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EXECUTIVE SUMMARY

A. Project Description

Project Scope:

The Upham Woods Facility Study was initiated by UW Extension and the Division of State Facilities (DSF) to evaluate current conditions at the Upham Woods Outdoor Learning Center, located in Wisconsin Dells, Wisconsin and to formulate future development options for the facility.

At the direction of DSF, the project scope was limited to the following elements:

- Building Assessment
- Topographic Site Survey (focused on developed areas only)
- Site Utility Assessment (Water and Wastewater Systems)
- Site Master Plan
- Future Development (First Phase):
  - New Bathhouse
  - Reuse of Existing Bathhouse
  - Central Lodge (Dining) Expansion

Project Team:

**KEE Architecture, Inc.** (Madison, Wisconsin) was the prime A/E for the Upham Woods Facility Study, coordinating all aspects of the project, conducting building assessments and providing guidance regarding future development options. **JDR Engineering** (Madison, Wisconsin) conducted mechanical/electrical assessment of buildings. **MSA Professional Services** (Baraboo, Wisconsin) provided topographic survey and site utility assessment services.

Other representatives on the project team included **Erik Sande** (DSF), **Maura Donnelly** (UW System), **Luis Fernandez** (UW Extension) and **Jessica Jens** (Upham Woods).

Additional input was received from members of the Upham Woods staff as well as the Upham Woods Advisory Committee.

B. Upham Woods Outdoor Learning Center

Site and History:

Upham Woods sits on a unique 310-acre site on the Wisconsin River, two miles north of the Wisconsin Dells. The heavily wooded property includes the 210-acre Blackhawk Island, designated a state natural area.

The majority of the property was donated to the University of Wisconsin in 1941 by sisters Elizabeth and Caroline Upham, with the stipulation that: "These lands are to be used as an outdoor laboratory and camp for youth, such as 4-H clubs and other people cooperating with the University of Wisconsin in the advancement of conservation, of agriculture and rural culture."

Mission:

Upham Woods Outdoor Learning Center provides educational opportunities to youth, youth leaders, and adults through year-round programs focused on environmental and leadership education. Programs
include environmental lesson plans, summer camp programming, leadership workshops and other conferences.

Facilities:
The Upham Woods site includes 14 significant buildings (with construction year noted), located in a concentrated ± 20 acre portion of the site (see Partial Site Plan, above):

- Cabins
  - Craig (1951)
  - Bewick (1951)
  - Bible (1952)
  - Ranger Mac (1954)
  - Varney (1957)
  - Ihlenfeldt (1961)

- Dining Shelter & Kitchen (now Varney Arts & Crafts Building) (1952)
- Administration Building (1957)
- Bathhouse (1962)
- Duplex Residence (1965)
- Central Lodge (1967)
- Dormitory (1971)
- Nature Center (1977)
- Maintenance Building (1987)

In addition, there are a number of smaller structures on the site, for storage and accessory uses.
On-site bed capacity is approximately 200, including (150) in eight cabins on Cabin Hill and (52) in the Dormitory.

Staff:
Upham Woods has a full-time staff of four, plus one half-time maintenance person. Custodial work is done by two half-time employees.

In addition, five full-time teaching naturalists live on-site in spring, summer and fall. During winter, naturalist staff is reduced, typically by two or three positions.

Foodservice is contracted to an outside vendor.

C. Building Assessment
Each of the 14 Upham Woods buildings was analyzed, based on available extant drawings, staff input and site observation. (A detailed summary of plans, descriptions and observations are found in Section C.)

Building Analysis:
- In general, the facilities at Upham Woods are in good condition, considering the age and intended use
- While many buildings are over fifty years old, they have been well-maintained and continue to serve the needs of the program
- In the last decades, ongoing maintenance has been addressed, near-term needs identified and limited resources allocated to minor improvements
- Some buildings need significant upgrades or replacement (e.g. Bathhouse)
- Structures are built with wood frame construction, some on masonry or concrete foundations
- Some maintenance (roofs) and upgrades (floors + equipment) have been done
- Mechanical/electrical systems are straight forward but most have exceeded their useful life
- Accessibility for those with disabilities has been addressed, but only to a limited extent
- Building expansion and remodeling may be limited in floodplain, particularly for Lodge (see below)

Recommendations: See Future Development, below.

D. Site Utility Assessment
Water Supply (Well) System:
MSA reviewed on-site water systems at Upham Woods. There is a single well at the site, with potable water distribution to six buildings:

- Administration Building
- Bath House
- Residence Duplex
- Central Lodge
- Dormitory
- Nature Center
The well was analyzed in detail, based on extant drawings, maintenance records, staff input and site observation. **Appendix X-3** includes a description of the well (construction, depth, capacity, usage, etc.), current condition and short- and long-term recommendations.

General observations about the well and water distribution systems include the following:

- The well is documented to be 108 feet deep, pumping at approximately 60 GPM at 45 to 68 PSI
- The 1,000 gallon pressure tank is below grade, which is not typically done today with new wells
- Water capacity is reported to be inadequate
- Water quality is good, per recent testing conducted by Upham Woods
- Distribution piping is less than 3” diameter and is direct-buried to each building served

Water system recommendations include:

- Install water meters
- Add capacity to the existing well
- Construct an additional well, tied to existing system

**Wastewater System:**

There are six separate on-site wastewater (septic) systems at Upham Woods, each serving one building:

- Administration Building
- Bathhouse
- Residence Duplex
- Central Lodge
- Dormitory
- Nature Center

Each system was installed at the time of original building construction (see above), and no significant upgrades have been done. Septic systems were analyzed in detail, based on extant drawings, maintenance records, staff input and site observation. **Appendix X-4** includes a description of each system (including layout of tanks and drainfields), current flows, current usage, current condition and short- and long-term recommendations.

General observations about the existing septic systems include the following:

- All systems are old (the most recent is over 30 years old, the oldest more than 50) and have exceeded the normal life expectancy of systems of their vintage, design and use
- The Administration Building system requires frequent pumping, causing limitations being placed on use of the facilities
- Some systems have not been pumped in years (e.g. Duplex and Lodge - > 5 years)
- Most systems are designated as emitting „normal” strength waste (except Central Lodge, which is “high strength” due to kitchen)
- It was difficult to locate some system components (e.g. Administration Building field is likely under parking lot & drive; Duplex system location could not be determined)
- Tank installed at Dorm is likely smaller than size indicated on drawings (based on pumping records)
- None of the systems would meet current codes, although upgrades are not typically required unless system components fail or other changes are made (such as building use)
- Soils were analyzed in the area of each of the septic fields
- Flood plain (and soil) conditions will limit locations and types of future septic fields
• Short-term maintenance is required at all systems, including removal of vegetation growing over tanks and fields, repair of numerous components, and regular pumping and tank cleaning
• Siphon tank is malfunctioning at the Bath House and should be repaired
• Recommended testing the strength of Central Lodge wastewater prior to making changes to the wastewater system

The wastewater analysis evaluated three options for implementation of upgrades:

Alternate A – A single on-site wastewater treatment system for the entire development.  
(Estimated Cost: $ 471,658)

Alternate B – Three separate treatment systems: 1) Central Lodge, 2) Bathhouse, and 3) all other buildings.  (Estimated Cost: $ 433,897)

Alternate C – Municipal treatment, including construction of a lift station and forcemain to connect to the City of Wisconsin Dells collection system at the nearest manhole.  (Estimated Cost: $ 634,881)

At this time, options for implementation are being evaluated, with Alternate B (three separate systems) considered to be the most likely to be implemented.

E. Future Development

As the Upham Woods program looks to the future, optimum use of the site and facilities will require maintenance and improvement to meet future needs.  The following outlines principles, master plan and recommendations for improvements are considered for implementation.

Guiding Principles:

Based on input from Upham Woods staff and meetings with the Advisory Committee, a group of guiding principles have been developed to use as future improvements at the facility are considered:

• Emphasis on Youth Groups
• Sustainability
• Flexibility
• Accessibility
• Connection to Outdoors
• Connection to River
• Flow & Sequence
• Organization
• Phasing-
• Image
Site Master Plan

A Conceptual Master Plan has been established to provide a framework for overall development in the area of Upham Woods that will continue to be the focus of capital improvements in the future.
Development Recommendations:
During planning sessions, a number of short-, medium- and long-term priorities have been identified for improvements, subject to funding and programmatic requirements:

**Short-Term – 0 to 2 years:**
1. Ongoing maintenance of all buildings
2. Minor repairs (cabins)
3. Accessibility upgrades (cabins)
4. Septic system maintenance

**Medium-Term (Utilities) – 2 to 6 years:**
5. Sanitary system upgrades
6. Water supply upgrades – capacity and duplication

**Medium-Term (Buildings – 2 to 6 years):**
7. New Bathhouse Building (and remodeling of existing Bathhouse)
8. Miscellaneous and Site Improvements
9. Expanded & Remodeled Lodge (to increase dining capacity)

**Long-Term – 6 years+:**
10. Expanded Dormitory (to increase bed capacity)
11. Other facilities:
   - Nature Center (addition and remodeling)
   - Administration Building (remodeling)
   - Duplex (remodel for program use)
   - Staff Housing (add staff housing)
### Project Budget:

