



Northern Bedrock Historic Preservation Corps

Building a Pathway to the Preservation Trades



2017 Field Season

2017 Field Season Report

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Report produced by
Northern Bedrock Historic Preservation Corps Staff

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EXECUTIVE SUMMARY

Summary

Northern Bedrock Historic Preservation Corps was created to serve two converging trends in Minnesota: the aging stock of historic resources and the growing need of job training for young adults. In partnership with the Minnesota Historical Society (MNHS), Northern Bedrock will help reduce the backlog of maintenance and repair needed on historic structures, and provide young people a strong foundation of historic preservation trade knowledge by integrating training and services with the conservation corps model. Through mentorship and training with technical specialist on the job site, Northern Bedrock provides young people the opportunity to explore diverse skills in the building trades.

In the 2017 Field Season, Northern Bedrock improved the aging stock of Minnesota's historic resources. Northern Bedrock coordinated with project hosts and technical specialists around the lifecycle of historic preservation projects. Technical specialists trained and worked with corpsmembers in cemetery restoration, building and structural preservation, pest mitigation, painting, and site stabilization. Beyond the physical work, our corpsmembers experienced: camaraderie as they camped and shared meals together, purpose as they came together to accomplish a goal, and history as they restored and repaired these resources in time.

Purpose

This report covers the entire field season overview, a description of the work projects including a map, and before and after photos. It also describes the total impact on historic properties and the impact on the corpsmembers lives with quotes and hard facts.

Outcomes

The 2017 season was built on Northern Bedrock's past three field seasons; 2014, 2015 (5 weeks each) and 2016 (26 weeks). We continued to grow corps skills with technical specialists, develop relationships with project hosts and expanded from one to three crews. The MNHS partnership funded two crews and a portion of the overhead for three crews.

This year our 26-week field season consisted of three, six-person crews. Overall Northern Bedrock hired 23 corpsmembers throughout the season, collaborated with 22 project hosts and 8 technical specialists working on 26 historic structures. A total of 18,610 hours of Historic Preservation was performed in the field.

FIELD SEASON OVERVIEW

About Northern Bedrock

Northern Bedrock's Mission is to develop lifelong workforce skills by connecting young people to the earth, cultures, and traditions through historic preservation work and outdoor service.

Northern Bedrock is dedicated to training the present and future stewards of Minnesota's historic structures, promoting "good history citizenship." Unique in United States, Northern Bedrock focuses on the specialized skills and trades specific to historic preservation.

The Corps Model

Northern Bedrock's goal is to introduce young adults to historic preservation, and provide a pathway to the preservation building trades. Since preservation is a multi-year and multi-skill career path, corpsmembers gain exposure and a base knowledge in a variety of trades, helping them to choose the next steps in their career path.

The Crew Leaders and Crew Members are all considered corpsmembers. Each crew works on a site for "Hitches" or stretches of time usually 8 days long, then has off time, usually about 6 days. Hitches allow for a complete immersion into a project and skill. Corpsmembers camp on or near the work site. A few project hosts have even coordinated community meals and potlucks along with education about the area. This year the season had 12 Hitches. Since many of the projects are throughout the state, Hitches allow for crew's travel time, and provides the project host with a constructive block of work hours to complete the project.

Recruitment & Hiring

Recruiting efforts for Northern Bedrock consist primarily of relationship building, direct outreach, and advertising, to help ensure a diverse field of quality candidates. Both educational and professional experience vary by corpsmember, with the common variable being a genuine interest in learning more about the historic preservation trades. Statewide relationships with young adult organizations, alternative high schools, and technical schools all yielded candidates, though the majority came from our postings on Indeed.com. Overall, Northern Bedrock received 182 applicants in response to the corpsmember postings. Corpsmember interviews were conducted via phone, Skype, or in person. A total of 23 corpsmembers successfully completed their 2017 field season term with Northern Bedrock.

The 2017 field season was Northern Bedrock's first as an AmeriCorps program, which requires that our crews consist of young adults, ages 18-25. AmeriCorps allows corpsmembers to receive a bi-weekly stipend to cover living expenses, and the opportunity to take advantage of student loan forbearance during their term of service with Northern Bedrock. Any accrued interest on the loan during that time will be retroactively taken care of by AmeriCorps. Additionally, corpsmembers receive an education award upon completion of our program. Half season corpsmembers receive \$1527, and full season corpsmembers receive \$2887, which can be used on past or future educational expenses. With 23 total corpsmembers, we had 10 full, and 13 half season crew members finish their terms, and receive their education awards.

Project Outreach

Northern Bedrock reached out to more than 246 organizations this season including historical societies, governmental organizations, cemeteries, nonprofits and individuals.

Northern Bedrock continues to reach out to historical societies and work with them on funding, and maintenance planning to collaborate on projects.

Historical Societies Served = 6

- Isanti County Historical Society - 2
- Pennington County Historical Society - 1
- Murray County Historical Society - 1
- Taylors Falls Historical Society - 1
- Lake County Historical Society - 1
- Pope County Historical Society - 2

Working on governmental projects provides a portion of cost sharing for the program. Additionally these projects provide corpsmembers with networking opportunities and insight into forest and park service careers. Staff conversations with the Ely Heritage Preservation Commission and the City of Ely, helped to expand relationships with the neighbors of Halfway Ranger Station.

Governmental Organizations Served = 4

- Superior National Forest - 4
- Chippewa National Forest - 1
- Grand Portage National Monument - 1
- City of Ely - Semer Park - 2

In order to reach more cemeteries Northern Bedrock contracted Edward Harthorn, a Northern Bedrock Alumni from the 2016 program year, as Cemetery Technical Specialist. He reached out to 41 cemeteries and associations and produced curriculum for cemetery cleaning, edging and resetting.

Cemeteries Served = 8

- Dakota County - 2
- Goodhue County - 3
- Ramsey County - 1
- St. Louis County - 2

Lifecycle of Historic Preservation Projects

The most unique and extensive project we worked on this year is Sts Mary and Joseph Church (also known as the Guardian Angel Mission Church or Church of the Woods). This project highlights the long lifecycle of gathering these projects, as the organization has been in conversation with the congregation members for 4 years. The projects served as a training ground for more methods and historic trade processes than any other project this year. Northern Bedrock plans to have crews continue work on the building next season.

The Operations Staff conducted 18 site visits beyond the visits that resulted in the 2017 Field Season Hitches. Most of the sites visited have multiple structures and buildings in need of maintenance and repair, which extends our work plan into the 2018 field season.

Media and Communications

The 2017 field season brought much attention to Northern Bedrock in the media, with several features on television and newspaper. The Duluth News Tribune highlighted the work done by Northern Bedrock on a weekend paper with a front page spread. Social media also played a part in media and communications with over 400 followers on Facebook and 260 Instagram followers.

