



Statement of Qualifications

# Winter Recreation at Braemar Park

City of Edina, Minnesota | April 1, 2016



Building a Better World  
for All of Us®

Engineers | Architects | Planners | Scientists



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for All of Us®

April 1, 2016

Ann Kattreh  
Parks & Recreation Director  
Parks and Recreation Department  
4801 W. 50th Street  
Edina, MN 55424

RE: Winter Recreation at Braemar Park  
City of Edina, Minnesota  
Statement of Qualifications (Qualification)  
SEH No. P-EDINA 136169

Dear Ann:

The City of Edina continues to be the leader in providing its citizens with great amenities. The opportunity to help Edina add its next great amenity, winter recreation at Braemar Park featuring machine made snow (snow), excites us. Since 2002 the SEH team described by this Qualification has successfully added winter recreation featuring snow inside metropolitan areas parks in Iowa, Illinois, and Minnesota.

Our approach in Braemar Park is to first prepare a market analysis/financial model verifying that it makes financial sense to add winter recreation featuring snow to Braemar Park that can be used by all citizens of Edina. If it makes sense, we will use our wealth of experience to guide us as we add winter recreation featuring snow to Braemar Park within close proximity to private property, the golf course, and public streets. Successfully adding snow to winter recreation under these constraints requires a special blend of winter recreation and municipal project design skills sets not found in the winter recreation design community. It is a lot different designing winter recreation inside Braemar Park than it is in the wide open spaces of the Soldier Hollow or Vail or Sunday River resorts in Utah, Colorado, and Maine respectively.

Our team not only has this special blend, but it has also completed many municipal projects for Edina since the mid 1980's. We understand the Community that is Edina and what it takes to successfully complete projects in Edina. Edina deserves an expert team playing a proactive and pivotal role helping it make great decisions assuring winter recreation at Braemar Park featuring snow is a successful amenity. The SEH team described by this Qualification has not only provided feasibility study, market analysis/financial model preparation, public engagement including project meetings, bid document preparation, permitting, bidding assistance, and construction phase services for winter recreation projects; but also specifically in Edina.

Besides strong winter recreation design and market analysis/financial model preparation bench strength, a detailed understanding of how nearby private property owners might view the impacts of winter recreation are a must. The Representative Projects section of this Qualification demonstrates not only our team's winter recreation design and market analysis/financial model preparation bench strength, but also its understanding of how adding winter recreation needing snow in metropolitan areas can impact nearby property owners.

As a case in point, Paul Pasko will lead our project team as its project manager. Since 1998 and 2002, Paul has had the pleasure of leading the SEH design teams that completed both our Edina municipal and winter recreation featuring snow projects respectively. As project manager, Paul will combine his unique knowledge of both winter recreation inside metropolitan areas and what it takes to successfully complete municipal projects for Edina. Besides Paul, team members Mike Horn, Ken Taillon, Tom Honer and Deric Deuschle have all not only completed Edina municipal projects, but also our winter recreation projects needing snow. They all understand how property owners near Braemar Park might view the impacts of winter recreation. While the resumes contained in this Qualifications section Names of Specific Individuals Assigned to This Project and Their Relative Experience

Engineers | Architects | Planners | Scientists

**Short Elliott Hendrickson Inc.**, 10901 Red Circle Drive, Suite 300, Minnetonka, MN 55343-9302  
SEH is 100% employee-owned | [sehinc.com](http://sehinc.com) | 952.912.2600 | 800.734.6757 | 888.908.8166 fax

provide detailed accounts of our experience adding winter recreation to parks similar to Braemar Park, below are a few key items about a few of these individuals.

1. Mike Horn – Quality Assurance / Quality Control: Before joining SEH, Mike was a project manager for Three Rivers Park District. Mike managed all of Three Rivers Park District's projects either studying or adding winter recreation needing snow to Park District parks. As the Park District's consulting engineer, Paul worked with Mike on all of those projects. Since joining SEH, and on behalf of Edina, Mike has been inspecting Edina's contractor's work reconstructing both the Driving Range and Executive Golf Course in Braemar Park.
2. Deric Deuschle – Environmental: On behalf of Edina, Deric is providing wetland delineation and environmental permitting services for the project that will reconstruct the 27-hole golf course to and 18-hole golf course at Braemar Park. He provided these same services during the reconstruction of both the Driving Range and Executive Golf Course in Braemar Park.
3. Dave Belin – Market Analysis / Financial Model Preparation: Prepared an analysis and model for Three Rivers Park District during their study of potential summer time alpine activities at Hyland Ski and Snowboard Area.
4. Mark Meadows – Snowmaking Engineering and Mike Parsons – Noise Impact Study Preparation: Were both SEH subconsultants on Three Rivers Park District projects to reconstruct the snow making system at Hyland Ski and Snowboard Area and add snowmaking to cross country ski trails in Hyland Lake Park Reserve. Additionally, Mark was the lead snowmaking engineer for the last two winter Olympic games in Vancouver, Canada and Sochi, Russia. He is currently designing the snowmaking for 2018 Winter Olympics in South Korea.
5. Toby Muse – Site Civil Engineering: Besides taking over project manager duties from Paul for the last 6 street and utility reconstruction projects completed by SEH for Edina, Toby is managing Three Rivers Park District's project to add the 9-Mile Creek Regional Trail to Edina.

We admire Edina for recognizing the opportunity that reconstructing the 27-hole golf course to 18-holes at Braemar Park presents to considering adding winter recreation featuring snow. Our experience shows that by considering both projects together now Edina is already addressing the fact that golf and snow are mutually exclusive. Many communities do not address this fact until it is too late. The price for that tardiness is usually expensive rework to an already built golf course. Today golfers want to use a course as late as November and early as March. During November and March snow is usually being made or melting respectively. We understand this exclusiveness. Golfers do not want snow to diminish their late or early season golf experience. We respect that.

We also respect that besides understanding what kind of impacts noise and light generated by winter recreation might have on surrounding private property owners, Edina will need to understand the revenues and expenses winter recreation will present. We have already developed these understandings for other winter recreation areas inside other metropolitan areas.

It is of great benefit to Edina that Braemar Park already has a large lit blacktop parking lot, clubhouse (containing Tin Fish), and adequate electrical power needed for a former municipal water well (now used for only golf course irrigation) adjacent to the area being considered for winter recreation shown in Exhibit A. This well can likely become the source of water needed to make snow. Bright green lines in Exhibit A are proposed golf course features. At a very schematic level, we believe the area shown in Exhibit A can physically contain the following opportunities for winter recreation with snow that all of Edina's property owners and visitors can use even when natural snow is absent without impacting golf.

1. A cross-country skiing trail featuring snow that is about 1.25 kilometers long (loop).
2. The loop could contain about 30, 20, and 50 percent of beginner, intermediate, and difficult terrain levels respectively.
3. Because the loop can be 1.25 kilometers long, by completing laps of the entire loop common cross-country race distances in multiples of 5 kilometers can be achieved. These distances may be attractive to Edina High School's Nordic Ski Team. Edina could consider hosting high school Nordic ski races on the loop. A sizable parking lot for cars and buses is already present. Additionally the clubhouse and Tin Fish are probably capable of handling concession needs of potential race athletes, their coaches, and fans.

4. Because the loop could be power groomed, it could periodically host other trail oriented activities such as fat-tire style winter biking and snow shoeing. At the conclusion of these activities, the power-groomer can return the trails to cross country skiing.
5. The loop can connect to possible cross-country skiing trails, featuring natural snow that Edina may choose to locate along the edges of Braemar's proposed 18-hole golf course.
6. As many as 11 snow tubing lanes that could include as many as 2 handle style tows that return tubers to the top of the hill for another run.
7. Because the snow tubing area could be power groomed, it could periodically host other downhill activities such as sledding or additional intermediate level cross country skiing trails. At the conclusion of these activities, the power-groomer can return the area to snow tubing.

Off-winter usage opportunities for this area will likely present themselves to Edina too. Edina may wish to consider opportunities such as zip wires, mountain biking, walking, running, and scenic overlooks for wedding event nuptial services and photography opportunities for wedding parties already using the club house.

We are confident that after reviewing the material in this Qualification Edina will see why our project team is uniquely qualified to deliver a successful project. We have the special blend of winter recreation and municipal project skill sets needed to design winter activities needing snow on existing park land within hundreds of feet of private property and public streets. Our combination of park design professionals, real world snowmaking experience, and market analysis/financial model preparation expertise will ensure that all of the Edina's immediate and long-term needs are covered. We look forward to further discussions with Edina on how SEH can help make this exciting project a reality.

