



Admin Services  
Whatcom County  
Library System

Facility Assessment &  
Capital Needs Assessment  
November 2021





5 November 2021

WCLS Administrative Services Building  
Bellingham, WA

### Executive Summary

RMC Architects has been contracted to provide a facilities analysis of the various WCLS Branch Libraries and facilities linked to a capital planning framework to best enable prioritizing and scheduling facility maintenance and operations upgrades, with an opinion of the possible associated costs. All of the WCLS system locations were visited in person with the exception of Point Roberts Library (newest branch) due to COVID-19 Border restrictions. Field observations were linked to WCLS shared existing documentation of each facility and are summarized in each report. We are providing you with an assessment and recommendations in four key areas: Accessibility, Code Compliance, Recommended Maintenance, and any noted Program Deficiencies. Structural Engineers, Mechanical Engineers, and Electrical Engineers have also provided their respective assessments to inform specific building systems.

We note that COVID-19 has changed the way we should manage HVAC strategies. Prior to the COVID-19 pandemic, the State Energy Code prompted an HVAC strategy of reducing ventilation air to the minimum, reducing the energy required to then heat or cool ventilation air. Standard filtration pre-pandemic was MERV-8 filters for office, classroom, and library settings. Now, during the pandemic, the recommended ventilation strategy is to increase ventilation air rates drastically and/or to add MERV-16 HEPA filtration at a minimum. The systems at most of the WCLS branch facilities utilize the minimum outside air for ventilation, and only some had operable windows for additional ventilation air. The best COVID-19 strategy is to increase outside air either via the furnace/AHUs or operable windows, or to increase filtration either at existing furnaces/AHUs or via plug-in detached standing only HEPA filters in a variety of library spaces.

The various recommended Maintenance and Code related conditions are tabulated in the attached excel tables that compare facility condition Expected Useful Life (EUL) durations against the actual respective Branch conditions. These tables are provided to WCLS in a workable format for you to use in the future for both Facility Capital Planning and as a helpful tool for informing/planning with Friends groups or Municipalities that own the structures where WCLS is an operator.

The one-story Administrative Services building is the largest in the system at 15,945 square feet and is owned by WCLS. The northernmost building portion is of an unknown 1960s date, but was formally converted for WCLS with a 1990 addition and includes a later 2006 interior finish upgrade. The facility has some minor Accessibility deficiencies, and several structural and Code-required ventilation conditions needing attention. A number of building systems and finishes are nearing end of expected life and need replacement as well as some recommended infrastructure system upgrades. As this structure is not a primary public-accessed facility, the timing of capital expenditures is more flexible than most branches.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Brad Cornwell', written over a white background.

Brad Cornwell  
RMC Architects

## Consultant Team

|                 |  |   |
|-----------------|--|---|
| Architectural   | RMC Architects<br>1223 Railroad Avenue<br>Bellingham, WA 98225<br>(360) 676-7733                       | Brad Cornwell, AIA<br>Lexie Costic, AIA |
| Structural      | Kingworks Structural Engineers<br>600 Dupont Street, Suite B<br>Bellingham, WA 98225<br>(360) 714-8260 | John (Jack) R. King, PE, SE             |
| Mechanical      | Wood Harbinger<br>929 108th Ave NE, Suite 1000<br>Bellevue, WA 98004<br>(425) 628-6000                 | Nicholas Baker, PE, CCP                 |
| Electrical      | Wood Harbinger<br>929 108th Ave NE, Suite 1000<br>Bellevue, WA 98004<br>(425) 628-6000                 | Sean Bollen, PE                         |
| Cost Estimating | DCW Cost Management<br>815 1st Ave #176<br>Seattle, WA 98104<br>(206) 259-2990                         | Trish Drew, CPE                         |



**Assessment/Recommendations:**

**Accessibility**

1. Minor toilet accessory compliance issues.
2. Major toilet accessory compliance issues.
3. Non-compliant push/pull door compliance.
4. Sink/counter accessibility.
5. Replace non-compliant exit landing & ramp.

**Code Related**

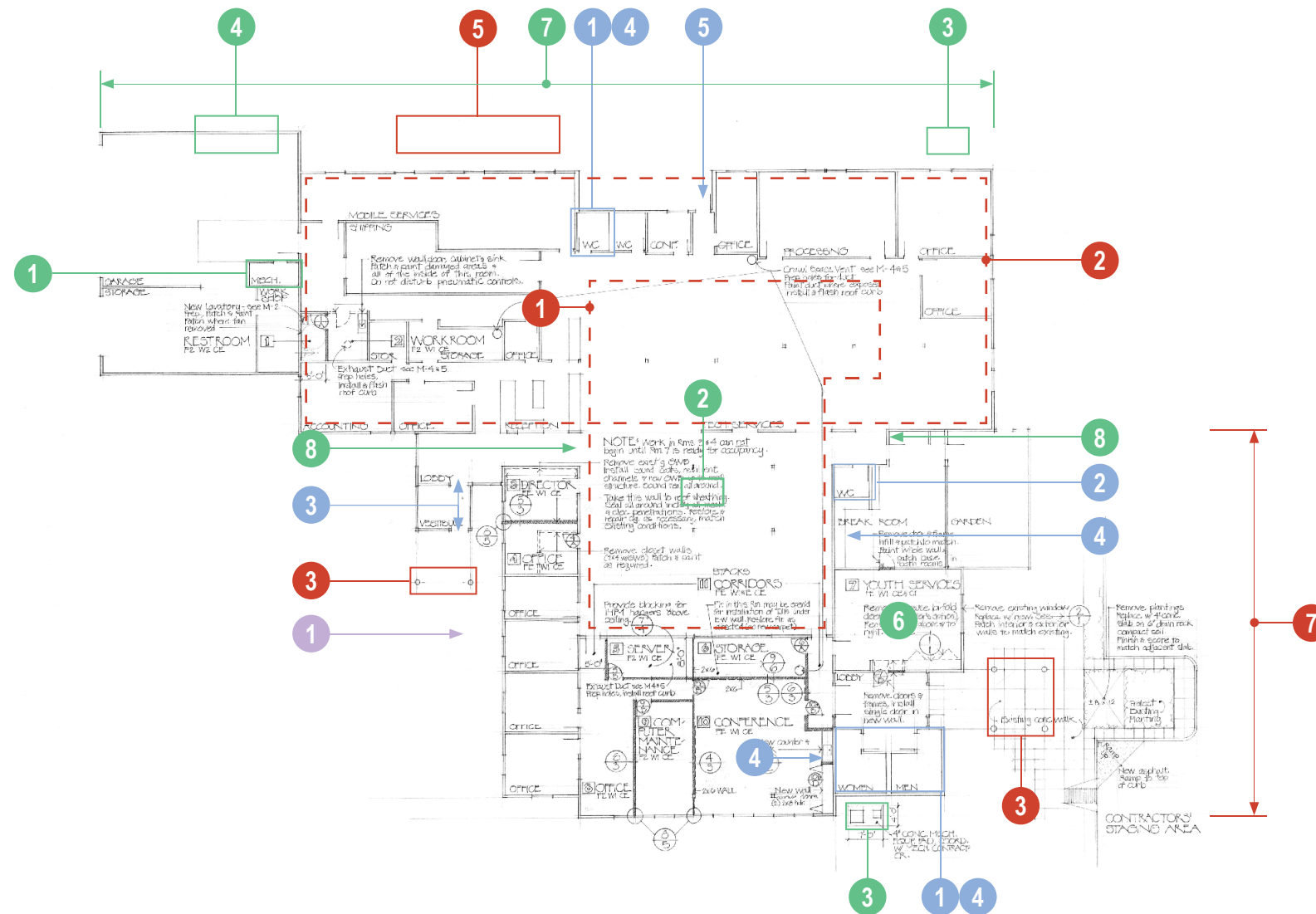
1. Unbraced taller than 5'-9" shelving.
2. Unbraced and unconnected temporary shoring columns/steel corrosion.
3. Steel canopy corrosion repairs.
4. See general non-structural recommendations from Kingworks report.
5. Raise external condensing units above flood-line.
6. Insufficient foundation crawlspace ventilation, repair/restart existing vertical fan system.
7. 1990 addition's attic ventilation from soffits to ridge was blocked post 2011. Building does not have a continuous ceiling vapor barrier. Opportunity exists for condensation against plywood roof sheathing—more investigation recommended.

**Maintenance**

1. Replace boiler.
2. Replace plumbing scope per WH recommendation.
3. Debris management at condensing units.
4. Replace 1990 electrical service with backup power system & generator per WH report.
5. Complete light fixture conversion to LED fixtures and daylighting controls.
6. Replace backup batteries at security panel.
7. Provide extensions to north side downspouts away from building.
8. Replace gable end windows.

**Program Deficiency**

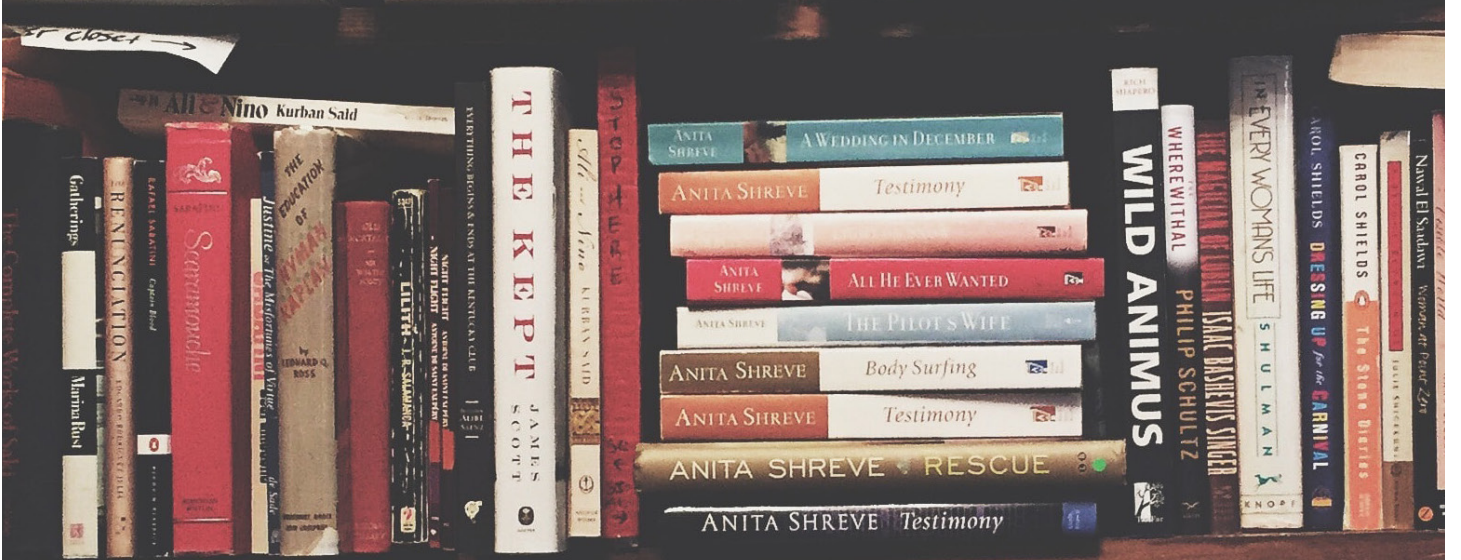
1. Add additional bike racks.



**Note:**

Unknown Original (1960's)  
 1990 Conversion & Addition  
 2006 Interior Finish Upgrade





Project: Whatcom County Library System - Admin Services

RMC#: 2126

Date: 2021-07-02

**Project Data**

Name: Administrative Services

Address: 5205 Northwest Road  
Bellingham, WA 98226

Site Data:

Site Area: 126,760 SF / 2.91 Acres

Provided On-Site Parking: 63

Building Height/Stories: 1 Floor

Building Code:

Occupancy Type: B

Construction Type: V-B

Building Area: 15,945 SF

Sprinklered: No

Cost Inflation Percentage: See Table

Capital Reserves: \$1.00

Reserve Increase Percentage: X%



| Year | %     |      |       |      | Mult    |
|------|-------|------|-------|------|---------|
| 0    | 0%    | 1000 | 0     | 1000 | 0.00%   |
| 1    | 4.00% | 1000 | 40    | 1040 | 4.00%   |
| 2    | 3.65% | 1040 | 37.96 | 1078 | 7.80%   |
| 3    | 3.25% | 1078 | 35.03 | 1113 | 11.30%  |
| 4    | 3.25% | 1113 | 36.17 | 1149 | 14.92%  |
| 5    | 3.25% | 1149 | 37.35 | 1187 | 18.65%  |
| 6    | 3.25% | 1187 | 38.56 | 1225 | 22.51%  |
| 7    | 3.25% | 1225 | 39.81 | 1265 | 26.49%  |
| 8    | 3.25% | 1265 | 41.11 | 1306 | 30.60%  |
| 9    | 3.25% | 1306 | 42.44 | 1348 | 34.84%  |
| 10   | 3.25% | 1348 | 43.82 | 1392 | 39.23%  |
| 11   | 3.25% | 1392 | 45.25 | 1438 | 43.75%  |
| 12   | 3.25% | 1438 | 46.72 | 1484 | 48.42%  |
| 13   | 3.25% | 1484 | 48.24 | 1532 | 53.25%  |
| 14   | 3.25% | 1532 | 49.81 | 1582 | 58.23%  |
| 15   | 3.25% | 1582 | 51.42 | 1634 | 63.37%  |
| 16   | 3.25% | 1634 | 53.10 | 1687 | 68.68%  |
| 17   | 3.25% | 1687 | 54.82 | 1742 | 74.16%  |
| 18   | 3.25% | 1742 | 56.60 | 1798 | 79.82%  |
| 19   | 3.25% | 1798 | 58.44 | 1857 | 85.67%  |
| 20   | 3.25% | 1857 | 60.34 | 1917 | 91.70%  |
| 21   | 3.25% | 1917 | 62.30 | 1979 | 97.93%  |
| 22   | 3.25% | 1979 | 64.33 | 2044 | 104.36% |
| 23   | 3.25% | 2044 | 66.42 | 2110 | 111.01% |
| 24   | 3.25% | 2110 | 68.58 | 2179 | 117.86% |
| 25   | 3.25% | 2179 | 70.81 | 2249 | 124.94% |
| 26   | 3.25% | 2249 | 73.11 | 2323 | 132.25% |
| 27   | 3.25% | 2323 | 75.48 | 2398 | 139.80% |
| 28   | 3.25% | 2398 | 77.94 | 2476 | 147.60% |
| 29   | 3.25% | 2476 | 80.47 | 2556 | 155.64% |
| 30   | 3.25% | 2556 | 83.08 | 2640 | 163.95% |