<table>
<thead>
<tr>
<th>Recommendation/Project</th>
<th>Budget Cost Estimate (Low to High Range) All in 2010 Dollars</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ongoing building maintenance (all buildings)</td>
<td>Varies</td>
<td>By Owner</td>
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<tr>
<td>2. Minor repairs (cabins)</td>
<td>$10,000 – $25,000</td>
<td>Cost per cabin (scope TBD)</td>
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<td>3. Accessibility upgrades (cabins)</td>
<td>$60,000 – $80,000</td>
<td>Cost per cabin - unisex toilet &amp; caregiver room</td>
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<td>4. Septic system maintenance</td>
<td>$12,000 – $16,000</td>
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<tr>
<td>5. Sanitary system upgrades</td>
<td>$434,000 – $635,000</td>
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<td>6. Water supply upgrades</td>
<td>$8,300 – $75,000</td>
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<td>7. New Bathhouse and Remodel exiting Bathhouse</td>
<td>$815,000 – $1,100,000</td>
<td>(4)</td>
</tr>
<tr>
<td>8. Miscellaneous and Site Improvements</td>
<td>$90,000 – $400,000</td>
<td>(5)</td>
</tr>
<tr>
<td>9. Expanded &amp; Remodeled Central Lodge</td>
<td>$1,625,000 – $2,000,000</td>
<td>(6)</td>
</tr>
<tr>
<td>10. Expanded Dormitory</td>
<td>$2,375,000 – $3,250,000</td>
<td>(7)</td>
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<tr>
<td>11. Other facilities</td>
<td>Varies</td>
<td>To Be Determined</td>
</tr>
</tbody>
</table>

### Notes:

1. Per MSA recommendation (See Section E and Appendix X-4).
2. Per MSA sanitary system recommendations. Low = individual system replacement, High = connection to municipal system (TBD). Includes Construction Cost plus 25% allowance for other project costs.
3. Per MSA water system recommendations. Low = increased capacity, High = additional well & enclosure. Includes Construction Cost plus 25% allowance for other project costs.
4. Per KEE Architecture estimate - includes Construction Cost plus 25% allowance for other project costs.
5. Upgrade roads and paths to Cabin Hill; revise entry; add remote parking; and/or provide access to Blackhawk Island.
6. Per KEE Architecture estimate - includes Construction Cost plus 25% allowance for other project costs. Excludes sitework and flood proofing.
7. Per KEE Architecture estimate. Based on shared restroom facilities. Includes Construction Cost plus 25% allowance for other project costs – in 2010 dollars. Sitework excluded.
F. Summary

Throughout its rich history, Upham Woods has provided unique opportunities for young visitors to experience the outdoor environment. The facilities have been nominally improved and upgraded since 1941 when the land was donated to the University of Wisconsin. But the future of Upham Woods programs requires additional development of and investment in facilities to realize the full vision of the Upham family and others in meeting the needs of users for the next generation.

Along with ongoing maintenance and minor upgrades, master planning will guide changes as Upham Woods facilities are added and improved to better serve the growing needs of the program as well as to provide increased accessibility, sustainability and a strong connection to the outdoors. Short-, medium- and long-range priorities have been established and can be implemented as funding becomes available.

This facility study is the first step in a process of in-depth evaluation, design and implementation – a vision for the future of Upham Woods.

Recommendations:

- Plan for the future with Guiding Principles and Conceptual Master Plan in mind
- Continue with ongoing maintenance and minor repairs of all buildings
- Improve access to users with disabilities, particularly on Cabin Hill, by upgrading roads, paths and one or more cabins for full accessibility
- Upgrade accessibility to common use elements of all publicly-accessed spaces where feasible
- Maintain existing septic systems, including recommendations made by MSA
- Upgrade sanitary system for long-term use, including added capacity for additional buildings
- Upgrade water supply system for long-term use, including added capacity and redundancy (second well)
- Build new Bathhouse on Cabin Hill
- Remodel existing Bathhouse as multi-season program structure
- Expand and remodel Central Lodge to increase dining capacity to 225
- Expand Dormitory to increase bed capacity to 108
- Address specific issues of other buildings on site as master plan is implemented (including Nature Center, Administration Building, Duplex and Staff Housing)
- Continue with detailed facility master planning to more fully incorporate Upham Woods long-term needs in development planning
A. PROJECT DESCRIPTION

Project Scope:
The Upham Woods Facility Study was initiated by UW Extension and the Division of State Facilities (DSF) to evaluate current conditions at the Upham Woods Outdoor Learning Center, located in Wisconsin Dells, Wisconsin and to formulate future development options for the facility.

At the direction of DSF, the project scope was limited to the following elements:

- **Building Assessment**
  Each of the 14 buildings on the Upham Woods site was visited, documented, described and assessed regarding current condition, recommended upgrades and future use.

- **Topographic Site Survey**
  Since an accurate topographic site survey did not exist for the developed areas of the Upham Woods property, a detailed survey was completed for the 25+ acre area including all buildings and infrastructure.

- **Site Utility Assessment (Water and Wastewater Systems)**
  Both water supply and wastewater systems are critical to the continued use of Upham Woods, and both are old. Each was analyzed in detail, with emphasis on providing systems for long-term use, including future expansion.

- **Site Master Plan**
  A comprehensive review of facility requirements as well as future Upham Woods programmatic goals were included as part to this study. Short- and long-term goals for future development are summarized in a site master plan and associated narrative.

- **Future Building Development (First Phase):**
  - **New Bathhouse**
    Replacement of the original Bathhouse (built in 196x) was identified as the top priority for building improvements. Program requirements include adequate, year-round, fully-accessible facilities for Cabin Hill.
  
  - **Reuse of Existing Bathhouse**
    Along with replacement of the existing facility, adaptive reuse of the existing Bathhouse was considered. The site at the top of Cabin Hill lends itself to semi-enclosed program space for use by groups of various sizes, another need identified for the facility.
  
  - **Central Lodge (Dining) Expansion**
    Current capacity at Upham Woods is limited by the allowable number of diners in the Central Lodge. Expansion of the kitchen and dining from 150 persons to 225-250 will allow for larger group sizes and more flexible programming for users. Additional upgrades of mechanical/electrical systems and accessibility improvements are also recommended.
Project Team:

**KEE Architecture, Inc.** (Madison, Wisconsin) was the prime A/E for the Upham Woods Facility Study, coordinating all aspects of the project, conducting building assessments and providing guidance regarding future development options. **JDR Engineering** (Madison, Wisconsin) conducted mechanical/electrical assessment of buildings. **MSA Professional Services** (Baraboo, Wisconsin) provided topographic survey and site utility assessment services.

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Other representatives on the project team included **Erik Sande** (DSF), **Maura Donnelly** (UW System), **Luis Fernandez** (UW Extension) and **Jessica Jens** (Upham Woods).

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Additional input was received from members of the Upham Woods staff as well as the Upham Woods Advisory Committee.
B. UPHAM WOODS OUTDOOR LEARNING CENTER

History:
Upham Woods was the vision of sisters Elizabeth and Caroline Upham who, in 1941, donated 310 acres of wooded property to the University of Wisconsin. Acquired 35 years previously, the Upham family property had been occupied by Native Americans (Ho-Chunk) as well as European settlers. Blackhawk Island was the site of a bridge and a three-story dwelling known as the Dells House, built in 1837. It was the first permanent house built on the Wisconsin River north of Portage. The area saw great activity during the fur trade and logging boom of the 19th and early 20th centuries, but remained largely as it was left by the early inhabitants, due to preservation by subsequent caretakers.

Among the stipulations set forth in the conveyance of the property by the Upham family were the following:

- The lands shall be known as Upham Woods
- The lands are to be used as an outdoor laboratory and camp for youth, such as 4-H clubs and other people cooperating with the University of Wisconsin in the advancement of conservation, of agriculture or of rural culture
- The lands are not to be used as a public park and are not to be developed commercially in any way
- No permanent buildings are to be erected or maintained on Blackhawk Island
- No large or permanent bridge is to be erected or maintained from the mainland to Blackhawk Island
- The University shall endeavor to preserve the wilderness condition of Blackhawk Island, and to perpetuate the island in its natural and information condition
- A committee, including educators and researchers, shall be selected to supervise the use of the property

The first Upham Woods Committee met in late 1941 to begin discussions about the use and development of the property. After a hiatus during and after World War II, the committee met again to begin formal development plans. Operational guidelines were established, a budget ($30,000 per year) was approved, and 4-H and other programs conducted.

In 1947, an additional 8.7 acres on the mainland side of the old channel was purchased as a building site.

In 1951, the J. A. Craig Cabin was built as the first permanent building on the site. Designed to accommodate 24 campers in two sleeping rooms with a lounge between, the log-slab structure would be the model for others to follow. Over the subsequent 15 years, ten additional buildings were constructed and other improvements made to outdoor spaces, waterfront, infrastructure, utilities and roads. The most recent building additions were the Dormitory (1971), Peters Nature Center (1977) and the Shop & Storage (Maintenance) Building (1987).

Since its inception, Upham Woods has served primarily as a 4-H camp for youth, with strong ties to 4-H clubs from throughout the state of Wisconsin. Usage grew steadily from just over 2,600 overnight campers in 1957 to a peak of almost 16,000 in 1993. With established year-round programs (currently at over 200 days each year), overall usage has remained high.
Site:

Upham Woods sits on a unique 310-acre site on the Wisconsin River, two miles north of the Wisconsin Dells. The heavily wooded property includes the 210-acre Blackhawk Island, designated a state natural area and offering an example of a mature mixed forest featuring flora not commonly found in the area. The island also has unique sandstone caves formed during the ice age.

