



Reserve Study Project No. 10108

Prepared for
Weatherstone at Highlands Ranch Association
Highlands Ranch, Colorado

Prepared by
Bornengineering
8310 South Valley Highway, 3rd Floor
Englewood, Colorado 80112

May 2, 2011

TABLE OF CONTENTS
Weatherstone at Highlands Ranch Association

Introduction	1
Component Report	3
Component Detail	35
Annual Expenditure Spread Sheet	39
Annual Expenditure Detail	47
Final Reserve Study Summary	52
Final Reserve Study Projection Graph	53
Final Reserve Study Projection	54

Introduction

Bornengineering has been commissioned by the Weatherstone at Highlands Ranch Association to prepare a Reserve Study. The purpose of this Reserve Study is to evaluate the common-area components for major repair, maintenance and replacement that are the responsibility of the Association. This Study provides a limited-scope evaluation of the existing condition and remaining life of the common-area components. The Study also includes estimated costs for the major repair, maintenance and/or replacement of the items to enable the Association to establish an adequate level of reserve funds for the upkeep of the property. Major repair, maintenance and/or replacement items are defined as anything that costs over \$1,000.

Community Description

Weatherstone at Highlands Ranch is a community comprised of 294 single family homes which is represented by an Association that is responsible for the common areas throughout the community. The common amenities include various site furniture, picnic shelters, and a secured pool area with pool building housing mechanical equipment and restrooms. The site also contains concrete walks, entrance monuments, fencing, irrigated vegetation areas and landscape lighting.

Approach

To prepare this Reserve Study, Bornengineering has completed the necessary research, the component report, the cost estimates, the financial projections, and the projection interpretation.

The Study identifies each reserve component, estimates the quantities of the reserve components and assigns major action items to those components. Reserve cost estimates were determined from bids received from similar projects, past expenditures on similar work and cost estimating guides (RS Means, Walkers Builders Estimators Reference Book, Dodge Unit Cost Guide). We use typical useful lives and unit costs, presuming the systems were properly installed in compliance with local code requirements, manufacturer installation requirements and original construction documents. This Reserve Study is not intended to be a construction compliance assessment or maintenance manual. The Study was prepared based on visual observations.

The projections were assembled using the cash flow method. This method develops 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 a desired funding program is achieved.

Reference Material

The following references were provided to Bornengineering for this Reserve Study by the client:

- Declarations
- Financial statements for the eleven months ending November 30, 2010
- Interest rate earned on invested capital funds (1.15%)
- Historical expense and past capital project information

Exclusions

Items not included in this Study are:

- Non-common area components.
- Association components with work that have estimated costs below the reserve component threshold amount of \$1,000.
- Long lasting items with estimated economic lives exceeding 30 years, such as sanitary sewers or building structural components. However, these items are included if they are known to have a fairly predictable anticipated useful life that falls within the term of the Study.
- Normal operating items, i.e., taxes, insurance, snow plowing, utilities, cleaning and landscape maintenance, etc.

Disclaimer

This Reserve Study was prepared specifically for the Weatherstone at Highlands Ranch Association. The information contained within this document has been assembled in conjunction with the client and is intended to assist the client with its reserve planning and funding. Bornengineering has performed visual site observations of the project to identify components and action items. These observations are non-invasive in nature and do not include any testing, verification of the original intent of the designer, or compliance with industry standards. Bornengineering does not guarantee, either explicitly or implied, that all repair and replacement items have been identified, the accuracy of the probable costs or the component lives.

In providing the opinions of probable replacement costs, the client understands that Bornengineering has no control over costs or the price of labor, equipment or materials, or over the contractor's method of pricing, and that the opinions of probable replacement costs provided herein are made on the basis of Bornengineering's qualifications and experience. Bornengineering makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to bid or actual costs.

All comments made are based on conditions seen at the time of the site visit. We do not accept any responsibility for unknown or unknowable conditions within the existing site or structures.

Reserve Study Component Report

A. Topography and Grading

A1. Site and Building Grading and Drainage

Location: Throughout the common areas of the community.

Quantity: 1 unit.

Description: The building drainage system utilizes surface slope to route stormwater runoff away from the building foundation system and into the overall site drainage system. The site drainage utilizes surface slope to convey runoff to the overall site drainage system.

Condition: Satisfactory condition with some deterioration and damage noticed. Several areas of soil near the building foundation appear to have settled, producing negative slope routing stormwater toward the foundation or neutral slope allowing water to pool and settle around the building foundations. A minimal number of areas throughout the site drainage system display the same characteristics as the building grading and drainage system.

Age: 13 years old.

Expected Useful Life: Indefinite, with industry standard recommended maintenance.

Effective Useful Life: Will exceed the term of this Study with industry standard recommended maintenance.

Action(s):

- Cyclically re-grade a portion of the surface slope every 7 years, starting in 2016.



B. Flatwork

B1. Walkways

Location: Throughout the common area surrounding the pool and north of the parking area.

Quantity: Approximately 4,100 square feet.

Description: The walkways are presumed to be on-grade, cast in place, non-reinforced slabs, finished with control joints and broom finish.

Condition: Satisfactory condition with some deterioration and damage noticed. Some of the walkways have experienced pressures causing cracking or displacement within the control joints and a minimal amount of cracking through the field of the walkway. One joint has lifted and could be a potential trip hazard. We were informed that none of the flatwork has been replaced, thus we extended the replacement cycle from three years to six years.

Age: 13 years old.

Expected Useful Life: 30 to 50 years, with industry standard recommended maintenance.

Effective Useful Life: Varies, with the execution of action items.

Action(s):

- Cyclically replace damaged sections of the walkways every 6 years, starting in 2017.



B2. Pool Deck

Location: Southeast of pool house.

Quantity: Approximately 7,332 square feet.

Description: The pool deck is presumed to be on-grade, cast in place, reinforced concrete slab with a broom finish. The overall dimension of the pool deck is approximately 103 feet by 71 feet with the large pool located in the west portion of this slab and the small pool located in the northeast corner of the pool deck. There are coping stones mortared to the deck around the perimeter of both pools. Various pool-related equipment (piping, recessed steps, electrical, ladders, etc.) is embedded below the surface of the concrete pool deck.

Condition: Satisfactory condition with some deterioration and damage noticed. During the site visit some damage was observed at the surface of the pool deck. It appears that the anchors used to fasten the pool cover have broken away from the pool deck and have left pits in the concrete with exposed aggregate.

Age: 13 years old.

Expected Useful Life: 30 to 50 years, with industry standard recommended maintenance.

Effective Useful Life: Varies, with the execution of action items.

Action(s):

- Cyclically repair or replace damaged sections of the pool deck every 6 years, starting in 2015.



C. Landscaping and Appurtenances

C1. Entrance Monuments

Location: At the entrances to the community.

Quantity: 4 units.

