Duluth Spirit Mountain Tourism Industry Infrastructure

Predesign Report Spirit Mountain Recreation Area City of Duluth, MN

TKDA No. 18185.000 October 15, 2021



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Certification Signatures Page

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly registered ARCHITECT under the laws of the state of Minnesota.

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Date: October 15, 2021

Predesign Team Page



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Introduction

History

The Spirit Mountain Recreation Area Authority (SMRAA) was created on May 18, 1973. The following is the mission statement for the SMRAA taken from Minnesota Laws, 1973, Chapter 327:

Mission

The purpose of this Act is to facilitate the development of a land area with the following objectives:

- ▶ The development of wide range recreational facilities available to both local residents and tourists.
- The aiding of the economy of northeastern Minnesota by encouraging private enterprise efforts in conjunction with recreational facilities; and
- ▶ The preservation of the environment in the area by a timely and intelligent plan of development.

Objectives

The Spirit Mountain Recreation Area will measure its success in satisfying its mission by the following:

- Provide recreational opportunities available to and accessible by all potential users, local residents and tourists alike.
- ▶ Maintain and enhance winter revenues and increase revenue generation in the spring, summer and fall.
- Ensure operating revenues cover annual operating costs, as well as maintenance and upkeep of facility. Substantial necessary improvements to the area are covered through established, legislated lodging and food and beverage taxes in which the Spirit Mountain Recreation Area Authority is specifically named, along with grants, local and state support and partnerships.
- Increase Spirit Mountain Recreational Area's regional economic impact in terms of total tourism dollars generated, enhancement of other regional attractions, and amount of spin-off private sector development.
- Maintain a sustainable land base protecting its ecological functions and cultural features.

Vision

The Spirit Mountain Recreational Area will achieve its mission by being a premiere four-season outdoor adventure recreation center, recognized for its unique, multi-faceted recreation facility that meshes mountain terrain, Lake Superior experience and semi-wild river access and by being accredited as a sustainable green facility and operation.



In June of 2008 the Spirit Mountain Master Plan was created to address the physical and market-related issues associated with a facility and grounds which, at that time, were 35 years old. This master plan included a proposal for updating and renovating the alpine ski facility and developing other four-season recreational amenities and activities to support regional tourism and generate more year-round use of the property. The following set of core concepts form the structure for the master plan.

- Enhanced Alpine Ski and Snowboard Focus
- ► Family Oriented, Multi-Activity Center
- Expanded Year-Round Activity
- ► Efficiency and Flexibility
- Private Development
- ► Forested Land-Based Management
- Sustainable Green Development

In accordance with the 2008 Master Plan, the SMRAA was to implement the master plan by:

- ▶ Realigning and upgrading chair lifts
- Enhancing the snowmaking system
- Developing a chalet and other amenities at Grand Avenue
- Renovating the Skyline Chalet
- Improving the Campground, parking and Nordic Areas
- ► Adding facilities for summer activities

The 2017 update to the Spirit Mountain Master Plan:

- Documented the improvements completed at SMRA since 2008.
- Considered the proposed trail network connections through the SMRA and advised working with the City to resolve the alignments and mitigate potential conflicts among user groups, including the ski area and downhill mountain biking.
- Provided insight on the Midwestern alpine ski industry and Spirit Mountain's position in relation to its regional competitors.
- Updated the Master Plan to reflect the SMRA's evolving role as a fourseason tourism and recreation amenity in western Duluth, taking into consideration the potential for integration with the proposed Grand Avenue Nordic Center and lower Spirit water access, improvements to the Zoo and the development of private lands in the vicinity of the Grand Avenue base.
- Evaluated existing and future parking requirements for the upper and lower base areas and studied the feasibility of a road between the two bases.

In July 2020, the Mayor of Duluth appointed a sixteen-member citizen's Task Force to draft a set of recommendations to help the Spirit Mountain Recreation Area achieve financial stability and develop a sustainable plan to pay for the repair and/or replacement of deteriorated infrastructure. The City of Duluth contracted with SE Group, an international outdoor recreation and ski area planning firm, to bring industry expertise to the planning process.

Among the data provided to the Task Force was a Spirit Mountain Multi-Season Recreation Assessment prepared by RRC Associates, a subcontractor for the SE Group, which researched visitor trends and estimated visitor volumes, local and regional market demographic profiles, and a broad analysis of existing regional amenities, market trends, and attractions in the greater Duluth area. The data served as a framework to inform strategic decisions around the opportunities for future planning scenarios. Research and findings were based on the following:

- Professional experience, data from the National Ski Areas Association, and consultant's empirical data
- American Community Survey
- ▶ U.S. Census Bureau
- ► The Outdoor Foundation
- ► The Outdoor Industry Association
- Explore Minnesota
- ► Visit Duluth

In January 2021 the SE Group presented the Strategic Business Plan for the Spirit Mountain Recreation Area for the consideration of the Task Force. The plan combines an examination of existing conditions, a financial analysis and recommendations for the future of SMRA. The Strategic Business Plan, which was included as an appendix in the final report of the Task Force, detailed Key Findings for the following:

- ► The Marketplace
- Outdoor recreation in Duluth
- Community Support
- Economic Impact
- Visitation Data
- Monitoring Tickets and Attendance
- Deferred Maintenance
- Performance Metrics
- Recommended Approach
- Alternatives
- Future Management
- Leadership

In March of 2021 the Spirit Mountain Task Force presented it recommendations to the Mayor Recommendations in the final report include:

- Business Improvement Strategies
- Capital Infrastructure Right Sizing and Renewal
- Adjustments to Tourism Tax Support
- Strategic Partnerships
- Redefining the Leadership Structure at SMRA

Purpose

This Predesign Report will address the major actions identified in the Spirit Mountain Task Force Report and has been prepared to:

- Identify all project needs and costs to serve as the basis for funding requests;
- Serve as the foundation for future decision making during the development of the project by providing a road map for future development;
- Communicate essential project objectives with data before the actual design process commences or other decisions are made;
- Identify and minimize risks associated with the project;
- Provide analysis of the best construction delivery method;
- Provide analysis of funding alternatives best suited for the project;
- Provide a basis for a Request for Proposal (RFP) for design services and for negotiating the future design contract, and
- Provide instructions to the future architectural and engineering design firms and provide them the foundation on which to base their design.



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SECTION 1: Predesign Summary

Project Summary Statement

Spirit Mountain Recreation Area is a regional economic driver that:

- Produces a \$22 million annual economic impact
- Welcomes approximately 250,000 visits per year
- Directly or indirectly supports 301 full-time jobs
- Attracts visitors, residents and businesses to choose Duluth

Spirit Mountain is essential to Duluth's quality of life, enabling thousands of Duluth residents and visitors of every age to be active, outdoors, together, year-round in a beautiful natural setting.

While Spirit Mountain is a tremendous asset, the recreation area never has reached its full potential. Spirit Mountain can and must be:

- More inclusive and accessible
- Better managed and maintained by Spirit Mountain and the City of Duluth
- ▶ More stable, operationally and financially
- Better positioned to maximize its impact on the Duluth area economy and quality of life

The City of Duluth proposes to leverage a capital reinvestment program, governance and management improvements, and new recreational programs that will:

- Increase Spirit Mountain's annual economic impact to an estimated \$39.9 million, attract more than 300,000 visits, and support 506 full-time jobs.
- Renew Spirit facilities to serve Duluth for another 30 years.
- Provide recreational experiences that are more relevant and enjoyable for today's outdoor recreationists.
- Lower cultural, financial, and physical barriers to enjoyment of Spirit Mountain and all that it has to offer.
- Further strengthen the appeal of Duluth as great place to live, work, visit, and invest.

Project Scope Skyline Chalet

Exterior and interior renovations to the existing Skyline Chalet, which include:

- Reconstruct the thermal envelope to reduce energy consumption.
- Apply low maintenance, sustainable cladding to the walls and roof.
- Replace all doors and windows with new thermally broken systems that incorporate glazing suitable to their solar orientation.
- Remodel 48,120 square feet of interior space to improve circulation and program efficiencies, provide modern sustainable finishes, and install energy efficient mechanical and electrical systems.

Landscape Improvements

Improvements to stormwater handling to prevent water intrusion to building, enhance drainage to eliminate icing problems in pedestrian areas, and provide required level of treatment.

Mountain Improvements

Replace and realign aging chairlifts and two ropes and improve the beginner area.

Snowmaking Improvements

Replace some aged snowmaking lines and improve the snowmaking system for both Alpine and Nordic skiing.

Lighting Improvements

Upgrade and make more energy efficient on-hill lighting and expand lighting in Nordic ski areas.

Summer and Adventure Park Improvements

Upgrade existing amenities and add new amenities to increase revenue.

Campground Improvements

Upgrade power distribution system and make shower buildings accessible.

Maintenance, Utility, and Infrastructure Improvements

Secure storage and upgrade electrical systems throughout.

Costs and Funding

Professional Services:	\$1,500,000
Contingency:	\$1,300,000
Site Improvements and Parking:	\$9,200,000
Building Improvements:	\$11,500,00
Furniture, Fixtures, and Equipment:	\$300,000
State Funding Sources:	\$12,000.000
Other Funding Sources	\$12,000,000

Operating Costs

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Operating Cost	\$4,342,826	\$7,817,289	\$9,138,843	\$9,340,622	\$9,674,229
No. of FTE	31	55	80	85	87

Graphic Schedule



Project Data Sheet for the Skyline Chalet

Name of Project:	Skyline Chalet Renovation
Organization:	Spirit Mountain Recreation Area
Building Location:	9500 Spirit Mountain Place, Duluth, MN 55810

Building	Occupancy Type	Existing	Remodeled
	Primary Space Types:	A-3	A-3
	Type of Construction:	V-B, sprinklered	V-B, sprinklered
Building S	Size		
	Number of Stories:	3	3
	First Floor Area:	21,660	20,724
	Second Floor Area:	20,394	20,394
	Third Floor Area:	7,002	7,002
	Total Area:	49,056	48,120
Systems a	and Components		
	Structural System Type:	CIP concrete footings, CMU foundation, steel columns, and wood beams.	Existing.
	Roofing Type:	Asphalt shingles.	Batten seam metal roof over existing structure.
	Exterior Wall Type:	Non-bearing wood frame.	Siding and continuous insulation over existing structure.
	Interior Wall Type:	Wood panel over gypsum wallboard on wood stud framing.	Gypsum wallboard on steel stud framing.
	Mechanical System Type:	Various	VRF or similar.
	Fire Protection System Type:	Wet sprinkler	Wet sprinkler
	Electrical System Type:	3-Phase 480V	3-Phase 480V
Site and F	Parking		
	Parking Type:	Surface parking	Surface parking
	Number of Stalls:	76	86
	Area of Parking:	40,390 SF	64,000 SF
Costs			
	Total Project Cost:		\$24,000,000
	Owner Costs:		\$1,370,500
	Professional Services:		\$1,500,000
	Site Improvements and Parking:		\$8,701,500
	Building Improvements (Chalet and Campground):		\$12,080,000
	Furniture, Fixtures, Equipment, and Signage:		\$300,000
	Commissioning:		\$48,000
Funding			
	State Funding Amount:		\$12,000,000
	Amount from Other Funding Sou	\$12,000,000	

SECTION 2: Basis for Need

Project Background Narrative

The Mission

The mission of the Spirit Mountain Recreation Area, grounded in its 1973 enabling legislation, is to:

- > Develop wide-range recreational facilities for both local residents and tourists
- Aid the economy of northeastern Minnesota by encouraging private enterprise in conjunction with the recreational facilities
- Preserve the environment by a timely and intelligent plan of development

This long-standing mission will be strengthened by the proposed investment in the infrastructure critical to meeting this mission.

Strategic Plan

Capital Renewal

An envisioned \$24 million capital reinvestment program would be funded by \$12 million in State bonding and a \$12 million local match contributed equally by the City of Duluth and Spirit Mountain. The investment would:

- Substantially improve the economic impact, community benefit and financial performance of Spirit Mountain by upgrading or replacing 47-year-old infrastructure and positioning Spirit for the future.
- Renew and right size winter skiing and riding infrastructure to provide a better service at lower cost and generate the operating profits that support Spirit's desire to lower or remove financial barriers for those who would otherwise be unable to participate.
- Complete the Nordic skiing and mountain biking trail systems to solidify their status as regional destinations and continue to broaden the number and variety of Spirit users.
- Renew and modestly expand summer Adventure Park activities to renew the coaster and zipline and add other amenities that can generate profits that support other Spirit activities.
- Renew deteriorated chalet, making it more energy and operationally efficient and upgrade campground infrastructure, making it more accessible and better able to service today's campers.
- Connect Spirit recreational facilities to the larger system of City and State recreational facilities including the Lake Superior Zoo, the Munger Trail, the DWP Trail, the Waabizheshikana Trail and the National Water Trail.



Enhancing Governance

The City will support efforts to improve the governance of Spirit by:

- 1. Adding two seats to the Board.
- Dedicating one Spirit Board seat to a City Councilor and one non-voting seat to an appointed director-level City staff representative.
- 3. Supporting the Spirit Board to fully occupy and exercise its leadership and governance role.
- Encouraging and assisting Spirit to enhance public awareness of, and engagement with, Board governance by improving public awareness of, and access to, board meetings and board information.

Targeting Financial Stability

The City will, over time, support making Spirit Mountain's operating finances more stable, resilient, and self-sustaining by:

- Formally committing to a consistent, inflationadjusted level of financial support, commensurate with Spirit's needs, over a period of ten years beginning at approximately \$1.2 million per year including debt service.
- 2. Gradually shifting City financial support to focus 100% on strategic investment in Spirit's capital infrastructure.
- 3. Gradually weaning Spirit from City operating subsidies.
- 4. Negotiating a debt repayment and forgiveness schedule.
- Holding, and helping Spirit grow, a cash reserve sufficient to enable Spirit to weather a major adverse business event without additional City operating subsidy.



Integrating Core Community Values

The City will help integrate core community values in the renewal of Spirit:

- Cultural inclusion: Spirit will engage the indigenous community in stewarding the mountain, enjoying the mountain and the recreation area, and visibly honoring the indigenous heritage of this special place.
- Environmental protection: Complete replacement of 1970's electrical and lighting infrastructure and including significant energy efficiency improvements in the chalet renovations, significantly reducing GHG emissions.
- 3. Increasing access for all: Facility improvements and new programs will lower financial barriers and increase accessibility for those with disabilities.

Improving Operations

The City entrusts Spirit to lead operational improvements that will focus on:

- Engaging with the community through outreach to community groups, stakeholders, and the indigenous community.
- 2. Increasing revenue from operations through modest price increases, ticket checking, and improved food and beverage services.
- Increasing the number and variety of users by collecting better user data, developing and implementing a strategic marketing plan, strengthening collaboration with the City's destination marketing organization, and improving services for mountain bikers, Nordic skiers, snowshoers, and ice skaters.
- 4. Improving the overall guest experience by fostering a distinctive Spirit Mountain culture of guest services.
- 5. Enhancing programming by establishing the Grand Avenue Chalet as the western Duluth headquarters for outdoor recreation information and services and revitalizing the snow sports school.
- Lowering barriers to recreating at Spirit by revitalizing partnerships with youth-serving organizations and schools, conducting special low cost "Spirit Loves Duluth" days, and soliciting grants and donations to pay the cost to waive or reduce fees.

Operational Plan

The investments envisioned for the Spirit Mountain campus will make its facilities more energy efficient; reduce operation and maintenance costs; increase operating revenues; increase the number of guest visits, and enhance the guest experience significantly. As the investments come on line, a slight increase in staffing will be warranted and more than offset by anticipated increased operating revenues.



Facility Condition Assessment

Existing Conditions

The 2017 Master Plan Update identified the following Skyline Chalet conditions:

- ► The (then) 43-year old day lodge of wood framed construction has a significant amount of deferred maintenance, particularly the building exterior (thermal envelope) and interior mechanical systems including restrooms.
- Due to several additions over time (1985, 1989, and 2012) the layout is long and linear, resulting in less than efficient space use.
- ► Functional conflicts exist due to multiple entrances. The main skier entrance conflicts with the directly adjacent shipping and receiving, and trash and refuse areas.
- ▶ The food service preparation location is not convenient to the spaces it serves.
- Remodeling and reconfiguration of the existing structure is deemed more fiscally viable and appropriate than building new.
- ▶ Improved external and internal flow will make the ski area more attractive to retain and expand current markets.
- ▶ Improved flow is needed to increase the capacity and efficiencies and reduce costs for catering and other events.
- New food service preparation kitchen, ideally located in the chalet, is critical to the building function and success.

The design team conducted a Facility Condition Assessment to verify the master plan report and fully document the existing conditions of the chalet, adjacent site, and campground shower and toilet facilities.





To take a tour of the Eagle Nest and Bear Paw areas scan or click the qr code

To take a tour of the Moosehead area scan or click the qr code



Site

The access road to the Skyline Chalet and the parking lot are in very poor condition with rutting, major cracking, and patching. There are no potholes presently in the parking lot. There are drainage issues near the accessible parking area that cause ice to build up in pedestrian access areas. Most of the outdoor storm drain structures are handmade, and one presents a potential fall hazard. The site slopes around the building are problematic and contribute to water infiltration to the building. There is storm water leaking into the sanitary system, which causes backups into the building requiring maintenance each spring.

Architectural Systems

The exterior door and window systems are from the original construction: They leak cold air and rain and require replacement. Many of the windows have been sealed shut and have far exceeded their expected useful life of 30 years. The exterior wood siding ranges from fair condition, to missing components, to areas of complete decay. The asphalt shingle roof system is in fair condition, but is near the end of its useful life, with roughly five years remaining. Roof to wall flashing at flat roof areas leaks at the lower levels. The interior finishes show significant wear, especially floor coverings, and should be replaced. The guardrails on the exit stairs exceed current code









allowable opening sizes, the toilet facilities do not meet current accessibility standards, and the distance from the accessible entrance to the elevator is more than 300 feet.

Structural Systems

The facility is sound and in good condition with the following exceptions; 1) structural members that have been exposed to weather require replacement or removal, 2) a portion of the exterior deck needs immediate removal. It has failed and presents a life safety hazard to building users and occupants. Immediate demolition is recommended, 3) The original CMU stair towers require replacement to address structural cracking and water penetration issues.

Mechanical Systems

The mechanical systems are a series of non-networked HVAC systems that run off local controllers without capacity to adjust for occupancy or temperature setbacks. There is no central control and no alarm systems associated with the existing controls. Cooling is supplied via electric DX coils that are connected to several large split AHUs. Heating is from a variety of sources; electric baseboard, hydronic natural gas boilers, and individual natural gas unit heaters. In many cases ventilation rates and outdoor air percentages are not code compliant. Many outside air dampers have been shut to increase space cooling capacity during summer months. In areas where outdoor air is supplied, there is no ability to control the percentage of outside air based on occupancy loads, which leads to unnecessary increased energy costs.

Electrical Systems

The main electrical switchboard is from the original 1974 construction and has exceeded its expected useful life of 30 years. There is no generator for emergency backup. Low voltage cabling is running along beams throughout the building and visible to the public. All lighting is controlled with manual switches and there are no occupancy sensors, daylight harvesting, or lighting controls used in the building.

Refer to Appendix A for the complete FCA Report.









SECTION 3: Organization Planning

Comprehensive Plan

Spirit's 1973 enabling legislation requires the development and regular updating of a comprehensive master plan that must be approved by the City Council. The most recent comprehensive master plan was completed in 2008 and updated in 2017; the Council-approved update to the master plan can be made available upon request.

The 2008 plan was a roadmap for upgrading the then 35-year-old facility, generating more operating revenue and helping it realize the vision in the enabling legislation to provide multiple recreational opportunities for residents and visitors. The 2017 update documented the improvements envisioned, which included:

- Creating year-round activities, primarily through construction of mountain-biking and hiking trails;
- Expanding opportunities for snowboarding and skiing, which resulted in upgrades to an existing lift and construction of two terrain parks;
- Adding the Grand Avenue Chalet at the foot of the mountain, which now serves as a Nordic skiing and mountain-biking hub and as the base of operations for popular summer camps;
- Enhancing the snowmaking system by pumping water from the St. Louis River rather than consuming treated city water, and
- Constructing and adding several attractions, including an alpine coaster and winter tubing hill, at the Adventure Park

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These improvements transformed Spirit Mountain into a year-round facility and, importantly, added a significant source of operating revenue from added summer operations. Additionally, the amenities attracted new users whose visits helped enhance the local hospitality industry, again consistent with the mission established in 1973.

However, many of the improvements envisioned in the Council-approved 2008 master plan and its 2017 update have not yet been realized; the investments envisioned in this request will further implement the improvements and renovations that were identified as critical needs in 2008, including:

- Renovating the Skyline Chalet and making it more energy efficient, environmentally sustainable and operationally productive – simultaneously saving money and creating appropriate space to generate additional operating revenues;
- Continuing to realign chairlifts consistent with visitation and operational and maintenance considerations.
- Updating and adding new amenities to the Adventure Park to further its generation of significant operating revenue.
- Updating and making accessible the two shower buildings at the Campground and making some of the campsites accessible, as well.
- Improving Nordic facilities by providing night lighting and snowmaking capacity to trails.

Stakeholders

In addition to significant stakeholder involvement in both the 2008 and update 2017 master plans that form the foundation for Spirit Mountain's planning efforts, the Mayor appointed a Spirit Mountain Task Force made up of 16 community members and several advisers representing various users; the Indigenous community; neighbors; the hospitality industry; banking; business/industry; outdoor recreation, and board, management and staff of Spirit, whose leadership team also provided in-depth detail to the consulting firm. The task force's collective insights, supported by consultants and city finance and legal experts, informed the City's direction for Spirit Mountain.

As a year-round, multi-purpose recreational area, Spirit Mountain serves a wide variety of outdoor recreation enthusiasts, both those who live in Duluth and those who visit specifically to partake in the options, which include but are not limited to:



- Alpine skiing
- Birdwatching
- Hiking
- Horseback riding
- Mountain biking
- Nordic skiing
- Playing disc golf
- ► Playing putt-putt golf
- Riding the Timber Twister and Timber Cruiser
- ► Sightseeing
- Snow tubing
- Snowboarding
- Snowmobiling
- Snowshoeing
- ► Trail-running





In addition to individuals who recreate at Spirit Mountain, many user groups actively use Spirit Mountain's facilities as part of their programming, including but not limited to:

- Courage Kenny, which works with Spirit to offer adaptive skiing and snowboarding
- Cyclists of Gitchee Gumee Shores (COGGS), a nonprofit that helps build, maintain and advocate the use of mountain-biking trails
- Duluth XC Ski Club, which has been an active partner in the development and maintenance of trails
- ▶ Duluth DEVO Enduro Mountain Bike Team
- Lake Superior Freestyle, a competitive freestyle team
- Superior Hiking Trail Association, which supports the 310-mile trail that crosses the Spirit Mountain Campus
- Team Duluth, a competitive alpine, freestyle and snowboard team

Impacts

The impacts of the proposed investment are difficult to overstate; they are significant in both depth and breadth. They include but are not limited to:

A Near Doubling of the Local Economic Impact: An economic analysis found that Spirit Mountain contributes \$22 million to the local economy annually and generates the equivalent of 300 full-time equivalent jobs. Consultants estimate that impact would jump 44% to \$39 million and the equivalent of 500 full-time jobs if the investments and operational changes suggested are implemented.. **Increased Visitation:** The consulting firm estimated a 35% increase in the number of skier visits over three years, at least some of which are likely to be tourists who will support the local hospitality industry. Likewise, an almost 60% increase in mountain biking visitation is predicted – from 7,000 to 12,000 over three years. Because Spirit Mountain has been named one of six "gold level" ride centers by the International Mountain Bicycling Association, a considerable percent of these new visits likely will come from out-of-town guests.

Increased Operating Margin: While some operating expenses will need to increase as Spirit maximizes the use of its facilities, the anticipated increase in operating revenues far outweighs the increase. The financial projections indicate the operating margin gradually will increase to 30% over three years, generating significant operating profit that can be reinvested in debt repayment, deferred maintenance and support for initiatives that reduce financial barriers to participation.

Vastly Enhanced Guest Experiences: The improvements envisioned for the Spirit Mountain facility will offer multiple improvements to the guest experience:

- Pick up and drop off will be less congested
- ▶ Wayfinding in the Skyline Chalet will be easier and seating more flexible
- The interior of the Skyline Chalet will be more comfortable and attractive
- ▶ Food and beverage service and variety will be vastly improved
- Chairlift operations will be improved through enhanced skier circulation
- ► Night lighting on Alpine and Nordic trails will be added/improved
- The beginner area will be enhanced significantly and include a new carpet tow
- Additional amenities at the Adventure Park will provide more recreational opportunities
- The campground showers will be renovated and made accessible, as will several campsites

Operations

The proposed investments will affect Spirit Mountain operations in many ways, as articulated below:

Facility Maintenance: The 47-year-old chalet has aged electrical, HVAC and other systems, as well as old and worn floors, carpeting, windows, walls, etc. All of these require significant maintenance staff time to repair and maintain in working order, as much as is possible. The improvements will reduce the level of facility maintenance required and free up staff to engage in the kind of ongoing maintenance needed to keep the facility and its systems in good working order rather than being diverted by emergencies and/or excessive maintenance required by the older systems.

Energy Efficiency: Outdated electrical and HVAC systems, leaky windows and poorly insulated walls lead to excessive energy consumption while still not providing consistent heating/cooling for building occupants in most seasons. The proposed investments in upgrades and energy efficiency will reduce Spirit's energy consumption and provide a more comfortable internal environment for guests and staff.

Food and Beverage: The current configuration of Spirit's kitchens and food/beverage service areas is inefficient, adds to staff time and limits the offerings to guests because of the vastly undersized kitchen for the main dining area. The proposed investments will expand the menu, which will lead to increased operating revenue, and will lead to far greater staff efficiencies, although more staff will be hired to accommodate larger numbers of guests.

Snow Sports and Lessons: Current indoor space restraints limit the class size for lessons, which otherwise could be larger, accommodate more families and groups and generate increased operating revenues. Increasing the class size possible might lead to a small increase in the number of instructors required.

Adventure Park: Currently, two amenities attract the largest number of visitors, requiring some crowd control on the part of staff. Expanding the number of amenities will require an increase in staff but also lessen their crowd control efforts and will allow guests to spread their visit among several amenities, lessening lines, improving their experience and generating more operating revenue.

Operational Budget

Capital Budget Request Operating Costs Form					
	Current Cost	Projected Cost (without inflation)			ı)
Changes in SMRA Operating Costs	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Compensation (program and building operation)	\$1,757,610	\$3,091,727	\$3,955,877	\$4,074,553	\$4,196,790
Other Program Related Expenses	\$1,218,336	\$2,870,297	\$3,218,770	\$3,315,334	\$3,414,794
Building Operating Expenses	\$134,872	\$187,472	\$193,097	\$198,889	\$204,856
Non-state Owned Lease Expenses	\$58,412	\$224,270	\$284,270	\$220,412	\$280,412
Other Expenses and Revenue Offsets	\$1,173,596	\$1,443,523	\$1,486,829	\$1,531,434	\$1,577,377
TOTAL	\$4,342,826	\$7,817,289	\$9,138,843	\$9,340,622	\$9,674,229
Number of FTE Personnel	31	55	80	85	87

SECTION 4: Project Description

Architectural Program

The architectural program was developed with input from City staff and SMRA directors and managers through a series of interactive design charrettes and weekly meetings conducted by the TKDA design team.

The following is a summary of the Key Findings critical to the development of the architectural program.

Goal Statements

- Create a context-sensitive design that is representative of the community and natural environment unique to Duluth.
- 2. Maximize the efficiencies of building systems.
- 3. Utilize performance-based metrics for decision making.
- 4. Create an economically sustainable project.
- 5. Build on previous planning work.
- 6. Create a shared vision.

Strengths

- Variety of Recreation Activities
- Scenic Site Lines
- History of the Site
- Capacity to Accommodate Large Groups

Location

Weaknesses

- Aging Infrastructure
- Poor Energy Efficiency
- Poor Flow and Accessibility
- ► Inefficient and ineffective HVAC
- Disconnected from Lower Chalet
- Thermal Envelope

Opportunities

- Campground Use
- Wedding and Banquet Opportunities
- Shared Tourist Experience
- Proximity to Hiking and Biking Trails
- Community Programming
- Access to St. Louis River

Threats

- Change in Local Government Officials
- Public Perception
- Climate Change
- Competition
- Employee Salaries and Benefits

Priorities

- 1. Maximize efficiencies with orientation.
- 2. Building performance over aesthetics.
- 3. Incorporate solar panels into the roof design.
- 4. Control heat loss.
- 5. Maximize opportunities for shade.
- 6. Accessibility.
- 7. Context sensitive "Midwest" design.
- 8. Welcoming.

A complete account of the Participatory Design Methodology can be found in Appendix B.

Detailed Space Program

The following Space Program is organized by Department.

Administration

Administration shall include area for seven offices; executive director, finance director, accounts receivable/ vault and accounts payable staff, food and beverage director, safety and risk director, human resource manager, and marketing staff. Support areas include work room, conference room, employee break room, vault, and storage rooms. Ideally, offices would be located on an exterior wall and include a window. Partition design shall include provisions for acoustical privacy.

Facilities

Facilities shall include area for four custodial closets, custodial storage space, two IT closets, toilet rooms, a tool room, and mechanical and electrical space.

