State of Nevada
Department of Conservation & Natural Resources
Division of State Parks
Old Las Vegas Mormon Fort State Historic Park
Facility Condition Analysis

OLD LAS VEGAS MORMON FORT
STATE HISTORIC PARK
500 East Washington Ave.
Las Vegas, Nevada 89101

Site Number: 9913
STATE OF NEVADA PUBLIC WORKS BOARD
FACILITY CONDITION ANALYSIS

Report Printed in March 2011
State of Nevada
Department of Conservation & Natural Resources
Division of State Parks
Old Las Vegas Mormon Fort State Historic Park
Facility Condition Analysis

The Facility Condition Analysis Program was created under the authority found in NRS 341.201. The State Public Works Board develops this report using cost estimates based on contractor pricing which includes materials, labor, location factors and profit and overhead. The costs of project design, management, special testing and inspections, inflation and permitting fees are not included. Cost estimates are derived from the R.S. Means Cost Estimating Guide and from comparable construction costs of projects completed by SPWB project managers.

The deficiencies outlined in this report were noted from a visual survey. This report does not address routine maintenance needs. Recommended projects do not include telecommunications, furniture, window treatments, space change, program issues, or costs that could not be identified or determined from the survey and available building information. If there are buildings without projects listed, this indicates that only routine maintenance needs were found. This report considers probable facility needs for a 10 year planning cycle.

This report is not a guarantee of funding and should not be used for budgeting purposes. This report is a planning level document for agencies and State Public Works Board to assess the needs of the Building and/or Site and to help support future requests for ADA upgrades / renovations, Capital Improvement Projects and maintenance. The final scope and estimate of any budget request should be developed by a qualified individual. Actual project costs will vary from those proposed in this report when the final scope and budget are developed.

Establishing a Facility Condition Needs Index (FCNI) for each building

The FCA reports identify maintenance items and establish construction cost estimates. These costs are summarized at the end of the report and noted as construction costs per square foot. A FCNI is commonly used by facility managers to make a judgment whether to recommend whole replacement of facilities, rather than expending resources on major repairs and improvements. The FCNI is a ratio between the proposed facility upgrade costs and facility replacement costs (FRC). Those buildings with indices greater than .60 or 60% are recommended to be considered for complete replacement.

Class Definitions

**PRIORITY CLASS 1 - Currently Critical (Immediate to Two Years)**

Projects in this category require immediate action to return a facility to normal operation, stop accelerated deterioration, correct a fire/life safety hazard, or correct an ADA requirement.

**PRIORITY CLASS 2 - Necessary - Not Yet Critical (Two to Four Years)**

Projects in this category include conditions requiring appropriate attention to preclude predictable deterioration or potential downtime and the associated damage or higher costs if deferred further.

**PRIORITY CLASS 3 - (Four to Ten Years)**

Projects in this category include items that represent a sensible improvement to existing conditions. These items are not required for the most basic function of a facility; however, Priority 3 projects will either improve overall usability and/or reduce long-term maintenance.
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<th>Building Name</th>
<th>Sq. Feet</th>
<th>Yr. Built</th>
<th>Survey Date</th>
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<th>Cost to Repair: P2</th>
<th>Cost to Repair: P3</th>
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**Report Totals:****

- Squ. Feet: 8,356
- Yr. Built: 1
- FCNI: 31%
## Table of Contents

<table>
<thead>
<tr>
<th>Building Name</th>
<th>Index #</th>
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<tbody>
<tr>
<td>OLD LAS VEGAS MORMON FORT STATE PARK</td>
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<tr>
<td>MORMOM FORT SOUTH RESTROOM</td>
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The Old Las Vegas Mormon Fort State Historic Park is located in downtown Las Vegas, at the intersection of Las Vegas Boulevard and East Washington Avenue. The first permanent non-native settlers in the Las Vegas Valley were a group of Mormon missionaries who built an adobe fort along Las Vegas Creek in 1855. They successfully farmed the area by diverting water from the creek. Today, the park includes a remnant of the original adobe fort, which serves as a museum with interpretive displays. The Park contains re-creations of many historic features. Historic interpretation is and will remain the focus of the park. There is also a Visitor's Center, a new mostly ADA compliant restroom and a paved parking area with ADA accessible parking spaces and route of travel to the Visitor's Center. The park is served by City water and sewer, and does not have any natural gas services. The site is fully fenced and well maintained.

**PRIORITY CLASS 1 PROJECTS**

**Total Construction Cost for Priority 1 Projects:** $138,500

**Currently Critical**

**Immediate to Two Years**

**ADA SIGNAGE**

The Americans with Disabilities Act (ADA) provides for accessibility to sites and services for people with physical limitations. The criteria includes: sign mounting heights and locations; character heights and proportions; raised and Braille characters/pictograms; and sign contrast and finish. The signage in this facility does not comply with this criteria. This project would provide funding for purchase and installation of ADA signage including directional signage from parking to accessible building entrances. NRS 338.180, IBC - 2006, ICC/ANSI A117.1 - 2003 and the most current version of the Americans with Disabilities Act Accessible Guidelines (ADAAG) were used as a reference for this project.

