Shakopee Economic Development Authority Regular Meeting

Wednesday, November 4, 2026
7:00 PM
City Hall, 485 Gorman Street

1. Roll Call
2. Approval of Agenda
3. Consent Business
   - 3.a Approval of EDA Meeting Minutes
4. General Business
   - 4.a Award of Professional Services Agreement with GZA Environmental for Mystic Lake Amphitheater Sound Monitoring and Bass Investigation.
   - 4.b First Amendment to Contract for Private Redevelopment - Mystic Lake Amphitheater
   - 4.c Change order with Gensler for additional work at Canterbury Southeast Development and a new contract for Creation of Marketing Video and Images for Shakopee Gravel Pit
5. Reports
   - 5.a EDA Bill List
6. Adjourn

Note to EDA Members: *If you have any questions or need additional information on any of the above items, please call Michael Kerski, prior to the meeting at (952)233-9346.*

Shakopee Economic Development Authority
November 4, 2026

3.a

Agenda Item: Approval of EDA Meeting Minutes
Prepared by: Rick Parsons
Reviewed by:

Action to be considered:
I move to approve the EDA meeting minutes for October 6, 2026

Motion Type:
Simple Majority

Background:
The October 6, 2026, EDA meeting minutes are ready for approval.

Recommendation:
Approve the above requested motion.

Budget Impact:
none.

Attachments:
EDA Minutes 10-06-2026

Economic Development Authority

City Hall
485 Gorman Street
Shakopee, MN, 55379

Tuesday, October 6, 2026
7:00 p.m.

Vision: Shakopee is a place where people want to be! A distinctive river town, with a multitude of business, cultural and recreational opportunities in a safe, welcoming, and attractive environment for residents and visitors.

Mission: Our mission is to deliver high quality services essential to maintaining a safe and sustainable community. We commit to doing this cost-effectively, with integrity and transparency.

1) Roll Call

PRESENT:
President Whiting, Commissioner DuLaney, Commissioner Contreras, and Commissioner Lehman

ABSENT:
Commissioner Lara

ALSO PRESENT:
None.

2) Approval of Agenda

Commissioner Contreras made a motion to approve the agenda, second by Commissioner DuLaney and the motion passed. 4 - 0

3) Consent Business

3.a) Approval of EDA Meeting Minutes

3.b) Lease Agreement with The Birch Ground LLC dba Wise Owl Eatery for Suite 175 River City Centre

Commissioner Lehman made a motion to approve the consent business, second by Commissioner DuLaney and the motion passed. 4 - 0

4) General Business

None.

5) Reports

5.a) EDA Bill List

6) Adjourn to Wednesday, November 4, 2026, at 7:00 pm

Commissioner DuLaney made a motion to adjourn to Wednesday, November 4, 2026, at 7:00 pm, second by Commissioner Lehman and the motion passed. 4 - 0

Shakopee Economic Development Authority
November 4, 2026

4.a

Agenda Item: Award of Professional Services Agreement with GZA Environmental for Mystic Lake Amphitheater Sound Monitoring and Bass Investigation.
Prepared by: Michael Kerski, Planning and Development Director
Reviewed by: Michael Kerski

Action to be considered:
Approve agreement

Motion Type:
Simple Majority

Background:

Mystic Lake Amphitheater completed its inaugural concert season in 2026, attracting approximately 500,000 attendees over 41 events. The venue has been an important addition to Shakopee's entertainment and tourism economy, bringing significant numbers of visitors to the community.

While the amphitheater's first season was successful, some surrounding neighborhoods experienced impacts from concert sound, particularly low-frequency bass. Residents reported hearing music at considerable distances from the venue and, in some instances, experiencing vibration and rattling of windows and other building components.

The City has been working cooperatively with Live Nation to address these concerns. Live Nation has already implemented several measures intended to reduce off-site sound impacts, including modifications to speaker positioning, installation of sound-dampening materials, and adjustments to sound levels in certain areas of the facility.

Recognizing that additional independent technical analysis is necessary, the City issued a Request for Proposals (RFP) seeking a qualified acoustical engineering consultant to investigate bass transmission, identify practical mitigation strategies, and develop recommendations for a permanent network of ten sound monitoring stations throughout

the surrounding community.

The City's objective is to maintain the amphitheater as a successful entertainment destination while minimizing impacts on nearby residential neighborhoods.

Proposal Evaluation

The City received four proposals from highly qualified acoustical consulting firms:

Consultant	Proposed Fee
GZA	$130,000
Acentech	$180,000
Ramboll	$198,000
PMY Group	$319,000

All four firms submitted strong proposals and demonstrated significant technical capabilities and relevant experience in acoustical engineering, environmental noise analysis, sound monitoring, or entertainment venue design.

Staff appreciates the time and effort each firm invested in developing its proposal. Each demonstrated a thoughtful understanding of the City's concerns, and all four were considered qualified to provide professional assistance on this project.

The proposals were evaluated based on the firms' relevant experience, understanding of the City's objectives, proposed technical approaches, ability to investigate low-frequency sound and vibration, permanent monitoring system expertise, project delivery, and proposed cost.

Recommended Consultant – GZA Geo Environmental

Following review of the four proposals, staff recommends selecting **GZA Geo Environmental** based on its comprehensive technical approach, relevant experience, commitment to practical mitigation strategies, and competitive fee.

Several factors distinguish GZA's proposal:

1. Strong emphasis on identifying the causes of residential bass impacts

GZA's approach goes beyond measuring general sound levels. The firm proposes investigating the relationship between low-frequency sound generated at the amphitheater and conditions experienced within surrounding neighborhoods.

Its work includes evaluating sound at residential locations, investigating reported vibration and rattling, and distinguishing between audible sound, perceptible vibration, and potential structural effects.

This distinction is especially important because the City's concerns involve low-frequency bass that can travel considerable distances and affect building components even when overall sound levels are relatively modest.

2. Focus on practical and measurable sound mitigation

GZA proposes evaluating changes to sound-system configurations, subwoofer arrangements, speaker orientation, equalization, and operating procedures.

The firm would conduct controlled testing to determine whether specific adjustments produce measurable reductions in bass at surrounding residential locations.

Rather than relying solely on theoretical recommendations, GZA proposes comparing actual measurements before and after changes and verifying results during live concert operations.

This approach should provide the City and Live Nation with practical, prioritized

recommendations for reducing neighborhood impacts while maintaining the venue's ability to host successful concerts.

3. Development of a permanent sound monitoring network

A major component of the project is identifying ten locations for permanent outdoor sound monitoring stations.

GZA proposes developing a preliminary monitoring network layout within approximately six weeks, allowing the City to begin evaluating site availability, installation requirements, and equipment procurement before the 2027 concert season.

The firm would also evaluate at least three commercially available monitoring systems and recommend preferred equipment and software based on measurement capabilities, reliability, ease of operation, and long-term ownership costs.

The objective is to provide the City with an independent, reliable monitoring network that can document sound conditions, evaluate complaints, and provide meaningful information during future concert seasons.

4. Relevant technical experience

GZA has assembled a multidisciplinary team with experience in environmental acoustics, amplified music venues, low-frequency sound transmission, vibration analysis, and permanent automated monitoring systems.

The firm's proposed team includes acoustical engineers and specialists experienced in investigating neighborhood impacts from entertainment venues and developing monitoring and mitigation programs.

This combination of expertise is especially well suited to the City's need to investigate existing conditions and establish a practical long-term monitoring program.

5. Competitive cost and overall value

GZA submitted the lowest-cost proposal at $130,000.

Its proposed fee is $50,000 less than Acentech, $68,000 less than Ramboll, and $189,000 less than PMY Group/WJHW.

Although cost was not the sole determining factor, staff believes GZA offers the best overall combination of technical expertise, proposed services, deliverables, and cost.

Prior to execution of the agreement, staff will confirm that the final scope includes the required concert measurements, residential sound and vibration investigation, background monitoring, equipment evaluation, permanent monitoring location recommendations, and commissioning services identified in the City's RFP.

Project Implementation

The investigation is expected to begin following execution of the professional services agreement.

Initial work will include review of previous sound studies, concert operating information, complaint records, existing monitoring data, and available sound-system configurations.

Because the 2026 concert season has concluded, portions of the investigation can proceed during the offseason, including preparation of a preliminary monitoring network design and development of controlled testing procedures.

Additional field measurements and verification of potential sound mitigation measures will be coordinated with Live Nation during the 2027 concert season.

The City will continue working cooperatively with Live Nation, area residents, and other stakeholders throughout the project.

Recommendation:

Approve a professional services agreement with GZA Geo Environmental, Inc. in an amount not to exceed **$130,000**, plus **$10,000** in contingency, to conduct an independent sound and bass investigation, evaluate potential sound mitigation measures, and develop a permanent sound monitoring system for Mystic Lake Amphitheater at Canterbury Commons. The proposal does not include the purchase or installation of the final recommended equipment. It is estimated that cost will be $100,000-$150,000. The proposal does include the consultant commissioning that equipment and staff training.

Budget Impact:
Fee will be paid out of an acoustic impact fee that will be charged per concert event to cover these costs and the purchase of future monitoring equipment.

Attachments:
GZA Proposal for Mystic Lake Amphitheather Sound Monitoring Design and Bass Investigation.pdf
Ramboll - Shakopee Mystic Lake Monitoring Proposal 20261027.pdf
641050.01 - Amphitheater Sound Monitoring Design and Bass Investigation Proposal for Consulting Services.pdf
2026.10.27 PMY ETS - City of Shakopee - Amphitheater Sound Monitoring Design and Bass Investigation.pdf

Known for excellen
Built on trust.

City of Shakopee

AMPHITHEATER SOUND MONITORING DESIGN AND BASS INVESTIGATION PROPOSAL

For Mystic Lake Amphitheater at Canterbury Commons operated by Live Nation



Prepared by:

GZA GeoEnvironmental | 7505 Metro Boulevard, Suite 300 | Edina, MN 55439

www.gza.com

01 COVER LETTER

October 26, 2026

Michael Kerski
Director of Planning and Development
City of Shakopee
485 Gorman Street
Shakopee, Minnesota 55379
mkerski@shakopeemn.gov
952-233-9346

Re: Amphitheater Acoustical Engineering RFP
Amphitheater Sound Monitoring Design and Bass Investigation
Mystic Lake Amphitheater at Canterbury Commons, Shakopee, Minnesota

Dear Mr. Kerski:

The City of Shakopee is seeking more than a study of whether sound from Mystic Lake Amphitheater can be heard beyond the venue. The City needs to understand when, where, and why low-frequency sound travels into surrounding neighborhoods, including neighborhoods well beyond the distances evaluated in the venue's 2022 pre-construction sound assessment; whether reported vibration and rattling are associated with amphitheater operations; which mitigation measures provide meaningful improvement; and how those conditions can be monitored reliably over the long term.

GZA GeoEnvironmental, Inc. (GZA) offers the City a team that combines commercial-music audio and acoustic design, environmental noise and vibration analysis, acoustic modeling, and permanent automated monitoring experience. Assessing and mitigating noise impacts on sensitive receptors and the surrounding community is the core of our acoustics practice, and a dedicated part of that practice focuses specifically on music venues: identifying how amplified sound affects homes and other sensitive land uses, and carrying that work from monitoring through mitigation. Our approach is built around an important distinction in the RFP: measured sound, source attribution, perceptibility, vibration, and structural effects are related questions, but they are not interchangeable. We will evaluate each using appropriate measurements and analysis rather than assuming that distance from the venue or a single decibel value explains the impacts reported by residents.

We also recognize that this investigation does not begin with a blank slate. The City reports that Live Nation has already installed sound-dampening materials in the amphitheater bowl, changed the placement of upper-stage speakers to direct sound downward, reduced speaker volume in outer gathering areas, and deployed staff to complaint locations to measure what residents are experiencing. The City and Live Nation continue to work together on noise concerns. Those steps provide an important foundation for GZA's work. Rather than assume their effectiveness, we will use available operating and monitoring information, field measurements, modeling where appropriate, and controlled testing to measure how those measures perform and where further refinements may be warranted. Many of these steps act most strongly at middle and high frequencies; their effect on the lowest bass frequencies, which travel farthest and are least affected by absorption and barriers, needs to be measured rather than assumed.

GZA's proposal is built around three commitments that respond directly to the City's evaluation criteria:

- Measured mitigation. A controlled sound-system test with simultaneous neighborhood measurements, reporting bass reduction by frequency band at stated locations, followed by verification at a live concert.
- Independent equipment advice. A scored comparison of at least three monitoring systems, with no reseller relationships or commissions, and a network whose data the City owns outright.
- Siting on the City's timeline. A preliminary layout of ten preferred monitoring sites and alternates within the City's 60-day timeline, so permissions and procurement can begin before the 2027 season, with live-event validation during the season.

Our goal is to leave Shakopee with more than a technical report. We will provide the City with an understanding of the low-frequency sound environment, prioritized mitigation recommendations, ten validated permanent monitoring locations with independently evaluated monitoring-system options, and practical procedures that City staff can use to interpret future events and respond to residents. The study becomes a work program for City staff, not a document.

Timothy (Tim) Kelly, PE, will serve as the City's day-to-day contact and can be reached at 630.684.4423 or timothy.kelly@gza.com.

We appreciate the opportunity to submit our proposal and look forward to supporting the City of Shakopee.

Sincerely,
GZA GeoEnvironmental, Inc.



Timothy Kelly, P.E.
Project Manager



Kevin Williams, AICP, PP
Principal in Charge



Ethan Wagner, INCE Brd. Cert.
Lead Acoustician

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01 TE AM QUALIFICATIONS

AICP, PP, Principal-in-Charge, will commit the staff and resources needed to deliver this assignment on the City's schedule. Key personnel and roles are summarized in Table 1.Complete resumes can be found in Appendix A.

Table 1. Key Personnel and Roles

Role	Team Member	Credentials	Responsibilities for Shakopee
Principal-in-Charge	Kevin Williams	AICP, PP; more than 25 years	Contract authority, senior oversight, and City and stakeholder communication
Project Manager	Tim Kelly	PE (Illinois); former IDOT statewide noise specialist	City's day-to-day contact; kickoff meeting, biweekly updates, schedule, budget, and technical coordination
Lead Acoustician	Ethan Wagner	INCE Bd. Cert.	Bass investigation, source attribution, modeling, controlled test, and mitigation plan
Consultant Reviewer, QA/QC	Gene Bove	INCE	Independent senior review of methods, findings, and every deliverable
Long-Term Automated Monitoring Specialist	Rayan Shamas	PE (Minnesota)	Network design, equipment evaluation, and commissioning; Minnesota licensure where required
Acoustician, Field and Modeling	Sean Bradley	INCE Member	Field measurements, EASE and propagation modeling, and ten-site validation
Field and Analysis Staff	Sean Harkin, Vicki Curran, Anna Quiros	INCE Member	Field measurements, data processing, and site sheets
Subconsultants	None proposed		GZA will self-perform all base-scope services



Kevin Williams, AICP, PP
Principal in Charge
Kevin brings more than 25 years of experience. As leader of GZA's Land Use and Environmental Planning Practice, Kevin oversees noise and acoustics assignments for live-music and performance venues, municipalities, developers, and transit agencies. His work includes community noise monitoring, predictive sound modeling, code-compliance evaluation, sound-system tuning and mitigation recommendations, and long-term monitoring programs. For Pacha NYC, Kevin directed a multi-phase acoustics program that used modeling, measurements at residential receptors, low-frequency sound-system adjustments, operational monitoring, and public-facing reporting to address a history of community complaints. This combination makes Kevin well suited to provide senior oversight and to translate GZA's findings into practical recommendations for the City, venue operator, regulators, and surrounding community. Kevin also brings education and training in law and architecture. That background informs how GZA frames recommended alert levels as operational tools, distinct from enforceable limits that remain a City policy decision.



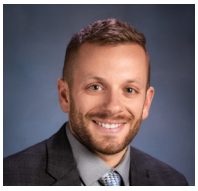
Timothy Kelly, P.E.
Project Manager
Tim combines noise-analysis experience with a public-agency perspective, and he is a licensed Professional Engineer in Illinois. As a former statewide noise specialist for the Illinois Department of Transportation, Tim has helped develop and interpret noise policies, reviewed noise reports, and worked directly with residents to explain noise-analysis processes and findings. He also has experience evaluating noise from a local music venue, conducting rail noise and vibration studies, and assessing noise-abatement alternatives. This background enables Tim to coordinate GZA's technical specialists and translate complex acoustic findings into practical recommendations for City staff and the community. As Project Manager, Tim will lead the kickoff meeting and biweekly progress updates and will flag promptly any decision that affects cost or schedule.



Ethan Wagner, INCE
Lead Acoustician
Ethan is Board Certified by the Institute of Noise Control Engineering and has investigated commercial-music noise complaints with particular attention to low-frequency transmission, designed and evaluated mitigation measures, and monitored sound both at venues and within surrounding residential areas. His work at Pacha NYC, an outdoor concert venue, included before-and-after acoustic modeling, measurements in surrounding neighborhoods, and sound-system fine-tuning at locations with known complaints. He also investigated low-frequency commercial-music impacts at 30 Hudson Yards and residential vibration and rattling at 1522 On The Lake. Before consulting, Ethan spent six years in the professional audio industry modeling loudspeaker and microphone systems for listening rooms and multi-speaker meeting spaces, which gives him working fluency with the subwoofer, line-array, and signal-processing systems that drive the venue's bass output.