Sincerely,



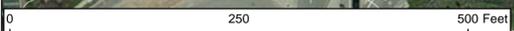
Paul J. Pasko III, PE  
Project Manager

CC: Mike Horn, SEH  
Dave Belin, RRC Associates  
Mark Meadows, PE, Torrent Engineering and Equipment  
Mike Parsons, HDR  
Deric Deuschle, SEH  
Tom Honer, SEH  
Ken Taillon, SEH  
Toby Muse, SEH

P:\AE\E\Edina\136169\1-gen\10-setup-cont\03-proposal\soq\ EDINA 136169\_Braemer Golf Course\_SOQ\_FINAL.pdf

AREA THAT CAN  
CONTAIN POSSIBLE  
WINTER RECREATION  
FEATURING MACHINE  
MADE SNOW

EXHIBIT A  
04/01/16



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, SITA, Intermap, and the USGS Mission Management Team

# SEH Address and Brief History

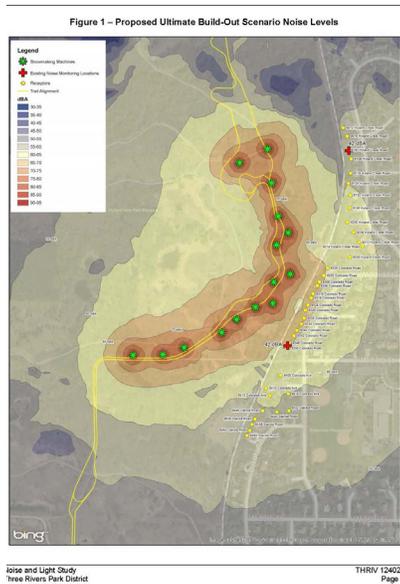
## FIRM OVERVIEW

SEH is an employee-owned engineering, architectural, environmental, and planning company that helps government, industrial, and commercial clients find answers to the tough questions they face. Our 700 employee-owners share a common goal: Building a Better World for All of Us®. This approach reflects a company-wide commitment to improving the quality of life by designing safer, more sustainable infrastructure for local, state, and federal units of government, and helping industrial and commercial clients achieve their business goals. You will find our clients spread out across the United States - with evidence of our work in 42 states.

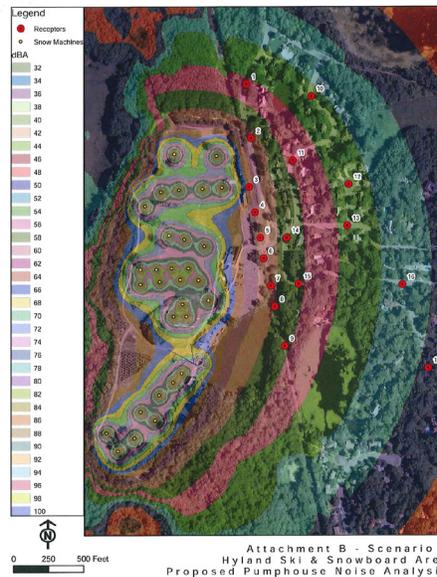
Address:  
 10901 Red Circle Drive  
 Suite 300  
 Minnetonka, MN 55343  
 Phone: 952.912.2600

## HISTORY

What started as a one-person operation more than 88 years ago has transformed into a nationally recognized consulting firm of more than 700 engineers, architects, planners, and scientists. P.R. Bannister launched SEH in 1927 as P.R. Banister Consulting Engineers in North St. Paul, Minnesota. In 1934, the office moved to St. Paul to accommodate growth in staff and clientele. That same year, the company changed its' name to Banister Engineering Company. We then moved to Roseville, Minnesota in August 1970, and on October 1, 1971, the name was changed once again to Banister, Short, Elliott, Hendrickson and Associates. The firm was incorporated on July 1, 1975 and the firm's new name of Short Elliott Hendrickson Inc. was adopted on July 1, 1977. Today the firm is headquartered in St. Paul and has 30 offices in Colorado, Indiana, Iowa, Minnesota, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming.



Sound levels caused by operating snowmaking machines in the neighborhood adjacent to Hyland Lake Park Reserve in Bloomington, MN.



Sound levels caused by operating snowmaking machines in the neighborhood adjacent to Hyland Ski and Snowboard Area in Bloomington, MN.



Installing force water main pipe and electric cables for snowmaking for the Snowmaking and Lighted Trail Development for Cross-country Skiing at Hyland Lake Park Reserve – Bloomington, Minn.

# Subconsultant Name, Address, and Brief History

We have supplemented our team with three subconsultant firms. RRC Associates, Torrent Engineering & Equipment, and HDR are global leaders in their respective fields.

## RRC Associates (RRC)

RRC was founded in 1983, and is the recognized leader in consumer intelligence and strategic market research for the tourism and recreation industries. RRC provides a broad range of market research, land use planning, real estate, customer satisfaction, and media and communications research services. Their focus is on providing high-quality, customized market research, planning, and analysis services to our clients.

Address:  
4770 Baseline Road  
Suite 360  
Boulder, CO 80303  
Phone: 303.449.6558

RRC is a full-service research company utilizing a variety of tools including web-based, intercept, kiosk, mail, and phone surveys and focus groups to meet client needs. Secondary research is also an important tool for RRC for projects such as competitive analysis and market feasibility studies. Results from their research have been used for branding, positioning, pricing, and planning decisions by a wide variety of clients.

## Torrent Engineering & Equipment (TEE)

TEE was established in 2000. Its two co-owners each have over 30 years of experience related to snowmaking systems and equipment. TEE encompasses system engineering, equipment selection and application, and prefabricated systems to provide practical snowmaking process equipment solutions to their clients. Their expertise includes:

Address:  
PO Box 270  
10693 N. Orn Rd.  
Millford, IN 46542  
Phone: 574.658.3200

- Mechanical, electrical, and controls engineering
- Snowmaking system design
- Practical knowledge of pumping equipment and controls
- Packaged (prefabricated) pump systems
- Process cooling systems
- Machine automation, motor controls, and electrical distribution

## HDR Inc. (HDR)

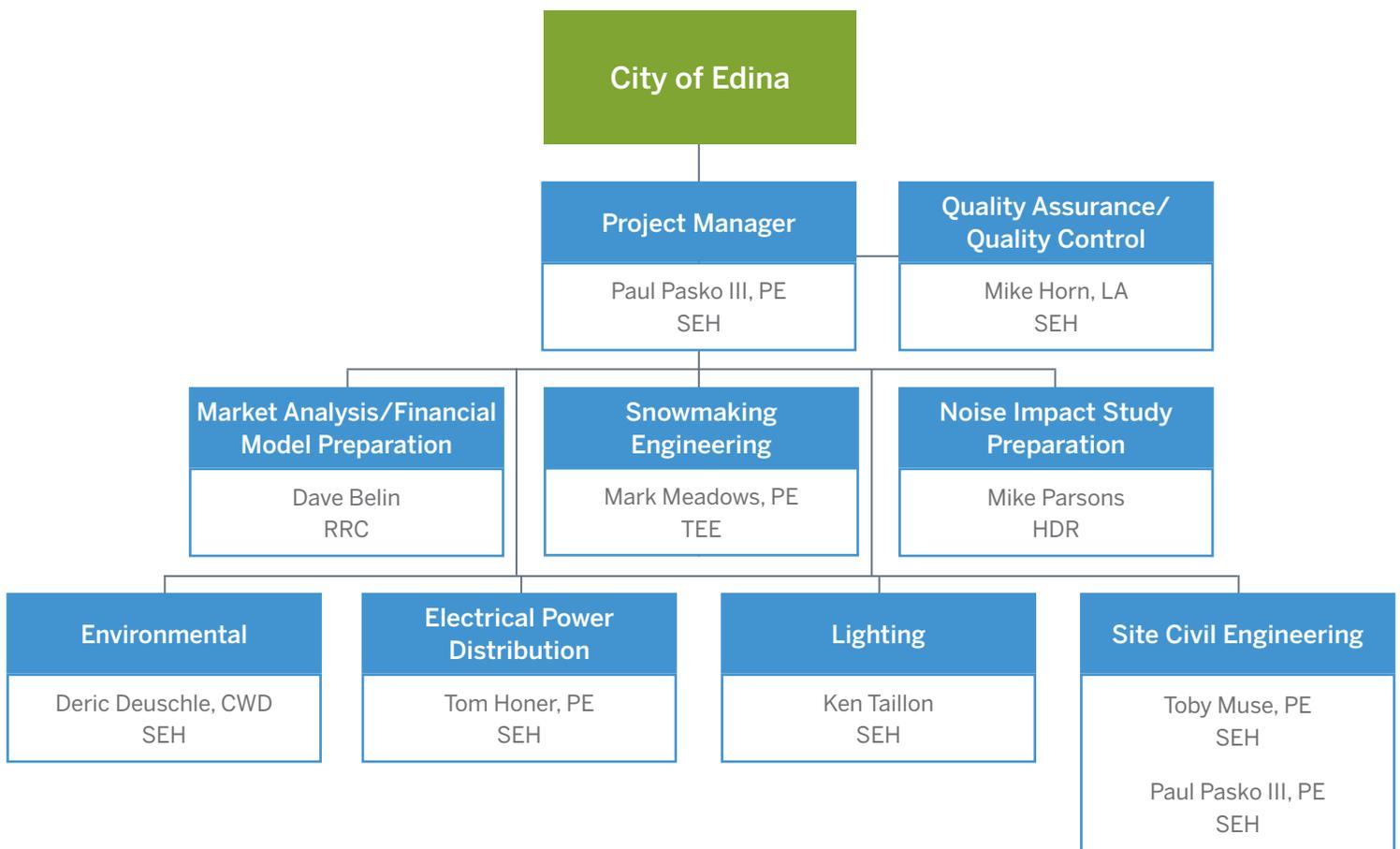
HDR was founded 90 years ago. They are a leader in performing NEPA noise and vibration analyses for projects involving surface transportation systems and transit, stationary and mobile noise sources including combustion turbines, snow-making machines, wind farms, construction projects, mineral extraction, water delivery/distribution systems, wastewater treatment facilities, and other architectural, industrial, and infrastructure noise sources. They can provide:

