

# Buildings and Structures Asset Management Plan

November 2011



**TABLE OF CONTENTS**

**Executive Summary.....4**

**Introduction/Background.....6**

**Types of Buildings and Structures.....7**

**Inventory of District’s Existing Buildings and Structures.....10**

**Building Roof Inspection and Evaluation (DC Consulting Services).....16**

**Building/Structure Painting.....18**

**Capital Costs for Buildings/Structures.....22**

**Plan Updates.....24**

**Conclusions and Recommendations.....25**

**APPENDICES**

**Appendix A – Recent Photos of District’s Buildings and Structures**

**Appendix B – Report on the Inspection and Evaluation of Building/Structure Roofs by DC Consulting Services**

**Appendix C – Capital Cost Projections (2012 – 2061) for Buildings and Structures**

## **LIST OF FIGURES**

**Figure 1 – Capital Cost Projections for Buildings and Structures (Roof Replacement and Painting), 2012 – 2061**

## **LIST OF TABLES**

**Table 1 – Buildings/Structures Owned by District**

**Table 2 – Roofing System Inspection, Evaluation and Replacement Costs (by DC Consulting Services)**

**Table 3 – Painting Schedule for Buildings/Structures Owned by District**

## **EXECUTIVE SUMMARY**

District staff has been taking a systematic approach to asset management. Previously completed asset management plans have addressed water meters, distribution mains, groundwater wells, transmission mains, and reservoirs/booster pump stations. This plan addresses the District's buildings and structures. This is the sixth and final component of the District's asset management plan program.

The purpose of this *Buildings and Structures Asset Management Plan* (BSAMP) is to inventory all of the District's existing buildings and other structures (car ports, etc.) in terms of type and age and to include a plan for required capital expenditures, primarily for roof replacement and painting. This BSAMP is intended to be used as a tool for ongoing communication between the Board and staff to prioritize building and structure maintenance, repair, and replacement. Furthermore, it is to be used as a planning tool during annual capital improvement program (CIP) budget discussions with the Board. This Plan does not represent a financial commitment by the Board, other than those CIP funds already approved and adopted.

The purpose and goals of the BSAMP are to:

- Inventory the District's existing buildings and structures by type, age, and condition.
- Provide a preliminary plan for necessary building and structure capital expenditures, primarily roof replacement and painting, which can be adapted and modified to incorporate new management practices and District needs.
- Provide direction and framework for future plan revisions.
- Coordinate with the District's long term Capital Improvement Program (CIP).

The District currently owns and maintains 40 separate buildings or structures of different types, ages and condition. Most of these are pump houses at well sites. The majority of the well site buildings are constructed of cement masonry units (CMU) or blocks. Some of the oldest buildings are well site pump houses that were constructed in the 1950's. Likewise, some of the newest buildings are also located at well sites. As long as they are properly maintained, the average useful life of a well constructed building can easily be 100 years or more.

The most expensive asset in terms of building/structure maintenance and repair is the roofs. Most roofs have a life expectancy of between 20 and 30 years. For this report, the District hired a roofing expert to inspect and evaluate the condition of roofs on all buildings and structures. The consultant also estimated the cost to replace building roofs when they are in need of replacement and estimated their life expectancy after they are replaced.

Another significant building/structure maintenance item is painting. This report proposes a schedule where the buildings and structures will be re-painted or sealed (in the case of unpainted CMU block buildings) approximately every 15 years. This is the schedule for building exteriors. Building interiors will not require re-painting as frequently and costs for interior painting are assumed to come out of the District's annual O&M budget. As necessary, spot painting and/or repairs are made each time building inspections are performed. Complete building and/or structure exterior re-paintings are estimated to cost between \$5 and \$10 per square foot depending on the building size.

The estimated capital cost over the next 50 years for the largest capital cost items (roof replacement and exterior painting) necessary to properly maintain the District's existing buildings and structures is approximately \$3.3 million (in 2011 \$).

Note that prefabricated fiberglass enclosures are not included in this asset management plan. These types of enclosures are in place at numerous well sites and typically house chlorination and/or fluoridation equipment. Because they can be purchased "off the shelf" and have no foundation or roofing system, these enclosures are not included in this report. In addition, the District's concrete material storage bins, although technically structures, are also not included.

Similar to the District's other asset management plans, it is anticipated that the BSAMP will be amended periodically in the future. It is recognized that new information will be made available in the future that might affect the condition of the buildings/structures and the need for repair and/or replacement. Review and reassessment of the BSAMP is recommended in 5 to 7 year intervals.

## **INTRODUCTION / BACKGROUND**

Water utilities throughout the United States are currently facing the challenge of extensive rehabilitation and replacement of aging and deteriorated water mains and other water system infrastructure. In 2010, the American Society of Civil Engineers (ASCE) published a report card on America's infrastructure and their rating for drinking water systems was a D-<sup>1</sup>. As part of this study, ASCE estimated the 5-year funding requirement for drinking water and wastewater infrastructure at \$255 billion.