Media Outlet	Date	Title	Web Link
FOX 21 KQDS	June 13, 2017	Preservation Corps Uses Machines to Raise Grave Stones	http://www.fox21online.com/2017/06/13/preservation-corps-uses-machines-raise-grave-stones/
St. Peter Herald	July 5 2017	Crew Restores Borgeson Cabin at Gustavus Adolphus College	http://www.southernminn.com/st_peter_herald/news/article_9900f38b-774d-5326-840f-7601433bcc72.html
Hastings Star Gazette	August 3, 2017	Crew Helps Preserve Oakwood Cemetery Gravestones	http://www.hastingsstargazette.com/news/4306516-crew-helps-preserve-oakwood-cemetery-gravestones
WDIO	August 20, 2017	History Being Preserved at Duluth Cemetery	http://www.wdio.com/news/preserving-headstones-duluth-northern-bedrock/4581299/
KBJR 6	August 20, 2017	Crews Work to Preserve and Restore History at Duluth Cemetery	http://www.kbjr6.com/story/36177450/crews-work-to-preserve-and-restore-history-at-duluth-cemetery
Business North	August 21, 2017	Logging Icon Receives Facelift	http://www.businessnorth.com/around_the_region/logging-icon-receives-facelift/article_33e3d276-8694-11e7-a21f-b3dc0de6c305.html?utm_medium=social&utm_source=email&utm_campaign=user-share
The Globe	September 27, 2017	Headstone cleaning and repair workshop	http://www.dglobe.com/news/4334833-headstone-cleaning-and-repair-workshop-oct-11
Duluth News Tribune	October 10, 2017	Youthful Crew Giving Life to 133-year-old House of Worship on Fond du Lac Reservation	http://www.duluthnewstribune.com/news/4339773-youthful-crew-giving-life-133-year-old-house-worship-fond-du-lac-reservation
FOX 21 KQDS	October 10, 2017	Local Preservation Corps Works Life Back into Historic Log Church	http://www.fox21online.com/2017/10/10/local-preservation-corps-works-life-back-historic-log-church/
The Timberjay	October 12, 2017	Northern Bedrock Works With Ely Mason at Halfway Station	http://timberjay.com/stories/saving-history,13677

<https://www.facebook.com/northernbedrock/>

Facebook

Corpsmember Experience

Northern Bedrock employed 23 young adults for the 2017 program season for a total of 17,114 service hours. Throughout the field season crews were presented with trainings that allowed them to acquire industry recognized certifications, which included OSHA 10, Lead Renovator, CPR/First Aid/AED and Leave No Trace. Trainings such as masonry, chinking & daubing, historical site assessment, log maintenance, cemetery restoration, roofing and window reglazing were all provided to the crews in the field as on-the-job training.

As the program year progressed, other trainings were provided that supported the corpsmembers interest in historic preservation as well as other life skills. Those trainings were a home buying workshop, plaster repair, home inspections, Historic Preservation with Mark Johnston, log hewing, team building, leadership, resume writing and interviewing.

At the end of the field season all corpsmembers completed an exit survey about their Northern Bedrock Historic Preservation Corps experience.

EXIT SURVEY RESULTS

- 70% have a better idea of what their career goals are
- 80% have a stronger sense of responsibility to preserve historic places and structures
- 90% are more knowledgeable about historic preservation
- 100% gained and improved upon their technical skills



CORPSMEMBER TESTIMONIAL

“I’ve learned new technical skills and have met people that are very passionate about historic preservation.”

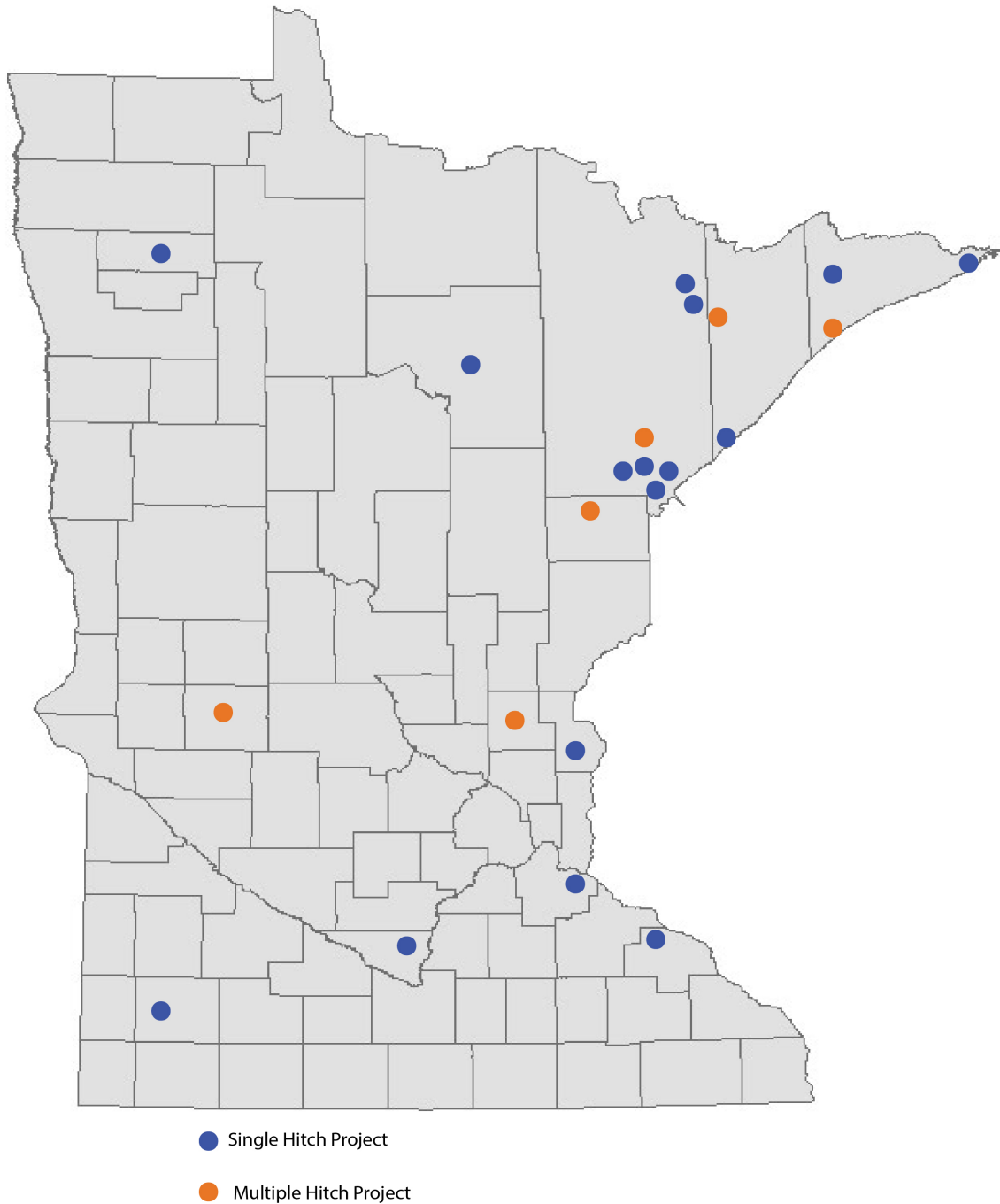
“It has been rewarding to see my fellow corpsmembers learn, grow and gain confidence when learning new skills.”