Address:  
701 Xenia Ave. South  
Suite 600  
Minneapolis, MN 55416  
Phone: 763.591.5400

- Air & Range Installation Compatible Use Zone (AICUZ/ RAICUZ) Studies
- Airport Ground Noise Control
- Architectural Studies
- Environmental Assessments (EA) and Impact Statements (EIS/Impulsive or Low Frequency Noise)
- Industrial Noise Sources (oil & gas, mining, and water-related projects)
- FAA Part 150 Studies
- Large & Small Arms Acoustical Analysis
- Noise Monitoring & Modeling (stationary and mobile noise sources)
- Occupational Noise, Worker Exposure & Noise Reduction strategies
- Recreational Noise
- Rocket Launch & Commercial Space Flight Noise
- Supersonic/Subsonic Noise
- Training Seminars & Guidelines
- Transportation Noise Sources (maritime, highway, transit, passenger, freight & high-speed rail)
- Underwater Acoustic Monitoring

# Names of Specific Individuals Assigned to this Project and their Relative Experience

To meet the City of Edina’s needs in designing a Winter Recreational Area, we have assembled a team with direct relevant experience. The following organizational chart identifies those team members proposed for this project and the roles and reporting structure. SEH, HDR and TEE team members listed below have been working together since 2002 providing study, market analysis/financial modelling, noise impact studies, bid document preparation, bidding assistance, and construction phase services for SEH’s winter recreation projects. Resumes for the individuals identified in the organizational chart follow.





# Paul J. Pasko III, PE

## Project Manager and Site Civil Engineering

Mr. Pasko is a project manager/engineer with 28 years of experience in a wide variety of civil and municipal engineering projects. Paul's responsibilities range from project conception to completion, including preparing scoping level studies, feasibility studies, and preliminary and final design. He also works on project management, construction administration and staking. Paul has worked on projects that include snowmaking systems, winter recreation activity design, sanitary sewer collection systems, water distribution systems, grading and drainage, site development and engineering, and streets and roadways. He also brings experience with public hearings and both written and presented public communications. Paul was the recipient of the 2015 Charles W. Britzius Distinguished Engineer Award, as decided by the Minnesota Federation of Engineering, Science and Technology Societies (MFESTS), and he was named the 2014 Engineer of the Year by the Minnesota Society of Professional Engineers (MnSPE).

### SEH OFFICE LOCATION

Minnetonka, Minn.

### EDUCATION

Bachelor of Science  
Civil Engineering  
University of Illinois at  
Urbana-Champaign

### CONTINUING EDUCATION

Safety Training Refresher  
(2012)

### PROFESSIONAL REGISTRATIONS

Professional Engineer in  
Minnesota (# 24628, 1996) and  
Illinois (#062-048410, 1993)

### PROFESSIONAL ASSOCIATIONS

City Engineers Association of  
Minnesota (CEAM), Member  
(1996–present)

Minnesota Society of  
Professional Engineers (MSPE),  
Member (1996–present)  
Secretary (1999–2003)

American Public Works  
Association (APWA) Minnesota  
Chapter,  
Member (1996–present)

Education and Training  
Subcommittee, Member  
(2010–present)

### AWARDS

2014 Engineer of the Year,  
Minnesota Society of  
Professional Engineers (MSPE)

### EXPERIENCE

#### Elm Creek Park Reserve Winter Recreation Area Phase I (Three Rivers Park District) – Osseo, Minn.

Project manager of this \$1.2 million winter recreation project. Based on a scoping level design prepared by the Three Rivers Park District staff, Paul coordinated design meetings with Park District staff and assisted with informational meetings for the Park District Board and its residential neighbors. Paul also prepared plans, specifications, and cost estimate for civil site improvements and mechanical and electrical equipment; provided bidding assistance, and construction administration, observation, and staking; and was responsible for project management during the construction. The project featured the addition of mechanical and electrical systems along 2.6 km of existing cross-country ski trails, allowing for snowmaking activities to occur along these trails. Mechanical and electrical systems were also added to nine acres of hillside for snowmaking activities on a snow tubing and snowboard and downhill ski area. Project components included the construction of a 4.1 MG clay-lined reservoir to store water used to make snow, regrading a nine-acre hillside for downhill skiing, snowboarding, and snow tubing activities, snowmaking pump skid, 8,500 ft. of steel pipe connected to 32 snowmaking hydrants, cast-in-place concrete wet well and foundation for the pump skid and its wood framed pump house, reconstruction of the existing cross-country ski trail lighting system, reconstruction of an 89-stall bituminous parking lot, stormwater runoff detention basin, tree clearing plan to make room for the snowmaking pipe network, realignment of 1,200 ft. of 10 ft. wide bituminous bicycle trail, and a restoration plan for park areas disturbed by construction.

#### Snowmaking and Lighted Trail Development for Cross-Country Skiing at Hyland Lake Park Reserve (Three Rivers Park District) –Bloomington, Minn.

Project manager on the \$4.2 million improvement project including snowmaking and lighted trail development for cross country skiing for Hyland Lake Regional Park. Paul prepared plans and a cost estimate for civil site improvements and mechanical and electrical equipment. The project featured the addition of mechanical and electrical systems along five km of existing and proposed cross-country ski trails allowing for snowmaking activities to occur along these trails. Project components included the construction of an intake pipe from Hyland Lake for water used to make snow, reconstruction of an existing boat ramp adjacent to the proposed intake pipe, snowmaking pump skid, 11,900 ft. of steel pipe connected to 42 snowmaking

## Paul J. Pasko III, PE Continued

hydrants, cast-in-place concrete wet well and foundation for the pump skid and its wood framed pump house, reconstruction of the existing cross-country ski trail lighting system, tree clearing plan to make room for the snowmaking pipe network, and a restoration plan for park areas disturbed by construction.

### **Dellwood Park Winter Recreation Area (Lockport Area Township Park District) – Lockport, Ill.**

Project manager for a schematic level sketch of park improvements, opinions of construction costs, and yearly operating costs and revenues for the winter recreation area. Paul prepared a forces and issues matrix outlining pros and cons of impacts on various specific project elements. Recognizing the satisfaction visitors already experience sledding at Dellwood Park caused the Lockport Area Township Park District to ask itself if that satisfaction could be a source of revenue, particularly if winter recreation activities supported by machine-made snow, snow tubing and snowboarding, were added to Dellwood Park. Paul completed schematic level investigations into the best location in the park for snow tubing and snowboarding, possible water sources for snowmaking operations, scope of slope side operations, and possible locations for parking lots. He also completed geotechnical investigations looking for bedrock depths, socio-political issues such as impacts of construction and winter operations on nearby existing neighborhoods and the likelihood of unearthing native American and civil war artifacts during construction. Other tasks included looking at sources of electricity for snowmaking operations and slope lighting for night time operations.