Rayan Shamas, P.E., INCE
Long Term Monitoring Specialist
Rayan is a Minnesota-registered Professional Engineer with extensive experience developing and implementing automated noise and vibration monitoring systems, including systems providing near-real-time reporting and automated alerts. He is currently managing the installation of up to seven fully automated noise-monitoring stations for a community acoustic assessment that includes octave-band spectral analysis and long-term monitoring. For Shakopee, Rayan will help translate the acoustic investigation into a reliable and maintainable ten-site network, including equipment evaluation, station configuration, data management, alert functions, and system commissioning. His involvement strengthens GZA's ability to recommend not only where monitoring should occur, but also how the system should function as a practical, long-term tool for City staff.



Gene Bove, INCE
Quality Assurance/Quality Control
Gene will serve as GZA's Consultant Reviewer and lead quality assurance/quality control for the assignment. As GZA's Noise and Acoustics Team Lead, Gene leads a practice centered on assessing and mitigating noise impacts on sensitive receptors and communities, and has conducted noise studies, developed remediation plans, and managed acoustic assessments involving baseline monitoring, predictive modeling, octave-band analysis, regulatory requirements, and mitigation design. His experience includes providing independent expert review of other acoustic consultants' reports for municipal boards and determining whether the analyses address applicable local and state noise requirements. For Shakopee, Gene will provide an independent senior review of GZA's investigation methods, data interpretation, modeling, source-attribution findings, mitigation recommendations, monitoring-network design, and final deliverables. His involvement will help confirm that the team's conclusions are technically supported, internally consistent, clearly communicated, and responsive to the City's objectives.



Sean Bradley
Acoustician
Sean will support the project's field investigation, acoustic modeling, and analysis of noise and vibration at sensitive residential locations. His experience includes environmental noise studies, modeling of interior and exterior acoustic environments, long-term noise and vibration monitoring, and building noise and vibration control. Sean has installed and supported a year-long noise-monitoring program that included weekly reporting, comparison of operational activity with measured sound levels, and evaluation of community noise complaints. He has also contributed to acoustic models used to evaluate noise-mitigation measures and performed long-term vibration monitoring in residential buildings to assess vibration perceptibility. Sean is also experienced in EASE electro-acoustic modeling, including loudspeaker-array models for a 5,000-capacity venue at MGM Grand, presentation rooms of about 500 seats, and speech-intelligibility (STI) analyses for each station on the New York City Transit L line and for the new terminal and rail-link redesign at JFK International Airport. For Shakopee, Sean will help collect and interpret field data, evaluate the relationship between venue operations and neighborhood conditions, support source attribution and mitigation analysis, and assist with validation of the ten-site permanent monitoring network.

The team is also supported by acousticians Vicki Curran, Sean Harkin, and Anna Quiros, who will support field measurements, data processing, and site documentation.

Availability. Each key team member has confirmed availability to support the schedule in Table 8, including evening concert fieldwork during the 2027 season. The team is available to begin immediately upon notice to proceed and can hold the kickoff meeting within one week. GZA will not substitute key personnel without the City's written approval.

Minnesota professional licensure. GZA does not anticipate that the base-scope acoustical services require Minnesota professional engineering licensure. If the City authorizes optional services that constitute the practice of professional engineering in Minnesota, Rayan Shamas, PE, is registered in Minnesota and will coordinate any such work.

02 RELEVANT PROJECT DESCRIPTIONS AND REFERENCES

The three projects below were selected for their relevance to the RFP's emphasis areas: amplified outdoor music, low-frequency noise, residential vibration and rattle diagnostics, and permanent monitoring (Table 2). They are drawn from the part of GZA's practice devoted to music venues and sensitive land uses, where each assignment runs from monitoring through mitigation. Full Project Sheets with more detail are provided in the Appendix, and reference contacts are listed in Table 3.

Detailed project descriptions can be found in Appendix B.

Project Relevance to RFP Emphasis Areas

Project	Amplified Outdoor Music	Low-Frequency Noise	Vibration and Rattle Diagnostics	Monitoring Program	GZA Staff
Pacha NYC	•	•		•	Williams, Wagner
Interstate Route 290 – Eisenhower Expressway EIS		•		•	Kelly
Revolution Wind Offshore Facilities			•	•	Shamas
Additional experience: 30 Hudson Yards; year-long monitoring program; seven-station automated network	•	•		•	Wagner, Bove

Pacha NYC | Brooklyn, NY

GZA performed an acoustic study for a renovated outdoor concert venue and club. The team created an in-depth before-and-after acoustic model, including loudspeaker arraying and complex digital signal processing, to demonstrate the proposed change in use and the reduction of impact to residents. GZA monitored inside the operational venue and in adjacent neighborhoods at sensitive receptors, and recommended mitigation and system fine-tuning to meet compliance, with special attention to locations with known past noise complaints. GZA continues to advise on land use approvals and permanent-structure design to meet the noise code.

Relevance: Amplified outdoor music; low-frequency loudspeaker and signal-processing adjustments; neighborhood monitoring at complaint locations.

GZA roles: Kevin Williams, Principal-in-Charge; Ethan Wagner, Lead Acoustician; Gene Bove, VIctoria Curan

Eisenhower Expressway EIS | Chicago, IL

GZA performed a comprehensive traffic noise and noise abatement analysis for the Interstate 290 (I-290) Eisenhower Expressway improvement project in Chicago, a complex urban corridor with dense residential development. The analysis evaluated four project alternatives and more than 10,000 individual noise receptors, followed by detailed impact and abatement analysis for the preferred alternative. GZA evaluated 92 potential noise walls, identifying 63 that were feasible, achieved IDOT's noise reduction design goal, and were cost effective. In response to public comments, GZA also completed sensitivity analyses in particularly dense residential areas and at a nearby Chicago Park District property. GZA supported extensive public involvement by developing viewpoint-solicitation packages, determining noise-wall voting results, and working with IDOT to prepare materials for public "noise forums."

Relevance: Noise assessment and noise abatement; selection of noise receptors; sensitivity analyses; feasibility and cost-effectiveness evaluation of mitigation; public involvement; complex urban/residential corridor.

GZA roles: Tim Kelly, Project Manager

Revolution Wind Offshore Facilities, North Kingstown, Rhode Island.
Managed the project involving the construction of a new interconnection facilities and substation for the Offshore wind project. The scope includes automated noise and vibration monitoring at up to four (4) locations, two (2) automated total station to monitor the king pile support of excavation, and four (4) 90' automated inclinometers consisted of shape arrays (SAAs). The automated noise/ acoustic monitoring implemented advanced AI/ML technology at the time to allow the project operations to continue during evening and night time without the need of full on-site presence to document the sources.

Relevance: Long term automated noise and vibration monitoring; AI/ML-enabled acoustic source documentation

GZA roles: Rayan Shamas, Sr. Project Manager

Table 3. Reference Contacts

Project or Person	Reference	Title and Organization	Email
Pacha NYC	Jaydeep "Jay" Anand	Chief Development and Sustainability Officer, FIVE Holdings	jay@fivehotelsandresorts.com
Revolution Wind Offshore Facilities	Anthony "Tony" Buccheri	Construction Project Manager, Burns & McDonnell	abuccheri@burnsmcd.com
Interstate Route 290 – Eisenhower Expressway EIS	Ben Sperry	Noise and Air Quality Specialist, Illinois Department of Transportation, Bureau of Design & Environment	benjamin.sperry@illinois.gov

03 TECHNICAL APPROACH AND SCHEDULE

PROJECT UNDERSTANDING

Mystic Lake Amphitheater presents the City of Shakopee with a challenge common to large outdoor entertainment venues, but with an important complication: the concern is not simply overall loudness. Residents have reported low-frequency bass that can be heard inside homes and, in some cases, is associated with window or building-component vibration. The City therefore needs to understand not only how much sound is present, but also what frequencies are present in the transmitted sound, where they originate, how they propagate, and under what conditions they become perceptible or produce secondary effects at residences.

The City has specifically cautioned against assuming that one bass level will cause every window to rattle or that venue sound levels can be predicted from distance alone. The record supports that caution.

GZA sees this project as an investigation, mitigation, and long-term management assignment, rather than simply a compliance-monitoring exercise. That is the work our practice is built around: identifying how a music venue affects sensitive receptors, attributing the source, and carrying the answer through mitigation and verification.

Reported Impacts Extend Well Beyond the 2022 Design Assumptions.
The venue's January 2022 pre-construction sound assessment, prepared for the developer, evaluated amplified sound in A-weighted terms, assumed a design level of 105 dBA at the mix position, and projected L10 contours from distance and atmospheric absorption alone. It concluded that the 50 dBA L10 contour would remain within about 4,500 feet of the venue, largely over industrial land to the north and east, and within about 1,500 feet to the west.

The City's October 12, 2026 impact map shows a different pattern (Figure 1). Reported impacts cluster in three areas: (A) north and northeast across the Minnesota River valley, about 2 to 6 miles from the venue and extending into Eden Prairie; (B) neighborhoods south of US 169 and west of County Road 83, about 1 to 3 miles away; and (C) the Dean Lake area, about 1.5 to 4 miles to the southeast.

That pattern is consistent with low-frequency sound, which atmospheric absorption, A-weighting, and the bowl's raised edges do little to reduce. A 40 Hz wave is about 28 feet long and diffracts over the sunken stage and seating berm with little loss. Areas B and C lie to the side and rear of the stage's east-northeast orientation, where the line arrays described in the 2022 study direct little mid- and high-frequency energy. But conventional subwoofers, unless configured as directional arrays, radiate in nearly all directions. Area A lies broadly ahead of the stage but across an open valley of water and wetlands, where calm summer nights and temperature inversions can carry bass much farther than distance alone predicts.

GZA treats these observations as hypotheses to test, not conclusions. They shape where we measure first, which mitigation options we test, and where the ten permanent monitors are most likely to be needed.

Community Concern Is Real, but Its Cause Must Be Measured
The City has established a dedicated process for residents experiencing amphitheater noise and asks that concerns be reported to Live Nation while an event is underway so venue representatives can respond and collect measurements. The City also reports that it is working with the Minnesota Pollution Control Agency, which has offered monitoring equipment that can be deployed in neighborhoods. GZA will coordinate with MPCA so that any agency instruments are time-synchronized with, and add coverage to, the field program.

Key Considerations

- Low Frequency Sound (10-200 Hz)
- Residential Perceptibility and Vibration
- Weather and Atmospheric Conditions
- Terrain and Land Use
- Community Concerns and Complaint History
- Venue Operations and Sound System Configuration

Public reporting has described complaints involving concert sound, particularly low-frequency bass, heard within homes in Shakopee and neighboring communities. The City's impact map (Figure 1) shows where those reports concentrate.

Those reports are valuable because they identify locations and conditions worth investigating. They are not, by themselves, acoustic source attribution. GZA's work will connect complaint information with synchronized sound measurements, frequency spectra, venue operating information where available, data from previous sound studies, meteorological conditions, and observations of other potential sources. That distinction is important to both the City and the venue operator because a permanent monitoring system should help staff understand not simply whether a sound level increased, but whether the available evidence supports an association with amphitheater operations.

Weather Is Part of the Acoustic System

The City's public information recognizes that wind direction, humidity, temperature, cloud cover, and other meteorological conditions can change how amphitheater sound travels. For this reason, an observation at a residence during one event should not automatically be treated as representative of every concert.

We will evaluate acoustic measurements with contemporaneous weather information and document the conditions under which measurements were made. This will help the City distinguish changes associated with venue operations from differences associated with propagation conditions and will inform both mitigation evaluation and permanent-monitor siting. Concerts run into the late evening, when clear, calm conditions favor temperature inversions; those are the conditions most likely to carry bass to distant neighborhoods, and the field program will document them.

The End Product Must Help the City Make Decisions

Ultimately, the value of the monitoring network will depend on what City staff can do with its data.

GZA will deliver procedures that connect resident reports with sound levels, bass spectra, weather, and venue records while allowing staff to flag unrelated sources and preserve the underlying record, along with reporting tools, maintenance procedures, data controls, alert procedures, and plain-language guidance on what A- and C-weighted measurements can and cannot establish about bass.

We therefore view commissioning and staff training as part of the technical solution rather than administrative closeout.

At completion, the City should have a system and procedures that help answer a resident's most important questions:

> *What happened? Was it associated with the amphitheater? What do the measurements show? Were weather or other sources important? Is mitigation warranted? If so, what action should follow?*

Answering those questions consistently will turn ten individual instruments into a useful community-noise management program.

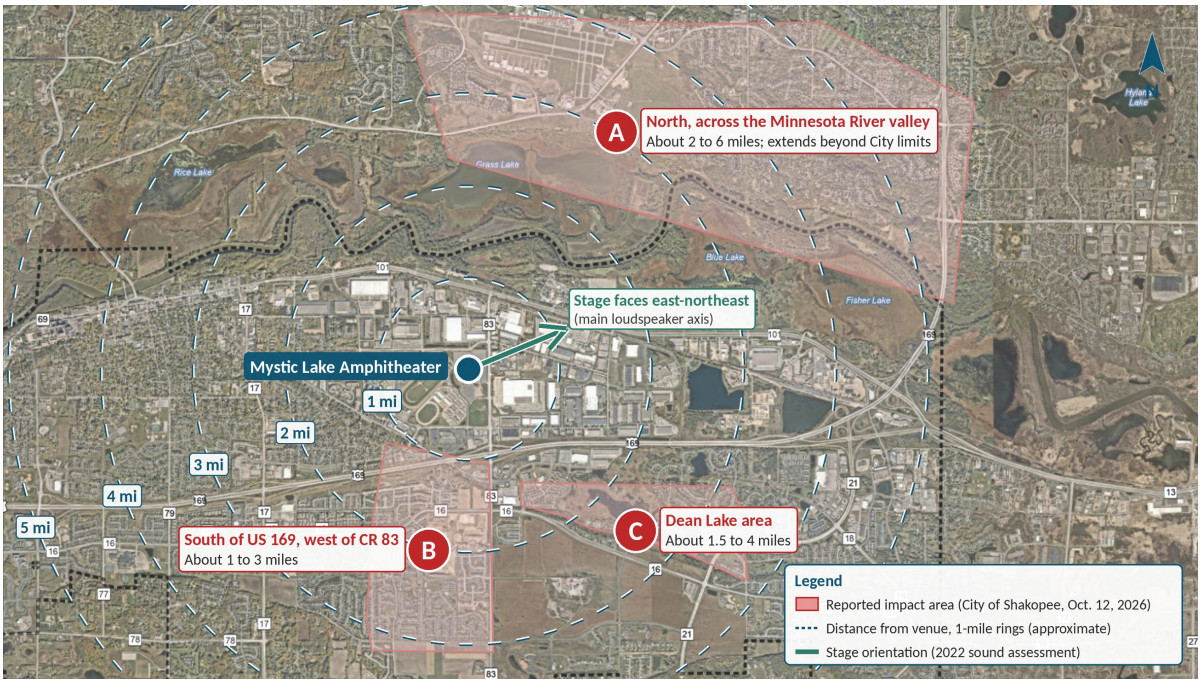


Figure 1. *Reported impact areas relative to the venue and stage orientation. Base map: City of Shakopee, Amp Sound Impact, October 12, 2026. Distance rings, labels, and stage axis added by GZA; distances are approximate and scaled from the City map.*

TECHNICAL APPROACH OVERVIEW

GZA will deliver the eight RFP tasks using the same monitoring-to-mitigation sequence our music-venue practice applies to sensitive receptors, organized in three phases that follow the City's calendar (Table 4): an off-season assessment that produces a City-approved Work Plan and a preliminary ten-site layout within the City's 60-day timeline; a spring and early-season program of controlled testing and live-event diagnosis; and network design, equipment selection, and commissioning timed to installation by others. Short memos at the end of each phase keep the City and venue operator informed and identify decisions that affect cost or schedule. Each section below describes GZA's approach to each task, in the order outlined in the RFP.

Table 4. Phasing Roadmap

Phase	Timing	RFP Tasks	Key Outputs	City Decisions Enabled
1. Assessment and Planning	Weeks 1 to 14; December 2026 to March 2027	Task 1; preliminary Tasks 5 and 6	Records review and GIS complaint map; Current State Memo; City-approved Work Plan; preliminary ten-site layout (Week 6); draft Equipment Recommendation (Week 14)	Begin site permissions; select and order equipment; confirm venue test dates
2. Controlled Testing and Diagnosis	Weeks 24 to 34; May to July 2027	Tasks 2, 3, and 4	Baseline concert and controlled test; Bass Investigation Report; Mitigation Plan; verification concert and Mitigation Memo	Adopt immediate operating changes; prioritize longer-term measures; confirm final sites
3. Network Delivery and Commissioning	Weeks 18 to 48; April to October 2027	Tasks 5, 6, 7, and 8	Final Ten-Monitor Siting Package; Operating Manual; Commissioning Package and training; Final Report	Authorize installation; activate Task 8; begin routine operation

TASK 1. REVIEW AND INVESTIGATION PLAN

During our initial review, we will seek to understand the sound-system configurations associated with prior events, changes made during the first season, previous subwoofer configurations, loudspeaker orientation, processing and limiter information available to the City, monitoring data, complaint records, weather information, and other relevant operating records. GZA will also request sound-check procedures, time-synchronized venue reference measurements, and operational logs, subject to operator access, and will review the 2022 sound assessment and the venue's approvals to identify which design assumptions have changed.