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**SITE**

Good (G): Sound and stable, free of damage/defects, functioning as designed, no degradation  
 Fair (F): Functional with minor wear, capacity uncertain, routine maintenance may be required, serviceable  
 Poor (P): System compromised, damage evident, restoration/repair required, limited operation, substandard  
 Unknown (U): Not available for assessment/inaccessible

**Service Walks:**

Type:

|           |   |
|-----------|---|
| Concrete✓ | <u>Minor settling at seams and cracking</u> |
| Flagstone | _____                                       |
| Brick     | _____                                       |
| Other     | _____                                       |

|                  |                  |                   |                  |                     |
|------------------|------------------|-------------------|------------------|---------------------|
| Condition:       | <u>    </u> Good | <u>  X  </u> Fair | <u>    </u> Poor | <u>    </u> Unknown |
| Pitched Properly | <u>  X  </u> Yes | <u>    </u> No    |                  |                     |
| Settling Cracks  | <u>  X  </u> Yes | <u>    </u> No    |                  |                     |
| Trip Hazard      | <u>  X  </u> Yes | <u>  X  </u> No   | (Minor)          |                     |

**Parking Lots/Driveways:**

Type:

|           |  |
|-----------|--|
| Concrete  | _____  |
| Flagstone | <u>Minor cracks</u>  |
| Brick     | _____  |
| Asphalt✓  | <u>NE parking near building has some damage from tree roots. Minor cracking/</u> |
| Other     | <u>splintering.</u>  |

|                        |                  |                   |                  |                     |
|------------------------|------------------|-------------------|------------------|---------------------|
| Condition:             | <u>    </u> Good | <u>  X  </u> Fair | <u>    </u> Poor | <u>    </u> Unknown |
| Cracks filled & sealed | <u>  X  </u> Yes | <u>    </u> No    |                  |                     |
| Pitched Properly       | <u>  X  </u> Yes | <u>    </u> No    |                  |                     |
| Curbing Type           | <u>    </u> Yes  | <u>  X  </u> No   | (Wheel stops)    |                     |

**Steps/Ramps:**

|                 |                   |                  |                   |                     |
|-----------------|-------------------|------------------|-------------------|---------------------|
| Condition:      | <u>    </u> Good  | <u>    </u> Fair | <u>  X  </u> Poor | <u>    </u> Unknown |
| Settling        | <u>  X  </u> Yes  | <u>    </u> No   |                   |                     |
| Railings        | <u>    </u> Yes   | <u>  X  </u> No  |                   |                     |
| Lighting Levels | <u>  X  </u> Good | <u>    </u> Fair | <u>    </u> Poor  | <u>    </u> Unknown |

(Wood ramp at N. needs replacement - non-code compliant)  
 (No steps, only the North exit ramp)

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**Common Gathering** (near Staff Break)

Type:

Concrete \_\_\_\_\_  
 Flagstone \_\_\_\_\_  
 Brick✓ Brick settling unevenly. Trip hazard at corner near door into building.  
 Asphalt \_\_\_\_\_  
 Other \_\_\_\_\_

Condition:  Good  Fair  Poor  Unknown  
 Cracks filled & sealed  Yes  No  
 Pitched Properly  Yes  No  
 Trim Back Trees/Shrubs  Yes  No

**Landscaping:**

Negative Grade at:

East Some at NE.  
 West \_\_\_\_\_  
 North Slight DS to grade.  
 South OK, some at SW.

Condition:  Good  Fair  Poor  Unknown  
 Irrigation System  Yes  No  
 Trim Back Trees/Shrubs  Yes  No  
 Retaining Walls  Yes  No

**Fencing:**

Location: At S. Mech and at E. Patio  
 Type: Wood

Condition:  Good  Fair  Poor  Unknown  
 Stable  Yes  No  
 Painted  Yes  No  
 (not unstable, but will need replacement relatively soon.)

**Exterior Lighting:**

Amount/Type: At parking and entry E/W  
 On Buildings  Yes  No  
 Free Standing  Yes  No  
 Parking Area  Yes  No (Freestand at parking)

Condition:  Good  Fair  Poor  Unknown

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**Site Signage**

Location: Monument at entry/parking lot.

Type: Wood with laminate

Condition:     Good   X   Fair     Poor     Unknown

**Outbuildings:** (N/A)

Number: \_\_\_\_\_

Age: \_\_\_\_\_

Condition:     Good     Fair     Poor     Unknown

**Dumpster/Recycling Area:** (at NW corner of site, behind yard fence)

Platform & Approach Condition:   X   Good     Fair     Poor     Unknown

Enclosure Condition: (None.)     Good     Fair     Poor     Unknown

**Health and Safety:**

Gases: None

Hazards: \_\_\_\_\_

Infestations: Previous history of carpenter ants

Air Quality: Previously had crawl space odors, no longer an issue with building in positive pressure.

Utilities Conditions: No deficiencies noted by WCLS.

**Miscellaneous:**

1. Unknown original structure construction date, 1960s... (Aug 2021)

2. Fence enclosure at maintenance:

-Chain link

-New

3. Fence enclosure off breakroom

-Failure at bottom rail in corner

-Fence should be refinished/repaired, not a threat to safety

4. Single bike rack at W Entry

-Current code/zoning would prompt more

-Similar condition at E entry

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**ARCHITECTURAL ENVELOPE**

Good (G): Sound and stable, free of damage/defects, functioning as designed, no degradation  
 Fair (F): Functional with minor wear, capacity uncertain, routine maintenance may be required, serviceable  
 Poor (P): System compromised, damage evident, restoration/repair required, limited operation, substandard  
 Unknown (U): Not available for assessment/inaccessible

**Substructure** 1960s original; 1990 Addition; Multiple interior renovations

Foundation: 16" TJI and 2x12 DF wood joists over 18" min clr crawl space at 1990 addition  
 Condition      Good   X   Fair      Poor      Unknown

Floor Slab: 4" slab on grade at garage (orig.+1990)  
 Condition      Good   X   Fair      Poor      Unknown  
 (exhaust ventilation provided at 3 locations to crawl space with manual switch exhaust to roof ventilators)

**Crawlspace**

Clean:   X   Yes      No  
 Adequate Lighting:      Yes   X   No

Wall Condition:      Good   X   Fair      Poor      Unknown  
 Cracks   X   Yes      No  
 Moisture (seasonal)   X   Yes      No  
 Bowed      Yes   X   No

Movement: Effervescence      Good   X   Fair      Poor      Unknown

Floor Condition:      Good   X   Fair      Poor      Unknown  
 Cracks      Yes      No  
 Water (seasonal)      Good      Fair   X   Poor      Unknown

Sump Pump:   X   Yes      No  
 Working   X   Yes      No      N/A

Plastic Sheeting at Crawlspace:   X   Yes      No  
 Insulation at Crawlspace:   X   Yes      No (some missing insulation locations and some locations with paper facing to exterior side vs. interior)

Last Pest Inspection: 2015 per WCLS

**Shell Construction**

Type: Wood 2x6 Wood frame at 1990 Addition with EIFS cladding (some repairs/repainting completed at unknown date.)  
 Metal \_\_\_\_\_  
 Masonry \_\_\_\_\_  
 Other \_\_\_\_\_

Age: 1960s at original; 1990 for addition  
 Walls Condition:      Good   X   Fair      Poor      Unknown  
 Roof Condition:      Good   X   Fair      Poor      Unknown

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**Thermal Envelope**

Floor:

Material Faced Batt insulation  
 R-Value R- 21  
 Code Compliant Yes  No  
 Current for 2018 Code R-30 required at floor joist framing

Wall:

Material EIFS at 1990 Addition  
 R-Value R- 19  
 Code Compliant Yes  No  
 Current for 2018 Code R-21 required

Roof:

Material Unfaced Batt insulation strapped within rafter bays with unknown 1-1/2" air clearance at sheathing at Addition; from 2018 report: Original building has fiberglass loose fill with rigid foam at attic at Original structure  
 R-Value R- 38 OR  
 Code Compliant Yes  No  
 Current for 2018 Code R-49 required

**Roofing**

Age: 1990  
 Inspected from: Roof  Ground

Type:  Hip  Flat  Mansard  
 Roof Covering A: Asphalt comp. shingle (one layer per 2018 inspection)  
 Roof Covering B:

Condition:  Good  Fair  Poor  Unknown

Attic Ventilation Location:  Soffit  Gable  None  
 Ends  Ridge  Per Code (No.)  
 (soffit only at original) (roof ventilation recently blocked by WCLS)

Valley Conditions:  Good  Fair  Poor  Unknown

Flashing Conditions:  Good  Fair  Poor  Unknown  
 (multiple locations of EIFS are too close to roof shingles AND lack of some flashing has degraded some EIFS transitions.)  
 (2018: Kickout flashings were noted needed at South side of building - status likely remains.)  
 (2018: Comp. roofing appears to be in contact with EIFS cladding at multiple locations - status likely remains.)

Skylights Condition:  Good  Fair  Poor  N/A

**Chimneys and B-Vents**

Age: Varies  
 Inspected from:  Roof  Ground

Condition:  Good  Fair  Poor  Unknown

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**Trim/Soffit/Fascia**

Material:

Wood 1x4 over 2x12 barge/facia typical  
 Metal \_\_\_\_\_  
 Vinyl \_\_\_\_\_  
 Other No soffit ventilation at 1989/1990. Cont. soffit ventilation at 3 sides at original.

Age: \_\_\_\_\_  
 Condition: X Good    \_\_\_ Fair    \_\_\_ Poor    \_\_\_ Unknown  
 Damaged    \_\_\_ Yes    \_\_\_ No  
 Missing    \_\_\_ Yes    \_\_\_ No  
 Painted    X Yes    \_\_\_ No

**Gutter and Downspouts**

Material:

Aluminum 3x4 to tightlines typical at 1990. 3x4 to grade drain outlets at original at North  
 Copper \_\_\_\_\_  
 Vinyl \_\_\_\_\_  
 None \_\_\_\_\_

Age: 1990  
 Condition: \_\_\_ Good    X Fair    \_\_\_ Poor    \_\_\_ Unknown  
 Holes/Leaks    \_\_\_ Yes    X No  
 Rust    \_\_\_ Yes    X No  
 Spill Blocks or Extensions    X Yes    \_\_\_ No  
 Right Sized, Missing    \_\_\_ Yes    X No

**Windows**

Material:

Wood \_\_\_\_\_  
 Metal \_\_\_\_\_  
 Vinyl ✓ At addition and original  
 Other \_\_\_\_\_

Age: 1990 and 1960s original structure  
 Type A: Vinyl fixed  
 Type B: Vinyl operable

Condition: \_\_\_ Good    X Fair    \_\_\_ Poor    \_\_\_ Unknown  
 Caulk Condition    \_\_\_ Good    X Fair    \_\_\_ Poor    \_\_\_ Unknown  
 Open/Close Properly    \_\_\_ Good    X Fair    \_\_\_ Poor    \_\_\_ Unknown  
 Lock Properly    X Good    \_\_\_ Fair    \_\_\_ Poor    \_\_\_ Unknown  
 Lintel Condition    \_\_\_ Good    X Fair    \_\_\_ Poor    \_\_\_ Unknown  
 Broken Seals    (N/A) Evident at west "spine" gable units

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**Exterior Doors:**

Number: (3)  
 Age: 1990 &  
 Type: HM at NW side; HM at N side; HM at E side  
 Condition:  Good  Fair  Poor  Unknown  
 Hardware Condition  Good  Fair  Poor  Unknown  
 Opens Easily  Yes  No

**Entrance Doors: Building Entry**

Number: (1) at South  
 Age: 1990  
 Type: Painted HM foor and frame  
 Condition:  Good  Fair  Poor  Unknown  
 Weather Stripping  Good  Fair  Poor  Unknown  
 Hardware  Good  Fair  Poor  Unknown  
 Opens Easily  Yes  No

**Balcony / Decks**

Number: N/A  
 Condition:  Good  Fair  Poor  Unknown  
 Railings  Good  Fair  Poor  Unknown  
 Stable  Yes  No

**Miscellaneous:**

1. WCLS blocked 1990 attic ventilation due to staff temperature conditioning complaints. Have created heated above ceiling cavity - NOTE: No air barrier at exposed batt insulation which could cause condensing at wood roof sheathing, allowing warm moisture through insulation.