**Project Index #: 9913ADA3**

**Construction Cost:** $2,500

**ADA SITE IMPROVEMENTS**

The Americans with Disabilities Act (ADA) provides for accessibility to sites and services for people with physical limitations. Access to the various features throughout the site is necessary to comply with ADA accessibility requirements. This project would provide for an accessible path of travel to the adobe fort, tower, group use area and to a platform to view the battle re-enactments and other performances on the upper portion of the site. This will require regrading, placement of P.C. concrete, signage, ramps, handrails, a concrete viewing platform and any other necessary upgrades. The 2006 IBC, ICC/ANSI A117.1 - 2003 and the most current version of the Americans With Disabilities Act Accessible Guidelines (ADAAG) were used as a reference for this project.

This project or a portion thereof was previously recommended in the FCA report dated 10/15/2003. It has been amended accordingly to reflect conditions observed during the most recent survey date of 02/01/2011.

**Project Index #: 9913ADA1**

**Construction Cost:** $100,000

**FENCE UPGRADE**

The landscape fence on the south side of the site is not tall enough to keep people from climbing over it. Vandals and thieves have accessed the property by climbing over the fence and it is recommended to add height to the fence to prevent this. This project would provide for adding concrete masonry units to the existing fence to raise the height of the fence by 3 feet.

**Project Index #: 9913SEC1**

**Construction Cost:** $8,000

**GROUP USE AREA IMPROVEMENTS**

The group use area is not ADA compliant and is not functional as is. This area should be scheduled for improvements. Currently, the picnic tables are under wooden grape vine trellises. The tables are also worn and deteriorated and there are no ADA tables or access. This project would provide for the purchase and installation of 10 new picnic tables including one accessible table, a new shade ramada to cover all of the tables and flatwork to provide ADA access between the new tables and the restroom.

**Project Index #: 9913ADA2**

**Construction Cost:** $25,000
TREE REMOVAL

There are two Mulberry trees that have reached the end of their expected lives and should be removed. The trees are adjacent to the Historic Fort Museum which would incur extensive damage if one of these trees fell on it. Previously, a similar tree fell into the road and caused an emergency road closure and removal of the fallen tree. This project would provide for removal of the two trees next to the Museum by a licensed tree removal company and a survey of the site to determine whether any other trees should be removed.

PRIORITY CLASS 2 PROJECTS

ASPHALT PAVING INSTALLATION

The access road from the parking lot to the Maintenance Shop and the parking area in front of the Maintenance Shop are not paved. This project would provide asphalt cement paving for a 10’ wide access road and paving the parking area at the maintenance shop. The estimate includes grading, 6” base, compaction and installation of 4” thick asphalt cement paving. A drainage swale should be incorporated into the access road at the slope going down to the parking lot.

FOG / CRACK SEAL ASPHALT PAVING

It is important to maintain the asphalt concrete paving on the site. This project would provide for minor crack filling and fog sealing of the paved parking lot. Striping is included in this estimate. This project should be scheduled on a 5 year cyclical basis to maintain the integrity of the paving and prevent premature failure. 25,000 square feet of asphalt area was used to generate this estimate.

This project or a portion thereof was previously recommended in the FCA report dated 10/15/2003. It has been amended accordingly to reflect conditions observed during the most recent survey date of 02/01/2011.

GRADING AT BONEYARD AREA

The site has a drainage problem in the bone yard area on the northwest side of the site. The existing grade does not properly slope towards the storm drain. Water accumulates in several areas adjacent to the drain creating a water and mud problem during inclement weather. This project would provide for grading in this area to slope the grade towards the drain.

WATER FEATURE REPAIRS

The man made creek and pond on the site are deteriorating and due for repairs. They are made of free-formed concrete to direct and collect the water. The concrete is settling and shifting and has significant cracking. The cracks allow water to seep into the ground requiring the park to increase their water consumption from the city. The creek and pond have not been equipped with a sufficient pump and filter which have allowed debris and trash to build up and generally to cloud the water. This project would provide for repairing the concrete and cleaning up the creek and pond. The pump and filter equipment will be addressed in the Pump House projects.
PROJECT CONSTRUCTION COST TOTALS SUMMARY:

Priority Class 1: $138,500
Priority Class 2: $60,250
Priority Class 3: $0

Grand Total: $198,750
MORMON FORT SOUTH RESTROOM

SPWB Facility Condition Analysis - 2900
Survey Date: 2/1/2011

MORMON FORT SOUTH RESTROOM
BUILDING REPORT

The Mormon Fort South Museum is a concrete masonry unit and wood framed structure with a single-ply roofing system on a concrete foundation. It provides Men's and Women's restroom facilities and is mostly ADA compliant. There is a small electric forced air unit in the attic space above. The building is well maintained.