See Page B-3 for developed area of site.
Facilities:
The Upham Woods site includes 14 significant buildings (with construction year noted), located in a concentrated ± 20 acre portion of the site (see Partial Site Plan, below):

- Cabins
  - Craig (1951)
  - Bewick (1951)
  - Bible (1952)
  - Ranger Mac (1954)
  - Varney (1957)
  - Ihlenfeldt (1961)

- Dining Shelter & Kitchen (now Varney Arts & Crafts Building) (1952)
- Administration Building (1957)
- Bathhouse (1962)
- Duplex Residence (1965)
- Central Lodge (1967)
- Dormitory (1971)
- Nature Center (1977)
- Shop & Storage (Maintenance) Building (1987)

In addition, there are a number of smaller structures on the site, for storage and accessory uses.

On-site bed capacity is approximately 200, including (150) in eight cabins on Cabin Hill and (52) in the Dormitory.
**Programs and Operation:**

Upham Woods Outdoor Learning Center provides educational opportunities to youth, youth leaders, and adults through year-round programs focused on environmental and leadership education. Programs include environmental lesson plans, summer camp programming, leadership workshops and other conferences as outlined in the 2010 Program Matrix, below.

### Program Matrix

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>Spring &amp; Fall</th>
<th>Summer Only</th>
<th>Winter</th>
<th>Grades</th>
<th>Grades</th>
<th>Grades</th>
<th>Fee Program</th>
<th>Uplift Staff Required</th>
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* – recommended / ** – Life Guard Required
Staff:

Upham Woods has a full-time staff of four, plus one half-time maintenance person. Custodial work is done by two half-time employees.

In addition, five full-time teaching naturalists live on-site in spring, summer and fall. During winter, naturalist staff is reduced, typically by two or three positions.

Foodservice is contracted to an outside vendor.
Building Assessment
C. BUILDING ASSESSMENT

Overview:

Each of the 14 Upham Woods buildings was analyzed, based on available extant drawings, staff input and site observation.

A description and summary of each building follows on pages C-2 through C-17.

A more detailed analysis of the plumbing, electrical and HVAC (heating, ventilating and air conditioning) systems for each building follows on pages C-18 through C-24.

Assessment Summary:

- In general, the facilities at Upham Woods are in good condition, considering the age and intended use
- While many buildings are over fifty years old, they have been well-maintained and continue to serve the needs of the program
- In the last decades, ongoing maintenance has been addressed, near-term needs identified and limited resources allocated to minor improvements
- Some buildings need significant upgrades or replacement (e.g. Bathhouse)
- Structures are built with wood frame construction, some on masonry or concrete foundations
- Some maintenance (roofs) and upgrades (floors + equipment) have been done
- Mechanical/electrical systems are straight forward but most have exceeded their useful life
- Accessibility for those with disabilities has been addressed, but only to a limited extent
- Building expansion and remodeling may be limited in floodplain, particularly for Lodge (see below)

Recommendations:

See Future Development, below.
**Craig Cabin**  
**# 0441**

**Name:** Craig Cabin  
**Function:** Cabin  
**Year Built:** 1951  
**Area (GSF):** 1,073 SF

**BUILDING DESCRIPTION**

**General:** 1 Story Wood framed building

**Function:** Sleeping quarters for 26

**Structure:** Concrete piers w/ wood infill skirt; wood frame exterior walls; 2” half-round log siding; Asphalt shingle roof; wood double-hung windows w/ aluminum storm windows; awning windows; wood doors w/ wood screen doors; hollow metal doors; wood deck; brick chimney

**Furniture:** bunkbeds for 26, tables and chairs in central space, woodstove

**Plumbing:** no plumbing

**Electrical:** Undetermined 120/240V overhead electric service; exit signs - nonoperational; no egress lighting; fire/smoke alarm devices

**HVAC:** (1) wood-burning stove; electric baseboard heaters; no air-conditioning

**Site:** Unimproved Path.
**Bewick Cabin**

**# 0443**

**Name:** Bewick Cabin  
**Function:** Cabin  
**Year Built:** 1951  
**Area (GSF):** 1,073 SF

### BUILDING DESCRIPTION

**General:** 1 Story Wood framed building

**Function:** Sleeping quarters for 28

**Structure:** Concrete piers w/ wood infill skirt; wood frame exterior walls; 2” half-round log siding; Asphalt shingle roof; wood double-hung windows w/ aluminum storm windows; hollow metal doors; enclosed wood porch; stone chimney

**Furniture:** bunkbeds for 28, tables and chairs in central space, woodstove

**Plumbing:** no plumbing

**Electrical:** Undetermined 120/240V overhead electric service; exit signs - nonoperational; no egress lighting; fire/smoke alarm devices

**HVAC:** (1) wood-burning stove; electric baseboard heaters; no air-conditioning

**Site:**
Bible Cabin
# 0444

Name: Bible Cabin
Function: Cabin
Year Built: 1952
Area (GSF): 608 SF

BUILDING DESCRIPTION

General: 1 Story Wood framed building

Function: Sleeping quarters for 14

Structure: Concrete piers w/ wood infill skirt; wood frame exterior walls; 2” half-round log siding; Asphalt shingle roof; wood double-hung windows w/ aluminum storm windows; wood doors w/ wood screen doors

Furniture: bunkbeds for 14, tables and chairs in central space, woodstove

Plumbing: no plumbing

Electrical: Undetermined 120/240V overhead electric service; exit signs - nonoperational; no egress lighting; fire/smoke alarm devices

HVAC: (1) wood-burning stove; electric baseboard heaters; no air-conditioning

Site:
**Ranger Mac Cabin**

**# 0445**

**Name:** Ranger Mac Cabin  
**Function:** Cabin  
**Year Built:** 1952  
**Area (GSF):** 608 SF

**BUILDING DESCRIPTION**

**General:** 1 Story Wood framed building

**Function:** Sleeping quarters for 14

**Structure:** Concrete piers w/ wood infill skirt; wood frame exterior walls; 2” half-round log siding; Asphalt shingle roof; wood double-hung windows w/ aluminum storm windows; wood doors w/ wood screen doors

**Furniture:** bunkbeds for 14, tables and chairs in central space, woodstove

**Plumbing:** no plumbing

**Electrical:** Undetermined 120/240V overhead electric service; exit signs - nonoperational; no egress lighting; fire/smoke alarm devices

**HVAC:** (1) wood-burning stove; electric baseboard heaters; no air-conditioning

**Site:**

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**Upham Woods Facility Study**

Upham Woods 4-H  
Environmental Education Center  
N194 County TRK N  
Wisconsin Dells, WI 53965  
DSF Project #09E1F

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**EXISTING PHOTOS**

[SOUTH/EAST ELEVATIONS]  
[NORTH ELEVATION]  
[BUILDING ENTRY]
**Varney Cabin**  
# 0448

**Name:** Craig Cabin  
**Function:** Cabin  
**Year Built:** 1951  
**Area (GSF):** 1,073 SF

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**EXISTING PHOTOS**

**SOUTHEAST ELEVATION**

**SOUTHEAST ELEVATION**

**NORTHWEST ELEVATION**

**SOUTHWEST ELEVATION**

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**BUILDING DESCRIPTION**

**General:** 1 Story Wood framed building

**Function:** Sleeping quarters for 32

**Structure:** Concrete piers w/ wood infill skirt; wood frame exterior walls; 2” half-round log siding; Asphalt shingle roof; wood double-hung windows w/ aluminum storm windows; wood doors w/ wood screen doors; hollow metal doors

**Furniture:** bunkbeds for 32, tables and chairs in central space, woodstove

**Plumbing:** no plumbing

**Electrical:** Undetermined 120/240V overhead electric service; exit signs - nonoperational; no egress lighting; fire/ smoke alarm devices

**HVAC:** (1) wood-burning stove; electric baseboard heaters; no air-conditioning

**Site:**
**Ihlenfeldt Cabin**

**# 0434**

**Name:** Ihlenfeldt Cabin  
**Function:** Sleeping Cabin  
**Year Built:** 1961  
**Area (GSF):** 1,182 SF

**BUILDING DESCRIPTION**

**General:** 1 Story Wood framed building

**Function:** Sleeping quarters for 32

**Structure:** Concrete foundation walls; wood frame exterior walls; 2” half-round log siding; Asphalt shingle roof; wood double-hung and awning windows; hollow metal doors; wood deck; brick chimney

**Furniture:** bunkbeds for 32, tables and chairs in central space, wood stove

**Plumbing:** no plumbing

**Electrical:** Undetermined 120/240V overhead electric service; exit signs - nonoperational; no egress lighting; fire/smoke alarm devices

**HVAC:** (1) wood-burning stove; electric baseboard heaters; no air-conditioning

**Site:**

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**EXISTING PHOTOS**

**WEST ELEVATION**  
**NORTH ELEVATION**

**INTERIOR OF BUNK ROOM**  
**INTERIOR OF CENTRAL SPACE**
Varney Craft Center
# 0442

Name: Varney Craft Center
Function: Arts & Crafts
Year Built: 1952
Area (GSF): 1,965 SF

BUILDING DESCRIPTION
General: 1 Story Wood framed building

Function: Houses arts and crafts sessions. (2) craft rooms w/ concrete floor & (2) wood stoves, storage room. Ski and camping supplies are stored in this bldg during the off seasons.