Food and Beverage

Food and Beverage shall include area for the chef's office, staff lockers, two event suites with private toilets, receiving and storage space, production kitchen, restaurant, cocktail lounge, retail café, and large banquet room. The receiving space and production kitchen shall be located on the lowest level adjacent to an elevator and loading zone. Seating areas for the restaurant, café, cocktail lounge, and banquet room shall be located on exterior walls that provide views to Lake Superior and the St. Louis River. A detailed description of program requirements for the food and beverage areas can be found under the Narrative Descriptions of Major Systems heading of this Section.

Guest Services

Guest Services shall include area for the guest experience desk and guest experience office. These areas shall be adjacent to a primary circulation path, identifiable, and exemplify the Spirit Mountain Recreation Area Experience.

Rental

Rental shall include area for rental equipment, rental counter and stacking space, public lockers, and storage. The rental area shall be located on the lowest level with direct access to the slope-slide of the chalet.

Retail

Retail shall include area for the season pass and ticket sales counter and stacking space, and retail shop. The ticket sales counter shall be in a prominent position along a primary circulation path, identifiable, welcoming to all SMRA visitors, and include area for guest queuing.

Ski Patrol

Ski Patrol shall include area for triage and first aid and a ski patrol locker room. The triage and first aid room shall be located on the lowest level with direct access to a loading zone and adjacent to the ski patrol locker room.

Snow Sports

Snow Sports shall include area for a guest services counter, office, instructor's room, child care room, student break room and lesson area and a field trip and after school programs area. The guest services counter shall be adjacent to the rental area. An event suite can function as the child care room, and the banquet space can function as the student lesson and after school program areas.

Architectural Program

Administration				
	Room Name	Area	Comments	
	Executive Director's Office	240	Acoustical privacy, window	
	HR Manager's Office	190	Acoustical privacy, window	
	Finance Director's Office	190	Acoustical privacy, window, uniquely keyed lock	
	Marketing Office	190	Acoustical privacy, window	
	Marketing Storage	150	Dual use storage space	
	Accounts Payable	120	Office or workstation	
	Vault Office	120	Bank drop box, uniquely keyed lock	
	Vault	40	Bank drop box, uniquely keyed lock	
	Food and Beverage Office	240	Acoustical privacy, window	
	Catering Sales Conference Room	240	Dual use as administration conference room	
	Safety and Risk Office	190	Acoustical privacy, window	
	Safety Documents and Materials Storage	100	Shelving, uniquely keyed lock	
	Employee Break Room	750	140 half-height lockers	
	Work Room	190	Area for office machines and coffee station	
	Active File Storage	65	Shelving, uniquely keyed lock	
	Cold File Storage	380	Shelving, uniquely keyed lock	
	Subtotal	3,395		
Facilities				
	Room Name	Area	Comments	
	Custodial Closets	200	Four closets at 50 square feet each	
	Custodial Storage	285	Bulk storage for closets	
	IT Closets	100	Two closets at 50 square feet each	
	Tool Room	720	Include office space	
	Toilet Rooms	1280	10 toilet rooms at 128 square feet each	
	Central Plant	1150	Can be sub-divided into smaller areas	
	Subtotal	3,735		
Food and Beverage				
	Room Name	Area	Comments	
	Chef's Office	100	Visual connection to Production Kitchen	
	Event Suite A	400	Function as Daycare when not in use for event.	
	Event Suite B	400	Function as Courage Kenny Storage when not in use.	
	Private Toilet A	65	Adjacent to Suite A	
	Private Toilet B	65	Adjacent to Suite B	
	Restroom	65	Kitchen staff only	

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Receiving an	d Storage		
	Receiving	100	Directly adjacent to exterior loading zone
	General Dry Storage	300	Shelving, utility carts, dunnage racks
	Secured Dry Storage	120	Shelving and dunnage racks
	Catering Storage	150	Shelving, uniquely keyed lock
	Soda Storage	80	Bulk CO2 storage
	Walk In Keg and Wine Refrigerator	120	Fully insulated stainless steel sandwich panel
	Walk In Freezer	120	Fully insulated stainless steel sandwich panel
	Cart Wash	70	Increased ventilation
Production K	litchen		
	Cold Food Production	350	Exhaust hood, grease duct, and fire protection
	Hot Food Production	650	Exhaust hood, grease duct, and fire protection
	Walk In Freezer	120	Fully insulated stainless steel sandwich panel
	Dry Storage	120	Shelving and dunnage racks
	Walk In Refrigerator	120	Fully insulated stainless steel sandwich panel
	Warewashing	350	Central ware and pot washing area
	Catering Support	90	Beverage production and catering cart staging
	Mop Closet	60	Food and Beverage use only
Restaurant			
	Beverage and Server Station	120	Adjacent to restaurant dining room and cocktail lounge
	Maitre d' Station	55	Restaurant's "front door"
	Dining Room Seating	2250	Seating for 150 people
Cocktail Lou	nge		
	Fireside Bar with Seating	450	Accommodate 3 bartenders
	Back of House and Server Station	150	Accommodate 3 cooks
	Fireside Cocktail Lounge Seating	750	Seating for 50 people.
Retail Café			
	Serving Area	2200	Multiple serving areas
	Seating Area	3000	Locate adjacent to outdoor seating.
Banquet Roc	m		
	Banquet Room	5250	Function as Program area when not in use.
	Banquet Support Space	300	Adjacent to banquet room
	Linen Storage	80	Shelving
	Table Storage	250	Area for 50 round tables and 500 chairs
	Subtotal	18,870	

Guest Service	es		
	Room Name	Area	Comments
	Guest Experience Desk	300	Easily located, visually stimulating.
	Guest Experience Office	300	Available for dual purpose use during off season
	Subtotal	600	
Rental			
	Room Name	Area	Comments
	Rental Area	5125	Includes area for guest queuing.
	Rental Storage	200	Shelving
	Public Lockers	1200	150 full height lockers
	Subtotal	6,525	
Retail			
	Room Name	Area	Comments
	Season Pass and Ticket Sales Counter	1000	Includes area for guest queuing.
	Retail Shop	640	Shelving and clothes racks
	Subtotal	1,640	
Ski Patrol			
	Room Name	Area	Comments
	Triage and First Aid	600	Directly adjacent to exterior loading zone
	Locker Room	1000	120 lockers
	Subtotal	1,600	
Snow Sports			
	Room Name	Area	Comments
	Front Counter and Guest Services	900	Variety of adult and child seating
	Office	325	Accommodate 4 users
	Instructors Room	400	Includes equipment storage
	Child Care Room		See Event Suite A
	Student Break Room and Lesson Area		See Banquet Room
	Field Trip and After School Programs Area		See Banquet Room
	Subtotal	1,625	
Program Sub	total	37,990	
Circulation	20%	7,598	
Building Sub	total	45,588	
Building GSF		48,120	

Space Needs Inventory Data Sheets

Refer to Appendix C for Space Needs Inventory Data Sheets. Diagrams included in Appendix C are conceptual in nature and do not represent a final design solution.

Adjacency Diagrams

The adjacency diagrams were developed during Design Charrette No. 2. The larger group was subdivided into four smaller groups and tasked to develop a bubble diagram based on the proposed building program and their area of expertise. The four solutions were presented and analyzed by the group. The Skyline Chalet has some existing adjacencies that work very well and some that do not.

Based on the current conditions and the limited construction budget, it was ultimately decided that the design focus on keeping working adjacencies in place and correcting those that complicate operations and diminish guest experience. It was also important that the building's footprint did not expand and that the existing site circulation remain intact. A complete account of the exercise can be found in Appendix B.

Refer to Appendix D for Adjacency Diagrams. Diagrams included in Appendix D are conceptual in nature and do not represent a final design solution.

Fixtures, Furniture, and Equipment

The following is a summary of FFE items organized by category:

- Office Furniture
- Food and Beverage Furniture
- Office Equipment
- Food and Beverage Equipment
- Snowmaking Equipment
- Miscellaneous

Refer to Appendix E for a complete list of FFE

Narrative Descriptions of Major Systems Architectural

The Spirit Mountain Skyline Chalet was originally constructed in 1974, with additions in 1985, 1989 and 2012. Beyond periodic reroofing and selected window replacement projects, most of the structure, doors, windows and other MEP components are original and have exceeded their expected useful life. The building is structurally sound, with the exception of exterior wood elements that have weathered and decayed in the elements and are near failure. It is recommended that the following envelope elements be removed: Shingles, siding, trim, including fascia and soffit material, doors, windows, and building papers, so only the roof and wall sheathing remain.

The new design shall take advantage of the building components scheduled to remain after demolition. The design should also utilize the opportunities on site for solar gain and views, as well as minimize the perimeter and surface area of the building footprint and building envelope as much as possible.

To meet the energy requirements of B3, the chalet shall be clad in highly energy efficient materials that minimize thermal bridging and air leakage through the thermal envelope. This system shall include a new layer of continuous insulation installed over the existing building sheathing. The overall R value of the system shall meet, or exceed, code required minimums as prescribed in the Minnesota Energy Code.

Thermal Performance Criteria

Element	U-Factor	R-Value	SHGC
Roof	U-0.021	R-49	
Walls Above Grade	U-0.051	R-20 + R-3.8 c.i.	
Walls Below Grade		R-10 c.i.	
Opaque Doors	U-0.37		
Fixed Fenestration	U-0.29		0.45
Entrance Doors	U-0.77		0.45
Skylights	U-0.50		

Envelope

Minimizing ongoing maintenance of exterior finishes is a critical concern. Selection of exterior materials should focus on natural materials like stone and masonry, or synthetic materials that look like stone or wood but that have a long life span and integral color retention.

Existing structural foundation components that remain shall be excavated, covered with a water proofing system, rigid insulation, a drainage mat, and then backfilled. All grading adjacent to the finished structure shall have positive drainage away from the building. New foundation systems shall be composed of cast-in-place concrete walls to match existing, covered with a water proofing system, rigid insulation and a drainage mat.

The exterior wall systems above grade shall include continuous insulation and a weather barrier and be clad with composite wood siding, composite wood panel products, metal panel products, or a combination thereof. Consider the use of stone veneer elements at the entrances, columns, and base of the building. Composite wood or metal finishes should be considered for use at eaves, soffits and exterior trim.

The roof system shall be sloped, utilizing the existing timber laminated trusses, existing tongue and groove structural wood decking, concealed insulation, and roof sheathing whenever possible. Any new construction will either match existing roof slopes, or introduce 30 degree sloped structures to create visual interest where program requirements call for exaggerated volume. The roofing system shall be composed of the existing roof structure or new parallel chord trusses, vapor barrier, mineral wool insulation, plywood sheathing, self-adhered sheet applied underlayment, and concealed fastener batten seam metal roof system or 50-year rubberized asphalt shingles. Incorporate vented eaves and ridge caps to keep the roof surface cool.

Fenestration

All window systems shall be either wood, fiberglass, or aluminum with thermally broken frames, and incorporate double or triple pane low E glazing. Additional coatings or films are to be explored to increase window efficiency based on exposure. The amount of glazing should be appropriate to the exposure on the site, maximizing views and daylighting opportunities, as well as solar gain potential as can be incorporated in the design. Windows shall not be operable and shall receive motor controlled coverings in public areas and manually controlled coverings in offices and other employee occupied spaces.

Exterior doors designated as primary entrances shall be aluminum with thermally broken frames and incorporate double or triple pane low E glazing. Emergency exits and service doors shall be hollow metal with thermally broken frames and insulated cores. All primary entrances shall be accessible and receive automatic door operators and related hardware.

Interior Finishes

Interior finishes shall be highly durable. Wall treatments and finishes should complement the character of the exterior and shall consist of gypsum wallboard installed over light gauge metal framing and finished with paint, wood paneling, ceramic tile, vinyl wall covering, or a combination thereof. The ceilings shall consist of exposed timber beams, tongue and groove wood board paneling, suspended acoustical ceiling tile, painted gypsum board, or a combination thereof.

Interior doors shall be either solid core wood doors or painted hollow metal doors, depending on function and location, installed in painted hollow metal frames.

Built in casework shall be wood with solid surface counter tops.

Exposed concrete floor slabs shall be sealed. Floors in the production kitchen and areas related to food prep shall be covered in quarry tile. Food and beverage areas that are visible to the public shall receive ceramic tile. Locations subject to ski boot traffic, including the toilet rooms, must have a slip resistance similar to a rubber tiles. The restaurant, banquet room, and café seating areas shall receive carpet tile designed for high traffic and heavy wear. The administration areas shall receive carpet tile or vinyl composite tile. Baseboard shall match, or complement, adjacent floor material and include wood, rubber, carpet, and ceramic tile.

Additionally, all entrance vestibules shall incorporate recessed, removable, walk off mat and frame systems with floor drains. This walk off mat system shall cover to entire floor area of the vestibules.

Food Service

Spirit Mountain serves a diverse customer base with a need for diverse offerings, in both venue and menu options. The foodservice facility will be designed with this broad customer base and long-range flexibility in mind. Understanding that the ski season is limited in Minnesota, foodservice revenue must be designed to capture the maximum amount of revenue possible in a finite window of operation. Large banquet functions provide revenue in non-winter months, and spaces must be flexible enough so a restaurant dining room can serve as a banquet hall for a wedding reception or other large event space. Knowing these unique needs, foodservice production and storage facilities must be extremely efficient, be outfitted with flexible equipment options to produce a wide variety of cuisines, and be centrally located to support multiple, unique operations simultaneously.







The Kitchen

The kitchen shall support all catering functions and appropriate support for the restaurant and the retail café serving area. Storage areas requiring direct adjacency to receiving, and areas that can be centralized, should be located on the lowest level. Production areas shall be located on the level associated with the venue they serve. Production areas can be shared as long as it does not negatively affect adjacencies, efficiencies, or operations. The kitchen shall be designed to be extremely efficient, flexible, and have a wide variety of equipment to produce most any menu item required by any of the operations it supports. The kitchen area will house a chef's office, hot and cold production, cold storage, dry storage, and other support spaces. The lowest level will support the operations through a receiving area directly adjacent to a loading zone.

The Café

The Café has the potential to significantly enhance its operation during ski season, capturing a significant portion of the daytime peak meal revenue. The serving area shall be very retail in appearance. The space shall have internal circulation with exit cashiers, which will help create a more distinct separation from the dining area for a more relaxed dining experience, a better catering environment, and provide flexible space for a variety of uses.

The Restaurant

The Restaurant will be a much quieter and more relaxed atmosphere than the retail café. It is anticipated that this venue will be table service, with menu items made to order. Customers will also have access to a full bar menu, including wine service. The interior of the space should match the theme of the chalet and highlight the unforgettable views of the slope side, the river, and Lake Superior. This space will not only operate as a full-service restaurant, but also double as a banguet space in the off season. The space should accommodate a minimum of 150 people for large events, though the restaurant wouldn't need to seat more than 100, and could offer a subdivided private dining room, to host small events during ski season. It is important to note that kitchen production areas required to support the majority of the food preparation for the restaurant must be located on the same level as the dining room.

The Cocktail Lounge

The Cocktail lounge is envisioned to be adjacent the Restaurant, offering a comfortable lounge experience for adult guests wishing to enjoy a glass of wine, a craft cocktail, or locally brewed beer on tap after a day on the slopes. Interior should be appropriately themed and should have a variety of soft lounge seating for 50 quests. Food options could also be available from the kitchen to further increase check averages and profitability. During the off season this space would serve as the pre-function area for events in the adjacent dining room.

The Banquet Hall

A dedicated year-round banquet space is desirable to generate consistent catering income. The banquet room should have high ceilings, excellent sightlines, and capture the views of the natural beauty of the slopes, the river, and Lake Superior. This banquet facility would also require an adjacent support space for plating, transportation equipment staging, and beverage production. A linen room and table storage room would also be connected to the banquet room, to allow for efficient setup and tear-down of events, which often happen on back-to-back days.

Alternates

The slope side main floor offers a unique location to provide service to guests without the need to enter the main building. We see the outdoor area having some outdoor seating with propane heaters for customers to relax in between runs. During the summer months, this location would also be extremely convenient as a support area for post wedding ceremony functions hosted on the brick paver patio.

Structural

The original building was designed in 1974 and subsequent additions were added at later dates. The roof framing consists of 2x wood purlins that span between wood roof girder trusses supported by steel columns. The columns are supported by conventional spread footings. The floor framing consists of 2x wood purlins that span to 2x wood girders. The basement wall consists of 12 inch cast-inplace concrete walls supported by continuous concrete spread footings. The north and south stair towers consist of CMU walls above the concrete basement walls. Exterior decks consist of wood framing and are supported by wood columns. The structural system of the building additions is substantially similar to the original building. Structurally the facility is sound and in good condition with the following exceptions:

- Structural members that have been exposed to weather need replacement or removal.
- A portion of the exterior deck needs immediate removal and replacement.
- The original CMU stair towers have significant wall cracking that are structural in nature and allow water penetration into the shaft.

Members damaged by weather should be removed or replaced.

The portion of exterior decking that has failed structurally is currently only restrained from occupancy by a movable barrier. This deck represents a life safety hazard to the building occupants and staff, as well as a large potential liability risk to Spirit Mountain Recreational Area. It should be demolished and removed immediately.

The original CMU stair towers should be replaced in kind or with cast-in-place concrete walls. We do not recommend attempts to repair the existing walls.

Mechanical

Most of the mechanical equipment currently in use is beyond its useful life and operates at partial capacity. The mechanical equipment ranges from 5 to 35 years old. In general, systems are undersized to provide thermal comfort to occupants or satisfy code ventilation rates. There is no system-wide control system, and most equipment is operated by equipment-mounted unit controllers by maintenance staff.

Air systems are non-congruent throughout the facility. The Moosehead room is comprised of networked residential style furnaces with DX cooling and residential style hot water boilers. The Bear Paw room has constant volume commercial AHUs with split DX coolers mounted outside. Most other areas are non-ventilated with the exception of the kitchen areas, which have power ventilators for exhaust. For certain equipment, replacement parts are no longer available. Increased maintenance and costs and sporadic failure have become regular for all units. The predesign assumes that all equipment will be removed and new systems will be installed to serve the renovated lodge. Variable refrigerant flow (VRF) is the preferred centralized heating and cooling plant for the replacement system. The system would be made up of air source VRF Condensing units, multiple building branch controllers and multiple indoor terminal units. The centralized system would also be fitted with an auxiliary natural gas boiler to aid in heating when outdoor ambient temperatures are low. This system is advantageous for many reasons, including the increased coefficient of performance at most design conditions, the ability to use heat recovery to heat or cool spaces simultaneously without adding heating or cooling from the main centralized plant, and the ability to serve individual spaces operating in dissimilar or divergent temperature zones. This applies directly to spaces like large gathering or kitchen areas where there is excess heat being generated by people or building processes.

Heating Cooling Plant

The air source VRF units would generate heating and cooling for the building year round. These units would be installed within an outdoor air ventilated but insulated and enclosed space for security, equipment health and low ambient air conditions. In cooling mode, outdoor air would be brought into the space and used by the VRF units to generate cooled refrigerant for the building. The byproduct would be heated air that would be rejected outside. In low temperature heating mode, the outdoor air and exhaust dampers would close and hydronic unit heaters would provide heat to the air sources VRF to be transferred to the refrigerant for building use. The auxiliary natural gas boiler would provide hot water for the unit heaters. The hot water system would also provide radiant finned tube heat at exterior windows for occupant comfort and building redundancy as well as to the sidewalk snowmelt systems.

Branch Controllers

The branch controllers are the component that allows the system to take advantage of heat recovery. With the existence of dissimilar climate zones, these units can move hot refrigerant from cooled areas to areas needing heating and vice versa without requiring energy from the central plant. This device houses a series of diverting valves, gas/liquid separators, and sub coolers that distribute high or low-pressure refrigerant as needed between the indoor units. The system would be sized such that all zones could be in design heating or cooling mode and do not rely on heat recovery for system capacity.

Terminal Heating and Cooling Units

Ductless indoor units will take refrigerant from the branch controllers to provide heating or cooling to their zone. These units come in a range of varieties and can satisfy the function of most conventional HVAC terminal units. In low temperature ambient conditions there will be supplementary heating provided at the exterior zones with a hydronic baseboard radiation system. The control system will ensure that zones that are served by hydronic finned tube as well as VRF terminal units are not run in simultaneous heating and cooling.

Code Ventilation and Outdoor Air

VRF systems gain efficiency points by using refrigerant to move heat throughout a building. Refrigerant has a high heat capacity and therefore can move heat much more efficiently than air or water systems. This being said, humans require air exchanges that are required by code to maintain healthy environments. This creates a separate challenge for VRF systems, as an independent dedicated air system is required to provide ventilation to the building. The design of this facility seeks to accomplish this with one or more dedicated outdoor air systems (DOAS). These systems will exchange building air at the code-required rate. The intake air will be dehumidified and pre-treated to a neutral temperature prior to being ducted to each zone. The equivalent air removed from each zone will be brought back to the units and passed through energy recovery ventilator (ERV) devices prior to being exhausted to the outdoor. The ERV allows for the exhaust air to transfer energy in or out of the incoming supply air as required. This allows for the central plant to generate less heating or cooling thus saving energy.

System Safety and Concerns

The refrigerant systems shall be installed in compliance with safety standards, including but not limited to the International Mechanical Code and ASHRAE's Standard 15 "Safety Standard for Refrigeration Systems

Alternate Mechanical Systems Heat Pump System

Heat pump systems have offer a cross between a VRF type system and a more conventional four pipe fan coil system. Like VRF, terminal units are allowed to share a net heating or cooling load across other terminal units that are on the same heat pump system loop. Terminal units use refrigerant compression cycles, similar to VRF, to generate heating or cooling for that zone while drawing heat or rejecting heat back into the heat pump loop. Heat pump loops are water filled and are generally kept at a neutral temperature of 70 degrees F. A boiler and a cooling tower would be used to add or reject heat as needed. The implementation of outside air control and requirements would be similar to the VRF option, which maintains good space allocation for this remodel and reduces building fan energy. This system would have a lower operational efficiency and would require much more mechanical space and maintenance access throughout the building when compared to a VRF system.

Four Pipe Fan Coil System

Four pipe fan coil systems are very conventional and offer individual zone climate control. Each fan coil would be piped to heating and cooling distribution loop. Terminal fan coils would be similar to VRF terminal units which are relatively easy to allocate space and maintenance clearances. The implementation of outside air control and requirements would be similar to the VRF option which maintains good space allocation for this remodel and reduces building fan energy. Because of the increased piping and pumping



Variable refrigerant flow systems can deliver cooling to some zones and heating to others, with no reheat needed (an air-source system is shown here).



Main System Equipment



requirements and the delta T required in the water filled supply/return distribution loops, this system would be the least operationally efficient and would likely cost more to install when compared to a heat pump loop system.

Electrical

Power Distribution

The existing electrical infrastructure is original to the building and past its useful life and requires replacement. The replacement shall include: The main switch board, all panel boards, and all wiring throughout building. Any existing electrical infrastructure scheduled to remain shall be identified and documented.

- The use of solar photovoltaic (PV) panels, located on the roof of the Skyline Chalet, is a highly visible and very feasible way to reinforce the City's commitment to sustainability. The solar photovoltaic system shall be connected to a single panel board and designed to allow for future expansion. PV arrays installed on ski-hill light poles shall be considered as an alternate.
- Plan for future electric vehicle (EV) charging stations, located in the parking lot adjacent to the chalet, and provide the required infrastructure. Electric vehicle charging shall be served by a single panel board. Design the EV charging infrastructure with future growth in mind. Because EV charging stations are not included in the buildings overall Energy Use Intensity rating (EUI), this service is to be sub-metered separate from the general building loads for SB2030 monitoring and compliance.
- Update the power metering capabilities by metering inside building power and outside ski-hill power separately.
- Determine the number of electrical receptacles according to code and user requirements.

Lighting

Provide LED lighting with customizable occupancy, vacancy, and daylight harvesting controls throughout the building. Light fixtures shall be installed with maintenance and cleaning in mind. Conference room and open space lighting shall be both dimmable and color selectable. Master control for lighting throughout entire building shall be incorporated into the design and specific to each space. Utilize current LEED sustainability practices with regard to light pollution reduction, controls, and energy performance.

Emergency and Backup Power System

A right-sized, gas-fueled generator shall provide stand-by power to the building and shall be sized to allow a minimum number of lighting, heating, and cooling systems to operate while the power grid is out. The generator shall be fed by natural gas, instead of diesel, for environmental emissions reasons. Provide battery backup systems.

Precedent Studies

The SE Group, an international outdoor recreation consultancy that provided information that informed the Spirit Mountain Task Force report, conducted a benchmark analysis that compared Spirit Mountain to both a set of 20 resorts within the Midwest region and a customized comparative data set of seven Midwest resorts more like Spirit Mountain in size. Their analysis, which is included as Appendix F, found that while Spirit's expenses are similar to like facilities in the Midwest, it has significant opportunity to increase its revenue per visit, especially when compared to other, similar facilities. The proposed investments are designed, in large part, to help Spirit capture additional revenue.

Technology Plan

The technology infrastructure design shall include equipment and cabling systems that support a new dedicated data network with Wi-Fi capability, data connections for the security, AV systems, and telephone. Technology infrastructure design shall follow MN.IT Telecommunications Design Standards. Access control, i.e. card readers, electronic surveillance, and cameras shall comply with DOC policy and installation standards.

- Provide a dedicated IT Closet within the building to house equipment and cabling. The data room shall require dedicated and backup power.
- Provide data cabling to dedicated private offices.
- Provide secure and quest Wi-Fi capability for entire building.
- Provide card readers and access control system as required.
- Provide interior and exterior hardwired security cameras.
- Electric locking and door hardware groups shall be coordinated with the door supplier.
- Provide audio video (AV) speakers wired throughout building and integral to the intercom system.

Sustainability, Energy Conservation, and Carbon Emissions

MNB3 and SB2030 Requirements

Based on the predesign phase initiation after January 2020, this state bond-funded project will be required to comply with Minnesota's B3, version 3.2. Minnesota's Sustainable Buildings 2030 (SB2030) will require an 80% reduction from the Average Building Baseline.

SB2030 Energy Analysis

TKDA initiated a Spirit Mountain Chalet project within the MN's B3 Tracking Tool, under version 3.2. The Spirit Mountain Chalet's major renovation project requires an early energy use analysis during Predesign (PD). Utilizing the SB2030 Tool, under the MNB3 E1.A – Meeting SB 2030 Energy Standards requirement, TKDA has developed a preliminary Energy Use Intensity (EUI) target.

To develop the SB2030 Energy Standard, the facility is modeled in the SB2030 Energy Standard Tool, developed for the State of Minnesota by Willdan. This tool requires the user to enter basic facility information such as occupancy, space usage, orientation, plug loads, and proposed HVAC zoning, utility plants and system options. Based on the facility inputs, the tool then calculated an Average Building Baseline using MN's 2004 Energy Code and its annual Energy Use Intensity (EUI). The SB2030 Standard will then present what an 80% reduction of that Average Building Baseline is and presents that EUI as our project's goal.

Based on the proposed renovation, additional Skyline Chalet information, and preferred VRF HVAC system, the resulting SB2030 EUI and Carbon Dioxide Equivalent (CO2e) Intensity targets are displayed in Image I: SB2030 Energy Standard Results. The Average Building Baseline EUI is 201.8 kBtu/sf/yr (CO2e = 58.4 lbm/sf/yr) and the City of Duluth is hopeful the project can achieve a Design EUI of 80.5 kBtu/sf/yr (CO2e = 19.2 lbm/sf/yr). This design point was selected because additional efforts to reduce the EUI rating through added energy efficiency are not expected to be cost effective.



The SB2030 goal for this building are targeted at 40.4 kBtu/sf/yr (CO2e = 11.7 lbm/sf/yr). To achieve the additional EUI reduction, the City is looking to commit 369kW of existing PV panels (22kW installed on site and 347kW off site) to the project in order to gain compliance. The results of donating PV renewable energy from within the City's portfolio of properties can be seen in Image XYX. Those RE credits would then be retired by this project.



The current design proposed, as described within the mechanical narrative, includes dedicated outside air units to maintain code required ventilation and pressurization and air cooled VRF heat recovery units to maintain the thermal comfort throughout the building. The proposed utility systems include a natural gas boiler and air cooled condensing units. The SB2030 Standard Tool has a limitation and requires a kitchen zone to be modeled with only a DX and natural gas packaged single zone unit. The kitchen will include this type of unit for makeup air, but can also be served by the VRF system for thermal comfort. At this time, the SB2030 tool is not accounting for the beneficial heat transfer from the kitchen to surrounding spaces during the heating season.

This can be further explored during later modeling phases, when the design team develops this facility's unique energy model. Further enhancements to the building which help to achieve the EUI target are: Increased thermal envelope performance, reduced infiltration rates, premium efficiency mechanical equipment, demand ventilation and lighting control, and solar PV panels which are further described within this narrative.

Indoor Air Quality

Code requirements and proper design of exhaust systems in restrooms and kitchen areas are the primary objective in controlling the building air quality. These techniques are considered standard in any deign. However, as climate conditions become increasingly unstable, it is imperative that new building provide resiliency by offering alternative operation modes where outside air can be reduced or even eliminated. This would be implemented into the building automation system by creating a recirculation system allowing the building return air to be brought through a MERV 14 filter prior to being redistributed. Therefore, when atmospheric air qualities are poor (e.g. during a wild fire event) or in times of extreme heat, the building operator would be allowed to circumvent the outside air from the HVAC system.

Though removing outside air during occupied times would be considered an abnormal operating condition, there would also be benefits to the building's ability to purge during unoccupied times. The additional filtration of recirculated air is one of the strategies recommended by the CDC to lower pathogen exposure amongst occupants. During unoccupied times filtration would be administered to the building while eliminating the energy costs or outside air changes.