Description: Stone veneer walls and pillars are constructed at both corners of the above noted locations and present composite signs displaying the Weatherstone name and emblem.

Condition: Satisfactory condition with some deterioration and damage noticed. Some stones have been displaced and the mortar is severely deteriorated at the joints between the masonry units. This is especially apparent at the east monuments.

Age: 13 years old.

Expected Useful Life: 20 to 25 years.

Effective Useful Life: Estimated 12 years.

Action(s):

- Cyclically tuck-point and repair the stone veneer at the entrance monuments every 10 years, starting in 2011. Financial allocation for the repair of the entrance monuments is included in component D2 of this Study.



C2. Block Retaining Wall

Location: Southeast of pool house.

Quantity: Approximately 125 linear feet.

Description: There is a block retaining wall ranging from 12 to 30 inches in height to change soil elevation and accommodate vegetation.

Condition: Satisfactory condition with some deterioration and damage noticed. During the site visit, extensive displacement was observed in a couple of areas at the south end of the wall.

Age: 13 years old.

Expected Useful Life: 50 + years.

Effective Useful Life: Estimated 37 years.

Action(s):

- Cyclically repair the retaining walls and regrade the soil surrounding them every 7 years, starting in 2011. The cost is not included in the Study because it falls below the minimum fund threshold.
- Replace the block retaining wall in 2048. The life expectancy of the block retaining wall should exceed the term of this Study.



C3. Metal Fence

Location: Throughout the common areas of the community.

Quantity: Approximately 1,482 linear feet.

Description: Several variations of metal fence exist on the site. Within the common area surrounding the pool location, there is a 3-foot metal fence surrounding the pool deck. Beyond this initial fence, there is an additional 5-foot metal fence creating a barrier between the common areas of the community and the public areas of the site. Finally, decorative fence is used at the two main thoroughfares into the community: Weathers Field Way and South Stone Mountain Drive.

Condition: The metal fence surrounding the pool area appears to be in good condition with minimal deterioration and damage noticed. During the site visit, we were informed that the metal fence in was prepped and painted in 2010. The paint on the decorative metal fence along Weathers Field Way and Stone Mountain Drive is weathering and resulting in deterioration of the metal. The horizontal surfaces of this fence show the most deterioration.

Age: 13 years old.

Expected Useful Life: 20 to 25 years.

Effective Useful Life: 7 to 12 years.

Action(s):

- Finish repairing and painting the metal fence at the entry thoroughfares in 2011.
- Cyclically repair and paint fence every 5 years, starting in 2015.
- Replace the metal fence in 2023.



C4. Privacy Fence

Location: Fence at side yards bordering Weathers Field Way and South Stone Mountain Drive.

Quantity: Approximately 2,150 linear feet.

Description: Wooden top and bottom rails are fastened to 6x6 posts with 5-1/2 inch pickets spanning between. This does not include fence at the first block of side yards in from Wildcat Reserve Parkway, or the back yard fence at Wildcat Reserve Parkway.

Condition: Satisfactory condition with some deterioration and damage noticed. During the site visit, it was noticed erosion from the private lots is causing displacement along the bottom perimeter of the fence. We were informed that a portion of the privacy fence has recently been repaired and stained.

Age: 13 years old.

Expected Useful Life: 14 to 16 years with maintenance.

Effective Useful Life: Estimated 3 years.

Action(s):

- Finish repairing and staining the privacy fence at the entry thoroughfares in 2011.
- Replace the privacy fencing in 2017 with composite fencing.



C5. Rail Fence

Location: Fence at side yards bordering Weathers Field Way and South Stone Mountain Drive.

Quantity: Approximately 200 linear feet.

Description: 2x6 rails span the distance between 4-foot tall 6x6 posts at the property line between front yards and community common areas.

Condition: Satisfactory condition with some deterioration and damage noticed. During the site visit, a few rails were loose and the stain appears thin in some areas.

Age: 13 years old.

Expected Useful Life: 14 to 16 years with maintenance.

Effective Useful Life: 5 years based on current condition.

Action(s):

- Cyclically replace the rail fence every 15 years, starting in 2016.
- Cyclically repair and stain the rail fence every 5 years, starting in 2021.



C6. Bench, Trash Receptacles, Picnic Tables and Bike Rack

Location: Throughout the common areas surrounding the pool house.

Quantity:

- Bench – 1 unit.
- Trash Receptacles – 4 units.
- Picnic Tables – 3 units.
- Bike Rack – 1 unit.

Description: A single, 6-foot bench is constructed of small gauge, punched steel with rolled edges and two 2-3/8 inch legs embedded into the soil of the common area, and is found to the west of the pool house. Trash receptacles are 32-gallon, expanded metal trash containers with dome lids and are located at each shelter and the pool deck. The picnic tables are 46-inch square table tops with rolled edges and four attached ribbed steel seats mounted to a 4-inch pedestal embedded into the concrete slabs of the shelters. The bike rack consists of three individual loops fastened at the end of each loop to two anchor braces which are in turn fastened to the surface of a concrete pad at the main entrance to the pool area. All items are black in color.

Condition: All appurtenances appear to be in good condition. Some of the fastening hardware at the above listed items has evidence of corrosion.

Age: 13 years old.

Expected Useful Life: 15 to 20 years.

Effective Useful Life: Estimated 7 years.

Action(s):

- Replace the benches, trash receptacles, picnic tables and bicycle rack in 2018.



C7. Barbecue Grills

Location: Throughout the common areas surrounding the pool house.

Quantity: 5 units.

Description: Barbeque grills are charcoal fueled and consist of a 20-inch adjustable cooking grate surrounded by a metal enclosure mounted to a 3-1/2 inch post that is embedded into the ground south of the pool house and at each shelter.

Condition: Good condition.

Age: 13 years old.

Expected Useful Life: 15 to 20 years.

Effective Useful Life: Estimated 7 years.

Action(s):

- Replace the barbeque grills in 2018.



C8. General Landscape

Location: Throughout the common areas of the community.

Quantity: 1 unit.

Description: Various species of trees, plants and shrubs and hardscape materials including edging, weed barrier, and mulch.

Condition: Good condition.

Age: Varies.

Expected Useful Life: 30 to 50 years.

Effective Useful Life: Varies, with the execution of action items.

Action(s):

- Cyclically replace the damaged landscaped materials every year, starting in 2011. The expenses associated with repairing and replacing the landscaped materials is not included in this component as they are funded through the operating budget of the Association.



C9. Irrigation System and Controllers

Location: Throughout the common areas of the community.

Quantity: 5 units.

Description: The irrigation system is comprised of drip lines, sprinklers, valves, valve boxes, pipe and five controllers.

Condition: Satisfactory condition. During the site visit we were informed that the controller located at the southwest corner of Weathers Field Way and Shadowstone Drive was replaced in 2009.

Age: Varies.