Structure: Concrete foundation walls; wood frame exterior walls; Wood bevel siding; Asphalt shingle roof; wood double-hung windows w/ aluminum storm windows; wood doors

Plumbing: No internal plumbing

Electrical: Undetermined 120/240V underground electric service from Lodge w/ Square D panel; exit signs (not working); no emergency egress lighting; no fire/smoke alarm devices

HVAC: (2) small wood-burning stoves

Site: Concrete outdoor workspace
**Administration Bldg.**

**# 0447**

**Name:** Administration Building  
**Function:** Admin. & Welcome  
**Year Built:** 1956  
**Area (GSF):** 2,100 SF

### BUILDING DESCRIPTION

**General:** 1 Story Wood framed building

**Function:** Offices for administrative and staff offices. Serves as welcome center for visitors. Houses a nurse’s station and the camp store, as well as a small conference room for program meetings with center staff.

**Structure:** Concrete foundation walls; wood frame exterior walls; 2” half-round log siding; Asphalt shingle roof; gutters and downspouts; wood double-hung windows; wood doors w/ wood screen doors; covered concrete front porch

**Plumbing:** Water supply from well; sanitary to independent septic system; natural gas supply to water heater; no water softener

**Electrical:** 100A 120/240V underground service w/ Square D breakerbox; working exit signs; no egress lighting; smoke detector/alarm in First Aid room

**HVAC:** (2) gas-fired sealed combustion furnaces; forced-air heat via underfloor ducting; electric thermostat for each furnace; motorized outside air duct dampers; window air conditioning units in some spaces

**Site:** Lawn with split rail fence, concrete stoop
**Building Description**

**Name:** Bathhouse  
**Function:** Bathhouse  
**Year Built:** 1961  
**Area (GSF):** 1,499 SF

**General:** 1 Story Wood framed building

**Function:** A centrally located bathhouse contains sinks, toilets and group showers.

**Structure:** Concrete foundation walls; wood frame exterior walls; 2” half-round log siding; Asphalt shingle roof; wood awning windows; wood and hollow metal doors w/ wood screen doors

**Plumbing:** Water supply from well system; sanitary to independent septic system; gas-fired water heater w/ 3 storage tanks; no water softener

**Electrical:** (2) 200A, 120/240V underground electric services w/ Square D panels - one labelled “DO NOT USE, BAD MAIN BREAKER”; lighting in showers not rated for that type of environment; no egress lighting

**HVAC:** (1) gas-fired makeup air unit w/ return air ductwork and motorized damper - functionality unknown; roof-mounted exhaust fan for all shower and toilet areas; no air-conditioning

**Site:** Unimproved path
Central Lodge
# 0245

**Name:** Central Lodge  
**Function:** Meeting and Dining  
**Year Built:** 1966  
**Area (GSF):** 6,912 SF

**Building Description**

**General:** 2 Story CMU and Wood framed building.

**Function:** The two-story Lodge provides the main assembly spaces. It includes a large assembly hall (Fireside Room - 150 people), small meeting room (Kiwanis Room - 20 people), kitchen, and dining hall (150 people).

**Structure:** Concrete foundation walls; wood frame and painted CMU exterior walls; wood bevel siding; 1x6 T/G soffit, exposed Glu-lam rafter tails; Asphalt shingle roof, gutters and downspouts; wood casement windows; wood and hollow metal doors; covered concrete front porch; wheelchair Ramp (ca. 1987), stone chimney, exterior walk-in freezer.

**Plumbing:** Water supply from well system; sanitary to independent septic system; natural gas supply to kitchen equipment and mechanicals; gas-fired water heater; (2) grease interceptors.

**Electrical:** 600A,120/240V underground electrical service; Cutler Hammer distribution panel; (3) branch electrical panels; exit signs; battery-powered egress lighting; Simplex fire alarm system.

**HVAC:** Hot water wall convectors and unit ventilators throughout; (1) gas-fired atmospheric boiler w/o motorized outside air damper; gas-fired unit heater (for kitchen/storage); walk-in freezer and cooler; exhaust fans in bathrooms; exhaust hood in kitchen.

**Site:** Flagstone path to front porch, asphalt to lower level kitchen, concrete walk around building, handicap ramp.
**Dormitory**

- **Name:** Dormitory
- **Function:** Dormitory
- **Year Built:** 1971
- **Area (GSF):** 6,912 SF

**Building Description**

**General:** 2 Story CMU and Wood framed building with basement

**Function:** The two story dormitory has 13 rooms. All rooms contain four single beds with total capacity of 52. Shared bathroom facilities are located on the 1st and 2nd floors. The lower level contains two meeting rooms: one can accommodate 40 people and the other can hold up to 25 people. The smaller room is also used as lounge area for guests. The dorm is centrally heated.

**Structure:** Concrete foundation walls; wood frame and unpainted CMU exterior walls; wood bevel and plywood siding; vented plywood soffit; Asphalt shingle roof; wood casement windows; Aluminum full-view doors; covered concrete entrance porch

**Plumbing:** Water supply from well; sanitary to independent septic system; natural gas supply to water heater; no water softener

**Electrical:** 200A 120/240V underground service w/ Square D breakerbox; exit signs; battery-powered egress lighting; Simplex fire alarm system

**HVAC:** Hot water wall fin and convectors; (2) gas fired atmospheric boilers; exhaust fans in toilet rooms; no air conditioning

**Site:** Accessible concrete path to entrance w/ wood handrails

**Remarks:** settlement of stone kneewalls at entrances, rot of windows at SE corner
Residence Duplex
# 0432

Name: Residence Duplex
Function: Staff Residence
Year Built: 1965
Area (GSF): 3,638 SF

**Building Description**

**General:** 2 Story Wood framed building

**Function:** The Duplex provides housing for the permanent staff. It provides living accommodations for 5 people, and is divided into 2 units.

**Structure:** Concrete foundation walls; wood frame exterior walls; wood bevel and plywood siding; vented plywood soffit; Asphalt shingle roof; gutters & downspouts; wood fixed-over-awning windows; Wood doors; attached 2 car garage

**Plumbing:** Water supply from well system; sanitary to independent septic system; gas-fired water heater; no water softener

**Electrical:** Undertermined 120/240V underground electric service; panels and fuse boxes; fire/smoke alarms (not in all sleeping rooms)

**HVAC:** Hot water fin; (1) gas-fired atmospheric boiler w/ motorized combustion air damper; exhaust hood in kitchen

**Site:** paved driveway, sidewalk, and concrete front steps to 2 units
**Nature Center**

Name: Peters Nature Center  
Function: Nature Center  
Year Built: 1977  
Area (GSF): 3,146 SF

**Building Description**

**General:** 1 Story Timber framed building

**Function:** This is the primary program building. It houses three classrooms: a wet lab with work tables and stereoscopes; kit room for teaching kits and other programmatic supplies, naturalist library, animal room, and bathrooms. The two larger classrooms can accommodate about 30 people each. The wet lab can accommodate about 15.

**Structure:** Concrete foundation walls; timber frame exterior walls; Fir plywood & battens; Asphalt shingle roof; Aluminum fascia; gutters and downspouts; wood awning-over-fixed windows; hollow metal doors in frames w/ sidelites & transoms; stone chimney; (3) skylight skylights

**Interior:** Classrooms

**Plumbing:** Water supply from well system; sanitary to independent septic system; gas-fired water heater; no water softener

**Electrical:** 200A, 120/240V underground electric service w/ Square D breaker box; exit signs; (1) fire/smoke alarm

**HVAC:** Forced-air heat via underfloor ducting; (3) gas-fired sealed combustion furnaces w/ electric thermostat for each furnace; motorized outside air duct damper; exhaust fans in toilet rooms, janitor's closet, and dark room

**Site:** Unimproved path
**Shop & Storage**

**# 0436**

**Name:** Shop & Storage  
**Function:** Shop, Storage, Meeting  
**Year Built:** 1987  
**Area (GSF):** 2,875 SF

**BUILDING DESCRIPTION**

**General:** 2 Story Wood framed building

**Function:** The two story maintenance building is located across Hwy N from the main camp area. The ground floor is split into two separate rooms. The smaller side stores hand tools, power tools, and work benches. The other side is a garage-style room with two large garage doors. Ceilings are approximately 15-20 feet high. A stairway connects the ground floor to the upstairs. The upstairs is also divided into two spaces. The larger south side room is used for storage. The north side room is an additional classroom with a wood burning stove to provide heat.