“I’ve built connections with professionals in historic preservation I probably wouldn’t have met otherwise and experienced things I wouldn’t have had I been working someplace else.”

HISTORIC PRESERVATION PROJECTS

Introduction

Northern Bedrock's 2017 Field Season began on May 30, 2017 with crew member orientation and lasted until November 22, 2017. Crew leaders started two weeks earlier than the rest of the crew to assist Northern Bedrock staff with preseason planning and organization. During this 26-week season, the crews affected 26 structures and logged 17,114 project work hours.



Click on the map above to find an online map that includes project photos, information about projects and project hosts. Or use the link below in a browser.

<https://goo.gl/LDWyTT>

FIELD SEASON PROJECTS

Crew Leader Training and Onboarding (two weeks)

- Halfway Ranger Station, leadership and preservation trades training, Ely
- Superior National Forest Sawbill Cabin, tool and camping training

Corpsmember Training and Onboarding (four days)

648 corpsmember hours

- Halfway Ranger Station, camp life, Leave No Trace training and preservation trades training
- Splitting stones training with Mike Braun, Ely
- Scandia Cemetery, introduction to cemetery restoration, Duluth

Hitch 1

1401 corpsmember hours

- Industry Training/Certifications: OSHA & CPR/First Aid
- Jonathan Appell Cemetery Training, resetting monuments at Forest Hill Cemetery, Duluth

Hitch 2

1104 corpsmember hours

- Gustavus Adolphus College Borgeson Family Log Cabin, chinking and daubing with Mark Johnson, St. Peter
- Semer Park, grill reconstruction and stone building tuck pointing with Mike Braun, Ely
- Halfway Ranger Station, log structure maint. and condition assessments with Joe Gallagher, Ely

Hitch 3

1355 corpsmember hours

- Taylors Falls Historical Society, deconstruction of a barn with Bruce Carlsted, Lindstrom
- Isanti County Historical Society, painting and site stabilization with Lynne Dablow, Cambridge
- Sts Mary and Joseph's Church, building preparation with Don Berthiaume, Sawyer
- Pope County Historical Society, historic school house cedar shake roof with Tim Lang, Glenwood

Hitch 4

1216 corpsmember hours

- Cemetery restoration with Ed Harthorn including work at County Line Cemetery in Lake City, Oakwood Cemetery in Hastings, and St. Luke's Cemetery in Hastings
- Halfway Ranger Station, carpentry skills training with Dan Green, Ely
- Lake County Historical Society, train depot window restoration with Mel Sando, Two Harbors

Hitch 5

1224 corpsmember hours

- Chippewa National Forest Joyce Estate, site stabilization and staining, Bovey
- Adas Israel Cemetery, cemetery restoration with Ed Harthorn, Duluth
- Sts Mary and Joseph's Church, stone chimney resto. and rebuild with Larry Beaumont, Sawyer

Hitch 6

1227 corpsmember hours

- Adas Israel Cemetery, cemetery restoration, Duluth
- Sts Mary and Joseph's Church, chinking and daubing, Sawyer

May 30, 2017 - August 23, 2017

Service Hours for DEED (1 Crew)	2,825
<u>Service Hours for MNHS (2 Crews)</u>	<u>5,649</u>
Corpsmember Service Hours (3 Crew)	8,474

- Session Two Training** 655 corpsmember hours
- Industry Training/Certifications: OSHA & CPR/First Aid for new corpsmembers
 - Halfway Ranger Station, corpsmember training, crew dynamics and onboarding for new corpsmembers
- Hitch 7** 1268 corpsmember hours
- Superior National Forest Tofte Ranger Station, log building staining with Lee Johnson, Tofte
 - Sts Mary and Joseph’s Church, roof substrate with Tim Lang, Sawyer
 - Pennington County Historical Society, chinking and daubing, Thief River Falls
- Hitch 8** 1218 corpsmember hours
- Pope County Historical Society, historic school house cedar roof with Tim Lang, Glenwood
 - Sts Mary and Joseph’s Church, stone chimney restoration and rebuild, Sawyer
 - Superior National Forest Tofte Ranger Station and Sawbill Cabins, staining and painting with Lee Johnson, Tofte
- Hitch 9** 1330 corpsmember hours
- Sts Mary and Joseph’s Church, cedar shingle roof with Tim Lang, Sawyer
 - Murray County Historical Society, chinking and daubing and window restoration, Slayton
 - Halfway Ranger Station, chimney restoration with Mike Braun, Ely
 - Carpentry Union Tour, Hermantown
- Hitch 10** 1335 corpsmember hours
- Sts Mary and Joseph’s Church, bell tower rebuild with Dan Green, Sawyer
 - Isanti County Historical Society, scrape/paint summer kitchen with Lynne Dablow, Cambridge
 - Sts Mary and Joseph’s Church, roofing, Sawyer
 - Superior National Forest Sawbill Cabins, log building maintenance with Lee Johnson, Tofte
 - City of Ely Cemetery, Cemetery Restoration, Ely
- Hitch 11** 1458 corpsmember hours
- Loaves and Fishes, chimney deconstruction, Duluth
 - Halfway Ranger Station, log dovetail hewn structure workshop with Gerry David, Ely
 - Grand Portage National Monument, stockade repairs, Grand Portage
- Hitch 12 - Field Season Wrap-Up** 1376 corpsmember hours
- Home buying training by One Roof Community Housing, Duluth
 - Historic home inspection walk through with area inspector, Duluth
 - Career advising and Next Steps in the Pathway to the Preservation Trades
 - Sts Mary and Joseph’s Church, overall project wrap-up with Northern Bedrock Staff, Sawyer

August 23, 2017 - November 22, 2017

Service Hours for DEED (1 Crew)	2,880
Service Hours for MNHS (2 Crews)	5,760
Corpsmember Service Hours (3 Crew)	8,640

Total Program Service Hours

Total Corpsmember Service Hours	17,114
Total Staff and Technical Specialist Hours	1,495
	18,609

ADAS ISRAEL CEMETERY | DULUTH, MN

TECHNICAL SPECIALIST: Ed Harthorn - Northern Bedrock Cemetery Restoration Specialist

FIELD HOURS: Corpsmember - 534

Technical Specialist - 13

Staff - 0

HITCH SUMMARY

The crew began work at the Adas Israel Cemetery with a main goal to reset, repair, and clean monuments. At the start, Ed Harthorn gave a demonstration on how to reset a monument which included: digging out the base of the monument, using a rock bar to level the base, how to replace gravel under the base, and using a level to check accuracy. He also used the same monument to demonstrate how to reassemble a fallen monument. This included how to use the tripod, monument setting compound, epoxy, and lead spacers. Along with resetting, the crew completed a repair on a monument which had broken in half. The method used for this stone was to use only epoxy.

