noted in various areas.

Replacement of the CMU block partition walls has been assumed.

Fencing - Fencing includes wooden split rail fencing on the west end of the property.

Replacement of the existing wooden fencing has been assumed. This includes replacement of fence posts.

Road Signs - Replacement of the existing road signs and sign posts has been assumed.

SECTION 04 - MASONRY

Masonry - Exterior walls at the first floor level of all buildings, as well as at the first and second floor level of the fronts of the four center Units, consist of a clay brick masonry veneer set in a running bond pattern. Openings for windows and doors are formed with steel lintels. Windows are provided with rowlock brick sills.

Masonry veneer cavity wall systems typically consist of the exterior brick masonry veneer, an air cavity and an interior wall of wood framing, CMU block or other structural back-up system. Exterior gypsum sheathing is located on the outer face of a wood framed back-up wall and interior gypsum wall board on the interior face.

The structural loads from the masonry veneer are supported by the building foundation, and lintels over doors, windows and other penetrations. Lateral support for the masonry veneer is provided by metal anchors set in the masonry mortar joints and fastened to the interior wall system. The overall rigidity of the interior wall system is critical to minimize flexure of the masonry veneer and prevent cracking of mortar joints and other deterioration due to flexural movement.

The masonry veneer walls we noted to be in generally good to fair condition at the time of inspection. Minor to moderate cracking of the masonry mortar joints, particularly at building corners and window openings, was noted in various areas including at Buildings 49-64, 65-80 and 113-128 (see Photographs #2 and #3). Moderate corrosion of the steel lintels was also noted in most areas.

Minor to moderate efflorescence, or white staining on the masonry surface, was noted in some areas including along the rear of Building 113-128. Efflorescence is caused when water and carbon dioxide within the wall structure mix to form a mild acid, which will then react with the lime in masonry mortar to form calcium carbonate, the white efflorescence noted on the masonry surfaces. The key to this reaction is typically excessive moisture within the walls, which initiates the reactions.

Partial (10%) repointing and other repairs to the masonry have been assumed to maintain the integrity of the masonry surface.

SECTION 06 - WOOD

Wood Decks - Buildings 49-64, 81-96, 97-112, 113-128, 129-144 and 161-176 are provided with elevated wood framed decks at the rear of the buildings. Exterior decks consist of wood framed structures supported by CMU block walls set perpendicular to the building foundation walls. Typical decks are approximately 8' x 15' in size; decks at end Units are 8' x 19'6" in size.

All decks appear to be constructed of pressure treated lumber. Deck frames consist of 2 x 10 joists @ 16" o.c. fastened to 2 x 10 ledgers bolted to the CMU block walls (see Photograph #5). Railings typically consist of 2 x 2 balusters @ 5 1/2" o.c. with 2 x 4 rails and 4 x 4 posts. Connections between deck framing members have been made with galvanized metal joist hangers. Wood decks were noted to be in generally good to fair condition at the time of inspection. Minor to moderate deterioration of the existing railings and outside band joists was noted, including twisting, cracking and checking of the exposed 2 x 10 band joists.

Wood posts were noted to have been installed near midspan below the doubled band joist on end Unit decks (see Photograph #4). Wood joist span calculations performed utilizing the current Massachusetts State Building Code required 60 lb./s.f. live load for decks of this type indicate that the

existing 2 x 10 joists at end Unit decks, spanning 19'6", are significantly overloaded.

CMU block walls supporting the decks were noted to be in generally good to fair condition at the time of inspection, with the exception of the wall supporting the exterior side of the deck at Unit 128 (see Photograph #6). Significant step cracking and displacement of the CMU block was noted in several areas near the base of the wall. It should be noted that, the CMU walls did not appear to be attached to the adjacent building foundation walls in most areas (see Photograph #7). This configuration would provide minimal lateral support to the deck assemblies.

Replacement of the existing wood decks has been assumed. This includes the cost of reinforcing the existing CMU block support walls and securing the CMU walls to the building foundation walls. Decks at Buildings 49-64, 81-96, 113-128, and 161-176 have been assigned longer service lives than decks at Buildings 97-112 and 129-144 due to conditions noted during inspection.

Note: Estimated service life is based on periodic maintenance including sealing pressure treated lumber with water repellent stain or paint.

SECTION 07 - BUILDING ENVELOPE

Shingle Roofs - The existing main roof systems consist of three tab asphalt shingles on all buildings except Building 161-176, which is provided with architectural style fiberglass mat asphalt shingles. Roof configurations include moderately pitched areas with hipped sections at building ends and valleys between adjacent roof planes. Ventilation is provided by roof mounted turbine vents and partially perforated PVC soffit panels at roof eaves.

The roofs on most buildings were noted to be in generally fair to poor condition with moderate to severe deterioration of the exposed shingle surfaces, particularly near the roof eaves and at the woven valleys. The architectural style shingles on Building 161-176 appeared to be in generally good condition.