**Structure:** Concrete foundation; wood frame exterior walls; vertical wood siding; Asphalt shingle roof; wood windows; garage doors; hollow metal doors

**Plumbing:** no plumbing

**Electrical:** 200A 120/240V overhead electric service w/ Square D panels; no fire/smoke alarm devices

**HVAC:** (1) gas-fired furnace serving 1st floor spaces; (1) wood-burning stove and (2) electric baseboard heaters serving 2nd floor meeting space

**Site:**
Boat Equip. House
# 0446

Name: Boat Equipment House
Function: Storage
Year Built: 1956
Area (GSF): 75 SF

BUILDING DESCRIPTION

General: 1 Story Wood framed building

Function: Storage

Structure: Concrete slab; wood frame exterior walls; vertical wood siding; Asphalt shingle roof; wood windows; garage doors; hollow metal doors

Plumbing: No plumbing

Electrical: unknown

HVAC: No HVAC

Site:
BUILDING ASSESSMENT (MECHANICAL/ELECTRICAL SYSTEMS)

A. Cabins

**Plumbing**
There is no plumbing in the Cabins.

**Electrical**
The Cabin electrical system consists of an undetermined 120/240V, 1Ø, overhead electric service from the utility. The existing panel in each cabin appears to be in working condition. There is no demand meter for the cabins. The lighting throughout the building is incandescent fixtures, all controlled by local toggle switches. No automatic lighting controls have been provided. All incandescent light fixtures should be replaced with fluorescent fixtures or retrofit screw-in style compact fluorescent lamps, at a minimum. Wall switch type occupancy sensors or timers could easily be retrofit to save energy. Convenience receptacles are located throughout the building and appear to be adequate in quantity and in working condition. Exit signs are old and do not appear to be in working condition. These should be replaced. Egress lighting has not been provided. Battery powered spot illumination should be provided, as this could be a life safety hazard. A number of fire/smoke alarm devices exist in the building, including audible alarms in all sleeping rooms.

**HVAC**
The Cabins are heated by wood burning stoves located in the main gathering area of the building and there are also electric baseboard heaters installed in certain areas of the buildings for supplemental heat. The electric baseboard heaters are in fair condition. No air conditioning is installed in the cabins.

B. Varney Craft Building

**Plumbing**
No internal plumbing. A water line runs near the exterior of building to a hose.

**Electrical**
The Arts and Crafts Building electrical system consists of an undetermined 120/240V, 1Ø, underground electric service from the Lodge. The existing Square D panel appears to be in working condition. There is no demand meter on the building. The lighting throughout the building consists of fluorescent strips, all controlled by local toggle switches. Incandescent lighting has been provided in the back storage room. All fluorescent lamps are T12 type and no automatic lighting controls have been provided. All incandescent light fixtures should be replaced with fluorescent fixtures or retrofit screw-in style compact fluorescent lamps, at a minimum. All fluorescent fixtures should be replaced or retrofitted with T8 type lamps, ballasts, and socket holders, at a minimum. Wall switch type occupancy sensors or timers could easily be retrofit to save energy. A few convenience receptacles are located throughout the building and appear to be in working condition. Exit signs are old and do not appear to be in working condition. These should be replaced. Egress lighting has not been provided. Battery powered spot illumination should be provided, as this could be a life safety hazard. No fire/smoke alarm devices were observed in the building.

**HVAC**
The two halves of the Arts and Crafts building are each heated by small wood burning stoves. The back storage room is not heated.
C. Administration Building

Plumbing

The Administration Building Plumbing systems consist of a water supply from the well system, sanitary to an independent septic system, and a natural gas supply with a meter. The water supplies the tank type toilets, lavatories, water coolers, sinks, mop basin, exterior wall hydrants, and water heater with domestic water. The water heater is a gas fired, atmospheric vent, 30 gallon water heater, which is vented to the adjacent chimney. The toilets, lavatory sinks, and faucets appear to be at least 20 years old, and are in fair to poor condition. There is no water softener in the building.

Electrical

The Administration Building electrical system consists of a 100A, 120/240V, 1Ø, underground electric service from the Lodge. The existing Square D load centers appear to be in working condition. There is no demand meter on the building, however we would estimate that the building is at approximately 75% of electrical service capacity. The lighting throughout the building is a mixture of fluorescent troffers, wraparounds, and incandescent fixtures, all controlled by local toggle switches. All fluorescent lamps are T12 type and no automatic lighting controls have been provided in the building. All incandescent light fixtures should be replaced with fluorescent fixtures or retrofit screw-in style compact fluorescent lamps, at a minimum. All fluorescent fixtures should be replaced or retrofitted with T8 type lamps, ballasts, and socket holders, at a minimum. Wall switch type occupancy sensors or timers could easily be retrofit to save energy, as it was noted that the lighting was on in a number of unoccupied rooms. Convenience receptacles and phone/data jacks are located throughout the building and appear to be adequate in quantity and in working condition. Exit signs are old and outdated but do appear to be in working condition. No egress lighting has been provided. A ceiling mounted smoke detector/alarm has been provided in the first aid room, as required by code.

HVAC

The Administration Building HVAC systems consist of two(2) gas-fired, sealed combustion furnaces that provide heated air through under-floor ducts to air baseboard grilles along the outside walls of the building. Each furnace has a return air grille located at the ceiling adjacent to the furnace room and there is a minimal amount of outside air mixed with the return air. Each furnace is controlled by an electric thermostat. The outside air ducts do have motorized dampers that can be closed during unoccupied periods. Some occupied rooms in the building are air conditioned by window air conditioning units. The HVAC equipment in the building is in fair to poor condition.

D. Bathhouse

Plumbing

The Bath House Plumbing systems consist of a water supply from the well system, sanitary to an independent septic system, and a natural gas supply with a meter. The water supplies the tank type toilets, showers, lavatories, mop basin, exterior wall hydrants, and water heater with domestic water. The water heater is a gas fired, atmospheric vent, 86 gallon water heater, with three adjacent 115 gallon storage tanks. The water heater is capable of 227 gallons per hour of recovery at 250,000 BTUs per hour. The toilets, showers, lavatory sinks, and faucets appear to be at least 20 years old, and are in fair to poor condition. There is no water softener in the building.

Electrical

The Bath House electrical system consists of two(2) 200A, 120/240V, 1Ø, underground electric services from the utility(Alliant Energy.) The existing Square D “Off-Peak” panel is labeled as “DO
NOT USE. BAD MAIN BREAKER.” This should be addressed by the owner at once. The existing Square D “Regular Service” panel appears to be in working condition. There is no demand meter on the building, however we would estimate that the building is at approximately 25% of electrical service capacity. The lighting throughout the building is a mixture of fluorescent wraparounds and incandescent fixtures, all controlled by local toggle switches. All fluorescent lamps are T12 type and no automatic lighting controls have been provided in the building. The lighting fixtures in the shower areas are not rated for that type of environment and should be replaced with fixture(s) that are intended for that environment. All incandescent light fixtures should be replaced with fluorescent fixtures or retrofit screw-in style compact fluorescent lamps, at a minimum. All fluorescent fixtures should be replaced or retrofitted with T8 type lamps, ballasts, and socket holders, at a minimum. Wall switch type occupancy sensors or timers could easily be retrofit to save energy. Convenience receptacles are located throughout the building and appear to be adequate in quantity and in working condition. Owner should confirm that all receptacles in the building are GFI type receptacles. Egress lighting has not been provided. Battery powered spot illumination should be provided, as this could be a life safety hazard.

HVAC

The Bath House is heated by one(1) gas fired, atmospheric makeup air unit that is mounted inside a mechanical room within the building. The makeup air unit does have return air ductwork associated with it so that air can be returned when the Bath House is unoccupied. We are unsure if the motorized dampers are operational for the control of return air and outside air quantities. There is a roof mounted exhaust fan that serves all the showers and toilet areas of the building. No air conditioning is installed in the Bath House. The HVAC equipment in the Bath House is in fair to poor condition.

E. Central Lodge

Plumbing

The Lodge Plumbing systems consist of a water supply from the well system, sanitary to an independent septic system, and a natural gas supply with a meter. The water supplies the tank type toilets, lavatories, water coolers, sinks, mop basins, kitchen sinks and dishwashers, exterior wall hydrants, and water softener with domestic water. The water softener looks to be original and feeds the water heater. The water heater is a gas fired, atmospheric vent, Bock water heater that appears to have been replaced in the past few years. The toilets, lavatory sinks, and faucets appear to be at least 20 years old, and are in fair to poor condition. The kitchen has two grease interceptors recessed in the floor. It is assumed that the kitchen sinks, floor drains, and dishwasher wastes are run to these units. The natural gas main is fed into the kitchen and distributes to multiple pieces of cooking equipment before running to the equipment room.

Electrical

The Lodge electrical system consists of a 600A, 120/240V, 1Ø, underground electric service from the utility(Alliant Energy.) The existing Cutler Hammer distribution panel appears to be in working condition. There is no demand meter on the building, however we would estimate that the building is at approximately 65% of electrical service capacity. The three(3) branch electrical panels in the facility all appear to be in working condition. We would recommend that locking latches be provided on all panels to eliminate tampering. In addition, the Cutler Hammer electrical panel in the main entryway is missing a number of breakers/blank spacers, which is a code violation and safety hazard. The lighting throughout the building is a mixture of fluorescent troffers, wraparounds, and incandescent fixtures, all controlled by local toggle switches. All fluorescent lamps are T12 type and no automatic lighting controls have been provided in the building. All incandescent light fixtures should be replaced with fluorescent fixtures or retrofit screw-in style compact fluorescent lamps, at a
minimum. All fluorescent fixtures should be replaced or retrofitted with T8 type lamps, ballasts, and socket holders, at a minimum. Wall switch type occupancy sensors or timers could easily be retrofit to save energy. Convenience receptacles are located throughout the building and appear to be adequate in quantity and in working condition. Owner should confirm that all receptacles in bathrooms, kitchen, and outdoors are GFI type receptacles. Telephone service has been provided to the building. Exit signs are old and outdated but do appear to be in working condition. Battery powered spot illumination egress lighting has been provided, however when tested, not all were operational. These devices should be tested and replaced as necessary, as this is a code violation and life safety hazard. A Simplex fire alarm system exists in the building and there appears to be adequate fire alarm devices and coverage throughout the facility.