The Sacramento Suburban Water District (SSWD) is no different in this regard. Of particular concern to SSWD in terms of water system infrastructure are the older water distribution mains that date back prior to the 1950s or even earlier. An ongoing water main replacement program is underway to replace aging distribution mains that have outlived their useful life. Attention is now focused on evaluating and assessing the District's buildings and structures. This is considered the final element of the District's ongoing asset management planning program.

Note that prefabricated fiberglass enclosures are not included in this asset management plan. These types of enclosures are in place at numerous well sites and typically house chlorination and/or fluoridation equipment. Because they can be purchased "off the shelf" and have no foundation or roofing system, these enclosures are not included in this report. In addition, the District's concrete material storage bins, although technically structures, are also not included.

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<sup>1</sup> Source: *Report Card for American Infrastructure*, American Society of Civil Engineers, 2009.  
Draft Buildings and Structures Asset Management Plan  
November 2011

## TYPES OF BUILDINGS/STRUCTURES

The majority of the District's existing buildings are constructed of concrete masonry units (CMU), otherwise known as concrete blocks. This is a very common type of construction material for commercial and industrial buildings.

The advantages of CMU building construction are as follows<sup>2</sup>:

- Durable – CMU block buildings will endure the test of time.
- Self-contained - CMU building materials can act as the structure, walls, foundation and other components of the building.
- Fire resistant – CMU blocks are suitable for the most stringent fire ratings.
- Local labor - Practically any building contractor is capable of constructing a building with CMU.
- Attractive – There are a huge variety of available textures, patterns, etc.
- Low maintenance – For the most part, build it and forget about it.

There are also certain disadvantages to CMU buildings as noted below:

- Expensive labor – CMU construction is labor-intensive. Depending on localities, labor can be very expensive.
- Heavy - Masonry buildings weigh more than comparable steel-framed and wood-framed buildings.
- Absorbent - CMU, like any other cement material, is absorbent to water penetration and must be weather-proofed.
- Modular – Typical CMU has modular 8” x 8” x 16” nominal dimensions and it is a bit more difficult to have walls that have odd dimensions or smooth curves.
- Difficult to insulate – CMU block has a very low “R” value and generally walls must be insulated by adding width to them thereby decreasing available floor square footage.

The District also owns several steel buildings. The advantages of steel buildings include<sup>3</sup>:

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<sup>2</sup> Source: <http://faculty.delhi.edu/hultenc/A220-Week2-Lecture-Web.html>.

<sup>3</sup> Source: [www.steelbuildings.org](http://www.steelbuildings.org).

- Common material – Steel is a common type of building material and system that is usually readily available.
- Familiarity – Steel is a familiar building system to most contractors in the construction building business.
- Ease of assembly – Steel buildings are known for rapid assembly and erection.
- Appearance – A wide variety of colors are usually available.
- Sizes – There are few width limitations. Large buildings with clear span widths of 100 to 200+ feet are possible.
- Resistance to Termites – Termites are not a problem with steel buildings.
- Aesthetics – A shallow roof slope makes the profile less obtrusive.
- Foundation – Steel buildings do not require a slab floor; the building can be installed on foundation piers.
- Interior Supports – Generally no interior support posts or columns are necessary.

The disadvantages to steel buildings are as follows:

- Cost – The cost of steel production is very high and the market can be very volatile. However, steel buildings can be cost effective with other types of buildings on large non-insulated buildings.
- Condensation – Steel buildings may “sweat,” causing interior condensation and dripping.
- Configuration – Steel buildings are usually limited to a simple "box" shape with little or no roof pitch (slope) or unique configurations beyond a simple square or rectangle, and usually with no exterior options other than steel sheeting.
- Zoning – If the location is other than zoned industrial land, zoning restrictions or problems may be encountered due to the "industrial" or "commercial" look of the vertical high rib sheeting and lower roof pitch.
- Corrosion – Steel is susceptible to corrosion in outdoor atmospheres.
- Heavy Equipment Required – Steel building construction usually requires a crane or heavy equipment, and sometimes on-site welding, depending on the building size and the degree of pre-engineering done by the building manufacturer.



- Insulation – Steel buildings require added insulation as steel on its own is not a very good insulator. Some steel building systems require that insulation be added only at the time the building is erected. If fiberglass bat insulation is used (this is the most common method) then some of R-value of the insulation is lost at all the compression points since the fiberglass insulation is sandwiched between the trusses and the outside sheeting.

## **INVENTORY OF DISTRICT'S EXISTING BUILDINGS AND STRUCTURES**

Table 1 lists all buildings and/or structures owned by the District along with their address, size, type of construction, type of roofing, etc. The majority of the buildings house pumps and other equipment at well sites.