Direct inspection of the roof surfaces on Buildings 49-64, 97-112 and 113-128 revealed organic mat, three tab asphalt shingles. Shingles in most areas were noted to have been installed with joints lining up in every second course, or "racked". It is generally recommended that shingles be installed with joints lining up every sixth course to increase the strength and overall watertightness of the shingle surface and reduce the aesthetic effect of minor variations in shingle color and texture. Severe deterioration of the shingle surfaces was noted at the valleys between roof planes on all three buildings, as was moderate deterioration of the shingle surfaces in field areas (see Photographs #10 and #11). Missing shingle tabs and sealant repairs were also noted in various areas (see Photographs #8 and #9).

Reroofing with a moderate to heavy weight shingle has been assumed. Reroofing is assumed to include removal of original shingles to allow inspection of the plywood deck for possible deterioration or inadequate fastening.

Note: Replacement of shingled roofs has been phased with the replacement of roofs on Buildings 49-64 and 65-80 scheduled first, followed by Buildings 81-96, 97-112, 113-128, 129-144 and 145-160. The newer roof on Building 161-176 is scheduled last.

Metal Roofs - Steep sloped mansard roof sections at the second floor level of the buildings have been provided with metal panel roof systems. Individual panels are formed to simulate hand split wood shakes. Metal panels appear to be finished with a paint or other liquid applied coating.

Metal panel roof systems were noted to be in generally good condition in most areas. Minor displacement of the hip cap shingles was noted in various areas (see Photograph #13). Significant finish failure including peeling of the finish was noted at Buildings 49-64 and 65-80 (see Photograph #14).

Replacement of the metal panel roof systems has been assumed. The estimated service lives of these materials is based upon periodic repairs to the metal panels, including replacement of the paint finishes as required, in order to maintain the integrity of the panel systems.

Gutters - Replacement of gutters and downspouts at the time of reroofing has been assumed.

Sealant Joints - The perimeter joints between the window/door frames and masonry are sealed with what appears to be a urethane or butyl sealant. These sealant materials have failed in most areas, with significant crazing and cracking of the sealant (see Photograph #15).

Preparation and resealing of the existing sealant joints has been assumed.

SECTION 10 - SPECIALTIES

Mailbox Kiosks - Replacement of mailbox kiosks has been assumed.

SECTION 16 - ELECTRICAL

Exterior Lighting - Replacement of exterior lighting in common areas has been assumed. This includes new fixtures.

**APPENDIX A
COMMON ELEMENT
COSTS & SERVICE LIVES**

**FARRWOOD GREEN II CONDOMINIUM
COMMON ELEMENT COSTS & SERVICE LIVES**

	ITEM	PRICE	QUANTITY	COST	AGE	REMAINING LIFE	EXISTING RESERVES	REQUIRED FUNDS	ANNUAL CONTRIBUTION
2-SITework	Site Utilities	\$1,800.00 (lump sum)	1	\$1,800			\$234	\$1,566	\$1,566
	Irrigation System	\$2,200.00 (lump sum)	1	\$2,200	7		\$286	\$1,914	\$1,914
	Pavement	\$5.00 (per sf)	97,620 (sf)	\$488,100	28	2	\$63,404	\$424,696	\$212,348
	Sidewalk Pavement	\$6.00 (per sf)	8,290 (sf)	\$49,740	28	2	\$6,461	\$43,279	\$21,639
	Concrete Patios	\$8.00 (per sf)	19,080 (sf)	\$152,640	28	12	\$19,828	\$132,812	\$11,068
	Concrete Stairs	\$5.00 (per sf)	1,400 (sf)	\$7,000	28	7	\$909	\$6,091	\$870
	Concrete Block Walls	\$35.00 (per sf)	1,750 (sf)	\$61,250	28	2	\$7,956	\$53,294	\$26,647
	Split Rail Fencing	\$20.00 (per lf)	100 (lf)	\$2,000	28	2	\$260	\$1,740	\$870
	Street Signs	\$200.00 (per unit)	4	\$800	3	11	\$104	\$696	\$63
4-MASONRY	Masonry Repairs	\$18.00 (per sf)	4,275 (sf)	\$76,950	3	7	\$9,996	\$66,954	\$9,565
6-WOOD	Wood Deck	\$40.00 (per sf)	7,680 (sf)	\$307,200	10	10	\$39,905	\$267,295	\$26,730
	Wood Deck	\$40.00 (per sf)	3,840 (sf)	\$153,600	14	6	\$19,952	\$133,648	\$22,275
7-BUILDING ENVELOPE	Shingle Roofs	\$5.00 (per sf)	22,800 (sf)	\$114,000	28	1	\$14,808	\$99,192	\$99,192
	Shingle Roofs	\$5.00 (per sf)	57,000 (sf)	\$285,000	28	5	\$37,021	\$247,979	\$49,596
	Shingle Roofs	\$5.00 (per sf)	11,400 (sf)	\$57,000	2	26	\$7,404	\$49,596	\$1,908
	Metal Roof	\$12.00 (per sf)	30,800 (sf)	\$369,600	28	22	\$48,011	\$321,589	\$14,618
	Sealant Joints	\$7.00 (per lf)	9,720 (lf)	\$68,040	8		\$8,838	\$59,202	\$59,202
	Sealant Joints	\$7.00 (per lf)	1,540 (lf)	\$10,780	2	6	\$1,400	\$9,380	\$1,563
10-SPECIALTIES	Mailbox Kiosks	\$2,200.00 (per unit)	5	\$11,000	13	2	\$1,429	\$9,571	\$4,786
	Entrance Lights	\$120.00 (per unit)	256	\$30,720	12	6	\$3,990	\$26,730	\$4,455
	Soffit Lights	\$125.00 (per unit)	19	\$2,375	12	6	\$309	\$2,066	\$344
	Exterior Spotlights	\$450.00 (per unit)	4	\$1,800	12	6	\$234	\$1,566	\$261