Overall the crew was able to work from the back of the cemetery to the front of the cemetery. Phil, the site host, wanted the crew to focus on the monuments that had completely fallen over, which he categorized as high priority. Because of this request the crew spent most of their time resetting monuments.

QUANTITATIVE MEASUREMENTS

- 39 monuments cleaned
- 51 monuments reset (rough weight = 21,128 lbs)
- 2 monuments repaired
- 3 stone fragments excavated

ACRES OF LAND IMPROVED

- 2 acres

TECHNICAL PROCESSES/TASKS COMPLETED

RESETTING:

- Leveled and straightened the lower base using heavy-duty pry bars
- Prepared and cleaned the paired surfaces that were being joined, then applied epoxy
- Placed lead spacers near each corner of the lower paired surface
- Set strips of monument setting compound near the corners of the lower paired surface
- Used tripod and hoist as needed to lift the upper section(s) of the stone onto the base
- Trimmed excess monument setting compound pressed out by the weight of the stone



Before



During



After



Before



After

CLEANING:

- Saturated stones with water, then applied a solution of D2
- Scraped off heavy lichen with plastic putty knives
- Scrubbed the stones with soft-bristle brushes to remove bio-growth
- Removed lichen from engraved lettering using bamboo skewers
- Rinsed the stones thoroughly with water



Before



After

REPAIR:

- Cleaned the gaps to remove as much staining and bio-growth as possible
- For more structural repairs, mixed and applied a stone-grade epoxy
- Mixed sand, water, and natural hydraulic lime to create a stone compatible mortar
- Applied mortar to the gaps using margin trowels and tuck pointers and allowed to cure



Before



After

RESETTING:

- Levelled and straightened the lower base using heavy-duty pry bars
- Prepared and cleaned the paired surfaces that were being joined, then applied epoxy
- Placed lead spacers near each corner of the lower paired surface
- Set strips of monument setting compound near the corners of the lower paired surface
- Used tripod and hoist as needed to lift the upper section(s) of the stone onto the base
- Trimmed excess monument setting compound pressed out by the weight

MURRAY COUNTY HISTORICAL SOCIETY | SLAYTON, MN

FIELD HOURS: Corpsmember - 360

Technical Specialist - 0

Staff - 0

HITCH SUMMARY

One crew set out for Murray County, MN, about three hours SW of Minneapolis. This was a great project host to work with as they offered a variety of work projects and fantastic educational opportunities. The main work project had the crew focused on the Wornson Cabin, a small log structure at the Murray County Fairgrounds. Chinking and daubing spot repair was completed around the building as well a small roof patch, window maintenance, and door sill and frame repair. After work was completed at the Wornson cabin, the crew traveled to the End-O-Line Railroad park to work on the 1900 Currie Depot windows. The crew scraped all failing paint and glazing from the Depot windows which are replaced with new glazing as necessary.

QUANTITATIVE MEASUREMENTS

- 123 ft. of chinking and daubing completed
- 2.18 sq. ft. of cedar roof repaired
- 4 windows repaired
- 12 windows scraped, re-glazed and painted
- 1 door sill replaced
- 1 building treated with borates

ACRES OF LAND IMPROVED

- Approximately 0.05 acres

TECHNICAL PROCESSES/TASKS COMPLETED



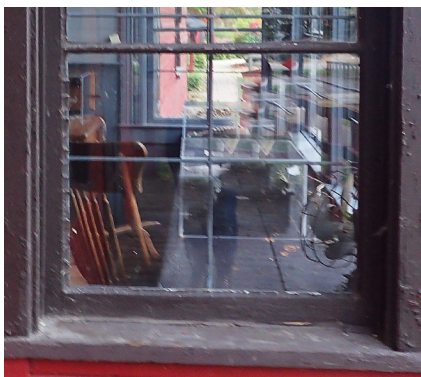
Before



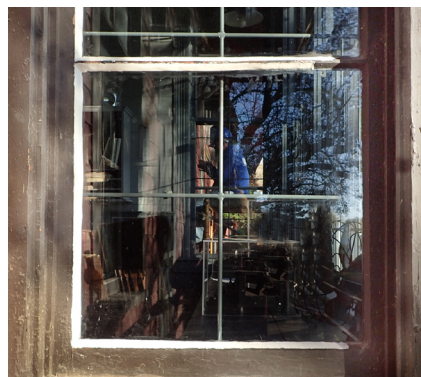
After

CHINKING AND DAUBING:

- Prepared chink space using slicks and wood chisels to remove punky wood and create a smooth daubing surface
- Used compressed air to remove dust and debris from chink space
- Filled chink space with oakum and foam backer rod
- Installed metal lath with staples
- Applied daubing mixture over lath



Before



After

WINDOW REPAIR:

- Removed failed and broken glazing from windows
- Cleaned windows and glazing area
- Replaced broken or missing glazing points
- Re-glazed windows with new glazing putty

DOOR REPAIR:

- Removed door, frame, sill, and trim boards
- Planed down bottom of door to stop it from sticking when opened
- Poured concrete footing for new sill to sit on
- Cut sill and frame boards to size and installed
- Chinked and daubed under old trim boards to close up gaps and replaced with new boards
- Put original door back in place



Before



During



After

CEDAR SHINGLE REPAIR:

- Removed cracked/failing shingles
- Cleaned exposed surface of roof
- Nailed new courses of cedar shingles starting at the roof edge moving up
- Made sure nail heads were covered by course above



Before



During



After

HALFWAY RANGER STATION | ELY, MN

TECHNICAL SPECIALIST: Mike Braun - Stone Mason

FIELD HOURS: Corpsmember - 307.5

Technical Specialist - 43.5

Staff - 10

HITCH SUMMARY

One crew worked with Mike Braun to repair damage to the fireplace (stone) and furnace (brick) chimneys on the Ranger Dwelling at Halfway Ranger Station. On the fireplace chimney, two to three courses of stones were re-laid using the same stones in the same location and orientation. A diagram of the stones was made prior to any removal or replacement of stones so as to keep their locations accurate. In addition to re-laying the stones, a new flue was installed and a new cap was poured to match the original. Similar work was completed on the furnace chimney, including the top two courses re-laid, top section of flue replaced, and a new cap.