### **Battle Creek Regional Park East (Ramsey County Parks and Recreation Department) – St. Paul, Minn.**

Project manager for the study for adding snowmaking to an existing sledding hill and cross-country ski trails within the park at an estimated cost of \$2.7 million. The study featured adding mechanical and electrical systems to a 5.7 acre sledding hill and along 2.5 km of cross-country ski trails to allow for snowmaking activities. Furthermore, area lighting was added to the sledding hill to convert the hill from a sledding to a snowboard and downhill ski area. Project components studied included the construction of a 1.9 MG plastic-lined reservoir to store water used to make snow, implications of filling the reservoir with water from City-owned water main, snowmaking pump skid, 7,200 ft. of steel pipe connected to 36 snowmaking hydrants, cast-in-place concrete wet well and foundation for the pump skid and its wood framed pump house, and reconstruction of the existing cross-country ski trail lighting system.

### **Clifton E. French Regional Park Feasibility Study (Three Rivers Park District) – Plymouth, Minn.**

Project manager for preparation of a study adding snowmaking to an existing sledding hill and cross country ski trails within the park at an estimated cost of \$5.6 million. The study featured adding mechanical and electrical systems to a 0.7 acre sliding hill and along 2.5 km of cross-country ski trails to allow for snowmaking activities. Project components studied included the construction of a 6.7 MG clay-lined reservoir to store water used to make snow, implications of filling the reservoir with water from City-owned water main, snowmaking pump skid, 11,500 ft. of steel pipe connected to 46 snowmaking hydrants, cast-in-place concrete wet well and foundation for the pump skid and its wood framed pump house, and reconstruction of the existing cross-country ski trail lighting system.

### **Country Club Neighborhood Street and Utility Reconstruction – City of Edina, Minn.**

Project manager and construction administrator for the temporary sanitary sewer and water main pipe networks, extensions of the existing storm sewer network, stormwater runoff treatment manholes, and street section reconstruction for a total cost of \$13.2 million. The project featured conventional aggregate base, bituminous paving, and replacement of existing curb and gutter, sidewalk spot repairs, replacement of existing road signage, and the reconstruction of the existing street light network. It included working with residents to mutually agree on a solution to the cut-through vehicle traffic in the northeast part of Edina in which the project is located. Residents requesting that cut-through traffic be addressed came not just from Edina, but also from the border Cities of St. Louis Park and Minneapolis. The project then applied every trenchless utility reconstruction method known to the industry to reconstruct all of the public utilities along five miles of streets while not removing any boulevard trees. Utility reconstruction included reconstructing the City-owned water service pipe to the curb stop and the privately owned sanitary service pipe in the right-of-way. Paul prepared feasibility studies and coordinated open houses, contractor think tank workshops, and neighborhood meetings. He also presented the project to the City's Transportation Commission, Heritage Preservation Board and Council. Paul was responsible for the plans, specifications, cost estimates, bid assistance to the City, and provided construction administration, observation, staking, and project management during construction.

## Paul J. Pasko III, PE Continued

### **Pamela Park Neighborhood Street Improvements – City of Edina, Minn.**

Project manager for this \$2.3 million reconstruction of the local streets. As part of their five-year Capital Improvement Plan, the City identified this neighborhood as needing street reconstruction. Paul prepared feasibility studies, coordinated open houses and neighborhood meetings, prepared plans, specifications, cost estimates, and provided bidding assistance to the City. The project included spot repairs of sanitary sewer; spot repairs of water main; storm sewer extensions using both open cut and horizontal directional drilling methods; stormwater runoff treatment manholes and biotreatment swales; street sections consisting of both conventional and recycled aggregate bases; bituminous paving; construction of new curb and gutter and rehabilitation of existing curb and gutter. The project also featured the addition of a drain tile pipe along both sides of each street using trenchless construction methods. The drain tile is connected to the neighborhood storm sewer pipe network. Homeowners were encouraged to connect their sump pump discharge hoses to this drain tile to prevent discharges into the City's sanitary sewer pipe network.

### **St. John's Park Neighborhood Street Improvements – City of Edina, Minn.**

Project manager for a \$1.7 million project reconstructing the local streets. As part of their five-year Capital Improvement Plan, the City identified this neighborhood as needing street reconstruction. Paul prepared feasibility studies; coordinated open houses and neighborhood meetings; prepared plans, specifications, and a cost estimate; provided bid assistance to the City; and provided construction administration, observation, staking, and project management during construction. The project included spot repairs and cured-in-place pipe lining of sanitary sewer; spot repairs of water main; storm sewer extensions; stormwater runoff treatment manholes; street sections consisting of both conventional and recycled aggregate bases; bituminous paving; construction of new curb and gutter and rehabilitation of existing curb and gutter. The project also featured the addition of a drain tile pipe along both sides of each street using trenchless construction methods. The drain tile is connected to the neighborhood storm sewer pipe network. Homeowners were then encouraged to connect their sump pump discharge hoses to this drain tile to prevent discharges into the City's sanitary sewer pipe network.



## Mike Horn, LA

### Quality Assurance/Quality Control

Mr. Horn has wide-ranging experience in the management of rural, urban and regional planning projects where ideation and creativity is the foundation of his approach. Mike is a senior project manager, respected industry leader and technical specialist in the areas of landscape architecture and planning. He specializes in park assessments and development, ADA and universal design, snowmaking applications, play area development and boat/fishing access. Mike has extensive knowledge of trail design from mountain hiking trails and cross-county ski trails to paved multi-use trails.

### EXPERIENCE AS A PROJECT MANAGER FOR THREE RIVERS PARK DISTRICT PRIOR TO JOINING SEH

#### **Elm Creek Park Reserve – Winter Recreation Area Phase I – Osseo, Minnesota**

Project manager of the design and construction for snowmaking, water storage, x-country ski trails, snow tubing, downhill area, and ski chalet. Mike was responsible for meeting expectation of the Three Rivers Park District's Superintendent and Board of Commissioners to complete the snowmaking phase prior to the winter season.

#### **Location Study for Winter Recreation Featuring Machine Made Snow at Clifton E. French, Hyland Lake, and Elm Creek Park Reserves**

Project manager directing the feasibility study between three parks to determine the next park to develop into a winter recreation facility for x-county skiing. Mike worked closely with Park District staff and the consulting firm to determine trail routing, water acquisition and cooling, parking and infrastructure requirements, permitting, and projected user base.

#### **Snowmaking and Lighted Trail Development for Cross-Country Skiing at Hyland Lake Park Reserve – Bloomington, Minnesota**

Project manager for the design and development of snowmaking and trail routing for five kilometers of x-country skiing. Mike worked closely with park commissioners and staff to provide both a beginner and challenging trail routing for a variety of ski users.

#### **Hyland Bush Anderson Lakes Park Reserve – Hyland Ski and Snowboard Area (HSSA)– Bloomington, Minnesota**

Project manager for the economic feasibility and master plan for the revitalization of the popular HSSA ski area. Mike worked closely with City of Bloomington Planners, Park District Superintendent and Board of Commissioners to develop off-season revenue opportunities, in addition to parking and site strategies to relieve congestion in the surrounding neighborhood.

### EXPERIENCE SINCE JOINING SEH

#### **Arden Neighborhood A – Utility and Street Reconstruction – Edina, Minnesota**

Public relations and resident project representative for the Arden A neighborhood for utility and street replacement for over 200 residences. Mike was the primary contact person during construction for homeowners, fielding all questions and concerns and providing weekly web based updates. Mike was also the primary inspector of contracted work associated with water and sewer replacement.

#### **Braemar Executive Golf Course 2015 Reconstruction – Edina, Minnesota**

Inspector for erosion control measures during construction. Mike attended weekly construction meetings and provided inspection services to assure all erosion control structures were maintained or provided recommendations for additional measures if needed in specific areas.

### SEH OFFICE LOCATION

Minnetonka, Minn.

### EDUCATION

Bachelor of Science  
Horticulture (Landscape  
Design Option)  
Montana State  
University-Bozeman

### CONTINUING EDUCATION

Project Management  
University of  
Minnesota-Minneapolis

### REGISTRATIONS/ CERTIFICATIONS

Landscape Architect in  
Minnesota (#41906, 2002)

### PROFESSIONAL ASSOCIATIONS

American Society of Landscape  
Architecture (ASLA), Member  
(2002–present)

### AWARDS

1999 Award of Excellence,  
Montana Fish, Wildlife and  
Parks

## DAVID R. BELIN

David brings strengths in project management and data analysis to work for clients. The Director of Consulting Services at RRC, David excels in designing guest research projects that incorporate the needs of clients and then delivering action-based recommendations derived from key findings of that research. His work has formed the basis of numerous strategic and marketing plans for resorts and other tourism-based clients. Examples of projects he has directed include visitor research studies, branding studies, and conversion studies in the recreation and tourism industry; economic analyses of the impact of tourism; and feasibility studies for resort real estate projects.