PRIORITY CLASS 1 PROJECTS
Currently Critical
Total Construction Cost for Priority 1 Projects: $900

ADA SIGNAGE
Americans with Disabilities Act (ADA) regulations pertaining to building access has established building signage criteria for permanent spaces in buildings. The criteria includes: sign mounting heights and locations; character heights and proportions; raised and Braille characters/pictograms; and sign contrast and finish. The signage in this facility does not comply with this criteria. It is recommended that applicable signage be installed where required. NRS 338.180, IBC - 2006, ICC/ANSI A117.1 - 2003 and the most current version of the Americans with Disabilities Act Accessible Guidelines (ADAAG) were used as a reference for this project.

PRIORITY CLASS 2 PROJECTS
Necessary - Not Yet Critical
Total Construction Cost for Priority 2 Projects: $9,700

COUNTERTOP MAINTENANCE
The concrete countertop sealant is damaged and reaching the end of its useful life. It is recommended that the concrete be stripped and re-sealed in order to extend the concretes' useful life. This project would provide for stripping the concrete and applying a new coat of sealant in the next 2-3 years.

EXTERIOR FINISHES
It is important to maintain the finish, weather resistance and appearance of the building. This project would provide funding to protect the exterior of the building excluding the roof. Included in the cost are cleaning and sealing the concrete masonry units, painting or sealing the exposed wood and caulking of the windows, flashing, fixtures and all other penetrations. It is recommended that the building be sealed and caulked in the next 2-3 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure.

FLOORING MAINTENANCE
The concrete floor sealant is damaged and reaching the end of its useful life. It is recommended that the concrete be stripped and re-sealed in order to extend the concretes' useful life. This project would provide for stripping the concrete and applying a new coat of sealant in the next 2-3 years.

INTERIOR FINISHES
The interior finishes are in fair condition. It is recommended that the interior concrete masonry unit walls are cleaned and sealed at least once in the next 2-3 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure. Prior to painting, all surfaces should be repaired and prepped. An epoxy-based paint should be utilized in wet areas for durability.
OCCUPANCY SENSOR INSTALLATION

There are no occupancy sensors installed in the building to control lighting. It is recommended to install sensors in order to reduce energy costs. Occupancy sensors will be installed in each restroom. This project provides for purchase and installation of 2 sensors.

BUILDING INFORMATION:

- Gross Area (square feet): 600
- Year Constructed: 2005
- Exterior Finish 1: 100% Masonry
- Exterior Finish 2: 0%
- Number of Levels (Floors): 1
- Basement?: No
- IBC Occupancy Type 1: 100% B
- IBC Occupancy Type 2: 0%
- Construction Type: Concrete Masonry Units & Steel
- IBC Construction Type: I-B
- Percent Fire Suppressed: 0%

PROJECT CONSTRUCTION COST TOTALS SUMMARY:

- Priority Class 1: $900
- Priority Class 2: $9,700
- Priority Class 3: $0
- Grand Total: $10,600

- Project Construction Cost per Square Foot: $17.67
- Total Facility Replacement Construction Cost: $90,000
- Facility Replacement Cost per Square Foot: $150
- FCNI: 12%

Construction Cost: $500
The Mormon Fort Pump House is a concrete masonry unit and steel framed structure with a metal roofing system on a concrete foundation which is partially below grade and accessed by a concrete stairway. It contains the water pumping system for the stream and pond feature in the park. The equipment is basically designed for a swimming pool and has been maintenance intensive according to staff. The facility is well maintained.

**PRIORITY CLASS 1 PROJECTS**

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<th>Total Construction Cost for Priority 1 Projects:</th>
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<tr>
<td>Currently Critical</td>
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**BACKFLOW PREVENTER INVESTIGATION**

There is a backflow preventer on the main water line coming into the building. It is leaking and should be replaced immediately. There may be a pressure problem with the incoming water main. This may be the cause of the broken prevention valve and should be analyzed by a licensed plumber. This project would provide for employing a licensed plumber to replace the backflow preventer and to analyze the system.

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**PRIORITY CLASS 2 PROJECTS**

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<td>Necessary - Not Yet Critical</td>
<td>Two to Four Years</td>
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**INTERIOR FINISHES**

The interior finishes are in fair condition. It is recommended that the interior walls be painted at least once in the next 2-3 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure. Prior to painting, all surfaces should be repaired and prepped. An epoxy-based paint should be utilized in wet areas for durability.

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**PUMP AND FILTER REPLACEMENT**

There is a man made stream with a pond at the bottom that is due for a new water pump and filter. The existing pumps and filters were designed for a swimming pool application, not a large stream and pond with continuously running pumps. It is recommended to replace the pumps with a new 5 H.P. fountain water pump system including a large solids filter and a microfilter. This project includes removal and disposal of the existing pumps and filters and all required connections to utilities.

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**PRIORITY CLASS 3 PROJECTS**

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<td>Long-Term Needs</td>
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**EXTERIOR FINISHES**

It is important to maintain the finish, weather resistance and appearance of the building. This project would provide funding to protect the exterior of the building excluding the roof. Included in the cost is sanding, priming and painting the exposed wood features, repairing and sealing the stone and masonry work and caulking of the flashing, fixtures and all other penetrations. It is recommended that the building be painted and sealed in the next 5-7 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure.