Humidity control is an important part of building health as well as occupant health. Incoming outside air is to be dehumidified to 55% RH prior to distribution. Terminal units will provide additional dehumidification as needed in high latent areas. Humidifying air should be considered for all non-assembly areas (i.e. office space). Assembly areas for this type of building will generally produce enough moisture through regular activity to eliminate the need for added moisture. The injection of moisture to required zones could be administered by an electric duct humidification unit installed on that zone's outside air supply.

Alternative and Renewable Energy

MNB3's Renewable Energy E2A requires an early Predesign feasibility evaluation to generate 2% overall energy demand through renewable energy in the design. Using the SB2030 Energy Standard goal of 80.5 kBtu/sf/yr and the project's total area of approximately 48,180square feet, a simply calculation estimates the total PV array's power to achieve 2% of the overall energy demand of the project.

Solar

EUI = 80.5 kBtu/sf/yr (23.6 kW/sf/yr) Area = 48,180 sf Project's Overall Energy Demand (annual) = 1,136,720 kW/yr 2% of the Overall Energy Demand = 22,734 kWh/yr Assuming 1060 KW/kwh/year (East roof mounting) = 22 kW

Estimate \$3000/kW = \$66,000

Wind

Capturing wind power involves installing tall turbines to take advantage of the wind speeds at elevated heights above the ground plane. Wind turbines are best suited for rural areas with consistent and unobstructed winds. Small scale building mounted systems might be able to be installed, but may impart vibrations to the structure and would not significantly power the building. This technology may be a good demonstration project, but high initial costs and periodic maintenance may be a hindrance for significant installation to reduce dependence on the traditional power grid unless it was to an installation and maintenance training program.

Heating and Cooling Systems

Geothermal

A Ground Source Heat Pump (GSHP) systems utilize energy stored in the earth as a heat sink for extracting and rejecting heat from the building air conditioning system. GSHP systems use underground pipe loop fields. These loop fields consist of buried high density polyethylene (HDPE) piping to act as a heat transfer medium. The loop fields can be laid out as horizontal piping or as vertical piping installed in eight inch diameter wells.

To serve this facility, a 60-ton GSHP loop field would require roughly 36 wells. Typically these are installed at a cost of approximately \$2,500 per well. Because of the soil conditions and the proximity of bedrock at this site, it is difficult to estimate an install cost except for to say that it would far exceed that of a compressor driven condenser or evaporative cooler to the point where payback may never be achieved. It is a safe assumption that the project would benefit from alternative forms of renewable energy in comparison and that this project is not a candidate for GSHP.

Solarthermal

Solarthermal systems utilize roof mounted panels connected to the domestic water heating system to provide energy to heat the domestic water. This water is stored in tanks and needs to be supplemented with a secondary heating source to provide hot water when the solar thermal is not generating energy. The roof will already be occupied by Photovoltaic panels which will have a greater benefit to lowering this buildings EUI rating.

Statute Requirements

State Statutes applied to Political Subdivisions

- §16B.323: Solar Energy in State Buildings. Up to 5% of appropriation to be used on solar energy system when doing substantial reconfiguration or replacement of energy systems.
- ▶ §16B.325: Apply sustainable guidelines (B3-MSBG).
- ▶ §216B.241: Sustainable building 2030 requirements.
- §16B.326: Written plan with predesign to consider providing geothermal and solarthermal HVAC systems.
- §16B.335, Subdivision 1: Notification to House and Senate Committees.
- §16B.335, Subdivision 3: Predesign Submittal.
- §16B.335, Subdivision 4: Energy Conservation Standards.
- §16B.335, Subdivision 3c: Consider the use of MINNCOR products.

- §16B.35: Percentage for Art. When considered in original legislative request and when construction is \$500,000 or greater.
- §177.42-44: Prevailing Wage Rates. Contractor must pay prevailing wages.
- Laws 2014, Chapter 294, Section 22 and Chapter 295, Section 21: American Made Steel.
- §16A.633: Jobs Reporting. Must report to legislature on jobs created or retained as a result of capital project funding by the state.
- 16C.285 Laws 2014, Chapter 253: Responsible Contractor.
- ▶ §16A.695: Use | Grant Agreement.
- Appropriation Language.

Specialty Requirements

Furniture, Fixtures, and Equipment

Refer to Appendix E for a complete list of furniture, fixtures, and equipment.

Project Procurement and Delivery

Construction Manager at Risk

The Construction Manager at Risk is the preferred project procurement and delivery method for a project of this size and complexity. Procurement and bid packages shall include non-proprietary specifications that allow multiple manufacturers and suppliers to competitively bid on the work. No single product or single source shall be specified unless justification is presented and formal approvals are received.
Project Design Services and Additional Owner Costs

Design and Owner Costs									
Item	Scope of Work	Cost							
Professional Services Costs									
1.1	Basic Design Services	\$1,290,000							
	Architectural and Interior Design	\$705,000							
	B3 Coordinator	\$75,000							
	Civil Engineering and Landscape Design	\$90,000							
	Structural Engineering	\$60,000							
	MEP Engineering	\$360,000							
1.2	Additional Services	\$210,000							
	Specialty Design	\$15,000							
	Security Design	\$15,000							
	Food Service Design	\$150,000							
	Fire Protection	\$30,000							
1.3	Furniture, Fixtures, and Equipment	\$300,000							
1.4	Environmental Assessment Worksheet	\$3,500							
	Owner Costs								
2.1	Topographic Survey	\$3,500							
2.2	Geotechnical Investigation	\$16,000							
2.3	Phase I and II Environmental Assessment	\$12,500							
2.4	Environmental Assessment Worksheet - Impact Statement	\$4,000							
2.5	HVAC and Electrical Systems Commissioning	\$24,000							
2.6	Building Envelope Commissioning	\$24,000							
2.7	Construction Testing	\$12,000							
2.8	Permit Cost	\$12,500							
2.9	Wetlands Delineation, Design, and Mitigation	\$6,500							

Quality Control Plan

In addition to special inspections and code required testing, the following quality control measures shall be included in the project and the projects budget:

- Building Envelope Commissioning: Design review commissioning, construction commissioning, and inspections during construction.
- HVAC and Electrical Systems Commissioning: Design review commissioning, construction commissioning, and inspections during construction.
- Building Envelope Analysis: The use of WUFI software performed by Building Commissioning Agent during the project design phase..
- ► Specified mock-ups of envelope component systems.

- ► Specified installation conferences.
- Specified Quality Control Plan submittal by Construction Manager at Risk.
- Adherence to Minnesota B3 Guidelines "New Buildings and Major Renovations" version
- 3.2 final version, with Minnesota Sustainable Buildings 2030 Energy Standard.
- Use of Building Information Modeling (BIM) for clash detection.

SECTION 5: Site Analysis

Site Analysis

Existing Site Description

The total property is 1,600 acres, with an approximate elevation change of 700 feet. The portion of the existing chalet and parking lots encompasses approximately 5.5 acres of the total area. An additional 15.2 acres of informal overflow parking exists to the north of the building as well. In addition to ski slopes and Nordic ski trails, the site has existing amenities including an Adventure Park, tubing hill, hiking, snowmobiling and mountain biking trails, disc golf, and a campground.

The two campground toilet and shower buildings consist of wood trusses supported by wood columns and CMU walls. The columns and walls are supported by conventional spread footings. The campground buildings are generally in good structural condition, with the exception of a failing concrete slab and column support in one location, which require repair or replacement. The buildings do not have the correct number of fixtures and they do not meet current accessibility requirements. Each toilet and shower building shall be renovated in accordance with the Minnesota Building and Accessibility Codes.

In addition to the structural and accessible renovations of the toilet and shower buildings, the campground's RV power system shall be upgraded to a 50 amp service.

Existing Parking Conditions

There are approximately 42 parking stalls and 4 ADA parking stalls for a total of 46 stalls in two separated bituminous parking lots near the chalet building. ADA stalls do not appear to be compliant with the Americans with Disabilities Act standards. Visitors also tend to park along access drives in this area but stalls are not marked. Overflow parking lots A, B, C, and D accommodate approximately 1,040 vehicles and are a combination of aggregate, turf, and other vegetation.

Existing Topography

The topography across the site slopes toward the southeast, eventually reaching the St. Louis River. The site has a noteworthy grade change of approximately 700 feet.

Existing Soil Conditions

Spirit Mountain is comprised of several soil types as shown in the NRCS soil survey. Soils on the ski slope area are generally comprised of rock outcroppings of the Mesaba-Barto complex, which are well-drained and non-hydric type soils. Areas near the bottom of the ski hill and adjacent to drainage ways on the site are comprised of more hydric soils of a clay or loamy nature.











Existing Utilities

The facility is currently serviced by public utilities in the City of Duluth including sanitary sewer, water, and natural gas. The site also has some storm sewer piping and structures that control stormwater runoff near the chalet. The chalet and ski hill are connected to both electrical and communications infrastructure.

Underground electrical power supplies the site from a feeder on Skyline Parkway, with lines crossing the hill to supply power to snow-making facilities, lighting and chair lifts. Underground telecommunications cables supply connectivity to the facility from the Grand Avenue corridor.

Water is supplied to the Skyline Chalet from the north via a City of Duluth water main. Water for snow-making operations is pumped from the St. Louis River using a reversible runoff collection and water supply line.

Sanitary sewer lines running downhill to City sanitary collection mains along Grand Avenue provide service for the Spirit Mountain operation including both the chalet and campground.

Storm sewer piping exists mainly in the area of the chalet and main parking lot, carrying water around the building and draining it safely downhill. There are also lines to control flow of water near the bottom of the ski slopes.

Potential rerouting of the Gandy Chair Lift, as developed by the SE Group, would potentially require coordination and relocation of some slope-side electrical and water lines serving snow-making operations.

Existing Stormwater Management

Slopes around the building are problematic and contribute to water infiltration to the building. The ADA parking area has drainage issues causing ice build-up in ADA walkways and parking areas in winter months. Most drainage grates are handmade, failing, and their design is not based on current stormwater standards. Storm water leaks into the sanitary system during spring thaw and causes backups into the building, which requires yearly maintenance. Consideration of a hydronic type snow melting system at the entry points to the chalet could be considered to help control tracking of snow and moisture into the facility.

Site Design

Site work for the project shall include rehabilitation of existing bituminous driving and parking surfaces and modest storm water improvements.

The existing parking and roadway access, approximately 64,000 SF, consists of three parallel tiers of bituminous pavement which shall be rehabilitated by full-depth reclamation. Modifications to the parking lot layout in the middle tier shall provide additional parking stalls, for a total of 86 stalls, when configured in an angle-parking arrangement.

The two existing stormwater catchments shall be modified by deepening and installing a concrete water quality structure to settle and collect grit and floatables, improving water quality of the discharge.

Pavement: Spirit Mountain Place; reclaim, grade, and pave existing "tear drop" shaped parking areas, including drop off area and loading zone.

Storm Sewer Improvements: Enhance existing storm catchments below middle tier for stormwater attenuation and treatment and add stormwater quality structures (one in each basin, sump/weir interior to collect sediment, floatables). Piping and catch basins shall connect (convey) between new structures and connect to the existing storm outlet through (below) the existing chalet.

▶ Construction Allowance: \$150,000

Sustainable Site Criteria

In past planning work, wetland delineations and documentation of environmental concerns were completed. This project contemplates modifications to the existing building footprint and parking lot area. Since the work is primarily rehabilitation of existing surfaces, no wetland impacts or threats to endangered plants or animals are anticipated. Improvements to stormwater controls on the site would serve to trap/remove floatables or sediment from stormwater runoff, which would improve the quality of water released from the site.

Site Amenities and Signage

The project shall include improvements to a variety of existing site amenities.

- Mountain Improvements: Replace and realign aging chairlifts and two ropes and improve the beginner area.
- Snowmaking Improvements: Replace some snowmaking lines and improve the snowmaking system for both Alpine and Nordic skiing.
- Lighting Improvements: Upgrade and make more energy efficient on-hill lighting and expand lighting in Nordic ski areas.
- Summer and Adventure Park Improvements: Upgrade existing amenities and add new amenities to increase revenue.
- Campground Improvements: Upgrade power distribution system and make shower buildings accessible.
- ▶ Maintenance, Utility, and Infrastructure Improvements: Secure storage and upgrade electrical systems throughout.

Site Infrastructure, Zoning, and Codes

Construction under this project shall meet current land use and zoning codes.



SECTION 6: Financial Information

Capital Expenditures

Capital Budget Request Construction Costs Form										
Construction	Evicting	Now	Bomodolo	d		Bonowal	Total Cost			
Type of Space	Existing	New	Remodele	u		Reliewal				
List of Major Spaces by Department			Gross Sq. Ft.	Cost per SF						
Administration			3,395	\$265	\$899,675		\$899,675			
Facilities			3,735	\$195		\$728,325				
Food and Beverage			18,870	\$305		\$5,755,350				
Guest Services			600	\$265		\$159,000				
Rental			6,525	\$245	\$1,598,625		\$1,598,625			
Retail			1,640	\$265	\$434,600		\$434,600			
Safety and Risk			1,600	\$245	\$392,000		\$392,000			
Snow Sports			1,625	\$245	\$398,125		\$398,125			
Circulation			7,560	\$170	\$1,285,200		\$1,285,200			
Subtotal for Skyline Chalet							\$11,650,900			
Campground Buildings			1,320	\$325	\$429,000		\$429,000			
Total							\$12,079,900			

Ongoing Operating Expenditures

Capital Budget Request Operating Costs Form											
	Current Cost Projected Cost (without inflation)										
Changes in SMRA Operating Costs	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025						
Compensation (program and building operation)	\$1,757,610	\$3,091,727	\$3,955,877	\$4,074,553	\$4,196,790						
Other Program Related Expenses	\$1,218,336	\$2,870,297	\$3,218,770	\$3,315,334	\$3,414,794						
Building Operating Expenses	\$134,872	\$187,472	\$193,097	\$198,889	\$204,856						
Non-state Owned Lease Expenses	\$58,412	\$224,270	\$284,270	\$220,412	\$280,412						
Other Expenses and Revenue Offsets	\$1,173,596	\$1,443,523	\$1,486,829	\$1,531,434	\$1,577,377						
TOTAL	\$4,342,826	\$7,817,289	\$9,138,843	\$9,340,622	\$9,674,229						
Number of FTE Personnel	31	55	80	85	87						

Life Expectancy

The Skyline Chalet shall be designed as a 53-year building. The following table indicates the life expectancy of major building elements, corresponding components and their respective life expectancy. The table also indicates alternative selections for some components. The buildings life expectancy referenced above is calculated as the average of the aggregate components.

Element	Component	Life Expectancy in Years
Substructure	Cast in Place Concrete	110 (existing)
Primary Frame	Laminated Timber and Steel	76 (existing)
Floor	Dimensional Wood Framing	51 (existing)
Roofing	Metal Roofing	50
Alternate 1	Asphalt Shingles	30
Alternate 2	Synthetic Shakes	40
Exterior Walls	Composite Siding	50
Alternate 1	Clay Masonry	86
Alternate 2	Steel Siding	35
Windows and Entrances	Aluminum	44
Alternate 1	Softwood	36
Alternate 2	Fiberglass	37
Interior Walls	Gypsum wallboard over steel stud	39
Alternate 1	Gypsum wallboard over wood stud	39
Alternate 2	Concrete Masonry Units	81
Interior Doors	Sold Core Wood Doors in Hollow Metal Frames	42
HVAC	VRF	15
Alternate 1	Ground Source Heat Pump	20
Alternate 2	Four Pipe Fan Coil System Unit	20

Risk Mitigation Site Related Risks

Currently there are no site-related risks. Improvements to site grading and the stormwater conveyance and collection system will serve to help prevent infiltration of runoff into the Skyline Chalet in the future.

Building Design and Construction Risks

Bidding Climate: Duluth is currently experiencing a labor shortage due to multiple large projects under construction. In addition, the ongoing global pandemic has negatively impacted material cost and availability. **Schedule and Phasing:** The success of this project depends heavily on the schedule. Spirit Mountain must remain operational during construction. Construction shall be phased and all major construction activities (demolition, systems installations, utility work, etc.) must occur during non-business hours or shoulder seasons.

These risks shall mitigated by: Incorporating an open, non-proprietary, specification into the construction documents, implementing design alternates, collaborating with the CM at Risk, extending the construction schedule to 18 months, and including a 20% design and construction contingency into the project budget.

SECTION 7: Schedule

Schedule Information

Proposed Project Schedule

The proposed project schedule includes one month for design team selection, one month for construction manager at risk selection, eight months for design, and 18 months for construction. The operations at SMRA cannot be interrupted and the site and buildings will be occupied during construction. Therefore, the design and construction schedules shall include time for phasing. The schedule shall also include time for commissioning and warranty inspection 10 months after substantial completion.

2022 2023 2024 2025 Funding Design Notification Completion Date May 2022 March 2023 Design Construction Warranty Construction Team Start Date Inspection Completion Selection Date May 2023 August 2025 August October 2024 2022 0 D Funding Commissioning Complete Received **Bidding and** July 2022 October 2025 Negotiations April 2023 СМ Selection **Midpoint of** Construction September 2022 February 2024 **Schematic Design** Commissioning **Design Development:** 10/10/22 – 12/02/22 Construction 05/01/23 - 10/31/24 Construction Documents: 12/05/22 – 3/31/20232 Bidding and Negotiation: 04/03/23 - 04/28/23

Graphic Schedule

Proposed Funding Sequence

Project Costs Form for Fiscal Years 2020 – 2025										
Total Project Costs all years and all funding sources	Project Costs all prior years	Project Costs FY 2020-21	Project Costs FY 2022-23	Project Costs FY 2024-25	Project Costs all years	Project Start month/year)	Project Finish (month/year)			
Property Acquisition							1			
Easements										
Buildings and Land										
Other Costs										
SUBTOTAL					\$0					
Design Fees										
Topo and Boundary Survey			\$3,500	\$3,500	Aug-22	Sep-22				
Geotechnical Report			\$16,000	\$16,000	Aug-22	Sep-22				
Phase I Environmental			\$12,500	\$12,500	Sep-22	Oct-22				
Wetland Delineation			\$2,500	\$2,500	Sep-22	Oct-22				
Schematic Design			\$225,000	\$225,000	Aug-22	Oct-22				
Design Development			\$300,000	\$300,000	Oct-22	Dec-22				
Contract Documents			\$600,000	\$600,000	Dec-22	Mar-23				
Contract Administration			\$167,000	\$208,000	Mar-23	Oct-24				
SUBTOTAL			\$1,326,500	\$208,000	\$1,534,500					
Project Management				·						
State Staff PM										
Non-state Staff PM										
Other Costs										
SUBTOTAL					\$0					
Construction Costs										
Building Permit			\$20,000	\$20,000	Mar-23	Mar-23				
Testing			\$6,000	\$6,000	\$12,000	Mar-23	Oct-24			
Construction			\$9,377,100	\$11,404,400	\$20,781,500	Mar-23	Oct-24			
Wetland Mitigation			\$4,000		\$4,000	Mar-23	May-23			
Contingency			\$650,000	\$650,000	\$1,300,000	Mar-23	Oct-24			
SUBTOTAL			\$10,057,100	\$12,060,400	\$22,117,500					
Occupancy										
FFE				\$300,000	\$300,000	Mar-23	Oct-24			
Commissioning				\$48,000	\$48,000	Oct-24	Oct-25			
SUBTOTAL				\$348,000	\$348,000					
Inflation										
Midpoint of Const.					February 2024					
Inflation Multiplier					16.22%					
GRAND TOTAL					\$24,000,000					

Appendix A



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Executive Summary

Conducted on May 26, 2021

TKDA gathered at the Spirit Mountain Recreational Area (SMRA) Skyline Chalet at 9 a.m. on May 26 to conduct a Facility Condition Assessment (FCA) of the Skyline Chalet. We met with Spirit Mountain leadership staff and broke off into separate groups to conduct civil, architectural, structural, mechanical, and electrical reviews of the existing systems. We took 3D photo scans of the interior spaces of the facility for reference, which allows our team to walk through the facility virtually at any time in our "digital twin."



To take a tour of the Eagle Nest and Bear Paw areas scan or click the qr code

To take a tour of the Moosehead area scan or click the qr code



Site

The access road to the Skyline Chalet and the parking lots are in very poor condition with rutting, major cracking and patching, and potholes: There are drainage issues near the ADA parking area that cause ice build-up in pedestrian access areas during the winter months. Most of the outdoor storm drain structures are handmade, and one presents a potential fall hazard. The site slopes around the building are problematic and contribute to water infiltration to the building and there is storm water leaking into the sanitary system, which causes backups into the building that require maintenance each spring.

Architectural Systems

Architecturally, the exterior door and window systems are from the original construction. They leak and need replacement. Many of the windows have been sealed shut and have exceeded their expected useful life of 30 years. The exterior wood siding ranges from fair condition, to missing components, to areas of complete decay. The asphalt shingle roof system is in fair condition, but is near the end of its useful life, with 5 +/- years remaining. Roof to wall flashing at flat roof areas leak at the lower levels. The interior finishes show wear for their age, especially floor coverings. The guardrails on the exit stairs exceed current code allowable opening sizes, the toilet facilities do not meet ADA standards, and the distance from the accessible entrance to the elevator is over 300 feet.

Structural Systems

Structurally the facility is sound and in good condition with the following exceptions: 1) structural members that have been exposed to weather need replacement or removal; 2) a portion of the exterior deck needs immediate removal. It has failed and presents a life safety hazard to building users and occupants. Immediate demolition is recommended; 3) The original CMU stair towers need replacement to address structural cracking and water penetration issues. The campground buildings were generally in good structural condition, with the exception of a failing concrete slab and column support in one location, which need repair or replacement.

Mechanical Systems

The mechanical systems are a series of non-networked HVAC systems that run off local controllers with no capacity to adjust for occupancy or temperature setbacks. There is no central control and no alarm systems associated with the existing controls. Cooling is supplied via electric DX coils that are connected to several large split AHUs. Heating is from a variety of sources: Electric baseboard, hydronic natural gas boilers, and individual natural gas unit heaters. Ventilation rates and outdoor air percentages are not code compliant in many cases. Many outside air dampers have been shut to increase space cooling capacity during summer months. In areas where outdoor air is supplied, there is no ability to control the percentage of outside air based on occupancy loads, which leads to unnecessary increased energy costs.

Electrical Systems

The main electrical switchboard is from the original 1974 construction and has exceeded its expected useful life of 30 years. There is no generator for emergency backup. Low voltage cabling is visibly running along beams throughout the building. All lighting is controlled with manual switches; there are no occupancy sensors, daylight harvesting, or lighting controls used in the building.

Detailed Condition Assessment of Specific Components

The building components that received a condition rating of 1 (Unacceptable) or 2 (Poor) in the Facility Condition Assessment (FCA) are illustrated in more detail below. The full FCA will follow the detailed Condition Assessment. Please note: Destructive or intrusive testing was not conducted during this assessment, nor was there any testing of hazardous materials. Any reference to codedeficient items are specific to the areas where noted, and this report should not to be construed to be a detailed life safety and accessibility code analysis of the facility.

Exterior Enclosure

Exterior Walls

Major System: Wood framed 2x4 walls with painted wood panel siding.

Minor Systems: Uninsulated CMU walls at exposed stair towers with exterior parge coat.

Condition Rating: 1-Unacceptable

Rationale for Condition Rating: Wood exterior is generally, in poor condition. There are areas of water damage, completely rotted trim, and large areas of peeling paint. Some wood panels are missing; many wood panels are warped and pulling away from building. Some wall areas on the Bear Paw Chalet addition (that faces the parking/drop off) are in good condition, but generally, all of the siding is past its useful life. The CMU stair tower enclosures are cracking in multiple areas (see structural comments) and show water damage. In some areas, daylight is visible through the cracking.



Area of loose wood siding



Vertical siding boards are warping



Cracking at outside corner of CMU wall at stair towers



Area of missing wood siding



Cracking at corners of CMU stair tower enclosure



Cracking and signs of moisture infiltration at exterior stair walls

Structural Elements



Delaminated beam at deck support



Damaged concrete pier cap and rotted wood column base footing cap



Area of deck without structural support below



Delaminated beam at deck support



Rotted column base



View of area below deck; primary deck support beam is missing



Missing area of rim board and structure at deck edge



Missing area of rim board and structure at deck edge

Exterior Windows

Major System: Combination of fixed windows set into openings, wood frames and operable wood windows.

Minor Systems: Clerestory windows have been closed off due to leaking in Skyline Chalet.

Condition Rating: 1-Unacceptable

Rationale for Condition Rating: Windows are from original construction. Exterior seals around perimeter are compromised and leak, some more than others depending on building orientation. Operable windows were sealed shut or spray foamed. Exterior trim at windows is in various stages of deterioration.

Exterior Doors

Major System: Hollow metal doors and hollow metal frame openings, wood frames and operable wood windows.

Minor Systems: Bear Paw entrance is a recent addition, completed in 2012, and the aluminum entrance system is the exception. The addition is in excellent condition.

Condition Rating: 1-Unacceptable

Rationale for Condition Rating: All of the hollow metal doors appear to be original to the construction. These doors range from fair to very poor condition, showing signs of rust and damage from use/abuse, and some are missing portions of the door and seals so daylight is visible.



Wood window frame delamination



Sealant at gaps in window frame from wood warping



Lintel at door head and hollow metal door frame rusted through



Hollow metal doorframe rusted through

Roofing: EPDM

Other System: Roof areas under middle level decks at Moosehead Saloon are covered with EPDM membranes.

Condition Rating: 1-Unacceptable

Rationale for Condition Rating: Roof system is

compromised at perimeter and leaks into spaces below. Adjacent walls that intersect with roofing show signed of long-term water damage, including structural supports.

Interior Construction

Interior Doors

Major System: Hollow metal frames with hollow metal doors and hardware. Systems appear to be original to 1974 construction.

Minor Systems: Solid wood doors and hollow metal frames. Systems appear to be original to Systems appear to be original to 1974 construction.

Condition Rating: 2-Poor

Rationale for Condition Rating: Solid wood doors have had hardware modified and doors and frames show wear and damage appropriate to age. Most doors should be replaced, especially on lower levels. Door hardware is functioning, but is at the end of its expected useful life.



Flashing at roof to wall intersection is compromised



Flashing at roof to wall intersection is compromised



Flashing at roof to wall intersection is compromised



Door hardware has been modified from original functions



Doors damaged from use



Doors damaged from use

Stair Systems

Major System: Wood timber stair frame and treads in fair condition.

Minor Systems: Uninsulated CMU walls with exterior parge coat.

Condition Rating: 1-Unacceptable

Rationale for Condition Rating: CMU structure shows a variety of cracking, step cracking, horizontal cracking and evidence of water infiltration. CMU walls are uninsulated and some cracks penetrate to daylight. This is also noted under Exterior Enclosure - Exterior Walls.

Regarding the stair system, the guard railings and open risers are not compliant with current code. In addition, some of the boards that make up the stair landing surface are loose and the landing floor surface is uneven where individual floor planks meet.



Typical stair landing and guardrail



Typical stair landing and guardrail at Moosehead Saloon

Interior Finishes

Major System: Main systems are carpet and quarry tile. Hard surface systems are in fair condition based on age.

Minor Systems: Quarry tile system is in good condition based on age.

Condition Rating: 1-Unacceptable

Rationale for Condition Rating: Approximately 90% of the carpet is worn, bubbled, and/or completely attached to substrate in areas. The carpet is at the end of its useful life.



Carpet in Moosehead Saloon seating



Worn and stained carpet in Moosehead Saloon, level 3



Worn carpet in Bear Paw seating area

Elevator

Major System: Passenger elevator receives yearly inspections. Elevator cab was replaced 10-15 years ago

Condition Rating: 2-Poor

Rationale for Condition Rating: Water drains into elevator pit, which has a sump pump. Exterior drainage improvements have helped reduce water infiltration at pit, but the water infiltration issue needs to be corrected.

Dumbwaiter

Major System: Dumbwaiter for transferring food and kitchen service to upper levels.

Condition Rating: 1-Unacceptable

Rationale for Condition Rating: Unit is no longer working. When it was working, it was not an efficient way to move food from kitchen to table. Food cools too quickly and capacity of lift is limited.



Dumbwaiter at level 2 kitchen

Plumbing Services

Plumbing Fixtures and Equipment

Major System: Fixtures are from original construction and are beyond useful life.

Condition Rating: 1-Unacceptable

Rationale for condition rating: Fixtures no longer operate as intended and create continuous maintenance for staff while offering visitors a poor quality of use.



Kitchen staff toilet room



Non-ADA compliant sinks



Non-ADA compliant men's room toilet

Domestic Hot Water

Major System: All systems are disconnected and are difficult to service as some are located in confined spaces.

Condition Rating: 2-Poor

Rationale for Condition Rating: These water heaters work but have reached the end of their useful life, (with less than 5 years remaining).



Residential-grade domestic hot water heater serving Bear Paw area



Residential-grade domestic hot water heater serving Moosehead Saloon

HVAC Services

Central Plant Heating

Major System: Gas fired boiler. Random electric baseboard and unit heaters. Multiple gas fired unit heaters.

Condition Rating: 2-Poor

Rationale for Condition Rating: Age of system. Boiler still works but is nearing the end of its expected useful life. (Lifespan: less than 5 years remaining). System is inefficient and hard to maintain. Temperature control is poor. Does not incorporate heating of outside air that would be required in a remodel effort.



Residential-grade furnaces with DX split system cooling



Residential-grade natural gas boilers

Central Plant Heating: Distribution

Major System: Only 15% of the heating system is served by a central distribution system.