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2. Admin Services has (3) foundation ventilators; installed in approx. 2005/06; installed to address "musty" foundation/crawl odors emanating into workspaces; (2) ventilators are inoperable. Crawl space does not have code-required cross ventilation and where 1990 addition covered half of original structure this was to likely address this foundation ventilation concern. RMC recommends these ventilators be repaired and linked to a timer switch to operate more consistently in the "wet" seasons. Filters should not be necessary at roof ventilators if exhaust has bird and insect screening.

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3. Total Area of Building: 15,945 SF; Per 2018 IBC 1202.4.1.2 requires 1 (one) SF of ventilation for each 1,500 SF of area OR = 10.63 net free area of foundation ventilation required in a cross ventilation pattern.

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4. Gutters cleaned in 2020.



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**ARCHITECTURAL INTERIORS**

Good (G): Sound and stable, free of damage/defects, functioning as designed, no degradation  
 Fair (F): Functional with minor wear, capacity uncertain, routine maintenance may be required, serviceable  
 Poor (P): System compromised, damage evident, restoration/repair required, limited operation, substandard  
 Unknown (U): Not available for assessment/inaccessible

**Wall Structure**

Type 2x wood framing  
 Condition      Good      Fair      Poor      Unknown

**Library Public Areas**

Cleanliness:   X   Good      Fair      Poor      Unknown

Flooring & Base:

Type 2x2 carpet tiles with 4" rubber base (c. 2006)  
 Condition   X   Good      Fair      Poor      Unknown

Walls:

Type Painted GWB  
 Condition   X   Good      Fair      Poor      Unknown

Ceiling:

Type 2x4 ACT system with plastic faced ceiling tiles (1990)  
 Condition      Good   X   Fair      Poor      Unknown

Emergency Lighting:

  X   Yes      No

General Lighting Level:

                  52           Foot candles @ Conference Room  
                  27 to 30           Foot candles @ Collections  
                  60                   Foot candles @ Center Circulation Spine

**Stairways/Ramps: (North exit to grade)**

Walksurface:

Condition      Good   X   Fair      Poor      Unknown  
 Handrails (at one side, not full length)      Good      Fair   X   Poor      Unknown  
 Lighting Levels      Good   X   Fair      Poor      Unknown  
 Emergency Lighting      Yes   X   No  
 Ramp Material Wood with nonslip matting - replace exit ramp - Non-ADA compliant

**Fire Exits**

Blocked:      Yes   X   No @ level: Ground Level  
 Unusable:      Yes   X   No @ level:

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**Meeting/Conference Room**

Flooring & Base:

Type 2x2 carpet tiles with 6" cove rubber base (c. 2006)  
 Condition X Good \_\_\_ Fair \_\_\_ Poor \_\_\_ Unknown

Ceilings:

Type 2x4 sloping ACT (c. 1990)  
 Condition X Good \_\_\_ Fair \_\_\_ Poor \_\_\_ Unknown

Wall Condition: (painted GWB) X Good \_\_\_ Fair \_\_\_ Poor \_\_\_ Unknown

AV Components: N/A  
 Type X Yes \_\_\_ No  
Projector whiteboard/screen  
 Condition X Good \_\_\_ Fair \_\_\_ Poor \_\_\_ Unknown

Lighting Level: 52 Foot candles

**Lobby/Entrance**

Flooring & Base:

Type Sheet vinyl with 6" cove rubber base  
 Condition \_\_\_ Good X Fair \_\_\_ Poor \_\_\_ Unknown

**Restrooms**

Quantity: (4) single occupant; (1) 2WC female; (1) 1WC/1 urinal male

Accessible (4 meet criteria) X Yes \_\_\_ No (service toilet has ADA compromises)

Door Condition OK-refer to ADA Matrix  
(SE toilets have a non-compliant door pull height)

Flooring & Base:

Type Sheet vinyl and 6" rubber base typ. (c. 1990)  
 Condition \_\_\_ Good X Fair \_\_\_ Poor \_\_\_ Unknown

Walls:

Type Painted GWB (c. 1990)  
 Condition X Good \_\_\_ Fair \_\_\_ Poor \_\_\_ Unknown

Ceilings:

Type \_\_\_  
 Condition X Good \_\_\_ Fair \_\_\_ Poor \_\_\_ Unknown

Exhaust Fan Condition: \_\_\_ Good X Fair \_\_\_ Poor \_\_\_ Unknown

Fixture Condition: \_\_\_ Good X Fair \_\_\_ Poor \_\_\_ Unknown  
 (note: sink controls are not fully ADA compliant)

GFCI Protected: X Yes X No

Lighting Level: 50 Foot candles (on average)

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**Staff Work Areas & Office**

Accessible:  Yes  No  
 Accessible Route:  Yes  No

Flooring & Base:

Type 2x2 carpet tiles and 6" cove rubber base (c. 2006)  
Sheet vinyl (confirm if electrostatic) + 6" rubber base at I.T. area (c. 1990)  
 Condition  Good  Fair  Poor  Unknown

Wall:

Type Painted GWB  
 Condition  Good  Fair  Poor  Unknown

Ceilings:

Type 2x4 ACT  
 Condition  Good  Fair  Poor  Unknown

Lighting Level:

27 to 60 Foot candles range typical

**Breakroom**

Size: 21'x22' = 462 SF approx with 38 foot candles lighting

Flooring & Base:

Type Sheet vinyl & 6" cove rubber base (c. 1990)  
 Condition  Good  Fair  Poor  Unknown  
 (some bubbling/seam uplifts occurring)

Ceiling:

Type Painted GWB (c. 1990)  
 Condition  Good  Fair  Poor  Unknown

Casework:

Type PLAM type  
 Condition  Good  Fair  Poor  Unknown

Staff Lockers/Storage:

Type 12"x12" metal type (6Wx6H = 36 units) with padlock latch  
 Condition  Good  Fair  Poor  Unknown

Appliances:

Type/Age (2) full size refrigerators + (1) range cooktop + (1) microwave (newer)  
 Condition  Good  Fair  Poor  Unknown

Plumbing:

Condition  Good  Fair  Poor  Unknown

Exhaust Fan Condition:

Good  Fair  Poor  Unknown

GFCI Protected:

Yes  No

Wall Ceiling Material Condition:

Good  Fair  Poor  Unknown

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**Mobile Services/Shipping**

Flooring & Base:

Type Sheet vinyl with 6" cove rubber base  
 Condition \_\_\_ Good \_\_\_ Fair X Poor \_\_\_ Unknown

Walls:

Type Painted GWB  
 Condition \_\_\_ Good X Fair X Poor \_\_\_ Unknown

Ceilings:

Type 2x4 ACT  
 Condition \_\_\_ Good X Fair \_\_\_ Poor \_\_\_ Unknown

**Service Room(s)**

Amount: (3) rooms

Accessible: X Yes \_\_\_ No

Garbage/Recycling Location: NW corner of site behind security fence

**Shelving/Display Systems**

Quantity +5'-9" Larger steel framed units at +84" NOT anchored  
 Seismically Anchored \_\_\_ Yes X No

Quantity -5'-9" \_\_\_ Yes X No  
 Seismically Anchored

Consistency: No applicable in this non-public site

Condition: \_\_\_ Good X Fair \_\_\_ Poor \_\_\_ Unknown

**Architectural Interior Modifications Needed/Noted**

1. Interior lighting upgraded in 2011.
2. Many deficient lighting levels noted by WCLS staff.

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 RMC#: 2126  
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**BUILDING MEP SYSTEMS**

Good (G): Sound and stable, free of damage/defects, functioning as designed, no degradation  
 Fair (F): Functional with minor wear, capacity uncertain, routine maintenance may be required, serviceable  
 Poor (P): System compromised, damage evident, restoration/repair required, limited operation, substandard  
 Unknown (U): Not available for assessment/inaccessible

**Water Heater**

Location: Attic mechanical space  
 Type: 30 gallon electric storage tank coupled with tankless gas fired water heater  
 Age: 10 years, 2011

|                      |   |                             |
|----------------------|---|-----------------------------|
| Relief Valve:        | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Extension Properly   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Vented Properly      | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Insulated            | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Seismically Anchored | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

**Heating System**

System Type and Amount:

|            |  |
|------------|--|
| Forced Air | <u>VRF with Heat Recovery units provided ducted ventilation air.</u>   |
| Hydronic   | <u>Electric Boiler and pump serving HRV units. More than 10 years old, appears to be original to building.</u> |
| Steam      | <u> </u>   |
| Electric   | <u> </u>   |

Age: 2011, 10 years old

|                       |  |  |                               |                                  |
|-----------------------|--|--|-------------------------------|----------------------------------|
| Condition:            | <input checked="" type="checkbox"/> Good | <input type="checkbox"/> Fair          | <input type="checkbox"/> Poor | <input type="checkbox"/> Unknown |
| Holes/Leaks           | <input type="checkbox"/> Yes             | <input checked="" type="checkbox"/> No |                               |                                  |
| Vented Properly       | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No            |                               |                                  |
| Temp / Pressure Gauge | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No            |                               |                                  |
| Relief Valve          | <input type="checkbox"/> Yes             | <input type="checkbox"/> No            |                               |                                  |

Fire Door Closes & Latches Properly:  Yes  No

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**Plumbing**

Main Shut Off Location: Did not locate.

Waterlines:

Copper  Mixed old pipe is galvanized new sections are copper.

Galvanized  Mixed old pipe is galvanized new sections are copper.

Plastic \_\_\_\_\_

Condition:  Good  Fair  Poor  Unknown

Corroded  Yes  No

Leaking  Yes  No

Drain/Waste Piping Condition:  Good  Fair  Poor  Unknown

Type:

Copper \_\_\_\_\_

Plastic  Needs further investigation.

**Electrical Main Panel**

Location: Bus garage area, north wall on NW area of building.

Accessible:  Yes  No

Volts: 208Y/120. 3ph, 4w

Disconnect:  Yes  No

GFIC Present:  Yes  No

Subpanel Locations: Garage and interior of building

Service Branch Circuits:

Location Throughout building

Circuits Grounded  Yes  No

Volts 120V

**Store Room(s)**

Cleanliness/Organization:  Good  Fair  Poor  Unknown

Lighting Levels:  Good  Fair  Poor  Unknown

Secure:  Yes  No

Combustibles:  Yes  No

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**A/C Condenser**

Amount and Ages: Two Condensing units serving VRF system, 2011, 10 years old  
 Inspected from: \_\_\_ Roof     Ground  
 Location: North side of building behind fence

**Elevators**

Amount & Sizes: None.  
 Last Inspection Date: \_\_\_\_\_

Condition: \_\_\_ Good    \_\_\_ Fair    \_\_\_ Poor    \_\_\_ Unknown  
 Crawl Space: \_\_\_ Yes    \_\_\_ No

**Fire Alarm Panel**

Location: Silent Knight K-5208, Upstairs in Attic Mechanical Room

Visual Annunciators:  Yes    \_\_\_ No  
 Audible Annunciators:  Yes    \_\_\_ No

Fire Suppression System:  
 Vintage c. \_\_\_\_\_  
 Dry or Wet \_\_\_\_\_

**Miscellaneous:**

1. Lighting: Fluorescent and incandescent types throughout facility with motion sensors for Controls. WCLS upgraded from T12 to T8 fluorescent lamps in 2012. Recommend LED replacements.

2. Data: Fiber optic provided by Black Rock to comm rack located upstairs in attic storage, adjacent to FACP. Cat 5E and 6 to data ports.

3. Security: AES Intelligent and monitored by Guardian Security, including motion sensors.

4. Owner notes that waste plumbing lines have had drainage issues in the past and **needs further investigation** – likely due to "slope" of horizontal runs.









600 Dupont St, Suite B  
Bellingham, WA 98225

360.714.8260  
www.king-works.com

## Whatcom County Library System Building Structural Assessment Admin Building

**Facility:** Admin Building

**Address:** 5205 Northwest Ave, Bellingham, WA

**Date Observed:** 7/2/21

**Drawings Reviewed:** 1990 Addition Drawings



### Building Structure Description

The original construction date of the Admin Building is unknown. An addition in 1990 roughly doubled the size of the building. The primary gravity system of the building consists of wood trusses and rafters at the roof level supported by wood bearing walls. The floor framing of the 1990 addition is made of wood I-joists and sawn lumber spanning between concrete stem walls. The floor framing in the original northern half of the building consists of steel channels spanning to concrete stemwalls. It is our understanding that the original half of the building is made of modular units that were framed together and modified to create the workspace. The foundation system for both portions of the building includes concrete shallow spread and strip footings. Wood shear walls and wood diaphragms act as the lateral system for the building.

### Structural Assessment

Drawings were only available for the 1990 addition, this structural assessment is based on the review of those drawings and what was observed on site. There were no visible areas of notable structural damage observed while on site. Access was available to the entire perimeter, interior, and portions of the attic. The structure observed in the attic appear to be in sound condition with no visible areas of decay or damage. Surface corrosion was visible on the exposed steel framing in the crawl space of the original half of the building. Library representatives said there had been issues with moisture in the crawlspace which could be the cause of the corrosion.

From our limited review of the structure on site and the available existing drawings we expect this building would provide reasonable protection of life safety for occupants in a minor to semi-moderate seismic event. The structure is single story and has multiple redundant shear wall lines on all sides of the building. However, given the building's vintage it may not perform as well as a building constructed to modern code requirements.

### Structural Deficiencies / Recommendations

The building overall is in generally good condition, the following items were observed or reviewed in available documents that we recommend be addressed.