HVAC

The Upper Floor area of the Lodge is heated by hot water wall convectors and unit ventilators. Each of the unit ventilators do have outside air louveres to bring outside air into the Main Meeting Room. We could not locate the thermostat for the large meeting room. The small conference room on the Upper Level is heated and ventilated by a unit ventilator. The restroom on the Upper Level has a small wall exhaust fan that is interlocked with the light switch. The Lower Level boiler room contains one(1) gas fired, atmospheric boiler that is in fair to poor condition. There is combustion air ducted to the boiler room but we did not see a motorized damper installed in the combustion air duct that would close when the boiler or water heater are not firing. The occupied rooms in the Lower Level are heated by hot water convectors and unit ventilators. There is also a kitchen in the Lower Level that has an exhaust hood over the cooking area that is ducted to the outdoors with an associated exhaust fan. The kitchen hood is controlled by a manual wall switch. There is also a storage room off the kitchen that contains a large freezer, dishwasher, and dry food storage. The dishwasher has exhaust duct connections serving it with an associated wall exhaust fan. This storage room is heated by one(1) newer gas fired unit heater and the room is cooled by a window air conditioning unit. The compressor(s) for the freezer is located outside on grade and there is no insulation on the refrigerant piping.

F. Dormitory

Plumbing

The Dormitory Plumbing systems consist of a water supply from the well system, sanitary to an independent septic system, and a natural gas supply with a meter. The water supplies the tank type toilets, tank type urinals, lavatories, water coolers, showers, clothes washer, sinks, mop basin, exterior wall hydrants, and water heater with domestic water. The water heater is a gas fired, 100 gallon, atmospheric vent water heater, and seems to be in good condition. The toilets, urinals, lavatory sinks, showers, and faucets appear to be at least 20 years old, and are in fair to poor condition. The only exception is the newly installed accessible bathroom, and one toilet on first floor has been replaced. The original documents show a water softener in the small mechanical room in the basement. The softener has since been demolished, and this room has been converted into a small laundry room with one washer and dryer. The boys and girls bathrooms on first and second levels are identically laid out. The urinals in the boy’s room are gravity tank type. The wall spacing in these bathrooms appear to be cramped and not to code. There is one accessible individual bathroom on first floor. This appears to have been converted from a dorm room in the past few years. There is no water softener in the building.

Electrical

The Dormitory electrical system consists of a 200A, 120/240V, 1Ø, underground electric service from the utility. The existing Square D panel appears to be in working condition. There is no demand meter on the building, however we would estimate that the building is at approximately 40%
of electrical service capacity. The lighting throughout the building is a mixture of fluorescent wraparounds and incandescent fixtures, all controlled by local toggle switches. All fluorescent lamps are T12 type and no automatic lighting controls have been provided in the building. The lighting fixtures in the shower areas are corroded and should be replaced with fixture(s) intended for that environment. All incandescent light fixtures should be replaced with fluorescent fixtures or retrofit screw-in style compact fluorescent lamps, at a minimum. All fluorescent fixtures should be replaced or retrofitted with T8 type lamps, ballasts, and socket holders, at a minimum. Wall switch type occupancy sensors or timers could easily be retrofit to save energy. Convenience receptacles are located throughout the building and appear to be adequate in quantity and in working condition. Owner should confirm that all receptacles in bathrooms are GFI type receptacles. Exit signs are old and outdated but do appear to be in working condition. Battery powered spot illumination egress lighting has been provided, however when tested, not all were operational. These devices should be tested and replaced as necessary, as this is a code violation and life safety hazard. A Simplex fire alarm system exists in the building and there appears to be adequate fire alarm devices and coverage throughout the facility, including audible alarms in all sleeping rooms.

HVAC
The Dormitory is heated by two(2) new gas fired, atmospheric boilers that provide hot water to hot water wall fin and convectors throughout the building. The HVAC hot water piping is routed throughout the building to the heating units and in most cases is exposed and not insulated. Some portions are insulated in the boiler room and at locations near the floor where occupants can touch the piping. The toilet rooms all have exhaust but the janitor’s closets in the building are not exhausted. There is no air conditioning in the building. The boilers are in good condition and the rest of the HVAC equipment is in fair condition.

G. Residence Duplex

Plumbing
The Residence (duplex) Plumbing systems consist of a water supply from the well system, sanitary to an independent septic system, and a natural gas supply with a meter. The water supplies the tank type toilets, lavatories, showers, sinks, exterior wall hydrants, clothes washer, dishwasher, and water heater with domestic water. The water heater is a gas fired, atmospheric vent, 75 gallon water heater. The toilets, showers, lavatory sinks, and faucets appear to be at least 10 years old, and are in fair to poor condition. Bathrooms are located on both levels. There is no water softener in the building.

Electrical
The Residence(duplex) electrical system consists of an undetermined 120/240V, 1Ø, underground electric service from the utility. The existing panels and fuse boxes appear to be in working condition. There is no demand meter on the building. The lighting throughout the building is typical for a residence, a mixture of incandescent fixtures with some fluorescent wraparounds in the kitchen, all controlled by local toggle switches. All fluorescent lamps are T12 type and no automatic lighting controls have been provided. All incandescent light fixtures should be replaced with fluorescent fixtures or retrofit screw-in style compact fluorescent lamps, at a minimum. All fluorescent fixtures should be replaced or retrofitted with T8 type lamps, ballasts, and socket holders, at a minimum. Wall switch type occupancy sensors or timers could easily be retrofit to save energy. Convenience receptacles are located throughout the building and appear to be adequate in quantity and in working condition. Owner should confirm that all receptacles in bathrooms, kitchen, and outdoors are GFI type receptacles. A number of fire/smoke alarm devices exist in the building, however not all sleeping rooms have been provided with code required smoke alarms, which is a life safety hazard.
HVAC

The Residence is heated by one(1) gas fired, atmospheric boiler that is in fair condition. The combustion air duct serving the boiler room does have a motorized damper installed in it, in order to close when the boiler or water heater is not operating. The boiler supplies hot water to hot water fin installed throughout the building occupied areas. The kitchen does have a residential exhaust hood over the stove which is either a re-circulating type hood or exhausted to the outdoors.

H. Peters Nature Center

Plumbing

The Nature Center Plumbing systems consist of a water supply from the well system, sanitary to an independent septic system, and a natural gas supply with a meter. The water supplies the tank type toilets, tank type urinal, lavatories, water cooler, sinks, mop basin, exterior wall hydrants, and water heater with domestic water. The water heater is a gas fired, atmospheric vent, 30 gallon water heater. The toilets, urinal, lavatory sinks, and faucets appear to be at least 20 years old, and are in fair to poor condition. The dark room appears to have original faucets in fair to poor condition. The stainless steel double compartment sink located in the animal holding area appears to be in fair condition. There is no water softener in the building.

Electrical

The Nature Center electrical system consists of a 200A, 120/240V, 1Ø, underground electric service from the utility. The existing Square D panel appears to be in working condition. There is no demand meter on the building, however we would estimate that the building is at approximately 50% of electrical service capacity. The lighting throughout the building is a mixture of fluorescent troffers, strips, and incandescent fixtures, all controlled by local toggle switches. In addition, a number of sections of incandescent track lighting have been provided in the lecture room. All fluorescent lamps are T12 type and no automatic lighting controls have been provided. All incandescent light fixtures should be replaced with fluorescent fixtures or retrofit screw-in style compact fluorescent lamps, at a minimum. All fluorescent fixtures should be replaced or retrofitted with T8 type lamps, ballasts, and socket holders, at a minimum. Wall switch type occupancy sensors or timers could easily be retrofit to save energy. Convenience receptacles are located throughout the building and appear to be adequate in quantity and in working condition. Owner should confirm that all receptacles in bathrooms and outdoors are GFI type receptacles. In addition, owner should confirm that all receptacles in the herpetarium room in the back are also GFI type receptacles, as there is a fair amount of water in this room. Exit signs are old and outdated but do appear to be in working condition. Only one fire/smoke alarm device was observed in the building.

HVAC

The Nature Center is heated by three(3) gas fired, sealed combustion furnaces that supply heated air through under floor ducts to the rooms of the building. The furnaces are in fair to poor condition and there is a motorized damper on the combustion air that enters the furnace room. Each of the furnaces has an associated electric thermostat located in one of three main areas of the building. There is an exhaust fan that serves the janitors closet but the exhaust fan does not operate and is in poor condition. The two(2) toilet rooms each have a wall exhaust fan but neither exhaust fan operates and are in poor condition. The dark room has one(1) wall exhaust fan but it does not operate and it is in poor condition.
I. **Shop & Storage**

**Plumbing**

There is no Plumbing in the Shops Building.