Included in Table 1 is the "Scheduled Value" of the building and/or structure. This value is calculated by the District's property insurance carrier, ACWA/JPIA. In order to determine the value of District buildings and structures, ACWA/JPIA uses the *Marshall and Swift Building Cost Manual* to calculate a replacement cost value. According to ACWA/JPIA, the replacement cost of a building/structure is the "total cost of construction required to replace the building with a substitute of like or equal utility using current standards of materials and design. These costs include labor, materials, supervision, contractor's profit and overhead, an architect's plans and specifications, sales tax and insurance." As noted on the District's Memorandum of Property Coverage (MOPC), the cost of the land is not covered but yard improvements are handled separately. Site work is automatically covered on the Property Schedule, with coverage for landscaping, lawns, trees, shrubs, signs, and light poles, paving, and fencing, up to a \$500,000 sub-limit.

The District's largest and most expensive buildings are described in more detail below.

### Administration Building (3701 Marconi Avenue)

The building is a single story, non-sprinklered, office building constructed in the late 1970's. The building size is approximately 18,000 square feet (sf) and it includes offices, a customer service area and a board room. The building also includes a separate suite (Suite 300) that has in the past been leased out. Because of the building's age it is assumed that the original shell structure was constructed based upon the 1969-1972 Uniform Building Code and American National Standards Institute (ANSI) Standards. A major alternation to the building was constructed in 1998 to convert a former bank drive through structure into the building shell. The building is raised above the surrounding public way and has an underground parking garage which serves the two existing suites (Suite 100 and Suite 300).

**Table 1**  
**Buildings/Structures Owned by District<sup>1,2</sup>**

| Facility Name                                 | Well Number | Type of Building/<br>Structure | Year<br>Built | Building<br>Size (sf) | Type of<br>Building<br>Construction | Type of Roof<br>Construction | Scheduled<br>Value <sup>3</sup> | Notes   |
|---|-------------|--------------------------------|---------------|-----------------------|-------------------------------------|------------------------------|---------------------------------|---|
| Eden/Root Well                                | 32A         | Pump and Treatment Building    | 2000          | 2,900                 | CMU Block                           | Composition shingle          | \$547,773                       |   |
| Morse/Cottage Park Well                       | 37          | Pump House & Engine Building   | 1958          | 300                   | CMU Block                           | Built-up                     | \$75,443                        |   |
| Watt/Auburn Well                              | 38          | Pump House & Engine Building   | 1958          | 232                   | CMU Block                           | Built-up                     | \$65,615                        |   |
| Thomas/Elkhorn Well                           | 39          | Pump House & Engine Building   | 1958          | 232                   | CMU Block                           | Built-up                     | \$65,616                        |   |
| Auburn/Yard Well                              | 40          | Pump House & Engine Building   | 1958          | 141                   | CMU Block                           | Built-up                     | \$44,298                        |   |
| Albatross/Iris Well                           | 41          | Pump House & Engine Building   | 1958          | 237                   | CMU Block                           | Built-up                     | \$66,976                        |   |
| Edison/Truax Well                             | 43          | Pump House & Engine Building   | 1958          | 232                   | CMU Block                           | Built-up                     | \$65,616                        |   |
| Jamestown/ Middleberry Well                   | 45          | Pump House & Engine Building   | 1958          | 252                   | CMU Block                           | Built-up                     | \$71,361                        |   |
| Jonas/Sierra Mills Well                       | 46          | Pump House & Engine Building   | 1959          | 342                   | CMU Block                           | Built-up                     | \$85,875                        |   |
| Copenhagen/Arden Well                         | 47          | Pump House & Engine Building   | 1960          | 216                   | CMU Block                           | Built-up                     | \$60,929                        |   |
| Stewart/Lynddale Well                         | 55A         | Pump Building                  | 2000          | 884                   | CMU Block                           | Composition shingle          | \$356,501                       | Metal acoustic panels on interior walls.  |
| River Drive/Jacob Well (Rodney T. Franz Well) | 71          | Pump Building                  | 1999          | 1,289                 | CMU Block                           | Composition shingle          | \$242,959                       | Metal acoustic panels on interior walls.  |
| River Walk/NETP Well                          | 72          | Pump Building                  | 1999          | 1,289                 | CMU Block                           | Composition shingle          | \$242,959                       | 387 KVA Emergency Generator, Diesel, MDI #4306, w/Auto Transfer Switch (\$162,641). |