QUANTITATIVE MEASUREMENTS

- 174 sq. ft. of stone re-laid and re-grouted
- 22 sq. ft. of bricks re-laid and re-grouted
- 1/3 acre of brush burned

ACRES OF LAND IMPROVED

- Approximately 3 acres

TECHNICAL PROCESSES/TASKS COMPLETED

CHIMNEY REPAIR:

- Used hammer drill and air chisel to remove mortar from all joints
- Re-lay stones with new mortar
- Replaced top section of flue
- Poured new cap
- Re-grouted all joints, tuck-pointed and struck back joints
- Acid washed chimney

Before



During



After



GRAND PORTAGE NATIONAL MONUMENT | GRAND PORTAGE, MN

TECHNICAL SPECIALIST: Mel Gagnon - Maintenance Supervisor

FIELD HOURS: Corpsmember - 381 Technical Specialist - 25 Staff - 0

HITCH SUMMARY

One crew traveled to Grand Portage, MN to repair the log stockade surrounding the Grand Portage National Monument. The park maintenance staff provided the crew with a thorough background and history of the site and supervised the stockade repairs for the hitch. The process of replacing logs involved removal of posts and bolts and peeling and shaping new logs in the original pattern. The crew was given the opportunity to explore many of the educational aspects of the monument, including the mount rose trail and the visitors center. The crew completed all the repairs to the stockade.

QUANTITATIVE MEASUREMENTS

- 113.5 ft. of stockade whalers replaced
- 11 new whalers installed

ACRES OF LAND IMPROVED

- Approximately 2 acres

TECHNICAL PROCESSES/TASKS COMPLETED

LOG STOCKADE REPAIR:

- Raked back rocks around posts
- Used sawzall to cut dowels holding posts to whalers
- Caught and removed post
- Removed old whalers by removing wooden cap and lag bolts
- Installed new whalers
- Reset posts
- Raked rocks back into place



Before



During



After

GUSTAVUS ADOLPHUS - BORGESON CABIN | ST. PETER, MN

TECHNICAL SPECIALIST: Mark Johnson - Artisan Restoration

FIELD HOURS: Corpsmember - 381 Technical Specialist - 80 Staff - 20

HITCH SUMMARY

The Borgeson Cabin restoration project was primarily intended to replace the failed exterior chinking and daubing on an 1860's Swedish family cabin, with certain additional log replacement and log maintenance tasks. The crew, along with Mark Johnson and two subcontractors, successfully installed tension rods in order to realign the walls of the structure, removed the failed chinking and daubing material, resurfaced rotten or otherwise damaged log segments, refitted new chinking (backer foam, aluminum-sided foam, and backer rod), stained the entire exterior, re-daubed the cabin (Permachink), sealed all checks, and prepared and installed four replacement logs. In eight days (including travel time), the crew completed the entire scope of work with the exception of the interior mortar surrounding the replacement logs, minor daubing along two of the building corners, daubing along one rear door frame, and any necessary touch-ups. (Cal Umlauf, Hitch 2.3 Hitch Report, 2017).

QUANTITATIVE MEASUREMENTS

- 1,700 ft. of chinking and daubing replaced
- 39.5 ft. of log replaced

ACRES OF LAND IMPROVED

- Approximately 0.05 acres

TECHNICAL PROCESSES/TASKS COMPLETED

CHINKING AND DAUBING:

- Removed failed chinking and daubing material using chisels and scrapers
- Cleaned log edges to prepare for new chinking and daubing
- Re-fitted new chinking (backer foam, aluminum-sided foam, and backer rod)
- Stained exterior walls
- Applied new daubing material (Permachink)



Before



During



After

POPE COUNTY HISTORICAL SOCIETY | GLENWOOD, MN

TECHNICAL SPECIALIST: Tim Lang - Cedar Roof Specialist

FIELD HOURS: Corpsmember - 647.25 Technical Specialist - 119.75 Staff - 6.5

HITCH SUMMARY

The Pope County Historical Society project sought to replace the cedar shingle roof of the Glenwood school house, located on the county museum grounds. The crew learned the step-by-step process of cedar roof replacement under the direction of Technical Specialist Tim Lang and successfully replaced the entire roof. In addition to shingling the school house, the small bell tower had shingles and tar paper removed and new tar paper and ice and water shield installed. The crew also created an area of brickwork encasing a commemorative home plate on an old baseball diamond on site and due to several storms passing through, had time to install two display boards in the county museum as well as a new Plexiglas case for a display. (Shae Peacock, Hitch 3.2 and 8.1 Hitch Reports, 2017).

QUANTITATIVE MEASUREMENTS

- 52.5 sq. ft. of old shingles and tar paper removed and tar paper replaced from Bell Tower
- 1,156 sq. ft. of roof replaced
- 34 ft. of molding primed
- 38 sq. ft. of brickwork laid for commemorative home plate

ACRES OF LAND IMPROVED

- Approximately 0.03 acres

TECHNICAL PROCESSES/TASKS COMPLETED

CEDAR SHINGLE ROOF REPAIR:

- Set scaffolding along NW elevation
- Installed harnesses and footholds across the roof
- Laid 2 x 10 planks on anchored roof jacks
- Removed old shingles and tar paper with spades and roofing shovels
- Pulled old nails, or hammered into roof boards
- Installed extra roof board along roof edge to extend drip line
- Laid ice and water shield across bottom of roof, followed by mesh cedar breather
- Shingles installed; tar paper stapled down as work went up the roof



Before



During



After

LAKE COUNTY HISTORICAL SOCIETY | TWO HARBORS, MN

TECHNICAL SPECIALIST: Mel Sando - Lake County Historical Society Director

FIELD HOURS: Corpsmember - 319.5

Technical Specialist - 52.5

Staff - 0

HITCH SUMMARY

One crew set out for the Lake County Historical Society in Two Harbors, MN to complete restoration work on the historic Duluth and Iron Range Railroad Depot. The 1907, brick building was home to the headquarters and corporate offices for the Duluth and Iron Range Railroad and is now home to the historical society administrative offices and museum. The Northern Bedrock crew worked to restore the windows and doors of the Depot to their original appearance; most notable being the large freight doors. The crew learned the "ins" and "outs" of windows, completing sash cord and pocket weight repairs.