Expected Useful Life: 35 to 45 years.

Effective Useful Life: Varies, with the execution of action items.

Action(s):

- Replace one of the remaining original controllers every year for the next 4 years.
- Cyclically replace damaged irrigation system components every year, starting in 2011. The expenses associated with repairing and replacing the irrigation system is not included in this component as they are funded through the operating budget of the Association.



C10. Landscape Electrical Units

Location: Throughout the common areas at the entrances of the community.

Quantity: 1 unit.

Description: There are numerous up lights and electrical receptacles in the soil surrounding the entrance monuments.

Condition: Satisfactory condition with some deterioration and damage noticed. Some of the electrical receptacles have the weather cover broken off and should be replaced immediately. The up lights appear to be in good condition. None of the lights or the electrical outlets were operable during the site visit.

Age: 13 years old.

Expected Useful Life: 20 to 25 years.

Effective Useful Life: Estimated 7 years.

Action(s):

- Cyclically replace the damaged sections of landscape electrical units every year, starting in 2011. The cost is not included in the Study because it falls below the minimum fund threshold.



D. Façade

D1. Stucco

Location: Southeast elevations of the pool house.

Quantity: Approximately 520 square feet.

Description: Stucco finish system covering the exterior wall surface of the building, finished with a light color.

Condition: Satisfactory condition with some deterioration and damage noticed. There is minimal surface cracking at the stucco surrounding doors at the pool house.

Age: 13 years old.

Expected Useful Life: 35 to 45 years.

Effective Useful Life: 22 to 32 years.

Action(s):

- Cyclically repair any damaged sections of the stucco every 10 years, starting in 2013.



D2. Brick and Stone Veneer

Location: All elevations of the pool house, brick pillars at metal fence of pool area, entrance monuments and various decorative pillars throughout the common areas of the community.

Quantity:

- Brick Veneer - Approximately 1,476 square feet.
- Stone Veneer - Approximately 2,000 square feet.

Description: There are two forms of masonry veneer found at the community. The entrance monuments and decorative pillars throughout the community are finished with a stone veneer, gray in color with mortar joints and pre-cast crowns at the pillars. At the pool house, the façade of the building is finished with brick veneer, red in color. The brick walls are topped by precast caps mortared in place. Brick veneer pillars can be found at the entrance gates to the common areas surrounding the pool house.

Condition: Poor condition. The masonry units appear in good condition, however the pre-cast caps that top the walls of the pool house are loose and the mortar is displaced. It is recommended to complete repairs as soon as weather allows due to the potential fall hazard and water infiltration. Some of the stone veneer units are displaced at the entrance monuments and the mortar joints are showing extensive indication of deterioration.

Age: 13 years old.

Expected Useful Life: 35 to 45 years.

Effective Useful Life: 22 to 32 years.

Action(s):

- Cyclically tuck-point the mortar joints of the brick, pre-cast and stone veneer units and replace any damaged sections every 10 years, starting in 2011. See condition above.



D3. Trim

Location: Southeast elevations of the pool house.

Quantity: Approximately 150 linear feet.

Description: Rough wood trim members are exposed at the southeast roof perimeter of the pool house forming a fascia, open soffits and an open rafter above the restroom entrances.

Condition: Satisfactory condition. During the site visit, we were informed that the wood trim at the pool house was stained in 2009, along with the Trellis. The stain appears thin at some of the components.

Age: 13 years old.

Expected Useful Life: 30 to 40 years.

Effective Useful Life: 17 to 27 years.

Action(s):

- Cyclically repair and stain the trim every 6 years, starting in 2012. Financial allocation for the repairing and staining the pool house Trim is included in component G3 of this Study.



D4. Windows

Location: Southeast elevations of the pool house.

Quantity: 2 units.

Description: Two triangular windows are at the top of the exterior walls of the pool house allowing additional illumination into the restrooms.

Condition: Good condition with minimal deterioration or damage noticed.

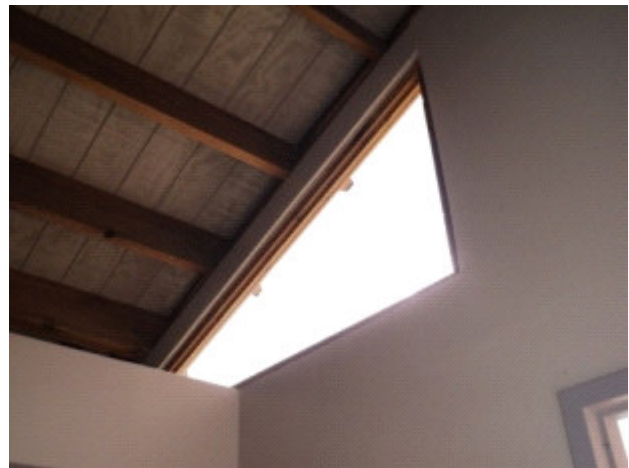
Age: 13 years old.

Expected Useful Life: 35 to 45 years.

Effective Useful Life: 22 to 32 years.

Action(s):

- Replace the windows in 2043. The life expectancy of the windows should exceed the term of this Study.



D5. Entry Doors

Location: Southeast elevations of the pool house.

Quantity: 3 units.

Description: There are metal entry doors and jambs at the two restrooms and the mechanical room of the pool house. The restroom door openings measure 3 feet wide by 6-2/3 feet tall. The mechanical room entry is a double door unit measuring 4 feet wide by 6-2/3 feet, tall and includes louvered panels in the lower portion of the doors.

Condition: Satisfactory condition with some deterioration and damage noticed. During the site visit, we were told the mechanical room doors were replaced in 2010. The doors at the restrooms are displaying some corrosion at the lower portion of the units.

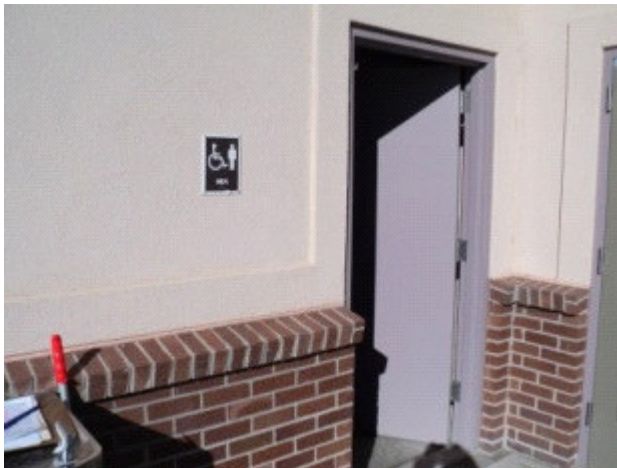
Age: 13 years old.

Expected Useful Life: 20 to 30 years.

Effective Useful Life: 2 years based on current condition.

Action(s):

- Replace the restroom entry doors in 2015.