|  |               |                                       |        |       |                                 |                     |           |   |
|--|---------------|---------------------------------------|--------|-------|---------------------------------|---------------------|-----------|---|
| Enterprise/Northrop Well                   | 75            | Pump Building                         | 2000   | 1,500 | CMU Block                       | Composition shingle | \$461,977 | 387 KVA Emergency Generator, Diesel, MDI #4306, w/Auto Transfer Switch (\$162,641), 150 PPD Sodium Hypochlorite Generator, US Filter #B1-150; 1300 Gal Day Tank, 6 Ton Salt Saturator, Water Softener, Feed Equipment (\$93,831). |
| McClellan Well                             | MC 10         | Pump House and Chemical Feed Building | 1946   | 450   | CMU Block & Reinforced Concrete | Built-up and Metal  | \$161,692 |   |
| Capehart 1C                                | MC-C1         | Old Fluoridation Building             | 1959   | 180   | Metal                           | Metal               | \$19,494  |   |
| Capehart 1C                                | MC-C1         | Engine House                          | 1959   | 224   | Metal                           | Metal               | \$32,346  |   |
| Capehart 2C                                | MC-C2         | Old Fluoridation Building             | 1959   | 180   | Metal                           | Metal               | \$19,494  |   |
| Capehart 2C                                | MC-C2         | Engine House                          | 1959   | 224   | Metal                           | Metal               | \$28,880  |   |
| Capehart 3C                                | MC-C3         | Old Fluoridation Building             | 1961   | 180   | Metal                           | Metal               | \$19,494  |   |
| Capehart 3C                                | MC-C3         | Engine House                          | 1961   | 144   | Metal                           | Metal               | \$20,794  |   |
| Cypress Well                               | N20           | Pump House & Chemical feed Building   | 1974   | 362   | CMU Block                       | Built-up            | \$104,546 |   |
| Poker Lane Well                            | N32A, B and C | Pump Control & Chemical Feed Building | 1990   | 904   | CMU Block                       | Metal               | \$261,077 | 500 KW Emergency Generator, Propane, Cummins, with Auto Transfer Switch (\$168,111).  |
| North Antelope Well                        | N35           | Pump Control & Chemical feed Building | 2002   | 640   | CMU Block                       | Composition shingle | \$136,459 |   |
| Verner Avenue Well                         | N36           | Pump House & Chemical Feed Building   | 2010   | 1,216 | CMU Block                       | Metal               | \$268,194 | 350 KW Generator, Emergency, w/Controls, Tank (\$180,306), 200 HP Pump w/Motor Vertical Turbine, VFD, MCC Depth 384' (\$203,717).   |
| AWD Infiltration Wells Monitoring Building | N/A           | Monitoring Building                   | 1960's | 600   | CMU Block                       | Shake shingle       | \$126,714 |   |

|   |     |                                       |                 |                  |           |                     |                     |  |
|---|-----|---------------------------------------|-----------------|------------------|-----------|---------------------|---------------------|--|
| Old AWD Admin. Building                             | N/A | Office Building                       | 1960's          | 3,100            | CMU Block |                     | \$350,907           | Currently leased to Skip's Music.  |
| Maintenance and Operations Building                 | N/A | Office Building                       | 1960's/<br>2000 | 4,400            | Metal     | Metal               | \$239,330           | Currently leased to Skip's Music. Building addition was constructed in 2000 that basically doubled the size of the building.   |
| Maintenance and Operations Storage Building         | N/A | Storage Building/Carport              | 1960's          | 1,300<br>(Bldg.) | Metal     | Metal               | \$85,270            | Currently leased to Skip's Music.  |
| Antelope Booster Pump Station/Shop                  | N/A | Building                              | 1999            | 11,600           | CMU Block | Metal               | \$1,444,009         | 500 KW Emergency Generator, Propane, Cummins, with Auto Transfer Switch (\$168,114), Instrumentation and Controls (\$201,737), Inventory (\$100,000), Shop Equipment (\$50,000).   |
| Demonstration Garden - Bathroom, Gazebo and Kitchen | N/A | Misc. Buildings                       | 2000            | ??               | CMU Block | Tile                | \$1,433,179         | These are out buildings in the demonstration garden area.  |
| Enterprise/Northrop Booster Pump Station            | N/A | Pump Station & Chemical Feed Building | 2006            | 3,360            | CMU Block | Composition shingle | \$857,513           |  |
| Administration Building                             | N/A | Office Building                       | 1978            | 17,854           | CMU Block | Built-up            | \$3,297,557         | Building w/ U/G Parking Structure, 80 KW Emergency Generator, Diesel, Olympian Model CD080, with Automatic Transfer Switch (\$43,172).   |
| Corp. Yard and Field Operations                     | N/A | Office Building                       | 1970/<br>1988   | 12,000           | CMU Block | Metal               | \$1,444,009         | Building addition was constructed in 1988. SCADA System, including Computer, Monitor, Alarm/Event Printer, SCADA Software, Auto Dialer, Radio Base Station, Antenna (Monitors 59 Remote Sites) (\$184,996), Personal Property (\$254,000), Inventory(\$100,000). |
| Corp. Yard and Field Operations                     | N/A | Storage Garage                        | 1988            | 400              | CMU Block |                     | \$15,884            |  |
| Watt/Elkhorn Booster Pump Station                   | N/A | Pump Station & Chemical Feed Building | 2000            | 1,925            | CMU Block | Composition shingle | \$412,877           | 387 KW Emergency Generator, Diesel, MDI w/Auto Transfer Switch (\$162,641).  |
|   |     |                                       |                 |                  |           |                     | <b>\$13,233,617</b> |  |

**NOTES:**

<sup>1</sup> Fiberglass enclosures used to house chemical feed equipment are not included in this table as they can be purchased "off the shelf" and are not constructed buildings.