QUANTITATIVE MEASUREMENTS

- 21 windows scraped of old paint
- 27 windows painted
- 5 doors painted
- 1 window repaired

ACRES OF LAND IMPROVED

- Approximately 0.6 acres

TECHNICAL PROCESSES/TASKS COMPLETED



Before



After

FREIGHT DOORS:

- Used hot air guns and Zip Away to remove old paint from wooden surfaces (paint bubbles up from heat)
- Removed all old paint in order for new paint to last longer
- Cut out old caulking around door frame and removed weatherstripping if present
- Sanded surfaces using electric sander or sponge for corners and cracks
- Cleared dust from bevels, cracks, and ledges using shop vac
- Applied 4 coats of yellow and 2 coats of red paint

STS MARY AND JOSEPH CHURCH | SAWYER, MN

TECHNICAL SPECIALISTS: Larry Beaumont - Stone Mason
Don Berthiaume - Project Host
Dan Green - Northern Bedrock Field Coordinator
Tim Lang - Cedar Roof Specialist

FIELD HOURS: Corpsmember - 3605 Technical Specialist - 246 Staff - 119

HITCH SUMMARY

Our largest project for the 2017 field season was the restoration of Sts Mary and Joseph's Church, a historic mission church. All Northern Bedrock crews worked to prep the site, remove and apply new chinking and daubing, rebuild a stone chimney, re-roof the structure, and reconstruct the bell tower.

The start of the project found crews prepping the building for future work and repairs. Much of the work revolved around removing chinking and daubing on the exterior of the building. Chinking and daubing work continued for the duration of the project.

The stone chimney on the building was in need of reconstruction, in which Northern Bedrock hired stone mason, Larry Beaumont to lead the crew. With the guidance of the Technical Specialist, crews installed the new chimney blocking and faced the blocking with stones that were retained from the original chimney. During the chimney install, crews learned traditional masonry techniques.

Along with chinking and daubing, the roof took up much of the crew time on this project as it required a complete demolition, roof substrate repair and cedar shake installation. Under the guidance of technical specialist Tim Lang, the crews removed all cedar shakes and deteriorated roof boards. Much of the roof substrate was replaced, and new furring strips, plywood and tar paper were installed in preparation for the new cedar shakes.

During the last hitch, a crew worked with Northern Bedrock Staff-Dan Green to reconstruct the bell tower. Church volunteers had previously lowered the bell tower to allow for roof repairs. Crews installed new posts extending 26 feet high, braced the base using pieces retained from the original tower and reinstalled the bell tower roof. The roof was framed, the roof boards laid, ice and water shield laid and lastly the church cross was installed on top.



Before (ca. 1948)



Before



After

QUANTITATIVE MEASUREMENTS

CHINKING & DAUBING

- 3,336 lineal ft. of chinking and daubing removed
- 675 lineal ft. of chinking and daubing completed
- 1,034 lineal ft. chinking installed

ROOFING AND FASCIA

- 2,344 sq. ft. of shakes
- 80 sq. ft. of buffalo board removed
- 227 sq. ft. of fascia removed and replaced
- 2,160 sq. ft. of plywood replaced
- 2,160 sq. ft. of tar paper replaced
- 102 sq. ft. of ice and water shield replaced
- 54 furring strips replaced
- 1,840 sq. ft. of shakes replaced
- 2 chicken ladders built
- 2 crickets built

CHIMNEY

- dimensions of chimney blocking installed 17" (L) x 21" (W) x 216" (H)
- dimensions of chimney stone face installed 27" (L) x 28" (W) x 216" (H)
- 1,225 stones used

BELL TOWER

- Installed 4 post brackets
- Installed 4 posts dimensions of each post 6" (L) x 6" (W) x 26' (H)
- Reinstalled tower roof measuring 6' (L) x 6' (W) x 3' (H)
- Reinstalled cross on top of bell tower

ACRES OF LAND IMPROVED

- 0.5 acres

TECHNICAL PROCESSES/TASKS COMPLETED

STONE CHIMNEY:

- Installed weeps to funnel water away from bottom of chimney
- Created a gradual ledge with old cement chunks for the first layer of stones laid on the base
- Struck back joints to clean up and pus mortar in
- Kept stones flat or tilted towards the inside
- Kept joints tight and staggered with each row
- Used brick ties to attach larger cornerstones to the clocking with hammer-set anchors



Before



During



After

CEDAR SHAKE REPLACEMENT:

- Removed existing shakes, underlying tar paper, nails and valley tin
- Removed deteriorating buffalo board, removed rotted sections, and replaced with aluminum-faced foam
- Laid 4x8 plywood on each plain with h-clip spacers, prepped surface with tar paper, ice/water shield and breather
- Install cedar shakes



Before



During



After

CHINKING AND DAUBING:

- Prepared chink space using slicks and wood chisels to remove punky wood and create a smooth daubing surface
- Used compressed air to remove dust and debris from chink space
- Filled chink space with oakum and foam backer rod and installed metal lath with staples
- Applied daubing mixture over lath



Before



During



After

BELL TOWER:

- Installed 4 post brackets at the base, installed posts and secured to the building
- Reinstalled 6' (L) x 6' (W) x 3' (H) framed roof, laid roof boards, laid ice/water shield
- Reinstalled the cross to the top of the bell tower



Before



During



After

TRAINING HIGHLIGHTS



Mike Braun teaching a corpsmember the skill of bricklaying

[Mike Braun](#)

Masonry

Mike Braun is an expert stone mason of Mike Braun Construction Inc. located in Ely, MN and has been in operation for 33 years. He has worked with Northern Bedrock for three seasons, and is consistently passing on knowledge with patience and reverence.

Mike was our Technical Specialist for two projects. The first being the reconstruction of the 1930's WPA era grills at Semer Park in Ely. The second project was at Halfway Ranger Station in which corpsmembers worked under the guidance of Mike to repair the stone chimney.



Gerry David demonstrating how to use a bark spud for peeling the log

[Gerald F. David](#)

Hewing

Gerald F. David is a German trained Timber Framer of who owns GFD Woodworking a restoration company out of Duluth MN. He has traveled around the country restoring structures and taching timber framing classes at the North House Folk School and Duluth Folk School.

Gerald conducted an 8-day hands on workshop with corpsmembers to teach them traditional log hewing skills. In addition to hewing logs, corpsmembers also started the construction of a traditional log structure.



Jonathan Appell using a chain hoist to set a monument onto the base

[Jonathan Appell](#)

Cemetery

Jonathan Appell is a historic stone conservator with over 30 years of experience, working out of West Hartford, Connecticut. He has been working in the field for 30 years and has had a significant impact on the field of historic preservation. Appell regularly travels across the country to lead cemetery preservation workshops demonstrating cleaning, resetting, and repairing monuments.

Northern Bedrock hosted Appell for a two-day workshop at the Forest Hill Cemetery in Duluth, MN, during which he trained all corpsmembers in the basic cleaning technique, followed by large monument resetting and repair using a tripod and chain hoist. This training translated to many hitches throughout the season, accounting for 465 monuments cleaned, 284 monuments edged, and 115 monuments reset.

*Click on trainers name to view their website.