GZA will request a collection of documents and data pertaining to the venue design and operation through the end of the 2026 concert season. These documents will be sorted into two categories: files pertaining to acoustic modeling, and data to be interpreted for noise impact. For acoustic modeling, the following files will be needed: site plan and architectural design documents including materials composition, grading plan, and sound system details. The sound system details should include loudspeaker specifications and placement, digital signal processing technology used, and audio quality and loudness goals. For data to be interpreted for noise impacts, GZA will also request past sound studies, all noted noise complaints with location, date, time, and description, prior monitoring data, and past hourly meteorological data. From these records, GZA will prepare a Current State Memo and a Work Plan for Tasks 2 through 8 for City approval before any field deployment, and will request additional records as gaps are identified.

Complaint mapping. GZA will map each reported impact by location, date, time, and description in GIS, overlaid with venue orientation, event schedules, and hourly weather. The mapping will cover the full extent of reported impacts, including areas well beyond one mile and outside the City limits; one mile will not be treated as a study boundary.

Work Plan. The City-approved Work Plan will define study areas, sampling locations, instrument capabilities and calibration procedures, weather acceptance criteria, source-identification methods, uncertainty, event selection, access needs, quality controls, schedule, and the acceptance criteria for Task 8. It will explain how bass impact will be assessed inside homes as well as outdoors (see Indoor Access) and, after review with City staff, will identify the standards and editions proposed for each analysis, for example IEC 61672-1:2013 and IEC 61260-1:2014 for instrumentation, ANSI/ASA S12.9 Parts 2 and 4 and ANSI/ASA S12.18 for outdoor measurement and assessment, ANSI/ASA S12.2-2019 for indoor low-frequency criteria, ISO 2631-2 for building vibration, and Minnesota Rules, chapter 7030.

Coordination. GZA will attend a kickoff meeting, provide progress updates at least every two weeks during active work, and identify promptly any decision that affects cost or schedule.

TASK 2. FIELD MEASUREMENTS AND SOURCE ATTRIBUTION

Review of existing data. Consistent with the RFP's base field components, GZA will first analyze the results of Live Nation's four temporary monitors, including background levels, and available concert measurements in complaint areas, and compare them with event logs and hourly weather.

Screening model. A new acoustic model will be created based on information acquired in Task 1 and calibrated against measured one-third-octave band data from the baseline program. Past measurements from Live Nation will be checked against model results and reported mix listening levels. For distances beyond about one kilometer, GZA will use a calculation method that accounts for meteorological conditions. GZA's base fee includes this screening model because it guides measurement locations, mitigation screening, and monitor siting; new or materially revised propagation modeling beyond that scope is offered as an optional service.

Baseline concert measurements. A preliminary ambient and operational level test will be conducted on site and at up to four highly impacted residential locations selected from the complaint map and projected by the acoustic model. This will include full-frequency (6.3 Hz to 20,000 Hz) acoustic measurements, vibration measurements with a three-axis accelerometer, and full weather monitoring. Ideally, some residential locations will also include vibration monitoring at upper floors inside dwellings. GZA will work with the City to contact impacted residents and ask for their participation before selecting a suitable testing period. Vibration can be amplified by interior structures and tends to be most perceptible on upper floors of buildings; accelerometers placed only outside homes may underestimate the impact residents report. Measuring time-synchronized on-site and off-site acoustic, vibration, and meteorological data will show how neighborhood levels track venue output and where to focus mitigation.

Controlled mitigation test. The day after the baseline concert, subject to City and venue approval, GZA will hold one coordinated sound-system test session of up to four hours with simultaneous measurements at up to ten neighborhood locations, as described under Task 4. Combining the two in one mobilization limits travel cost and lets the test build directly on baseline results.

For measurements in Task 2 and the following tasks, the equipment, number of survey locations, staff onsite, and other details are listed in Table 6. Additional measurement locations or events are priced as optional services in Table 10.

TASK 3. DIAGNOSE THE REPORTED IMPACTS

GZA will conduct the analysis and model calibration using the baseline monitoring with and without the venue operating. Synchronized data will include A- and C-weighted levels and unweighted one-third-octave spectra covering at least 20 to 200 Hz for bass analysis, wider bands for source identification, and 10 to 16 Hz where warranted. GZA will disclose instrument response, self-noise, and wind-noise limits at the lowest frequencies. Impact will be assessed against Minnesota's A-weighted noise

LOW-FREQUENCY EXPERIENCE.

The RFP requires analysis over at least 20 to 200 Hz, with evaluation down to 10 to 16 Hz where warranted, together with disclosure of instrument limitations at those frequencies. It also requires GZA to distinguish audibility, annoyance, perceptible vibration, rattling, and potential structural effects rather than treating these conditions as equivalent.

That requirement aligns particularly well with Ethan Wagner's experience.

30 Hudson Yards
Ethan conducted time-synchronized monitoring associated with a commercial-music complaint and developed mitigation focused on low-frequency transmission and operational controls.

1522 On The Lake, Milwaukee, WI
Ethan used simultaneous acoustic and meteorological recordings to investigate a residential noise source and subsequently evaluated vibration mitigation of balcony railings.

Pacha NYC, outdoor concert venue
Ethan's work included monitoring within the operating venue and at sensitive receptors in surrounding neighborhoods, acoustic modeling, and system fine-tuning at locations with known previous complaints.

That experience informs an important principle for Shakopee: we will investigate the pathway from source to receiver rather than diagnose the problem from either end alone.

standards and separately for audibility, annoyance, perceptible vibration, and rattling, with any question of structural effects identified as a distinct issue. Because the State standards are A-weighted, they say little about bass, so GZA will also compare C-weighted and band levels with published low-frequency and vibration criteria, stating the applicability and limits of each, and will not assume a universal bass level that causes every window to rattle. Weather conditions during monitoring will be assessed and considered in the analysis, along with terrain, reflections, and competing sources such as US 169 and local traffic, aircraft at Flying Cloud Airport, rail, Valleyfair and Canterbury Park activity, and mechanical equipment. Findings will be reported in the Bass Investigation Report, which will distinguish measured conditions, source attribution, uncertainty, and conclusions that require additional testing.

TASK 4. RECOMMEND AND TEST MITIGATION

Two acoustical models will be created. The first will be a model focused on maintaining audio quality while balancing impact to neighbors, including expected sound pressure level, Speech Transmission Index (STI), clarity, and direct-to-reverberant (D/R) ratio across the venue for different loudspeaker system configurations. The second will incorporate the elements of this audio model and assess the projected impact at distant receivers under worst-case meteorological conditions (downwind propagation and the temperature inversions common at night and in early morning from spring through fall). At distances greater than one-quarter mile from a significant noise source, meteorological effects can dominate received levels through refraction, and assessing these conditions conservatively is important.

Up to four loudspeaker configurations or adjustments will be considered, including subwoofer placement and directional (cardioid or end-fire) arrays, orientation, delay and phase alignment, equalization, low-frequency roll-off, frequency-specific limiters, and operating procedures such as sound-check practices and bass targets at the mix position. Physical measures such as regrading, barriers, or absorptive panels will be assessed only where their likely low-frequency effectiveness supports further consideration, because such measures are far less effective at bass frequencies than at higher frequencies. GZA will prepare the prioritized mitigation matrix required by the RFP, identifying for each measure the responsible party, planning-level capital and operating cost, expected reduction by frequency band at stated locations, implementation timing, confidence, and verification method, and will recommend immediate operating changes and longer-term improvements where the findings support them. Cost estimates will be order-of-magnitude with assumptions stated; detailed design and construction cost estimating are optional services. Once a path for mitigation is selected, GZA will provide support through meetings with contractors and subcontractors, drawing review, product and specification review, and coordination with manufacturers.

Controlled test. GZA will use one coordinated sound-system test session of up to four hours, subject to City and venue approval, to compare up to four agreed operating configurations using repeatable test signals and program material, with simultaneous measurements at up to ten neighborhood locations and at audience positions. Results will document bass reduction by one-third-octave band at stated locations, distinguish measured results from modeled or estimated benefits, and report effects on audience coverage, operator feasibility, and any transfer of sound to other neighborhoods.

Verification. Once measures are in place, GZA will perform the same assessment as in Task 2 with the mitigation or operational controls operating. Additional short-term monitoring will be conducted at each candidate permanent monitoring location to support Task 5 validation. Similar to Task 3, a short Mitigation Memo will document changes in impact and perceptibility before Tasks 5 through 8 are finalized.

Venue levels and alert levels. GZA will recommend maximum operating levels at the mix position in both dBA and dBC, including a limit on the difference between the two to control bass content, along with speaker direction and volume settings that support them. GZA will also recommend diagnostic or operational alert levels for the permanent network, each with its measurement location, averaging period, basis, and response procedure. These are recommendations for operational management, not enforceable limits unless the City separately adopts them; ordinance drafting and legal opinions are outside the base scope.

TASK 5. DEVELOP AND VALIDATE THE NETWORK LAYOUT

A preliminary layout of ten preferred sites and alternates, based on the complaint map, the screening model, Live Nation monitor data, and winter site reconnaissance, will be delivered at Week 6, within the City's 60-day timeline, so the City can begin permissions and procurement planning. Based on the configuration and mitigation selected in Task 4, projected impact from the model and from field measurements will confirm or adjust those placements for the final layout.

All ten stations will serve neighborhood receiving areas. Locations will be selected using field results, complaint patterns, populated areas, terrain, sound-system directionality, weather exposure, and installation feasibility, rather than to cover every compass direction. For planning purposes, GZA expects to distribute the stations across the three mapped impact areas in proportion to population, complaint density, and propagation exposure, with at least one station placed to document a coverage gap or transition zone. Monitors will ideally be mounted on public poles with practical maintenance access, out of harm's way of people and

vehicles, at a height approximating the highest residential floors in the represented neighborhood, with mounting isolation to keep pole or hardware vibration from contaminating acoustic readings.

Each monitor will be designed for solar power, year-round Minnesota weather, and cellular communication, with near-real-time data access and local buffering during outages. GZA will test signal strength at each site and recommend alternatives where solar power or cellular service is not feasible. GZA will identify the owner of each pole or parcel and the permissions or permits required; City or utility ownership does not constitute permission. Because the largest mapped impact area lies north of the Minnesota River outside the City limits, GZA will coordinate permissions there through City introductions.

Weather instruments will also be placed in representative neighborhoods for correlation with acoustic data; they are priced separately and are not counted toward the ten sound monitors. When possible, these weather stations will be co-located with acoustic monitoring equipment. GZA will recommend the number and placement needed, because a single station, or a distant feed such as the Flying Cloud Airport observations, cannot represent low-level temperature and wind conditions across a river valley and upland neighborhoods. Any venue reference feed will have documented access, time synchronization, calibration, and continuity arrangements.

Siting package. The Ten-Monitor Siting Package will include a georeferenced map of sites 1 through 10, affected neighborhoods, venue orientation, relevant distances, and coverage gaps; the distinct purpose and area represented by each station; one practical alternate per site, with tradeoffs; and a site sheet for each with coordinates, pole or parcel identification, photographs, proposed microphone height and offset, mounting details, nearby reflective surfaces, unrelated noise sources, maintenance access, solar and communications findings, outage buffering, winter operation, vandalism exposure, permissions or permits, and installation cost. Each site will be validated with temporary measurements and resident reports. No site will be represented as fully validated until those checks and access approvals are complete; any unresolved condition will be stated with the steps required before installation

TASK 6. COMPARE SYSTEMS AND SELECT A PREFERRED CONFIGURATION

At least three commercially available acoustic and weather monitoring systems from different manufacturers will be compared. A scored comparison matrix (Table 5) will be supported by current manufacturer documentation, demonstrations or sample data, reference installations, budgetary quotations, and GZA's firsthand experience, and will distinguish verified capabilities from vendor claims. The matrix will support a recommendation of one specific brand and model, outdoor microphone configuration, required licenses, communications equipment, weather integration, and cloud or local software platform, plus one acceptable alternative, with an explanation of why the preferred system best fits the City's needs. GZA has no reseller relationships, commissions, or other financial interests with any monitoring manufacturer or supplier, and the recommendation will not commit the City to a purchase. The cost and purchasing package will itemize capital

TEN MONITORS SHOULD FUNCTION AS A NETWORK, NOT TEN INDEPENDENT INSTRUMENTS

The City's long-term monitoring system is a central element of the assignment.
GZA's approach will treat the monitors as a network: stations are sited so that their data can be compared with one another and over time, helping staff separate venue-driven bass, which rises at several stations at once, from a local source that affects only one.

Location selection will combine the acoustic investigation with complaint geography, propagation patterns, weather exposure, field validation, installation feasibility, and long-term maintainability.

Rayan Shamas, PE, brings direct experience implementing automated noise, vibration, and other instrumentation systems. His project experience includes multi-year automated systems with near-real-time reporting and alarm notifications as well as multiple projects using simultaneous noise and vibration monitoring. Sean Bradley has performed year-long monitoring involving weekly reporting and evaluation of community complaints.

This combination allows GZA to consider both sides of the City's investment: whether the stations collect appropriate acoustic data and whether the network can operate reliably enough to be useful to City staff.

cost for ten complete stations, annual operating cost, and five-year total cost of ownership, including software, cellular service, storage, calibration, maintenance, replacements, training, and identified taxes or shipping, with quotation dates and assumptions. GZA will also provide performance specifications and an equivalent-product review method suitable for the City's purchasing process.

TASK 7. PREPARE THE OPERATING MANUAL

The alert levels recommended in Task 4 will be configured in the specific system chosen by the City, with configuration files and setting schedules included in the manual. All monitors will report to a staff interface with relevant acoustic and weather data, comparison to historical data, and comparison to applicable standards and perceptibility criteria; a public-facing dashboard can be added as an optional service. A complaint-response workflow will align each resident report with sound levels, bass spectra, weather, and venue records at the nearest stations. A procedure for labeling or excluding data from unrelated sources will preserve original data, corrections, exclusions, and an audit trail, and exclusions will be noted in monthly reports. Concert and monthly reporting templates will present maps, trends, frequency-band results, valid-data coverage, uncertainty, and plain-language findings, including what dBA, dBC, and their difference can and cannot establish about bass. If Shakopee township wants diagnostic audio to be used to identify anomaly events, GZA will recommend short, event-triggered clips with privacy controls, such as limited duration, filtering that renders speech unintelligible, restricted access, and fixed retention, and will describe non-audio alternatives. No audio recording or streaming will be enabled without prior City approval. The manual will also set out data retention, access, security, and export procedures, calibration checks, data validation, handling of outages and weather contamination, and periodic maintenance responsibilities, building on the storage platform selected in Task 6.

TASK 8. COMMISSION AND TRAIN

After installation by others, GZA will inspect all ten monitors and weather stations across a minimum seven-day operational period that includes one attended concert for network validation, separate from the two diagnostic events. GZA will

Table 5. Illustrative Equipment Scoring Matrix (criteria and weights to be confirmed with City staff in the Work Plan)

Criterion	What GZA Will Verify	Weight
Measurement performance	Class 1 performance under IEC 61672 and one-third-octave filters under IEC 61260, verified for the complete installed configuration, including weather protection, low-frequency response, and usable noise floor	15%
Bass and spectral capability	Simultaneous A- and C-weighted equivalent levels and maxima; stored unweighted one-third-octave spectra from 20 to 200 Hz, with 10 to 16 Hz where supported; every required license and any logging limits	15%
Data quality and logging	One-second logging; configurable intervals; L10 and L50; synchronized clocks and weather; flags for invalid data, overload, calibration, and communication gaps	10%
Minnesota durability and reliability	Documented operating temperatures; moisture and icing protection; windscreen performance; power and communications reliability; outage storage; remote health alerts; safe firmware updates	15%
Staff usability	Ten-station display; frequency-specific alerts; configurable access, with City and operator access evaluated separately; straightforward exports and investigation reports; optional public-dashboard cost	10%
Event identification	Ability to capture anomaly events (siren, motorcycle, train, or amphitheater music) to verify their source	5%
Data ownership and exit	City ownership of original and processed data, settings, and metadata; open-format bulk export; retention, backups, and security; exit without loss of history	10%
Service and support	Calibration and verification, service availability, warranty, parts, repair turnaround, service life, training, and comparable outdoor references	10%
Five-year cost of ownership	Itemized capital, annual operating, and five-year total cost from dated quotations	10%
Total		100%

verify microphone placement, configuration, calibration, time synchronization, communications, weather integration, data buffering, alerts, exports, and user access, and will document deficiencies and the party responsible for correction. After confirming functionality and installation, GZA will compare permanent readings with simultaneous portable measurements at representative residential locations during ambient and operational conditions and document any remaining coverage limitations. The Commissioning Package will report valid-data availability, interruptions, and corrective actions against acceptance criteria defined in the approved Work Plan, with an updated site inventory. After confirming functionality, GZA will hold one training session on site covering hardware and software setup, troubleshooting, calibration, data analysis, and the complaint-response workflow.