- Foundation Cracks – Previous building inspection performed by Sound to Mountain Home Inspections in 2018 noted locations where the foundations had significant cracking with a leaning stemwall. Due to the limited nature of our investigation scope, these were unable to be observed while on site, but based on the photos provided in the report we recommend these cracks and leaning stemwall be addressed. Repairs of this nature typically include jacking the stem wall straight and then cleaning, prepping, and patching back the cracked concrete to its original dimensions.
- Temporary Crawlspace Columns – Previous building inspection performed by Sound to Mountain Home Inspections in 2018 noted locations of the original half of the building that were supported by temporary steel shoring columns without a positive attachment to the structure above or foundations. Due to the limited nature of our investigation scope these were unable to be observed while on site, but based on the photos provided in the report we recommend these be replaced with permanent posts and foundations.

- Corrosion in Crawlspace – Surface corrosion was observed on the steel framing members below the original half of the building. The corrosion observed did not appear to result in a significant loss of section or member capacity. The staff on site noted that there had been past moisture issues in the crawlspace. We recommend the moisture issue be addressed to stop further corrosion of these members.
- Wood Ramp Decay – A ramp at the north side of the building consisted of wood framing directly supported by earth. Many of the wood members on the ramp were decayed. We recommend this ramp be replaced in kind with a ramp made from treated lumber and a concrete base to mitigate the effects of wood being in direct contact with the ground.
- Corrosion at Entry Canopies – Surface corrosion was visible at the baseplates of the entry canopies. We recommend the corrosion be removed and repainted to prevent future corrosion.
- Stack Loading – We have reviewed the existing wood I-joist shop drawings for the 1990 addition and the shop drawings indicate the joists in the stack shelving area were designed for 135 psf live load. Current codes recommend a live load of 150 psf for library stack rooms. We reviewed the larger demand on the existing joists and they appear to have adequate capacity for current code loads for library stack areas.
- Anchorage to Foundations – The steel framing below the original half did not appear to have a positive connection to the interior stemwalls. We recommend additional anchorage be added to the existing stem walls so they remain connected during a seismic event and can transmit lateral forces down to the foundation.
- Non-Structural Equipment – See typical non-structural recommendations sheet for commentary of bracing and anchoring mechanical equipment. Items observed on site: shelving, attic mechanical units, exterior mechanical units, and water heaters.

### **Structural Scope Description**

Kingworks has been contracted to provide cursory structural evaluations for 11 Whatcom County Library System library branches. Kingworks was scoped to observe 5 of the 11 library branches in person, the rest of the library branch evaluations were performed based on the available building drawings and photos shared from RMC.

The structural evaluations focused on identification of significant issues as they relate to the seismic performance of the structure or the gravity load carrying system. Other issues (not listed herein) may exist due to the cursory nature of this initial review, or because the deficiencies were either not clearly shown on the drawings or not easily observable while on site. Site visits were typically brief in nature with minimal exploration into tight spaces such as crawlspaces or attics. No structural calculations were performed except for cursory checks at select items noted in the individual reports.

#### **Branches Observed in Person**

- Admin Building
- Blaine
- Everson
- Lynden
- Sumas

#### **Branches Not Observed in Person**

- Deming
- Ferndale
- Lummi Island
- North Fork
- Point Roberts
- South Whatcom

### **Structural Report Format**

An approximately one-page structural evaluation report has been prepared for each branch. The report includes a summary of the available documents used for the evaluation, a summary of the branch's primary structural system for gravity and lateral loads, high-level "overall" assessment of the branch's structural system, and an expanded list of specific observed structural deficiencies and recommendations. Recommendations noted in the reports are intended to improve the structural performance of the building, which may not necessarily bring the building into compliance with current building codes, but are consistent with currently accepted strengthening measures for voluntary retrofits.

### **Non-Structural Items**

Many branches had similar non-structural components that are typically recommended to be braced or anchored for seismic loads to prevent falling hazards during a seismic event. The non-structural item summary contained herein outlines typical non-structural items found at many branches with a description of the typical remediation required to seismically anchor or brace the item.

### **Whatcom County Seismicity**

Whatcom County's level of seismicity is classified as high per current seismic evaluation standards. The level of seismicity is determined from the mapped spectral response accelerations provided by USGS for a subject building's location. It is common for buildings in the Pacific Northwest to be classified as a high level of seismicity, in large part due to the close proximity to the Cascadia Subduction Zone, a large fault stretching from Northern California to Vancouver Island. This fault is capable of earthquakes in excess of 9.0 on the Moment Magnitude Scale (MMS), a modern calculation similar to the Richter Scale. Based on geological evidence, a minimum of 7 of these large events have taken place in the past 3,500 years, with an average return period of 300 to 600 years. The last such event occurred around 1700, while smaller earthquakes occur in the Pacific Northwest with greater regularity. There have been three notable moderate earthquakes in the past century, the 1949 Olympia, 1965 Seatac, and the 2001 Nisqually.

## Whatcom County Library System Non-Structural Items Typical Bracing and Anchorage Recommendations

### **Non-Structural Item Summary**

All library branches reviewed contain a variety of non-structural items including furniture, mechanical equipment, shelving, and electrical equipment that are recommended by current building codes to be braced to the primary structure to prevent falling hazards to occupants during a seismic event. The following is a summary of what is recommended to receive bracing or anchorage where none is currently present.

### **Mechanical Equipment**

Interior mechanical equipment that is supported directly at a floor level and weighs more than 400 lbs should have a positive attachment to the supporting structure to resist seismic forces and prevent overturning or sliding of the unit. All exterior equipment (including rooftop units) should be positively attached to supporting structure to resist wind and seismic loading. Anchorage will vary depending on the unit and supporting structure but likely consist of either screw anchors into concrete or lag screws into wood structure.

### **Suspended Equipment**

Equipment that weighs more than 20 lbs and is hanging from the structure above should have lateral bracing to restrain the equipment during a seismic event. Bracing typically consists of diagonally cables or struts to resist lateral loading. Unbraced hanging equipment can sway during a seismic event and damage adjacent items or itself, creating falling hazards to occupants.

### **Water Heaters**

Water heaters should be anchored to the floor or braced to adjacent walls to prevent overturning during a seismic event. Bracing to walls typically includes a light gauge strap around the heater and anchored to the wall, with anchorage typically includes concrete or wood screws into the supporting structure.

### **Shelving**

Tall and narrow library shelving can tip over during a seismic event if it is not anchored to the floor or adjacent walls. We recommend anchorage be verified and added as needed to any shelving that is taller than 6' or has a height to width ratio of 3:1 (or greater).

### **Fall Prone Contents**

Any equipment, furnishings, or stored items that weigh more than 20 lbs and are located or stored more than 4 feet above the floor shall be braced or restrained in a manner so as to not create a falling hazard during a seismic event.

### **Fire Suppression Piping**

Fire suppression piping should be braced to primary structure per NFPA 13. Code officials have found that suppression piping has performed poorly in past earthquakes when left unbraced, rendering systems unusable when needed most.

### **Bracing of Suspended Lath & Plaster or Gypsum Board Ceilings**

Suspended ceilings built of lath & plaster or gypsum board should have seismic bracing for every 12 ft<sup>2</sup>. These ceiling types are prone to collapse if not properly braced. Bracing typically consists of diagonal wire bracing in each direction up to the primary support structure.

| Location                 | Category |             | Recommendation   | Cost       |
|--------------------------|----------|-------------|--|------------|
| WCLS Administrative Bldg | 1        | Plumbing    | Replace corroded pipe sections and install dielectric fitting between dissimilar metals to prevent corrosion.                                    | \$ 5,000   |
| 15400 SF                 | 2        | HVAC        | Replace boiler, unit is well passed service life. ASAP   | \$ 15,000  |
|                          | 3        | HVAC        | Outside condensing units for VRF system in flood area, recommend raise units and piping above flood line.  | \$ 7,500   |
|                          | 4        | HVAC        | Clean outside condensing units coils in spring and fall as regular maintenance to remove debris from area trees and plants.                      | \$ -       |
|                          | 5        | HVAC        | Move storage at thermostat to allow for accurate reading and utilize shading especially when space is unoccupied to reduce cooling load on room. | \$ -       |
|                          | 6        | Power       | Replace 1990 primary/incoming distribution with new distribution, including backup power system with new transfer switch & generator.            | \$ 156,800 |
|                          | 7        | Lighting    | Replace all lights with LED type and update daylighting controls.  | \$ 197,200 |
|                          | 8        | Low Voltage | Replace backup batteries for security panel.   | \$ 250     |



Reference Photos - Administrative Services



Typical exterior conditions



Typical interior conditions



Typical interior conditions



## Reference Photos - Administrative Services



Typical restroom conditions



Breakroom conditions



Major toilet accessory compliance issues

## Reference Photos - Administrative Services



Non-compliant push/pull door compliance



Sink/counter accessibility



Replace non-compliant exit landing and ramp

Reference Photos - Administrative Services



Unbraced taller than 5'-9"  
shelving



Steel canopy corrosion repairs



Insufficient foundation  
crawl space ventilation

Reference Photos - Administrative Services



Debris management at condensing units



Provide extensions to north side downspouts away from building



Replace gable end windows



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**SITE - INVENTORY**

| Item                                      | EUL | Age | RUL | Condition (G, F, P) | Action          | Quantity | Unit | Unit Cost   | Total Cost  | Comments  |
|---|-----|-----|-----|---------------------|-----------------|----------|------|-------------|-------------|---|
| <b>Service Walks</b>                      |     |     |     |                     |                 |          |      |             |             |   |
| Hard Surface                              | 50  | 21  | 29  | F                   |                 | 1,608.5  | SF   | \$10.44     | \$16,792.74 | concrete 4" broom finish, incl. base aggregates   |
| Wood/Plastic decking - replace            |     |     |     |                     |                 |          | SF   | \$28.00     | \$0.00      | Decking material only, incl. demo and disposal. Existing substructure and frame to remain |
| Wood ramp and railing - replace           | 30  | 21  | 9   | P                   | Replace Now     | 12.0     | LF   | \$525.00    | \$6,300.00  | 2x railing (timber), and assume 7' width of ramp  |
| Metal railing in lieu of timber - replace |     |     |     |                     |                 |          | LF   | \$190.00    | \$0.00      | incl. removal and disposal of existing railing  |
| <b>Parking Lots</b>                       |     |     |     |                     |                 |          |      |             |             |   |
| Hard Surface                              | 50  | 21  | 29  | F                   |                 | -        | SF   | \$4.80      | \$0.00      | Asphalt, incl. base aggregates  |
| Hard Surface (sealing)                    | 5   | 10  | -5  | P                   | Reseal          | 43,575.0 | SF   | \$1.85      | \$80,613.75 | Fog Coat at discretionary timing  |
| Restripe - stall                          | 5   | 10  | -5  | P                   | Restripe        | 63.0     | EA   | \$55.00     | \$3,465.00  |   |
| <b>Steps/Ramps</b>                        |     |     |     |                     |                 |          |      |             |             |   |
| Hard Surface                              | 50  | 21  | 29  | F                   |                 |          | SF   | \$16.95     | \$0.00      | Concrete  |
| Railings                                  | 14  | 21  | -7  | F                   |                 | 8        | LF   | \$175.00    | \$1,400.00  | Painted tube steel  |
| <b>Common Gathering Areas</b>             |     |     |     |                     |                 |          |      |             |             |   |
| Hard Surface - Brick @ Staff              | 50  | 21  | 29  | F                   | Level           | 197      | SF   | \$34.50     | \$6,796.50  | Dimensional pavers, mortar set, incl. base aggregates                                     |
| <b>Landscaping</b>                        |     |     |     |                     |                 |          |      |             |             |   |
| Plantings                                 | 50  | 21  | 29  |                     |                 |          | SF   | \$8.50      | \$0.00      | Incl. 2 gal shrub, 24" O.C., 12" topsoil, 3" mulch, and 1 tree x 400 SF.                  |
| Grading                                   | 50  | 21  | 29  |                     |                 |          | SF   | \$1.10      | \$0.00      | Rough and fine grading, incl. compaction  |
| Irrigation                                | 30  | 21  | 9   |                     | Assess          | 20,000   | SF   | \$2.00      | \$40,000.00 | Bed irrigation. \$1.50 for rotor lawn areas   |
| Irrigation repair                         |     |     |     |                     |                 |          | SF   | \$1.05      | \$0.00      | Irrigation repair, incl. trenching and backfill   |
| Retaining Walls                           | 50  | 1   | 49  | N/A                 |                 |          | SF   | \$66.00     | \$0.00      |   |
| <b>Fencing</b>                            |     |     |     |                     |                 |          |      |             |             |   |
| Fence 1                                   | 40  | 21  | 19  | N/A                 | Monitor         | 607.0    | LF   | \$85.00     | \$51,595.00 | Coated link fencing 6' high   |
| Fence 2                                   | 30  | 21  | 9   | F                   | Monitor         | 75.0     | LF   | \$45.00     | \$3,375.00  | cedar fence, 6' ht.   |
| <b>Site Lighting</b>                      |     |     |     |                     |                 |          |      |             |             |   |
| On Buildings                              | 10  | 21  | -11 | G                   | Monitor         | 13.0     | EA   | \$450.00    | \$5,850.00  | LED exterior building surface mounted fixture   |
| Free Standing                             | 25  | 21  | 4   | G                   |                 | 3.0      | EA   | \$6,250.00  | \$18,750.00 | Pole Lighting- Ped  |
| Parking Area                              | 35  | 21  | 14  |                     |                 | 2.0      | EA   | \$8,500.00  | \$17,000.00 | Pole Lighting- Parking  |
| Mailboxes                                 | 20  | 21  | -1  | F                   | Monitor         | 1.0      | EA   | \$1,450.00  | \$1,450.00  | single vault curbside   |
| <b>Site Signage</b>                       |     |     |     |                     |                 |          |      |             |             |   |
| Signage/Lighting                          | 25  | 1   | 24  |                     |                 |          | EA   | \$5,000.00  | \$0.00      | Basic lighted monument sign   |
| <b>Playground</b>                         |     |     |     |                     |                 |          |      |             |             |   |
| Hard Surface                              | 50  | 1   | 49  | N/A                 |                 |          | SF   | \$32.00     | \$0.00      | PIP   |
| Ground Cover                              | 50  | 1   | 49  | N/A                 |                 |          | SF   | \$2.65      | \$0.00      | Engineered wood fiber   |
| Equipment                                 | 25  | 1   | 24  | N/A                 |                 |          | EA   | \$15,000.00 | \$0.00      | includes foundation, typical per piece  |
| <b>Dumpster/Recycling Area</b>            |     |     |     |                     |                 |          |      |             |             |   |
| Enclosure                                 | 20  | 1   | 19  |                     |                 |          | LF   | \$80.00     | \$0.00      | 8' wood with gate   |
| Container 1                               | 40  | 1   | 39  | G                   | Monitor         | 1.0      | EA   | \$1.00      | \$1.00      | typically provided by Sanitary Services   |
| Container 2                               | 40  | 1   | 39  | G                   | Monitor         | 1.0      | EA   | \$1,500.00  | \$1,500.00  | same as above   |
| Site Electrical Main                      | 40  | 21  | 19  | P                   | Replace         | 1.0      | EA   | \$10,000.00 | \$10,000.00 | per WH report; assess timing (assume year 10)   |
| <b>Site Power Distribution</b>            |     |     |     |                     |                 |          |      |             |             |   |
| 100AMP UG Service Feeder                  | 40  | 1   | 39  | N/A                 |                 |          | LF   | \$94.00     | \$0.00      | includes conduit  |
| 200AMP UG Service Feeder                  | 40  | 21  | 19  | F                   | Replace         | 100.0    | LF   | \$138.00    | \$13,800.00 | includes conduit per WH report; (assume year 10).   |
| <b>Site Sanitary Lines</b>                |     |     |     |                     |                 |          |      |             |             |   |
| X Units 4" HDPE                           | 50  | 21  | 29  | G                   |                 |          | LF   | \$40.30     | \$0.00      | Includes trenching and bedding  |
| X Units 6" HDPE                           | 50  | 21  | 29  | G                   |                 |          | LF   | \$49.30     | \$0.00      | Includes trenching and bedding  |
| Site Sewer Main                           | 50  | 21  | 29  | G                   |                 |          | EA   | \$15,000.00 | \$0.00      | includes trenching and bedding, base cost- valves and connections                         |
| Site Water Main                           |     |     |     | G                   |                 |          | EA   | \$20,000.00 | \$0.00      | includes trenching and bedding, base cost - valves and connections                        |
| X Units 1-1/2" Line                       | 40  | 21  | 19  | N/A                 |                 |          | LF   | \$47.88     | \$0.00      | Includes trenching and bedding  |
| X Units 2-3" Line                         | 40  | 21  | 19  | G                   | Monitor         |          | LF   | \$68.75     | \$0.00      | Includes trenching and bedding  |
| Storm Drain Lines                         | 50  | 21  | 29  | P                   | Assess Solution |          | LF   | \$59.11     | \$0.00      | Includes trenching and bedding at north side  |