D6. Exterior Lighting

Location: Southeast elevations of the pool house and within the joists of the trellis structure.

Quantity: 9 units.

Description: Four round, wall mounted fixtures are found at the exterior façade and restrooms of the pool house. Five square lights are mounted in the bays of the rafters of the trellis structure.

Condition: During the site visit, the lights were inoperable thus only the aesthetic condition could be assessed. The lights at the pool house appear to be in good condition with minimal wear noticed. The lights found at the trellis appear to all have sustained deterioration and water damage to the housings and fasteners.

Age: 13 years old.

Expected Useful Life: 20 to 25 years.

Effective Useful Life: 1 year, based on the current condition of the exterior lights at the trellis.

Action(s):

- Replace the exterior lighting units in 2012.



E. Roofing

E1. Asphalt Shingles

Location: Rooftop of the pool house and the shelter houses northeast of the pool house.

Quantity: Approximately 1,200 square feet.

Description: Asphalt, architectural shingles over a felt membrane.

Condition: Satisfactory condition with some deterioration and damage noticed. The shingles appear to have sustained some damage and deterioration.

Age: 13 years old.

Expected Useful Life: 20 to 25 years.

Effective Useful Life: 4 years based on current condition.

Action(s):

- Replace the asphalt shingles in 2013.



F. Interior

F1. Restrooms

Location: Pool house.

Quantity: 2 units, approximately 260 square feet.

Description: The men's restroom is located on the east elevation of the pool house and the women's is found on the south. Both are similar in finish materials and sizes. The bathrooms measure approximately 14 feet wide by 8 feet deep with vaulted ceilings. The floors are concrete with a broom finish, and are sloped to a floor drain. The walls are a smooth drywall surface with a tile wainscot, brown in color, to a height of 4 feet and incorporating two clear, triangular windows for additional illumination. The fixtures include toilets, in-counter sink with faucet in a tiled countertop, soap dispenser, mirror, grab bars, toilet paper mount and wooden bench.

Condition: Satisfactory condition with some deterioration and damage noticed. During the site visit, some of the tile and grout were found displaced.

Age: 13 years old.

Expected Useful Life: 12 to 28 years.

Effective Useful Life: Varies, with the execution of action items.

Action(s):

- Cyclically refurbish the restrooms every 15 years, starting in 2015.



G. Amenities

G1. Swimming and Wading Pools

Location: Southeast of pool house.

Quantity:

- Swimming Pool – Approximately 1,900 square feet.
- Wading Pool – Approximately 100 square feet

Description: The pool measures approximately 6 feet by 30 feet. The wading pool measures approximately 10-feet square. The pool was covered for winter and we were unable to observe the depth and finish materials at either the perimeter or the surface of the pool.

Condition: During the site visit, the pool cover displayed substantial signs of deterioration and damage. We were told that the coping stones and grout around the perimeter of the pool was repaired in 2008.

Age: 13 years old.

Expected Useful Life: 8 to 12 years.

Effective Useful Life: Varies, with the execution of action items.

Action(s):

- Cyclically resurface the pools every 10 years, starting in 2014.
- Cyclically repair or replace the coping stones every 10 years, starting in 2018.
- Cyclically replace the pool covers every 13 years, starting in 2014.



G2. Trellis

Location: Southeast of pool house.

Quantity: Approximately 1,900 square feet.

Description: The trellis bears on 6-inch square columns supporting beams, rafters and battens. The corner roofline rises to a sloped pitch supported by a heavy timber beam bearing on square columns. The trellis spans approximately 70 feet at its longest and is approximately 10 feet wide.

Condition: Satisfactory condition with some deterioration and damage noticed. During the site visit, we were told that the trellis was stained in 2008. Some of the components of the trellis were splitting.

Age: 13 years old.

Expected Useful Life: 20 to 25 years.

Effective Useful Life: Estimated 12 years.

Action(s):

- Cyclically repair and stain the trellis every 6 years, starting in 2017.
- Replace the trellis in 2023.



G3. Sun Shades

Location: Attached to joists of the trellis structure.

Quantity: Approximately 14 units.

Description: Fabric attached to metal rollers is fastened to the lower horizontal edge of some of the rafters of the trellis to provide shade from the sun.

Condition: Satisfactory condition. The sun shades were rolled up for the winter season and we were unable to observe their operation. However we were informed that they were installed in 2008 thus they are presumed to be in satisfactory working condition.

Age: 3 years old.

Expected Useful Life: 8 to 12 years.

Effective Useful Life: Estimated 9 years.

Action(s):

- Cyclically replace the sunshades every 12 years, starting in 2020.



G4. Shelters

Location: Northeast of the pool house.

Quantity: 2 units, approximately 386 square feet.

Description: 6x6 posts rest on a concrete slab and support a roof system of rafters, roof decking, felt and asphalt shingles.

Condition: Satisfactory condition with some deterioration and damage noticed. During the site visit, some of the roof decking was twisted and bowed.

Age: 13 years old.

Expected Useful Life: 20 to 25 years.

Effective Useful Life: Estimated 12 years.

Action(s):

- Cyclically repair and stain the shelters every 6 years, starting in 2012. Financial allocation for repairing and staining the shelters is included in component G2 of this Study.
- Replace the shelters in 2024. Financial allocation for replacing the shelters is included in component G2 of this Study.



G5. Water Cooler

Location: Southeast elevation of the pool house.

Quantity: 1 unit.

Description: There is one drinking fountain mounted to the façade of the pool house with a stainless steel basin and plastic composite housing.

Condition: Poor condition. During the site visit, the housing surrounding the lower portion of the drinking fountain was corroded and deteriorating due to exposure to the environmental elements.

Age: 13 years old.

Expected Useful Life: 10 to 20 years.

Effective Useful Life: Estimated 2 years.

Action(s):

- Replace the water cooler in 2011. The cost is not included in the Study because it falls below the minimum fund threshold.



G6. Pool Furniture

Location: Stored in the restrooms of the pool house during the winter season.

Quantity: Approximate quantities:

- Chairs – 24 units.
- Tables - 6 units.
- Lounge Chairs – 30 units.

Description: All chairs are constructed of a 1 inch round, aluminum frame with a powder-coated finish in white and vinyl strapping forming the resting area. The tables are two styles but both have a metal frame and round plastic tops.

Condition: Satisfactory condition. The pool furniture was stored in the restrooms for the winter season and we were unable to fully view the furniture. We were informed that the pool furniture is in good working condition and displays normal wear and tear.