Task 8 is priced separately and will begin on written City notice after equipment installation. Hardware purchasing, construction, and installation labor are excluded. Fee validity and assumptions for delayed installation or concert availability are stated in the Fee Proposal.

REQUIRED FIELD QUANTITIES

Table 6 summarizes the number of in-person monitoring events, staffing, deployment durations, and quantities of measurements included in the base fee. Additional locations are priced in Table 10. Access assumptions: the City will help secure resident participation and venue access; GZA will coordinate indoor access directly with participating residents; and the venue operator will provide access for measurements at the venue and for the controlled test

Table 6. Field Program Included in the Base Fee

				At the Venue			In Neighborhoods		
Field Event	**Timing and Duration**	**Staff**	**Task**	**Acoustic**	**Vibration**	**Weather**	**Acoustic**	**Vibration**	**Weather**
1. Baseline concert and controlled test	1 night plus a test session of up to 4 hours the next day; start of 2027 season	4	2, 3, 4	2	1	1	4 (up to 10 during the controlled test)	4*	4
2. Mitigation verification concert	1 night, after installation of mitigation and control measures during the concert season	3	4, 5	2	1	1	10	4^	Up to 4~
3. Network commissioning and validation	7-day operational check, including 1 attended concert, after installation by others	3	8	2	1	1	10	4^	Up to 4~
* Depends on resident participation									
^ Depends on resident participation and results from Task 2									
~ Depends on results from Task 2									
Values are numbers of measurement points. Additional points are priced in Table 10.									

INDOOR ACCESS

Indoor access will be needed for vibration and indoor sound measurements. Ideally, up to four households across the areas where reports are most prevalent will volunteer access. At each participating home, GZA will measure simultaneously outdoors with an in-air acoustic monitor and indoors with an accelerometer in the room where effects are reported. This will help correlate the acoustic source outside and the perception inside residents' homes. That correlation will help determine limits monitored by the permanent network. Where indoor access is not available, GZA will use outdoor data with stated, conservative assumptions and identify the resulting uncertainty.

INSTRUMENTATION

GZA's on-site short-term measurements will use Larson Davis 821 Class 1 sound level meters from our inventory, with outdoor microphone systems and windscreens suited to low-frequency measurement. Vibration measurements will use a Larson Davis SEN020 tri-axial accelerometer, which has a frequency range of 0.5 Hz to 2500 Hz. Weather data will be collected by NMS045 meteorological sensors paired with the meters. All instruments will be field-calibrated before and after each session, clocks will be synchronized to a common time reference, and calibration records will be delivered with the data.

TEN-SITE VALIDATION

Validation occurs in two stages. Before installation, each preferred site is validated with temporary measurements during a live event and with resident reports (Task 5). After installation, GZA will verify each station as follows (Task 8):

1. Confirm the monitor is at the proper height and location, firmly mounted, vibration isolated, and connected to the system interface.
2. Confirm the solar panel is facing the correct direction, firmly mounted, and connected to the system interface.
3. Confirm the weather station is upright, firmly mounted, and connected to the system interface.
4. Confirm connectivity to cell service and data output at the configured interval.
5. Compare acoustic and weather data with a 15-minute reading using a handheld, calibrated sound level meter and weather station, and check the station with an acoustic calibrator.
6. Confirm time synchronization, local data buffering, alerts, exports, and user access.
7. If any step above is not confirmed, document the deficiency and the party responsible for correction.

EQUIPMENT COMPARISON

Permanent monitoring equipment will be evaluated against the RFP's required criteria (Table 5), including frequency range, signal-to-noise ratio (SNR), calibration and precision, weather tolerance, durability, battery life, wireless connectivity, web interface, installation requirements, availability, smart features, and cost. Candidate manufacturers may include Acoem (01dB), HBK (Brüel & Kjær), Larson Davis, Svantek, and Casella, among others; final candidates will be confirmed in the Work Plan.

Weather equipment will be evaluated based on these criteria: measurement of all relevant quantities, including wind speed and direction, gust speed and direction, temperature, relative humidity, rain rate, rain accumulation, rain duration, hail rate, hail accumulation, hail duration, and barometric pressure, as well as calibration and precision, weather tolerance, battery life, durability, smart features, wireless connectivity, web interface, and cost.

MITIGATION TESTING

Mitigation testing has two parts: the controlled test session, which compares agreed configurations under repeatable conditions, and the verification concert, which confirms performance with real program material and weather. Before the verification concert, GZA will confirm with the operator which measures are in place. The verification concert will repeat the baseline procedure and add measurements at candidate permanent monitoring locations. Because a different performer and mix will introduce variability, GZA will normalize results using venue reference measurements at the mix position.

DELIVERABLES

All draft and final reports will be submitted in editable Word and searchable PDF formats, with one consolidated City review cycle for each draft. Data will be delivered in CSV or another City-approved open format and locations in a City-compatible GIS format, together with calibration records, field notes, photographs, settings, weather records, and underlying measurements. Model files will be provided in native format where licensing permits, with inputs, outputs, and documentation sufficient for independent review, and any proprietary restrictions will be identified before work proceeds. The City will be able to retain and use all work products and monitoring data without an ongoing consultant subscription.

Table 7. Deliverables and Timing

	Deliverable	Requited Contents	Timing
Required by RFP	Work Plan	Study areas, methods, field quantities, event selection, access needs, quality controls, and schedule.	Draft Week 5; final after one consolidated City review and before field deployment
	Bass Investigation Report	Concert and background data, indoor and outdoor comparisons, component vibration, source attribution, uncertainty, and findings.	Within 4 weeks of the baseline concert and controlled test
	Mitigation Plan	Prioritized measures, controlled-test results, expected frequency-specific benefits, costs, responsibilities, and verification plan.	Within 2 months of baseline measurements
	Ten-Monitor Siting Package	Preferred sites and alternates, GIS map, ten site sheets, field validation, permissions, installation needs, and costs.	Preliminary layout at Week 6; final within 2 weeks of City review of the Task 4 Mitigation Memo
	Equipment Recommendation	Comparison of at least three manufacturers; one preferred brand, model, and platform; acceptable alternative; specifications; quotations; five-year cost.	Draft at Week 14 so procurement can proceed; final with the Ten-Monitor Siting Package
	Operating Manual	Settings, quality controls, maintenance, data handling, alerts, complaint-response workflow, and reporting templates.	Within 2 weeks of equipment selection by the City; updated after commissioning
	Commissioning Package	All-ten-station checks, concert validation, seven-day operational review, deficiencies, final inventory, training, and presentation.	Within 1 month of completing the seven-day operational check
	Final Report	Consolidated findings, mitigation results, final network design, and commissioning outcomes, with all data and work products.	Within 3 weeks of the Commissioning Package
Additional GZA Deliverables	Current State Memo	Comments on past sound studies, summary of all noise complaints, analysis of prior monitoring data and perceptibility, and past hourly meteorological data.	Within 4 weeks of receipt of all requested materials (Task 1)
	Preliminary Ten-Site Layout	Ten preferred sites and alternates with purpose, ownership, permissions needed, and open validation items.	Week 6, within the City's 60-day timeline
	Mitigation Memo	Analysis of monitoring data and perceptibility, and past hourly meteorological data in comparison to baseline monitoring.	Within 2 weeks of completion of mitigation monitoring in Task 4

SEASONAL CONSTRAINTS

Certain meteorological and seasonal conditions can make acoustic measurements unrepresentative. Consistent with FHWA measurement guidance and the outdoor measurement standards identified in the Work Plan[EW56.1][KW56.2], measurements should not be taken during heavy rainfall, snow, hail, or winds above 11 mph (5 m/s). Cloud cover should be noted for each measurement. Snow is highly absorptive and can distort far-field propagation. Measurements intended to represent concert-season conditions should not be taken while the ground is icy, frozen, or snow covered. For that reason, winter work in Phase 1 focuses on records review, modeling, site reconnaissance, and communications testing, and acoustic field measurements are scheduled for the concert season.

Particular attention will be paid to temperature inversions, which typically form after sunset on clear, calm nights and persist until after sunrise, the same hours when concerts are underway. As the ground cools by radiation, the air nearest the surface becomes cooler than the air above it. Because sound travels faster in warmer air, sound is refracted back toward the ground and can carry well beyond the distances predicted under neutral conditions; during the day, the opposite gradient bends sound upward and can create shadow zones. Cool air also drains into low ground such as the Minnesota River valley, which may strengthen inversions between the venue and the neighborhoods to the north. These effects can change which neighborhoods hear the concert from one night to the next, which is why the field program and the permanent network pair every acoustic record with weather data

SCHEDULE

Table 8 presents the proposed schedule in weeks from notice to proceed (NTP). It assumes City Council approval and NTP in late November 2026, following the November 4 selection, and it follows the RFP's sequence: an initial assessment and controlled-testing phase, followed by live-event validation during the 2027 concert season.

Table 8. Proposed Schedule

Milestone	Weeks from NTP	Target Timing
Kickoff meeting and records request	Week 1	Late November to early December 2026
Site reconnaissance and communications testing	Weeks 3 to 4	December 2026
Draft Work Plan and Current State Memo	Week 5	Late December 2026
Preliminary ten-site layout with alternates	**Week 6**	**Early January 2027, within the City's 60-day timeline**
Final Work Plan, after one consolidated City review	Week 9	January 2027
Draft Equipment Recommendation; City procurement can proceed	Week 14	March 2027
Equipment procurement lead time (assumed)	4 to 12 weeks after order	Delivery by about June 2027
Draft Operating Manual	Week 18	Early April 2027
Field Event 1: baseline concert and controlled test	**Week 24**	**May 2027, first suitable concert**
Draft bass findings (Bass Investigation Report)	Week 28	June 2027
Mitigation recommendations (Mitigation Plan)	Week 32	July 2027
Field Event 2: mitigation verification concert	**Week 34**	**July 2027**
Ten-site design (final Ten-Monitor Siting Package)	Week 37	August 2027
Installation by others	Weeks 36 to 39	August 2027
Task 8: seven-day operational check, attended concert, and training	**Weeks 39 to 41**	**Late August to early September 2027**
Commissioning Package	Week 45	October 2027
Final Report	Week 48	Late October 2027

Testing mitigation measures in the concert season will rely upon timely decisions and implementation by Live Nation

Earliest availability and dependencies. GZA's team is available to begin immediately upon NTP. The schedule depends on the 2027 concert calendar, venue approval of test dates and access, weather that meets the Work Plan criteria, equipment delivery, and installation by others. If the first suitable concert or the controlled test moves, downstream milestones shift by the same interval, and GZA will flag the change at the next biweekly update. Decisions that can proceed before live-event validation. The City can reasonably (1) begin owner permissions and permits for the preliminary preferred sites and alternates in January 2027; (2) select and order monitoring equipment after the draft Equipment Recommendation, because the system choice does not depend on final site locations; and (3) procure mounting, solar, and communications hardware for sites the preliminary assessment rates as high confidence. Installation at sites that remain unvalidated, and any change to how stations are allocated among the impact areas, should wait for live-event validation during Field Event 2.

04 INDEPENDENCE AND EXCEPTIONS

Relationships and disclosures. GZA has no current relationship with Live Nation, the venue operator, or with any monitoring equipment manufacturer or supplier, and has no reseller agreements, commissions, or other financial interests tied to equipment it may recommend. GZA previously provided due diligence services to the developer of Mystic Lake Amphitheater,

GZA owns sound level meters from several manufacturers, purchased on ordinary commercial terms, and receives no benefit from any equipment the City may purchase.

Conflict management. Kevin Williams, as Principal-in-Charge, is responsible for maintaining the independence of this assignment. During the contract, GZA will not accept work from the venue operator, the developer, or any monitoring manufacturer on matters related to Mystic Lake Amphitheater without the City's written consent, and will promptly disclose any new relationship that arises.

Assumptions. The City will provide available prior studies, approvals, complaint records, mapping, sound records, and potential pole locations, and will assist with introductions to the venue operator, residents, pole owners, and adjacent jurisdictions. Venue records, reference measurements, access, and test dates depend on operator cooperation. Field events depend on the 2027 concert calendar and the Work Plan's weather criteria. Resident participation in indoor measurements is voluntary. Equipment lead time is assumed at [8 to 12] weeks after order, and installation is by others.

Exclusions. Hardware purchasing, construction, and installation labor; ordinance drafting and legal opinions; and the optional services listed in Table 10, unless authorized in writing by the City. Contract exceptions. GZA takes no exception to the conditions in RFP Section 11. Because the City's professional-services agreement was not attached to the RFP, GZA requests the opportunity to discuss mutually acceptable terms, including standard of care, limitation of liability, insurance, and data-handling provisions, during negotiation.

Public records. GZA does not request confidential treatment of any portion of this proposal.

06 FEE PROPOSAL

Table 9 presents GZA's lump-sum fee for each task, a total for Tasks 1 through 7, a separate fee for Task 8 commissioning, and the combined base-scope total. The lump-sum fees assume the staffing, instrument quantities, and measurements specified in Table 6 and include labor, instrument rentals, travel, meetings, analysis, and expenses, and do not include additional measurements, which are priced in Table 10. Monitoring equipment, installation, and construction are not consultant fees; they will be estimated separately in the Equipment Recommendation.

Fee validity. Fees are valid for 120 days from the proposal date for contract execution. Task 8 fees are valid through December 31, 2027; if installation or concert availability delays Task 8 beyond that date, the Task 8 fee will be updated to GZA's rates then in effect, with any change agreed in writing before work proceeds. Cancellation and weather rescheduling. GZA will confirm go or no-go with the City 48 hours before each field mobilization, based on the concert schedule and forecast. If an event is canceled or postponed, or weather fails the Work Plan criteria, after GZA has mobilized, GZA will invoice incurred travel and standby time at the rates in Table 11, and the rescheduled event will proceed under the same lump sum.

Hourly rates. Optional and additional services will be billed at the hourly rates in Table 11 or at the unit prices in Table 10.

Table 9. Lump-Sum Fee by Task

Task	Lump Sum Fee
Task 1. Review and Investigation Plan	$10,000
Task 2. Field Measurements and Source Attribution	$32,000
Task 3. Diagnose the Reported Impacts	$8,000
Task 4. Recommend and Test Mitigation	$35,000
Task 5. Develop and Validate the Network Layout	$4,000
Task 6. Compare Systems and Select a Preferred Configuration	$8,000
Task 7. Prepare the Operating Manual	$8,000
Subtotal, Tasks 1 through 7	**$105,000**
Task 8. Commission and Train (separately priced; begins on written City notice)	$25,000
Combined Base-Scope Total, Tasks 1 through 8	**$130,000**

Table 10. Optional Services and Unit Prices

Service	Description	Price
Additional measurement locations	Per acoustic, vibration, or meteorological measurement point beyond what is listed in Table 6	$500 per location per field event
Additional public meetings	Meetings with public officials or the public beyond the kickoff meeting and biweekly updates	Hourly, Table 11
Additional concerts or residences	Attended concert event or participating residence beyond Table 6	$7500 per event
Additional controlled testing or baseline monitoring	Additional test session or background monitoring period	$7500 per session
New or materially revised propagation modeling	Modeling beyond the screening model included in the base fee	Hourly, not-to-exceed by scope
Detailed mitigation design	Design of physical or sound-system mitigation selected in Task 4	Hourly, not-to-exceed by scope
Structural engineering assessment	Assessment by a Minnesota-licensed professional engineer	Hourly, not-to-exceed by scope
Procurement assistance and installation oversight	Bid support, submittal review, and installation observation	Hourly, Table 11
Ongoing seasonal analysis	Concert-season data review and reporting after commissioning	$4000 per month
Public-dashboard development	Public-facing display of network data	$10,000 plus vendor fees
Venue reference monitor, weather instruments, spares, portable instrument	Equipment items the RFP requires to be priced separately from the ten sound monitors	Estimated in the Equipment Recommendation

Table 11. Hourly Rates

Service	Price
Senior Principal	$350
Principal	$340
Associate Principal	$325
Senior Consultant	$310
Senior Project Manager or Senior Scientist	$245
Senior Technical Specialist	$245
Project Manager	$200
Technical Specialist or Senior Engineer	$200
Assistant Project Manager or Engineer	$180
Engineer I or Project Engineer	$165
Engineer II or Staff Engineer	$150
Senior Administrative Assistant	$115
Sound level meter or weather station (per unit)	$150 per day
Travel, lodging, per diem, and shipping	Cost plus 15%

APPENDIX A RESUMES



Kevin Williams, AICP, PP

Associate Principal, Urban & Environmental Planning Practice Leader

Education

J.D., 2008, Rutgers School of Law

M.S., 2000, Urban & Regional Planning, Florida Atlantic University

Architectural Technology, Florida Atlantic University, 1997–2000

B.A., 1996, History, University of Florida

B.S., 1996, Biological Neuroscience, University of Florida

Licenses & Registrations

Professional Planner (PP), New Jersey, 2021, #33LI00646600

American Institute of Certified Planners (AICP), #032608

Areas of Specialization

- Outdoor Venue & Amplified-Music Noise Assessment
- Community Noise Monitoring & Complaint Response
- Predictive Sound Modeling (CadnaA / SoundPLAN, ISO 9613-2)
- Noise Ordinance & Code Compliance
- Noise Mitigation & Operational Controls
- Environmental Review (SEQR / CEQR / NEPA / HUD Part 58)
- Public Hearings, Testimony & Stakeholder Engagement
- Land Use, Zoning & Environmental Planning

Affiliations / Memberships

- American Institute of Certified Planners (AICP)
- Urban Land Institute (ULI)
- American Planning Association, NY and NJ Chapters

Summary of Experience

Kevin Williams is an Associate Principal and leader of GZA's Land Use & Environmental Planning Practice, with more than 15 years of environmental planning and design for acoustics and environmental compliance within a 25-year career. He serves as Principal-in-Charge for GZA's noise and acoustics work for live music, nightlife and performance venues, municipalities, energy and data center developers, and transit agencies. That work spans ambient and operational sound monitoring, predictive sound modeling, noise-code compliance evaluation, mitigation and sound-system tuning recommendations, and long-term and construction noise monitoring programs.