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**SITE- COST**

| Item                              | Cost            |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | Total            |
|-----------------------------------|-----------------|------------|------------|-----------------|------------|-----------------|------------|------------|-----------------|-----------------|-----------------|------------|------------|-----------------|----------------|-----------------|------------|------------|------------|----------------|------------------|
|                                   | 1<br>2021       | 2<br>2022  | 3<br>2023  | 4<br>2024       | 5<br>2025  | 6<br>2026       | 7<br>2027  | 8<br>2028  | 9<br>2029       | 10<br>2030      | 11<br>2031      | 12<br>2032 | 13<br>2033 | 14<br>2034      | 15<br>2035     | 16<br>2036      | 17<br>2037 | 18<br>2038 | 19<br>2039 | 20<br>2040     |                  |
| Service Walks                     |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                |                  |
| Hard Surface                      |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Wood/Plastic decking - replace    |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Wood ramp and railing - replace   | \$6,300         |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$6,300          |
| Metal railing in lieu of timber - |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Parking Lots                      |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Hard Surface                      |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Hard Surface (sealing)            | \$80,614        |            |            |                 |            | \$80,614        |            |            |                 | \$80,614        |                 |            |            |                 |                | \$80,614        |            |            |            |                | \$322,456        |
| Restripe - stall                  | \$3,465         |            |            |                 |            | \$3,465         |            |            |                 | \$3,465         |                 |            |            |                 |                | \$3,465         |            |            |            |                | \$13,860         |
| Steps/Ramps                       |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Hard Surface                      |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Railings                          | \$1,400         |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 | \$1,400        |                 |            |            |            |                | \$2,800          |
| Common Gathering Areas            |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Hard Surface                      |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Landscaping                       |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Plantings                         |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Grading                           |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Irrigation                        |                 |            |            |                 |            |                 |            |            | \$40,000        |                 |                 |            |            |                 |                |                 |            |            |            |                | \$40,000         |
| Irrigation repair                 |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Retaining Walls                   |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Fencing                           |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Fence 1                           |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Fence 2                           |                 |            |            |                 |            |                 |            |            | \$3,375         |                 |                 |            |            |                 |                |                 |            |            |            |                | \$3,375          |
| Site Lighting                     |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| On Buildings                      | \$5,850         |            |            |                 |            |                 |            |            |                 | \$5,850         |                 |            |            |                 |                |                 |            |            |            | \$5,850        | \$17,550         |
| Free Standing                     |                 |            |            | \$18,750        |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$18,750         |
| Parking Area                      |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            | \$17,000        |                |                 |            |            |            |                | \$17,000         |
| Mailboxes                         |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Site Signage                      |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Signage/Lighting                  |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Playground                        |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Hard Surface                      |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Ground Cover                      |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Equipment                         |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Dumpster/Recycling Area           |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Enclosure                         |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Container 1                       |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Container 2                       |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Site Electrical Main              |                 |            |            |                 |            |                 |            |            |                 | \$10,000        |                 |            |            |                 |                |                 |            |            |            |                | \$10,000         |
| Site Power Distribution           |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| 100AMP UG Service Feeder          |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| 200AMP UG Service Feeder          |                 |            |            |                 |            |                 |            |            |                 | \$13,800        |                 |            |            |                 |                |                 |            |            |            |                | \$13,800         |
| Site Sanitary Lines               |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| X Units 4" HDPE                   |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| X Units 6" HDPE                   |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Site Sewer Main                   |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Site Water Main                   |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| X Units 1-1/2" Line               |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| X Units 2-3" Line                 |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| Storm Drain Lines                 |                 |            |            |                 |            |                 |            |            |                 |                 |                 |            |            |                 |                |                 |            |            |            |                | \$0              |
| <b>Uninflated Totals</b>          | <b>\$97,629</b> | <b>\$0</b> | <b>\$0</b> | <b>\$18,750</b> | <b>\$0</b> | <b>\$84,079</b> | <b>\$0</b> | <b>\$0</b> | <b>\$43,375</b> | <b>\$29,650</b> | <b>\$84,079</b> | <b>\$0</b> | <b>\$0</b> | <b>\$17,000</b> | <b>\$1,400</b> | <b>\$84,079</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$5,850</b> | <b>\$465,891</b> |

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**ARCHITECTURAL ENVELOPE - INVENTORY**

| Item                                    | EUL | Age | RUL | Condition (G, F, P, U) | Action       | Quantity | Unit | Unit Cost   | Total Cost   | Comments   |
|---|-----|-----|-----|------------------------|--------------|----------|------|-------------|--------------|--|
| <b>Walls</b>                            |     |     |     |                        |              |          |      |             |              |  |
| Finish                                  | 10  | 21  | -11 | F                      | Recoat       | 6873     | SF   | \$21.00     | \$144,333.00 | Elastomeric Coating  |
| Structure                               | 50  | 21  | 29  | F                      | Monitor      |          | SF   | \$42.40     | \$0.00       | Cladding 33% glazing   |
| Insulation                              | 50  | 21  | 29  |                        | Monitor      |          | SF   | \$6.52      | \$0.00       | Batt in Wall Cavity  |
| Wood siding and trim - new paint        | 10  | 1   | 9   | -                      | N/A          |          | SF   | \$33.50     | \$0.00       |  |
| Masonry - new sealant                   | 40  | 1   | 39  | -                      | N/A          |          | SF   | \$42.00     | \$0.00       |  |
| Clean Corrosion/Repaint Steel Structure | 50  | 21  | 29  | P                      | Repair       | 1        | Lump | \$2,000.00  | \$2,000.00   |  |
| <b>Roof</b>                             |     |     |     |                        |              |          |      |             |              |  |
| Covering                                | 20  | 21  | -1  | P                      | Assess       | 17065    | SF   | \$16.75     | \$285,838.75 | Asphaltic Shingles ( assume year 4)  |
| Structure                               | 50  | 21  | 29  | U                      | Assess       | 0        | SF   | \$52.80     | \$0.00       | Wood Trusses/Dimensional Lumber  |
| Insulation                              | 50  | 21  | 29  | F                      |              |          | SF   | \$5.45      | \$0.00       | rigid  |
| Drainage - Gutter/Downspouts            | 25  | 21  | 4   | F                      | Monitor      | 530      | LF   | \$21.00     | \$11,130.00  |  |
| Drainage - Interior                     | 50  | 1   | 49  | -                      | N/A          |          | SF   | \$29.40     | \$0.00       |  |
| Soffits - Repaint                       | 5   | 1   | 4   |                        |              | 494      | SF   | \$21.00     | \$10,374.00  | Repaint concurrent with siding   |
| Fascia - Replace / Repaint              | 25  | 1   | 24  |                        |              |          | LF   | \$18.90     | \$0.00       |  |
| <b>Floor</b>                            |     |     |     |                        |              |          |      |             |              |  |
| Structure                               | 50  | 21  | 29  |                        |              |          | SF   | \$51.40     | \$0.00       | Wood (13,814 SF)   |
| Insulation                              | 50  | 21  | 29  |                        |              |          | SF   | \$5.50      | \$0.00       | Minor Missing Sections (13,814 SF)   |
| Slab                                    | 60  | 21  | 39  | F                      | N/A          |          | SF   | \$6.70      | \$0.00       | Except at Garage Slab (2,219 SF)   |
| Foundations (Material)                  | 50  | 1   | 49  |                        |              |          |      | \$52.92     | \$0.00       | concrete   |
| <b>Basement/Crawlspace</b>              |     |     |     |                        |              |          |      |             |              |  |
| Walls (Material)                        | 50  | 21  | 29  | P                      | Reinspect    |          | LF   | \$63.00     | \$0.00       | Concrete, Note deficiencies in Kingworks Report (565 LF). Reinspect corrosion @ steel members at crawlspace.   |
| Crawl Space Repairs                     | 50  | 21  | 29  | F/P                    | Repair       | 1        | Lump | \$40,000.00 | \$40,000.00  | Corrections include joist anchorage to concrete stem walls, replacement of temp shoring columns with associated footing/beam connectors and repairs to perimeter concrete stem walls.- Repair Within 5 years |
| Sump Pump                               | 20  | 21  | -1  | P                      | Replace      | 1        | EA   | \$2,200.00  | \$2,200.00   |  |
| Lighting                                | 25  | 1   | 24  | N/AA                   |              | 0        | SF   | \$11.60     | \$0.00       |  |
| <b>Exterior Windows</b>                 |     |     |     |                        |              |          |      |             |              |  |
| Window Type 1 (X SF)                    | 30  | 21  | 9   | F                      | Replace      | 42       | SF   | \$78.00     | \$3,276.00   | Fiberglass/Vinyl (Replace now or year 9)   |
| Window - aluminum, double pane (X SF)   | 30  | 1   | 29  |                        | N/A          |          | SF   | \$82.00     | \$0.00       |  |
| Window - wood, double pane (X SF)       | 30  | 1   | 29  |                        | N/A          |          | SF   | \$96.00     | \$0.00       |  |
| Window frame repair - caulking          | 12  | 21  | -9  | F                      | Recaulk      | 1000     | LF   | \$18.00     | \$18,000.00  |  |
| Window repair - new flashing            | 20  | 21  | -1  | F                      | Replace      | 16       | LF   | \$16.50     | \$264.00     |  |
| <b>Exterior Doors</b>                   |     |     |     |                        |              |          |      |             |              |  |
| Door Type 1 (21 SF)                     | 25  | 1   | 24  |                        | N/A          |          | EA   | \$3,100.00  | \$0.00       | Wood / Plam  |
| Door Type 2 - HM (21 SF)                | 50  | 21  | 29  | F                      |              |          | EA   | \$5,100.00  | \$0.00       | Painted Hollow Metal (3 locations)   |
| Door Type 3 - HM Entrance (42 SF)       | 50  | 21  | 29  | G                      |              |          | EA   | \$9,500.00  | \$0.00       | Painted Hollow Metal with Sidelights (1 location)  |
| Door frame repair - caulking            | 12  | 21  | -9  | F                      | Recaulk      | 144      | LF   | \$18.00     | \$2,592.00   |  |
| Door repair - new flashing              | 20  | 21  | -1  | F                      | Assess       | 142      | LF   | \$16.50     | \$2,343.00   |  |
| <b>Balcony/Decks</b>                    |     |     |     |                        |              |          |      |             |              |  |
| Structure                               | 40  | 1   | 39  |                        | N/A          |          |      | \$48.75     | \$0.00       |  |
| Porches                                 | 50  | 1   | 49  |                        | N/A          |          |      | \$60.00     |              |  |
| Decking                                 | 20  | 1   | 19  |                        | N/A          |          |      | \$33.60     | \$0.00       |  |
| Railings                                | 50  | 1   | 49  |                        | N/A          |          | LF   | \$175.00    | \$0.00       |  |
| Chimneys/B-Vents                        | 25  | 21  | 4   | F                      | Field Assess | 40       | LF   | \$108.00    | \$4,320.00   | At time of reroof  |