Condition Rating: 2-Poor

Rationale for Condition Rating: Only covers a small portion of building. Efficiency is limited at low 80% due to non-condensing technology. Units are past expected useful life.

Terminal and Packaged Units: Split Systems, Forced Air Furnaces, and Package Units

Major System: There are three residential-grade furnaces serving the original 1974 Skyline Chalet construction.

Condition Rating: 2-Poor

Rationale for Condition Rating: All units are beyond useful life and require frequent repair. Cooling is undersized throughout building; outside air percentage rates do not meet code. Space temperature comfort is poor.

Terminal and Packaged Units: Split Systems, Forced Air Furnaces, and Package Units

Major System: Unitary controllers

Condition Rating: 2-Poor

Rationale for Condition Rating: Age of system, tied to poor quality units, No centralized system. No control of outside air percentages.



Hot water distribution pumps



DX condensing units



Boiler controls



Air handler unit controls condensing units

Electrical Services

Service to Building

Major System: The building has one electrical service. 480/277 3 phase. Main switchboard and distribution panels are original

Condition Rating: 2-Poor

Rationale for Condition Rating: Age of system (lifespan: Approximately 45 years, useful lifespan of equipment is normally 30 years). There has been a few instances where breakers have not tripped and started fires in panel boards. This is most likely due to age of circuit breakers, where internal parts degrade over time/use.

Communication cables can be seen throughout public areas strung along pipes and attached via zip-ties. Proper raceways and supports should be used, which also would create a more visually appealing aesthetic.

There are areas where lighting and ductwork overlap, making the fixtures useless because ductwork blocks out needed light. Spirit Mountain has dealt with this particular instance by using a plug-in string light for the main source of light in this area. Although this method is a Band-Aid, string lights are not meant to be main source of light all of the time. The only way to turn it on and off is by plugging and unplugging the string lights. All lighting in Skyline Chalet is controlled via wall switching, no occupancy sensors or daylight harvesting is used. Most light fixtures are non-LED fixtures; replacing fixtures with LED and pairing with occupancy and daylight harvesting will decrease power consumption.



Main switchboard in lower level of Moosehead Saloon



Typical vintage branch panels



Typical vintage branch panels



Exposed cabling at link



Exposed cabling at link

In a few instances the dimmable switches/dials are seen as broken or missing the dial. Additional receptacles are needed throughout building. Extension cords are used to supply power to areas that require additional receptacles. Extension cords, by code, are only to be used for temporary power and should be unplugged after use. Anytime extension cords are left plugged in over an extended period of time, they become a tripping hazard and internal degradation occurs.

The fire alarm and communications cabinet is neatly laid out in a dedicated lockable closet. Telecom wires are no longer needed.

Fixtures, Furniture, and Equipment Fixed Casework

Major System: Fixed plastic laminate counters and related cabinets, original to construction of each addition.

Condition Rating: 2-Poor

Rationale for Condition Rating: Age of equipment, showing wear consistent with age. Expected useful life of cabinets is 25 years. Service counters are in areas that are not ADA compliant.



Extension cords exposed at counter to serve bar power requirements



Extension cord with power strip in trusses because of lack of power receptacles



Telecom wiring is obsolete



Fixed casework at rental



Fixed casework at rental



Fixed casework at rental

Site

Design and Drainage

Major System: Site layout including slopes and drainage around the building and drainage structures.

Condition Rating: 2-Poor

Rationale for Condition Rating: Slopes around the building are problematic and contribute to water infiltration to the building. The ADA parking area has drainage issues causing ice build-up in ADA walkways and parking areas. Most drainage grates are handmade, failing, and not based on any standards. Stormwater leaks into the sanitary system during spring thaw and causes backups into the building, which require yearly maintenance.



Steep slope into ponding area



Ada parking – drainage – iced in winter



Gravel parking lot drainage & slopes



Extension cord with power strip in culvert causing back-ups



Catch basin



Negative drainage toward building



Catch basin in pavement



Drainage slope into bridge area

Service to Building

Major System: The building has one electrical service – 480/277 3 phase. Main switchboard and distribution panels are original

Condition Rating: 2-Poor

Rationale for Condition Rating: Age of system (lifespan: Approximately 45 years, useful lifespan of equipment is normally 30 years).



Major cracking and patching at parking loop



Major cracking and patching at driving lanes



Major cracking and patching at building

Campground Buildings

The campground toilet and shower facilities need amenity upgrades, ADA accessibility upgrades, and stall and shower counts appropriate for number of campsites. There is a failing concrete slab and column support in one location, which need repair or replacement.



Restroom building



Failed slab to be replaced

Facility Condition	Assessment	(FCA)	Field	Form
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		Range	Condition Rating	Building Inf	ormation			
General Information		Element not Present	0-Not Entered	# of Levels	3			
		0 to 5%	5-Excellent	Average Building Height FT	25			
Facility Name	Spirit Mountain Chalet	5 to 10%	4-Good	Perimeter LF	900			
Age of Building	1974, 1985 & 1989	10 to 25%	3-Fair	Length LF	350			
Date Assessed	5/26/2021	25 to 50%	2-Poor	Width LF	60			
Surveyor	TKDA	>50%	1-Unacceptable	Footprint SF	18,140			
Building Gross SF 42,000								
	General Building Notes							

Original Construction was completed in 1974 with additions in 1985 & 1989. It is primarily a wood framed building with steel columns supporting timber trusses, and with cast in place concrete foundation walls, CMU bearing walls and stair tower enclosures. The most recent addition was a renovated, accessible entrance to the 1989 addition that was completed in 2011. The facility functions as a ski chalet in the winter season and as a wedding and event center in the summer. The exterior finishes are painted wood siding; wood framed, residential style windows; and asphalt shingles. The interior finishes are composed primarily of wood tongue and groove boards on the walls and ceilings in all public areas and carpeted floors. Lower level ski rental area has exposed concrete floors. Toilet rooms have FRP paneled walls and gypsum board ceilings. The facility has 3 different kitchen / food prep areas that serve the chalet facilities.

Mechanical systems consist of HVAC systems that are run off local unit controls. These controllers are not networked together and do not communicate with any central automation control system. Controls are set to run continuously and do not have scheduling capacity to control based on occupancy or temperature setbacks. No alarm systems associated with controls. Cooling is suppled via electric DX coils that are connected to several large split air handling units. Heating is a variety of electric baseboard, hydronic natural gas boilers serving furnaces, and individual natural gas unit heaters.

Electrical systems consist of 1000KVA pad mounted transformer; 277/480V three phase service to chalet. No existing generator for emergency backup. The main switchboard is original, from 1974; equipment has exceeded useful life of 30 years. Communications closet is found to use Cat5 Ethernet patch panel along with 110 punch down block for telephone communication. Cat5 cabling is seen running along beams and breaking out to wall jacks throughout building. All lighting is controlled via switching; no occupancy sensors, daylight harvesting or lighting control are used throughout building.

WBS Uniformat Code	System Description	Changes Required Yes/No	Present Yes/No	Cost ID	Quantity or Unit of Area Served Measure		Condition Rating	Notes				
A. SUBSTR	UBSTRUCTURE											
A10	FOUNDATIONS											
A1010	Standard Foundations	No	Yes	х	18,140	Bldg FP SF	4-Good	Major System: cast in place concrete at 1974 construction, CMU at 1985 and 1989 additions. Walls appear generally to be plumb and uncracked.				
A1030	Slab-on-Grade	No	Yes	x	18,140	Bldg FP SF	4-Good	Major System: concrete slab on grade. Reason for Condition Rating: slab is in good condition, consistent with				
Δ20	SUBSTRUCTURE							age of the structure				
A2020	Basement Wall Structures	No	Yes	x	18140	Basement SF	4-Good	Major System: CMU walls and cast in place concrete. Walls are original construction and in good condition. Reason for Condition Rating: Approximately 5% of the walls have step cracking that should be addressed.				

B. STRUCT	URE AND SHELL		1					
B10	SUPERSUBSTRUCTU	RE						
B1010	Elevated Floor Structures	No	Yes	x	42,000	Bldg Gross	4-Good	Major System: Interior structural systems installed in 1974 & 1985 & 1989 are composed of wood 2x12 floor joists bearing on laminated timber beams; they are in excellent condition for a structure of its age and anticipated use. The glaring exception is an exterior deck where the floor structural system has partially collapsed despite attempts at shoring the girders. We recommend that area be demolished as soon as possible.
B1020	Roof Structural System	No	Yes	x	18,140	Bidg FP SF	5-Excellent	Major System: Exposed wood timber trusses and wood tongue and groove decking installed in 1974, 1985 & 1989, components are in excellent condition for a structure of its age and anticipated use.
B20	EXTERIOR ENCLOSU	RE						
B2010	Exterior Walls	No	Yes	x	42,000	Bidg Gross	1-Unacceptable	Major System: wood framed 2x4 walls with painted wood panel siding. Minor systems: Uninsulated CMU walls at exposed stair towers with exterior parge coat. Reason for Condition Rating: Wood exterior is generally in poor condition; there are areas of water damage and completely rotted trim, large areas of peeling paint, some missing wood panels, and many wood panels are warped and pulling away from the building. Some wall areas on the Bear Paw Chalet that face the parking/drop off, are in good condition but generally all of the siding is past its useful life. The CMU stair tower enclosures are cracking in multiple areas (see structural comments) and show water damage; in some areas daylight is visible through the cracking.
B2020	Exterior Windows	Yes	Yes	x	42,000	Bidg Gross	1-Unacceptable	Major System: Combination of fixed windows set into openings, wood frames and operable wood windows. Clerestory windows have been closed off due to leaking in Moosehead Saloon. Reason for Condition Rating: Windows are from original construction. Exterior seals around perimeter are compromised and leak, some more than others depending on building orientation. Operable windows were sealed shut, or spray foamed. Exterior trim at windows is in various stages of deterioration.
B2030	Exterior Doors	No	Yes	M01-B2030-05	42,000	Bldg Gross SF	1-Unacceptable	Major System: Hollow metal doors and hollow metal frames. Minor System: Bear Paw Chalet entrance – aluminum entrance system in excellent condition. Reason for Condition Rating: All of the hollow metal doors appear to be original to the construction. These doors range from fair to very poor condition, showing signs of rust, damage from use/abuse, and some are missing portions of the door and seals so daylight is visible.

B30	ROOFING							
B3010	Roof Coverings	No	Yes	M01-B301001	42,000	Bldg FP SF	3-Fair	Major System: sloped roof with asphalt shingles. Reason for Condition Rating: Asphalt roof system has been replaced within 15 years, expected remaining useful life about 5 years.
B3010.100	Roof Coverings - EPDM	No	Yes	M01-B301001	1,000	Bldg FP SF	1-Unacceptable	Other System: Roof areas location under middle level decks at Skyline Chalet are covered with EPDM membranes. Reason for Condition Rating: roof system is compromised at perimeter and leaks into spaces below. Adjacent walls that intersect with roofing show signed of long term water damage, including structural support
)RS							Supports.
C10	INTERIOR CONSTRUC							
C1010	Interior Partitions	No	Yes	M01-C1010-02	42,000	Finished SF	4-Good	Major System: Wood frames stud walls with wood panel covering. Other Systems: Wood framed walls with painted gypsum finish, Other Systems: Exposed, painted CMU walls are in good condition. Reason for Condition Rating: Age of system (Lifespan: 10 years
C1020	Interior Doors	No	Yes	M01-C1020-05	42,000	Finished SF	2-Poor	remaining). Major System: Hollow metal frames with hollow metal doors and hardware. Systems appear to be original to 1974 construction. Other Systems: Solid wood doors and hollow metal frames. Systems appear to be original to 1974 construction. Reason for Condition Rating: Solid wood doors have had hardware modified; doors and frames show wear and damage appropriate to age. Most doors should be replaced, especially on lower levels.
C1030	Fittings (Lockers, Restroom Partitions, Railings)	No	Yes	M01-C1030-05	42,000	Finished SF	3-Fair	Major System: Metal toilet partitions are in poor condition. Reason for Condition Rating: Age of system. Partitions are showing wear appropriate to age (Lifespan: 5 years remaining). Code: Non-compliant stalls for handicap access. Non-compliant clearance at entrances. Some counters and sinks are too high above the floor.
C20	STAIRS/FIRE ESCAPE	S						
C2010	Stair Structure	No	Yes	M01-C2010-03	600	Stair tower GSF	1-Unacceptable	Major System: Wood timber stair frame and treads in fair condition. Stair Enclosures: CMU structure shows a variety of cracking, step cracking, horizontal cracking and evidence of water infiltration. Some cracks penetrate to daylight Code: Non-Compliant guard railings and open risers. Some landing boards are loose and surface is uneven where floor planks join.

C30	INTERIOR FINISHES							
C3010	Interior Walls	No	Yes	M01-C23010-05	42,000	Finished SF	4-Good	Major System: Standard paint on wood panels and trim (to 10' AFF) gypsum and masonry walls. System is in fair condition based on age. Major system: Wood panels wall higher than 10 AFF is unfinished or clear finished and is in very good condition. Other Systems: Ceramic tile system is in good condition based on age and damage. Reason for Condition Rating: Damage from wear is minimal with wood; some touch up painting required in locations.
C3020	Interior Floors	No	Yes	M01-C3020-05	42,000	Finished SF	1-Unacceptable	Major System: Main systems are carpet and quarry tile. Hard surface systems are in fair condition based on age. Other Systems: Quarry tile system is in good condition based on age. Reason For Condition Rating: Approximately 90% of the carpet is worn, bubbled, not completely attached to substrate in areas. The carpet is at the end of its useful life.
C3030	Interior Ceilings	No	Yes	M01-C3030-03	42,000	Finished SF	3-Fair	Major System: Exposed wood ceilings are in excellent condition Other Systems: Other systems include gypsum board in toilet rooms, acoustic ceiling panels and 2x2 suspended acoustical ceiling tile system in office areas; they are om fair condition. Reason for Condition Rating: Age of systems, showing wear, some staining (Lifespan: 8 years remaining).
D. SERVIC	ES							
D10	CONVEYING SYSTEM	s						
D1010	Elevators and Lifts							
D1010.100	Elevators	No	Yes				2-Poor	Major System: Passenger elevator receives yearly inspections. Elevator cab was replaced 10-15 years ago. Rationale for Condition Rating: Water drains into elevator pit, which has a sump pump. Exterior drainage improvements have helped reduce water infiltration at pit, but the water infiltration issue needs to be corrected.
D1010.200	Dumb Waiter	Yes	Yes		<u> </u>		1-Unacceptable	Not Functioning
D20	PLUMBING							
D2010	Plumbing Systems and Fixtures	No	Yes	M01-D2010-05	42,000	Served SF	1-Unacceptable	Major Systems: Fixtures are from original construction and are beyond useful life. Reason for condition rating: Fixtures no longer operate as intended and create continuous maintenance for staff while offering visitors a poor quality of use.
D2020	Domestic Hot Water Heaters and	Yes	Yes	M01-D2020-05	100%	Served SF	2-Poor	Major System: All systems are disconnected and are difficult to service as some are located in confined spaces. Reason for Condition Rating: These water heaters work but have reached the end of their useful life. (lifespan: Less than 5 years remaining).

D2040	Internal Roof Rain Water Drainage	No	Yes	M01-0240-01		Bldg FP SF	0	Element not present.
D30	HVAC							
D3010	Energy Supply to Building	Yes	Yes	M01-D3010-02	100%	Bldg Gross SF	3-Fair	Major System: Natural gas if fed to building for boilers, water heater and unit heaters. Electric power to DX coolers and electric baseboard heat. Reason for Condition Rating: Age of system is unknown. System currently functions but will require modifications in association with failed heating and cooling systems.
D3020	Central Plant Heating within building	Yes	Yes	M01-D3020-03	100%	Bldg Gross SF	2-Poor	Major System: Gas fired boiler. Boiler still works but is nearing the end of its useful life. Random electric baseboard and unit heaters. Multiple gas fired unit heaters. Reason for Condition Rating: Age of system. (Lifespan: less than 5 years remaining). System is inefficient and hard to maintain. Temperature control is poor. Does not incorporate heating of outside air that would be required in a remodel effort.
D3020.300	Fireplaces	No	Yes	M08-D3020.300-02	1	Each	4-Good	Major System: Masonry Chimney within South Main lodge. Chimney is in fair condition. Reason for Condition Rating: This seems to function as intended but a remodel of the space would likely include replacement
D3040	Distribution Systems							•
D3040.100	Central Plant - Heat Distribution Systems	Yes	Yes	M01-D3050.100-05	15%	Served SF	2-Poor	Major System: only 15% of the heating system is served by a central distribution system. Reason for Condition Rating: Only covers a small portion of building. Efficiency is limited at low 80% due to non-condensing technology. Units are past useful life.
D3050	Terminal and Packaged Un	its						
D3050.100	Split Systems/Forced Air Furnaces/Package Units	Yes	Yes	M01-D3050.100-05	100%	Served SF	2-Poor	Major System: There are three residential style furnaces feeding Moosehead Saloon. Reason for Condition Rating: All units are beyond useful life and require frequent repair. Cooling is undersized throughout building, OA% rates do not meet code. Space temperature comfort is poor.
D3060	Heat/Cooling Controls	Yes	Yes	M01-D3060-05	100%	Served SF	2-Poor	Major System: Unitary controllers only. No centralized system. No control of OA%. Reason for Condition Rating: Age of system, tied to poor quality units.
D40	FIRE PROTECTION							
D4010	Sprinklers	Yes	Yes	M01-D4010-05	40%	Served SF	3-Fair	Major System: Age of sprinkler system is unknown. The system appears to be in working order. The average life expectancy is 50 years. Main lodge and cooking areas are sprinklered. Reason for Condition Rating: Current systems are operable but will likely be replaced with any architectural changes to large chalet areas.

D50	ELECTRICAL	1						
D5010	Electrical Service to Building	Yes	Yes	M01-D5020-05	42,000	Bidg Gross SF	2-Poor	Major System: The building has one electrical service. 480/277 3 phase. Main switchboard and distribution panels are original. Reason for Condition Rating: Age of system (lifespan: Approximately 45 years old, useful lifespan of equipment is normally 30 years).
D5020	Lighting and Branch Wiring	Yes	Yes	M01-D5020-05	42,000	Bldg Gross SF	3-Fair	Major System: Wiring/cables are original minus remodel efforts. Talk of circuit breakers not tripping when should of, likely due to age. Lighting above ductwork, now using plugin string lights for light at top of stairs. All fixtures were working, broken light switches. Reason for Condition Rating: Age of system (lifespan: Approximately 45 year's old, useful lifespan of equipment is normally 30 years)
D5030	Communication/Security/ Fire Alarm	No	Yes	M01-D5030-05	42000	Served SF	4-Good	Major System: Communications cabinet and fire alarm panel are located in basement closet locked to public. Space is organized relatively well and in good working condition. Only negative comments are that cat 5 cable is run on top of beams in clusters before branching off in public spaces.
D5090	Emergency Power	Yes	Yes	M11-D5090-02	42,000	Served SF	3-Fair	Major System: No emergency/ backup generator onsite. All egress and emergency lighting is battery backup on units themselves. Reason for Condition Rating: Age of system, batteries and fixtures require monthly testing. Batteries may need replacing at various intervals.
E. EQUIPM	IENT AND FURNISHING	S						
E10	EQUIPMENT							
E1030	Vehicular Equipment							
E1090	Other Equipment							
E1090.900	Agricultural Equipment							
E20	FURNISHINGS							
E2010	Fixed Furnishings							
E2010.200	Fixed Furnishings-Casework	No	Yes	M01-E2010.200-05	50	Length LF	2-Poor	Major System: Fixed plastic laminate counters and related cabinets, original to construction of each addition Reason for Condition Rating: Age of equipment, showing wear consistent with age (lifespan:5 years remaining). Code: Service counters with
E SPECIAL			N					non-compliant ADA height.
F. SPECIAL		DEMOLITIO						
F10								
F20	Special Eacilities							
F40	Special Pacilities							

Person Responding Position:								
Time Worked at Facility Phone Number:								
Date of Response:								
GENERAL INFORMATION								
What is the year of Construction of the original building? 1974 Are there additions: Yes No Year of Addition #1: 1985 Addition #2: 1989 Addition #3: Addition #4: Please outline locations of additions on attached floor plan. If more than 4 additions, indicate and date on plan.								
Do you have any drawings more current/accurate than the attached: \bigcirc Yes \bigcirc No								
Do you have any original architectural or structural drawings: • Yes No If Yes (check all that apply): Are they?: Hardcopy only PDF AutoCAD Contact Name/Phone # to obtain electronic copies: We only have some electronic copies, Greg Cooper, 218-491-7								
A10 - SUBSTRUCTURE								
Type of Foundation: Perimeter footings with slab-on-grade Deep Foundations (piers, structural floor)								
Do you have HVAC support tunnels? Yes No Unknown (If Yes, please show on drawing)								
Any known foundation problems? Yes No Unknown (If Yes, please describe below)								
Any previous foundation repairs? Yes No OUnknown (If Yes, please describe below)								
Any history of Radon issues? Ves No Unknown (If Yes, please describe below)								
Have studies been conducted or reports prepared for Structure/Foundation? OYes No OUnknown								
Other Comments: Generally foundation walls are plumb and uncracked.								
A20 - BASEMENT								
Is a Basement Present? • Yes No If yes, show the location on the drawing. Are there any leaks? Yes No								

If yes, describe: None observed to any magnitude

Is there any damage? Yes No If yes, describe:

B10 - SUPERSTRUCTURE
Is an Elevated Floor Present? • Yes No If yes, what type?
Cast-In-Place Concrete Steel Framing w/concrete&metal deck
OPrecast frame CIP columns/beams with precast deck Wood Framing on Load Bearing Walls
Wood Stick Framed Construction Heavy Timber Type of Roof Structure?
Cast-In-Place Concrete Steel Framing w/concrete&metal deck Steel Framing w/ metal only deck
OPrecast frame CIP columns/beams with precast deck Wood Framing on Load Bearing Walls
Wood Stick Framed Construction Heavy Timber
Are there any problems, movement, or distress associated with the elevated floor structure? Yes No If yes, describe: The exterior deck on the south end of the MooseHead Chaletnees to be demolished. West and Centu
Are there any problems, movement, or distress associated with the roof structure? Yes No If yes, describe: Roof Structure is solid.
B20 - EXTERIOR WALLS/WINDOWS
Are the Exterior Wall Systems original: • Yes No Unknown Date Installed: <u>1974, 85 & 89</u>
Are the Doors original: • Yes No Unknown If No, year(s) of replacement:
Are the Windows original: • Yes No Unknown If No, year(s) of replacement:
Type of Windows Single Pane% Double Pane 100 % Other
Are there exterior wall leaks? Yes No Unknown (If yes, please describe below.)
Isolated/Sporadic Seasonal Chronic Rainstorms from the East will force water through the window system and into the walls and onto floors
Are there exterior window/door leaks? • Yes No Unknown (If yes, please describe below.)
Isolated/Sporadic Seasonal Chronic Rainstorms from West will force water through the window system and into the walls and floors
Other Comments:

B30 - ROOFING
Type of Roof Systems (check all that apply): Built-up with Gravel Surfacing Built-up with Granule Cap ✓EPDM TPO Hypalon Metal Polyurethane Foam ✓Shingles - Asphalt Concrete Tile Clay Tile Plaza Deck Please describe age of roof by Area and indicate if any of the roofs are under warranty (ex: main building – original; K-wing – replaced 2001- manufacturer warranty, Gym – 2012 - 20 YR NDL, etc.)
Do any roof areas have multiple roofs? If so, please describe by Area (ex: main building – original BUR with foam recover roof.)
Do you have active roof leaks? •Yes No If leaks, how often? Every Rain Periodically 1-2 per year
Other Comments: A portion of an EPDM roof leaks in the 1974 chalet after every rain, openings in hte flashing at the roof wall interfaces are visiable

C30 - INTERIOR PARTITIONS AND FINISHES

Type of Wall Finishes (check all that apply)

Present	Material	Average Age	Present	Material	Average Age
\checkmark	Painted Drywall	47		Vinyl Composite Tile	
\checkmark	Painted Concrete Block	47		Vinyl Tile	
	Painted Woodwork			Natural Clay Tile	
	Medium Weight Vinyl			Natural Stone Tile	
	Heavy Weight Vinyl			Synthetic Marble Tile	
\checkmark	Wood Paneling	47		Natural Marble Tile	

Surveyor Initials	18
Interview Date	

Type of Floor Finishes (check all that apply)

Present	Material	Average Age	Present	Material	Average Age
\checkmark	Exposed Concrete	47		Vinyl Composite Tile	
	Traffic Coating			Vinyl Tile	
	Epoxy Coating			Natural Clay Tile	
	Terrazzo			Natural Stone Tile	
\checkmark	Nylon Carpet w/o Padding	20		Synthetic Marble Tile	
	Nylon Carpet w/ Padding			Natural Marble Tile	
	Wool Carpet w/ Padding			Hardwood Flooring	

Type of Ceiling Finishes (check all that apply)

Present	Material	Average Age	Present	Material	Average Age
\checkmark	Gypsum Board	47		Plaster	
	Acoustic Ceiling Tiles			Crown Molding	
\checkmark	Wood	47			

% of finishes that are standard (Class B): 100

% of finishes that are deluxe (Class A):_____

Please describe any interior renovations within the last 10 years below (by location and year):

A new accessible entrance was constructed in 2011 into the Bear Paw Chalet.

Are the Doors original: Yes No Unknown If	No, year(s) of replacement:
Is the Door hardware original: •Yes No Unknown	If No, year(s) of replacement:
Are toilet partitions original: •Yes No Unknown	If No, year(s) of replacement:

D1010 - ELF	CVATORS (CONVEYING SYSTEMS)	N/A
Number of Elevators: <u>1</u> Age	of elevators: 🖌 Original Date <u>1974</u>	Unknown
Are elevators regularly maintained?	•Yes No Unknown	
Are parts available for maintenance?	Yes No OUnknown	
Has the control system been upgraded?	○Yes Date: No ●Unknown	
Are state/local certificates current?		
Are the elevators reliable?	Yes No If yes briefly describe below:	
Any Major problems or repairs within	the last 5 years? (Describe by issue and date):	

D1013 - LIFTS (CONVEYING SYS	TEMS)						
Number of lifts: <u>1</u> Age of lifts: √ Original Date	1974 Unknown						
Are lifts regularly maintained? Yes No OUnknown							
Are parts available for maintenance? Yes No Unknown	Are parts available for maintenance? Yes No Unknown						
Are state/local certificates current? Yes No OUnknown							
Are the lifts reliable?	cribe below:						
Any Major problems or repairs within the last 5 years? (Describe by	Any Major problems or repairs within the last 5 years? (Describe by issue and date):						

D2010 – PLUMBING FIXTURES

Type of Plumbing Fixtures (check all that apply)

Present	Fixture	Average Age	Preser	nt Fixtur	re	Average Age
\checkmark	Water Closet – Floor Mounted	15	\checkmark	Lavatory		15
	Water Closet – Wall Mounted	0		Service Sir	nk	15
\checkmark	Urinal – Wall Mounted	15				

Do building's fixtures function properly?	• Yes \bigcirc No		
Do building's fixtures leak on the water supply side?	Frequently	• Infrequently	No
Do building's fixtures leak on the drain side?	Frequently	• Infrequently	No

Please describe any renovations/replacements within the last 10 years below (by type and year) or any comments:

Water supply source: On-site well Municipal supplier					
Have backflow preventers been installed? Yes No OUnknown					
Type of water piping? Or Galv. Steel Copper CPVC Polybutylene Other					
Problems with Pinholes? Yes No OUnknown					
Age of water piping: 8					
Do building's water lines leak? Frequently Infrequently No					
Sanitary System Discharge:					
Septic field: Location:					
Does septic field work properly? Yes No If no, describe problem:					
Are state/local certificates current? Yes No Unknown					
On-site plant: Age: Unknown N/A Capacity: (gpd) Unknown					
Is sewage treatment plant reliable? Yes No If no, describe problem:					
Are state/local certificates current? Yes No Unknown					
Municipal System: Utility Authority:					
Do you have on site lift stations? Yes No Unknown - Frequency of Maintenance?:					
Type of Sanitary Piping? Cast Iron PVC V. Clay Other, describe:					
Age of Sanitary Piping: 🖌 Original Date 1975, 85, 89 Unknown					
Do the sanitary lines leak or have problems at joints/piping? Frequently Infrequently No					
Do building's sanitary lines leak from the plumbing fixture? Frequently Infrequently No					
Do clean-outs exist? Yes No OUnknown Properly placed and identified?					
Any Major Renovations/Repairs completed? (Describe by location and date):					

D2020 –WATER HEATERS			
How is water heated: Domestic Water Heater (s) Transfer from Heating Boilers Unknown			
Age of domestic water heater(s):			
Have studies been conducted or reports prepared for the water distribution system? Yes • No			
Any Major Renovations/Repairs completed? (Describe by location and date):			
D2040 – STORM DRAINAGE			
Storm Drainage Piping Through and Under the Building Only: (Does not extend beyond 5-ft from the building)			
Type of Storm Piping? Cast Iron PVC Concrete Steel HDPE Other:			
Any Major Renovations/Repairs completed? (Describe by location and date):			
D3010 – ENERGY SUPPLY SYSTEMS			
Natural Gas: • Yes No Fuel Oil: Yes • No			
Coal: Yes No Solar: Yes No			
Wind: Yes No			
Who owns the transformers: Building Local Utility			
Capacity of main electrical site transformer: <u>1000KV</u> Amps / Unknown			
Age of Solar Components: Original Date Unknown			
Portion of building Served: Entire Chalet Building			
Age of Wind Components: Original Date Unknown			
Portion of building Served:			
D3011 – GEOTHERMAL HEATING/COOLING SUPPLY			
Type of system? (In-ground Wells (Ponds (Ground Fields			
Other (please describe):			
Age of System:Original DateUnknown			
Type of Piping:			
Number of Wells:			
Any Major Problems or Repairs required since original construction? (Describe by issue and date):			

Surveyor Initials 22 Interview Date _____
Building Number:

D3020 – FIREPLACES
Type of Fireplace: • Gas Wood Pellet Combo:
Are there any problems with the chimney?
D3020 – HVAC SYSTEMS - SUMMARY/MISC QUESTIONS
Provide a brief summary description of how the building is heated (example: boiler with hot water loop feeding
radiators and unit ventilators, split system with gas furnace, air handlers with electric re-heat coils, etc.):
Building is heated with a variety of disjointed systems includeing: electric baseboard and unit heaters. Natural gas boilers feeding AHU u
No BAS system for occupancy schedule, temperature management, or alarms.