Research methodologies with which David has extensive experience include surveys conducted via the Internet, telephone, mail-out/mail-back, and intercept techniques, as well as facilitation of focus groups. David possesses a master's degree in Business Administration from the Fuqua School of Business at Duke University.

### Education

Master of Business Administration: Fuqua School of Business, Duke University, 1998

Bachelor of Arts, History: Yale University, 1992

### Professional Experience with RRC

2003 to present      DIRECTOR OF CONSULTING SERVICES, RRC Associates, Boulder, CO

1998 to 2003        SENIOR RESEARCH ANALYST, RRC Associates, Boulder, CO

### Representative Projects

#### Visitor Profile Studies

Telluride, CO	Killington, VT
Breckenridge, CO	Montrose, CO
Boulder, CO	Grand Targhee, WY
Estes Park, CO	Walla Walla, WA
Big Bear Lake, CA	Council Bluffs, IA

#### Competitive/Strategic Analysis

Telluride Mountain Village Owners Association  
 Downtown Boulder Business Improvement District  
 Colorado Ski Country USA

#### Economic Impact Studies

Ski Areas of New York  
 Pennsylvania Ski Areas Association  
 North Carolina Ski Areas Association  
 Minnesota Ski Areas Association

#### Multi-Season Recreation Market Assessment

Boler Mountain, ONT  
 Gunstock Mountain, NH  
 Hickory Hills, MI  
 Hyland Ski and Snowboard, MN  
 June Mountain, CA  
 Mt. Agassiz, MAN

#### Valuation Models

CNL Lifestyle Properties  
 Numerous other ski areas

#### Ski Area Visitor Research

Whitefish, MT	Okemo, VT
Sunday River, ME	Mount Sunapee, NH
Schweitzer, ID	The Canyons, UT
Mt. Bachelor, OR	Moonlight Basin, MT
Mount Snow, VT	Loon Mountain, NH

#### National Ski Areas Association

Beginner Conversion Cookbook  
 Model for Growth Analysis  
 Kottke End of Season Report  
 Economic Analysis of US Ski Areas  
 Financial Return on Sustainability

#### Real Estate Feasibility Studies

Teton Pines, ID  
 Bitterroot Resort, MT  
 Steamboat Ski Area, CO  
 Three Sisters Mountain Village, AB  
 Cloudrock, UT  
 Grand Targhee, WY

# Mark R. Meadows, PE

## TORRENT Engineering & Equipment

### Snowmaking Engineer

#### Qualifications:

Mark has over 25 years of engineering experience related to snowmaking system design and installation worldwide. His experience includes complete system design, equipment specification and application, project management, and on-site engineering supervision and inspection.

Mark was the lead snowmaking engineer as part of the design team for the last two winter Olympics, Whistler/Cypress (Vancouver) and Rosa Khutor (Sochi), and is presently involved in planning for the 2018 winter games in South Korea.

Mark is the lead snowmaking engineer for clients North American including Vail Resorts, Aspen Skiing Company, Peak Resorts, and Powder Corporation among others.

Mark has been a co-owner of Torrent since 2000.

#### Education:

- Bachelors Degree, Mechanical Engineering Technology  
Rochester Institute of Technology
- Associates Degree, Design and Drafting  
Alfred State College

#### Professional Registration:

- NYS Professional Engineer, License 071591
- CA Professional Engineer, License M 31632
- CO Professional Engineer, License 38008
- AZ Professional Engineer, License 45955
- PA Professional Engineer, License PE078860

#### Recent Projects:

##### **SEH / Hyland Lake, MN - 2013**

New snowmaking system design for cross-country ski area including pump station and trail piping

##### **SMI / Thaiwoo, China - 2013**

Detailed snowmaking system design for a new large resort

##### **Stowe, VT - 2013**

Booster pump station design

##### **Sunday River, ME - 2012**

Snowmaking system analysis and master planning services

##### **Arizona Snowbowl, AZ -2011**

Final design installation drawings and specifications for complete new airless type snowmaking system including piping, electrical, pump station, and water cooling

##### **Aspen Highlands, CO - 2011**

Snowmaking system expansion engineering

##### **Copper Mountain, CO - 2011**

Mountain system, pump station, and compressor expansion for early season race training venue snowmaking coverage

##### **Mount Snow, VT - 2009-10**

Major pumping infrastructure upgrade including withdrawal, transfer, and two on-mountain booster pump stations



## Michael J. Parsons, PE, INCE

Civil Engineer/Noise Specialist

Mr. Parsons is a civil engineer with over 16 years of experience finding creative solutions to address noise and vibration on projects throughout Minnesota and North America. He has extensive experience performing NEPA noise and vibration analyses for projects involving surface transportation systems and transit, stationary and mobile sources including combustion turbines, snow-making machines, wind farms, construction projects, mineral extraction, water delivery/distribution systems, wastewater treatment facilities, and other architectural, industrial, and infrastructure noise sources.

### EDUCATION

Bachelor of Science, Civil Engineering, University of WI Madison, 1997

### PROFESSIONAL REGISTRATIONS

PE – Minnesota (#45493)  
Oregon (#81444)

### PROFESSIONAL AFFILIATIONS

Institute of Noise Control Engineering

### SPECIALIZED TRAINING

40-Hour Hazardous Waste Site Training (HAZWOPER)

### HDR TENURE

16+ Years

### INDUSTRY TENURE

17+ Years

### TRAINING

NHI Course #142051  
Highway Traffic Noise

Transit Noise & Vibration Impact Assessment

Trained Missouri DOT on TNM Analyses

### HDR PROJECT EXPERIENCE

**Hyland Ski and Snowboard Area Noise Study, Bloomington, MN.** HDR was hired to perform the noise analysis for the proposed expansion of the Hyland Ski and Snowboard Area snow making process. Existing noise levels were measured in the project area, and future noise levels were predicted using Cadna-A with the proposed snow making machines operating. Results were summarized in a technical report.

**Noise Study for Snowmaking and Lighted Trail Development for Cross-Country Skiing at Hyland Lake Park Reserve, Bloomington, MN.** HDR was hired to perform the noise analysis for the affects on private property owners close to existing cross country ski trail segments to potentially receive machine made snow. Existing noise levels were measured in the project area, and future noise levels were predicted using Cadna-A with the proposed snow making machines operating. Results were summarized in a technical report.

**MnDOT Cayuga Noise Analysis.** The Cayuga Project is located on I-35E between University Avenue and Maryland Avenue in Saint Paul, MN. The scope of the project includes reconstruction and realignment of I-35E. Thirteen bridges will be replaced or constructed. Among the significant improvements, the existing Pennsylvania Avenue/I-35E interchange will be replaced by a new interchange at Cayuga Street, correcting the current safety and operational issues at Pennsylvania and improving access for Saint Paul's recently constructed Phalen Boulevard corridor. Capacity will be added in each direction and the existing roadway geometry will be improved. A noise analysis was performed of the existing and proposed roadway using the Mn/DOT MINNOISE model. A public meeting was held to discuss and solicit desire for the noise walls that were designed as part of the noise analysis.

**MnDOT TH 100 Noise and Air Quality Analysis.** Mr. Parsons was the Project Manger and lead noise analyst for the TH 100 Noise and Air Quality Analysis. This project is located in St. Louis Park, MN and evaluated the TH 100 reconstruction and auxiliary lane addition from 36th Street to Cedar Lake Road, including the cross streets of Cedar Lake Road, Minnetonka Boulevard, Highway 7/County Road 25, and 36th Street. The final product will assist the State in writing the required environmental documentation and also assist the state with the required public involvement process to gain municipal consent. The newly enacted, 2011 state noise policy was followed throughout this project including hosting and leading the Noise Advisory Committee meetings with area residents and the balloting of benefited receptors.



## Deric R. Deuschle, CWD

### Environmental

Mr. Deuschle is a senior scientist with 16 years of environmental consulting and ecological research experience. Deric is an aquatic ecologist and leader of SEH's natural resources team. Deric provides project management and technical leadership for wetland services, such as delineations, permitting, mitigation siting and design, and monitoring. He produces environmental documents including environmental assessments (EA), environmental assessments worksheets (EAW), and EISs. Deric brings expertise in threatened and endangered species surveys, tree inventories, water quality analysis, aquatic invertebrate ecology, stream and large river ecology, fish and wildlife studies, nutrient loading analysis, GIS, and GPS.

### EXPERIENCE

#### **Braemar Golf Course Driving Range and Executive Course Reconstruction – City of Edina, Minn.**

Aquatic ecologist leading the wetland delineations and permitting for the reconstruction of the driving range and the nine-hole executive course. Project included a determination of jurisdictional status of wetlands, with the determination that the majority of aquatic features were incidental or not waters of the United States. A small wetland was created as mitigation for unavoidable impacts, and extensive areas of short grass prairie and oak savanna were created or restored to provide ecological restoration as a course augmentation. Erosion control inspections were completed throughout the reconstruction to support NPDES permit requirements.