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**ARCHITECTURAL ENVELOPE - INVENTORY**

| Item | EUL | Age | RUL | Condition (G, F, P, U) | Action | Quantity | Unit | Unit Cost | Total Cost | Comments |
|------|-----|-----|-----|------------------------|--------|----------|------|-----------|------------|----------|
|------|-----|-----|-----|------------------------|--------|----------|------|-----------|------------|----------|

Continued

**Wall Finish Life Spans**

|  |    |  |  |  |  |  |  |          |  |  |
|--|----|--|--|--|--|--|--|----------|--|--|
| Aluminum Siding                          | 15 |  |  |  |  |  |  | \$18.50  |  |  |
| Brick or Block                           | 40 |  |  |  |  |  |  | \$45.00  |  |  |
| Brownstone/Stone Veneer                  | 20 |  |  |  |  |  |  | \$50.00  |  |  |
| Glass Block                              | 15 |  |  |  |  |  |  | \$44.00  |  |  |
| Granite Block                            | 40 |  |  |  |  |  |  | \$92.00  |  |  |
| Metal/Glass Curtain Wall                 | 15 |  |  |  |  |  |  | \$108.00 |  |  |
| Pre-cast Concrete Panel                  | 40 |  |  |  |  |  |  | \$51.00  |  |  |
| Vinyl Siding                             | 30 |  |  |  |  |  |  | \$14.20  |  |  |
| Wood Shingle, Clapboard, Plywood, Stucco | 10 |  |  |  |  |  |  | \$21.00  |  |  |
| Fiber cement siding                      | 10 |  |  |  |  |  |  | \$19.45  |  |  |

**Roof Covering Life Spans**

|   |     |  |  |  |  |  |  |         |  |  |
|---|-----|--|--|--|--|--|--|---------|--|--|
| Aluminum Shingles                       | 40  |  |  |  |  |  |  | \$18.50 |  |  |
| Asphalt Shingles                        | 20  |  |  |  |  |  |  | \$16.75 |  |  |
| Built-up (BUR)                          | 20  |  |  |  |  |  |  | \$22.50 |  |  |
| Membrane                                | 20  |  |  |  |  |  |  | \$24.00 |  |  |
| Metal (pre-formed)                      | 40  |  |  |  |  |  |  | \$26.50 |  |  |
| Slate, Tile, Clay, or Concrete Shingles | 50+ |  |  |  |  |  |  | \$28.00 |  |  |
| Wood Shingles                           | 20  |  |  |  |  |  |  | \$17.50 |  |  |

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**ARCHITECTURAL ENVELOPE - COST**

| Item                                    | Cost             |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | Total            |
|---|------------------|------------|------------|-----------------|-----------------|------------|------------|------------|-----------------|------------------|------------|------------|-----------------|-----------------|------------|------------|------------|------------|-----------------|------------|------------------|
|   | 1<br>2021        | 2<br>2022  | 3<br>2023  | 4<br>2024       | 5<br>2025       | 6<br>2026  | 7<br>2027  | 8<br>2028  | 9<br>2029       | 10<br>2030       | 11<br>2031 | 12<br>2032 | 13<br>2033      | 14<br>2034      | 15<br>2035 | 16<br>2036 | 17<br>2037 | 18<br>2038 | 19<br>2039      | 20<br>2040 |                  |
| Walls                                   |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            |                  |
| Finish                                  | \$144,333        |            |            |                 |                 |            |            |            |                 | \$144,333        |            |            |                 |                 |            |            |            |            |                 |            |                  |
| Structure (Construction Type)           |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$288,666        |
| Insulation (Material)                   |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Wood siding and trim - new paint        |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Masonry - new sealant                   |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Clean Corrosion/Repaint Steel Structure | \$2,000          |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$2,000          |
| Roof                                    |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Covering                                | \$285,839        |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$285,839        |
| Structure (Asphaltic Singles)           |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Insulation (Material)                   |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Drainage - Gutter/Downspouts            |                  |            |            | \$11,130        |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$11,130         |
| Drainage - Interior                     |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Soffits                                 |                  |            |            | \$10,374        |                 |            |            |            | \$10,374        |                  |            |            |                 | \$10,374        |            |            |            |            | \$10,374        |            | \$41,496         |
| Fascia                                  |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Floor                                   |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Structure (Construction Type)           |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Insulation (Material)                   |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Slab                                    |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Foundations (Material)                  |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Basement/Crawlspace                     |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Walls (Material)                        |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Crawlspace Repairs                      |                  |            |            |                 | \$40,000        |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$40,000         |
| Sump Pump                               | \$2,200          |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$2,200          |
| Lighting                                |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Exterior Windows                        |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Window Type 1 (X SF)                    |                  |            |            |                 |                 |            |            |            | \$3,276         |                  |            |            |                 |                 |            |            |            |            |                 |            | \$3,276          |
| Window - aluminum, double pane (X SF)   |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Window - wood, double pane (X SF)       |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Window frame repair - caulking          | \$18,000         |            |            |                 |                 |            |            |            |                 |                  |            |            | \$18,000        |                 |            |            |            |            |                 |            | \$36,000         |
| Window repair - new flashing            | \$264            |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$264            |
| Exterior Doors                          |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Door Type 1 (X SF)                      |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Door Type 2 - HM (X SF)                 |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Door Type 3 - Aluminum (X SF)           |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Door frame repair - caulking            | \$2,592          |            |            |                 |                 |            |            |            |                 |                  |            |            | \$2,592         |                 |            |            |            |            |                 |            | \$5,184          |
| Door repair - new flashing              | \$2,343          |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$2,343          |
| Balcony/Decks                           |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Structure                               |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Porches                                 |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Decking                                 |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Railings                                |                  |            |            |                 |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$0              |
| Chimneys/B-Vents                        |                  |            |            | \$4,320         |                 |            |            |            |                 |                  |            |            |                 |                 |            |            |            |            |                 |            | \$4,320          |
| <b>Uninflated Totals</b>                | <b>\$457,571</b> | <b>\$0</b> | <b>\$0</b> | <b>\$25,824</b> | <b>\$40,000</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$13,650</b> | <b>\$144,333</b> | <b>\$0</b> | <b>\$0</b> | <b>\$20,592</b> | <b>\$10,374</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$10,374</b> | <b>\$0</b> | <b>\$722,718</b> |

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**ARCHITECTURAL INTERIORS - INVENTORY**

| Item   | EUL | Age | RUL | Condition (G, F, P) | Action   | Quantity | Unit | Unit Cost   | Total Cost  | Comments   |
|--|-----|-----|-----|---------------------|----------|----------|------|-------------|-------------|--|
| Wood Doors & Frames - Replace                              | 25  | 21  | 4   | F                   | Monitor  | 6        | EA   | \$2,190.00  | \$13,140.00 | wood SC panel plus glazing                                 |
| Door/Opening Hardware                                      | 15  | 21  | -6  | F                   | Monitor  | 10       | EA   | \$550.00    | \$5,500.00  |  |
| HM Door & Frame - Replace                                  | 50  | 21  | 29  | F                   |          | -        | EA   | \$1,920.00  | \$0.00      |  |
| Auto-Opener - Opening                                      | 15  | 5   | 10  | G                   | Monitor  | -        | EA   | \$4,000.00  | \$0.00      | (2) openings   |
| Access Control - Opening                                   | 15  | 5   | 10  | G                   | Monitor  | -        | EA   | \$3,300.00  | \$0.00      | (5) openings   |
| Flooring   |     |     |     |                     |          |          |      |             |             |  |
| Resilient Floor (tile/sheet) (c.1990)                      | 15  | 21  | -6  | F/P                 | Assess   | 2,155    | SF   | \$10.50     | \$22,627.50 | Replace at WCLS discretion (at same time as carpeting)     |
| Carpet (from 2006)   | 7   | 5   | 2   | G                   |          | 11,177   | SF   | \$7.80      | \$87,180.60 | Carpet tile per WCLS Standards                             |
| Concrete   | 50  | 1   | 49  |                     |          | -        | SF   | \$9.00      | \$0.00      | polished   |
| Ceramic/Quarry Tile  | 50  | 1   | 49  |                     |          | -        | SF   | \$14.50     | \$0.00      |  |
| Base - Ceramic Tile  | 50  | 1   | 49  |                     |          | -        | LF   | \$12.60     | \$0.00      |  |
| Base - Wood, 1 x 4   | 15  | 1   | 14  |                     |          | -        | LF   | \$10.90     | \$0.00      |  |
| Base - Rubber Cove, 4" (c.1990)                            | 15  | 21  | -6  | F/P                 | Assess   | 2,570    | LF   | \$5.50      | \$14,135.00 | Replace at WCLS discretion (at same time as carpeting)     |
| Ceilings   |     |     |     |                     |          |          |      |             |             |  |
| GWB/Plaster  | 50  | 21  | 29  | F                   |          |          | SF   | \$9.80      | \$0.00      |  |
| Paint (c.1990)   | 8   | 21  | -13 | F                   | Repaint  | 2,357    | SF   | \$1.65      | \$3,889.05  |  |
| ACT(c.1990)  | 20  | 21  | -1  | F                   | Monitor  | 11,500   | SF   | \$5.65      | \$64,975.00 | Baseline - Existing ACT is ok, replace Tiles as necessary. |
| Walls  |     |     |     |                     |          |          |      |             |             |  |
| Specialty Surface  | 30  | 1   | 29  |                     |          | -        | SF   | \$16.00     | \$0.00      | typical  |
| Repaint  | 8   | 21  | -13 |                     | Repaint  | 22,162   | SF   | \$2.00      | \$44,324.00 |  |
| Interior Lighting - LED (c. 2011 @ 1/2)                    | 25  | 11  | 14  | F/P                 | Decision | -        | SF   | \$12.80     | \$0.00      | Assume 1/2 of Building Area (see MEP inventory)            |
| Cabinets (Base & Uppers)                                   | 20  | 21  | -1  | F/P                 | Assess   | 33       | LF   | \$760.00    | \$25,080.00 | plastic laminate   |
| Countertop/Backsplash                                      | 20  | 21  | -1  | F/P                 | Assess   | 50       | LF   | \$212.00    | \$10,600.00 | Poor condition at Toilet PLAM Counters                     |
| Kitchen Sink / Lavatory - single basin, incl. ADA controls | 20  | 21  | -1  | F                   | Assess   | 1        | EA   | \$1,025.00  | \$1,025.00  | Replace concurrent with cabinetry                          |
| Restrooms (5 locations)                                    |     |     |     |                     |          |          |      |             |             |  |
| Toilet Accessories - Public                                | 7   | 21  | -14 | F/P                 | Decision | 7        | LS   | \$490.00    | \$3,430.00  | per WC (Replace in 10 years)                               |
| Toilet Fixtures (toilet)- Public                           | 15  | 21  | -6  | F                   | Decision | 7        | EA   | \$1,066.00  | \$7,462.00  | per fixture (Replace in 10 years)                          |
| Toilet Fixtures (sink)- Public                             | 15  | 21  | -6  | F                   | Decision | 5        | EA   | \$1,025.00  | \$5,125.00  | per fixture (Replace in 10 years)                          |
| Toilet Partition - metal, incl. demo of existing           | 15  | 21  | -6  | F                   | Decision |          | EA   |             |             | Likely can last  |
| Drinking Fountains (c. 2011)                               | 15  | 10  | 5   | G                   |          | 2        | EA   | \$4,350.00  | \$8,700.00  | dual basin, ADA (Replace in 10 years)                      |
| Acoustical Control   | 20  | 1   | 19  |                     |          |          | SF   | \$18.50     | \$0.00      |  |
| AV/Equipment   | 12  | 1   | 11  |                     | ?        |          | LS   | \$50,000.00 | \$0.00      | typical  |
| Window Covering  | 12  | 1   | 11  |                     | Monitor  |          | SF   | \$12.50     | \$0.00      | manual, fabric; at WCLS discretion                         |
| Anchor - Library Shelving, floor                           | 0   | 0   | 0   |                     |          | 40       | LOC  | \$55.00     | \$2,200.00  | Existing units very heavy - NOT Anchored.                  |
| Anchor - Library Shelving, wall                            |     |     |     |                     |          |          | LOC  | \$48.00     | \$0.00      |  |
| Residential Appliances                                     | 15  | 21  | -6  | G                   | Assess   | 4        | EA   | \$1,200.00  | \$4,800.00  | Due for replacement within 10 years.                       |