Provide a brief summary description of how the building is cooled (example: swamp coolers in the common corridors, individual split system for computer room, window unit in break room, chiller with cold water loop feeding AHUs, condensing unit installed within original AHUs, etc):

Cooling is provided by stand alone DX units associated with AHUs and residential style furnaces.

No BAS system for occupancy schedule, temperature management, or alarms.

Cooling is regularly under performing.

Is outside air provided and distributed through the building (example: swamp coolers in the common corridors, roof top air handling units, or forced air ventilation, If so, how? Outside air in provided at large AHUs in the North building addition only.

N/A
ľ

Type of Boilers: Standard High Efficiency Boiler Fuels: Natural Gas Heating Oil Coal
% Building Heated by Boiler System 20
Number of Boilers: 2 Year(s) installed: Unknown
When were they last inspected? Date Unknown
Is sufficient heating capacity provided to distribution system? • Yes No
Is Water Treatment Provided? Ves No
Any problems with pipe corrosion, frequent leaks, etc? Yes No
Any Major problems, repairs, or proactive maintenance performed within the last 10 years? (Describe by issue and date):

✓N/A

Building Number:

D3030 - HVAC – CHILLED WATER COOLING SYSTEMS

% Building Cooled by Central Plant Syste	2m:	
Number of Chillers:	Year(s) installed:	Unknown
Is maintenance regularly scheduled?		
Is sufficient cooling capacity provided	to distribution system? Yes No	
Any Major problems, repairs, or proactive and date):	maintenance performed within the last 10 years? (Description of the second seco	ribe by issue
Number of Cooling Towers:	Year(s) installed:	Unknown
Is maintenance regularly scheduled?	Yes No	
Is Water Treatment Provided?	Yes No	
Any Major problems, repairs, or proactive and date):	maintenance performed within the last 10 years? (Description)	ribe by issue
D3040 - HVAC – CEN	TRAL PLANT AIR DISTRIBUTION SYSTEMS	✓ N/A
% Building Heated by Distribution Syster % Building Cooled by Air Handling Syste	n (radiators, unit ventilators, AHUs, etc): <u>100</u>	
Age of Systems: Original Date	unknown	
Type of air handling systems?		
Internal air handling unit with heating	ng and cooling coils (4 pipe system)	
Internal air handling unit with single	e coil (2 pipe system)	
VAV Boxes with reheat coils	AV Boxes with no coils	
Exterior air handling units with heat	ing and cooling coils (4 pipe system)	
Exterior air handling units with sing	e coil (2 pipe system)	
4 pipe system with heat pumps		
2 pipe system with heat pumps		
Describe your preventative maintenance a Change filters, grease bearings, check motors, check motors	pproach for the air handlers: eck dampers, clean coils, clean air intakes.	

Surveyor Initials ______ Interview Date ______

Do the systems provide outside air? • Yes No Unknown, If Yes, how is it controlled/monitored: Controlled with manual damper. Not monitored.
What is your typical schedule for filter replacement and condensate pan inspection?
Type of ductwork system? Metal with internal insulation Metal with external insulation Ductboard Flexduct Age of Ductwork: Original Date Unknown Any Major problems, repairs, or proactive maintenance performed within the last 10 years? (Describe by issue and date):
D3050 - HVAC – SPLIT SYSTEM AND PACKAGE UNITS N/A
Package units present: ✓N/A - # of Units: Year(s) installed: Unknown Areas heated/cooled by package units:
Forced Air Furnaces units present: N/A- # of Units: <u>3</u> Year(s) installed: Unknown Areas heated by forced air furnaces units: <u>15% North Chalet open area</u> Is cooling adequate for areas served? Yes No. Is heating adequate for areas served? Yes No.
Do the systems provide outside air? • Yes No, If Yes, how is it controlled/monitored: Manually set, not monitored
What is your typical schedule for filter replacement and condensate pan inspection?

Any Major problems or repairs within the last 10 years? (Describe by issue and date):

Surveyor Initials _____26_____

Interview Date _____

Building Number:

D3060 – HVAC & HEATING CONTROLS
Type of Controls: Pneumatic% of building 🖌 DDC 30% of Building
Controls Age:
If blended system, describe (pneumatic actuators with digital control, etc.):
Describe control system (ex: one per room, two rooms per single control, etc): <u>all controls are via unit controllers on equipment</u> There is no central control system.
Any problems with air leaks/function? • Yes No If yes, describe? Large open duct holes where damage
Are controls adequate? Yes No If no, explain problems? p set point control only, no communications
Any Major problems or repairs within the last 10 years? (Describe by issue and date):
D40 - FIRE PROTECTION and ALARMS
Age of fire protection (sprinkler) system: Original Date Unknown N/A 50 % of building covered by sprinkler systems.
Age of alarm systems: Original Date <u>1974, 85, 89</u> Unknown N/A
Do sprinkler lines leak? OFrequently Infrequently No Type of last repairs/upgrades and dates:
Date of last inspection: Location of inspection report: Local District Office
Have studies been conducted or reports prepared for fire protection and alarm systems? • Yes No
D50 – ELECTRICAL SYSTEMS
Is distribution wiring aluminum or copper?
Age of Wiring: 🖌 Original Date Unknown
Do you have enough capacity to the facility (exterior primary transformer)? • Yes No Unknown
Do you have enough circuits/capacity within the facility to support technology? • Yes No Unknown
Are the outlets conveniently placed for use? Yes No
Has there been any major electrical work or renovations? No •Yes Date Early 2000's Late 1990's
Description: Added panelboards and gear for Rental Area in the Bear Paw basement (room next to Eagles Nest SWGR)
Do you have an emergency generator? Yes No,
If Yes please describe system and age:

Building Name: Building Number:
D50 – COMMUNICATION/SECURITY SYSTEMS
Type and location of Communication Systems: Ethernet patch panel for data & 110 punchdown block for Telephone
Age of communication system: Original, some added later on
Are computer systems interconnected via hardwire or wireless? Wireless Hard Wired Both Age of computer system:
Fechnology Backbone: Coax CAT5 Cable CAT6 Cable Fiber Optics Wireless Age of technology backbone: 1990's
Do you have an internet and phone system drop in each office/room? • Yes ONo OUnknown
Do you have a security/alarm system? • Yes No
Do you have security cameras? Yes No If Yes, location(s)
COMMERCIAL EQUIPMENT – LAUNDRY FACILITY
s a laundry facility provided? Yes No If yes, answer the following:
For those major components (counters, cabinets, washing machines, dryers, etc) that were not installed as part of original construction, please indicate component and date of replacement/installation below:
Any Major problems or repairs within the last 5 years? (Describe by issue and date):
INSTITUTIONAL – JAIL EQUIPMENT
s the cell unit pre-fabricated? Yes No If no, describe:

Are there working plumbing fixtures within the cell (check all that apply): _

Lavatory	Sink	Urinal	Other:
Age of Cells:	Or1g1	nal Date	

Date _____ Unknown

Any Major problems or repairs within the last 5 years? (Describe by issue and date):

Building Number:

INSTITUTIONAL - LABORATORY
Type of Laboratory Components (check all that apply): Built-In Laboratory Station Fume Hood Glassware Washer Wall Mounted Laboratory Cabinets Other:
Are there working sinks at the laboratory stations? Yes No Is there access to natural gas at the laboratory stations? Yes No
VEHICLE EQUIPMENT - OVERHEAD CRANES V Types of Cranes: Capacity: Number of Cranes:
Age of Crane and Components: Original Date Unknown Describe the safety features:
Any Major problems or repairs within the last 5 years? (Describe by issue and date):
VEHICLE EQUIPMENT – TRUCK WEIGHT SCALES V /A
Type of Scale: Capacity: Number of Scales:
Age of Scale and Components: Original Date Unknown Describe the safety features:
Any Major problems or repairs within the last 5 years? (Describe by issue and date):

Broiler

Reach in Freezer

Walk-in Cooler

Ice Cube Maker

Garbage Disposal

 \checkmark

 \checkmark

 \checkmark

 \checkmark

Building Number:

			VEHICLE E	QUIPMEN	T -	- BOAT]	LIFTS	N/A
Туре	of Lift:		Ca	pacity:			Number of Lifts: _	
Age	of Lift ar	nd Components:	Driginal Da	.te		Unk	nown	
Any]	Major pr	oblems or repair	rs within the last 5	years? (Des	scri	be by issu	ue and date):	
		VEHIC	CLE EQUIPMEN	NT – GARA	GI	E ACCES	S EQUIPMENT	N/A
Is the	e entrance	e to the garage n	nanned? Ves (No				
Desc	ribe the t	icketing and gat	e equipment at the	e entrance:				
Age	of Entrar	ce Equipment:	Original Da	.te		Unk	nown	
Is the	e exit to t	he garage manne	ed? Yes N	0				
Desc	ribe the t	icketing and gat	e equipment at the	e exit:				
Age	of Exit E	quipment: [Original Da	.te		Unk	nown	
			FOOD S	SERVICE E	Q	UIPMEN	Т	N/A
What	type of	kitchen is preser	nt: Serving Kit	chen 🖌 Fu	11 F	Kitchen		
<u>Type</u>	of Appl	iances (check all	that apply):					
	Present	Fiz	xture	Average Age		Present	Fixture	Average Age
	\checkmark	Dishwasher		20 years		\checkmark	Warming Counter	25 years

Range with oven

Reach in Cooler

Walk-in Freezer

Serving Counter

Pot Sink

 \checkmark

25 years

25 years

5 years

25 years

25 years

25 years

5 years

25 years

10 years

Any Major problems or repairs within the last 5 years? (Describe by issue and date):

RESIDENTIAL EQUIPMENT	✓N/A
Type of Kitchen Components (check all that apply):	
Refrigerator Garbage Disposal Dishwasher Cook Top Range Double Oven	
Fixed Microwave	
Wall and Base Cabinets: Ostandard Obeluxe	
Counter Tops: OPlastic Laminate Granite	
Age of Equipment: Original Date Unknown	
ATHLETIC EQUIPMENT	✓N/A
Type of Athletic Space (check all that apply):	
Shooting Range Sport Court Sauna Racquet Ball Other:	
Age of Equipment: Original Date Unknown	
Any Major problems or repairs within the last 10 years? (Describe by issue and date):	
AGRICULTURAL EQUIPMENT – ANIMAL STORAGE/CAGES	✓ N/A
Type of Animal Stored: Carnivorous Non-carnivorous	
Is the cage pre-fabricated: Yes No	
Age of Cages: Original Date Unknown	
Any Major problems or repairs within the last 10 years? (Describe by issue and date):	

Building Number:

AGRICULTURAL EQUIPMENT – FISH HATCHERY/CONCRETE TROUGHS 🖌 N/A
Type and location of Water Circulation Systems:
Age of water circulation system:
Type Water Filtration Systems:
Age of water filtration system:
Depth and Size of Trough:
Any problems with water leaks or seepage? Yes No If yes, describe?
Any Major problems or repairs within the last 10 years? (Describe by issue and date):
FIXED FURNISHINGS - SEATING
FIXED FURNISHINGS - SEATING N/A Type of Seating Available (check all that apply): Auditorium Bench Bleachers
Type of Seating Available (check all that apply): Auditorium Bench Bleachers Age of Seating: Original Date Unknown
FIXED FURNISHINGS - SEATING Type of Seating Available (check all that apply): Auditorium Bench Bleachers Date Unknown Are the auditorium, are the seats upholstered? Yes N/A
FIXED FURNISHINGS - SEATING Type of Seating Available (check all that apply): Auditorium Bench Bleachers Original Date Unknown Are the auditorium, are the seats upholstered? Yes No Are the components functioning properly? Yes No
FIXED FURNISHINGS - SEATING Type of Seating Available (check all that apply): Auditorium Bench Bleachers Unknown Are the auditorium, are the seats upholstered? Yes No Are the components functioning properly? Yes No Age of Upholstery: Original Date Unknown
FIXED FURNISHINGS - SEATING Type of Seating Available (check all that apply): Auditorium Bench Bleachers Age of Seating: Original Date Yes No Are the components functioning properly? Yes No Age of Upholstery: Original Date Unknown Are the bleachers: Fixed Motorized N/A
FIXED FURNISHINGS - SEATING Type of Seating Available (check all that apply): Auditorium Bench Bleachers Age of Seating: Original Date Yes No Are the components functioning properly? Yes No Are the bleachers: Fixed Motorized N/A Are the components functioning properly? Yes No Are the bleachers: Fixed Motorized N/A Are the components functioning properly? Yes No Are the bleachers: Fixed Motorized N/A Are the components functioning properly? Yes No Are the components functioning properly? Yes No Are the components functioning properly? Yes No
FIXED FURNISHINGS - SEATING Type of Seating Available (check all that apply): Auditorium Bench Bleachers Age of Seating: Original Date Yes NA Are the auditorium, are the seats upholstered? Yes No Are the components functioning properly? Yes Are the bleachers: Fixed Motorized N/A Are the components functioning properly? Yes No Are the components functioning properly? Yes No Are the components functioning properly? Yes Are the components functioning properly? Yes No Are the components functioning properly? Yes No Age of Motor and Components: Original Date Unknown

FIXED FURNISHINGS - CLINIC

✓N/A

Is a clinic or nurse's office provided? Yes No, If yes, answer the following:

For those major components (counters, hard wired equipment, exam tables, cabinets, etc) that were not installed as part of original construction, please indicate component and date of replacement/installation below:

Any Major problems or repairs within the last 5 years? (Describe by issue and date):

Interview Date _____

Building Number:

VAULT TOILET
Type of Structure: Lined Pit Concrete Vault (If prefabriacted, use prefab form) Age of Structure: Original Date Unknown Are there any active roof leaks? Yes No Are structural issues? Yes No
If yes, describe:
MULTI-PURPOSE ROOM
Cafeteria Seating Gymnasium Auditorium
Age of score boards/sound systems? Original Other:
Age of curtains? Original Other:
Age of flooring? Original Other:
Age of lighting? Original Other:
Any Major problems, repairs, and/or component replacement within the last 10 years? (Describe by issue and date):
Flease describe any fenovations within the last 10 years below (indicate worked performed and year).
GYMNASIUM V/A
Type of Gymnasium provided (Check all that apply)? Single Full Size Competition Floor
Auxiliary Gym Multiple Competition Floors within single room
Is an indoor track provided: Indoor Competition Track Indoor running track/loop No
of sets of locker rooms provided: Described as:
O Separate Locker Rooms provided for each Gym OLocker rooms shared between multiple gyms
Separate Varsity/JV Locker Rooms
Age of score boards/sound systems? Original Other:
Age of seating systems? Original Other: Any Issues:
Date of last floor refinishing?
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Any Major problems, repairs	, and/or component replacement	t within the last 10 years	s? (Describe by issue and
date):			

Please describe any renovations within the last 10 years below (indicate worked performed and year):

AUDITORIUM N/A			
Age of lighting systems? Original Other:			
Are sufficient controls provided for lighting systems? Yes No If No, describe below:			
Age of sound systems? Original Other:			
Are sufficient controls provided for sound systems? Yes No If No, describe below:			
Is a separate sound control room provided? Yes No			
Any issue with stage floor/stage handling equipment? No Yes, If Yes, please describe below:			
Any Major problems, repairs, and/or component replacement within the last 10 years? (Describe by issue and date):			
Please describe any renovations within the last 10 years below (indicate worked performed and year):			
REFRIGERATED STORAGE ROOM			
Is the cold storage room pre-fabricated? Yes No			
<u>(If stand-alone prefabricated "building", use prefab form)</u>			
Age of Cold Storage Room: Original Date Unknown			
Are there any problems with the refrigeration system? Yes No If yes, describe:			
Is the refrigeration system original? Yes No If no, when was it modified:			

Assessment Questionnaire

HAZMAT STORAGE ROOM	N/A	
Type of Structure: CMU Block Stick Framed Pre-fabricated (If stand-alone prefabricated "building", use prefab form)		
Age of Structure: Original Date Unknown		
Are there any active leaks? Yes No If yes, describe:		
Is a sprinkler system present? Yes No If yes, describe:		
Age of Room Original Date Unknown		
Are there any problems with the sprinkler system? Yes No If yes, describe:		
AQUATIC FACILITIES	N/A	
Type of pool treatment: Chemical Salt/Saline Other:		
Age of pool filter/circulation systems? Original Other:		
Date of last pool resurfacing?		
Age of lighting systems? Original Other:		
Are sufficient controls provided for lighting systems? Yes No, If No, please describe below:		
Age of score boards/sound systems? Original Other:		
Are separate Varsity/IV locker rooms provided? No \bigcirc Ves		
The separate varsity is viocker rooms provided. The Tes		
Any issue with leaks? No Yes If Yes, describe below:		

Any Major problems, repairs, and/or component replacement within the last 10 years? (Describe by issue and date):

Please describe any renovations within the last 10 years below (indicate worked performed and year):

Surveyor Initials	34
Interview Date	

Building Number:

ICE RINK	✓N/A
Are there any problems with the chillers? Yes No If yes, describe:	
Age of Chillers: Original Date Unknown	
Are there any problems with the dehumidification system? Yes No If yes, describe:	
Age of Dehumidification System: Original Date Unknown	
Are there any problems with the ice making system? Yes No If yes, describe:	
Age of Ice Making System: Original Date Unknown	
Are there any problems with the boards or glass? Yes No If yes, describe:	
Age of Boards and Glass: Original Date Unknown	
Please describe any renovations within the last 10 years below (indicate worked performed and year)	:

Appendix B



Participatory Design Methodology

The participatory design team was comprised of representatives from SMRA, the City of Duluth, and design teams including TKDA, SE Group, and Rippe Associates. The group met for two collaborate design charrettes that explored design goals and intent for both the chalet building and the surrounding site. Through a variety of exercises, the group developed a collective vision and goals for the project.

Strengths

Goal Statements

- Create a context-sensitive design that is representative of the community and natural environment unique to Duluth, MN
- 2. Maximize efficiencies of systems
- 3. Utilize performance-based metrics for decision making
- 4. Create an economically sustainable project
- 5. Build on previous planning work
- 6. Create a shared vision

Summary of charrette #1

The first charrette took place on June 10, 2021. The participatory design team participated in a variety of activities throughout the day.

The first activity included a SWOT Analysis where the group collectively identified the top strengths, weaknesses, opportunities, and threats to Spirit Mountain. After, the group prioritized the top issues in each category. The following represents the results:

Capacity levels Snowmobiles Long history of site/spiritual Large groups City and state trail connections Variety of recreation activities Location – highway Scenic site lines







Next participants conducted a visual preference survey and discussed the collective vision for the chalet. The group generally agreed on an aesthetic direction but also discussed the importance of developing a performance-based design that would be maintainable and realistic.





The following represents the top priorities for exterior material components as discussed with the participatory design team:

	Roof		Walls		Priorities
• 9 • 1 • 0 • 9 • 0 • 0	Solar panels No cedar shakes Composite/metal Shade opportunities Control heat loss Valkable/safe	•	Green screen Performance based Context sensitive "Midwest" Welcoming	•	Maximize efficiencies with orientation Performance over aesthetics

The participatory design team then sketched a variety of ideas for future improvements.



The remainder of the day focused on developing a vision for the exterior improvements. The group explored a variety of systems including access, circulation, stormwater, natural environment, social behaviors, and more. The following represents the major themes collectively developed:

Spirit Mountain Recreation Area	Campground	Chalet Site
 Updated entry experience Celebrate the natural resources (Knowlton Creek, St. Louis River, terrain, etc.) Beginner areas Stormwater opportunities Pedestrian improvements Additional camping opportunities 	 New check in and drop off area Overflow tenting areas Stormwater opportunities RV camping opportunities Supporting amenities (playground, splash pad, increased electrical capacity, etc.) 	 Parking improvements Outdoor dining & seating opportunities Improved entry Outdoor ticketing opportunities Improved delivery access Branding opportunities Improve wedding ceremony area Better connections to the chalet

Summary of charrette #2

The first charrette took place on July 8, 2021. The participatory design team participated in a variety of activities throughout the day.

The first activity was a verification of the existing program and the correlating space needs. A refined program was collaboratively developed.



The team then created a series of bubble diagrams to define spaces and adjacencies. Themes ranged between groups but had common themes including a grand entry for the public, maximizing views towards the river at gathering spaces, and shared use spaces for efficiencies.



Mechanical Review Recap

- Existing mechanical review
 - What do we want to keep? Not much is functioning at this time and there is little to no interest in keeping any mechanical equipment other than the energy recovery units in the ski shop rental area.

Deficiencies

- Lack of capacity in existing equipment
- Lack of control leads to operational unknowns, poor energy efficiency due to lack of setback and set point control.



Energy targets

- Centralized mechanical systems
- Hybridized electric heat pump/ gas boilers
- This is desired in order to guaranty heating function in the low ambient conditions and allow for carbon reduction when heat pumps are in low COP (coefficient of performance) region.
- Water versus air cooled chiller
 - Either would be acceptable
- Proposed options
 - VRF
 Most desired option based on performance, energy efficiency, and building comfort
 - Fan Coil Some interest was given
 - VAV
 Considered fallback option
 based on budget challenges

Department:AdministrationRoom Name:Executive Directors OfficeSquare Foot Area:240 SFNumber of Occupants:4

Function:

Office space for the executive director. Include meeting space for up to four people.

Adjacencies:

Administration offices, conference room, work room, and employee break room.

Furniture, Fixtures, and Equipment:

Executive desk and chair, meeting table and four chairs, combination printer/copier/scanner, and computer with monitor.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	Window coverings
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Acoustical privacy, window

Plumbing and HVAC Requirements:

Climate controlled by VRF system.

- Electrical Requirements: Six duplex receptacles, and PA system.
- Technology Requirements: Two CAT6 duplex data receptacles.
- Room Layout Diagram:



Department:	Administration
Room Name:	Human Resources Manager's Office
Square Foot Area:	192 SF
Number of Occupants:	3

Function:

Office space for the HR manager. Include meeting space for up to three people and area for secure records storage.

Adjacencies:

Administration offices, conference room, work room, and employee break room.

Furniture, Fixtures, and Equipment:

Office desk and chair, meeting table and three chairs, combination printer/copier/scanner, and computer with monitor.

Architectural Finishes:

Floor:	
Walls:	
Ceiling:	
Lighting:	

Carpet tile Painted gypsum wall board Suspended acoustical panels 24 x 24 LED Specialties:Window coveringsWall Base:VinylCeiling Height:8 footComments:Acoustical privacy, window

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: Six duplex receptacles, and PA system.

Technology Requirements: Two CAT6 duplex data receptacles.

Room Layout Diagram:



Department:	Administration
Room Name:	Finance Director's Office
Square Foot Area:	192 SF
Number of Occupants:	2

Function:

Office space for finance director. Include meeting space for up to two people and area for secured record storage.

Adjacencies:

Administration offices, vault, work room, active and cold file storage rooms, and employee break room.

Furniture, Fixtures, and Equipment:

Office desk and chair, meeting table with two chairs, combination printer/copier/scanner, and computer with monitor.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	Window coverings
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Acoustical privacy, window

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

Four duplex receptacles.

Technology Requirements:

Two CAT6 duplex data receptacles.

Room Layout Diagram:

Department:	Administration
Room Name:	Marketing Office
Square Foot Area:	192 SF
Number of Occupants:	3

Function:

Office space for the marketing manager. Include meeting space for up to three people and area for secure records storage.

Adjacencies:

Administration offices, conference room, work room, and employee break room.

Furniture, Fixtures, and Equipment:

Office desk and chair, meeting table with three chairs, combination printer/copier/scanner, and computer with monitor.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	Windo
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Acoust

Plumbing and HVAC Requirements: Climate controlled by VRF system.

- Electrical Requirements: Six duplex receptacles.
- **Technology Requirements:** Two CAT6 duplex data receptacles.

Room Layout Diagram:

Adjacency Layout Diagram: Refer to Appendix D.

Window coverings

Acoustical privacy, window



Department:	Administration
Room Name:	Marketing Storage
Square Foot Area:	144 SF
Number of Occupants:	1

Function:

Storage area for marketing supplies and materials.

Adjacencies: Marketing office.

Furniture, Fixtures, and Equipment: Shelving.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	None
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED		

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: One duplex receptacle.

Technology Requirements: None.

Room Layout Diagram:



Department:	Administration
Room Name:	Vault Office
Square Foot Area:	120 SF
Number of Occupants:	1

Function:

Office space with access to vault.

Adjacencies:

Finance director's office and vault.

Furniture, Fixtures, and Equipment:

Office desk and chair, one side chair, combination printer/copier/scanner, computer with monitor, and bank drop box.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	Window coverings
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Uniquely keyed lock

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: Four duplex receptacles.

Technology Requirements:

Two CAT6 duplex data receptacles, security system.

Room Layout Diagram:



Department:	Administration
Room Name:	Vault
Square Foot Area:	40 SF
Number of Occupants:	None

Function:

Secure storage for money and documents.

Adjacencies:

Vault office.

Furniture, Fixtures, and Equipment: Bank drop box.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	None
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Fire rated vault construction

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: One duplex receptacle.

Technology Requirements:

One CAT6 duplex data receptacles, security system.

Room Layout Diagram:



Department:	Administration
Room Name:	Food and Beverage Office
Square Foot Area:	240 SF
Number of occupants:	5

Function:

Office space for the food and beverage staff. Shall be an open office layout with workstations to accommodate five people.

Adjacencies:

Administration offices, work room, catering sales conference room, and employee break room.

Furniture, Fixtures, and Equipment:

Five modular workstations with one office chair, one side chair, secure file cabinets, wardrobe locker, and open linear shelving, shared combination printer/copier/scanner, and five computers with monitors.

Specialties:

Wall Base:

Comments:

Ceiling Height: 8 foot

Architectural Finishes:

Floor:	Carpet tile
Walls:	Painted gypsum wall board
Ceiling:	Suspended acoustical panels
Lighting:	24 x 24 LED

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

Two duplex receptacles at each workstation, minimum.

Technology Requirements:

One CAT6 duplex data receptacles and each workstation.

Room Layout Diagram:

Adjacency Layout Diagram: Refer to Appendix D.

Window coverings

Vinyl

Window



Department:	Administration
Room Name:	Catering Sales Conference Room
Square Foot Area:	240 SF
Number of Occupants:	5

Function:

Dedicated meeting area for event sales and planning with Clients. Provide space in the room for display table arrangement options.

Adjacencies:

Food and beverage office.

Furniture, Fixtures, and Equipment:

Conference table and six chairs, banquet table for display setting, bookcase, and shelving.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	None
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED		

Plumbing and HVAC Requirements:

Climate controlled by VRF system.

Electrical Requirements:

Two duplex receptacles at each workstation, minimum.

Technology Requirements:

One CAT6 duplex data receptacles and each workstation

Room Layout Diagram:



Department:	Administration
Room Name:	Safety and Risk Office
Square Foot Area:	192 SF
Number of occupants:	3

Function:

Office space for the safety and risk staff. Include meeting space for up to three people.

Adjacencies:

Administration offices, work room, employee break room, and safety documents and material storage room.

Furniture, Fixtures, and Equipment:

Office desk and chair, meeting table and three chairs, combination printer/copier/scanner, and computer with monitor.

Architectural Finishes:

Floor:	
Walls:	
Ceiling:	
Lighting:	

Carpet tile Painted gypsum wall board Suspended acoustical panels 24 x 24 LED Specialties:Window coveringsWall Base:VinylCeiling Height:8 footComments:Acoustical privacy, window

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: Six duplex receptacles, and PA system.

Technology Requirements: Two CAT6 duplex data receptacles.

Room Layout Diagram:



Department:	Administration
Room Name:	Safety Documents and Materials Storage.
Square Foot Area:	96 SF
Number of Occupants:	None

Function:

Storage area for safety documents and materials.

Adjacencies:

Safety and risk office.

Furniture, Fixtures, and Equipment: Shelving for storage box system.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	None
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Uniquely keyed lock
5 5			

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: One duplex receptacle.

Technology Requirements:

One CAT6 duplex data receptacle, security system.

Room Layout Diagram:



Department:	Administration
Room Name:	Employee Break Room
Square Foot Area:	750 SF
Number of occupants:	50

Function:

Break room and lounge area for employees to eat, warm up, and take breaks during the workday. This area will also serve as the lift operators' pre-shift meeting location, and where lift operator jackets are distributed. Include closet space for lift operator jacket storage.

Adjacencies:

Central location close to administration offices and toilets.