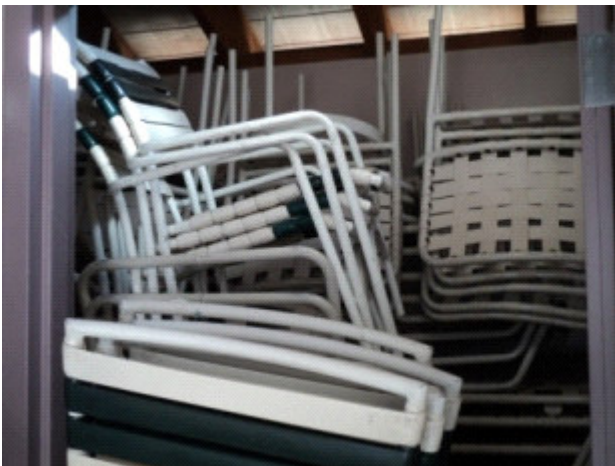
Age: 13 years old.

Expected Useful Life: 12 to 15 years.

Effective Useful Life: Varies, with the execution of action items.

Action(s):

- Replace a portion of the pool furniture every 5 years, starting in 2013.



H. Mechanical

H1. Boilers

Location: Mechanical Room of the pool house.

Quantity: 2 units.

Description:

- Wading Pool Boiler – Teledyne Laars Lite 2, 175,000 BTU.
- Swimming Pool Boiler – Teledyne Laars, model # - AP0850IN09C1PCJX.

Condition: Satisfactory condition. We were informed during the site visit that the boilers are regularly maintained and had some minor repairs and maintenance performed in 2010.

Age: 13 years old.

Expected Useful Life: 30 + years, with industry standard recommended maintenance.

Effective Useful Life: 12 years based on current condition.

Action(s):

- Cyclically refurbish the boilers every 10 years, starting in 2017.
- Replace the boilers in 2027.



H2. Pumps

Location: Mechanical Room of the pool house.

Quantity: 2 units.

Description: There are two pumps that aid in circulating the water from the pools through the boiler and filters.

Condition: Good condition with minimal deterioration and damage noticed.

Age: 13 years old.

Expected Useful Life: 8 to 10 years, with industry standard recommended maintenance.

Effective Useful Life: Estimated 3 years.

Action(s):

- Cyclically replace the circulation pumps every 8 years, starting in 2012.



H3. Pool Filters

Location: Mechanical Room of the pool house.

Quantity: 2 units.

Description:

- Wading Pool Filter – Pentair Triton II, hi-rate sand filter.
- Swimming Pool Filter – Astral, hi-rate sand filter, model # 06682.

Condition: Good condition with minimal deterioration noticed.

Age: 13 years old.

Expected Useful Life: 13 to 15 years.

Effective Useful Life: Estimated 2 years.

Action(s):

- Cyclically replace the pool/spa filters every 15 years, starting in 2013.



H4. Water Heaters

Location: Mechanical room of the pool house.

Quantity: 2 units.

Description: There are two water heaters that service the restrooms.

Condition: Good condition.

Age: 13 years old.

Expected Useful Life: 20 to 30 years.

Effective Useful Life: Estimated 7 years.

Action(s):

- Replace the water heaters in 2018.



H5. Heater Unit

Location: Mechanical Room of the pool house.

Quantity: 1 unit.

Description: Electrical unit heater hung from the ceiling by threaded rods.

Condition: Good condition.

Age: 13 years old.

Expected Useful Life: 15 to 17 years.

Effective Useful Life: Estimated 4 years.

Action(s):

- Cyclically replace the heater unit every 15 years, starting in 2015. The cost is not included in the Study because it falls below the minimum fund threshold.



**Weatherstone at Highlands Ranch Association
Component Detail**

Description	Date in Service	Replacement Year	Useful	Adjustment	Remaining	Units	Unit Cost	Current Cost
Site and Building Grading and Drainage								
Regrade earthen areas	1998	2016	7	11	5	1 UT	25,000.00	<u>2,500</u>
Site and Building Grading and Drainage - Total								\$2,500
Walkways								
Replace damaged sections	1998	2017	6	13	6	492 SF	7.50	<u>3,690</u>
Walkways - Total								\$3,690
Pool Deck								
Replace damaged sections	1998	2015	6	11	4	366 SF	9.00	<u>3,299</u>
Pool Deck - Total								\$3,299
Entrance Monuments								
Tuck-point								<i>unfunded</i>
Block Retaining Wall								
Regrade and repair								<i>unfunded</i>
Replace								<i>unfunded</i>
Metal Fence								
Repair and paint	1998	2015	5	12	4	1,482 LF	6.72	9,959
Repair and paint remaining metal fence	1998	2011	13	0	0	300 LF	6.72	2,016
Replace	1998	2020	25	-3	9	1,482 LF	37.50	<u>55,575</u>
Metal Fence - Total								\$67,550
Privacy Fence								
Repair and stain remaining privacy fence	1998	2011	13	0	0	709 LF	4.24	3,008
Replace w/ composite fencing	1998	2017	19	0	6	2,150 LF	53.50	<u>115,025</u>
Privacy Fence - Total								\$118,033
Rail Fence								
Repair and stain	1998	2021	5	18	10	200 LF	12.00	2,400
Replace	1998	2016	15	3	5	200 LF	12.00	<u>2,400</u>
Rail Fence - Total								\$4,800
Bench, Trash Receptacles, Picnic Tables and Bike Rack								
Replace	1998	2018	20	0	7	9 UT	675.14	<u>6,076</u>
Bench, Trash Receptacles, Picnic Tables and Bike Rack - Total								\$6,076
Barbecue Grills								
Replace	1998	2018	20	0	7	5 UT	243.00	<u>1,215</u>
Barbecue Grills - Total								\$1,215

**Weatherstone at Highlands Ranch Association
Component Detail**

Description	Date in Service	Replacement Year	Useful	Adjustment	Remaining	Units	Unit Cost	Current Cost	
General Landscape									
Replace as needed	<i>unfunded</i>								
Irrigation System and Controllers									
Replace controllers	1998	2011	35	-22	0	4 UT	1,500.00	6,000	
Replace controllers	1998	2012	35	-21	1	1 UT	1,500.00	1,500	
Replace controllers	1998	2013	35	-20	2	1 UT	1,500.00	1,500	
Replace controllers	1998	2014	35	-19	3	1 UT	1,500.00	1,500	
Irrigation System and Controllers - Total									\$10,500
Landscape Electrical Units									
Replace damaged sections	<i>unfunded</i>								
Stucco									
Repair damaged sections	1998	2013	15	0	2	130 SF	8.00	1,040	
Stucco - Total									\$1,040
Brick and Stone Veneer									
Tuck-point mortar joints	1998	2011	10	3	0	521 SF	5.00	2,607	
Brick and Stone Veneer - Total									\$2,607
Trim									
Repair and stain	<i>unfunded</i>								
Windows									
Replace	<i>unfunded</i>								
Entry Doors									
Replace - restroom	1998	2015	20	-3	4	2 UT	1,500.00	3,000	
Entry Doors - Total									\$3,000
Exterior Lighting									
Replace	1998	2012	20	-6	1	9 UT	203.00	1,827	
Exterior Lighting - Total									\$1,827
Asphalt Shingles									
Replace	1998	2013	20	-5	2	1,200 SF	2.70	3,240	
Asphalt Shingles - Total									\$3,240
Restrooms									
Refurbish	1998	2015	15	2	4	2 UT	3,600.00	7,200	
Restrooms - Total									\$7,200