#### **Braemar Golf Course Reconstruction – City of Edina, Minn.**

Aquatic ecologist leading the wetland delineations and permitting for the reconstruction and consolidation of the Braemar Golf Course from 27 to 18 holes. Project included wetland delineations, functions and values assessments, and permitting for minor wetland impacts. A six-acre wetland and floodplain mitigation site was designed along the South Fork of Nine Mile Creek, as were the establishment of upland buffer and oak savanna to integrate ecological enhancement within the course design.

#### **Feasibility Study of Snowmaking and Lighted Trail Development for Cross-Country Skiing at Hyland Lake Park Reserve (Three Rivers Park District) – City of Bloomington, Minn.**

Aquatic ecologist on the analysis of Hyland Lake water temperatures to determine the feasibility of using the lake as a water source for machine made snow for use on cross-country ski trails. Deric completed analysis and assessment of when ice-in would occur on the lake as a surrogate for predicting when snow-making operations could begin in the fall.

#### **Bid Document Preparation and Construction Phase Services for Snowmaking and Lighted Trail Development for Cross-Country Skiing at Hyland Lake Park Reserve – City of Bloomington, Minn.**

Aquatic ecologist who oversaw the wetland delineations, permitting, and water appropriation for the trail alignment and placement of utilities to create snow on a cross-country ski circuit. The project also required agency coordination for permitting of an intake structure and water appropriation from Hyland Lake and for wetland impacts associated with the project from placement of electrical and water utilities, and the pump house.

#### **D&I Railroad Relocation – Hawarden, Iowa.**

Project manager for the completion of a Categorical Exclusion for the relocation of two miles of railroad currently located on an unstable slope along the Big Sioux River. The project required the completion of wetland delineations, review of cultural resources, threatened and endangered species, and floodplain determination. The document was approved by the Federal Rail Authority and approved for a federal grant.

### SEH OFFICE LOCATION

St. Paul, Minn.

### EDUCATION

Master of Science  
Biology  
University of Wisconsin-La  
Crosse

Bachelor of Science  
Biology  
Winona State University  
Winona, Minn.

### CONTINUING EDUCATION

MnDOT, Hydinfra (2005, 2007)

Wisconsin Department of  
Natural Resources, Karner  
Blue Butterfly HCP Monitoring  
(2008)

### CERTIFICATIONS

Certified Wetland Delineator  
(CWD) (2005), University of  
Minnesota-Water Resources  
Center

OSHA 40 Hour HAZWOPER  
(Specialist)

OSHA 8 Hour HAZWOPER  
(Refresher) (2014), SEH

### PROFESSIONAL ASSOCIATIONS

Open Space Commission, City  
of Andover, Minn., Chairman  
(2007)

Elm Creek Watershed  
Management Commission, Vice  
Chairman (2002–2007)

Wetland Professionals  
Association, Member (2001)



## Toby Muse, PE

Site Civil Engineering

Mr. Muse is a senior project manager with 16 years of experience who leads and facilitates site civil planning and design and construction services, including numerous park projects and City of Edina neighborhood and street reconstruction projects. He has worked on project design elements that include roads, trails, bridges, boardwalks and parking lots, and utility systems including stormwater detention/conveyance, sanitary sewer, water distribution, lighting and traffic signals.

### SEH OFFICE LOCATION

Minnetonka, Minn.

### EDUCATION

Bachelor of Science  
Civil Engineering  
University of North Dakota-  
Grand Forks

### REGISTRATIONS/ CERTIFICATIONS

Professional Engineer in  
Minnesota (#43364, 2004)

### PROFESSIONAL ASSOCIATIONS

Minnesota Public Works  
Association (MPWA), Member  
(2007-present)

City Engineers Association of  
Minnesota (CEAM), Member  
(2007-present)

Minnesota Society of  
Professional Engineers (MSPE),  
Member (2007-present)

### EXPERIENCE

#### **Nine Mile Creek Regional Trail (Three Rivers Park District) – Edina, Minn.**

Project manager for this six+ mile segment of regional trail through the City of Edina. Led planning, design and construction services for design of the trail that adhered to MnDOT federal/state aid design standards. Developed detailed plans, specifications, cost estimates and easements. Challenges included finding design solutions for a alignment that traversed through wetlands, floodplains, and developing residential and commercial corridors including over MnDOT trunk highways and under 70th Street via pedestrian bridges and a box culvert.

#### **Fish Lake Regional Park Pavement Rehabilitation (Three Rivers Park District) – Maple Grove, Minn.**

Project manager responsible for design and construction administration of this regional park improvement project. Responsibilities included the development of detailed plans, specifications, and cost estimates. Project rehabilitated parking lots, roads, trails, and a boat ramp. Included design of a porous concrete paver block system within the parking bays of the main visitor center parking lot, aquatic invasive species station, LED lighting, design of new water and sewer services by horizontal directional drill to serve a maintenance building and development of a robust construction staging and sequencing plan to facilitate park programs during construction of the roads and parking lots.

#### **Edina Project Portfolio**

Project manager responsible for feasibility study development, preliminary and final design, cost estimating, preparation of plans and specifications and construction administration.

- Arden Park D Roadway Improvements
- 54th Street Reconstruction
- Normandale Neighborhood Roadway Improvements
- Richmond Hills Park Roadway Improvements
- Gallagher Drive Reconstruction
- Minnehaha Woods Neighborhood Roadway Improvements



## Thomas D. Honer, PE

### Electrical Power Distribution

Mr. Honer is an electrical design, construction, engineering manager with more than 15 years of experience in the power and control system design. Tom has been involved in designs, evaluation, and construction of water and wastewater treatment facilities, hotels with water parks, parks and recreational park centers, industrial and commercial projects, and transmission. He is responsible for the design and preparation of construction documents for power distribution, lighting, motor controls, instrumentation, SCADA, and standby power. Tom also has experience in all voltage ranges from low voltage (0-480 volt), medium voltage (4.160-38kV) and high voltage. (69-230 kV). His design experience also includes fire alarm, lightning protection, and management of electrical projects from conceptual phase to completion of construction.

Tom's experience includes electrical and control design with specialty systems that include generators for emergencies, backup power, and peak shaving, electrical equipment evaluation, and replacement. He has also dealt with complex distribution projects where voltage drop is a major concern.

### EXPERIENCE

#### **Snowmaking and Lighted Trail Development for Cross-Country Skiing for Hyland Lake Regional Park (Three Rivers Park District) – Bloomington, Minn.**

Oversaw electrical group construction activities for project which featured the addition of electrical infrastructure along 5K of cross-country ski trails allowing for trail lighting and snowmaking operations. Electrical systems were also added to 2.9 acres of hillside for lighting and snowmaking operations on an existing sledding area.

#### **Mercury Removal – City of Hibbing, Minn.**

Electrical engineer for the design of 480 volt service to new filter building from existing service on site. Project included layout power, lighting, and controls for filter equipment. New programmable logic controller panel connected to existing system. Tom resized and designed new backup generation system to operate entire plant and used for peak shaving, 1000 kW gen set. Designed 2012-2013, Construction 2013 to present.

#### **Wastewater Treatment Facility Improvements – City of Mora, Minn.**

Electrical engineer for modification to existing facility, new pumping building, and modification to existing lift stations. Tom evaluated existing electrical equipment and provided design modification for new electrical equipment, controls, and SCADA. Equipment consisted of new motors control centers, upgrade utility power, backup generation, instrumentation and controls, and upgrade SCADA system.

#### **Tracy Avenue Roundabout – City of Edina, Minn.**

Lighting Designer for a roundabout along collector roadways. Ken prepared construction documents for the design which specified LED lighting equipment capable of connecting to the City's intelligent lighting control system.

#### **Arden Park – City of Edina, Minn.**

Lighting Designer for a residential decorative street lighting installation within the Arden Park neighborhood. Ken prepared construction documents for the design which incorporated a new LED lighting system. Ken was also responsible for project administration, and construction observation.

### SEH OFFICE LOCATION

St. Paul, Minn.