Furniture, Fixtures, and Equipment:

Tables and chairs for 50 people, comfortable lounge seating, countertop with upper and lower cabinets, two microwaves, one large refrigerator, two vending machines, coffee machine, dishwasher, two compartment sink, two monitors, 140 half-height lockers, time clock, four bulletin boards located near the entry for posting of notices, OSHA and Department of Labor informational posters, and job openings.

Architectural Finishes:

Floor:	Carpet tile at seating	Specialties:	Lockers, cork board
	Ceramic tile at sink area		and white board
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Use existing furniture

Plumbing and HVAC Requirements:

Hot and cold water lines, sewer line, floor drain, and climate controlled by VRF system.

Electrical Requirements:

12 duplex receptacles, USB charging and dedicated circuit for appliances.

Technology Requirements:

Two CAT6 duplex data receptacles and security system.

Room Layout Diagram:



Department:	Administration
Room Name:	Work Room
Square Foot Area:	192 SF
Number of Occupants:	1

Function:

Work area for general office tasks, copying, mail distribution, and office supply storage.

Adjacencies:

Administration offices, conference room, and employee break room.

Furniture, Fixtures, and Equipment:

Upper and lower casework with countertops, office machines, mailboxes, and coffee machine.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	Window coverings
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED		

Plumbing and HVAC Requirements:

Cold water line for coffee machine, and climate controlled by VRF system.

Electrical Requirements:

10 duplex receptacles, and dedicated circuit for coffee machine.

Technology Requirements:

Four CAT6 duplex data receptacles.

Room Layout Diagram:

Department:	Administration
Room Name:	Active File Storage
Square Foot Area:	64 SF
Number of Occupants:	1

Function:

Area for active financial records.

Adjacencies:

Finance director's office.

Furniture, Fixtures, and Equipment: Secure file cabinets.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	None
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Uniquely keyed lock

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: One duplex receptacle.

Technology Requirements:

One CAT6 duplex data receptacles, security system.

Room Layout Diagram:



Department:	Administration
Room Name:	Cold File Storage
Square Foot Area:	384 SF
Number of Occupants:	1

Function:

Storage area for cold financial records, historical documents, board meeting minutes, pictures, miscellaneous long term storage, and building plans.

Adjacencies:

Administration offices.

Furniture, Fixtures, and Equipment: Shelving for storage box system.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	None
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Uniquely keyed lock

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: One duplex receptacle.

Technology Requirements:

One CAT6 duplex data receptacle, security system.

Room Layout Diagram:
Department:	Facilities		
Room Name:	Custodial Closets	Quantity:	Four
Square Foot Area:	48 SF		
Number of Occupants:	None		

Function:

Custodial area for storing mop bucket, mop heads, brooms, and cleaning supplies.

Adjacencies:

Four closets strategically placed throughout the building.

Furniture, Fixtures, and Equipment:

Shelving, mop and broom rack, and mop sink.

Architectural Finishes:

Floor:	Sealed Concrete	Specialties:	
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	

Plumbing and HVAC Requirements:

Hot and cold water lines, sewer line, floor drain, and climate controlled by VRF system.

Electrical Requirements:

Two duplex receptacles.

Technology Requirements: None.

Room Layout Diagrams:



Department:	Facilities
Room Name:	Custodial Storage
Square Foot Area:	288 SF
Number of occupants:	None

Function:

General bulk storage for custodial equipment and supplies.

Adjacencies:

Receiving.

Furniture, Fixtures, and Equipment: Shelving.

Architectural Finishes:

Floor:	Sealed concrete
Walls:	FRP paneling
Ceiling	Suspended acoustical panels
Lighting:	24 x 24 LED

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: Two duplex receptacles

Technology Requirements: None.

Room Layout Diagram:

Adjacency Layout Diagram: Refer to Appendix D

None

Vinyl

Specialties:

Ceiling Height: 8 foot

Wall Base:



Department:	Facilities		
Room Name:	IT Closets	Quantity:	Two
Square Foot Area:	48 SF		
Number of Occupants:	None		

Function:

IT closet space for server equipment, AV equipment, and data cable distribution.

Adjacencies:

Two closets strategically located throughout the building.

Furniture, Fixtures, and Equipment:

Server equipment, data rack, and uninterrupted power supply.

Architectural Finishes:

Floor:	Sealed concrete	Specialties:	None
Walls:	Painted GWB over plywood	Wall Base:	Vinyl
Ceiling:	Open	Ceiling Height:	8 foot
Lighting:	Linear LED	Comments:	Static electricity resistance

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: Two duplex receptacles.

Technology Requirements: None.

Room Layout Diagram:



Department:	Facilities
Room Name:	Tool Room
Square Foot Area:	720 SF
Number of Occupants:	3

Function:

Tool and workshop area for maintaining building equipment. Include area for 100 SF office.

Adjacencies:

Central plant and loading zone.

Furniture, Fixtures, and Equipment:

4 x 8 island style work bench, 3 x 12 work bench, shelving, air compressor, tool cabinet, office desk and chair, shelving, file cabinet, computer and monitor, and combination printer/copier/scanner.

Architectural Finishes:

Floor:	Sealed concrete	Specialties:	None
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Adjacent to exterior exit

Plumbing and HVAC Requirements:

Climate controlled by VRF system, floor drains.

Electrical Requirements:

10 120v duplex receptacles and two 240v receptacles.

Technology Requirements:

One CAT6 duplex data receptacle.

Room Layout Diagram:



Department:	Facilities		
Room Name:	Public Toilet Rooms	Quantity:	10
Square Foot Area:	128 SF		
Number of Occupants:	None		

Function:

Public toilet and rest room area.

Adjacencies:

Five public toilet room pairs equally distributed throughout the building.

Furniture, Fixtures, and Equipment:

Toilet, urinal (as required), lavatory, and toilet room accessories.

Architectural Finishes:

Floor:	Ceramic tile	Specialties:	Toilet partitions
Walls:	Ceramic tile	Wall Base:	Ceramic tile
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Mold resistant finishes

Plumbing and HVAC Requirements:

Hot and cold water lines, sewer line, floor drain, and climate controlled by VRF system.

Electrical Requirements: None.

Technology Requirements: None.

Room Layout Diagram:



Department:	Facilities
Room Name:	Central Plant
Square Foot Area:	1,152 SF
Number of occupants:	None

Function:

Area for buildings cooling and heating systems and primary electrical room.

Adjacencies:

Centralized location, large exposure to exterior walls on either side for ventilation of VRF condensers.

Furniture, Fixtures, and Equipment:

Multiple VRF condensers, natural gas boilers, unit heaters, water heaters, pumps, piping, air louvers, and central controls office.

Specialties:

Wall Base:

Ceiling Height: 10 foot

Architectural Finishes:

Floor:Sealed concreteWalls:Painted concrete masonry

units

Ceiling Open Lighting: Linear LED

Plumbing and HVAC Requirements:

Hot and cold water lines and floor drain.

Electrical Requirements: 480V 3-phase power.

Technology Requirements:

One CAT6 duplex data receptacle.

Room Layout Diagram:

Adjacency Layout Diagram: Refer to Appendix D.

None

None



Department:	Food and Beverage
Room Name:	Chef's Office
Square Foot Area:	100 SF
Number of Occupants:	3

Function:

Office with meeting space for up to three people with visual connection to production kitchen.

Adjacencies:

Loading zone, receiving and storage, and production kitchen.

Furniture, Fixtures, and Equipment:

Work station and office chair, meeting table and two chairs, all in one printer/copier/scanner, and computer with monitor.

Architectural Finishes:

Floor:Ceramic tileWalls:Painted gypsum wall boardCeiling:Suspended acoustical panelsLighting:24 x 24 LED

Specialties:Window coveringsWall Base:VinylCeiling Height:8 footComments:Visual connection to kitchen

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: Six duplex receptacles.

Technology Requirements:

Two CAT6 duplex data receptacles and connection to PA system.

Room Layout Diagram:



Department:	Food and Beverage		
Room Name:	Event Suite	Quantity:	Two
Square Foot Area:	400 SF		
Number of Occupants:	15		

Function:

Preparation area for wedding parties during summer months. Daycare or brown bag area during ski season.

Adjacencies:

Private toilet room with direct access to outdoor event area.

Furniture, Fixtures, and Equipment:

Lounge seating, four full length mirrors, and side tables.

Architectural Finishes:

Floor:Carpet tileWalls:Wood/ Painted GWBCeiling:Suspended acoustical panelsLighting:Decorative LED

Specialties:Window coveringsWall Base:VinylCeiling Height:8 footComments:Dimmable fixtures

Plumbing and HVAC Requirements:

Climate controlled by VRF system.

Electrical Requirements:

Five duplex receptacles and USB charging receptacles.

Technology Requirements:

One CAT6 duplex data receptacles, speakers, and connected to music system

Room Layout Diagram:



Department: Room Name: Square Foot Area Number of Occup	ı: pants:	Food and Beverage Event Suite Private Toile 60 SF None	et Quantit	y: Two
Function: Private, a	ccessible, unis	ex toilet room.		
Adjacencies: Event sui	tes.			
Furniture, Fixture Toilet, an	s, and Equipme d counter mou	ent: nted lavatory.		
Architectural Finis Floor: Walls: Ceiling: Lighting:	shes: Ceramic tile Ceramic tile Suspended ad Decorative LE	coustical panels D	Specialties: Wall Base: Ceiling Height: Comments:	Coved 8 foot Dimmable fixtures
Plumbing and HV Hot and d	AC Requireme	nts: s, sewer line, floor drain, a	and climate contr	olled by VRF system.
Electrical Require Code rec	ments: Juired receptac	les.		

Technology Requirements:

Room Layout Diagram:



Food and Beverage
Receiving
100 SF
None

Function:

Staging area for vendor deliveries and returns.

Adjacencies:

Loading zone, vertical circulation, and production kitchen.

Furniture, Fixtures, and Equipment:

Bulk CO² tank with fill box, oil collection recycling tank, receiving carts, tilt truck, shortening disposal unit, and recycling containers.

Architectural Finishes:

Floor:Sealed concreteWalls:Painted concreteCeiling:Painted suspended gridLighting:24 x 24 LED

Specialties:NoneWall Base:NoneCeiling Height:8 foot

Plumbing and HVAC Requirements:

Connections to foodservice equipment and climate controlled by VRF system.

Electrical Requirements: Connections to foodservice equipment.

Technology Requirements: Phone with direct line to kitchen.

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	General Dry Storage
Square Foot Area:	300 SF
Number of Occupants:	None

Function:

Storage area for bulk dry and paper goods to support all food service functions.

Adjacencies:

Receiving, vertical circulation, and production kitchen.

Furniture, Fixtures, and Equipment:

Dry storage shelving, utility carts, and dunnage racks.

Architectural Finishes:

Floor:Quarry tileWalls:Painted gypsum wall boardCeiling:Suspended acoustical panelsLighting:24 x 24 LED

Specialties:NoneWall Base:Coved tileCeiling Height:8 footComments:Washable ceiling tile

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

Technology Requirements:

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Secured Dry Storage
Square Foot Area:	120 SF
Number of Occupants:	None

Function:

Secured storage area for alcohol.

Adjacencies:

Receiving, vertical circulation, and production kitchen.

Furniture, Fixtures, and Equipment:

Wine and liquor storage shelving and dunnage racks.

Architectural Finishes:

Floor:Quarry tileWalls:Painted gypsum wallboardCeiling:Suspended acoustical panelsLighting:24 x 24 LED

Specialties:NoneWall Base:Coved tileCeiling Height:8 footComments:Washable ceiling tile

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

Technology Requirements:

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Catering Storage
Square Foot Area:	150 SF
Number of Occupants:	None

Function:

Support space for banquet equipment

Adjacencies:

Receiving, vertical circulation, and production kitchen.

Furniture, Fixtures, and Equipment:

Storage shelving, utility carts, mobile dish dollies, and dish storage shelving.

Architectural Finishes:

Floor:Quarry tileWalls:Painted gypsum wallboardCeiling:Suspended acoustical panelsLighting:24 x 24 LED

Specialties:NoneWall Base:Coved tileCeiling Height:8 footComments:Washable ceiling tile

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

Technology Requirements:

Room Layout Diagram:

Department:	Food and Beverage
Room Name:	Soda Storage
Square Foot Area:	80 SF
Number of Occupants:	None

Function:

Storage area for bag-in box soda system.

Adjacencies:

Receiving, vertical circulation, production kitchen, and bulk CO2 system.

Furniture, Fixtures, and Equipment:

Soda system, water filtration system, soda bag-in box racks, and dunnage racks.

Architectural Finishes:

Floor:Quarry tileWalls:Painted gypsum wallboardCeiling:Suspended acoustical panelsLighting:24 x 24 LED

Specialties:NoneWall Base:Coved tileCeiling Height:8 footComments:Washable ceiling tile

Plumbing and HVAC Requirements:

Conduit runs to each foodservice location requiring soda, connections to foodservice equipment, floor drain, and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Room Layout Diagram:



Department:Food and BeverageRoom Name:Walk In Keg and Wine RefrigeratorSquare Foot Area:120 SFNumber of Occupants:None

Function:

Walk in cold storage area for beer and wine.

Adjacencies:

Receiving, vertical circulation, and production kitchen.

Furniture, Fixtures, and Equipment:

Walk in panels, refrigeration system, fiberglass reinforced plastic mobile shelving, aluminum dunnage racks, and remote glycol cooled beer system.

Architectural Finishes:

Floor:	Quarry tile over insulated floor
Walls:	Panelized wall and ceiling system
	stainless steel where exposed
Lighting:	Integral LED lighting

Specialties:NoneWall Base:Coved stainless steelCeiling Height:8 footComments:Fully insulated system

Plumbing and HVAC Requirements:

Connections to foodservice equipment, sprinkler system, and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Connections for remote temperature monitoring.

Room Layout Diagram:

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Department:	Food and Beverage		
Room Name:	Walk In Freezer	Quantity:	Two
Square Foot Area:	120 SF		
Number of Occupants:	None		

Function:

Walk in cold storage to support main production kitchen, banquet functions, restaurant, retail café serving area, and remote retail operations.

Adjacencies:

Receiving, vertical circulation, and production kitchen.

Furniture, Fixtures, and Equipment:

Walk in panels, refrigeration system, fiberglass reinforced plastic mobile shelving, and aluminum dunnage racks.

Architectural Finishes:

Floor:	Quarry tile over insulated floor	Specialties:	None
Walls:	Panelized wall and ceiling system	Wall Base:	Coved stainless steel
	stainless steel where exposed	Ceiling Height:	8 foot
Lighting:	Integral LED lighting	Comments:	Fully insulated system

Plumbing and HVAC Requirements:

Connections to foodservice equipment, sprinkler system, and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Connections for remote temperature monitoring of walk in.

Room Layout Diagram:

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Department:	Food and Beverage
Room Name:	Cart Wash
Square Foot Area:	70 SF
Number of Occupants:	None

Function:

Cart Washing space to serve all foodservice areas and functions.

Adjacencies:

Receiving, vertical circulation, storage areas, and production kitchen.

Furniture, Fixtures, and Equipment:

Utility shelf with mop hanger, detergent dispensing system, floor trough, hose reel, and chemical supply shelving

Architectural Finishes:

Floor:	Quarry Tile
Walls:	Combination SS and FRP panels
Ceiling:	Suspended acoustical panels
Lighting:	24 x 24 LED

Specialties:NoneWall Base:CovedCeiling Height:8 footComments:Washable ceiling tile

Plumbing and HVAC Requirements:

Connections to foodservice equipment, hose bibb, floor drain, mop sink with bucket faucet, increase ventilation, and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Cold Food Production
Square Foot Area:	350 SF
Number of Occupants:	2

Function:

Cleaning and cutting of fresh produce and production of salads to support restaurant, retail café, and banquet functions.

Adjacencies:

Vertical circulation and food service support spaces.

Furniture, Fixtures, and Equipment: Refer to Appendix E.

Architectural Finishes:

Floor:	Quarry Tile	Specialties:	SS panel at exhaust hoods
Walls:	Ceramic tile or FRP	Wall Base:	Coved
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Washable ceiling tile

Plumbing and HVAC Requirements:

Connections to foodservice equipment, exhaust fan and rated grease duct, hood fire protection system, and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Data lines to POS system and remote service printers.

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Hot Food Production
Square Foot Area:	650 SF
Number of Occupants:	4

Function:

Main production kitchen to support restaurant, retail café, and banquet functions.

Adjacencies:

Vertical circulation, cold food production, and food service support spaces.

Furniture, Fixtures, and Equipment: Refer to Appendix E.

Architectural Finishes:

Floor:	Quarry Tile	Specialties:	SS panel at exhaust hoods
Walls:	Ceramic tile or FRP	Wall Base:	Coved
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Washable ceiling tile

Plumbing and HVAC Requirements:

Connections to foodservice equipment, exhaust fan and rated grease duct, hood fire protection system, and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Data lines to POS system and remote service printers.

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Dry Storage Room
Square Foot Area:	120 SF
Number of Occupants:	None

Function:

Storage area to support the daily food production needs of the restaurant, retail café, and banquet functions.

Adjacencies:

Vertical circulation, cold food production, and food service support spaces.

Furniture, Fixtures, and Equipment:

Dry storage shelving and dunnage racks.

Architectural Finishes:

Floor:	Quarry Tile	Specialties:	SS panel at exhaust hoods
Walls:	Ceramic tile or FRP	Wall Base:	Coved
Ceiling:	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Washable ceiling tile

Plumbing and HVAC Requirements:

Connections to foodservice equipment and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Room Layout Diagram: Adjacency Layout Diagram: Refer to Appendix D.



Department:	Food and Beverage
Room Name:	Walk In Refrigerator
Square Foot Area:	120 SF
Number of Occupants:	None

Function:

Walk in cold storage area.

Adjacencies:

Vertical circulation, hot and cold food production areas, and food service support spaces.

Furniture, Fixtures, and Equipment:

Walk in panels, refrigeration system, fiberglass reinforced plastic mobile shelving, and aluminum dunnage racks.

Architectural Finishes:

Floor:	Quarry tile over insulated floor
Walls:	Panelized wall and ceiling system
	stainless steel where exposed
Lighting:	Integral LED lighting

Specialties:NoneWall Base:Coved stainless steelCeiling Height:8 footComments:Fully insulated system

Plumbing and HVAC Requirements:

Connections to foodservice equipment, sprinkler system, and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Connections for remote temperature monitoring.

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Warewashing
Square Foot Area:	350 SF
Number of Occupants:	3

Function:

Warewashing and pot washing area to serve production kitchen, restaurant, retail café, and banquet functions.

Adjacencies:

Vertical circulation, hot and cold food production areas, and food service support spaces.

Furniture, Fixtures, and Equipment:

Sort table with soak sink, two hand sinks, pot and pan agitator sink, mini-waste express disposer system, spray rinses, eye/face wash station, hose reel, soiled dish table, conveyor type dish machine, floor trough, condensate hood, mobile rack dollies, mobile dish dollies, mobile trash bins, glass rack carts, mobile soak basin, pan storage shelving, and mobile compost bins.

Architectural Finishes:

Floor:	Quarry tile
Walls:	Ceramic tile or FRP
Ceiling:	Suspended acoustical panels
Lighting:	24 x 24 LED

Specialties: Wall Base: Coved Ceiling Height: 8 foot Comments: Washable ceiling tile

Plumbing and HVAC Requirements:

Connections to foodservice equipment, exhaust at load and unload ends of dish machine, plus additional exhaust to accommodate dish machine latent and sensible heat output, and climate controlled by VRF system.

Electrical Requirements:

Connections to service foodservice equipment.

Technology Requirements:

Room Layout Diagram:

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Department:	Food and Beverage
Room Name:	Catering Support
Square Foot Area:	90 SF
Number of Occupants:	None

Function:

Support area for beverage production and catering cart staging.

Adjacencies:

Vertical circulation, production kitchen, restaurant dining room, dish room, and walk in refrigerator.

Furniture, Fixtures, and Equipment:

NSF Stainless steel work counter with sink, ice maker and bin with transport cart, water filtration system, bumper guard, floor trough, glass filler faucet, beverage equipment, catering storage shelving, utility carts, reach in refrigerator, mobile racks, and trash bin.

Architectural Finishes:

Floor:Quarry tileWalls:FRP or ceramic tileCeiling:Suspended acoustical panelsLighting:24 x 24 LED

Specialties: Wall Base: Coved Ceiling Height: 8 foot Comments:

Plumbing and HVAC Requirements:

Connections to foodservice equipment and climate controlled by VRF system.

Electrical Requirements: Connections to foodservice equipment.

Technology Requirements: Data lines to potential computer and printer

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Mop Closet
Square Foot Area:	60 SF
Number of Occupants:	None

Function:

Mop closet to serve production kitchen and dish room.

Adjacencies:

Vertical circulation, production kitchen, dish room, and food service support areas.

Furniture, Fixtures, and Equipment:

Utility shelf with mop hanger, detergent dispensing system, and chemical supply shelving.

Architectural Finishes:

Floor: Quarry tile Walls: Ceramic tile or FRP Ceiling: Suspended acoustical panel Ceiling Height: 8 foot Lighting: 24 x 24 LED

Specialties: Wall Base: Coved Comments:

Plumbing and HVAC Requirements:

Connections to foodservice equipment, hose bibb, floor drain, mop sink with bucket faucet, and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Beverage and Server Station
Square Foot Area:	120 SF
Number of Occupants:	4

Function:

Support area for restaurant.

Adjacencies:

Vertical circulation, restaurant, lounge, and back of house.

Furniture, Fixtures, and Equipment:

Beverage counters, wall shelves, water dispensers, ice dispensers with soda heads, ice cube maker, soda system carbonators, juice dispensers, air pot coffee brewers, glass dispensers, cup dispensers, and under counter refrigerators.

Architectural Finishes:

Floor:Quarry tile/ceramic tileWalls:Painted gypsum wall boardCeiling:Suspended acoustical panelsLighting:24 x 24 LED

Specialties: Wall Base: Coved Ceiling Height: 8 foot Comments:

Plumbing and HVAC Requirements:

Connections to foodservice equipment and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Data lines to POS system and remote service printers.

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Maître d' Station
Square Foot Area:	55 SF
Number of Occupants:	2

Function:

Welcoming area at main entrance to restaurant.

Adjacencies:

Vertical circulation, restaurant, lounge, bar, back of house, and public toilet rooms.

Furniture, Fixtures, and Equipment:

Maître d' millwork stand, POS system, and refrigerated wine library.

Architectural Finishes:

Floor:Carpet tileWalls:Wood/painted GWBCeiling:OpenLighting:Dimmable LED

Specialties: Wall Base: Coved Ceiling Height: Varies Comments:

Plumbing and HVAC Requirements:

Connections to foodservice equipment and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Data lines to POS System and remote service printers

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Dining Room Seating
Square Foot Area:	2250 SF
Number of Occupants:	150

Function:

Restaurant dining room and banquet space

Adjacencies:

Vertical circulation, maître d' station, lounge, bar, back of house, outdoor seating, and public toilet rooms.

Furniture, Fixtures, and Equipment: Dining room tables, chairs, and lounge seating.

Architectural Finishes:

Floor:Carpet tileWalls:Wood/painted GWBCeiling:OpenLighting:Dimmable LED

Specialties:Window coveringsWall Base:CovedCeiling Height:VariesComments:Views to hill, lake, and river

Plumbing and HVAC Requirements:

Connections to foodservice equipment and climate controlled by VRF system.

Electrical Requirements:

Code required receptacles and connections to foodservice equipment.

Technology Requirements:

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Fireside Bar with Seating
Square Foot Area:	450 SF
Number of Occupants:	15

Function:

Bar area with flexible seating and dining capabilities.

Adjacencies:

Vertical circulation, maître d' station, restaurant, lounge, back of house, outdoor seating, and public toilet rooms.

Furniture, Fixtures, and Equipment:

Bar top, bar stools, stainless steel drink rail, hand sinks, dump sinks, two corner drain boards, two ice bins with insulated bottle wells, two soda gun tubing chases, two lineal drain boards, two speed rails, POS cabinet, glass washer, two back bar refrigerators, storage cabinet, beer tower with drainer and glass rinser, and trash bins

Architectural Finishes:

Floor:Ceramic tileWalls:Wood/CT/painted GWBCeiling:OpenLighting:Dimmable LED

Specialties:Window coveringsWall Base:CovedCeiling Height:VariesComments:Views to hill, lake, and river

Plumbing and HVAC Requirements:

Connections to foodservice equipment and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment and USB charging receptacles.

Technology Requirements:

Data lines to POS System and remote service printers.

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Back of House and Server Station
Square Foot Area:	150 SF
Number of Occupants:	2

Function:

Kitchen area for bar and lounge.

Adjacencies:

Vertical circulation, restaurant, bar, lounge, and outdoor seating.

Furniture, Fixtures, and Equipment:

Work counter with sink, hand sink, ice maker and bin, storage shelving, and under counter refrigerator.

Architectural Finishes:

Floor:Quarry tile/CTWalls:FRP/CTCeiling:Suspended acoustic panelsLighting:24 x 24 LED

Specialties: Wall Base: Coved Ceiling Height: 8 foot Comments:

Plumbing and HVAC Requirements:

Connections to foodservice equipment and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment and USB charging receptacles.

Technology Requirements:

Data lines to POS system and remote service printers.

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Fireside Cocktail Lounge Seating
Square Foot Area:	750 SF
Number of Occupants:	50

Function:

Dining and lounge space with flexible seating arrangements.

Adjacencies:

Vertical circulation, restaurant, bar, public toilet rooms, and outdoor seating.

Furniture, Fixtures, and Equipment:

Tables and chairs and portable hostess station.

Architectural Finishes:

Floor:Carpet tileWalls:Wood/painted GWBCeiling:OpenLighting:Dimmable LED

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

10 duplex receptacles and USB charging receptacles.

Technology Requirements:

Five CAT6 duplex data receptacles, speakers, microphone, connected to music and PA systems.

Room Layout Diagram:

Adjacency Layout Diagram: Refer to Appendix D.



Specialties:Window coveringsWall Base:VinylCeiling Height:VariesComments:Views to hill, lake, and river

Department:	
Room Name:	Retail Café Serving Area
Square Foot Area:	2000 SF
Number of Occupants:	10

Function:

Retail foodservice which provides a variety of fresh menu options to guests.

Adjacencies:

Vertical circulation, retail café seating area, public toilet rooms, and outdoor seating.

Furniture, Fixtures, and Equipment: Refer to Appendix E.

Architectural Finishes:

Floor:Quarry tile/ CTWalls:Stainless Steel/CTCeiling:Suspended acoustical panelsLighting:Decorative LED

Specialties: Wall Base: Vinyl Ceiling Height: 8 foot Comments: Washable ceiling tile

Plumbing and HVAC Requirements:

Connections to foodservice equipment, exhaust fan and rated grease duct, hood fire protection system, and climate controlled by VRF system.

Electrical Requirements:

Connections to foodservice equipment.

Technology Requirements:

Data lines to POS system and remote service printers.

Room Layout Diagram:



Department:	Food and Beverage
Room Name:	Retail Café Seating Area
Square Foot Area:	3,000 SF
Number of Occupants:	200

Function:

Dedicated seating area for retail café foodservice operation.

Adjacencies:

Retail café serving area, public toilet rooms, and outdoor seating.

Furniture, Fixtures, and Equipment:

Tables, chairs, booths, and soft seating.

Architectural Finishes:

Floor:Carpet tileWalls:Wood/painted GWBCeiling:OpenLighting:Dimmable LED

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

Code required duplex receptacles and USB charging receptacles.

Technology Requirements:

CAT6 duplex data receptacles, speakers, and connected to music system.

Specialties:

Wall Base:

Comments:

Ceiling Height: Varies

Room Layout Diagram:

Adjacency Layout Diagram: Refer to Appendix D.

Window coverings

Views to hill, lake, and river

Vinyl



Department:	Food and Beverage
Room Name:	Banquet Room
Square Foot Area:	5,250 SF
Number of Occupants:	350

Function:

An open, high ceiling space for banquets or gathering space for large groups.

Adjacencies:

Primary horizontal circulation, banquet support space, linen and table storage.

Furniture, Fixtures, and Equipment: Refer to Appendix E.

Architectural Finishes:

Floor:Carpet tileWalls:Wood/painted GWBCeiling:OpenLighting:Dimmable LED

Specialties:Window coveringsWall Base:VinylCeiling Height:VariesComments:Views to hill, lake, and river

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

Code required duplex receptacles and USB charging receptacles.

Technology Requirements:

CAT6 duplex data receptacles, speakers, and connected to music system.

Room Layout Diagram:



Department:	Food and Service
Room Name:	Banquet Support Space
Square Foot Area:	300 SF
Number of Occupants:	2

Function:

Support area for banquet room. Include staging space, beverage production, and area for plating.

Adjacencies:

Banquet room, table and linen storage.

Furniture, Fixtures, and Equipment:

Stainless steel beverage counters with sinks, ice cube maker and bin, water filtration system, bumper guard, floor trough, glass filler faucet, large urn style coffee brewer, beverage equipment, catering storage shelving, and utility carts.

Architectural Finishes:

Floor:Quarry tileWalls:FRPCeiling:Suspended acoustical panelsLighting:24 x24 LED

Specialties:Window coveringsWall Base:CovedCeiling Height:8 footComments:Washable ceiling tile

Plumbing and HVAC Requirements:

Connections to foodservice equipment, floor drain, and climate controlled by VRF system.

Electrical Requirements:

Connections as required to service Foodservice Equipment

Technology Requirements:

Data lines for future computer and printer.