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BUILDING INFORMATION:

- Gross Area (square feet): 140
- Year Constructed: 1999
- Exterior Finish 1: 100 % Stone Masonry
- Exterior Finish 2: 0 %
- Number of Levels (Floors): 1  Basement? No
- Exterior Finish 1: 0 % U
- IBC Occupancy Type 1: 0 %
- IBC Occupancy Type 2: 0 %
- Construction Type: Concrete Masonry Units
- IBC Construction Type: V-B
- Percent Fire Suppressed: 0 %

PROJECT CONSTRUCTION COST TOTALS SUMMARY:

- Priority Class 1: $1,000  Project Construction Cost per Square Foot: $70.71
- Priority Class 2: $8,200  Total Facility Replacement Construction Cost: $21,000
- Priority Class 3: $700  Facility Replacement Cost per Square Foot: $150
- Grand Total: $9,900  FCNI: 47%
The Mormon Fort Tower is an adobe masonry re-creation of a portion of the old fort. It has a wood framed roofing system and a dirt floor. It is open to the public for tours and is in good shape.

**EXTERIOR/ INTERIOR FINISHES**

It is important to maintain the finish, weather resistance and appearance of the building. This project would provide funding to protect the exterior and interior of the building excluding the roof. Included in the cost is cleaning and repairing the brick masonry as needed and caulking of any penetrations. It is recommended that the building be repaired and caulked in the next 2-3 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure.

**BUILDING INFORMATION:**

- **Gross Area (square feet):** 200
- **Year Constructed:** 1999
- **Exterior Finish 1:** 100% Adobe Masonry
- **Exterior Finish 2:** 0%
- **Number of Levels (Floors):** 2
- **Basement:** No
- **IBC Occupancy Type 1:** 100% U
- **IBC Occupancy Type 2:** %
- **Construction Type:** Adobe Masonry
- **IBC Construction Type:** V-B
- **Percent Fire Suppressed:** 0%

**PROJECT CONSTRUCTION COST TOTALS SUMMARY:**

- **Priority Class 1:** $0
- **Priority Class 2:** $1,000
- **Priority Class 3:** $0

- **Project Construction Cost per Square Foot:** $5.00
- **Total Facility Replacement Construction Cost:** $20,000
- **Facility Replacement Cost per Square Foot:** $100
- **Grand Total:** $1,000

- **FCNI:** 5%
The Mormon Fort Restroom is a brick masonry and wood framed structure with a foam roofing system on a concrete foundation. It is located on the west side of the site adjacent to the fort tower and gazebo area. The restroom is identified as an ADA accessible restroom but does not have a route of travel to the facility from the site attractions.

## PRIORITY CLASS 1 PROJECTS

### DUAL LEVEL DRINKING FOUNTAIN INSTALLATION

- Project Index #: 2398ADA1
- Construction Cost: $3,000

This building contains a water fountain. The 2006 IBC Section 1109.5 states where a water fountain is provided, at least half should be accessible. This project would provide funding for the purchase and installation of a new accessible fixed high/low ADA drinking fountain.

NRS 338.180, IBC - 2006, ICC/ANSI A117.1 - 2003 and the most current version of the Americans with Disabilities Act Accessible Guidelines (ADAAG) were used as a reference for this project.

## PRIORITY CLASS 2 PROJECTS

### EXTERIOR FINISHES

- Project Index #: 2398EXT1
- Construction Cost: $1,200

It is important to maintain the finish, weather resistance and appearance of the building. This project would provide funding to protect the exterior of the building excluding the roof. Included in the cost is power washing, priming and painting the stucco walls and caulking of the windows, flashing, fixtures and all other penetrations. It is recommended that the building be painted in the next 2-3 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure.

### INTERIOR FINISHES

- Project Index #: 2398INT1
- Construction Cost: $1,200

The interior finishes are in fair condition. It is recommended that the painted interior walls be painted at least once in the next 2-3 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure. Prior to painting, all surfaces should be repaired and prepped. An epoxy-based paint should be utilized in wet areas for durability.

### LIGHTING UPGRADE

- Project Index #: 2398ENR1
- Construction Cost: $360

The existing lighting fixtures are the older fluorescent type, and are not energy efficient. This project will upgrade fixtures to higher efficiency units with a longer life cycle. F28 T-8 lamps with electronic ballasts are suggested. Occupancy sensors will be installed in the restrooms for additional savings. Any electrical wiring upgrades are not included in this estimate.
BUILDING INFORMATION:

Gross Area (square feet): 240
Year Constructed: 1999
Exterior Finish 1: 100 % Painted Brick Mason
Exterior Finish 2: 0 %
Number of Levels (Floors): 1     Basement? No
IBC Occupancy Type 1: 100 % B
IBC Occupancy Type 2: %
Construction Type: Brick Masonry & Wood
IBC Construction Type: V-B
Percent Fire Suppressed: 0 %