### EDUCATION

Bachelor of Science  
Electrical Engineering  
North Dakota State  
University-Fargo

### PROFESSIONAL REGISTRATIONS

Professional Engineer in  
Alberta (#183202, 2014),  
California (#19064, 2009),  
Colorado (#PE-43529, 2009),  
Idaho (#14106, 2010),  
Illinois (#062062283, 2010),  
Indiana (#PE11011500, 2010),  
Iowa (#19681, 2010),  
Kansas (#20838, 2009),  
Louisiana (#PE.0035221,  
2010),  
Minnesota (#45519, 2006),  
Montana (#19682, 2010),  
Nebraska (#E13252, 2010),  
North Dakota (#5634, 2006),  
Oregon (#84190PE, 2010),  
South Dakota (#10208, 2010)  
Virginia (#0402046738, 2009),  
Washington (#46832, 2010),  
Wisconsin (#40371, 2009), and  
Wyoming (#12710, 2010)

### PROFESSIONAL ASSOCIATIONS

North Central Electrical League  
(NCEES), Member (2013)



# Kenneth S. Taillon

## Lighting

Mr. Taillon has 21 years of experience in a wide variety of outdoor lighting projects for government agencies across the upper Midwest. Ken's work focuses on roadway lighting for state highways, commercial and residential areas, downtown streetscapes, and lighting for parks, parking lots, and sports facilities. His areas of expertise include lighting planning and policy development, design, specifications, construction observation, equipment photometric and mechanical evaluation, intelligent lighting management systems, solid state (LED) lighting equipment, and addressing operation and maintenance issues.

## EXPERIENCE

### **Battle Creek Regional Park East (Ramsey County Parks and Recreation Department) – St. Paul, Minn.**

Lighting and electrical specialist for a study for the addition of snowmaking and lighting to an existing sledding hill and cross-country ski trails within the park. Ken was responsible for the study which featured adding electrical and lighting systems to a 5.7 acre sledding/skiing hill and along 2.5 km of cross-country ski trails to allow for snowmaking, trail and site lighting.

### **Snow Tubing Feasibility Study (Saint Croix National Golf and Event Center) – Somerset, Wis.**

Prepared feasibility study to add snowmaking and lighting to an existing driving range at the golf course to enable winter snow tubing. Ken completed the study which featured the addition of electrical infrastructure to a 5.0 acre driving range to accommodate for snowmaking and site lighting.

### **Snowmaking and Lighted Trail Development for Cross-Country Skiing for Hyland Lake Regional Park (Three Rivers Park District) – Bloomington, Minn.**

Project manager for electrical equipment improvements. Ken prepared plans and cost estimates which featured the addition of electrical infrastructure along 5K of cross-country ski trails allowing for trail lighting and snowmaking operations. Electrical systems were also added to 2.9 acres of hillside for lighting and snowmaking operations on an existing sledding area.

### **Elm Creek Park Reserve Winter Recreation Area Phases 1 & 2 (Three Rivers Park District) – Osseo, Minn.**

Lighting and electrical design for a parking lots, tubing, and downhill ski hills, illuminated cross-country ski trail and training area, and snowmaking facilities. Ken provided construction documents and construction administration for the installation of new park electrical and lighting systems. The electrical system involved the design for the installation of new lighting and snowmaking facilities, and associated equipment. Assisted with electrical and lighting design for 8,300 sq. ft. visitors center.

### **Country Club Area, Lighting Improvements – City of Edina, Minn.**

Lighting Designer for a residential decorative street lighting installation within the Country Club neighborhood. Ken prepared construction documents for the design which incorporated a new lighting system with numerous existing lighting circuits. Ken was also responsible for project administration, and construction observation.

## SEH OFFICE LOCATION

St. Paul, Minn.

## EDUCATION

Bachelor of Applied Science  
Industrial Technology  
(Electronics, Management)  
University of Minnesota–Duluth

## CONTINUING EDUCATION

Roadway Lighting Design  
(06/2001), Minnesota  
Department of Transportation  
(MnDOT)

Traffic Signal Design  
(05/1996), University of  
Minnesota

## CERTIFICATIONS

Signal and Lighting II, Design  
and Inspection (2010),  
Minnesota Department of  
Transportation (MnDOT)

## PROFESSIONAL ASSOCIATIONS

Illuminating Engineering  
Society (IES), Member

Vadnais Heights Planning  
Commission, Former Member

## Kenneth S. Taillon Continued

### **Industrial Park Lighting Improvements – City of Edina, Minn.**

Project Manager of a stand-alone street lighting project that involved the replacement of existing lighting systems that have outlived their useful life. The new state-of-the-art system incorporates dimmable LED lighting units and a control system that provides revenue grade metering and monitoring of luminaire operating hours, and operating characteristics. The system enables the City to assign specific lighting units to unique operating and lighting level schedules. The system currently dims the lighting units to lower levels during off-peak hours. Ken was responsible for the design including complete construction document preparation, project administration, and construction observation.

### **Tracy Avenue Roundabout – City of Edina, Minn.**

Lighting Designer for a roundabout along collector roadways. Ken prepared construction documents for the design which specified LED lighting equipment capable of connecting to the City's intelligent lighting control system.

### **Arden Park – City of Edina, Minn.**

Lighting Designer for a residential decorative street lighting installation within the Arden Park neighborhood. Ken prepared construction documents for the design which incorporated a new LED lighting system. Ken was also responsible for project administration, and construction observation.

# Production Schedule

Our team's special blend of winter recreation and municipal project design skills sets tell us the following production schedule is feasible for possibly adding winter recreation to Braemar Park..

Production Milestone	Date	Comment
Receive Notice to Proceed with Feasibility Study	Spring 2016	
Host Public Information Meeting to Present the Proposed Project not only to Braemar Park's Neighbors, but also Interested Residents and Visitors	Late Summer 2016	
Present Feasibility Study to City Council for Consideration of Accepting the Study and Ordering the Preparation of Bidding Documents	Early Fall 2016	
27-hole Golf Course Closes for Reconstruction to an 18-hole Golf Course	Fall 2016	While not part of possible Winter Recreation Park construction, this date is nevertheless significant.
Prepare Bidding Documents	Fall / Winter 2016	
Open Bids and Award a Construction Contract	Late Winter 2017	
Construction	Spring – Fall 2017	
Open Winter Recreation for Business	December 2017	Weather dependent
Open 18-hole Golf Course for Business	Summer 2018	While not part of possible Winter Recreation Park construction, this date is nevertheless significant.

# Representative Projects

Our qualified team has already provided feasibility study, market analysis/financial model, and bid document preparation services plus public meetings and bidding assistance, plus construction phase services for winter recreation projects featuring activities that require machine-made snow (snow) inside metropolitan areas for many projects similar to this one at Braemar Park. The following pages demonstrate that experience and includes references for those projects.

## Snowmaking at Cone Park

Day	Highest Wind Gust Speed (mph)	Average Wind Speed (mph)	Highest Gust Direction
1	35	14.4	W
2	33	15.2	W
3	29	12.9	W
4	21	8.1	S

**Inset Images:**  
 - Top Left: Existing site view.  
 - Bottom Left: Tower Mounted Snowmaking Machine with a 15' height indicator.  
 - Bottom Middle: Sample Snow Overspray.  
 - Bottom Right: Overspray on Stairs/Deck and Overspray on Driveway.

**Logos:** SIOUX CITY SEH, March 28, 2016

## Winter Recreational Park

Sioux City, Iowa

With the exception of Mike Horn, Toby Muse and Mike Parsons, the entire team listed in this Qualification is working on this soon to be completed project. This project is too current to show up yet in the resumes included with this Qualification.

Completed a feasibility study, including a market analysis/financial model, for civil site improvements and mechanical and electrical equipment for this \$17.9 million dollar project that will add both nordic and downhill skiing, and snow tubing featuring machine-made snow plus outdoor ice skating rinks to Cone Park located within Sioux City. The study included schematic level design of a chalet supporting both winter and possible summer time activities. Activities were added to Cone Park in three phases. We also completed bid document preparation services for civil site improvements and mechanical and electrical equipment for the \$4.3 million 'Start-Up' phase adding snow tubing with its supporting machine made snow, area lighting, and ski lift infrastructure. The City will open bids during May 2016. We anticipate providing construction administration and inspection services during summer through winter 2016.

Project components include tree clearing to make room not just for nordic and downhill skiing and snow tubing, but also for the snowmaking pipe network itself; constructing an intake pipe from an on-site stormwater detention pond for water used to make snow; cast-in-place concrete wet well and foundation for the pump skid and its pump house next to the detention pond; snowmaking pump skid itself; steel pipe connecting the pump house to snowmaking hydrants out in Cone Park; area lighting for nordic and downhill skiing and snow tubing; public meetings with adjacent property owners; and a restoration plan for park areas disturbed by construction.