Room Layout Diagram:

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Department:	Food and Beverage
Room Name:	Linen Storage
Square Foot Area:	80
Number of Occupants:	None

Function:

Linen storage area for banquet room

Adjacencies:

Banquet room, banquet support space, and table storage.

Furniture, Fixtures, and Equipment: Linen storage shelving, and transport carts.

Architectural Finishes:

Floor:Quarry tileWalls:FRP/ Painted GWBCeiling:Suspended acoustical panelsLighting:24 x24 LED

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: Code required receptacles.

Technology Requirements:

Room Layout Diagram:

Adjacency Layout Diagram: Refer to Appendix D.

Washable ceiling tile

Coved

Specialties:

Wall Base:

Comments:

Ceiling Height: 8 foot



Department:	Food and Beverage
Room Name:	Table Storage
Square Foot Area:	250
Number of Occupants:	None

Function:

Table storage area for banquet room

Adjacencies:

Banquet room, banquet support space, and linen storage.

Furniture, Fixtures, and Equipment: Table and chair transport carts.

Architectural Finishes:

Floor:Carpet tileWalls:Painted gypsum wall boardCeiling:Suspended acoustical panelsLighting:24 x24 LED

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: Code required receptacles.

Technology Requirements:

Room Layout Diagram:

Adjacency Layout Diagram: Refer to Appendix D.



Specialties: Wall Base: Vinyl Ceiling Height: 8 foot Comments:
Department:	Guest Services
Room Name:	Guest Experience Desk
Square Foot Area:	300 SF
Number of Occupants:	2

Function:

Base of operations for customer service ambassadors to assist guests.

Adjacencies:

Centralized location near primary entrance, ticket sales counter, and public toilets.

Furniture, Fixtures, and Equipment:

Accessible height counter with base cabinets, two office chairs, two computers, and three monitors.

Specialties:

Wall Base:

Ceiling Height: 9 foot

Architectural Finishes:

Floor:Carpet tileWalls:Painted gypsum wall boardCeilingSuspended acoustical panelsLighting:24 x 24 LED

Plumbing and HVAC Requirements: Climate controlled by VRF system.

- Electrical Requirements: Six duplex receptacles.
- Technology Requirements: Two CAT6 duplex data receptacles.

Room Layout Diagram

Adjacency Layout Diagram: Refer to Appendix D

Window coverings

Vinyl

Department:	Guest Services
Room Name:	Guest Services Office
Square Foot Area:	300 SF
Number of Occupants:	8

Function:

Home base for ambassadors, parking lot attendants, and ticket checkers.

Adjacencies:

Primary entrance, guest experience desk, tickets sales counter, and administration.

Furniture, Fixtures, and Equipment:

Work surfaces with base cabinets and upper shelving, eight office chairs, and four computers stations.

Architectural Finishes:

Floor:Carpet tileWalls:Painted gypsum wall boardCeilingSuspended acoustical panelsLighting:24 x 24 LED

Specialties:Window coveringsWall Base:VinylCeiling Height:8 foot

Plumbing and HVAC Requirements:

Climate controlled by VRF system.

Electrical Requirements:

Five duplex receptacles at each workstation minimum.

Technology Requirements:

Four CAT6 duplex data receptacles and each workstation.

Room Layout Diagram



Department:	Rental
Room Name:	Rental Area
Square Foot Area:	5,125 SF
Number of Occupants:	10

Function:

Area where rental equipment is stored, cleaned, dried out, and distributed. Area includes office, workroom, and customer service space. Include area for guest paperwork and queuing. Capacity: 1,500 skis, 300 snowboards, and 1,100 boots.

Adjacencies:

Direct access to exterior exit, stand-alone ticket counter, rental storage room, and tune area.

Furniture, Fixtures, and Equipment:

Customer service counter, ski and boot storage systems, boot-drying systems, benches, work bench in tune area, stone grinder, and waxing benches.

Architectural Finishes:

Floor:	Rubber	Specialties:	Window coverings
Walls:	Painted gypsum wall board	Wall Base:	Rubber
Ceiling	Suspended acoustical panels	Ceiling Height:	10 foot
Lighting:	24 x 24 LED	Comments:	

Plumbing and HVAC Requirements:

Sewer line, floor drain, and climate controlled by VRF system.

Electrical Requirements:

20 duplex receptacles.

Technology Requirements:

Six CAT6 duplex data receptacles.

Room Layout Diagram:

Department:	Rental
Room Name:	Rental Storage
Square Foot Area:	200 SF
Number of Occupants:	None

Function:

Storage area for rental supplies and equipment.

Adjacencies:

Rental area.

Furniture, Fixtures, and Equipment: Shelves and high density storage system.

Architectural Finishes:

Floor:	Rubber	Specialties:	
Walls:	Painted gypsum wall board	Wall Base:	Rubber
Ceiling	Suspended acoustical panels	Ceiling Height:	10 foot
Lighting:	24 x 24 LED	Comments:	
Lighting:	24 x 24 LED	Comments:	

Plumbing and HVAC Requirements:

Sewer line, floor drain, and climate controlled by VRF system.

Electrical Requirements:

Two duplex receptacles.

Technology Requirements:

One CAT6 duplex data receptacle.

Room Layout Diagram:



Department:	Rental
Room Name:	Public Lockers
Square Foot Area:	1,200 SF
Number of Occupants:	75

Function:

Area for public to rent lockers for personal gear storage.

Adjacencies:

Primary entrance, horizontal circulation, and public toilet rooms

Furniture, Fixtures, and Equipment:

Benches, 150 full height lockers at 18 inches wide by 18 inches deep by 84 inches high.

Architectural Finishes:

Floor:	Rubber	Specialties:	
Walls:	Painted gypsum wall board	Wall Base:	Rubber
Ceiling	Suspended acoustical panels	Ceiling Height:	9 foot
Lighting:	24 x 24 LED	Comments:	

Plumbing and HVAC Requirements:

Sewer line, floor drain, and climate controlled by VRF system.

Electrical Requirements:

20 duplex receptacles.

Technology Requirements:

Room Layout Diagram:



Department:	Retail
Room Name:	Season Pass and Ticket Sales Counte
Square Foot Area:	1,000 SF
Number of Occupants:	6

Function:

Printing and selling tickets and season passes. Includes area for guest queueing.

Adjacencies:

Primary entrance, guest services, retail shop, rental, and public toilet rooms.

Furniture, Fixtures, and Equipment:

Accessible height counter. Computer with monitor and keyboard, cash drawer, ticket printer, receipt printer, credit card pin pad. Combination printer/copier/scanner, phone, and four season pass ticket printers. Storage cabinets for supplies. Each ticket sales area shall have space for its own season pass printer.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	Window coverings
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	10 foot
Lighting:	24 x 24 LED	Comments:	High traffic interior finishes

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

12 duplex receptacles.

Technology Requirements:

10 CAT6 duplex data receptacles.

Room Layout Diagram:

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Department:	Retail
Room Name:	Retail Shop
Square Foot Area:	640 SF
Number of Occupants:	3

Function:

Selling SMRA merchandise and storage space for merchandise.

Adjacencies:

Primary entrance, ticket sales counter, and guest services.

Furniture, Fixtures, and Equipment:

Accessible height counter, point of sale equipment, and casework for merchandise display.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	Window coverings
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements: 12 duplex receptacles.

Technology Requirements: Two CAT6 duplex data receptacles.

Room Layout Diagram:



Department:	Ski Patrol
Room Name:	Triage and First Aid
Square Foot Area:	600 SF
Number of Occupants:	10

Function:

Treatment area for injured guests. The room shall accommodate two bench style beds, at six feet apart, two treatment chairs, and space for family members.

Adjacencies:

Loading zone, direct access to an exterior exit, and ski patrol locker room.

Furniture, Fixtures, and Equipment:

Two bench style beds, two treatment chairs, curtain and track, oxygen tank rack, eye bolt in ceiling capable of supporting 500 pounds, counter space for computer, and medical storage cabinets

Architectural Finishes:

Floor:	Slip resistant VCT	Specialties:	Window coverings
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Medical grade finishes

Plumbing and HVAC Requirements:

Hot and cold water lines, sewer line, hand sink with single handle faucet, floor drain, and climate controlled by VRF system.

Electrical Requirements:

One duplex receptacle.

Technology Requirements:

One CAT6 duplex data receptacle and connection to security system.

Room Layout Diagram:



Department:	Ski Patrol
Room Name:	Locker Room
Square Foot Area:	1,000 SF
Number of Occupants:	20

Function:

Storage area for personal equipment, boots and skis for 120 patrollers. Include storage area for lift evacuation gear and toboggans.

Adjacencies:

Direct access to exterior exit and adjacent to triage and first aid.

Furniture, Fixtures, and Equipment:

Bench, shelving, racks for storing toboggans and related gear, and 120 lockers 18 inches wide by 18 inches deep by 84 inches high.

Architectural Finishes:

Floor:	Slip resistant VCT	Specialties:	Window coverings
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	Medical grade finishes

Plumbing and HVAC Requirements:

Sewer line, floor drain, and climate controlled by VRF system.

Electrical Requirements:

10 duplex receptacles.

Technology Requirements:

One CAT6 duplex data receptacle and connected to security system.

Room Layout Diagram:



Department:	Snow Sports
Room Name:	Front Counter and Guest Services
Square Foot Area:	900 SF
Number of Occupants:	3

Function:

Area where guests interacts with snow sports programming and staff, students and groups check in and pay for lessons. Instructors also check-in at this desk. Include two sales stations and a lesson check-in station.

Adjacencies:

Primary entrance, ticket counter, vertical circulation, rental area, snow sports office, public toilet rooms, and childcare area.

Furniture, Fixtures, and Equipment:

Service counter, each sales area shall include: computer, monitor, keyboard, cash drawer, credit card pin pad, ticket printer, and receipt printer. Include casework and counter for supply storage, all in one printer/copier/scanner, and telephone.

Architectural Finishes:

Rubber tile	S
Painted gypsum wall board	V
Suspended acoustical panels	C
24 x 24 LED	C
	Rubber tile Painted gypsum wall board Suspended acoustical panels 24 x 24 LED

Specialties:	
Wall Base:	Rubber
Ceiling Height:	10 foot
Comments:	High traffic interior finishes

Plumbing and HVAC Requirements:

Climate controlled by VRF system.

Electrical Requirements:

Six duplex receptacles.

Technology Requirements:

Two CAT6 duplex data receptacles.

Room Layout Diagram:



Department:	Snow Sports
Room Name:	Office
Square Foot Area:	325 SF
Number of Occupants:	3

Function:

Open office area for snow sports support staff Include space for three workstations.

Adjacencies:

Primary entrance, ticket counter, vertical circulation, rental area, snow sports counter, public toilet rooms, and program areas.

Furniture, Fixtures, and Equipment:

Three workstations with office chairs, lockable file cabinet, wardrobe, and linear shelving, three side chairs, shared access to all in one printer/copier/scanner, and computer and monitor at each workstation.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

Six duplex receptacles.

Technology Requirements:

Two CAT6 duplex data receptacles.

Room Layout Diagram:



Department:	Snow Sports
Room Name:	Instructors Room
Square Foot Area:	400 SF
Number of Occupants:	8

Function:

Locker area for instructors to secure personal items and rest between lessons. Storage area for employee uniforms.

Adjacencies:

Snow sports front counter and guest service desk, field trip program and after school program areas, and student lesson area.

Furniture, Fixtures, and Equipment:

Eight full height lockers at 18 inches wide by 18 inches deep by 72 inches high, locker benches, and two lounge chairs.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	Lockers and white board
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	

Plumbing and HVAC Requirements:

Sewer line, floor drain, and climate controlled by VRF system.

Electrical Requirements:

Six duplex receptacles and USB charging receptacles.

Technology Requirements:

One CAT6 duplex data receptacle.

Room Layout Diagram:



Department:	Snow Sports		
Room Name:	Child Care Room		
Square Foot Area:	400 SF	Dual Use:	See Event Suite A
Number of occupants:	10		

Function:

Supervised play area for children.

Adjacencies:

Snow sports front counter and guest service desk, field trip program and after school program areas, and student lesson area.

Furniture, Fixtures, and Equipment:

Architectural Finishes:

Floor:	Carpet tile	Specialties:	
Walls:	Painted gypsum wall board	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	8 foot
Lighting:	24 x 24 LED	Comments:	

Plumbing and HVAC Requirements: Climate controlled by VRF system.

Electrical Requirements:

Six duplex receptacles.

Technology Requirements:

One CAT6 duplex data receptacle.



Department:	Snow Sports		
Room Name:	Student Break Ro	oom and Lesson Area	l i i i i i i i i i i i i i i i i i i i
Square Foot Area:	5,200 SF	Dual Use:	See Banquet Room
Number of Occupants:	100		

Function:

Area to assemble and prepare students for lessons indoors, also serve as break area for students to warm up during and after lessons.

Adjacencies:

Primary entrance, vertical and horizontal circulation, rental, public toilet rooms, childcare, snow sports front counter and guest services desk, and instructors room.

Furniture, Fixtures, and Equipment:

Benches, tables, and chairs.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	Window coverings
Walls:	Wood/ Painted GWB	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	10 foot
Lighting:	Decorative LED	Comments:	Dimmable fixtures

Plumbing and HVAC Requirements:

Climate controlled by VRF system.

Electrical Requirements:

20 duplex receptacles and USB charging receptacles.

Technology Requirements:

Two CAT6 duplex data receptacles and WI-FI access.



Department:	Snow Sports			
Room Name:	Field Trip Progra	Field Trip Program and After School Program Room		
Square Foot Area:	5,200 SF	Dual Use:	See Banquet Room	
Number of occupants:	350			

Function:

Space to assemble and organize field trip and after school program groups.

Adjacencies:

Primary entrance, vertical and horizontal circulation, rental, public toilet rooms, childcare, snow sports front counter and guest services desk, and instructors room.

Furniture, Fixtures, and Equipment:

Benches, tables, and chairs.

Architectural Finishes:

Floor:	Carpet tile	Specialties:	Window coverings
Walls:	Wood/ Painted GWB	Wall Base:	Vinyl
Ceiling	Suspended acoustical panels	Ceiling Height:	10 foot
Lighting:	Decorative LED	Comments:	Dimmable fixtures

inyl foot immable fixtures

Plumbing and HVAC Requirements:

Climate controlled by VRF system.

Electrical Requirements:

20 duplex receptacles and USB charging receptacles.

Technology Requirements:

Two CAT6 duplex data receptacles and WI-FI access.



Appendix D





South Wing - Lower Level









North Wing - Mid Level











South Wing - Loft Level



This is the complete list of FFE requested by SMRA. The current budget is \$300,00 and cannot support the full request. During future design phases the team shall provide alternate solutions that reconcile the budget with the request.

Administration Offices

Item	Quantity	Cost	Total	Remarks
Desks	5	700	\$3,500	
File Cabinets	4	300	\$1,200	
Desk Chairs	5	300	\$1,500	
Computers	3	2200	\$6,600	
Printers				Use existing

Marketing Office

Item	Quantity	Cost	Total	Remarks
Desks	2	700	\$1,400	
Office Chairs	2	300	\$600	
Computer	1	2200	\$2,200	Laptop

Catering Conference Room

Item	Quantity	Cost	Total	Remarks
Projector	1	2000	\$2,000	
Web Camera	1	1000	\$1,000	
Speakers	2	500	\$1,000	
Video Conf. Sys.	1	4000	\$4,000	
Table	1	2000	\$2,000	Seats 16
Chairs	16	100	\$1,600	

Staff Break Room

Item	Quantity	Cost	Total	Remarks
Table				Use existing
Chairs				Use existing
Microwave				Use existing
Refrigerator	1	1500	\$1,500	

Facilities

Item	Quantity	Cost	Total	Remarks
Tool Shelving	2	1000	\$2,000	
Peg Board	5	200	\$1,000	
Supply Shelving	2	1000	\$2,000	

Receiving and Storage

Item	Quantity	Cost	Total	Remarks
Refrigerator	2			Walk-in (system)
Freezer	1			Walk-in (system)
Dunnage Racks	9			
Shelving	2			Dunnage
Shelving	10			For walk-ins
Shelving	30			Dry storage
Shelving	8			Dish storage
Shelving	5			Beer kegs
Shelving	2			Wine/liquor
Utility Cart	1			
Water Filtration	1			
Recycling Bins	2			
Chem. Dispensing	1			Owner's vendor

Hose Reel	1		
		\$104,300	

Cold Food

Item	Quantity	Cost	Total	Remarks
Work Counter	1			
Food Processor	1			
Shelving	5			Pan storage
Hand Sinks	2			
Rack Dolly	2			
Work Counter	1			With sinks
Wall Shelf	1			
			\$27	,500

Item	Quantity	Cost	Total	Remarks
SS Wall Panels	2			
Convection Oven	2			2 section
Kettle	1			25 gallon
Steamer	1			Boilerless, 2 sec.
Bumper Guard	1			
Grill with Stand	1			
Charbroiler	1			With stand
Range	1			With oven
Cook & Hold Oven	1			2 section
Fryer & Dump Sta.	1			2 sec. with filter
Shortening Disp.	1			
Cooks Counter	1			With sink
Hand Sinks	3			
Printer	1			By Owner
Ticket Rail	1			
Plate Dispenser	4			Heated
Heat Lamp	2			
Drop-in Cold Pan	1			1-well
Hot Food Well	1			4-well
Soup Well	1			
Warming Drawer	1			
Prep Table	2			Refrigerated
Microwave	1			
Refrigerator	1			Reach-in, 1 sec.
Freezer	1			Reach-in, 1 sec.
Trash Bin	1			Mobile
Mixer	1			40 quart
Mobile Worktable	1			
			\$304 800	

Kitchen Storage

Item	Quantity	Cost	Total	Remarks
Freezer	1			Walk-in, system
Refrigerator	1			Walk-in, system
Refrigerator	1			Display, system
Shelving	12			Fridge/freezer
Shelving	12			Dry Storage
			\$102,930	

Warewashing and Pot Washing

Item	Quantity	Cost	Total	Remarks
Soiled Dish Table	1			
Disposer	1			
Spray Rinse	1			
Dish Machine	1			Booster Heater
Rack Shelf	1			With storage
Clean Dish Table	1			
Pot and Pan Sink	1			
Hose Reel	1			
Eyewash Station	1			
Hand Sink	1			
Shelving	2			Pan storage
Detergent Sys.	1			Owner's vendor
Detergent Shelf	1			
			\$103,000	

Catering Support

Item	Quantity	Cost	Total	Remarks
Glass Filler	1			
Refrigerator	1			Reach-in, 2 sec.
Spray Rinse	2			
Trash Bins	3			Mobile
Work Counter	1			With sink
Rack	1			Mobile
Ice Maker	1			
Ice Bin	1			With transport cart
			\$44,100	

Restaurant

Item	Quantity	Cost	Total	Remarks
POS Counter	1			
POS System	1			By owner
Wall Shelves	3			
Beverage Counter	2			With sink
Airpot Brewer	2			Owner's vendor
Refrigerator	2			Under-counter
Ice Bin	2			With soda heads
Soda System	2			Owner's vendor
Work Counter	1			With sink
Prep Table	1			Refrigerated
Warming Cabinet	1			Reach-in, 1 sec.
Work Counter	1			
Refrigerator	1			Roll-in, 1 sec.
Rack	1			Mobile
			\$79,200	

Cocktail Lounge

Item	Quantity	Cost	Total	Remarks
SS Drink Rail	1			
Hand Sink	2			
Corner Drainboard	2			
Trash Bins	3			
Insulated Ice Bins	2			With bottle wells
Soda Gun Chase	2			

Drainboard	3		
Speed Rail	2		
POS Cabinet	2		
Glass Washer	1		
Dump Sink Cab.	1		
Refrigerator	2		Back-bar, 3 sec.
Storage Cabinet	1		
Beer Tower	1		System
		\$60,700	

Item	Quantity	Cost	Total	Remarks
Refrigerator	1			Walk-in, display
Shelving	5			Refrigerator
Hand Sinks	3			
Work Counters	4			With sink
Trash Bins	5			
Warming Cabinet	1			Pass-thru, 1 sec.
Conveyor Oven	1			
Refrigerator	1			Roll-thru, 1 sec.
Rack	2			Mobile
Serving Counter	3			Soup, deli, pizza
Protector Shelf	3			System
Drop-in Cold Pan	1			3 well
Drop-in Cold Pan	1			2 well
Drop-in Cold Pan	1			1 well
Bread Rack	1			Owner's vendor
Prep Table	1			Refrigerated
SS Wall Panels	2			<u> </u>
Range	1			6 burner
Refrigerated Base	3			1 section
Soup Wells	3			
Display Warmer	1			
Warming Cabinet	1			Under-counter
Cutting Board	1			
Charbroiler	1			
Grill	1			
Fryer & Dump Sta.	1			3 sec. with filter
Freezer	1			Reach-in, 1 sec
Utility Sink	1			Under-mount
Hand Sink	1			Under-mount
Snack Display	2			
Beverage Counter	1			
Cup Dispenser	2			
Ice Dispenser	1			With soda heads
Ice Maker	1			
Tea Brewer	1			Owner's vendor
Cappuccino Mach.	1			Owner's vendor
Cashier Counter	2			
POS System	2			By Owner
Condiment Count.	1			, <u>,</u>
Flatware Disp.	3			
			\$580,000	

Item	Quantity	Cost	Total	Remarks
Beverage Counter	1			With sink
Ice Maker	1			
Bumper Guard	1			
Ice Bin	1			
Glass Filler	1			
Coffee Brewer	1			Owner's vendor
Portable Bar	6			66 inches
Heated Cabinet	2			Mobile
			\$101,500	

Chalet Seating

Item	Quantity	Cost	Total	Remarks
Round Tables	50	850	\$42,500	
Long Tables	20	300	\$6,000	72 inches
Long Tables	20	350	\$7,000	96 inches
Cafeteria Tables	40	1600	\$64,000	
Banquet Chairs	500	40	\$20,000	

Guest Services and Ticketing

Item	Quantity	Cost	Total	Remarks
Stools	6	250	\$1,500	Ticket agents
Chair	1	300	\$300	Guest service
Guest Chairs	2	400	\$800	
Computers	5	2200	\$11,000	Ticketing
Monitors	1	500	\$500	
CC Machine	5	1000	\$5,000	
Brochure Racks	1	500	\$500	
Big Screen TV	2	800	\$1,600	Wall mounted

Rental

Item	Quantity	Cost	Total	Remarks
Ski Racks	20	1000	\$20,000	
Snowboard Racks	15	1500	\$22,500	
Boot Racks	10	1000	\$10,000	Ski boots
Boot Racks	10	1000	\$10,000	Snowboard boots
Boot Dryers	6	6000	\$36,000	
Helmet Racks	3	6000	\$18,000	With dryer
Tune Bench	1	2000	\$2,000	
Waxing Bench	1	2000	\$2,000	
Guest Benches	15	500	\$7,500	
Monitors	2	800	\$1,600	Marketing screens
Boot Bridge	1	2000	\$2,000	

Retail

Item	Quantity	Cost	Total	Remarks
Clothing Racks	4	400	\$1,600	
Product Shelving	4	300	\$1,200	

Ski Patrol

Item	Quantity	Cost	Total	Remarks
Chairs	3	300	\$900	
Beds				Use existing
Curtains	2	200	\$400	

6 Bottle Rack 1 500 \$500 Wall mount					
	6 Bottle Rack	1	500	\$500	Wall mount

Snow Sports

Item	Quantity	Cost	Total	Remarks
Welcome Sign	1	800	\$800	In desk
File Cabinets	2	200	\$400	Under counter
Stools	3	250	\$750	
Recreation Space	1	500	\$500	Indoor
Child Seating	20	75	\$1,500	
Boot-up Benches	2	500	\$1,000	
Guest Chairs	4	200	\$800	
Desks	2	700	\$1,400	
Office Chairs	2	300	\$600	
Monitors	2	800	\$1,600	
Coat Rack	2	500	\$1,000	

Action Sports Office

Item	Quantity	Cost	Total	Remarks
Table	1	800	\$800	
Desk	3	700	\$2,100	
Office Chairs	3	300	\$900	
Computer	1	2200	\$2,200	Laptop
Monitor	1	1000	\$1,000	

Instructors Room

Item	Quantity	Cost	Total	Remarks
Equipment Rack	1	4000	\$4,000	Wall mounted
Uniform Rack	2	500	\$1,000	
Table	1	300	\$300	
Chairs				Use existing

Storage

Item	Quantity	Cost	Total	Remarks
System Shelving	10	700	\$7,000	
File Cabinets	10	300	\$3,000	

Adventure Park

Item	Quantity	Cost	Total	Remarks
POS Computers	4	2200	\$8,800	
Telescoping Chair	4	250	\$1,000	
Tables	2	300	\$600	Seats 4
Banquet Chairs	8	150	\$1,200	
Storage Racks	3	200	\$600	
Food Storage	1	500	\$500	Lockable
Monitors	2	800	\$1,600	Menu display

Signage

Item	Quantity	Cost	Total	Remarks
Directional Signs	20	75	\$1,500	Interior
Directional Signs	30	100	\$3,000	
Café Sign	1	100	\$100	
Guest Services	1	100	\$100	
Ski Shop	1	100	\$100	
Rental	1	100	\$100	
Snow Sports	1	100	\$100	

Tickets	1	100	\$100	
Entrance Signs	3	200	\$600	
Indoor Maps	3	500	\$1,500	
Outdoor Maps	3	1000	\$3,000	

Other

Item	Quantity	Cost	Total	Remarks
Ski Racks	10	700	\$7,000	Exterior
Picnic Tables	15	400	\$6,000	Exterior

Spirit Mountain's relationship with the community has frayed in recent years and rebuilding that relationship is imperative.

BENCHMARK ANALYSIS

To assess the historical financial performance of Spirit Mountain, a "Benchmark Analysis" was completed in which Spirit Mountain's performance under key financial metrics were compared to that of 20 ski resorts within the Midwest Region across the 2017/18 and 2018/19 winter operating seasons.⁴ Comparative data for this benchmark analysis was obtained from the National Ski Areas Association (NSAA) *Economic Analysis of the U.S. Ski Industry*, published annually. Additionally, for the Spirit Mountain analysis, SE Group worked with RRC Associates to prepare a customized comparative data set from within the 20 Midwest ski areas to narrow the data to those seven which are more specifically like Spirit Mountain on a size ranking basis.⁵ The industry data represents the actual performance of the resorts against which Spirit Mountain was compared, which is then is anonymized and amalgamated. It is important to note that data provided by Spirit Mountain was insufficiently disaggregated to allow for a complete examination within select areas of the benchmark analysis. Increased granularity within the departmental financial reporting structure is recommended.

In general, the benchmark analysis depicts that Spirit Mountain performs well in the summer season with revenue values aligning favorably to the comparables. For the winter operating season, Spirit Mountain is notably, and substantially, underperforming in all revenue departments, averaging only 53 to 57 percent of the revenue generation of the comparable areas. Spirit Mountain's total operating expenses trend slightly high of the comparables but not alarmingly so – indicating there may be some areas for improvement in reducing expenses, but none that would substantially alter the overall profitability of the facility.

Assessment of these financial indicators presented many of the challenges (and opportunities) that are present at Spirit Mountain. To the positive, this analysis identified measurable areas for potential revenue improvement for further evaluation.

The results of the benchmark analysis are presented in Table 7 and within the narrative discussion that follows.

⁴ The 2019/20 operating season was not assessed for two reasons; 1) the comparative NSAA data for the 19/20 season will not be published until early in 2021 and, 2) the operating season was truncated due to the pandemic.

⁵ Size ranked by Vertical Transport Feet (VTFH) per day, skiable terrain (acres), season length, fixed assets, and annual visitation.

Table 7. Key Economic Indicator Benchmark Analysis

	Spirit Mountain Recreation Area 2018/19	NSAA Midwest Areas VTFH 3.0M+ 2018/19	NSAA Custom Set Average 2018/19
Number of Areas in Category	1	11	5
Ski Area Characteristics			
Season Length (days)	107	124	84
Skiable Terrain (acres)	89	234	105
Skier Visits	107,618	141,644	61,729
VTF/Hr (000)	4,383	5,392	2,999
Average # of Employees			
Full-time year-round employees(avg.)	22	108	25
Full time winter employees (ave.)	260	209	205
Ski Area Economic Characteristics			
Adult Weekend Ticket Price	\$65.00	\$75.36	\$46.40
Adult Season Pass Price	\$449.00	\$527.00	\$390.00
Child Season Pass Price	\$309.00	\$356.00	\$327.00
Summary Financial Data			
Gross Assets Fixed Assets	\$31,199,838	\$33,945,000	\$19,979,000
Operating Profit (Loss) Before Tax	\$260,433	\$3,486,000	\$1,043,000
Operating Profit Margin	5%	24%	30%
Profit (Loss) / Skier Visit	\$2.42	\$24.61	\$16.90
Revenue Sources & Analysis ¹			
Ticket Sales (including Season Passes)	\$2,323,617	\$4,831,000	\$1,639,000
Snowplay & other winter ops	\$189,221	\$238,000	\$295,000
Lessons	\$140,889	\$493,000	\$149,000
Food & Beverage (Ski Operations)	\$688,564	\$3,277,000	\$608,000
Retail	\$117,505	\$1,016,000	\$93,000
Other Operating Rev	\$1835356	\$913,000	\$79,000
Total Revenue	\$5,636,764	\$14,621,000	\$3,430,000
Total Rev / Skier Visit	\$52.38	\$103.22	\$55.57
Ticket Rev / Skier Visit	\$21.59	\$34.11	\$26.55
Ticket Yield	33.2%	45.3%	57.2%
Snowplay & other winter ops/ Skier Visit	\$1.76	\$1.68	\$4.78
Lesson Rev/ Skier Visit	\$1.31	\$3.48	\$2.41
Food & Beverage / Skier Visit	\$6.40	\$23.14	\$9.85
Retail / Skier Visit	\$1.09 \$3.17	\$7.17 \$6.45	\$1.51 \$9.19
Other Operating Rev	\$17.05	\$9.53	\$1.28
	41.00/	77.0%	47.00/
Spowplay & other winter ons/ Total Rev	41.2% 3.4%	33.0%	47.8%
Lesson Rev / Total Rev	2.5%	.0%	4.3%
Food & Beverage Rev / Total Rev	12.2%	22.4%	17.7%
Retail Rev / Total Rev	2.1%	6.9%	2.7%
Rental Rev / Total Rev	6.1%	6.2%	16.5%
Other Operating Rev	32.6%	9.2%	2.3%
Expenses & Analysis			
Cost of Goods Sold	\$559,617	\$1,550,000	\$288,000
Direct labor	\$1,880,721	\$4,277,000	\$887,000
Other Operating Expenses	\$2,935,993	\$5,308,000	\$1,212,000
Total Expenses / Skier Visit	אס,אס,אס,אס געס סג	۵۱۱,۱۵5,000 ۲۶ ۶۱	⊅∠,38/,000 ¢38.67
	φ+0.90	φ/0.01	ψ50.07
Cost of Goods Sold / Skier Visit	\$5.20	\$10.94	\$4.67
Direct Jabor / Skier Visit	\$27.28	\$37.47	\$19.63
	\$17.48	\$30.20	\$14.57
Cost of Goods Sold / Total Expenses	10.4%	13.9%	12.1%
Direct labor / Total Expenses	35.0%	38.4%	37.2%

Source: SMRA, NSAA Economic Analysis of US Ski Areas, RRC, SE Group

COMPARISON METRICS

The following sections discuss Spirit Mountain's performance against comparable ski areas as presented in Table 7.