HISTORIC PRESERVATION IMPACT

Cemetery

The 2017 field season found the cemetery projects to be those in the most need of preservation and maintenance. Crews reset 115, cleaned 465, edged 284, excavated 13, and repaired 5 monuments between 8 cemeteries in MN. This work mitigates future safety and liability concerns of toppling heavy headstones in these public spaces as well as instilling a deep sense of history in the corpsmembers.

Documentation and Condition Assessments

The results of project documentation and assessments of historic properties aid in the survival and accuracy in future interpretation of the property. Corpsmembers documented each project through photos and individual hitch reports, as well as completed 5 condition assessments and a subsequent report for each building. These reports can be utilized by hosts when determining priority maintenance tasks.

Site Stabilization

Basic site stabilization, which often goes unnoticed, has some of the greatest impact on a buildings' preservation. Among other stabilization tasks, crews dug 4 drip lines and cleared 3,650 square ft. of brush from around buildings, creating proper drainage away from the structures.

Scraping, Painting and Staining

Historic Preservation tasks such as scraping, painting and staining structures is often not a priority for host sites, in particular the Historical Societies. Northern Bedrock crews were able to support hosts in these efforts on 9 historic structures. Painting projects often bring a renewed interest in the historic structure by the public. The impact of this work is to weatherize buildings to increase their longevity, as well as creating a renewed interest by the public.

Log Building Maintenance

Log buildings were the most common type of structure worked on this season. Crews maintained 12 log buildings, providing hosts with skills and outcomes scarcely found locally. Log buildings are often nationally or locally significant, linked to great histories that engage the public; an impact that would be lost without the preservation work completed by corpsmembers.

Chinking and Daubing

Chinking and daubing is a technical skill that many local historical societies do not have the capabilities to administer. Northern Bedrock Corpsmembers were taught the proper technique and completed historically accurate chinking and daubing on 6 log structures. This task is critical to a structures' preservation as it provides weatherization and mitigates damage from pests.

Masonry

Masonry projects, this season, returned some of the most fulfilling impacts to the public. Two Youth Conservation Corps-built stone grills were reconstructed by Northern Bedrock Corpsmembers in their original locations, carrying on Corps work that began in the 1930's. Community members saw the reconstruction of a chimney that has value associated with their heritage dating back to the early 1900's. Two chimneys were repaired at Halfway Ranger Station, which increased the level of use at a historic building, previously a cherished home for many.

QUANTITATIVE DATA

WORK TYPE	Total	Units
STRUCTURES		
HISTORIC STRUCTURES AFFECTED	26	Units
CEMETERY		
MONUMENT CLEANED	465	Units
MONUMENT EDGED	284	Units
MONUMENTS EXCAVATED	13	Units
MONUMENTS REPAIRED	5	Units
MONUMENTS, RESET	115	Units
SITE STABILIZATION		
ACRES OF LAND IMPROVED	21.09	Acres
BRUSH REMOVAL	3650	Sq. Ft.
LANDSCAPING	8387	Sq. Ft.
ROOF CLEANED	2500	Sq. Ft.
DRIP LINE	245	Ln. Ft.
STRUCTURE, CLEANED	1600	Sq. Ft.
CARPENTRY		
BOARDS, REPLACED	14	Units
GENERAL SMALL STRUCTURES	18	Units
LARGE STRUCTURES	2	Units
LOGS, REPLACED	149.5	Ln. Ft.
LOGS, REPAIRED	113.5	Ln. Ft.
DECONSTRUCTION		
LOG STRUCTURE	488	Sq. Ft.
STONE	28	Cu. Ft.
PLASTER	36	Sq. Ft.

WORK TYPE	Total	Units
EXTERIOR MAINTENANCE		
BORATE, LOGS TREATED	3046	Sq. Ft.
CHINKING / DAUBING	7338.25	Ln. Ft.
FASCIA, REMOVAL	227	Ln. Ft.
FASCIA, REPLACED	227	Ln. Ft.
PAINT, REMOVAL	13131	Sq. Ft.
PRIMER, APPLIED	7	Sq. Ft.
PAINT / STAIN, APPLIED	15800	Sq. Ft.
ROOF, REPLACED	3028.6	Sq. Ft.
ROOF, REPAIR	2214.68	Sq. Ft.
SIDING, REPAIR	184	Sq. Ft.
TRIM , REPLACED	20	Ln. Ft.
WINDOWS, REGLAZED	25	Units
WINDOWS, SCRAPED, REFINISHED	39	Units
DOORS, REFINISHED	5	Units
LOGS, CHECKS CLEANED	1397	Sq. Ft.
MASONRY & CONCRETE		
BRICKS, LAYED DRY	88	Sq. Ft.
CHIMNEYS, RECONSTRUCTED	1	Units
CHIMNEYS, REPAIRED	2	Units
STONE CLEANED	640	Sq. Ft.
STONE, REPOINTED	490	Sq. Ft.
STONE, RECONSTRUCTION	113	Cu. Ft.
FIREPITS, REBUILT	3	Units

TRAINING, COST SHARING AND IN-KIND CONTRIBUTIONS

In addition to the base support from partnerships and grants, Northern Bedrock’s work depends on technical specialists, cost sharing and in-kind contributions.

The program relies heavily on the ability to pay trainers and technical specialists, much like the Civilian Conservation Corps with the Local Experienced Men (LEM).

Project hosts contribute cost sharing to Northern Bedrock on a sliding scale based on the organization’s ability to pay and the quality of the Corpsmember experience. This allows the crews to assist small organizations in maintaining and repairing their historic resources.

In kind contributions fill in funding gaps and provide meaningful experiences for the corpsmembers and communities.

2017 Field Season

TRAINING COST

HITCH	TECHNICAL SPECIALIST	ORGANIZATION	DESCRIPTION	COST
0	Joe Gallagher	Heritage Preservation Resources	Site Assessments	2,500
1	Edward Harthorn	Edward Harthorn	Cemetery restoration	7,176
1	Johnathan Appel	Monument Conservator	Cemetery restoration	2,500
2.1	Joe Gallagher	Heritage Preservation Resources	Assessment and log replacement	2,500
3.2	Tim Lang	Tim Lang	Cedar Shake Roofs	5,000
5.3	Larry Beaumont	Beaumont Stoneworks	Build Stone Chimney	1,400
7.2	Tim Lang	Tim Lang	Cedar Shake Roofs	5,000
9.3	Mike Braun	Braun Construction	Repair Stone Chimney	3,140
11.2	Mark Engebretson	Independent Contractor	Chimney Teardown	250
11.3	Gerry David	GDF Woodworking, LLC	Hewing & Dovetail Workshop	3,900
12	Mark Johnston	Historic Design Consulting	Traditional woodworking	300
12	Jim James	20/20 Home Inspections	House Inspection 101	350