PROJECT CONSTRUCTION COST TOTALS SUMMARY:

<table>
<thead>
<tr>
<th>Priority Class 1</th>
<th>Project Construction Cost per Square Foot:</th>
<th>$24.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority Class 2</td>
<td>Total Facility Replacement Construction Cost:</td>
<td>$30,000</td>
</tr>
<tr>
<td>Priority Class 3</td>
<td>Facility Replacement Cost per Square Foot:</td>
<td>$125</td>
</tr>
<tr>
<td>Grand Total:</td>
<td>FCNI:</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
MORMON FORT VEHICLE SHOP
BUILDING REPORT

The Mormon Fort Vehicle Shop is a concrete masonry unit and steel framed structure with a metal roofing system on a concrete foundation. It contains a large single bay for equipment and vehicle repair, storage areas and office space with a restroom which is mostly ADA compliant. The heating and cooling is provide by a split system with 2 exterior ground mounted AC condensers and a small electric forced air unit mounted in a closet in the shop area. The facility is lacking a fire alarm and sprinkler system. The building is well maintained.

PRIORITY CLASS 1 PROJECTS

FIRE ALARM SYSTEM INSTALLATION
This building is lacking a fire detection and alarm system. It is recommended that a fire detection and alarm system be installed. When completed, the new system will provide visual, as well as audible notification, in accordance with ADA requirements located in ICC/ANSI A117.1- 2006 Section 7 and the 2006 International Fire Code.

FIRE SUPPRESSION SYSTEM INSTALLATION
The building is partly a B occupancy per the 2006 IBC. Pursuant to the Nevada State Fire Marshal Regulation, NAC 477.915 (c) states, that every building owned or occupied by the state which is designated as a B occupancy, or has a floor area greater than 12,000 square feet on any floor or 24,000 square feet on all floors or is an R-1 occupancy, must have sprinklers installed when the building is remodeled or an addition is proposed. This project would provide funding for the installation of a fire sprinkler system and backflow prevention in the event the building is remodeled or an addition is undertaken.

SAFETY CABINETS
The shop contains many different oils, paints, stains and other hazardous products on open shelves and work benches. This does not meet OSHA standards for hazardous materials containment. This project would provide for the purchase of two hazardous materials storage containers and installing placards on the building exterior in accordance with OSHA 1910.106 (d).

PRIORITY CLASS 2 PROJECTS

EXTERIOR FINISHES
It is important to maintain the finish, weather resistance and appearance of the building. This project would provide funding to protect the exterior of the building excluding the roof. Included in the cost is power washing, priming and painting the stucco, sealing the concrete masonry units and caulking of the windows, flashing, fixtures and all other penetrations. It is recommended that the building be painted in the next 3-4 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure.
GUTTER INSTALLATION
The building does not have gutters or downspouts to control the runoff from the roof. The water currently sheet drains off the roof causing extensive erosion to the built-up dirt slope around the foundation. This will eventually lead to failure of the foundation undermining the integrity of the entire structure. This project would provide funding for the installation of a seamless gutter and downspout system for the building.

INTERIOR FINISHES
The interior finishes are in fair condition. It is recommended that the interior walls and ceilings be painted at least once in the next 2-3 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure. Prior to painting, all surfaces should be repaired and prepped. An epoxy-based paint should be utilized in wet areas for durability.

LIGHTING UPGRADE
The existing lighting fixtures are the older fluorescent type, and are not energy efficient. This project will upgrade fixtures to higher efficiency units with a longer life cycle. F28 T-8 lamps with electronic ballasts are suggested. Occupancy sensors will be installed in the restroom and office areas for additional savings. Any electrical wiring upgrades are not included in this estimate.

SECURITY SYSTEM INSTALLATION
The building does not have a security system. This project recommends motion detection and window and door sensors be installed and interfaced with the sitewide security system.

BUILDING INFORMATION:

<table>
<thead>
<tr>
<th>Gross Area (square feet):</th>
<th>1,176</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year Constructed:</td>
<td>1999</td>
</tr>
<tr>
<td>Exterior Finish 1:</td>
<td>100 % Painted Stucco / EIFS</td>
</tr>
<tr>
<td>Exterior Finish 2:</td>
<td>0 %</td>
</tr>
<tr>
<td>Number of Levels (Floors):</td>
<td>1</td>
</tr>
<tr>
<td>Basement?</td>
<td>No</td>
</tr>
<tr>
<td>IBC Occupancy Type 1:</td>
<td>60 % S-I</td>
</tr>
<tr>
<td>IBC Occupancy Type 2:</td>
<td>40 % B</td>
</tr>
<tr>
<td>Construction Type:</td>
<td>Concrete Masonry Units &amp; Steel</td>
</tr>
<tr>
<td>IBC Construction Type:</td>
<td>V-B</td>
</tr>
<tr>
<td>Percent Fire Suppressed:</td>
<td>0 %</td>
</tr>
</tbody>
</table>

PROJECT CONSTRUCTION COST TOTALS SUMMARY:

| Priority Class 1: | $17,936 | Project Construction Cost per Square Foot: | $33.65 |
| Priority Class 2: | $21,640 | Total Facility Replacement Construction Cost: | $265,000 |
| Priority Class 3: | $0     | Facility Replacement Cost per Square Foot: | $225 |
| Grand Total:      | $39,576 | FCNI: | 15% |
The Historic Fort Museum is an adobe and wood framed structure and is the only original remnant on the site. It contains interpretive displays that are open to public. The building is not ADA accessible and is in good shape considering it's age.