Size

As measured in Vertical Transport Feet per Hour (VTFH, an acronym used in Table 5, is a metric used by NSAA to categorize ski area size as it measures the uphill lift capacity of a ski area), Spirit Mountain is approximately 81% the size of the Midwest VTFH 3.0M+ comparison ski areas and 146% of the NSAA custom set. Compared by average skiable acreage, Spirit Mountain is 38% the size of the average Midwest VTFH 3.0M+ comparison ski areas and 89% the size of the average NSAA custom set. Spirit Mountain is on the smaller side for lifts and terrain for the Midwest VTFH 3.0M+ comparison ski areas, and on the larger side for lifts but smaller for terrain than the average of the comparison set.

Skier Visits

Spirit Mountain does not presently track accurate skier visitation. As mentioned above, the ski area does not scan tickets and there is a significant group who visits Spirit without purchasing a ticket, resulting in a loss of revenue and a liability risk. Skier visitation at Spirit Mountain has historically been tracked by taking the sum of day tickets sold plus an assumed usage of total season passes sold. Spirit Mountain has been using the assumption that each season pass is utilized an average of 15 days each ski season. Throughout the North American ski industry, actual tracked/scanned season pass usage averages 7-8 days per pass. For our analysis, an adjusted visitation figure for Spirit Mountain was calculated using an assumed season pass usage of 8 days per season. This resulted in a downward adjustment of skier visitation to 107,618 during the 2018/19 ski season. We have included in our recommendations that Spirit Mountain immediately initiate active checking/scanning of every skier/rider lift ticket/pass at every lift each day of the season. This is a ubiquitous practice at other ski areas that must be employed at Spirit Mountain.

Using this adjusted level of skier visitation, Spirit Mountain is receiving approximately 76% the visits of the Midwest VTFH 3.0M+ comparison ski areas and 174% of the NSAA custom set. These figures indicate solid visitation with some room for moderate growth, both through additional ticket scanning and additional market capture.

Lift Ticket/Pass Pricing

The lead day ticket price for Spirit Mountain is \$65, which is 86% of the Midwest VTFH 3.0M+ comparison ski areas and 140% of the NSAA custom set used for this analysis. This is indicative that lift ticket pricing is likely in an appropriate range – with some room for moderate increase. Adult season pass pricing is similarly 85% and 115% of the comparable ski areas, and is likely in an appropriate position. In the subsequent section of this report, lift ticket yield per user is discussed which is a more indicative metric towards revenue than the lead ticket price.

Revenue Yields

Comparable revenue (and expense - see below) yields are derived by dividing the revenue data by the total annual skier visitation value. This can be then thought of as a "per visitor" metric.

For Spirit Mountain, the Total Revenue per skier visit figure may be somewhat misleading, as 33% of the total revenue recorded is derived from the "Other Operating Revenue" category which includes very strong performance by Spirit Mountain in summer operations and weddings. Spirit Mountain's Total Revenue per visit is soft against the comparables at \$52.38 per visit compared to an average of \$103 at the Midwest

VTFH 3.0M+ comparison ski areas and \$55 for the NSAA custom set. Aside from the Other Operating Revenue category, all revenue sources at Spirit Mountain are noticeably underperforming. While helping explain past performance, this observation presents tremendous potential for the future. There are numerous areas which can be improved to assist Spirit Mountain in becoming more financially selfsustaining. Each of these is reviewed below with our observations/recommendations:

Ticket Revenue per Skier Visit

This metric is inclusive of all lift tickets and season passes sold annually. Spirit Mountain is achieving only 63% and 81% of the comparables. This is dramatically lower than the ratios to lift ticket/pass pricing (86% and 140%). This suggests that Spirit Mountain is selling a disproportionate number of tickets below the lead ticket pricing. This revenue per skier visit does not encompass the many skiers who visit Spirit Mountain without purchasing a ticket.

Lesson Revenue per Skier Visit

Among all revenue departments at Spirit Mountain, at just \$1.31 per visit, snowsports lessons is the lowest performer comparing at 38% of and 54% of the revenues achieved at the comparative sets. This data includes all ski and snowboard lesson programs and reflects both low utilization and low pricing. There are several factors that should be specifically assessed in relation to snowsports revenue improvement; pricing, the supply/availability of instructors to accommodate those interested in taking a lesson, and the quality of the program.

This discussion acknowledges that Spirit Mountain is a community facility and operates under a mandate to be accessible and affordable for the residents of Duluth, and snowsports lesson pricing/packages reflect this intention. However, current pricing levels may not be appropriate for all Duluth residents and out-of-town visitors.

Rental Revenue per Skier Visit

Closely associated with snowsports programs, equipment rental at Spirit Mountain is notably underperforming. At \$3.17 per visitor, rental revenue at Spirit Mountain is just 35% and 49% of that achieved at the comparable ski areas. Interestingly, operations personnel at Spirit Mountain described a noted lack of surrounding competitive rental shops for Alpine skis and snowboards – further indicating that Spirit Mountain should be performing strongly in this area. As our review of the department found that insufficient capital has been allocated to the routine replacement of the rental equipment fleet, the quality of the equipment may limit the number of people interested in renting what the department can charge.

Retail Sales per Skier Visit

Given the proximity of Spirit Mountain to Duluth residents' homes, we would not anticipate that there would be a robust retail opportunity at the mountain. However, the retail revenue per skier visit, at \$1.09 per visitor (15% and 72% of that achieved at the comparables), is quite low. Potential areas for improvement may include providing sufficient space and diversifying the offering to cater to the Nordic uses at Grand Avenue, and interspersing retail with other guest services. For example, having gloves, goggles and typically forgotten items available in the rental shop or the snowsports lesson check in area.

Food and Beverage per Skier Visit

For this analysis, food and beverage revenue attributable to summer operations and wedding functions was omitted. Food and beverage affiliated with Spirit Mountain's ski operations presently capture \$6.40 per visitor - compared to \$23.14 and \$9.85 for the comparables or 28% and 65% of the revenues achieved at these areas. As discussed above, the food and beverage venues face challenges with secure storage, size of kitchen facilities, and differentiation.



Other Operating Revenue

The other operating revenue category at Spirit Mountain is performing remarkably well, at \$17.05 per skier visit, compared to \$9.53 at the NSAA Midwest Areas VTFH 3.0M+ and \$1.28 of the NSAA custom set. This is a reflection of Spirit's very strong performance in summer with the Adventure Park and weddings. While this is a strong revenue category for Spirit Mountain, there may remain opportunities to improve given the strong market for summer activities, while the wedding business may have reached its popularity.

Snowplay/Snowtubing additionally does well at Spirit Mountain providing effective revenue of \$1.76 per skier visit, the metric used across industry. The comparable resorts are capturing between \$1.68 and \$4.78 on snowplay/tubing. There may be facility enhancements that could encourage additional skiers and Duluth residents to participate in snowplay/tubing.

Expense Analysis

In contrast to the notable underperformance in revenue, Spirit Mountain appears to be more reasonably in line with expected operating expenses, with all metrics being managed within, or toward the bottom of, the expected comparable range.

Total Operating Expenses

Total expenses at Spirit Mountain are \$49.96 per skier visit. This compares to \$78.61 and \$38.67 at the two comparative sets: Spirit Mountain spends 64% and 129% of that spent for the comparable ski areas.

Other Operating Expenses

For this metric, Spirit Mountain is running at \$27.28 compared to \$37.47 and \$19.63 at the comparable sets of ski areas.

Direct Labor

Similarly, Spirit Mountain is presently at \$17.48 per skier visit as compared to \$30.20 and \$14.37 for the comparable sets. Further, a review of union negotiated labor rates was conducted and did not reveal any specific areas for comment or concern.

Cost of Goods Sold

This represents both items available for retail sale and food and beverage supplies. An interesting observation for this metric is that Spirit Mountain is presently on the low end of this metric at \$5.20 per skier visit as compared to \$10.94 and \$4.67 for the other comparative sets. This may be related to the quality, portions, and potential margins associated with the food and beverage and retail offerings.

Operating Profit/Loss

As the previous discussion suggests, underperformance on the revenue element with relatively normal operating expenses cannot result in on par profitability. For the 2018/19 operating season, Spirit Mountain captured just \$2.42 of net profit per skier visit – as compared to between \$24.61 and \$16.90 per visit for the comparative sets. Expressed as total profitability, this is \$260,433 in annual profitability for Spirit Mountain compared to \$3.48 million and \$1.04 million for the comparative sets.

Anecdotally, SE Group typically observes ski areas operating at roughly 100,000 annual visits, with the quality of facilities presented at Spirit Mountain, to experience net operating income of over \$1 million annually.

This level of profit margin achieved by Spirit Mountain does not allow it to withstand weaker years (i.e., low snow, pandemic), pay off its capital debt expenditures, or appropriately maintain its facilities.

SMRA PREDESIGN REPORT TEAM DIRECTORY						
Project Team	Name	Title	Role	Phone Number	Email Address	Responsibilities
Owner City of Duluth 411 W. 1st Street Duluth, MN 55802	Erik Birkeland	Property & Facilities Manager	Project Manager	(218) 730-4435	ebirkeland@duluthmn.gov	Coordinate owner's team Communicate with State government
	Joe Miller	Facilities Operations Supervisor	Assistant Project Manager	(218) 348-3199	jmiller@duluthmn.gov	Assist Erik
	Mike LeBeau	Project Supervisor	Assistant Project Manager	(218) 340-0221	mlebeau@duluthmn.gov	Assist Erik
	Rob Hurd	Project Coordinator	Design Review	(218) 730-4416	rhurd@duluthmn.gov	Review and critique concepts
	Alex Jackson	Energy Coordinator	Design Review	(218) 730-4433	ajackson@duluthmn.gov	Review and critique concepts
	lames Shoherg	Project Coordinator	Design Review	(218) 020-3837	isboberg@duluthmn.gov	Review and critique concepts
	Frica Vatsaas	Project Coordinator	Team Member	(218) 269-9174	evatsaas@duluthmn.gov	Project scheduling and invoicing
	Jennifer Ondrik	Administrative Clerical Specialist	Team Member	(218) 730-4429	jondrik@duluthmn.gov	Project scheduling
				•		•
User Group Spirit Mountain Recreational Area	Ann Glumac	Interim Executive Director	Project Manager	(218) 391-4350	ann@glumac.biz aglumac@spiritmt.com	Advise on consistancy with Task Force and SE Group recommendations
9500 Spirit Mountain Place Duluth, MN 55810	Ryan Abel	Director of Mountain Operations and Maintenance	Project Advisor	(218) 269-7351	rabel@spiritmt.com	Ground, snowmaking, lifts, and hill lighting
	Cubby Madigan	Building Manager	Project Advisor	(218) 391-9352	cmadigan@spiritmt.com	Building envelope, systems, maintenance, and grounds
	Erik Blow	Outdoor Operations Manager	Project Advisor	(715) 892-5301	eblow@spiritmt.com	Grounds and traffic flow
	Kyle Ross	Outdoor Operations Assistant Manager	Project Advisor	(603) 986-4447	kross@spiritmt.com	Grounds and traffic flow
	Gretchen Ransom	Director of Safety and Risk	Project Advisor	(218) 348-1217	gransom@spiritmt.com	Building flow, historic issues, and everything else
	Lisa Johnson	Director of Sales	Project Advisor	(218) 213-1521	ljohnson@spiritmt.com	Building flow, ticketing area, and campground
	Jon Regenold	Co-Director of Resort Services	Project Advisor	(218) 591-9779	jregenold@spiritmt.com	Grounds, maintenance, custodial, building flow, and programming
	Tess Regenold	Co-Director of Resort Services	Project Advisor	(218) 391-7265	tregenold@spiritmt.com	Building flow and programming
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	Dawn Earls	Co-Director of Food	Project Advisor	(218) 391-0346	dearls@spiritmt.com	Building flow, kitchen, banquets, weddings, Moosehead, Slopeside, and Café
	Ryan Gunderson	Chef and Kitchen	Project Advisor	(218) 576-2864	rgunderson@spiritmt.com	Kitchens, banquets, and Moosehead,
	Jennifer Hoffman	Human Resources	Project Advisor	(218) 349-7769	jhoffman@spiritmt.com	Banquets, weddings, and building flow
	Dave Wadsworth	Director of Finanace	Project Advisor	(607) 761-8549	dwadsworth@spiritmt.com	General
Architecture and	Benjamin Olson AlA	Group Manager	Project Manager	(218) 491-7372	benjamin olson@tkda.com	Coordinate project team
Engineering	Berljanin eleen, /	oroup manager	i roject manager	(218) 730-8747		Quality assurance and control
TKDA	Gregory Cooper, AIA	Senior Architect	Project Architect	(218) 491-7370	gregory.cooper@tkda.com	Architect of Record
11 East Superior Street, Suite 420				(218) 428-3697		Coordinate design team
Duluth, MN 55802	Company Devite	D	Desired Desires	(240) 404 7200		Prepare report
	Corey Beste	Designer	Project Designer	(218) 491-7380 (218) 428-8252	<u>corey bestewikda.com</u>	Bubble diagrams and concept studies
		Conies Asehitest	D2 Canadiantes	(054) 202 4420		Material and finish selection
	Michollo Gallaghor CID	Interior Designer	Interior Design	(651) 292-4436	michollo gallaghor@tkda.com	Recommendations for B3 documentation
	Samantha McKinney	Landscape Architect	Landscape Design	(651) 292-4576	samantha mckinnev@tkda.com	Landscape concept studies
	Craig Bursch, PE	Senior Engineer	Structural Engineer	(218) 491-7365	craig.bursch@tkda.com	Structural analysis and design narrative
	Luke Zupan, PE	Engineer	Mechanical Engineer	(218) 340-3156	luke.zupan@tkda.com	Mechanical analysis and design narrative
	Brian Mickelson, PE	Market Manager	Electictrial Engineer	(218) 491-7388	brian.mickelson@tkda.com	Electrical analysis and design narrative
	Jeff Goetzman, PE	Group Manager	Civil Engineer	(218) 491-7385	jeff.goetzman@tkda.com	Site analysis and design narrative
	Elizabeth Tomlinson, PE	Senior Engineer	Commissioning	(651) 726-7935	elizabeth.tomlinson@tkda.com	Recommendations for sustainable design
Food Service Consultant	Eric Goodrich	Operations Project Manager	Project Manager	(952) 955-8056 (651) 755-5809	egoodrich@rippeassociates.com	Food service
Rippe Associates 10400 Yellow Circle Dr., Suite 100 Minneapolis, MN 55343						
Ski Area Consultant	Claire Humber	Director of Resort	Team Leader	(802) 233-3067	chumber@segroup.com	Planning and strategy, market assessment,
SE Group		r anning				muiti-season planning, and guest services planning
131 Church St., Suite 200	Kent Sharp	President	Team Member	(970) 390-8880	ksharp@segroup.com	Business strategy and financial modeling
Burlington, VT 05401	George Schmidt	CFO Senor Financial Analysist	ı eam Member	(425) 478-7131	gschmidt@segroup.com	Business strategy and financial modeling
	Pete Williams	Director of Mountain	Team Member	(801) 633-3294	pwilliams@segroup.com	Mountain planning
	Ellie Wachtel	Project Analyst	Project Coordinator	(301) 275-6136	ewachtel@segroup.com	Planning analyst, financial modeling assistance

PREDESIGN CHECKLIST

- ✓ Review the Contents of a Predesign Submittal in the State's Predesign Manual
- ✓ Structure the format of your Predesign Submittal to contain the components of predesign.
- Project Background
- Organization Planning
- Project Description
 - Architectural Program
 - Precedent Studies
 - Technology Plan
 - Sustainability, Energy Conservation, and Carbon Emissions
 - Operations and Maintenance Requirements
 - Statute Requirements
 - Specialty Requirements
 - Project Procurement and Delivery
 - Quality Control Plan
- ✓ Site Analysis and Selection
- ✓ Financial Information
- ✓ Schedule Information
- <u>Section 1 Predesign Summary Statement:</u> Work with the user organization to develop the executive summary. Be brief, with a two or three paragraph scope description of the project. Below the description include costs, funding sources and schedule.
- <u>Section 1 Predesign Summary Statement:</u> Complete the building data sheet to tabulate the pertinent data upon which the cost estimates are based. Include this sheet as a second page to the Section 1 Predesign Summary Statement.
- <u>Section 1 Predesign Summary Statement:</u> If the project involves remodeling of an existing building, use the building audit sheet to perform an audit of the building's major components, systems, and their conditions. Use and amend the building data sheet to indicate the scope of work for the proposed project. Insert behind the Summary Statement.
- Section 2 Basis For Need Project Background: Gather the Section 3 planning information from the organization and synthesize it into the format shown in the example. Detailing the mission, strategic plan, operational plan and basis for need for the project. At the back of this include any additional background information on the project from your work with the organization.
- <u>Section 2 Basis For Need Project Background:</u> Verify that the scope of the predesign complies with the language of the appropriation.
- <u>Section 3 Organization Planning</u>: This Section supports the basis for need and project background. Obtain the following from the user organization:
 - Planning documents such as org charts, mission statement, strategic plan, and operational plan for the project. This information would include any supporting data, analysis or studies which support the proposed project and demonstrates the need for the project by linking it to the organization's mission, strategic, and operational plans.
- <u>Section 3 Organization Planning:</u> Included a list and narrative regarding the stakeholders involved and affected by the project. Also include issues that remain to be resolved among

stakeholders along with budget and schedule impacts upon the project.

Section 3 Organization Planning: Impacts on operations, budget, and facility staff are detailed.

- Section 4 Architectural Program: For State Agency projects obtain and coordinate space planning standards with the Department of Administration. Then, include a review sign off from The Department of Administration's Real Estate and Construction Services Division. Focus on job related functional needs and the State's Space Guidelines when developing the square foot areas of spaces.
- <u>Section 4 Architectural Program</u>: Work with the owner to develop the space program. Employ a
 participatory programming methodology similar to the example to analyze operations and
 activities. Your methodology should consider Post Occupancy Evaluation (POE).
- <u>Section 4 Architectural Program</u>: Complete the space needs inventory sheet for each room of the project. Include these sheets in the predesign document. The space needs sheet should also identify special mechanical and electrical needs or upgrades for the space.
- <u>Section 4 Architectural Program</u>: Prepare and include a detailed architectural space program with a table of spaces and their respective areas (square footages) with a total of assignable and gross square feet.
- <u>Section 4 Architectural Program</u>: Provide adjacency diagrams of all spaces and a conceptual layout of spaces. Superimpose these diagrams onto the Site Plan to show building fit and site relationships.
- <u>Section 4 Architectural Program</u>: For State Agency Projects identify potential MINNCOR Industries and Minnesota State Industries products for the project.
- Section 4 Architectural Program: For State Agency Projects, if applicable to the agency, work with the user agency to incorporate a telecommuting plan for this project. Include the telecommuting plan with the predesign submittal document. Obtain review and response letter from MN.IT.
- Section 4 Architectural Program: Develop the Furniture, Fixtures, and Equipment needs and include the associated costs as a line item in the project cost estimate. Consider interior and exterior signage exterior landscaping and fixtures, telecommunication devices, security camera system, lockers, trash compactor, window washing equipment, phasing costs, and moving costs.
- Section 4 Precedent Studies: Research the project. Visit similar building types and include precedent projects into the predesign document and how the precedent affects the proposed project. Include information on the facilities (name, location, size, design features); Then indicate any features that will be incorporated into the proposed project. Special attention should be paid to design features that result in efficiency of program operations and ability to reduce long term operating costs.
- Section 4 Technology Program: For State Agency Projects identify and document the technology needs for the project. Develop a technology plan for the project using the MN.IT guidelines.
- Section 4 Technology Plan: For State Agency Projects forward the technology plan to MN.IT for review and obtain a written letter from MN.IT. Incorporate any changes requested by MN.IT.
- Section 4 Sustainability, Energy Conservation, and Carbon Emissions: In accordance with Minnesota Statute §16B.235 identify sustainable and high performance goals for the project using "The State of Minnesota Sustainable Building Guidelines." Include a summary table of goals and strategies. Also include the B3-MSBG project submittal report for the Predesign Phase that is generated by use of the B3-MSBG Tracking Tool. This requirement applies when the project is new building, addition, or major renovation. See the Applicability rules at the B3-MSBG website.
- ✓ <u>Section 4 Sustainability, Energy Conservation, and Carbon Emissions:</u> Include a table of

strategies to comply with Sustainable Building (SB) 2030 requirements.

- For the Section 4 Sustainability, Energy Conservation, and Carbon Emissions: In accordance with MN Statute § 16B.32, a identify alternative energy uses and associated systems. This applies to a new building or for a renovation of 50 percent or more of an existing building or its energy systems. Anticipate future designs which use active and passive solar energy systems, earth sheltered construction, and other alternative energy sources where feasible.
- <u>Section 4 Sustainability, Energy Conservation, and Carbon Emissions:</u> When the project is for a State Agency provide a cost benefit analysis for including alternative energy sources to provide 2% of the proposed building's energy consumption.
- <u>Section 4 Sustainability, Energy Conservation, and Carbon Emissions:</u> For compliance with MN Statute 16B.326, provide a written plan in the predesign to consider providing Geothermal and Solar Energy Heating and Cooling Systems on new or replacement HVAC systems.
- <u>Section 4 Sustainability, Energy Conservation, and Carbon Emissions:</u> Include a narrative in the predesign that the project specifications are to include requirements for the contractor to submit a "Waste Management and Recycling Program Plan" for both demolition and construction.
- <u>Section 4 Sustainability, Energy Conservation, and Carbon Emissions:</u> Estimated yearly energy consumption and associated costs are included.
- <u>Section 4 Operations and Maintenance Requirements:</u> Conduct information gathering and program meetings with operations and maintenance staff. Document and include these needs into the predesign.
- Section 4.E Operations and Maintenance Requirements: For Projects located on the Capitol Complex, obtain "Plant Management Preferred Equipment List", "Capitol Complex Guidelines," and "Signage Guidelines." Include these documents in the Predesign document as instructions for the future design team.
- ✓ <u>Section 4 Statute Requirements:</u> See Appendix 4 for statute requirements related to all projects receiving any amount of state funding. Enter information on how the project will comply with each statute and include in the final predesign document.
- <u>Section 4 Statute Requirements:</u> Review the table of statutes contained in this manual. Identify the statutory requirements for the project. These are to be included in the final Predesign Document.
- <u>Section 4 Statute Requirements</u>: Include any design requirements or other mandated requirements.
 - The statute that gives authority for the operational program
 - Licensing requirements.
 - Design requirements.
 - Operating Standards.
 - Federal Statutes, Laws, and Requirements.
 - Significant Building Code or land use and zoning requirements.
- <u>Section 4 Specialty Requirements</u>: Review the need to conduct a security and vulnerability assessment for the project. Include the study in the predesign document along with associated costs.
- <u>Section 4 Specialty Requirements:</u> Include any unique requirements that are applicable to the specific project. i.e. performance requirements, unique testing requirements, environmental reports, assessments, impact statements, facility condition audits that may have been done, hazardous materials surveys, unique construction, and restrictions.
- <u>Section 4.G Specialty Requirements:</u> For renovations and demolitions, verify if the building or structure or amenity is on the register of historic places or within a historic district. Meet with the
State Historic Preservation Office (SHPO) to determine requirements. Include all SHPO requirements in the predesign as well as all specialty consultants (historic preservationist, archeologist) required for the future design team.

- <u>Section 4 Project Procurement and Delivery:</u> Provide a written statement and recommendation of the proposed construction delivery method to be used on the project. Include the reasons for this selection.
- Section 4 Project Design Services and other Owner Costs: Provide a listing of all costs that will be incurred in order to build the project.
- <u>Section 4 Quality Control Plan:</u> Provide a listing of all quality control services and costs that are needed and will be incurred in order to building the project.
- Section 5 Site Analysis and Selection: Provide a narrative on why the preferred site was selected for the project based on the locations that best meet pre-identified site criteria. For State owned buildings and State Agency projects, coordinate this effort with the Department of Administration, Real Estate and Construction Services.
- Section 5 Site Analysis and Selection: When locating or relocating or when proposing a new building or renovation, the Predesign Document must include an analysis of the agency's location using "Criteria for Locating State Offices and Agencies."
- Section 5 Site Analysis and Selection: If the proposed project is a new building that will be in a campus setting; review location options on the campus in regards to efficient operation and programs provided on the campus.
- <u>Section 5 Site Analysis and Selection</u>: Verify if the project will be required to undergo a State Environmental Review.
- <u>Section 6 Financial Information:</u> Compile the project costs using the Department of Minnesota Management and Budget's Capital Budget Request spreadsheet form. Complete this form and include it in the submitted Predesign document.
- <u>Section 6 Financial Information</u>: Compile the projected operating costs using the State Operating Costs form.
- <u>Section 6 Financial Information</u>: Review the Project Delivery Method for impact on the Cost Plan for the project.
- ✓ <u>Section 6 Financial Information:</u> Include design fees for special consultants in the project costs.
- <u>Section 6 Financial Information</u>: Verify existing utility infrastructures for adequate capacity needed to support the proposed building or renovation. Incorporate costs for upgrades into the budget.
- <u>Section 6 Financial Information:</u> If applicable and desired, include percent for Art in the project cost. Statute 16B.35 Subdivision 1 applies (up to 1% of the appropriation can be allocated to art in public buildings).
- <u>Section 6 Financial Information</u>: Assist the user organization in identifying and incorporating contingency phasing and funding plans into the predesign to anticipate questions during legislative hearings.
- Section 6 Financial Information: When the proposed project is for an existing correctional facility, obtain the contractor security requirements for the facility and include appropriate cost and schedule adjustments.
- Section 6 Financial Information: For renovations, a facility condition assessment has been conducted on the existing building and associated upgrade costs are included in the estimate.
- ✓ <u>Section 6 Financial Information:</u> On major building projects, use the predesign to develop an

options based strategy for the organization to use in approaching the governor and legislature when requesting funding. The predesign should anticipate possible questions by presenting options for varying scopes and costs.

- <u>Section 6 Financial Information:</u> Conduct an industrial hygiene investigation to determine if there are any hazardous material or asbestos abatement clean-up costs, fuel tank removal or contaminated soils clean-up costs for the proposed project or site.
- Section 6 Financial Information: Provide the life expectancy of the major building components and building as a whole and included in the predesign document. Show comparison costs of varying construction systems and components and their life span. Indicate the selected system that was used to prepare the cost estimates.
- <u>Section 6 Financial Information</u>: For State Agency projects state's design guidelines were reviewed and associated costs accounted for.
- <u>Section 7 Schedule Information</u>: Include a schedule narrative and bar chart in the submittal document. Include time for hazardous material abatement, site clean-up, fuel tank removal and soils replacement costs, project schedule phasing time, relocation or move time, and any potential long lead material deliveries.
- Section 7 Schedule Information: Include a quality control and coordination review of the construction documents by a third party. Include the cost of this in the design budget. Indicate a minimum of two months in the schedule for this review.
- For State Agency projects: Complete the Technology Checklist. Insert the MN.IT letter indicating they have reviewed and approved the Technology and Telecommuting Plans.
- ✓ This predesign document contains all the necessary requirements and costs for:
 - The owner to confidently pursue funding based on the cost estimates contained.
 - The owner to advertise for design services and structure their contract with a design firm as to the design scope of work and fee; and
 - The future design team for all project requirements in order to carry out the proposed design.
 - All owner costs required to deliver the proposed project.
- ✓ Include the SIGNATURE sheet, with signature of the ARCHITECT.

CONSULTANT SIGNATURE:

Name of Project: Spirit Mountain Recreational Area Printed Name: Benjamin Olson, AIA Title: Architect of Record Company: TKDA State Project No.