<sup>2</sup> Existing buildings at the Becerra/Marconi Well (#42) and the Gilman/SMUD Station Well (#44) are not included in this table as they are scheduled to be demolished.

<sup>3</sup> Scheduled values have been assigned by the District's property insurance carrier, ACWA/JPIA. ACWA/JPIA uses the *Marshall and Swift Building Cost Manual* to calculate a replacement cost value for each building. The replacement costs shown for buildings are adjusted each year for inflation.

#### Walnut Avenue Corporation Yard (5331 Walnut Avenue)

The District's existing corporation yard and field operations building is approximately 12,000 square feet in size. This building incorporates offices, a maintenance shop and a warehouse. The building is constructed of CMU block with a prefabricated metal roof. The building is split level in configuration with the older portion of the building being single story and the newer portion of the building at two stories. The building was constructed in two phases. The east portion of the building was constructed in 1970. The west portion of the building, including the shop and warehouse, was constructed in 1988.

#### Former Arcade Water District Corporation Yard (2736 Auburn Blvd.)

There are three buildings and a separate carport structure that make up this compound. All three buildings have been leased out to Skip's Music for several years. However, the District still utilizes the corporation yard itself including the carport structure. In addition, there are two active well sites located on this property. One building is the former Arcade Water District Administration Building. This building is approx. 3,100 sf in size and served as the AWD administration building until the early 1980's. The second building is the former AWD operations building. The first half of this building was constructed in the 1960's but a building addition was later constructed in 2000. The total size of the building is 4,400 sf. And finally, there is an old steel storage building approx. 1,300 sf in size with an attached carport.

#### Antelope Reservoir Operations Building and Booster Pump Station (7800 Antelope North Road)

This building was built in 1999 at the same time that the 5 million gallon (MG) reservoir was constructed. The building is two story, 11,600 sf in size and is metal frame with a CMU block exterior and metal roof. The building houses the booster pump station and equipment and also includes a separate standby generator room, motor control center, a large meeting room, kitchen area, locker rooms/shower/bathrooms, office space, storage areas, and a shop. There are also three outbuildings at this site located near the demonstration plant garden. These include a bathroom, gazebo and kitchen. In additions, there is also a standalone car port structure at this site.

### Well Buildings and Pump Houses (Numerous)

The well site buildings range from only a few hundred square feet in size up to approximately 1,500 sf. The older well site buildings tend to be very small, typically only a few hundred square feet in size. The newer buildings tend to be much larger, typically over 1,000 sf in size. The majority of these buildings are constructed of CMU block and they generally have either prefabricated metal or composite shingle roofs. In some cases, the block is unpainted but incorporates a sealer on the surface of the block to prevent moisture from passing through.

## **BUILDING ROOF INSPECTION AND EVALUATION**

Other than the structure itself, the most expensive routine capital replacement related to a building is the roof. The District contracted with DC Consulting Services, a roofing expert, to perform a roofing inspection and evaluation for 40 buildings/structures located throughout the District. The purpose of which was to inventory the roofing/waterproofing assets, as well as recommend remedial action for all buildings and walls observed. Core cuts were taken where roofs looked aged (10-12 years old or older) in order to verify construction. Newer roofs, for the sake of warranty purposes, were not cored.

A separate report has been prepared by DC Consulting Services and is included in Appendix B. Their report includes individual construction, conditions, and recommendations sections for each roof that was inspected and evaluated. The report includes a prioritization spreadsheet (see Table 2) to enable staff and the Board to quickly assess inventory and have direction as to whether the roofs are in good condition or whether repairs are needed in order to bring them back to a serviceable condition. As noted in Table 2, DC Consulting Services also estimated the remaining life in years for each roof and then estimated the replacement cost (in 2011 \$) and life expectancy for a similar type roof. Their report also includes 6 – 8 photos of each building/structure in order to highlight conditions as observed on site.

The report from DC Consulting Services also identifies and lists some immediate roofing repairs that need to be taken care of to bring the existing roofs back to a serviceable standard and to extend their service life. These repairs are considered to be an operation and maintenance budget item and the costs are not included in the capital expenditure cost estimates included in this report.





## **BUILDING/STRUCTURE PAINTING**

There are generally two types of concrete block: smooth and split-face. At times, the CMU block may also be given a decorative finish such as a comb finish. Concrete block buildings can be left unpainted, but many owners prefer to paint the exterior. As well as making the building more attractive, the paint provides an extra layer of protection from the elements. Painted concrete block buildings can be virtually maintenance-free if done properly.