**PRIORITY CLASS 1 PROJECTS**

**Total Construction Cost for Priority 1 Projects:** $4,000

**Currently Critical**

**Immediate to Two Years**

**FIRE ALARM SYSTEM INSTALLATION**

This building is lacking a fire detection and alarm system. It is recommended that a fire detection and alarm system be installed. When completed, the new system will provide visual, as well as audible notification, in accordance with ADA requirements located in ICC/ANSI A117.1-2006 Section 7 and the 2006 International Fire Code. Due to the historical nature of the building, this project is subject to review and approval from the State Historical Preservation Office.

**Construction Cost** $4,000

Project Index #: 1905SFT1

**PRIORITY CLASS 2 PROJECTS**

**Total Construction Cost for Priority 2 Projects:** $70,000

**Necessary - Not Yet Critical**

**Two to Four Years**

**ELECTRICAL UPGRADE**

The building is equipped with a knob and tube electrical system. This type of system is no longer used and replacement parts are impossible to find. The main disadvantage of this electrical system is that there is no safety grounding conductor. Also, as the cotton and rubber wire insulation ages, it becomes dry and brittle and becomes easily damaged. It is recommended the entire system be upgraded to a modern electrical system. The existing knob and tube system could remain in place to display the historical nature of the Museum. Due to the historical nature of the building, this project is subject to review and approval from the State Historical Preservation Office.

**Construction Cost** $10,000

Project Index #: 1905ELE1

**EXTERIOR/ INTERIOR FINISHES**

It is important to maintain the finish, weather resistance and appearance of the building. This project would provide funding to protect the exterior and interior of the structure. Included in the cost is basic adobe maintenance by the staff as well as funds for adobe specialists to come out once a year. These costs should be sufficient to allow the specialists to spend two days per year at the Museum over the next four years. This project should be scheduled on a cyclical basis to maintain the integrity of the Museum. Due to the historical nature of the building, this project is subject to review and approval from the State Historical Preservation Office.

**Construction Cost** $25,000

Project Index #: 1905EXT1

**ROOF REPLACEMENT**

The hot-mopped tar roof on this building was in poor condition at the time of the survey. The statewide roofing program has set the useful life of an average roof at 20 years. The temperature fluctuations throughout the year, consistent wind which blows sand and dirt on to the roof and constant exposure to the sun are contributing factors to wear and deterioration. It is recommended that this building be re-roofed and fitted with rain gutters in the next 2-3 years to be consistent with the roofing program. Due to the historical nature of the building, this project is subject to review and approval from the State Historical Preservation Office.

**Construction Cost** $15,000

Project Index #: 1905EXT2

31-Mar-11
SECURITY SYSTEM INSTALLATION

The building does not have a security system. This project recommends motion detection and window and door sensors be installed and interfaced with the sitewide security system. Due to the historical nature of the building, this project is subject to review and approval from the State Historical Preservation Office.

Project Index #: 1905SEC1
Construction Cost $5,000

WINDOW REPLACEMENT

The windows are older single pane construction in a wooden frame. These older windows are drafty and the wooden frames have deteriorated significantly. This project recommends replacing the windows with dual pane units. This estimate is for the replacement of 10 units including wooden frames. Additional costs are included due to the historic nature of the building and that the window frames will need to be replicated based on the existing windows. Removal and disposal of the existing windows is included in this estimate. Due to the historical nature of the building, this project is subject to review and approval from the State Historical Preservation Office.

Project Index #: 1905EXT3
Construction Cost $15,000

BUILDING INFORMATION:

Gross Area (square feet): 1,000
Year Constructed: 1855
Exterior Finish 1: 100 % Adobe
Exterior Finish 2: %
Number of Levels (Floors): 1  Basement? No
IBC Occupancy Type 1: 100 % A-3
IBC Occupancy Type 2: %
Construction Type: Adobe
IBC Construction Type: V-B
Percent Fire Suppressed: 0 %

PROJECT CONSTRUCTION COST TOTALS SUMMARY:

Priority Class 1: $4,000  Project Construction Cost per Square Foot: $74.00
Priority Class 2: $70,000  Total Facility Replacement Construction Cost: $125,000
Priority Class 3: $0  Facility Replacement Cost per Square Foot: $125
Grand Total: $74,000  FCNI: 59%
The Mormon Fort Visitor's Center is a wood, concrete, and steel-framed structure with a single-ply roofing system on a concrete foundation. It contains a small gift shop, display areas, and staff offices. It has a fire alarm and sprinkler system as well as a security system, but the security system is not adequate according to staff. The building's HVAC system is an all-electric packaged system with collapsible ducting. There are no restrooms present in the building. The facility is mostly ADA compliant and is well maintained.