Total \$34,016

2017 Field Season
COST SHARING

HITCH	HOST	DESCRIPTION	COST SHARING
2.2	City of Ely	Semer Park - stone grill repairs	9,600
2.3	Gustavus Adolphus	Borgson Family Log Cabin	8,600
3.1	St. Mary's & Joseph Church	Clean logs, Windows, Demo	10,000
3.2	Pope County Historical Society	School Roof	7,000
3.3	Taylor's Falls Historical Society	Cabin Deconstruction	1,000
3.4	Isanti County Historical Society	Paint Fence & Site Stabilization	1,000
4.3	Friends of Mnpls Pioneers & Soldiers Mem. Cem.	Cemetery Maintenance & Restoration	350
4.3	Oakwood Lutheran Cemetery, Lake City	Cemetery Restoration	600
4.3	Lake City Historical Society	Cemetery Restoration	600
5.1	Chippewa National Forest	Joyce Estate	9,600
5.3	St. Mary's & Joseph Church	Chinking & daubing, Chimney	10,000
6.1	St. Mary's & Joseph Church	Chinking & daubing, Roofing	10,000
6.2	Adas Israel Cemetery	Cemetery Cleaning	9,000
7.1	Superior National Forest	Tofte Log Building Maintenance	10,000
7.3	Pennington County Historical Society	Chinking and Daubing	9,600
8.1	Pope County Historical Society	School Roof	3,000
8.3	Superior National Forest	Tofte, Sawbill	10,000
9.2	Murray County Historical Society	Log Cabin & windows	3,500
11.1	Grand Portage National Monument	Stocade Repairs	10,000
12	Sts Mary & Joseph Church	Bell Tower Reconstruction	10,000

Total \$133,450

2017 Field Season

IN-KIND CONTRIBUTION

HITCH	TYPE	IN-KIND	CREDITED TO
CL Tng	Camping	\$450.00	US Forest Service (SNF)
	Project Host Support	\$480.00	Tim McKenzie
CM Tng	Training	\$547.00	WITC
1	Camping	\$756.00	Snowflake Nordic Ski Center
2.1		\$0.00	
2.2	Materials and Equipment	\$50.00	Mike Braun
2.3		\$0.00	
3.1	Camping	\$1,050.00	Lounge on Big Lake Shores
	Food/Refreshments	\$400.00	Sts. Mary and Joseph Church
	Project Host Support	\$525.00	Don Berthiaume
3.2	Food/Refreshments	\$100.00	Pope County Historical Society
	Materials and Equipment	\$100.00	Tim Lang
3.3	Camping/Facilities	\$650.00	Taylor's Falls Historical Society
	Project Host Support	\$680.00	Bruce Charlestad
	Food/Refreshments	\$200.00	Daryl Johnson
3.4	Camping	\$450.00	Isanti County Historical Society
	Food/Refreshments	\$50.00	
4.1	Camping	\$1,092.00	Lake County Historical Society
	Project Host Support	\$160.00	Mel Sando
4.2		\$0.00	
4.3		\$0.00	
5.1	Camping	\$1,050.00	US Forest Service (CNF)
5.2	Project Host Support	\$200.00	
5.2	Camping	\$252.00	Snowflake Nordic Ski Center
	Project Host Support	\$100.00	Phil Sher
5.3	Food/Refreshments	\$400.00	Sts. Mary and Joseph Church
	Materials and Equipment	\$200.00	Larry Beaumont
	Camping	\$1,050.00	Lounge on Big Lake Shores
6.1	Food/Refreshments	\$350.00	Sts. Mary and Joseph Church
	Materials and Equipment	\$200.00	Larry Beaumont
	Camping	\$1,350.00	Lounge on Big Lake Shores
6.3	Camping	\$308.00	Snowflake Nordic Ski Center

2017 Field Season

IN-KIND CONTRIBUTION

HITCH	TYPE	IN-KIND	CREDITED TO
End of Half Season	Space for Ceremony	\$250.00	Meteeq & Co.
Mid-Season CM Training	Training	\$82.05	WITC
	Camping	\$96.00	Snowflake Nordic Ski Center
7.1	Camping	\$1,050.00	US Forest Service (SNF)
	Project Host Support	\$6,790.00	
7.2	Camping	\$875.00	Lounge on Big Lake Shores
	Food/Refreshments	\$350.00	Sts, Mary and Joseph Church
	Materials and Equipment	\$200.00	Tim Lang
7.3	Camping	\$1,050.00	Pennington County Historical Society
8.1	Food/Refreshments	\$100.00	Pope County Historical Society
8.2	Camping	\$1,050.00	Lounge on Big Lake Shores
	Food/Refreshments	\$400.00	Sts. Mary and Joseph Church
	Materials and Equipment	\$100.00	Tim Lang
	Materials and Equipment	\$100.00	Larry Beaumont
8.3	Camping	\$1,050.00	US Forest Service (SNF)
	Project Host Support	\$6,790.00	
9.1	Camping	\$1,050.00	Lounge on Big Lake Shores
	Food/Refreshments	\$400.00	Sts. Mary and Joseph Church
	Materials and Equipment	\$200.00	Tim Lang
9.2	Food/Refreshments	\$50.00	Murray County Historical Society
	Camping	\$1,050.00	
9.3	Materials and Equipment	\$100.00	Mike Braun
	Household Goods	\$125.00	Dan Green
10.1	Camping	\$450.00	Lounge on Big Lake Shores
	Food/Refreshments	\$150.00	Sts. Mary and Joseph Church
	Materials and Equipment	\$50.00	Tim Lang
10.2		\$0.00	
10.3	Camping	\$375.00	Lounge on Big Lake Shores
	Food/Refreshments	\$150.00	Sts. Mary and Joseph Church
	Materials and Equipment	\$120.00	Dan Green

2017 Field Season

IN-KIND CONTRIBUTION

HITCH	TYPE	IN-KIND	CREDITED TO
10.4	Camping	\$300.00	US Forest Service (SNF)
	Project Host Support	\$2,000.00	
	Camping	\$60.00	Snowflake Nordic Ski Center
10.5	Camping	\$375.00	Isanti County Historical Society
	Food/Refreshments	\$100.00	Isanti County Historical Society
	Camping	\$36.00	Snowflake Nordic Ski Center
1.1	Camping	\$1,050.00	Grand Portage National Monument (NPS)
11.2	Food/Refreshments	\$350.00	Sts. Mary and Joseph Church
	Materials and Equipment	\$100.00	Tim Lang
11.3		\$0.00	
11.4	Food/Refreshments	\$100.00	Loaves and Fishes
12	Food/Refreshments	\$100.00	Sts. Mary and Joseph Church
	Materials and Equipment	\$100.00	Tim Lang
	Volunteer Time	\$50.00	Bryan French
	Training	\$200.00	One Roof
	Volunteer Time	\$50.00	Mark Poirier
2017 season	Parking	\$1,160.00	Mark Poirier

Total \$43,934.05