If it is painted, the split-face block, with its rough texture, requires twice as much primer and paint as the smooth face block. The District's split-face concrete block buildings are generally not painted but instead incorporate a surface sealer. Interior block surfaces are always smooth and can be painted or not. The interior surfaces of the District's CMU block buildings are generally painted but in some cases they are not.

In the past, the District has generally not had a schedule or plan for re-painting buildings. Typically, re-painting has only been performed on an as-needed basis as a reactive measure. However, with this report, a plan has been developed to begin scheduling building re-painting. Building exteriors are recommended to be repainted at approximately 15 year intervals. Building interiors will not require re-painting as often as the exteriors. Building interiors are often re-painted for aesthetics and/or cleaning purposes. It is assumed that interior painting is covered under the District's O&M budget and therefore, costs for interior painting are not included in this report. See Table 3 for a painting schedule for all of the District's buildings and structures.

For the District's largest buildings (Administration Building, Walnut Avenue Corporation Yard Building and Antelope Reservoir Operations Building), staff obtained detailed price quotes from River City Painting, Inc. of Sacramento for re-painting the building exteriors. For the remainder of the District's buildings, a more generic cost per square foot cost quote was used (also from River City Painting). Buildings 500 sf and smaller in size are estimated to cost \$10/sf to repaint, buildings between 500 and 800 sf are estimated to cost \$7.50 per sf and buildings larger than 800 sf are estimated to cost \$5 per sf.

**Table 3**  
**Painting Schedule for Buildings/Structures Owned by District<sup>1</sup>**

| Facility Name                                 | Well Number | Type of Building/<br>Structure | Year Built | Type of Building Construction | Building Size (sf) | Year Building Was Last Painted | Year(s) for Next Scheduled Re-Painting (Exterior) <sup>2</sup> | Notes |
|---|-------------|--------------------------------|------------|-------------------------------|--------------------|--------------------------------|--|-------|
| Eden/Root Well                                | 32A         | Pump and Treatment Building    | 2000       | CMU Block (Comb Face)         | 2,900              | 2000                           | 2015/2030/<br>2045/2060  |       |
| Morse/Cottage Park Well                       | 37          | Pump House & Engine Building   | 1958       | Wood/CMU Block                | 300                | Unknown                        | 2012/2027/<br>2042/2057  |       |
| Watt/Auburn Well                              | 38          | Pump House & Engine Building   | 1958       | CMU Block                     | 232                | Unknown                        | 2012/2027/<br>2042/2057  |       |
| Thomas/Elkhorn Well                           | 39          | Pump House & Engine Building   | 1958       | CMU Block                     | 232                | Unknown                        | 2012/2027/<br>2042/2057  |       |
| Auburn/Yard Well                              | 40          | Pump House & Engine Building   | 1958       | CMU Block                     | 141                | Unknown                        | 2012/2027/<br>2042/2057  |       |
| Albatross/Iris Well                           | 41          | Pump House & Engine Building   | 1958       | CMU Block                     | 237                | Unknown                        | 2013/2028/<br>2043/2058  |       |
| Edison/Truax Well                             | 43          | Pump House & Engine Building   | 1958       | CMU Block                     | 232                | Unknown                        | 2013/2028/<br>2043/2058  |       |
| Jamestown/ Middleberry Well                   | 45          | Pump House & Engine Building   | 1958       | CMU Block                     | 252                | Unknown                        | 2013/2028/<br>2043/2058  |       |
| Jonas/Sierra Mills Well                       | 46          | Pump House & Engine Building   | 1959       | CMU Block                     | 342                | Unknown                        | 2013/2028/<br>2043/2058  |       |
| Copenhagen/Arden Well                         | 47          | Pump House & Engine Building   | 1960       | CMU Block                     | 216                | 2008                           | 2023/2038/<br>2053   |       |
| Stewart/Lynndale Well                         | 55A         | Pump Building                  | 2000       | CMU Block (Comb Face)         | 884                | 2000                           | 2015/2030/<br>2045/2060  |       |
| River Drive/Jacob Well (Rodney T. Franz Well) | 71          | Pump Building                  | 1999       | CMU Block (Comb Face)         | 1,289              | 1999                           | 2014/2029/<br>2044/2059  |       |
| River Walk/NETP Well                          | 72          | Pump Building                  | 1999       | CMU Block (Comb Face)         | 1,289              | 2007                           | 2022/2037/<br>2052   |       |