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**ARCHITECTURAL INTERIORS - COST**

| Item  | Cost             |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | Total            |
|---|------------------|------------------|------------|-----------------|------------|------------|------------|------------|------------------|-----------------|----------------|------------|------------|------------|------------|-----------------|-----------------|-----------------|------------|------------|------------------|
|   | 1<br>2021        | 2<br>2022        | 3<br>2023  | 4<br>2024       | 5<br>2025  | 6<br>2026  | 7<br>2027  | 8<br>2028  | 9<br>2029        | 10<br>2030      | 11<br>2031     | 12<br>2032 | 13<br>2033 | 14<br>2034 | 15<br>2035 | 16<br>2036      | 17<br>2037      | 18<br>2038      | 19<br>2039 | 20<br>2040 |                  |
| Doors & Frames                                      |                  |                  |            | \$13,140        |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$13,140         |
| Door/Opening Hardware                               | \$5,500          |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            | \$5,500         |                 |                 |            |            | \$11,000         |
| HM Door Frame - Replace                             |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Auto-Opener - Opening                               |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Access Control - Opening                            |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Flooring  |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Resilient Floor (tile/sheet)                        |                  | \$22,628         |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 | \$22,628        |            |            | \$45,256         |
| Carpet  |                  | \$87,181         |            |                 |            |            |            |            | \$87,181         |                 |                |            |            |            |            | \$87,181        |                 |                 |            |            | \$261,543        |
| Concrete  |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Ceramic/Quarry Tile                                 |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Base - Ceramic Tile                                 |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Base - Wood, 1 x 4                                  |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Base - Rubber Cove, 4"                              |                  | \$14,135         |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 | \$14,135        |            |            | \$28,270         |
| Ceilings  |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| GWB/Plaster   |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Paint   | \$3,889          |                  |            |                 |            |            |            |            | \$3,889          |                 |                |            |            |            |            |                 |                 | \$3,889         |            |            | \$11,667         |
| ACT   | \$64,975         |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$64,975         |
| Walls   |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Specialty Surface                                   |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Repaint   | \$44,324         |                  |            |                 |            |            |            |            | \$44,324         |                 |                |            |            |            |            |                 |                 | \$44,324        |            |            | \$132,972        |
| Interior Lighting - LED                             |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Cabinets (Base & Uppers)                            | \$25,080         |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$25,080         |
| Countertop/sink                                     | \$10,600         |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$10,600         |
| Kitchen Sink/LAV - single basin, incl. ADA controls | \$1,025          |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$1,025          |
| Restrooms   |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Toilet Accessories                                  |                  |                  |            |                 |            |            |            |            |                  | \$3,430         |                |            |            |            |            |                 |                 |                 |            |            | \$3,430          |
| Toilet Fixtures (toilet)                            |                  |                  |            |                 |            |            |            |            |                  | \$7,462         |                |            |            |            |            |                 |                 |                 |            |            | \$7,462          |
| Toilet Fixtures (sink)                              |                  |                  |            |                 |            |            |            |            |                  | \$5,125         |                |            |            |            |            |                 |                 |                 |            |            | \$5,125          |
| Toilet Partition - metal, incl. demo of             |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Drinking Fountains                                  |                  |                  |            |                 |            |            |            |            |                  | \$8,700         |                |            |            |            |            |                 |                 |                 |            |            | \$8,700          |
| Acoustical Control                                  |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| AV/Equipment  |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Window Covering                                     |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Anchor - Library Shelving, floor                    | \$2,200          |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$2,200          |
| Anchor - Library Shelving, wall                     |                  |                  |            |                 |            |            |            |            |                  |                 |                |            |            |            |            |                 |                 |                 |            |            | \$0              |
| Residential Appliances                              | \$4,800          |                  |            |                 |            |            |            |            |                  |                 | \$4,800        |            |            |            |            |                 |                 |                 |            |            | \$9,600          |
| <b>Uninflated Totals</b>                            | <b>\$162,393</b> | <b>\$123,944</b> | <b>\$0</b> | <b>\$13,140</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$135,394</b> | <b>\$24,717</b> | <b>\$4,800</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$92,681</b> | <b>\$48,213</b> | <b>\$36,763</b> | <b>\$0</b> | <b>\$0</b> | <b>\$642,045</b> |

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**BUILDING MEP SYSTEMS - INVENTORY**

| Item                                   | EUL | Age | RUL | Condition (G, F, P) | Action                    | Quantity | Unit | Unit Cost    | Total Cost   | Comments   |
|--|-----|-----|-----|---------------------|---------------------------|----------|------|--------------|--------------|--|
| Water Heater w/recirc pump             | 12  | 10  | 2   | G                   | Monitor                   | 1        | EA   | \$18,600.00  | \$18,600.00  | 30 gallon storage tank w/tankless gas heater                                 |
| Heating System                         | 20  | 10  | 10  |                     | Monitor                   | 0        | SF   | \$52.50      | \$0.00       | At north: VRF w/heat recovery units.   |
| Boiler - Replace                       | 25  | 21  | 4   | P                   | Replace                   | 1        | Lump | \$15,000.00  | \$15,000.00  |  |
| Plumbing Distribution                  | 30  | 21  | 9   | F                   |                           | 1        | Lump | \$5,000.00   | \$5,000.00   | disimilar piping metals - source and provide new coupling per WH             |
| A/C Condenser                          | 15  | 21  | -6  |                     |                           | 3        | EA   | \$7,480.00   | \$22,440.00  | 5 TON (wall mounted at IT room)  |
| Elevators                              | 50  | 1   | 49  |                     | N/A                       |          | STP  | \$46,000.00  | \$0.00       | baseline   |
| Fire Suppression System                | 50  | 1   | 49  |                     | N/A                       |          | SF   | \$5.80       | \$0.00       |  |
| Electrical Service                     | 50  | 21  | 29  | P                   | Replace                   | 1        | EA   | \$133,000.00 | \$133,000.00 | Replace 208/120v, 3 phase, 4w system per WH report; assume 10 year life left |
| Electrical Wiring - Distribution       | 50  | 21  | 29  | F                   |                           | 0        | SF   | \$44.50      | \$0.00       | All electrical less lighting system  |
| Gas Distribution                       | 50  | 21  | 29  | G                   |                           | 0        | LF   | \$68.00      | \$0.00       |  |
| Hot & Cold Water Distribution          | 50  | 21  | 29  | G                   |                           | 0        | LF   | \$48.60      | \$0.00       | less for PEX system  |
| Gas Furnace - Replace                  | 20  | 21  | -1  | G                   | Replace                   |          | EA   | \$9,000.00   | \$0.00       |  |
| Electric Furnace - Replace             | 15  | 21  | -6  |                     | N/A                       |          | EA   | \$8,000.00   | \$0.00       |  |
| AHU (gas) - Replace                    | 20  | 21  | -1  |                     |                           |          | EA   | \$26,000.00  | \$0.00       |  |
| AHU (electric) - Replace               | 20  | 21  | -1  |                     |                           |          | EA   | \$25,000.00  | \$0.00       |  |
| Hose Bib - Replace                     | 30  | 21  | 9   |                     |                           | 0        | EA   | \$450.00     | \$0.00       |  |
| Lighting Control Panel - Repair        | 15  | 1   | 14  |                     | N/A                       |          | EA   | \$2,000.00   | \$0.00       |  |
| Sanitary Waste & Vent System           | 50  | 21  | 29  | G                   |                           | 0        | LF   | \$36.00      | \$0.00       | PVC  |
| Lighting - Replace (@ 1/2 of Building) | 25  | 21  | 4   | P                   | Complete Replace/Upgrades | 1        | Lump | \$197,200.00 | \$197,200.00 | Per WH cost input  |
| Security System                        | 10  | 21  | -11 | P                   |                           | 1        | Lump | \$250.00     | \$250.00     | Replace backup battery   |

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**BUILDING MEP SYSTEMS - COST**

| Item                                  | Cost          |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | Total          |
|---------------------------------------|---------------|---------------|-----------|----------------|-----------|-----------|-----------|-----------|--------------|----------------|------------|------------|------------|---------------|------------|---------------|------------|------------|------------|------------|----------------|
|                                       | 1<br>2021     | 2<br>2022     | 3<br>2023 | 4<br>2024      | 5<br>2025 | 6<br>2026 | 7<br>2027 | 8<br>2028 | 9<br>2029    | 10<br>2030     | 11<br>2031 | 12<br>2032 | 13<br>2033 | 14<br>2034    | 15<br>2035 | 16<br>2036    | 17<br>2037 | 18<br>2038 | 19<br>2039 | 20<br>2040 |                |
| Water Heater with pump Heating System |               | 18,600        |           |                |           |           |           |           |              |                |            |            |            | 18,600        |            |               |            |            |            |            | 37,200         |
| Boiler                                |               |               |           | 15,000         |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | 15,000         |
| Plumbing                              |               |               |           |                |           |           |           |           | 5,000        |                |            |            |            |               |            |               |            |            |            |            | 5,000          |
| A/C Condenser                         | 22,400        |               |           |                |           |           |           |           |              |                |            |            |            |               |            | 22,400        |            |            |            |            | 44,800         |
| Elevators                             |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| Fire Suppression System               |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| Electrical Service                    |               |               |           |                |           |           |           |           |              | 133,000        |            |            |            |               |            |               |            |            |            |            | 133,000        |
| Electrical Wiring                     |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| Gas Distribution                      |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| Hot & Cold Water Distribution         |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| Gas Furnace - Replace                 |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| Electric Furnace - Replace            |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| AHU (gas) - Replace                   |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| AHU (electric) - Replace              |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| Hose Bib - Replace                    |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| Lighting Control Panel                |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| Sanitary Waste & Vent System          |               |               |           |                |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | -              |
| Lighting                              |               |               |           | 197,200        |           |           |           |           |              |                |            |            |            |               |            |               |            |            |            |            | 197,200        |
| Security System                       | 250           |               |           |                |           |           |           |           |              | 250            |            |            |            |               |            |               |            |            |            | 250        | 750            |
| <b>Uninflated Totals</b>              | <b>22,650</b> | <b>18,600</b> | <b>-</b>  | <b>212,200</b> | <b>-</b>  | <b>-</b>  | <b>-</b>  | <b>-</b>  | <b>5,000</b> | <b>133,250</b> | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>18,600</b> | <b>-</b>   | <b>22,400</b> | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>250</b> | <b>432,950</b> |

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**TOTAL COST & INFLATION SUMMARY**

| Item   |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |            |            |            |            |            | Cost        |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
|  | 1<br>2021 | 2<br>2022 | 3<br>2023 | 4<br>2024 | 5<br>2025 | 6<br>2026 | 7<br>2027 | 8<br>2028 | 9<br>2029 | 10<br>2030 | 11<br>2031 | 12<br>2032 | 13<br>2033 | 14<br>2034 | 15<br>2035 | 16<br>2036 | 17<br>2037 | 18<br>2038 | 19<br>2039 | 20<br>2040 | Total       |
| <b>Uninflated Totals - Site</b>                    | \$97,629  | \$0       | \$0       | \$18,750  | \$0       | \$84,079  | \$0       | \$0       | \$43,375  | \$29,650   | \$84,079   | \$0        | \$0        | \$17,000   | \$1,400    | \$84,079   | \$0        | \$0        | \$0        | \$5,850    | \$465,891   |
| <b>Uninflated Totals - Architectural Envelope</b>  | \$457,571 | \$0       | \$0       | \$25,824  | \$40,000  | \$0       | \$0       | \$0       | \$13,650  | \$144,333  | \$0        | \$0        | \$20,592   | \$10,374   | \$0        | \$0        | \$0        | \$0        | \$10,374   | \$0        | \$722,718   |
| <b>Uninflated Totals - Architectural Interiors</b> | \$162,393 | \$123,944 | \$0       | \$13,140  | \$0       | \$0       | \$0       | \$0       | \$135,394 | \$24,717   | \$4,800    | \$0        | \$0        | \$0        | \$0        | \$92,681   | \$48,213   | \$36,763   | \$0        | \$0        | \$642,045   |
| <b>Uninflated Totals - Building</b>                | \$22,650  | \$18,600  | \$0       | \$212,200 | \$0       | \$0       | \$0       | \$0       | \$5,000   | \$133,250  | \$0        | \$0        | \$0        | \$18,600   | \$0        | \$22,400   | \$0        | \$0        | \$0        | \$250      | \$432,950   |
| <b>Uninflated Totals - All</b>                     | \$740,243 | \$142,544 | \$0       | \$269,914 | \$40,000  | \$84,079  | \$0       | \$0       | \$197,419 | \$331,950  | \$88,879   | \$0        | \$20,592   | \$45,974   | \$1,400    | \$199,160  | \$48,213   | \$36,763   | \$10,374   | \$6,100    | \$2,263,604 |
| Inflation Increase Percentage                      | \$0.04    | \$0.08    | \$0.11    | \$0.15    | \$0.19    | \$0.23    | \$0.26    | \$0.31    | \$0.35    | \$0.39     | \$0.44     | \$0.48     | \$0.53     | \$0.58     | \$0.63     | \$0.69     | \$0.74     | \$0.80     | \$0.86     | \$0.92     |             |
| <b>Adjusted Total Cost</b>                         | \$769,853 | \$153,657 | \$0       | \$310,176 | \$47,461  | \$103,003 | \$0       | \$0       | \$266,209 | \$462,164  | \$127,765  | \$0        | \$31,557   | \$72,744   | \$2,287    | \$335,943  | \$83,969   | \$66,108   | \$19,261   | \$11,694   | \$2,863,849 |
| Capital Reserve                                    | \$1       |           |           |           |           |           |           |           |           |            |            |            |            |            |            |            |            |            |            |            |             |
| <b>Reserve Remaining</b>                           |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |            |            |            |            |            |             |
| Reserve Increase Percentage                        | \$0.04    |           |           |           |           |           |           |           |           |            |            |            |            |            |            |            |            |            |            |            |             |
| Adjusted Reserve                                   |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |            |            |            |            |            |             |
| <b>Adjusted Reserve Remaining</b>                  |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |            |            |            |            |            |             |