Mr. Williams specializes in amplified music and outdoor-venue noise, where technical findings must hold up before neighbors, community boards and regulators. He has led acoustic programs for indoor/outdoor concert venues and music clubs, including matched-night monitoring at residential receptors, model-guided speaker-system tuning, and reports and memoranda written for regulators, community boards and the public. He brings an environmental planner's view of how venue operations, site design, meteorology and community expectations interact, and translates acoustic data into practical operating limits and mitigation options.

He has prepared and overseen locals, State and Federal environmental reviews, including noise analyses, for more than two decades and regularly provides testimony and outreach before community boards, planning and zoning boards and municipal staff. Prior to GZA, he was Principal and owner of Planning Analytics & Solutions, an Associate Vice President at HNTB Corporation, and a Vice President for urban design, planning and landscape architecture at AECOM (Urbitran Associates).

Relevant Project Experience

OUTDOOR MUSIC, NIGHTLIFE & LIVE-PERFORMANCE VENUE ACOUSTICS

Principal-in-Charge, Pacha NYC Indoor/Outdoor Music Venue Acoustic Compliance Program, Brooklyn, NY (2026). Directed a multi-phase acoustic program for FIVE Holdings at the former Avant Gardner / Brooklyn Mirage complex, an approximately 80,000-square-foot indoor/outdoor electronic dance music venue with a combined capacity of 7,830 patrons and events running to 4:00 AM. The site had a history of community noise complaints under prior ownership, and GZA was engaged at the operator's initiative to support a State Liquor Authority (SLA) license transfer. GZA built before-and-after CadnaA (ISO 9613-2) models of the prior and proposed venues using d&b audiotechnik loudspeaker array and directivity data, a perimeter sound wall and temporary structures plans. The models showed a substantial reduction at nearby residences, and the findings were presented to Brooklyn Community Board 1 (April 2026) and the SLA (May 2026). Program phases followed commitments made at the community board hearing:

- Pre-operational testing (May 26–27, 2026): system-on/system-off measurements at 11 residential locations with the untuned system at maximum output, using field-calibrated Larson Davis meters with A- and C-weighted and one-third-octave data. Results led to low-frequency DSP tuning and limiter recommendations.

- Operational monitoring (June 12–14, 2026): monitoring at four residential receptors, comparing an ambient night with a fully occupied event night, with minute-by-minute separation of venue sound from neighborhood nightlife against NYC Noise Code dB(A), dB(C) and octave-band limits.

- Receptor refinement: monitoring narrowed from 11 modeled receptors, including two with repeated past complaints, to five and then four as successive tuning rounds resolved potential exceedances. A follow-on program of monthly monitoring over six months of operation was planned to confirm sustained compliance (August 2026 results reported in September).
- Model validation: a memorandum compared predicted with measured increase over ambient, the metric that governs NYC Noise Code impact determinations, and accounted for night-to-night and meteorological variability.

Mr. Williams oversaw all SLA reports, two-tier final monitoring report, with a plain-language executive summary for the community board and public and a technical report for regulators. He also prepared a Department of Buildings memorandum on zoning compliance, lot-line measurement, the model's predictive capability and a proposed evaluation methodology for building enclosure design. He testified at multiple Community Boards, State Liquor Authority Hearings, and multiple meetings with Sate and local elected officials and community representatives.

Principal-in-Charge, Annabel's, 675 Hudson Street SLA Acoustic and Traffic Studies, Manhattan, NY (2026–ongoing). Leading acoustic and traffic studies for a private members club taking over the full five-story building and rooftop, with restaurants and bars on every floor and a 300- to 400-person subcellar event space. Total capacity is approximately 1,000 people. The worst-case analysis assumes peak member activity overlapping a full event buyout, and the scope includes testimony before the Community Board 2 SLA Licensing Committee.

Principal-in-Charge, 300 Kent Avenue (Sugar House at the Domino Refinery) Acoustic and Traffic Studies, Brooklyn, NY (2026). Directed combined SLA acoustic and traffic studies for TVG Hospitality's Sugar House, a first-floor restaurant and live-performance venue with an outdoor patio in the redeveloped Domino Refinery building on the Williamsburg waterfront. The acoustic investigation included evening ambient monitoring (8:00–10:20 PM) at street level at the nearest residential buildings (270 and 280 Kent Avenue) to set a conservative background level. It also covered estimates of façade Outdoor/Indoor Transmission Class (OITC) for each exterior wall and window assembly, and interior music levels by room based on the type, location and volume of programming. Exterior patio and queue-line speech and background music were also modeled, and combined levels were evaluated against the NYC Noise Code at nearby sensitive receptors. Mr. Williams performed the principal QA/QC review of the acoustic report (issued June 30, 2026). He also authored the companion traffic and operations assessment, which covered a five-position staffing plan for queue and perimeter management, including noise and litter sweeps and a community complaint line, plus coordination protocols for simultaneous events at the building's 640-person rooftop venue. GZA supported the client's presentation to Brooklyn Community Board 1 in September 2026, and the final reports were submitted for the SLA application.

Principal-in-Charge, 656 Sixth Avenue (Former Limelight) Acoustic Studies, Manhattan, NY (2023 and 2026). Led two SLA engagements at a landmarked former church and nightclub: a ticketed Broadway-style cabaret venue on multiple floors (2023), and a three-floor private membership club with a seasonal outdoor courtyard (2026). Work included evening ambient monitoring at the nearest residential property line, ASTM façade sound-isolation testing to ground model assumptions, and worst-case evaluation of indoor and courtyard operations against the NYC Noise Code. Both applications were approved.

Principal, 530 West 27th Street Performance Venue Acoustic Investigation, Manhattan, NY (2026). Oversaw the acoustic investigation of a proposed restaurant and multi-floor performance venue at the former Sleep No More site, including 24-hour rooftop ambient monitoring and recommendations, coordinated with an SLA traffic operations analysis.

Principal-in-Charge, Center for Emerging Culture, 45 Howard Street Acoustic Analysis, Manhattan, NY (2026). Co-authored the acoustic analysis of a catering facility and private membership club, evaluating music and patron noise at adjacent residential receptors, with a traffic study and patron operations plan for community board review.

Principal, Multi-Venue SLA Acoustic and Traffic Studies, 161 Water Street and One Madison Avenue, Manhattan, NY. Provided acoustic and traffic studies for a 33-floor vertical program of public and private venues, gallery, music-listening and

cultural spaces at 161 Water Street, and for multilevel hybrid public/private licensed spaces at One Madison Avenue. Both applications were approved.

Additional venue acoustic assignments: Breitling Social Club rooftop patio, Brooklyn (2025); Broome Hotel bar and louvered-roof courtyard, Manhattan (2025); The Stone Rabbit, Manhattan (2025); 85 Tenth Avenue (VERDE), Manhattan (2024); 16 East 16th Street rooftop lounge and private venue, Manhattan (2023, approved); 47 West 20th Street, Manhattan (2023); Mi Garba backyard noise mitigation, Manhattan (2026). Also, The Shed (Hudson Yards) transportation and operations plan for a multipurpose performance and arts venue.

MUNICIPAL NOISE REVIEW, CODE COMPLIANCE & COMMUNITY ENGAGEMENT

Principal-in-Charge, Village of Western Springs Third-Party Acoustic Review, Western Springs, IL (2026). Directed a third-party review of an applicant's noise analysis on behalf of the Village, with a review memorandum and a working session with Village staff ahead of a public meeting.

Principal-in-Charge, Hotel and Gaming Trades Council Amplified Sound Noise Study, Manhattan, NY (2026). Directed a noise study of amplified sound at picket-line activity after permitted hours were reduced. Mr. Williams tightened the NYC Noise Code framework, including impulsive vs. non-impulsive sound and meter-response settings, clarified permit conditions, and added an executive summary and step-by-step compliance recommendations.

Principal, Richmond Avenue CEQR Stationary-Source Noise Analysis, New York, NY (2026). Developed the noise approach and agency strategy, scoping with NYC DEP for stationary vacuum sources at the property edge nearest residences, with supplemental ambient monitoring.

NOISE MONITORING, MODELING & MITIGATION PROGRAMS

Principal-in-Charge, Data Center Noise Studies, Texas, Georgia and South Carolina (2026). Leads noise studies for data center developers including Prologis (Sweetwater, GA; New Braunfels and Plano, TX) and Skybox Datacenters (Lancaster and Hutto, TX). The work includes expanded monitoring networks, chiller and equipment measurement, predictive modeling of generators and cooling equipment, and additional monitoring where neighbor complaints were expected as new phases came online. As QA reviewer on Woolpert's York, SC studies, Mr. Williams found that A-weighted results had been compared to unweighted County limits and directed a corrected comparison.

Principal, MTA Fulton–Liberty Line CBTC Construction Noise and Vibration, New York, NY (2026). Executive sponsor for baseline noise and vibration monitoring, modeling and a Noise Control, Monitoring and Mitigation Plan with certificate of compliance for design-build signal work, including crane-related impacts on nearby residences.

Principal-in-Charge, Battery Energy Storage System (BESS) Noise Program, New York and New England (2024–2026). Leads ambient monitoring, SoundPLAN and CadnaA modeling and ordinance-compliance reporting for more than 15 BESS sites for NineDot Energy, New Leaf Energy, Carson Power, Nexamp and Flatiron Energy. As QA reviewer on Flatiron Energy's Salt Cod BESS report, he resolved tonality weighting, 60/120 Hz hum characterization and receptor-placement issues.

ENVIRONMENTAL REVIEW WITH NOISE ANALYSIS

Principal Planner, Brooklyn Prospect Sunset Yards K-8 Charter School, ZR 73-19 Special Permit, Brooklyn, NY. Led the environmental assessment, including detailed noise analysis and mitigation, to show a 660-student school could be appropriately sited in a manufacturing zone.

Principal-in-Charge, ProvPort 30-Year Resilient Port Master Plan, Providence, RI. Lead master planner for a 120-acre working port where adjacent environmental justice communities have long experienced noise, air quality and traffic impacts from port operations. The plan sequences impact reduction and community benefits through an advisory group and regular community facilitation.

Additional environmental reviews with noise components: The Hart, Brooklyn (NEPA/CEQR/SEQR with acoustical consulting); 252 Victory Boulevard, Staten Island (HUD noise assessment, FONSI 2024); 1034 Atlantic Avenue rezoning, Brooklyn (CEQR noise analysis); 41 Summit Street, Brooklyn (noise E-designation compliance); Nursery Field, City of Rye (SEQR noise and testimony; negative declaration); MicroGrid Networks 315 Berry Street rooftop BESS, Brooklyn (special permit EAS including noise); Metro-North station planning, where community stakeholders sought to mitigate train noise.



Timothy M. Kelly, P.E., INCE-USA

Project Manager

Education

B.S., 2007, General Engineering, University of Illinois- Champaign-Urbana

Licenses & Registrations

Professional Engineer
2012, Illinois, #062-064658

Areas of Specialization

- Noise Analyses
- NEPA

Training/Seminars

- FHWA Beta Training for TNM 3.0, 2020
- HMMH Aviation Noise Course, 2020
- NEPA and the Transportation Decision-making Process, Columbia, SC, 2016
- ACEC-Illinois/IDOT Phase 1 Training, IDOT/FHWA, Lombard, Illinois, 2016
- Environmental & Community Noise Monitoring, Chicago, Illinois, 2014
- Transit Noise and Vibration Impact Assessment, Portland, Oregon, 2011
- Noise Policy Meeting, 2011 – Presenter
- Context Sensitive Solutions Approach, IDOT, 2009
- FHWA Traffic Noise Model 2.5 Course, Franklin, Tennessee, 2008
- ACEC of Illinois - Highway Traffic Noise Course, 2007
- OSHA 40 Hour, Hazardous Waste Site Worker Course, 2007

Publications and Presentations

- Noise Presentation / Training for IDOT (April 2018 and October 2018)
- "The Ike: Rewriting Illinois DOT's Traffic Noise Policy" ADC40 Meeting (2017)

Summary of Experience

Mr. Kelly is a professional engineer with experience in environmental studies, particularly with traffic noise analyses. Mr. Kelly led the development of the updated Illinois Department of Transportation noise policy and played a prominent role in the development of the updated Illinois Tollway noise policy. He is prequalified by Illinois DOT for traffic noise analysis on an EIS level, and for NEPA as an EA Lead. His experience as IDOT's statewide noise expert has provided him with understanding of noise policies and public perceptions of noise, which is critical in establishing noise policy. In addition, he has experience with rail noise and vibration studies, having completed noise and vibration analyses for both Metra and under the CREATE program.

Mr. Kelly also led the highly complex noise study for the I-290 EIS. Over 10,000 individual receptors were studied for this project area. He worked with IDOT to develop content for noise informational meetings, called "noise forums." This project garnered much public interest, and these meetings served an important role in successfully completing the project.

Mr. Kelly has served as the project manager for NEPA projects including Gougar Road EA, the US 20 Feasibility Study, and the Dee Bennett Road EA. The Gougar Road EA presents several interesting challenges, including potential Section 106 and Section 4(f) impacts.

Relevant Project Experience

NOISE ANALYSIS

- Conducted over 50 noise report reviews on behalf of IDOT D1 and IDOT BDE (2015 to present)
- On-call services, policy interpretation, policy development, and noise analysis reviews for IDOT District 1, IDOT BDE, and ISTHA (2010 – present)
- Conducted noise analysis w/ TNM 2.5 for I-88 at York Road in DuPage Co., IL (2026)
- 2025 Update of Illinois DOT Traffic Noise Assessment Manual and Policy (2025)
- Conducted noise analysis with TNM 2.5 for Manhattan-Monee Rd in Will Co., IL (2025)
- Conducted noise analysis with TNM 2.5 for US Route 6 in Grundy Co., IL (2025)
- Conducted noise analysis with TNM 2.5 for approximately 70-mile stretch of I-88 in Whiteside, Lee, Ogle, DeKalb, and Kane Counties, IL (2024)
- Conducted noise analysis with TNM 2.5 for Ridge Road in Kendall Co., IL (2023)
- Conducted noise re-eval for I-80 EA re-evaluation in Will County, Illinois (2023)
- Conducted noise analysis with TNM 2.5 for I-57 in Kankakee Co., IL (2023)
- Conducted noise analysis utilizing TNM 2.5 for Gougar Road in Will Co., IL (2022)
- Conducted noise analysis utilizing TNM 2.5 for I-57 in Williamson Co., IL (2022)
- Conducted noise analysis with TNM 2.5 for IL 53 in Will Co, IL (2021)
- Conducted noise analysis with TNM 2.5 for Randall Road at IL 72 in Kane Co, IL (2021)
- Conducted noise analysis with TNM 2.5 for 25th Avenue in Cook Co., IL (2020)
- Conducted noise analysis with TNM 2.5 for IL 97 in Sangamon Co., IL (2020)
- Conducted noise analysis with TNM 2.5 for Laraway Road in Will Co., IL (2020)
- Conducted noise analysis with TNM 2.5 of IL 158 Extension in St Clair Co., IL (2020)