|  |               |                                       |                 |                                 |       |         |                         |  |
|--|---------------|---------------------------------------|-----------------|---------------------------------|-------|---------|-------------------------|--|
| Enterprise/Northrop Well                   | 75            | Pump Building                         | 2000            | CMU Block (Comb Face)           | 1,500 | 2000    | 2015/2030/<br>2045/2060 |  |
| McClellan Well                             | MC 10         | Pump House and Chemical Feed Building | 1946            | CMU Block & Reinforced Concrete | 450   | 2009    | 2024/2039/<br>2054      |  |
| Capehart 1C                                | MC-C1         | Old Fluoridation Building             | 1959            | Metal                           | 180   | Unknown | 2014/2029/<br>2044/2059 |  |
| Capehart 1C                                | MC-C1         | Engine House                          | 1959            | Metal                           | 224   | Unknown | 2014/2029/<br>2044/2059 |  |
| Capehart 2C                                | MC-C2         | Old Fluoridation Building             | 1959            | Metal                           | 180   | Unknown | 2014/2029/<br>2044/2059 |  |
| Capehart 2C                                | MC-C2         | Engine House                          | 1959            | Metal                           | 224   | Unknown | 2014/2029/<br>2044/2059 |  |
| Capehart 3C                                | MC-C3         | Old Fluoridation Building             | 1961            | Metal                           | 180   | Unknown | 2015/2030/<br>2045/2060 |  |
| Capehart 3C                                | MC-C3         | Engine House                          | 1961            | Metal                           | 144   | Unknown | 2015/2030/<br>2045/2060 |  |
| Cypress Well                               | N20           | Pump House & Chemical feed Building   | 1974            | CMU Block                       | 362   | Unknown | 2015/2030/<br>2045/2060 |  |
| Poker Lane Well                            | N32A, B and C | Pump Control & Chemical Feed Building | 1990            | CMU Block                       | 904   | Unknown | 2015/2030/<br>2045/2060 |  |
| North Antelope Well                        | N35           | Pump Control & Chemical feed Building | 2002            | CMU Block (Split Face)          | 640   | 2002    | 2017/2032/<br>2047      |  |
| Verner Avenue Well                         | N36           | Pump House & Chemical Feed Building   | 2010            | CMU Block (Split Face)          | 1,260 | 2010    | 2025/2040/<br>2055      |  |
| AWD Infiltration Wells Monitoring Building | N/A           | Monitoring Building                   | 1960's          | CMU Block                       | 600   | Unknown | 2015/2030/<br>2045/2060 | Building will most likely be demolished. |
| Old AWD Admin. Building                    | N/A           | Office Building                       | 1960's          | CMU Block                       | 3,100 | Unknown | 2016/2031/<br>2046/2061 |  |
| Maintenance and Operations Building        | N/A           | Office Building                       | 1960's/<br>2000 | Metal                           | 4,400 | 2002    | 2017/2032/<br>2047      |  |

|   |     |                                       |               |                        |        |         |                         |   |
|---|-----|---------------------------------------|---------------|------------------------|--------|---------|-------------------------|---|
| Maintenance and Operations Storage Building         | N/A | Storage Building/ Carport             | 1960's        | Metal                  | 1,300  | Unknown | 2016/2031/<br>2046/2061 |   |
| Antelope Booster Pump Station/Shop                  | N/A | Building                              | 1999          | CMU Block              | 11,600 | 1999    | 2014/2029/<br>2044/2059 | A detailed price quote has been obtained from River City Painting, Inc.   |
| Demonstration Garden - Bathroom, Gazebo and Kitchen | N/A | Buildings                             | 2000          | CMU Block (Split Face) | ??     | 2000    | 2015/2030/<br>2045/2060 |   |
| Enterprise/Northrop Booster Pump Station            | N/A | Pump Station & Chemical Feed Building | 2006          | CMU Block (Split face) | 3,360  | 2006    | 2021/2036/<br>2051      |   |
| Administration Building                             | N/A | Office Building                       | 1978          | CMU Block (Comb Face)  | 17,854 | Unknown | 2012/2027/<br>2042/2057 | Building exterior is scheduled to be painted in 2012. A detailed price quote has been obtained from River City Painting, Inc. |
| Corp. Yard and Field Operations                     | N/A | Office Building                       | 1970/<br>1988 | CMU Block              | 12,000 | Unknown | 2016/2031/<br>2046/2061 | A detailed price quote has been obtained from River City Painting, Inc.   |
| Corp. Yard and Field Operations                     | N/A | Storage Garage                        | 1988          | CMU Block              | 400    | Unknown | 2016/2031/<br>2046/2061 | See above.  |
| Watt/Elkhorn Booster Pump Station                   | N/A | Pump Station & Chemical Feed Building | 2000          | CMU Block (Comb Face)  | 1,925  | 2000    | 2015/2030/<br>2045/2060 |   |