**Electrical**

The Shops electrical system consists of a 200A, 120/240V, 1Ø, overhead electric service from the utility. The existing Square D panel appears to be in working condition. There is no demand meter on the building. The lighting throughout the building consists of fluorescent strips and incandescent fixtures, all controlled by local toggle switches. All fluorescent lamps are T12 type and no automatic lighting controls have been provided. All incandescent light fixtures should be replaced with fluorescent fixtures or retrofit screw-in style compact fluorescent lamps, at a minimum. All fluorescent fixtures should be replaced or retrofitted with T8 type lamps, ballasts, and socket holders, at a minimum. Wall switch type occupancy sensors or timers could easily be retrofit to save energy. Convenience receptacles are located throughout the building and appear to be adequate in quantity and in working condition. Some receptacles were observed to be without cover plates. No fire/smoke alarm devices were observed in the building.

**HVAC**

The Shops Building ground level rooms are heated by one(1) gas fired, atmospheric furnace that supplies heated air to the garage area and the tool workroom. The upper level conference room is heated by a wood burning stove and two(2) sections of electric baseboard heaters. There is a minor amount of exhaust from the garage and shop areas. The furnace is in poor condition and the electric baseboard heaters are in fair condition.
Water System Assessment
WATER SYSTEM ASSESSMENT

General:

A comprehensive water system assessment was conducted for the Upham Woods site, including the six buildings currently served by septic systems.

A Water System Analysis (dated December 2009) was prepared by:

MSA Professional Services, Inc.
1230 South Boulevard
Baraboo, WI 53913
Phone: (800)362-4505
Contact: John Langhans, P.E.

The purpose of the analysis and report is to assess existing conditions including well and distribution; determine current and future water usage; identify system deficiencies; and make recommendations for corrective action as well as future system modifications and upgrades.

General observations about the well and water distribution systems include the following:

- The well is documented to be 108 feet deep, pumping at approximately 60 GPM at 45 to 68 PSI
- The 1,000 gallon pressure tank is below grade, which is not typically done today with new wells
- Water capacity is reported to be inadequate
- Water quality is good, per recent testing conducted by Upham Woods
- Distribution piping is less than 3” diameter and is direct-buried to each building served

(See Appendix X-3 for full Water System Analysis.)

Options and Recommendations:

Water Supply:

Based on the calculated future water usage at the Upham Woods facilities, it appears there is a deficiency in water supply to the facility. With the proposed expansion of facilities, the deficiency will become more acute. As such, additional pumping capacity is recommended, by increasing the pump capacity in existing well and/or construction of a second well.

Construction of a second well, of a capacity equal to or greater than the existing well, is recommended to provide better system reliability for the facilities. In the event the existing well pump has to be taken out of service, the second well will provide water to the facilities.

Other recommended improvements include the installation of a water meters or run time meters on all pumps to document system usage. Further investigation regarding the structural integrity of the water mains is also recommended.
**Water Storage:**

As the water supply (pumping capacity) for the facility is increased, the water storage capabilities should correspondingly increase, with new bladder-type pressure tanks located in above-grade structure.

**Cost Estimates:**

- Replace/upgrade existing well pump: $8,266
- Construct second well: $31,050
- Construct new building/bladder-type pressure tanks: $42,780
Wastewater System Assessment
WASTEWATER SYSTEM ASSESSMENT

General:

A comprehensive wastewater system assessment was conducted for the Upham Woods site, including the six buildings currently served by septic systems.

A Wastewater Facility Study (dated December 2009) was prepared by:

MSA Professional Services, Inc.
1230 South Boulevard
Baraboo, WI 53913
Phone: (800)362-4505
Contact: John Langhans, P.E.

The purpose of the analysis and report is to assess existing conditions of each septic system, including current design, flows, usage and condition; and make short- and long-term recommendations for each system based on current and future uses.

General observations about the existing septic systems include the following:

- All systems are old (the most recent is over 30 years old, the oldest more than 50) and have exceeded the normal life expectancy of systems of their vintage, design and use
- The Administration Building system requires frequent pumping, causing limitations being placed on use of the facilities
- Some systems have not been pumped in years (e.g. Duplex and Lodge - > 5 years)
- Most systems are designated as emitting „normal” strength waste (except Central Lodge, which is “high strength” due to kitchen)
- It was difficult to locate some system components (e.g. Administration Building field is likely under parking lot & drive; Duplex system location could not be determined)
- Tank installed at Dorm is likely smaller than size indicated on drawings (based on pumping records)
- None of the systems would meet current codes, although upgrades are not typically required unless system components fail or other changes are made (such as building use)
- Soils were analyzed in the area of each of the septic fields
- Flood plain (and soil) conditions will limit locations and types of future septic fields
- Short-term maintenance is required at all systems, including removal of vegetation growing over tanks and fields, repair of numerous components, and regular pumping and tank cleaning
- Siphon tank is malfunctioning at the Bath House and should be repaired
- Recommended testing the strength of Central Lodge wastewater prior to making changes to the wastewater system

It should be noted that the newest septic system at Upham Woods was constructed in the late 1970’s and there have been numerous changes, both large and small, to the state plumbing code, COMM 83, since then. Generally, septic systems do not need to be upgraded to meet current code requirements unless the owner intends to remodel the structure and increase the daily flow to the system or make major changes to a portion of the system. In those cases the regulatory authority may require that the entire system be reconstructed to meet current code.
(See Appendix X-4 for full Wastewater Facility Study.)

Options and Recommendations:

The wastewater analysis evaluated three options for implementation of upgrades:

**Alternate A** – A single on-site wastewater treatment system for the entire development. (Estimated Cost: $471,658)

**Alternate B** – Three separate treatment systems: 1) Central Lodge, 2) Bathhouse, and 3) all other buildings. (Estimated Cost: $433,897)

**Alternate C** – Municipal treatment, including construction of a lift station and forcemain to connect to the City of Wisconsin Dells collection system at the nearest manhole. (Estimated Cost: $634,881)

At this time, options for implementation are being evaluated, with Alternate B (three separate systems) considered to be the system likely to be implemented.
F. FUTURE DEVELOPMENT

Introduction:
As the Upham Woods program looks to the future, optimum use of the site and facilities will require maintenance and improvement to meet future needs. The following outlines principles, master plan and recommendations for improvements are considered for implementation.

Guiding Principles
Based on input from Upham Woods staff and meetings with the Advisory Committee, a group of guiding principles have been developed to use as future improvements at the facility are considered:

- **Emphasis on Youth Groups** - Youth groups will continue to be the primary users of Upham Woods and will be the priority for future planning, particularly from April 1 through early November of each year.
- **Sustainability** – Stress sustainability in programs, facilities and educational programs.
- **Flexibility** - Simultaneous use by multiple groups should be accommodated, particularly in planning for dining facilities and meeting rooms.
- **Accessibility** - To the extent practical, all facilities should accommodate users with physical and development disabilities.
- **Connection to Outdoors** – Strengthen connection of users to outdoor environment, including visual.
- **Connection to River** – Strengthen ties with the Wisconsin River water front and Blackhawk Island.
- **Flow & Sequence** – Improve arrival by car/bus, parking and pedestrian experience.
- **Organization** – how buildings and spaces between them are arranged and developed.
- **Phasing** - Allow for options in growth and development, but with a *master plan* in mind.
- **Image** – Explore what users will think and remember about their visit to Upham Woods.

Site Master Plan
A Conceptual Master Plan has been established to provide a framework for overall development in the area of Upham Woods that will continue to be the focus of capital improvements in the future.

(See Conceptual Master Plan, page F-2)
**Development Recommendations:**

During planning sessions, a number of short-, medium- and long-term priorities have been identified for improvements, subject to funding and programmatic requirements:

**Short-Term - 0 to 2 years:**

1. Ongoing maintenance of all buildings
   - Routine building upkeep, including painting, re-roofing, equipment maintenance and similar scheduled work should continue.

2. Minor building repairs
   - Except where building remodeling or replacement is imminent, building repairs and upgrades, such as those indicated in the Building Assessment (See Section C) should continue. This includes replacement of HVAC, plumbing and electrical equipment, energy upgrades, window repair and replacement, correction of minor site issues and new interior finishes.

3. Accessibility upgrades
   - Improve accessibility to users with disabilities, particularly on Cabin Hill
   - Upgrade common use elements of all public-access buildings where feasible

4. Maintenance of wastewater (septic) systems.
   - Each of the six separate septic systems require short-term maintenance, testing and minor repairs to ensure continued use. (See Section E for detailed recommendations for each system.)

**Medium-Term (Utilities) - 2 to 6 years:**

5. Upgrades of water supply (well system) – capacity and duplication (See Section D)

6. Upgrades of sanitary system, including one or more of alternatives (See Section E):
   - Three combined systems (on-site)
   - Single system (on-site)
   - Connect to off-site (municipal) system
Medium-Term (Buildings) - 2 to 6 years:

7. New Bathhouse Building (and remodeling of existing Bathhouse)
   - Identified as the highest priority by Upham Woods, a new bathhouse provides a facility to meet the future needs of the occupants of Cabin Hill. Based on a bed capacity of 150, the bathhouse includes (14) unisex showers and larger men’s and women’s restrooms.
   - All facilities would be fully accessible to those with disabilities.
   - Additional space is provided for a self-service laundry.
   - Proposed location for new Bathhouse is west of the existing building. (See Partial Site Plan (Cabin Hill), below.)
   - Remodeling of the existing bathhouse as a multi-season open structure with fireplace, increases the amount of meeting space on the site and could be used as program space during inclement weather.