Timothy M. Kelly, P.E., INCE-USA

Project Manager

- Conducted noise analysis with TNM 2.5 for Green Mount Rd. in St Clair Co., IL (2020)
- Conducted noise analysis with TNM 2.5 for Rest Area in Union Co., IL (2020)
- Conducted noise analysis with TNM 2.5 for Anderson Road in Kane Co., IL (2020)
- Conducted a Phase II noise analysis reassessment using TNM 2.5 the ISTHA Central Tri-State widening project (2019-2020)
- Conducted noise analysis utilizing TNM 2.5 for I-64 in St. Clair County, Illinois (2019)
- Conducted a noise analysis utilizing TNM 2.5 and the benefited receptor survey for IL 97 in Sangamon County, Illinois (2019)
- Conducted a noise analysis utilizing TNM 2.5 for I-80 from Ridge Road to US 30 in Will & Grundy Counties, Illinois (2019)
- Conducted a detailed noise study for a Metra Fox River Bridge as part of an EA document (2017)
- Conducted a noise analysis for four build alternatives and noise abatement analysis for the preferred alternative utilizing TNM 2.5 for I-290 Eisenhower Expressway Traffic Noise, Cook County, Illinois (2015)
- Conducted a noise and vibration study for the High-Speed Rail corridor project at the Kankakee Bridge (2014)
- Conducted a detailed noise study for a Metra UP NW Line as part of an EA document (2013)
- Conducted noise & vibration studies and noise abatement analyses for CREATE projects P6, WA5, WA10, B1, B4/B5, B8, B15, and B9EW1 (2007 – 2017)
- Conducted a noise analysis utilizing TNM 2.5 for US 20 in Kane & Cook Counties, Illinois (2019)
- Conducted a noise analysis utilizing TNM 2.5 for the proposed new alignment of the Delhi Bypass, Jersey County, IL (2019)
- Developed and conducted noise training for IDOT Pre-qualification process (April and October 2018)
- Conducted a noise analysis utilizing TNM 2.5 for US 20 in Kane & Cook Counties, Illinois (2018)
- Conducted a noise analysis utilizing TNM 2.5 for a I-80 in Will & Grundy Counties, Illinois (2018)
- Conducted a noise analysis utilizing TNM 2.5 for a Naperville Road in DuPage County, Illinois (2018)
- Conducted a noise analysis utilizing TNM 2.5 for a Happ Road in Lake County, Illinois (2018)
- Conducted a noise analysis utilizing TNM 2.5 for IL 173 in Lake County, Illinois (2018)
- Conducted a noise analysis utilizing TNM 2.5 for a I-55 in Will County, Illinois (2017)
- Reviewed TNM 3.0 Beta and provided comments on behalf of IDOT BDE (2017)
- 2017 Update of Illinois DOT Traffic Noise Assessment Manual and Policy (2016-17)
- 2017 Update of Illinois State Toll Highway Authority Traffic Noise Study and Abatement Policy (2016-17)
- Lead development of IDOT Traffic Noise Informational Video Series (2016-17)
- Conducted a noise analysis utilizing TNM 2.5 for a Nofsinger Road in Tazewell County, Illinois (2016)
- Conducted noise analysis with TNM 2.5 & benefited receptor survey for 31 miles of I-57 in Williamson, Franklin, & Jefferson Counties, Illinois (2016)
- Conducted a noise analysis utilizing TNM 2.5 for South 6th Street in Sangamon County, Illinois (2016)
- Conducted a noise analysis utilizing TNM 2.5 for a proposed weigh station on I-74 in Vermillion County, Illinois (2016)
- Reviewed noise analysis for the I-55 Managed Lanes project, Cook and Will Counties, Illinois (2015)
- Conducted a noise impact analysis for four build alternatives and noise abatement analysis for the preferred alternative utilizing TNM 2.5 for the proposed Alton Bypass in Alton, Illinois (2015)
- Conducted a noise study & abatement analysis utilizing TNM 2.5 for the East Side Highway in Bloomington, Illinois (2014)
- Conducted a noise analysis of trucking facility relative the Illinois Pollution Control Board limits in Will County, Illinois (2014)
- Conducted a noise study analysis with TNM 2.5 for Laraway Road between Manhattan Rd. & Cedar Rd. in Will Co., IL (2014)
- Conducted a noise abatement screening to estimate the potential abatement costs for the proposed IL53 for ISTHA (2013)
- Conducted a noise study on the effects of diamond grinding on the noise properties of pavements for ISTHA (2013)
- Conducted a noise exposure screening for occupational noise concerns (2013)
- Conducted a noise study with TNM 2.5 for I-90 at Barrington Road in Hoffman Estates and South Barrington, Illinois (2013)
- Conducted a noise study with TNM 2.5 for 143rd between Will Cook Road and Wolf Road in Orland Park, Illinois (2013)
- Conducted a noise study & abatement analysis utilizing TNM 2.5 for the Weber Road at I-55 in Will County, Illinois (2012)
- Performed a reanalysis of the I-80 noise analysis at Parker Road, including several information meetings with residents regarding the noise analysis process (2012)



Ethan Wagner, INCE

Lead Acoustician

Education

B.S.E., Mechanical with Acoustics,
University of Hartford, 2019
M.Eng., Acoustics
Pennsylvania State University

Areas of Specialization

- Noise Control
- Acoustic Engineering
- Vibration and Structural Acoustics

Summary of Experience

Acoustic Engineer and project manager with 7 years of demonstrated experience in acoustics, noise control, audio, and signal processing. Project manages environmental noise work such as battery energy storage, solar, construction, commercial music, and transportation. Keen ability to manage complex acoustic and multi-disciplinary projects, balancing system or project level tradeoffs to ensure deliverables and deadlines are met with community support.

He has designed and conducted numerous acoustic analyses and developed noise mitigation strategies throughout the country as a certified noise consultant with GZA for a wide variety of projects from large scale rural solar projects to commercial music noise complaints in Manhattan.

Relevant Project Experience

NOISE AND ACOUSTICS

Project Manager, SLA and Community Monitoring, 140 Stewart Avenue, Brooklyn, New York. Completed a State Liquor License Authority (SLA) Application Acoustic Study for a renovated outdoor concert venue and club. Created an in depth before-and-after acoustic model including loud speaker arrays and complex digital signal processing to demonstrate proposed change in use and reduction of impact to residents. Monitored inside the operational venue and in adjacent neighborhoods at sensitive receptors, and suggested mitigation and system fine tuning to meet compliance with special attention to locations with known past noise complaints.

Project Manager, Residential Noise Control, 1522 On The Lake, Milwaukee, Wisconsin. Monitored, analyzed, and proposed noise control solutions for an unknown noise source that occurred during high wind events. Used simultaneous acoustic and meteorological recordings to determine correlation and which floors and facades needed treatment. Vibration mitigation of outdoor balcony railings were applied and monitored after treatment.

Acoustic Technical Lead, Commercial Music – 30 Hudson Yards, New York, New York. Designed monitoring plan and mitigation methods for commercial music noise complaint at Edge. Conducted ambient time-synced noise monitoring in empty apartment in complainant building and along Edge rooftop to determine impact and transmission to adjacent residential buildings. Determined the extent of noise code exceedance and offered mitigation methods to maintain commercial business and eliminate noise complaints, focusing on low frequency transmission and operational controls.

Experience Prior to GZA

CATEGORY

Acoustic Consultant Intern, Lewis S. Goodfriend and Associates. Environmental and interior acoustic consulting in the North New Jersey and New York metro including industrial factory assessments, construction impact, and interior acoustic design.

Ethan Wagner

Lead Acoustician

Acoustic Manufacturing Intern, YG Acoustics. Ultra hi-fi loudspeaker manufacturing, including designing, machining, assembling, and testing all products in house.

Acoustic Engineer, Bose. Specialty headphone and active noise control design, testing, and manufacturing for use in aviation, sports communication, and military applications.

Acoustic Systems Engineer, Acoustic Lead, Boston, Massachusetts. Acoustic design, testing, and manufacturing for Meeting Owl 3 and Owl Bar. Led efforts to achieve Microsoft Teams Certification for both products.

Publications and Presentations

Wagner, E.L. "Improving autonomous vehicle safety—The use of convolutional neural networks for the detection of warning sounds." The Journal of the Acoustical Society of America, May 2019.

Certifications/Training

- Institute of Noise Control Engineering (INCE) Board Certification
- Engineer in Training (Mechanical), 2019
- First Aid/CPR

Affiliations/Memberships

- Acoustical Society of America, CIRDI Committee Co-Chair
- Institute of Noise Control Engineering Member



Rayan Shamas, P.E.

Long Term Monitoring Specialist

Education

B.S., 2010, Civil Engineering,
University of Massachusetts- Lowell
M.S., 2012, Geotechnical Engineering,
University of Massachusetts- Lowell

Registrations & Certificates

Professional Engineer, Massachusetts, #--503; Minnesota, #--718
2022, INCE-USA Member Noise Specialist

Other Experience

Database Management/Programming/GIS

Professional Activities

Drilled Shaft Committee Member, DFI – Deep Foundations Institute.
Member, ASCE/BSCE – American/Boston Society of Civil Engineers
Member, PDCA – Pile Driver Contractor's Association

Certificates of Training

Basic Plus CPR, AED, and First Aid for Adults, 2013-2019
The Port Authority of NY & NJ – #110491 2015-2016
Massachusetts Bay Transportation Authority – Right of Way (ROW) Safety Training; 2015-2018
Massachusetts DOT Keolis Commuter Services – GLX 2014-2019
OSHA 40-hour Hazardous Waste & Emergency Response Training, 201
OSHA 10-hour Construction Safety & Health Training, 2013
Transportation Worker Identification Card (TWIC), 2014-2019
Keolis ROW Training – 2015-2019

Areas of Specialization

- Geotechnical/Structural Instrumentation
- Automated Monitoring
- Noise Monitoring
- (CSL) (PDA) (TIP) Deep Foundation Testing.
- Static Load Test

Summary of Experience

Mr. Shamas is an accomplished instrumentation engineer. With a successful career spanning over 14 years in the heavy civil construction industry, he has cultivated management expertise while collaborating with contractors, engineers, owners, and developers on projects ranging from small bridges to mega-projects with construction value exceeding $4.2 Billion (2016) and approximately $5.2 Billion (2026) with direct instrumentation and monitoring scopes up to $2 million.

Mr. Shamas possesses advanced technical expertise in deep foundation observation and testing, automated noise, vibration, geotechnical and environmental instrumentation. He has successfully served as a senior project manager and site engineer on numerous projects, overseeing the implementation of automated instrumentation and conducting pre/post-construction surveys, installation of vibration, noise, dust, weather, crack, underwater turbidity monitoring, and other advanced geotechnical and environmental solutions.

Mr. Shamas has extensive experience in developing noise and vibration monitoring plans and implementing instrumentation solutions on a plethora of private and public projects. He is a member of the Institute of Noise Control Engineering INCE-USA. He has presented at multiple national conferences and special talks webinars at DFI, Geo-Institute, and INCE.

Relevant Project Experience

Sr. Project Manager, PNSY P-381 Multimission, Kittery, Maine. 2022-Current. Managed and performed all the cross-hole Sonic Logging (CSL) and wireless Thermal Integrity Profiling (TIP) non-destructive testing on the proposed 10-foot-diameter to 3-foot-diameter drilled shafts for the new drydock expansion project. Also assisted with the installation, monitoring, and maintenance of an automated instrumentation system during major renovations to dry docks in the Naval Base. The monitoring system included 2 automated total stations, 3 vibration monitors, 2 automated noise acoustic monitoring station, multiple tiltmeters, weather station and dust monitor and drilled in VWPZ. The automated data acquisition system provided near real time data reporting, automated scheduled reporting, and email alert notification of pre-set alarm levels for multiple years duration.

Sr. Project Manager and Acoustic Specialist, Ship St Acoustic Monitoring, Providence, Rhode Island. 2026-Present. Managed the project involving furnishing and installing of up to seven (7) fully automated noise monitoring stations to assess the acoustics due to cooling towers on the neighborhood. Included Octave band spectral analysis and long-term acoustic monitoring.

Acoustic Specialist, Draw One Bridge Replacement Project, Boston, Massachusetts. 2026-Present. Acoustic/Noise specialist for the Noise Control Plan for MBTA's North Station Draw One project that includes replacing the existing Charles River railroad drawbridges with new movable structures carrying six tracks, together with new approach trestles, track and signal upgrades, a new Tower A control facility, Platform F extension, utilities, and associated infrastructure. GZA's scope also includes condition surveys,

Rayan Shamas, P.E.
Long Term Monitoring Specialist

automated deformation, vibration, noise monitoring at various locations around this iconic structure.

Acoustic Specialist, Basiliere Bridge Replacement Project, Haverhill, Massachusetts. 2026-Present. Acoustic/Noise specialist for the Noise Control Plan for the Basiliere Bridge Replacement project that includes replacing the existing Route 125 bridge over the Merrimack River with a new multi-span bridge, roadway and intersection improvements, utility relocations, pedestrian and bicycle accommodations, and demolition of the existing bridge. GZA's scope includes preparation of the Noise Control Plan, automated continuous deformation monitoring using ATSs, vibration, noise, dust, and underwater turbidity monitoring.

Acoustic Specialist, Washington Bridge Replacement Project, Providence/East Providence, Rhode Island. 2026-Present. Acoustic/Noise specialist and deep foundations consultant for the I-195 Washington Bridge Replacement project that includes full replacement of the westbound bridge over the Seekonk River, including new piers and foundations, a new superstructure, roadway improvements, resurfacing, and replacement of drainage systems. GZA's scope also includes extensive condition surveys, automated deformation, vibration, noise monitoring at various locations, as well as geotechnical services.

Acoustic Specialist Sr. Project Manager, Washington Bridge Demolition, Providence, Rhode Island. 2024-2025. Assisted with implementing automated noise and dust monitoring during demolition operations. Lead meetings with RIDOT, GC, demolition contractor, and other parties regarding noise and dust monitors. Two (2) noise and two (2) dust monitoring systems were implemented on the project.

Sr. Project Manager, 25 West Wheelock St Dorms Dartmouth College, Lebanon, New Hampshire. 2024 – 2026. Managed the project involving the demolition and reconstruction of the apartment buildings. GZA assisted with automated deformation monitoring of adjacent structures, support of excavation, and college building during demolition and construction operations. GZA installed two (2) Automated Total Station, six (6) vibration and/or noise monitoring systems as well as crack gauges on sensitive structures.

Sr. Project Manager, Revolution Wind Offshore Facilities, North Kingstown, Rhode Island. 2024 – 2025. Managed the project involving the construction of a new interconnection facilities and substation for the Offshore wind project. The scope includes automated noise and vibration monitoring at up to four (4) locations, two (2) automated total station to monitor the king pile support of excavation, and four (4) 90' automated inclinometers consisted of shape arrays (SAAs). The automated noise/acoustic monitoring implemented advanced AI/ML technology at the time to allow the project operations to continue during evening and night time without the need of full on-site presence to document the sources.

Sr. Project Manager, Fairmount Line Bridge Replacement, Boston, Massachusetts. 2021. Managed the installation of two (2) automated total station (ATS) systems to monitor track and bridge structure deformation during the replacement of two (2) railroad bridges. In addition to developing a detailed noise monitoring plan for MassDOT and MBTA's review and the installation of automated vibration & noise monitoring systems throughout the project site at up to five simultaneous locations. Also managed condition surveys on multiple adjacent residential structures. The monitoring system included one ATS unit and one automated vibration monitor. Monitoring data was made available in real time using a project specific website.

Sr. Project Manager, Poplar St Pump Station – Somerville, Massachusetts. 2024 – Current. Managed the installation of automated noise and vibration monitoring during the construction and installation of large holding tank and construction of new pump station. Other work includes automated deformation monitoring during support of excavation (SOE) construction on the adjacent highway piers. As well static pull-out testing on rock anchors.

Sr. Project Manager, South Elm St Bridge Replacement, Haverhill, Massachusetts. 2024 – Current. Managed the project involving the replacement of the new bridge. The scope of work included planning, design, and implementation of fully automated track and structure monitoring system using an ATS, up to seven vibration and noise monitoring units running simultaneously. In addition to micropile inspection services and pre-construction condition surveys.

Sr. Project Manager, Harvard Boat House, Cambridge, Massachusetts. 2024. Managed the project involving two (2) automated vibration and noise monitoring systems during pile driving operations for the new Harvard boat house.

Rayan Shamas, P.E.

Long Term Monitoring Specialist

Project Engineer/Assistant Project Manager, PNSY, Building B-178, Kittery, Maine. 2021-2022. Implemented automated noise and vibration monitoring at the Portsmouth Naval Shipyard during construction operations at multiple locations.

Project Manager, 25 West Wheelock St Dorms Dartmouth College, Lebanon, New Hampshire. Managed the project involving the demolition and reconstruction of the apartment buildings. GZA assisted with automated deformation monitoring of adjacent structures, support of excavation, and college building during demolition and construction operations. GZA installed two (2) Automated Total Station, six vibration and/or noise monitoring systems as well as crack gauges on sensitive structures.

Project Manager, Fairmount Line Bridge Replacement, Boston, Massachusetts. Managed the installation of two (2) automated total station (ATS) systems to monitor track and bridge structure deformation during the replacement of two (2) railroad bridges. In addition to developing a detailed noise monitoring plan for MassDOT and MBTA's review and the installation of automated vibration & noise monitoring systems throughout the project site at up to five simultaneous locations. Also managed condition surveys on multiple adjacent residential structures. The monitoring system included one ATS unit and one automated vibration monitor. Monitoring data was made available real time using a project specific website.

Project Engineer/Assistant Project Manager, PNSY, Building B-178, Kittery, Maine. Implemented automated noise and vibration monitoring at the Portsmouth Naval Shipyard during construction operations at multiple locations.

Project Engineer, Haverstraw Former MGP Remediation, Haverstraw, New York. Project Engineer for the installation and monitoring of a noise monitoring and automated vibration monitoring systems. Also installed an Automated Total Station system to monitor existing adjacent residential properties and the newly installed sheet pile support of excavation system during a large remediation project. The monitoring system included one AMTS unit and 25 optical prisms. Monitoring data was made available real time using a project specific website. Also performed pre- and post-construction surveys.

Field Engineer, Route 79/I-195 Interchange Reconstruction Project, Fall River, Massachusetts. Performed noise monitoring during the reconstruction of the I-79 and I-195 interchange. Noise monitoring plan was implemented, monitoring units were mounted for remote measurements.