Weatherstone at Highlands Ranch Association Component Detail

Description	Date in Service	Replacement Year	Useful	Adjustment	Remaining	Units	Unit Cost	Current Cost
Swimming and Wading Pools								
Repair or replace coping stones	2008	2018	10	0	7	220 LF	45.78	10,072
Replace pool cover	1998	2014	13	3	3	1 UT	3,125.00	3,125
Resurface	1998	2014	10	6	3	2,000 SF	7.00	<u>14,000</u>
Swimming and Wading Pools - Total								<u>\$27,197</u>
Trellis								
Repair and stain	2010	2017	6	1	6	1 UT	4,800.00	4,800
Replace	1998	2023	25	0	12	1,900 UT	13.50	<u>25,650</u>
Trellis - Total								<u>\$30,450</u>
Sun Shades								
Replace	2008	2020	12	0	9	14 UT	690.00	<u>9,660</u>
Sun Shades - Total								<u>\$9,660</u>
Shelters								
Stain	<i>unfunded</i>							
Water Cooler								
Not used at this time	<i>unfunded</i>							
Pool Furniture								
Replace a portion	1998	2013	5	10	2	19 UT	97.00	<u>1,921</u>
Pool Furniture - Total								<u>\$1,921</u>
Boilers								
Refurbish	1998	2017	10	9	6	2 UT	8,250.00	16,500
Replace	1998	2027	25	4	16	2 UT	8,488.00	<u>16,976</u>
Boilers - Total								<u>\$33,476</u>
Pumps								
Replace	1998	2012	8	6	1	2 UT	2,000.00	<u>4,000</u>
Pumps - Total								<u>\$4,000</u>
Pool Filters								
Replace	1998	2013	15	0	2	2 UT	1,800.00	<u>3,600</u>
Pool Filters - Total								<u>\$3,600</u>
Water Heaters								
Replace	1998	2018	20	0	7	2 UT	825.00	<u>1,650</u>
Water Heaters - Total								<u>\$1,650</u>
Heater Unit								
Replace	<i>unfunded</i>							

**Weatherstone at Highlands Ranch Association
Component Detail**

Description	Date in Service	Replacement Year	Useful	Adjustment Remaining	Units	Unit Cost	Current Cost
Total Asset Summary							<u>\$348,531</u>

**Weatherstone at Highlands Ranch Association
Annual Expenditure Spread Sheet**

Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Site and Building Grading and Drainage										
Regrade earthen areas						2,898				
Site and Building Grading and Drainage Total:						2,898				
Walkways										
Replace damaged sections							4,406			
Walkways Total:							4,406			
Pool Deck										
Replace damaged sections					3,714					
Pool Deck Total:					3,714					
Entrance Monuments										
Tuck-point		<i>unfunded</i>								
Block Retaining Wall										
Regrade and repair		<i>unfunded</i>								
Replace		<i>unfunded</i>								
Metal Fence										
Repair and paint					11,209				12,994	
Repair and paint remaining metal fence	2,016									
Replace									72,513	
Metal Fence Total:	2,016				11,209				85,507	
Privacy Fence										
Repair and stain remaining privacy fence	3,008									
Replace w/ composite fencing							137,346			
Privacy Fence Total:	3,008						137,346			
Rail Fence										
Repair and stain										
Replace						2,782				
Rail Fence Total:						2,782				

**Weatherstone at Highlands Ranch Association
Annual Expenditure Spread Sheet**

Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bench, Trash Receptacles, Picnic Tables and Bike Rack										
Replace								7,473		
Bench, Trash Receptacles, Picnic Tables and Bike Rack Total:								7,473		
Barbecue Grills										
Replace								1,494		
Barbecue Grills Total:								1,494		
General Landscape										
Replace as needed										<i>unfunded</i>
Irrigation System and Controllers										
Replace controllers	6,000									
Replace controllers		1,545								
Replace controllers			1,591							
Replace controllers					1,639					
Irrigation System and Controllers Total:	6,000	1,545	1,591		1,639					
Landscape Electrical Units										
Replace damaged sections										<i>unfunded</i>
Stucco										
Repair damaged sections				1,103						
Stucco Total:				1,103						
Brick and Stone Veneer										
Tuck-point mortar joints						2,607				
Brick and Stone Veneer Total:						2,607				
Trim										
Repair and stain										<i>unfunded</i>
Windows										
Replace										<i>unfunded</i>

**Weatherstone at Highlands Ranch Association
Annual Expenditure Spread Sheet**

Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Entry Doors										
Replace - restroom					3,377					
Entry Doors Total:					3,377					
Exterior Lighting										
Replace		1,882								
Exterior Lighting Total:		1,882								
Asphalt Shingles										
Replace			3,437							
Asphalt Shingles Total:			3,437							
Restrooms										
Refurbish					8,104					
Restrooms Total:					8,104					
Swimming and Wading Pools										
Repair or replace coping stones								12,387		
Replace pool cover				3,415						
Resurface				15,298						
Swimming and Wading Pools Total:				18,713				12,387		
Trellis										
Repair and stain							5,731			
Replace										
Trellis Total:							5,731			
Sun Shades										
Replace										12,604
Sun Shades Total:										12,604
Shelters										
Stain										<i>unfunded</i>
Water Cooler										
Not used at this time										<i>unfunded</i>

**Weatherstone at Highlands Ranch Association
Annual Expenditure Spread Sheet**

Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Pool Furniture										
Replace a portion			2,038					2,362		
Pool Furniture Total:			2,038					2,362		
Boilers										
Refurbish							19,702			
Replace										
Boilers Total:							19,702			
Pumps										
Replace		4,120								5,219
Pumps Total:		4,120								5,219
Pool Filters										
Replace			3,819							
Pool Filters Total:			3,819							
Water Heaters										
Replace								2,029		
Water Heaters Total:								2,029		
Heater Unit										
Replace		<i>unfunded</i>								
Year Total:	13,631	7,547	11,989	20,352	26,403	5,680	167,185	25,746		103,330