PRIORITY CLASS 1 PROJECTS

Total Construction Cost for Priority 1 Projects: $31,750

Currently Critical

Immediate to Two Years

<table>
<thead>
<tr>
<th>Project Index #</th>
<th>Construction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1681ADA2</td>
<td>$5,000</td>
</tr>
</tbody>
</table>

ADA RAMP HANDRAIL INSTALLATION

This building has an ADA accessible ramp located on the east side of the building. This ramp is on the accessible path of travel from the accessible parking space to the entrance of the building. The ramp does not have handrails or edge protection which are required for ADA compliance. This project would provide for installing handrails on the ramp including proper returns, gripping surfaces and edge protection to make it fully ADA compliant. NRS 338.180, IBC - 2006, ICC/ANSI A117.1 - 2003 and the most current version of the Americans with Disabilities Act Accessible Guidelines (ADAAG) were used as a reference for this project.

<table>
<thead>
<tr>
<th>Project Index #</th>
<th>Construction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1681ADA1</td>
<td>$750</td>
</tr>
</tbody>
</table>

ADA SIGNAGE

Americans with Disabilities Act (ADA) regulations pertaining to building access has established building signage criteria for permanent spaces in buildings. The criteria includes: sign mounting heights and locations; character heights and proportions; raised and Braille characters/pictograms; and sign contrast and finish. The signage in this facility does not comply with this criteria. It is recommended that applicable signage be installed where required. NRS 338.180, IBC - 2006, ICC/ANSI A117.1 - 2003 and the most current version of the Americans with Disabilities Act Accessible Guidelines (ADAAG) were used as a reference for this project.

<table>
<thead>
<tr>
<th>Project Index #</th>
<th>Construction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1681PLM2</td>
<td>$1,000</td>
</tr>
</tbody>
</table>

BACKFLOW PREVENTER INVESTIGATION

There is a backflow preventer on the main water line coming into the building. It is leaking and should be scheduled for replacement. There may be a pressure problem with the incoming water main. The psi valve is maxed out indicating the pressure is above 100 psi. This may be the cause of the broken prevention valve and should be analyzed by a licensed plumber. This project would provide for employing a licensed plumber to replace the backflow preventer and to analyze the system.

<table>
<thead>
<tr>
<th>Project Index #</th>
<th>Construction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1681SEC1</td>
<td>$25,000</td>
</tr>
</tbody>
</table>

SECURITY UPGRADES

The site and buildings have experienced break-ins in the recent past. The Visitors Center was compromised by breaking a window in the Conference Room. Currently, the windows are not alarmed and the alarm sensors in the building did not detect the intruder quickly. Part of the reason for the delay in detection may have been that some of the motion sensors are not located properly. They are located too high on the walls and some are blocked by displays. This project would provide for upgrading the security system by relocating the existing sensors and alarming the doors and windows. Alternatively, the windows could be provided with an exterior security shutter to prevent vandalism and break-ins.
EXTERIOR FINISHES
It is important to maintain the finish, weather resistance and appearance of the building. This project would provide funding to protect the exterior of the building excluding the roof. Included in the cost are cleaning and sealing the concrete masonry units and caulking of the windows, flashing, fixtures and all other penetrations. It is recommended that the building be sealed and caulked in the next 2-3 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure.

FLOORING MAINTENANCE
The concrete floor sealant is damaged and reaching the end of its useful life. It is recommended that the concrete be stripped and re-sealed in order to extend the concretes’ useful life. This project would provide for stripping the concrete and applying a new coat of sealant in the next 2-3 years.

HVAC DUCTING REPLACEMENT
The existing HVAC system employs a collapsible ducting system. This system makes a lot of noise in such a way that it startles visitors in the building. It is not a system that is appropriate for a museum type setting and it is recommended to install rigid ducting in its place. This project would provide for the removal of the existing ducting and installation of new rigid ducting including attachment to ceiling, supply and return diffusers and balancing by a licensed HVAC contractor.

INTERIOR FINISHES
The interior finishes are in fair condition. It is recommended that the painted interior walls and ceilings be painted at least once in the next 2-3 years and that this project be scheduled on a cyclical basis to maintain the integrity of the structure. Prior to painting, all surfaces should be repaired and prepped. An epoxy-based paint should be utilized in wet areas for durability.

OCCUPANCY SENSOR INSTALLATION
There are no occupancy sensors installed in the building to control lighting. It is recommended to install sensors in order to reduce energy costs. Occupancy sensors will be installed in restrooms, conference rooms, utility rooms and other low occupancy. This project provides for purchase and installation of 6 sensors.