Totals: Updated: 7/2/08 \$2,253,595 \$292,740 \$1,960,855 \$571,478

Notes:

- (1) Funding and maintenance based on this study will be assumed to begin in: 2008
- (2) The Reserve Fund Balance is: \$292,740 as of June, 1999

APPENDIX B
PHOTOGRAPHS



Photograph #1 – Cracked And Settled Bituminous Pavement



Photograph #2 – Cracked And Displaced Brick Masonry At Lintel End



Photograph #3 – Cracking Of Brick Masonry And Foundation Wall



Photograph #4 – Wood Post Below Band Joists At End Unit Deck. Note Bowing Of Post.



Photograph #5 – Wood Deck Joists Attached To CMU Wall



Photograph #6 – Cracked And Displaced CMU Block Wall At Unit 128



Photograph #7 – Note Gap Between CMU Block Wall And Building Wall



Photograph #8 – Sealant Repairs To Asphalt Shingles



Photograph #9 – Mastic Repairs To Metal Furnace Vent



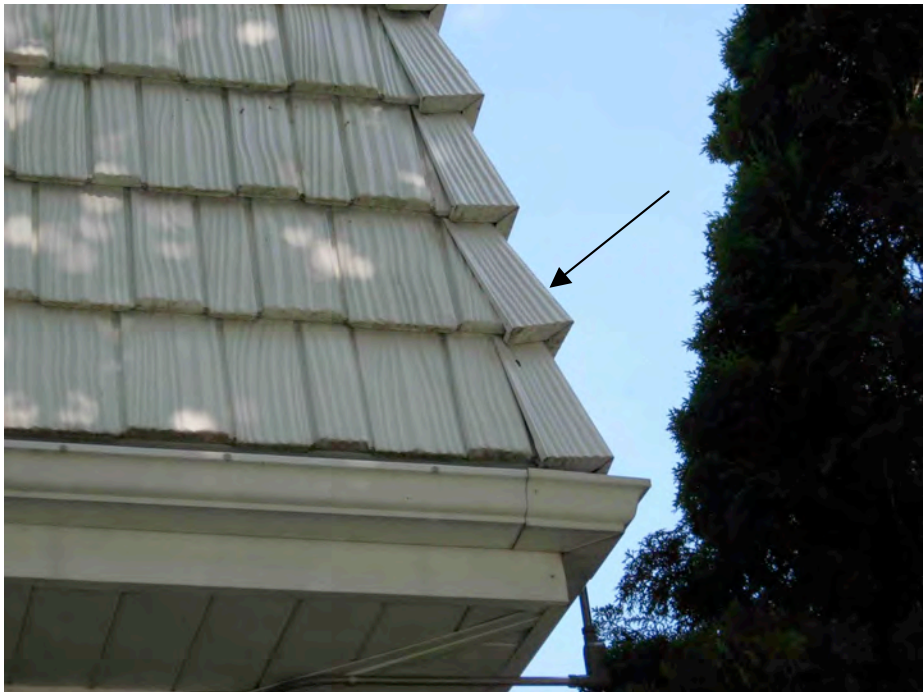
Photograph #10 – Deteriorated Shingles At Woven Valley



Photograph #11 – Deteriorated Shingles At Woven Valley



Photograph #12 – Broken Shingle Tabs



Photograph #13 – Displaced Metal Hip Cap



Photograph #14 – Finish Failure At Metal Panels



**APPENDIX B - PHOTOGRAPHS
FARRWOOD GREEN II CONDOMINIUM
HAVERHILL, MASSACHUSETTS**

**JULY, 2008
PROJECT #08110NH**

Photograph #15 – Failed Window Perimeter Sealant