**Weatherstone at Highlands Ranch Association
Annual Expenditure Spread Sheet**

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Site and Building Grading and Drainage										
Regrade earthen areas			3,564							4,384
Site and Building Grading and Drainage Total:			3,564							4,384
Walkways										
Replace damaged sections			5,261						6,282	
Walkways Total:			5,261						6,282	
Pool Deck										
Replace damaged sections	4,434						5,295			
Pool Deck Total:	4,434						5,295			
Entrance Monuments										
Tuck-point	<i>unfunded</i>									
Block Retaining Wall										
Regrade and repair	<i>unfunded</i>									
Replace	<i>unfunded</i>									
Metal Fence										
Repair and paint					15,064					17,463
Repair and paint remaining metal fence										
Replace										
Metal Fence Total:					15,064					17,463
Privacy Fence										
Repair and stain remaining privacy fence										
Replace w/ composite fencing										
Privacy Fence Total:										
Rail Fence										
Repair and stain	3,225						3,739			
Replace										
Rail Fence Total:	3,225						3,739			

**Weatherstone at Highlands Ranch Association
Annual Expenditure Spread Sheet**

2021 2022 2023 2024 2025 2026 2027 2028 2029 2030

Description

Bench, Trash Receptacles, Picnic Tables and Bike Rack

Replace

Bench, Trash Receptacles, Picnic Tables and Bike Rack Total:

Barbecue Grills

Replace

Barbecue Grills Total:

General Landscape

Replace as needed

unfunded

Irrigation System and Controllers

Replace controllers

Replace controllers

Replace controllers

Replace controllers

Irrigation System and Controllers Total:

Landscape Electrical Units

Replace damaged sections

unfunded

Stucco

Repair damaged sections

1,719

Stucco Total:

1,719

Brick and Stone Veneer

Tuck-point mortar joints

3,504

Brick and Stone Veneer Total:

3,504

Trim

Repair and stain

unfunded

Windows

Replace

unfunded

**Weatherstone at Highlands Ranch Association
Annual Expenditure Spread Sheet**

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Entry Doors										
Replace - restroom										
Entry Doors Total:										
Exterior Lighting										
Replace										
Exterior Lighting Total:										
Asphalt Shingles										
Replace										
Asphalt Shingles Total:										
Restrooms										
Refurbish										12,625
Restrooms Total:										12,625
Swimming and Wading Pools										
Repair or replace coping stones								16,647		
Replace pool cover							5,015			
Resurface				20,559						
Swimming and Wading Pools Total:				20,559			5,015	16,647		
Trellis										
Repair and stain			6,844						8,172	
Replace			36,571							
Trellis Total:			43,414						8,172	
Sun Shades										
Replace										
Sun Shades Total:										
Shelters										
Stain		<i>unfunded</i>								
Water Cooler										
Not used at this time		<i>unfunded</i>								

**Weatherstone at Highlands Ranch Association
Annual Expenditure Spread Sheet**

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Pool Furniture										
Replace a portion			2,738					3,174		
Pool Furniture Total:			2,738					3,174		
Boilers										
Refurbish							26,478			
Replace							27,241			
Boilers Total:							53,719			
Pumps										
Replace								6,611		
Pumps Total:								6,611		
Pool Filters										
Replace								5,950		
Pool Filters Total:								5,950		
Water Heaters										
Replace										
Water Heaters Total:										
Heater Unit										
Replace		<i>unfunded</i>								
Year Total:	11,163		54,978	20,559	15,064	3,739	64,028	34,102	14,454	34,472

**Weatherstone at Highlands Ranch Association
Annual Expenditure Detail**

Description	Expenditures
Replacement Year 2011	
Metal Fence	
Repair and paint remaining metal fence	2,016
Privacy Fence	
Repair and stain remaining privacy fence	3,008
Irrigation System and Controllers	
Replace controllers	6,000
Brick and Stone Veneer	
Tuck-point mortar joints	2,607
Total for 2011	<u>\$13,631</u>
Replacement Year 2012	
Irrigation System and Controllers	
Replace controllers	1,545
Exterior Lighting	
Replace	1,882
Pumps	
Replace	4,120
Total for 2012	<u>\$7,547</u>
Replacement Year 2013	
Irrigation System and Controllers	
Replace controllers	1,591
Stucco	
Repair damaged sections	1,103
Asphalt Shingles	
Replace	3,437
Pool Furniture	
Replace a portion	2,038
Pool Filters	
Replace	3,819
Total for 2013	<u>\$11,989</u>
Replacement Year 2014	
Irrigation System and Controllers	
Replace controllers	1,639

**Weatherstone at Highlands Ranch Association
Annual Expenditure Detail**

Description	Expenditures
<i>Replacement Year 2014 continued...</i>	
Swimming and Wading Pools	
Replace pool cover	3,415
Resurface	15,298
Total for 2014	<u>\$20,352</u>
 Replacement Year 2015	
Pool Deck	
Replace damaged sections	3,714
Metal Fence	
Repair and paint	11,209
Entry Doors	
Replace - restroom	3,377
Restrooms	
Refurbish	8,104
Total for 2015	<u>\$26,403</u>
 Replacement Year 2016	
Site and Building Grading and Drainage	
Regrade earthen areas	2,898
Rail Fence	
Replace	2,782
Total for 2016	<u>\$5,680</u>
 Replacement Year 2017	
Walkways	
Replace damaged sections	4,406
Privacy Fence	
Replace w/ composite fencing	137,346
Trellis	
Repair and stain	5,731
Boilers	
Refurbish	19,702
Total for 2017	<u>\$167,185</u>

**Weatherstone at Highlands Ranch Association
Annual Expenditure Detail**

Description	Expenditures
Replacement Year 2018	
Bench, Trash Receptacles, Picnic Tables and Bike Rack	
Replace	7,473
Barbecue Grills	
Replace	1,494
Swimming and Wading Pools	
Repair or replace coping stones	12,387
Pool Furniture	
Replace a portion	2,362
Water Heaters	
Replace	2,029
Total for 2018	\$25,746
 <i>No Replacement in 2019</i>	
Replacement Year 2020	
Metal Fence	
Repair and paint	12,994
Replace	72,513
Sun Shades	
Replace	12,604
Pumps	
Replace	5,219
Total for 2020	\$103,330
 Replacement Year 2021	
Pool Deck	
Replace damaged sections	4,434
Rail Fence	
Repair and stain	3,225
Brick and Stone Veneer	
Tuck-point mortar joints	3,504
Total for 2021	\$11,163

No Replacement in 2022

**Weatherstone at Highlands Ranch Association
Annual Expenditure Detail**

Description	Expenditures
Replacement Year 2023	
Site and Building Grading and Drainage	
Regrade earthen areas	3,564
Walkways	
Replace damaged sections	5,261
Trellis	
Repair and stain	6,844
Replace	36,571
Pool Furniture	
Replace a portion	2,738
Total for 2023	<u>\$54,978</u>
 Replacement Year 2024	
Swimming and Wading Pools	
Resurface	20,559
Total for 2024	<u>\$20,559</u>
 Replacement Year 2025	
Metal Fence	
Repair and paint	15,064
Total for 2025	<u>\$15,064</u>
 Replacement Year 2026	
Rail Fence	
Repair and stain	3,739
Total for 2026	<u>\$3,739</u>
 Replacement Year 2027	
Pool Deck	
Replace damaged sections	5,295
Swimming and Wading Pools	
Replace pool cover	5,015
Boilers	
Refurbish	26,478
Replace	27,241
Total for 2027	<u>\$64,028</u>