WATER HEATER REPLACEMENT
There is a 5 gallon electric water heater in the building. The average life span of a water heater is eight to ten years. With the passage of time and constant use, this unit is showing signs of wear and should be scheduled for replacement in the next 2-3 years. It is recommended that a new on-demand electric water heater be installed. Removal and disposal of the existing equipment is included in this estimate.
### PRIORITY CLASS 3 PROJECTS

**Four to Ten Years**

**Total Construction Cost for Priority 3 Projects:** $170,000

<table>
<thead>
<tr>
<th>Project Index #</th>
<th>Construction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1681ENR2</td>
<td>$150,000</td>
</tr>
<tr>
<td>1681EXT2</td>
<td>$20,000</td>
</tr>
</tbody>
</table>

#### PHOTOVOLTAIC POWER SYSTEM INSTALLATION

There is no natural gas service to the site. All of the equipment including HVAC and water heating is powered solely by electricity. This makes the building an ideal candidate for photovoltaic power which could be installed on the roof. A photovoltaic power system would eliminate electricity costs and could be fitted with a reverse power meter to sell power back to the electric company. This project would provide for the purchase and installation of a 15 kW photovoltaic system including solar panels, deep cycle solar batteries, a reverse power meter and all associated electrical boxes and hardware to connect it to the main electrical service.

**Project Index #: 1681ENR2**

**Construction Cost:** $150,000

#### PUBLIC ENTRANCE STAIRWAY INSTALLATION

The entrance to the building is often overlooked by visitors and is generally uninviting. Without a stairway from the parking lot to the front door, visitors have a hard time discerning where the entrance to the Visitors Center is. This project would provide for installing a concrete stairway in front of the entrance to the building. The stairway shall be designed to comply with all adopted building codes and the ADA accessibility guidelines.

**Project Index #: 1681EXT2**

**Construction Cost:** $20,000

### BUILDING INFORMATION:

- **Gross Area (square feet):** 5,000
- **Year Constructed:** 2005
- **Exterior Finish 1:** 75% Concrete Masonry U
- **Exterior Finish 2:** 25% Concrete & Metal Sid
- **Number of Levels (Floors):** 1
- **IBC Occupancy Type 1:** 70% A-3
- **IBC Occupancy Type 2:** 30% B
- **Construction Type:** Wood & Steel
- **IBC Construction Type:** I-A
- **Percent Fire Suppressed:** 100%

### PROJECT CONSTRUCTION COST TOTALS SUMMARY:

- **Priority Class 1:** $31,750  
  - **Project Construction Cost per Square Foot:** $55.85
- **Priority Class 2:** $77,500  
  - **Total Facility Replacement Construction Cost:** $1,450,000
- **Priority Class 3:** $170,000  
  - **Facility Replacement Cost per Square Foot:** $290
- **Grand Total:** $279,250  
  - **FCNI:** 19%

### NOTES:

The deficiencies outlined in this report were noted from a visual survey. The costs do not represent the cost of a complete facility renovation or maintenance needs. Recommended projects do not include telecommunications, furniture, window treatment, space change, program issues, relocation, swing space, or costs that could not be identified or determined from the survey and available building information.

Individual projects and costs noted herein may be impacted by new construction materials or methods, agency projects, and pending or proposed Capital Improvement Projects (CIP).

This report was created under the authority found in NRS 341.201 by the State Public Works Board and should be utilized as a planning level document.

### REPORT DEVELOPMENT:

- **State Public Works Board**  
  - 515 E. Musser Street, Suite 102  
  - (775) 684-4141 voice
- **Facilities Condition Analysis**  
  - Carson City, Nevada 89701-4263  
  - (775) 684-4142 facsimile

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Old Las Vegas Mormon Fort State Historical Park - Site #9913
Description: View of area for proposed entrance stairs.

Old Las Vegas Mormon Fort State Historical Park - Site #9913
Description: View of the main and only public entrance walkway / ramp.
Old Las Vegas Mormon Fort State Historical Park - Site #9913
Description: Pond in need of cleaning.

Mormon Fort Visitor’s Center - Building #1681
Description: Exterior of the building / public entrance.
Mormon Fort Visitor’s Center - Building #1681
Description: View of the collapsible ducting.

Mormon Fort Visitor’s Center - Building #1681
Description: Leaking back flow prevention assembly.
Mormon Fort Visitor’s Center - Building #1681
Description: Public entrance.

Historic Fort Museum - Building #1905
Description: Exterior of the building.
Mormon Fort Vehicle Shop - Building #2397
Description: Exterior of the building.

Mormon Fort Vehicle Shop - Building #2397
Description: Interior of the shop area.
Mormon Fort Restroom - Building #2398
Description: Exterior of the building.

Mormon Fort Restroom - Building #2398
Description: Interior of the building.
Mormon Fort Tower - Building #2399
Description: Exterior of the building.

Mormon Fort Pump House - Building #2864
Description: Exterior of the building.
Mormon Fort South Restroom - Building #2900
Description: Exterior / Entrance of the building.

Mormon Fort South Restroom - Building #2900
Description: Interior of the building.