**NOTES:**

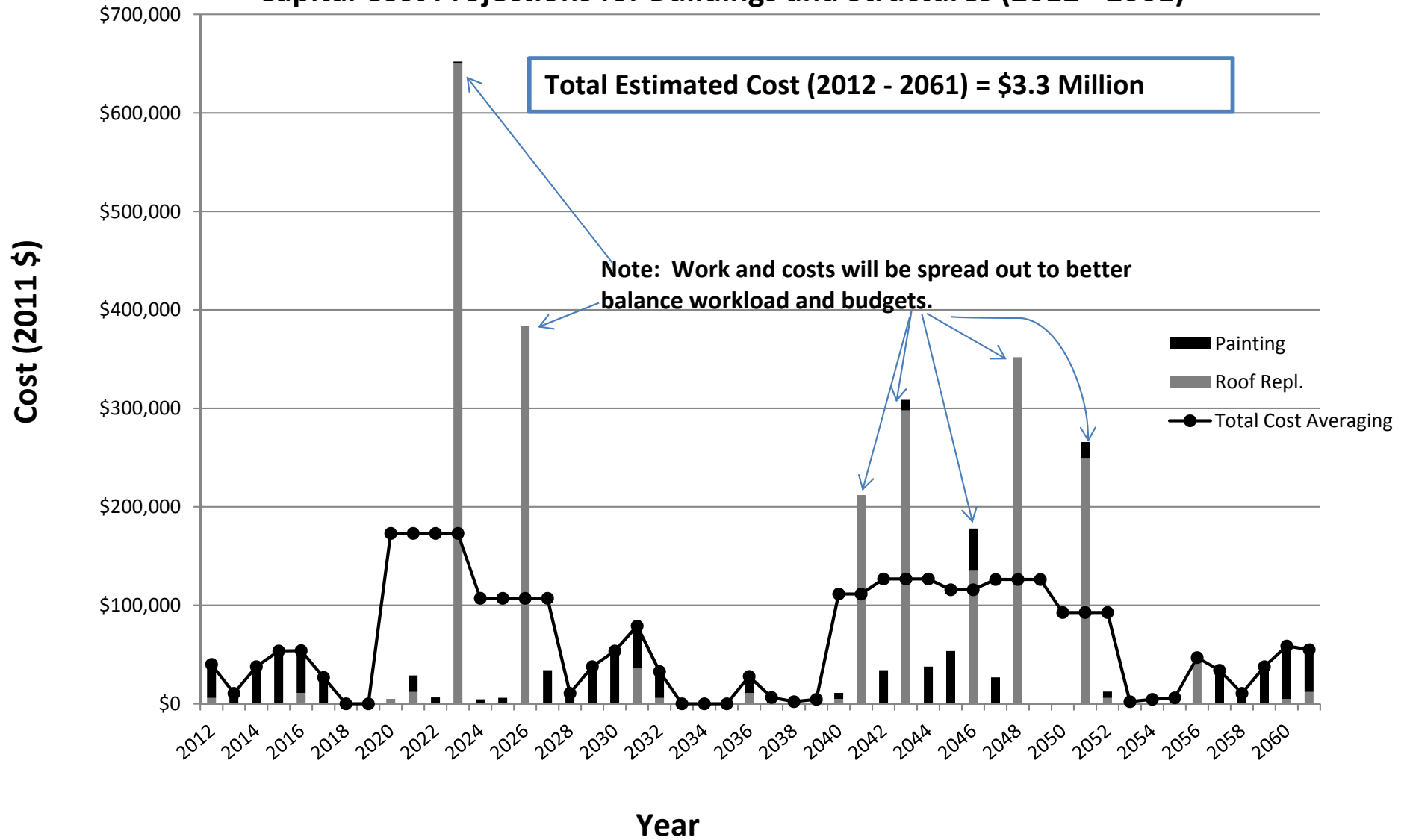
<sup>1</sup> Existing buildings at the Becerra/Marconi Well (#42) and the Gilman/SMUD Station Well (#44) are not included in this table as they are scheduled to be demolished.

<sup>2</sup> Re-painting of building exteriors is recommended every 15 years. Building interiors, if painted at all, require less frequent re-painting and costs are considered to be incidental and are not included in this report.

## **CAPITAL COSTS FOR BUILDINGS/STRUCTURES**

Capital costs for building and structure roof replacements and painting have been projected out 50 years (2012 – 2061) and are shown in Figure 1. The cost data is also included in tabular form in Appendix C. As noted, over the entire 50 year period, total capital cost expenditures are estimated at approximately \$3.3 million (in 2011 \$).

**Figure 1**  
**Capital Cost Projections for Buildings and Structures (2012 - 2061)**



## **PLAN UPDATES**

Review and reassessment of the *Buildings and Structures Asset Management Plan* is recommended in at least 5 to 7 year intervals. It is recognized that new information may be made available in the future that might affect the need for repair and/or replacement.



## CONCLUSIONS AND RECOMMENDATIONS

- This *Buildings and Structures Asset Management Plan* provides an inventory of the District's existing buildings and structures.
- This BSAMP provides a tool for communication between the Board and Staff to identify buildings in need of maintenance, repair and/or replacement.
- This BSAMP identifies probable costs associated with needed building and structure capital replacement items (roofing and painting) but does not prescribe any funding mechanisms.
- The estimated capital cost over the next 50 years for the largest capital cost items (roof replacement and painting) necessary to properly maintain the District's existing buildings and structures is approximately \$3.3 million (in 2011 \$).
- This Plan will be reviewed and revised periodically as additional field and other information becomes available.