**Weatherstone at Highlands Ranch Association
Annual Expenditure Detail**

Description	Expenditures
Replacement Year 2028	
Stucco	
Repair damaged sections	1,719
Swimming and Wading Pools	
Repair or replace coping stones	16,647
Pool Furniture	
Replace a portion	3,174
Pumps	
Replace	6,611
Pool Filters	
Replace	5,950
Total for 2028	<u>\$34,102</u>
 Replacement Year 2029	
Walkways	
Replace damaged sections	6,282
Trellis	
Repair and stain	8,172
Total for 2029	<u>\$14,454</u>
 Replacement Year 2030	
Site and Building Grading and Drainage	
Regrade earthen areas	4,384
Metal Fence	
Repair and paint	17,463
Restrooms	
Refurbish	12,625
Total for 2030	<u>\$34,472</u>

**Weatherstone at Highlands Ranch Association
Final Reserve Study Summary**

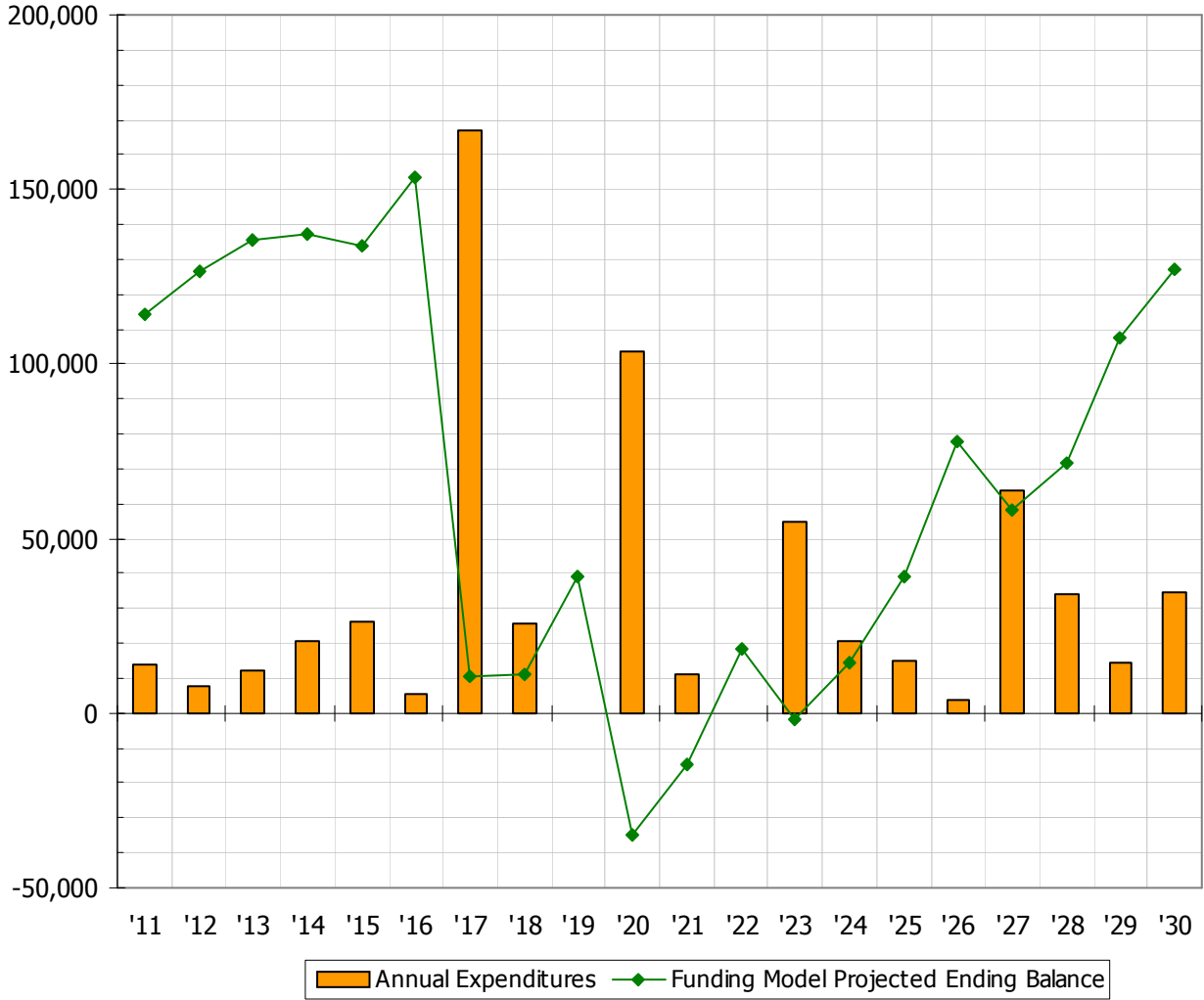
Report Date	March 07, 2011
Account Number	10108
Budget Year Beginning	January 01, 2011
Budget Year Ending	December 31, 2011
Total Units	294

<i>Report Parameters</i>	
Inflation	3.00%
Interest Rate on Reserve Deposit	1.15%
Tax Rate on Interest	0.00%
Contingency	0.00%
2011 Beginning Balance	\$109,183.00

Final Funding Model Summary of Calculations

Required Monthly Contribution	\$1,448.00
<i>\$4.93 per unit monthly</i>	
Average Net Monthly Interest Earned	<u>\$101.11</u>
Total Monthly Allocation to Reserves	\$1,549.11
<i>\$5.27 per unit monthly</i>	

Weatherstone at Highlands Ranch Association Final Reserve Study Projection Graph



**Weatherstone at Highlands Ranch Association
Final Reserve Study Projection**

Beginning Balance: \$109,183

Year	Annual Contribution	Annual Interest	Annual Expenditures	Projected Ending Reserves
2011	17,376	1,213	13,631	114,141
2012	18,419	1,347	7,547	126,360
2013	19,524	1,444	11,989	135,339
2014	20,695	1,459	20,352	137,141
2015	21,937	1,417	26,403	134,093
2016	23,253	1,630	5,680	153,295
2017	24,648		167,185	10,758
2018	26,127		25,746	11,140
2019	27,695	302		39,136
2020	29,356		103,330	-34,838
2021	31,118		11,163	-14,883
2022	32,985	34		18,136
2023	34,964		54,978	-1,878
2024	37,062		20,559	14,624
2025	39,285	240	15,064	39,086
2026	41,643	669	3,739	77,658
2027	44,141	434	64,028	58,205
2028	46,790	571	34,102	71,463
2029	49,597	969	14,454	107,576
2030	52,573	1,174	34,472	126,850