Partial Site Plan (Cabin Hill)
**New Bathhouse Building**

**Description**

Based on a cabin bed capacity of 150, the 3,600 square foot Bathhouse includes (14) unisex showers and larger men’s and women’s restrooms.

All facilities are fully accessible to those with disabilities.

Additional space is provided for a self-service laundry for campers and centralized mechanical space.

**Site Location**

The New Bathhouse is centrally-located on Cabin Hill, west of the existing Bathhouse. (See *Partial Site Plan*, page F-4). The facility is located on the path connecting the cabins on the Hill as well as on a paved service drive, allowing access by staff and disabled users.
Program Pavilion

Description
The Pavilion utilizes essential components of the previous 1,500 square foot building, including foundations, floor slab and roof structure. As part of the de-construction, building components will be reused on site or recycled in other locations.

The "three-plus" season structure includes open, screened perimeter walls to encourage natural ventilation. For cold season use, wall panels are closed and a fireplace provides heat.

Site Location
The Program Pavilion replaces the current bathhouse, at the most prominent location atop Cabin Hill. Converted to program use, the Pavilion capitalizes on the views, air movement and stature of the site.

The facility is located on the foot path connecting the cabins on the Hill.
8. Miscellaneous and Site Improvements (per Conceptual Master Plan, page F-2)

- Accessibility upgrades to Bible Cabin
- Accessible trail to Cabin Hill
- Service road to Cabin Hill
- Reorganize parking lot and entry sequence to control traffic
- Create remote parking (south of Highway N)
- Establish safe highway crossing(s)
- Additional access to Blackhawk Island

9. Expanded & Remodeled Central Lodge (to increase dining capacity)

- Identified as second highest priority by Upham Woods, expansion of the Central Lodge provides dining space for a total of up to 225 - 250 guests at one time. (See Lower Level floor plan, below.)
- The additional 2,000 square feet of dining space could be separated from the existing dining space or connected for large groups.
- Includes new elevator to serve both levels of the Lodge.
- All new facilities, including all restrooms, would be fully accessible to those with disabilities.
- Upper level of expansion could provide outdoor “deck” space adjacent to the existing meeting room.
- Location of Lodge building within floodplain will require additional engineering and sitework, including flood proofing.
- See Page F-8 for additional information.

![Conceptual Building Plans](image_url)

<table>
<thead>
<tr>
<th>Lower Level</th>
<th>Upper Level</th>
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<tbody>
<tr>
<td>1 Dining (Existing)</td>
<td>7 Storage</td>
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<tr>
<td>2 Dining (New)</td>
<td>8 Meeting Space (Large)</td>
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<tr>
<td>3 Corridor</td>
<td>9 Exterior Deck</td>
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<td>4 Mechanical</td>
<td>10 Entry</td>
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<tr>
<td>5 Toilets</td>
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<tr>
<td>6 Kitchen</td>
<td>12 Meeting Room</td>
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<tr>
<td></td>
<td>13 Outdoor Program Space</td>
</tr>
</tbody>
</table>
Central Lodge

Description

By adding first floor dining space, the Lodge can serve up a total of 225 guests at one time (up from current capacity of 150). The additional dining room can be separated from the current space for simultaneous use by multiple groups or connected for large events.

The building addition includes an elevator, serving both levels of the Lodge, as well as new accessible restrooms (on both levels), mechanical and support spaces.

Exterior space on the upper level, adjoining the current large meeting room, provides opportunities for outdoor activities on a semi-protected deck.

The building expansion adds approximately 5,000 square feet of space to the Lodge (plus exterior deck). Site access is improved to enable on-grade access to the new building entry, rather than to the upper level as currently provided.
**Long-Term - 6 years +:**

10. Expanded Dormitory (to increase bed capacity)

- Identified as a lower priority by Upham Woods, expansion of the Dormitory provides (108) total beds in (27) quad-occupancy rooms, nominally twice the current capacity. (See First Floor Plan (Dormitory), below.)
- Rooms would be of a similar size and configuration as existing rooms.
- New restrooms and showers would be shared by rooms on each wing.
- (Private bathrooms could be considered as an option in some or all of the new rooms, at additional cost.)
- Includes new elevator to serve both levels of the Dormitory.
- All new facilities, including restrooms, would be fully accessible to those with disabilities.
11. Other facilities

- Nature Center - building addition for meeting space
- Administration Building - remodel to suit administration requirements
- Duplex - remodel building for program use
- Staff Housing - add staff housing (south of Highway N)
**Project Budget:**

<table>
<thead>
<tr>
<th>Recommendation/Project</th>
<th>Budget Cost Estimate (Low to High Range)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ongoing building maintenance (all buildings)</td>
<td>Varies</td>
<td>By Owner</td>
</tr>
<tr>
<td>2. Minor repairs (cabins)</td>
<td>$ 10,000 - $ 25,000</td>
<td>Cost per cabin (scope TBD)</td>
</tr>
<tr>
<td>3. Accessibility upgrades (cabins)</td>
<td>$ 60,000 - $ 80,000</td>
<td>Cost per cabin - unisex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>toilet &amp; caregiver room</td>
</tr>
<tr>
<td>4. Septic system maintenance</td>
<td>$ 12,000 - $ 16,000</td>
<td>(1)</td>
</tr>
<tr>
<td>5. Sanitary system upgrades</td>
<td>$ 434,000 - $ 635,000</td>
<td>(2)</td>
</tr>
<tr>
<td>6. Water supply upgrades</td>
<td>$ 8,300 - $ 75,000</td>
<td>(3)</td>
</tr>
<tr>
<td>7. New Bathhouse and Remodel exiting Bathhouse</td>
<td>$ 815,000 - $ 1,100,000</td>
<td>(4)</td>
</tr>
<tr>
<td>8. Miscellaneous and Site Improvements</td>
<td>$ 90,000 - $ 400,000</td>
<td>(5)</td>
</tr>
<tr>
<td>9. Expanded &amp; Remodeled Central Lodge</td>
<td>$ 1,625,000 - $ 2,000,000</td>
<td>(6)</td>
</tr>
<tr>
<td>10. Expanded Dormitory</td>
<td>$ 2,375,000 - $ 3,250,000</td>
<td>(7)</td>
</tr>
<tr>
<td>11. Other facilities</td>
<td>Varies</td>
<td>To Be Determined</td>
</tr>
</tbody>
</table>

**Notes:**

(1) Per MSA recommendation (See Section E and Appendix X-4).
(2) Per MSA sanitary system recommendations. Low = individual system replacement, High = connection to municipal system (TBD). Includes Construction Cost plus 25% allowance for other project costs – in 2010 dollars.
(3) Per MSA water system recommendations. Low = increased capacity, High = additional well & enclosure. Includes Construction Cost plus 25% allowance for other project costs – in 2010 dollars.
(4) Per KEE Architecture estimate - includes Construction Cost plus 25% allowance for other project costs – in 2010 dollars.
(5) Upgrade roads and paths to Cabin Hill; revise entry; add remote parking; and/or provide access to Blackhawk Island.
(6) Per KEE Architecture estimate - includes Construction Cost plus 25% allowance for other project costs – in 2010 dollars. Excludes sitework and flood proofing.
(7) Per KEE Architecture estimate. Based on shared restroom facilities. Includes Construction Cost plus 25% allowance for other project costs – in 2010 dollars. Sitework excluded.
SUMMARY

Throughout its rich history, Upham Woods has provided unique opportunities for young visitors to experience the outdoor environment. The facilities have been nominally improved and upgraded since 1941 when the land was donated to the University of Wisconsin. But the future of Upham Woods programs requires additional development of and investment in facilities to realize the full vision of the Upham family and others in meeting the needs of users for the next generation.

Along with ongoing maintenance and minor upgrades, master planning will guide changes as Upham Woods facilities are added and improved to better serve the growing needs of the program as well as to provide increased accessibility, sustainability and a strong connection to the outdoors. Short-, medium- and long-range priorities have been established and can be implemented as funding becomes available.

This facility study is the first step in a process of in-depth evaluation, design and implementation – a vision for the future of Upham Woods.

Recommendations:

- Plan for the future with Guiding Principles and Conceptual Master Plan in mind
- Continue with ongoing maintenance and minor repairs of all buildings
- Improve access to users with disabilities, particularly on Cabin Hill, by upgrading roads, paths and one or more cabins for full accessibility
- Upgrade accessibility to common use elements of all publicly-accessed spaces where feasible
- Maintain existing septic systems, including recommendations made by MSA
- Upgrade sanitary system for long-term use, including added capacity for additional buildings
- Upgrade water supply system for long-term use, including added capacity and redundancy (second well)
- Build new Bathhouse on Cabin Hill
- Remodel existing Bathhouse as multi-season program structure
- Expand and remodel Central Lodge to increase dining capacity to 225
- Expand Dormitory to increase bed capacity to 108
- Address specific issues of other buildings on site as master plan is implemented (including Nature Center, Administration Building, Duplex and Staff Housing)
- Continue with detailed facility master planning to more fully incorporate Upham Woods long-term needs in development planning