## Glossary

|                   |  |
|-------------------|--|
| AC                | air conditioning   |
| ACT               | acoustic ceiling tiles   |
| ADA               | Americans with Disabilities Act  |
| air barrier       | system to control airflow between a conditioned and an unconditioned space       |
| AV                | audio visual   |
| B-Vents           | vent that pulls air from indoors   |
| BUR               | built-up (asphaltic type) roofing  |
| CMU               | concrete masonry unit (typically 8" x 16" x 8")                                  |
| code              | International Building Code (IBC) or International Existing Building Code (IEBC) |
| comp              | composite  |
| demo              | demolish   |
| DCW               | DCW Cost Management (cost estimating consultant)                                 |
| DOAS              | dedicated outside air supply   |
| EA                | each   |
| EIFS              | exterior insulation finishing system   |
| EUL               | estimated useful life  |
| FA                | fire alarm (system)  |
| FACP              | fire alarm control panel   |
| FCU / FCU Control | fan control unit   |
| foot candles      | brightness measurement units   |
| gal               | gallon   |
| GFCI              | ground-fault-circuit-interrupter   |
| GWB               | gypsum wall board; aka "drywall"   |
| ht.               | height   |
| HC                | handicap   |
| HDPE              | high density polyethylene  |
| HM                | hollow metal (usually in reference to a door/door frame)                         |
| HRV               | heat recovery ventilator   |
| HVAC              | heating, ventilation and air conditioning  |
| IBC               | International Building Code  |
| IEBC              | International Existing Building Code   |
| I-joist           | engineered wood joist  |
| KW                | Kingworks (structural engineering consultant)                                    |
| LED               | light emitting diodes, most energy efficient type of lighting                    |
| LF                | linear foot/feet   |
| Lump Sum, Lump    | stipulated or fixed price  |
| MMS               | Moment Magnitude Scale: a modern calculation similar to Richter Scale            |
| MEP               | mechanical electrical plumbing   |
| non-compliant     | doesn't meet current code or ADA requirements                                    |
| O.C., OC          | on center  |

## Glossary

|               |  |
|---------------|--|
| OAS           | outside air supply   |
| PT            | paper towel  |
| PLAM          | plastic laminate   |
| PSF           | per square foot  |
| R-Value       | standard insulation value of building materials  |
| RMC           | RMC Architects (architectural consultant)  |
| RUL           | remaining useful life  |
| SF or Sq. Ft. | square feet  |
| shear walls   | vertical structural element designed to resist lateral forces                          |
| stack loading | stack shelving area, weight of floor area per square foot                              |
| stem wall     | structure used to connect the foundation of a building to its walls                    |
| STP           | Stop. Refers to the number of floors where an elevator 'stops.'                        |
| SVA           | Sudden Valley Association (Home Owner's Association)                                   |
| tightlines    | pipng system directing rainwater away from structure                                   |
| TPO           | Thermoplastic Polyolefin membrane roofing  |
| UG            | under ground   |
| vapor barrier | layer of impermeable material used to prevent absorption of moisture into an assembly. |
| VRF           | variable refrigerant flow (HVAC technology)  |
| WC            | water closet   |
| WCLS          | Whatcom County Library System  |
| WH            | Wood Harbinger (Mechanical/Electrical Engineering Consultant)                          |

# IES Recommended Light Levels

## Waypoint's Quick Reference Guide

A footcandle (fc), the most common unit of measure used for quantifying light levels, is a measure of illuminance with one footcandle being equal to one lumen per square foot. The Illuminating Engineering Society (IES) has established recommended average maintained footcandle levels for a broad range of applications to ensure adequate illumination and safety for occupants. An important strategy in maximizing energy savings with lighting upgrade projects is to identify overlit spaces and use IES recommendations to establish new light levels that are both appropriate and desirable. Consult with a lighting energy professional to learn the proper way to establish appropriate light levels in your facility and reduce energy waste. Call Waypoint Lighting ([www.waypoint-lighting.com](http://www.waypoint-lighting.com)) at (512) 270-8625 to schedule your lighting evaluation.

| Application and Task                              | Maintained Horizontal     |                         | Maintained Vertical       |                         | Comments   |
|---|---------------------------|-------------------------|---------------------------|-------------------------|--|
|   | Average (fc) <sup>1</sup> | Range (fc) <sup>2</sup> | Average (fc) <sup>1</sup> | Range (fc) <sup>2</sup> |  |
| <b>COMMON AREAS</b>                               |                           |                         |                           |                         |  |
| ATM or Service Kiosk                              | 20                        | 10-40                   | 10                        | 5 - 20                  | Vertical at face of ATM  |
| Circulation/Corridor                              | 5                         | 2.5 - 10                | 3                         | 1.5 - 6                 | Independent Passageway   |
| Conference Room                                   | See Commercial Office     |                         |                           |                         |  |
| Filing (Intermittent)                             | 15                        | 7.5 - 30                | 10                        | 5 - 20                  |  |
| Restroom (General)                                | 5                         | 2.5 - 10                | 3                         | 1.5 - 6                 |  |
| Restroom (Vanities)                               | 15                        | 7.5 - 30                | 20                        | 10 - 40                 | See also Fixtures/Lockers/Showers                                |
| Lunch & Break Room                                | 10                        | 5 - 20                  | 3                         | 1.5 - 6                 |  |
| Stairs  | 5                         | 2.5 - 10                | 3                         | 1.5 - 6                 | Not High Activity or Surveillance                                |
| <b>COMMERCIAL OFFICE</b>                          |                           |                         |                           |                         |  |
| Open Office (Desk)                                | 40                        | 30 - 50                 | -                         | -                       | Measured at desk height  |
| Private Office (Desk)                             | 40                        | 30 - 50                 | -                         | -                       | Measured at desk height  |
| Conference Room (Table)                           | 30                        | 15 - 60                 | -                         | -                       |  |
| Whiteboard (Reading)                              | -                         | -                       | 15                        | 7.5 - 30                |  |
| Whiteboard (Presenting)                           | -                         | -                       | 30                        | 15 - 60                 |  |
| Presentation Screen (Projector)                   | -                         | -                       | 1.5                       | 1.5 - 6                 |  |
| Lunch & Break Room                                | 15                        | 5 - 20                  | -                         | -                       |  |
| <b>EDUCATIONAL (SCHOOLS)</b>                      |                           |                         |                           |                         |  |
| Classroom (Challenging Applications) <sup>3</sup> | 25                        | 25 - 100                | 3.75                      | 3.75 - 15               | Arts, Blueprints, Lab Bench;<br>Measured at desk height          |
| Classroom (Typical Applications) <sup>3</sup>     | 15                        | 15 - 60                 | 2.5                       | 2.5 - 10                | Reading, Writing;<br>Measured at desk height                     |
| Auditorium/Lecture Hall (AV, Notes)               | 5                         | 2.5 - 10                | 5                         | 2.5 - 10                |  |
| Auditorium/Lecture Hall (AV)                      | 1                         | 0.5 - 2                 | 5                         | 2.5 - 10                |  |
| Auditorium/Lecture Hall (no AV)                   | 10                        | 5 - 20                  | 5                         | 2.5 - 10                |  |
| Gymnasium-Class I (Pro or Div. 1 College)         | 100                       | -                       | 30                        | -                       | See NCAA & professional guides;<br>> 5000 spectators             |
| Gymnasium-Class II (Div. 2 or 3 College)          | 75                        | -                       | 20                        | -                       | Competition; ≤ 5000 spectators                                   |
| Gymnasium-Class III (High School)                 | 50                        | -                       | 150                       | -                       | Competition; Some spectators                                     |
| Gymnasium-Class IV (Elementary)                   | 30                        | -                       | 100                       | -                       | Competition or Recreational Play;<br>No provision for spectators |

| Application and Task   | Maintained Horizontal     |                         | Maintained Vertical       |                         | Comments                            |
|--|---------------------------|-------------------------|---------------------------|-------------------------|-------------------------------------|
|  | Average (fc) <sup>1</sup> | Range (fc) <sup>2</sup> | Average (fc) <sup>1</sup> | Range (fc) <sup>2</sup> |                                     |
| <b>EXTERIOR</b>  |                           |                         |                           |                         |                                     |
| Parking (Covered)  | 5                         | -                       | -                         | -                       | 1 Min; 10:1 Max-Min Uniformity      |
| Parking (Uncovered) Zone 3 (Urban)                                     | 1.5                       | 0.75 - 3                | 0.8                       | 0.4 - 1.6               |                                     |
| Parking (Uncovered) Zone 2 (Suburban)                                  | 1                         | 0.5 - 2                 | 0.6                       | 0.3 - 1.2               |                                     |
| Gas Station Canopy   | 12.5                      | 10 - 15                 | -                         | -                       |                                     |
| Safety (Building Exterior)   | 1                         | 0.5 - 2                 | -                         | -                       | For security issues, raise Avg to 3 |
| <b>INDUSTRIAL/MANUFACTURING</b>  |                           |                         |                           |                         |                                     |
| Assembly & Inspection (Simple)<br>Component Manufacture (Large Part)   | 30                        | 15 - 60                 | 30                        | 15 - 60                 |                                     |
| Component Manufacture (Med. Part)                                      | 50                        | 25 - 100                | 50                        | 25 - 100                |                                     |
| Assembly & Inspection (Difficult)<br>Component Manufacture (Fine Part) | 100                       | 50 - 200                | 100                       | 50 - 200                |                                     |
| Assembly & Inspection (Exacting)                                       | 300                       | 150 - 600               | -                         | -                       |                                     |
| <b>RETAIL</b>  |                           |                         |                           |                         |                                     |
| Discount/Warehouse/Drug/<br>Convenience (Ambient)                      | 50                        | 25 - 100                | 20                        | 10 - 40                 |                                     |
| Discount/Warehouse/Drug/<br>Convenience (Perimeter)                    | -                         | -                       | 50                        | 25 - 100                |                                     |
| Department Store (Ambient)   | 40                        | 20 - 80                 | 15                        | 7.5 - 30                |                                     |
| Department Store (Perimeter)   | -                         | -                       | 75                        | 25 - 150                |                                     |
| Accent Lighting (Displays)   | -                         | -                       | -                         | -                       | 3-10 times more than ambient        |
| <b>RETAIL (AUTOMOTIVE SALES)</b>                                       |                           |                         |                           |                         |                                     |
| Showroom   | 50                        | 25 - 100                | 10                        | 5 - 20                  |                                     |
| Service Area   | 50                        | 25 - 100                | 30                        | 15 - 60                 |                                     |
| Sales Lot (Exterior) Zone 3 (Urban)                                    | 20                        | 10 - 40                 | 20                        | 10 - 40                 |                                     |
| Sales Lot (Exterior) Zone 2 (Suburban)                                 | 15                        | 7.5 - 30                | 15                        | 7.5 - 30                |                                     |
| <b>RETAIL (GROCERY)</b>  |                           |                         |                           |                         |                                     |
| Circulation  | 20                        | 10 - 40                 | 7.5                       | 3.5 - 15                |                                     |
| General Retail   | 50                        | 25 - 100                | 20                        | 10 - 40                 |                                     |
| Perimeter  | -                         | -                       | 50                        | 25 - 100                |                                     |
| <b>WAREHOUSING &amp; STORAGE</b>                                       |                           |                         |                           |                         |                                     |
| Bulky Items - Large Labels   | 10                        | 5 - 20                  | 5                         | 2.5 - 10                |                                     |
| Small Items - Small Labels   | 30                        | 15 - 60                 | 15                        | 7.5 - 30                |                                     |
| Receiving/Shipping Dock  | 10                        | 5 - 20                  | 3                         | 1.5 - 6                 |                                     |
| Receiving/Staging  | 30                        | 15 - 60                 | 10                        | 5 - 20                  |                                     |

**Source:** Compiled by CleaResult Consulting from the 'The Lighting Handbook' 10th Edition from the Illuminating Engineering Society (IES); Adapted from Foot Candle Light Guide produced by Energy Trust of Oregon and Lighting Design

- Use a professional lighting specifier to determine and provide appropriate light levels as defined by the IES.
- Horizontal - Average maintained foot-candles are measured at horizontal plane.
- Vertical - Average maintained foot-candles are measured at vertical plane.

<sup>1</sup> At least half of users (occupants) are in the 25 - 65 age range

<sup>2</sup> Ranges are based on situations where at least half of users are < 25 years of age (Low value) and > 65 years of age (High value)

<sup>3</sup> Recommendation for Classrooms assume at least half of users are < 25 years of age (Low range value); When designing the space for students, allowances should be made for the instructor (e.g. task lighting or downlight over desk)

The logo graphic consists of the letters 'R', 'M', and 'C' in a stylized, overlapping font. The 'R' and 'M' are on the left, and the 'C' is on the right, partially overlapping the 'M'. The letters are in a dark brown color.

Thank  
you.

1223 Railroad Ave, Bellingham, WA 98225 360.676.7733

RMC is a community-oriented design firm: we are committed to improve the quality of our shared communities built through holistic, place-centered architecture.