Assisting Design Engineer, Route 128 Widening, Needham-Wellesley, Massachusetts. Performed geotechnical and structural design of noise/retaining walls, concrete gravity wall design. Geostructural/DEEPEX software was used for the modeling of the walls and checking for any possible failure criteria.



Gene M. Bove, INCE

Consultant Reviewer – QA/QC

Summary of Experience

Mr. Bove is a Senior Project Manager with 11 years of professional experience and serves as the practice lead for GZA's acoustic consulting practice. He is a certified Noise Consultant in both New York City and New Jersey and specializes in environmental noise assessment, acoustic modeling, and noise mitigation for complex energy, industrial, commercial, and development projects.

Mr. Bove has conducted sound studies and acoustic analyses in more than 20 states and has completed more than 100 acoustic assessments for battery energy storage system (BESS) projects. His experience includes BESS facilities, data centers, industrial facilities, freight and logistics centers, large-scale commercial and mixed-use developments, and live music and entertainment venues. His work encompasses ambient sound monitoring, acoustic modeling, equipment and operational noise assessments, regulatory compliance evaluations, and the development and evaluation of practical noise mitigation measures.

Mr. Bove has extensive experience navigating local, state, and federal noise requirements and regularly prepares technical analyses for agency and regulatory review. In New York City, he is one of GZA's most active consultants in preparing Remedial Action Plans for Air Quality and Noise for the Mayor's Office of Environmental Remediation (OER) and routinely prepares acoustic analyses for review by the New York City Department of Environmental Protection (DEP), as well as studies supporting State Liquor Authority (SLA) applications. His experience also includes noise assessments supporting CEQR, SEQR, and NEPA environmental reviews.

Beyond New York and New Jersey, Mr. Bove has performed sound measurements, acoustic modeling, compliance assessments, and mitigation evaluations for data centers in Oregon, Texas, Virginia, and Oklahoma, as well as industrial and energy facilities in Rhode Island, Connecticut, Pennsylvania, and other jurisdictions throughout the United States.

Education

A.S., Business Administration, Sussex County Community College
B.S., Environmental Science, Centenary University
M.S., Earth and Environmental Science, Montclair State University
Graduate Certificate, Geographic Information Science, Montclair State University

Areas of Specialization

- Noise and Acoustics
- Urban Planning
- GIS

Relevant Project Experience

NOISE AND ACOUSTICS

Project Manager, Private Membership Club and Live Music Venue, 656 6th Avenue, New York, New York. Provided acoustic consulting services in support of a New York State Liquor Authority (SLA) application for a proposed multi-level private membership club in Manhattan featuring dining, entertainment, outdoor courtyard space, and live music. Conducted ambient sound monitoring and field-tested the building façades to evaluate Noise Isolation Class (NIC) using ASTM E366-20 methodology as a guideline. Developed acoustic analyses to evaluate transmission of live music and patron-generated noise from interior and outdoor spaces to nearby residential receptors. Evaluated projected A-weighted, C-weighted, and 1/3 octave-band sound levels against applicable NYC Noise Code requirements and assessed worst-case operating conditions, including maximum occupancy. The analysis demonstrated that the proposed operations could comply with applicable NYC Noise Code criteria at nearby residences.

Project Manager, Battery Energy Storage Systems, New York City and Multiple U.S. Locations. Provided acoustic consulting services for more than 100 proposed battery

Gene M. Bove

Consultant Reviewer – QA/QC

energy storage system (BESS) facilities throughout New York City and additional projects in MA, TX, MD, NJ, RI, CT, and NY State. Services included ambient sound monitoring, review of manufacturer equipment sound data, development of detailed acoustic models, and assessment of projected operational noise. Interpreted and applied the complex requirements of the local noise codes and developed site-specific noise mitigation measures to achieve compliance with applicable limits. Mitigation evaluations included equipment layout and orientation, acoustic barriers, and other engineering controls tailored to individual site constraints.

Project Manager, Expert Review, West Windsor, New Jersey. Provides expert review of applications presented to the town board for matters related to noise and acoustics. This includes reviewing other acoustic consultants' reports and providing comments to meet the local and state noise codes.

Project Manager, Data Center Development, Texas and Multiple U.S. Locations. Provided acoustic consulting services for proposed data center developments in Texas and throughout the United States including sites in TX, OK, AZ, VA, SC, GA, WY, and other locations. Conducted ambient sound monitoring to establish baseline conditions and developed detailed acoustic models to evaluate sound from proposed mechanical and electrical equipment, including cooling systems, generators, transformers, and other critical infrastructure. Evaluated normal operations and emergency equipment scenarios against applicable state and local noise requirements. Developed and evaluated site-specific noise mitigation measures, including equipment layout and orientation, sound barriers, equipment enclosures, and other engineering controls, to minimize impacts to surrounding properties and achieve compliance with applicable noise limits. At select operating facilities, implemented permanent long-term noise monitoring systems to continuously track sound levels and evaluate ongoing compliance and facility noise performance. These systems provide operators with long-term acoustic data to identify changes in site conditions and support proactive management of potential noise concerns.

Project Manager, Proposed Cold Storage Warehouse, Cheshire, Connecticut. Provided acoustic consulting services for a proposed cold storage warehouse development. Conducted pre-development ambient sound monitoring to characterize existing conditions and developed a comprehensive acoustic model incorporating manufacturer-provided sound data for rooftop refrigeration equipment and measured sound data from truck movements and facility operations. Evaluated projected operational sound levels against applicable local and state noise requirements and developed site-specific mitigation measures to achieve compliance at surrounding properties.

Project Manager, Nasonville Substation, Burrillville, Rhode Island. Provided acoustic consulting services for the proposed redevelopment and expansion of an existing electrical substation. Conducted ambient sound monitoring to establish baseline conditions and developed a detailed acoustic model using manufacturer-provided equipment sound data to predict operational sound levels. Octave-band analysis identified a potential tonal condition associated with proposed equipment that would trigger more stringent requirements under the applicable local noise ordinance. Developed and evaluated noise mitigation measures, including strategically designed sound barriers, to control the tonal component and maintain compliance with applicable noise limits.

Project Manager, EV Charging Station, Brooklyn, New York. Provided acoustic consulting services for a proposed EVgo electric vehicle charging station in Brooklyn. Conducted overnight ambient sound monitoring and performed field measurements of an operating EVgo charging station to acoustically characterize the proposed equipment where manufacturer sound data were unavailable. Source measurements were conducted using ISO 3744 methodology to develop sound power levels and source directivity for use in a CadnaA acoustic model. Evaluated continuous operational noise, impulsive sounds associated with charger connections, and octave-band sound levels at nearby residential, commercial, school, and public receptors. Interpreted and applied multiple provisions of the NYC Noise Code, including requirements for general noise, circulation devices, and octave-band sound levels, and demonstrated that the proposed facility would comply with applicable noise limits.

Project Manager, Cannabis Cultivation Facility, Sandisfield, Massachusetts. Provided acoustic consulting services for an operating cannabis cultivation facility in response to community noise concerns associated with large greenhouse ventilation fans. Conducted approximately 72 hours of continuous sound monitoring under controlled fan-on and fan-off conditions to quantify the facility's contribution to surrounding sound levels and evaluate changes in ambient conditions. Performed octave-band and tonal analyses and evaluated the results against the Town of Sandisfield Special Permit requirements and the Massachusetts Department of Environmental Protection (MassDEP) Noise Policy. The assessment also evaluated the effectiveness of operational changes,

Gene M. Bove

Consultant Reviewer – QA/QC

including reorientation of the greenhouse fans away from nearby residences, and provided recommendations for maintaining compliance with applicable noise requirements.

Project Manager, Mixed-Use Residential and Preschool Development, Irvington, New York. Provided acoustic consulting services for a proposed development consisting of 53 residential units, a preschool, outdoor playgrounds, and a rooftop terrace. Conducted 24-hour ambient sound monitoring and developed a CadnaA acoustic model in accordance with ISO 9613-2 to evaluate operational noise impacts at surrounding residential properties. The analysis evaluated noise from preschool playground activities, rooftop HVAC equipment, and rooftop terrace use, including the cumulative impact of simultaneous operations. Evaluated projected sound levels against applicable Village of Irvington noise requirements and established acoustic guidelines, demonstrating that the proposed development would not result in significant adverse noise impacts at nearby residences.

Project Manager, Fields Point Natural Gas Liquification Plant, Providence, Rhode Island. Provided acoustic services for the recent opening of a natural gas liquefaction plant. Conducted noise monitoring throughout Providence on two different occasions to ensure the plant as designed was meeting FERC Noise Standards. Will conduct further noise monitoring when plant is fully operational.

Project Manager, 3285 Fulton Street Site, Mutual Housing Association of New York (MHANY), Brooklyn, New York. Completing OER Air Quality and Noise E Designation services at vacant site where seven-story affordable housing residential structure is planned.

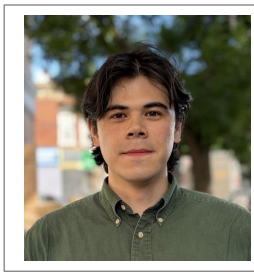
Project Manager, 23-83 31st Street, Queens, New York. Completed OER Air Quality and Noise E Designation services for a proposed 12-story mixed use building. Prepared a noise investigation protocol to reduce noise attenuation at site directly adjacent to an elevated rail line as part of a rezoning. Utilized a neighboring building's outdoor balconies to determine specific attenuation values by floor. Upon approval of E-Designation modification by OER and DCP, prepared the Remedial Action Plan for Air Quality and Noise that was approved by OER. Upon completion of construction, the Installation Report will be prepared and submitted.

Project Manager, 1184 River Avenue, Bronx, New York – 2018 – 2023. Provided OER Air Quality and Noise E-Designation services for a 17-story mixed use (school, commercial, affordable housing) building. Prepared a protocol to reduce noise attenuation values at the site directly adjacent to an elevated rail line as part of an area wide rezoning. The noise monitoring utilized a cherry picker style lift to determine height specific attenuation values. Upon approval of E-Designation modification by OER and DCP, prepared the Remedial Action Plan for Air Quality and Noise that was approved by OER. This included detailed air quality modeling as well as composite calculations. The developer installed windows without the proper reports. Interior noise monitoring was required to understand the attenuation of said windows. An Installation Report was prepared and was approved by OER.

Project Manager, 1881 McDonald Avenue, Brooklyn, New York. Provided OER Air Quality and Noise E-Designation services for 9-story mixed use building. Prepared Remedial Action Plan for Air Quality and Noise approved by OER. As part of the Remedial Action Plan, INSUL Sound Isolation Predication software was utilized to determine the OITC rating of the exterior walls; then prepared composite calculations to allow for a lower OITC window to be installed while maintaining the overall OITC rating of the façade. Upon completion of construction, the Installation Report will be prepared and submitted.

Project Manager, 20 Bruckner Boulevard Bronx, New York. Provided OER Noise E-Designation services for a 5-story school building. This building was a renovation of an existing building. The developer did not realize they had an E-Designation until windows were already purchased and installed. Mr. Bove prepared an interior noise investigation protocol to determine if the existing windows and façade met the attenuation requirements. Upon approval of the protocol, Mr. Bove completed the interior noise monitoring and determined that the existing windows and façade meet the attenuation requirements. Mr. Bove then completed the Installation Report and was approved by OER.

Project Manager, 1249 Edward L Grand Highway, Bronx, New York. Conducted OER Air Quality E-Designation services for a 12-story residential building at which emissions stack locations were out of compliance with the E-Designation. Prepared an Air Quality Modeling protocol for approval by OER. Upon approval, completed modeling and submitted E-Designation modification to allow the existing stack plan to be accepted by OER.



Sean Bradley

Acoustician

Summary of Experience

Sean Bradley is primarily experienced in the acoustic consulting role through industrial noise control, architectural acoustics, environmental noise studies, and acoustic modeling of interior and exterior environments. He is well-versed in the architectural design process, noise evaluation through agencies such as the OER, SCA, MTA, and FTA.

Sean Bradley has been working on numerous data centers performing noise evaluation of existing conditions and future impacts of mechanical systems on nearby sensitive receptors. These have been through site surveys collecting measurements of mechanical equipment and 3D acoustic modeling of the data center plan. Before joining GZA, Sean Bradley was with SM&W LLC as an acoustic consultant and project manager.

Education

B.S.M.E. with concentration in acoustics

Areas of Specialization

- Environmental and interior noise modeling
- Long term noise and vibration monitoring
- Building noise and vibration control
- HVAC noise control

Relevant Project Experience

Acoustic Engineer, Skybox Data Center, Lancaster, Texas. Installed long-term (one year) noise monitors to monitor data center site levels with assessment for local noise code. Noise monitoring includes weekly reports of noise levels, cross-analysis of data center mechanical operation and corresponding noise level, and evaluation of community noise complaints.

Acoustic Engineer, Tectonic BESS, New York, New York. Contributed acoustic modeling efforts to the proposed site of multiple battery energy storage systems throughout New York. The models were evaluated to NYC noise code and included design of noise mitigation techniques.

Experience Prior to GZA

Acoustic Consultant, NYCT Canarsie Line PA/CIS Upgrade (Project W-32808), New York, New York Modeled and performed STI analysis of L train stations to verify locations of proposed PA speakers. Process included noise surveys of each station, physical measurement of station dimensions, independent EASE model of each station, and adjustment to acoustic finishes to conduct STI and S/N analysis of designs.

Acoustic Consultant, MTA Vibration Impact, New York, New York Contributed long term vibration monitoring of MTA train vibration impact on residential buildings with assessment for building code. Study included 3 monitoring locations throughout 12 floors to capture extents of vibration perceptibility.

Acoustic Consultant, University Video Game Foley Studio, Albany, New York Coordinated with architects to design proper building and vibration isolation for foley recording studio at a university's video game design lab. Studio isolation included low frequency isolation from exterior lab activities and HVAC noise control for acceptable studio background noise levels.

Acoustic Consultant, GE MRI Vibration Baseline Study, New York, New York Performed vibration measurements of base-building slab with accordance to GE MRI standards to determine if slab natural frequency is acceptable for MRI procedures.

APPENDIX B PROJECT DESCRIPTIONS

Pacha NYC Indoor/Outdoor Music Venue

Community Noise Compliance Program

Brooklyn, New York



Pacha NYC venue complex in East Williamsburg, Brooklyn.

PROJECT OVERVIEW

FIVE Holdings acquired the former Avant Gardner / Brooklyn Mirage complex in East Williamsburg, an approximately 80,000-square-foot indoor/outdoor venue with a history of community noise complaints under prior ownership, and is rebranding it as Pacha NYC, an electronic dance music and live-entertainment destination with a combined capacity of 7,830 patrons and events running to 4:00 AM. The operator engaged GZA on its own initiative, before any regulatory requirement, to learn from past operations, show a measurable reduction in community noise, and support a transfer of the State Liquor Authority (SLA) license.

GZA's work progressed from predictive modeling through pre-operational testing, iterative sound-system tuning, live-event monitoring, model validation and ongoing compliance monitoring. GZA is currently supporting long range sound mitigation and building envelop design for a permanent structure at the Site. Each phase was tied to commitments the operator made at the Brooklyn Community Board 1 hearing, and findings were reported to the community board, the SLA and the NYC Department of Buildings (DOB).

THE CHALLENGE

- **Documented complaint history.** The prior venue's loudspeakers carried sound in all directions into nearby neighborhoods. GZA's model of prior operations showed levels at residences well above the 42 dB(A) NYC Noise Code limit for commercial music, consistent with the complaint history.
- **Noisy, variable background.** The surrounding area is industrial and commercial with scattered non-conforming residences and other active nightlife venues. Venue sound had to be separated from a loud and highly variable late-night ambient soundscape.
- **Bass-heavy program material.** Low-frequency bass from EDM programming propagates further and is the most common source of complaints, requiring C-weighted spectral analysis in third octave-bands.
- **Multiple audiences.** Findings had to satisfy neighbors and community board members, liquor counsel, the SLA and the DOB, each with different needs for technical detail.

Project Highlights

- Prior-venue and proposed-venue 3D acoustic modeling
- Loudspeaker arraying and DSP review
- Pre-operational system testing
- Model-guided system tuning and limiter recommendations
- Ambient and live-event community monitoring
- Model validation vs. measurement
- Monthly compliance monitoring
- Community board and SLA hearing support
- Regulator (DOB) technical memoranda

GZA TEAM

Kevin Williams, AICP, PP – Principal-in-Charge

Ethan Wagner, INCE Bd. Cert. – Acoustic Project Manager

Sean Harkin, INCE – Acoustic Project Manager

Gene Bove, INCE – Consultant Reviewer

Vicki Curran – Acoustic Staff

GZA'S APPROACH

Phase 1 | Predictive modeling (March 2026). GZA built two 3D acoustic models in CadnaA following ISO 9613-2, which assumes worst-case downwind or temperature-inversion propagation. The first modeled the prior venue's sound system and structures. The second modeled Pacha NYC using the d&b audiotechnik loudspeaker arrays and directivity data, a new perimeter sound wall, a fire-rated south wall and the temporary structures plan. Receivers were chosen at residences with known complaints and at model projected highly impacted homes in each direction. The comparison predicted reductions of 10 to 27 dB(A) at all 11 residential receivers, where a 10 dB reduction is perceived as roughly halving loudness. The reduction was driven mainly by the cardioid subwoofer array designed by d&b audiotechnik that keeps sound focused forward on the crowd rather than radiating backwards, supplemented by the perimeter screening walls. The Acoustic Report (March 31, 2026) was presented to Community Board 1 on April 14, 2026.