### Reference:

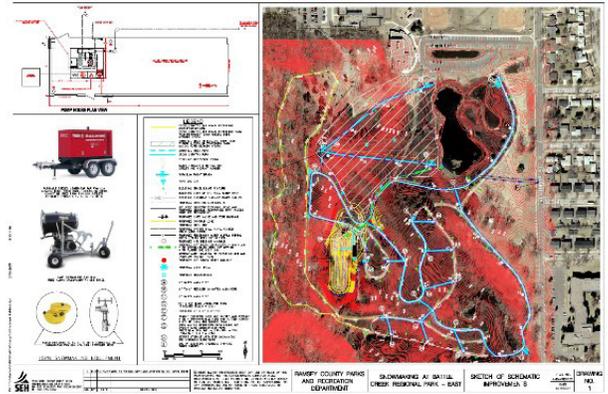
City of Sioux City, Iowa  
 Matt Salvatore – Parks and Recreation Director  
 401 Gordon Dr. P.O. Box 447  
 Sioux City, Iowa 51102  
 712.224.5126

**Year Completed:** 2017

## Snowmaking Study, Battle Creek Regional Park East

City of St. Paul, Minn.

Completed a study to add snowmaking to a sledding hill and cross-country ski trails within the existing park at an estimated cost of \$2.7 million. The study featured adding mechanical and electrical systems to a 5.7 acre sledding hill and along 2.5 km of cross-country ski trails to allow for snowmaking activities. Furthermore, area lighting was added to the sledding hill to convert the hill from a sledding to a snowboard and downhill ski area. Project components studied included the construction of a 1.9 million gallon plastic-lined reservoir to store water used to make snow, implications of filling the reservoir with water from City-owned water main, snowmaking pump skid, 7,200 feet of steel pipe connected to 36 snowmaking hydrants, cast-in-place concrete wet well and foundation for the pump skid and its wood framed pump house, and reconstruction of the existing cross-country ski trail lighting system.



### Reference:

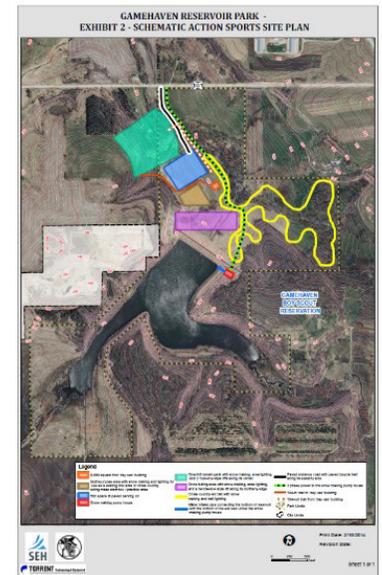
Ramsey County Parks and Recreation Department  
Greg Mack, Director  
2015 N. Van Dyke Street  
Maplewood, Minnesota 55109-3796  
651.748.2500

Year Completed: 2007- Present

## Gamehaven Reservoir Park, Winter Recreation Concept Plan/Letter of Endorsement (Rochester Active Sports Club)

Rochester, Minn.

The Rochester Active Sports Club (RASC) asked us to provide a letter of endorsement for RASC's efforts to add infrastructure to support winter action sports at the park because they knew we have extensive experience adding this type of infrastructure to similar projects in Minnesota, Wisconsin, and Illinois. They needed our letter to secure the City of Rochester's backing to pursue funds for this infrastructure from Minnesota's Destination Medical Center funding program for Rochester. Our preliminary investigations of the park found that the proximity to the City of Rochester and its population is key to the Park's success. Besides becoming a regional cross-country skiing asset, a lit trail network featuring dependable machine made snow will provide a good venue for area high school and collegiate teams to conduct both practices and competitions. We found that the infrastructure installed for winter action sports would likely not interfere with summer action sports in the Park. Our endorsement was contingent upon the Minnesota Department of Natural Resources allowing the use of water from the pool behind its dam for snowmaking and the installation of infrastructure to support action sports in the vicinity of both its dam and the dam's emergency overflow structure. Our letter of endorsement addressed snowmaking, cross-country skiing trail network, tubing/downhill terrain park area, day use building/multi-purpose area, parking/entrance road, off-site improvements, and non-winter action sports.



### Reference:

Rochester Active Sports Club  
Michael O'Connor, Member  
507.319.0142

Year Completed: 2014 to Present



## Market Assessment (City of Traverse City and Garfield Township)

Hickory Hills, Mich.

In 2013, RRC prepared a market assessment report for Hickory Hills ski area in Michigan. The area is owned by the City of Traverse City and Garfield Township, and operated by the Grand Traverse Ski Club. The market assessment report defined visitor trends and volumes, local and regional market demographic profiles, and a broad analysis of existing regional amenities and attractions in the Northwest Michigan area. The report and research was intended to serve as a framework for discussions to assist Hickory Hills and City of Traverse City management team in making strategic decisions regarding the opportunities and barriers for the success of four-season recreation at Hickory Hills. Findings included a significant potential for summer activities and recreation, but also competition for both summer and winter visitor business.



### Reference:

Dave Green, Department of Public Services  
City of Traverse City  
231.922.4900

Year Completed: 2013



## Hyland Ski and Snowboard Area (Three Rivers Park District)

Bloomington, Minn.

RRC conducted a market assessment in 2010 to investigate the potential for additional amenities and activities at the urban recreation area, including summer skiing on an artificial slope surface. The report documented some of the opportunities and challenges regarding its future as a four-season mountain recreation area, particularly within the context of its suburban location and as part of a larger public park district. The research and recommendations were inclusive of a greater diversity of the metro area population, more group events, corporate team building activities, health and wellness, and providing year-round action and gravity-based adventures.

### Reference:

Fred Seymour  
Senior Manager  
Alpine Services  
763.694.7805

Year Completed: 2010

## Winter Recreation Area Operations, Dellwood Park

Lockport, Ill.

Provided schematic-level investigations, sketches, and estimates of construction and operating costs for snow tubing and snowboarding, possible water sources for snowmaking operations, scope of slope-side operations, locations for parking lots, electrical needs, slope lighting, and geotechnical investigations. In addition, identified the impacts of construction and winter operations on nearby neighborhoods, and the likelihood of unearthing Native American and Civil War artifacts.



### Reference:

Lockport Township Park District  
Dave Herman, Director of Recreation  
1911 South Lawrence Avenue  
Lockport, IL 60441  
815.838.1183 x204

Year Completed: 2009

## Elm Creek Park Reserve Winter Recreation Area, Rope Tow, Chalet, and Maintenance Facility (Three Rivers Park District)

Osseo, Minn.

Coordinated design meetings with Park District staff, assisted with informational meetings for the Park District Board and its residential neighbors; prepared plans, specifications, cost estimate for civil site improvements and mechanical and electrical equipment; provided bidding assistance; provided construction administration, observation, and staking; and provide project management during the construction of this \$1.2 million project. The project featured the addition of mechanical and electrical systems along 2.6 km of existing cross-country ski trails allowing for snowmaking activities to occur along these trails. Mechanical and electrical systems were also added to nine acres of hillside for snowmaking activities on a snow tubing and snowboard and downhill ski area. Project components included the construction of a 4.1 million gallon clay-lined reservoir to store water used to make snow, regrading a nine-acre hillside for downhill skiing, snowboarding, and snow tubing activities, snowmaking pump skid, 8,500 feet of steel pipe connected to 32 snowmaking hydrants, cast-in-place concrete wet well and foundation for the pump skid and its wood framed pump house, reconstruction of the existing cross-country ski trail lighting system, reconstruction of an 89-stall bituminous parking lot, stormwater runoff detention basin, tree clearing plan to make room for the snowmaking pipe network, realignment of 1,200 feet of 10-foot wide bituminous bicycle trail, and a restoration plan for park areas disturbed by construction. The team also prepared plans, specifications, and cost estimates for a \$2.9 million, two-story 8,300 square foot slope side chalet/visitor center. The visitor center supports year-round visits by patrons using the park's extensive paved trail system, play structure, parking lots, picnic areas, filtered swim-pond, cross-country and downhill skiing, snowboarding, and snow tubing. The team prepared plans, specifications, and cost estimates for the construction of a \$2 million, two-story 11,800 sq. ft. office and maintenance area space that supports year-round park maintenance activities on an extensive paved trail system, play structure, parking lots, visitor centers, picnic areas, filtered swim-pond, snow-making activities for cross-country and downhill skiing, and snow tubing.



### Reference:

Three Rivers Park District  
Mike Horn, Project Architect  
3000 Xenium Lane  
Plymouth, MN 55441  
763.559.6760

Year Completed: 2003- Present



# Building a Better World for All of Us<sup>®</sup>

Sustainable buildings, sound infrastructure, safe transportation systems, clean water, renewable energy and a balanced environment. Building a Better World for All of Us communicates a company-wide commitment to act in the best interests of our clients and the world around us.

We're confident in our ability to balance these requirements.