Phase 2 | Pre-operational system testing (May 26–27, 2026). As committed at the community board hearing, GZA measured sound levels at 11 residential locations with the newly installed, untuned system at maximum output and again with the system off. This was a deliberate worst case in an empty venue. Measurements used field-calibrated Larson Davis 821 meters with A- and C-weighted, statistical and one-third-octave band data. GZA recommended low-frequency DSP tuning and a system limiter, and Kevin Williams prepared the acoustic talking points for the SLA hearing on May 28, 2026.

Phase 3 | Tuning and live-event monitoring (June 12–14, 2026). As tuning progressed, monitoring was narrowed from the 11 modeled receptors (including two with repeated past complaints) to five and then four, removing locations where modeled and measured levels matched and no exceedances were forecast. GZA then compared a Friday ambient night with a fully occupied Sunday event. Data were reviewed minute by minute against field notes to separate venue sound from neighborhood nightlife and other venues, and results were tabulated against the NYC Noise Code overall dB(A), overall dB(C) and third octave-band limits.

Phase 4 | Model validation (July 2026). A validation memorandum compared predicted and measured increase over ambient, the metric that drives NYC Noise Code impact determinations, rather than absolute levels, which mix the venue's contribution with night-to-night, block-to-block and weather variability. It documented the conditions of each campaign, including active nearby venues and light rain and wind on the event night.

Phase 5 | Compliance monitoring and regulatory reporting (August–October 2026). Monitoring continues monthly at the four receptors over the first six months of operation to confirm sustained compliance under varying conditions. Kevin Williams authored a two-tier August monitoring report, with a plain-language executive summary for the community board and public and a technical report for regulators. He also prepared a DOB memorandum addressing lot-line measurements and methodology, the model's predictive capability and a proposed evaluation method, finalized with the client and land-use counsel in October 2026.

MODEL FIGURES

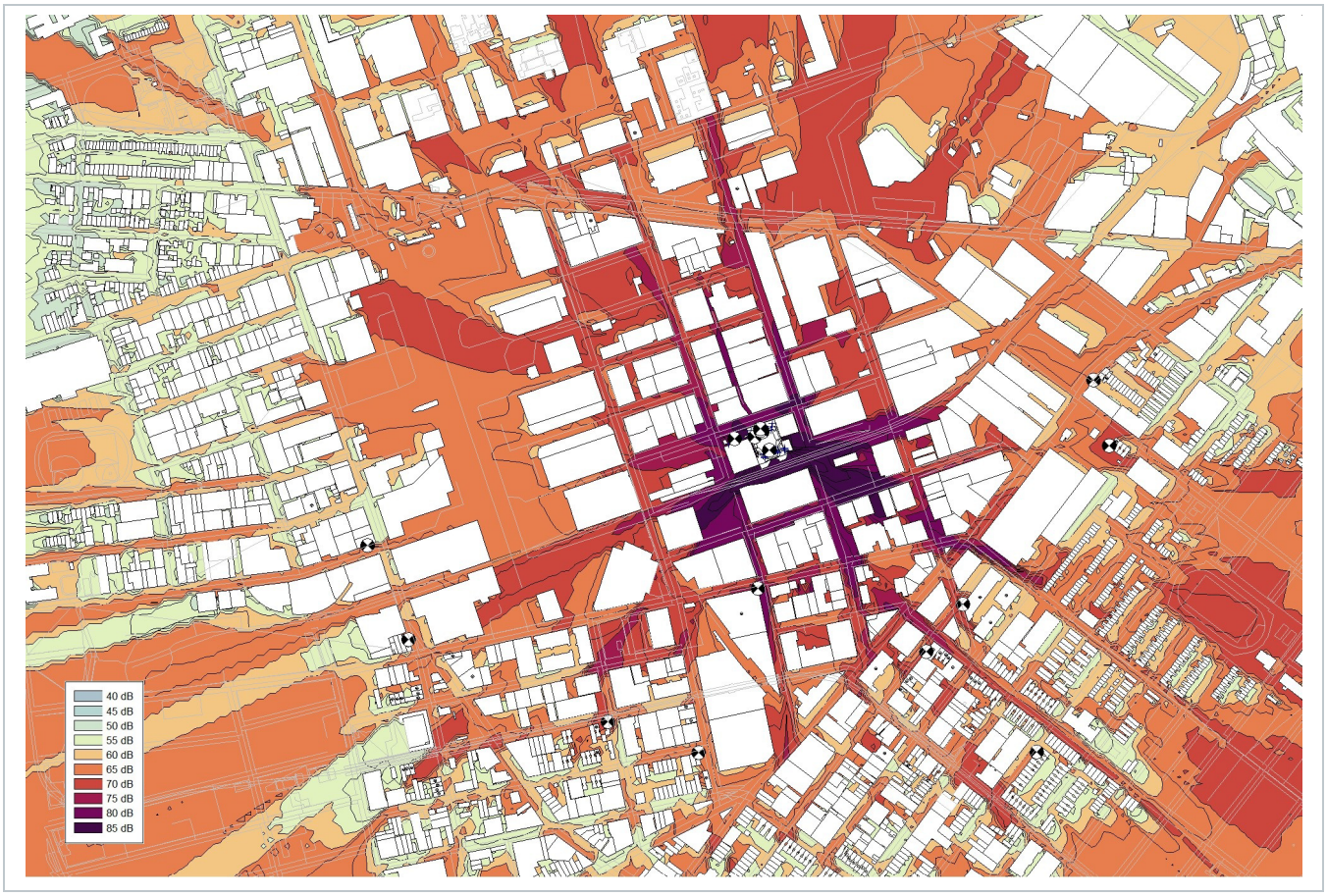


Figure 8 – Legacy system sound propagation. CadnaA modeled sound pressure level contours for the prior venue configuration, illustrating broader off-site propagation toward surrounding receptors.

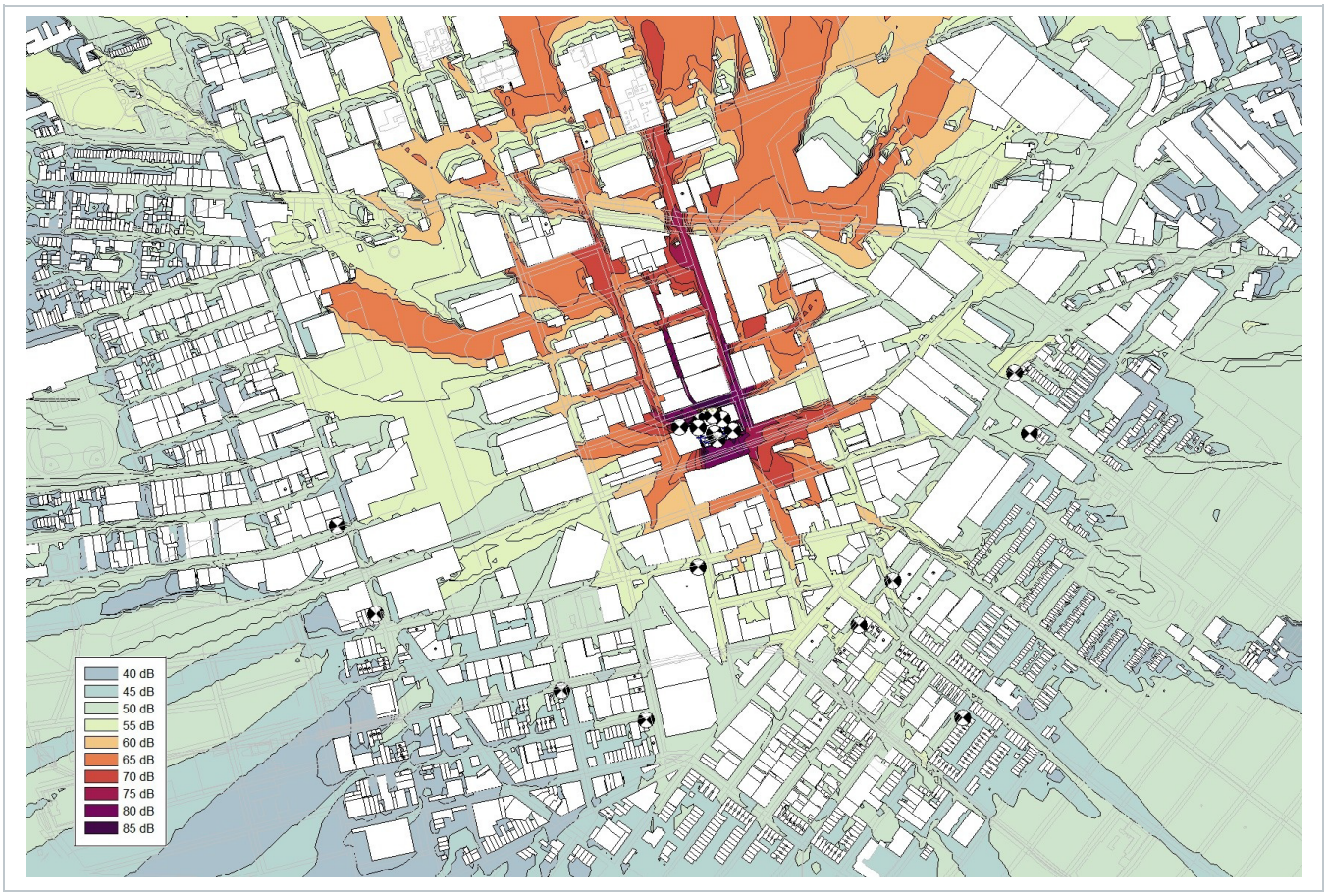


Figure 10 – Pacha NYC proposed system sound propagation. CadnaA modeled sound pressure level contours for the directional d&b system and perimeter screening, showing a more controlled propagation pattern around the venue.

Source: GZA, Pacha NYC SLA Acoustic Analysis, March 31, 2026. CadnaA (ISO 9613-2:2024), worst-case downwind/inversion propagation.

RESULTS AND VALUE

- **Measurable improvement.** Modeling predicted 10 to 27 dB(A) reductions at all 11 residential receivers compared with the prior venue, and field data confirmed the improvement after model-guided tuning.
- **Data-driven tuning.** Pre-operational testing turned model predictions into specific low-frequency and limiter adjustments before opening night.
- **Defensible findings.** Minute-by-minute source attribution and increase-over-ambient validation gave regulators a credible basis for decisions in a loud, variable nightlife district.
- **Commitments kept.** Every phase followed through on commitments the operator made at the community board hearing, building trust with neighbors and the community board.
- **Clear communication.** Two-tier reporting let the community, counsel, the SLA and the DOB each get what they needed from the same data set.

RELEVANCE

Pacha NYC shows the full process cities and venue operators need when an outdoor music venue faces neighbor complaints. The table below maps each step of that process to the matching Pacha task.

Pursuit need	Demonstrated at Pacha NYC
Review existing data and complaint history	Prior-venue model and complaint-informed receptor selection
Baseline and operational field measurements	Ambient, system-on/off and live-event monitoring with full-spectrum data
Diagnose reported impacts	Minute-by-minute attribution; overall A and C-weighted, and octave-band evaluation
Recommend and test mitigation	Model-guided DSP tuning, limiter settings and post-tuning retests

Pursuit need	Demonstrated at Pacha NYC
Locate long-term monitors	Receptors narrowed from 11 to five to four using model and field results
Validate the model	Predicted vs. measured increase-over-ambient validation memo
Ongoing compliance and reporting	Monthly monitoring; two-tier public and technical reports
Public and regulatory engagement	Community board, SLA hearing and DOB memoranda

CLIENT REFERENCE

Nabil Akiki
Title: Chief Development Officer
Organization: FIVE Holdings (for AG Acquisition 1 LLC and FIVE International Hotel Management Limited (DIFC), operator of Pacha NYC)
Email: nabil@fivedevelopment.com
Relationship: Client lead and GZA's primary contact for the Pacha NYC acoustic program, March 2026 – present
Reference approved by client.

Interstate Route 290 – Eisenhower Expressway EIS
PTB #114-01

Chicago, Illinois –2017 – 2019



The Interstate 290 (I-290) Eisenhower Expressway improvement project was a multimodal corridor from I-88 (western Chicago suburbs) to Racine Avenue (downtown Chicago). I-290 will be reconstructed from I-88 to IL 50 (Cicero Avenue), upgrading the roadway to current design standards and replacing the nearly 50-year-old pavement and structures that have exceeded their service lives. Some additional highway capacity will be added to eliminate the current bottleneck conditions. The project would also provide High Occupancy Toll (HOT) lanes to improve operations in this extremely congested corridor. The I-290 corridor from IL 50 to Racine Avenue will be restriped to provide additional capacity.

Project Highlights:

- Traffic Noise and Noise Abatement Analysis
- Natural Resources
- Preparation of Environmental Impact Statement
- Public Involvement
- Wetlands
- Floodplains
- Vegetation Survey

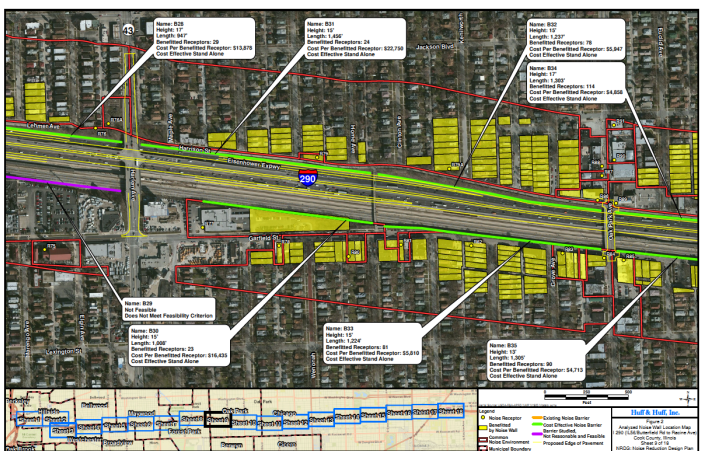
Key Staff: Tim Kelly, P.E.
James Novak

Client Contact:

WSP
30 N. LaSalle
Chicago, IL 60606
(312) 782-8150

The project was initiated in 2001 as an ECAD, Categorical Exclusion, and was elevated to an (EIS) in 2009 based on public comments. The Record of Decision was signed in June 2017. There has been a high level of public involvement for the project in general, particularly involving the traffic noise and noise abatement analysis completed by GZA Illinois, Inc. (GZA) formerly Huff & Huff, Inc. The traffic noise analysis for this project was highly complex, given the dense urban development through which the project corridor extended. Over 10,000 individual receptors were studied in this project area. Four project alternatives were studied for traffic impacts, then the preferred alternative was studied for traffic impacts as well as abatement analysis. Based on public comments, sensitivity analyses in particularly dense residential areas and for a nearby Chicago Parks District property were completed to determine the traffic noise consequences of various types of project alternatives. Nearly all land adjacent to the I-290 study corridor was found to have traffic impacts in the future condition and ninety-two noise walls were analyzed in the project area. Of these ninety-two walls, sixty-three were found to be feasible, met IDOT's noise reduction design goal, and were cost effective.

GZA developed the viewpoints solicitation packages for those who would receive a noise reduction benefit from the sixty-three prepared noise walls, in addition to determining the results from the noise wall voting process. GZA worked with IDOT to develop content and materials for noise information meetings prior to the noise wall voting, called "noise forums." The project was highly controversial, and alternatives changed frequently through the project in response to the Context Sensitive Solutions (CSS) process GZA delivered a state-of-the-art technical report and worked closely with the public and agencies throughout the noise analysis process.



In addition to the traffic noise analysis, GZA completed a wetland analysis, tree survey, natural resources review, threatened and endangered species analysis, water quality analysis, and worked closely with the project's engineering team to develop the floodplains analysis for the EIS.

PROJECT PROFILE

Noise Investigation and Mitigation Planning

Milwaukee, WI



Project Highlights

- Investigation of intermittent noise affecting residences
- Acoustic and frequency-spectrum analysis
- Evaluation of weather-related conditions and potential source pathways
- Assessment of perceptible noise, vibration, and rattling
- Source attribution and targeted mitigation recommendations

Challenge: Residents at 1522 On the Lake reported intermittent whistling, buzzing, and metal-on-metal sounds that could be heard inside residential units and common areas as well as on upper-floor balconies. Complaints were more frequently associated with upper floors and high-wind conditions along portions of the building, but the source was uncertain. Potential pathways included balcony railings and other exterior building components as well as mechanical and internal building systems. The property needed a technically supported investigation that could distinguish among potential sources and focus mitigation where it would provide the greatest benefit, rather than broadly treating building components without first establishing the likely cause.

Solution: GZA conducted an acoustic investigation that combined resident observations with acoustic analysis, review of mechanical plans, site information, photographs, and recordings collected both indoors and outdoors. Frequency analysis of resident recordings identified recurring tonal characteristics, including peaks near 110 Hz and harmonics extending through 550 Hz, allowing GZA to move beyond subjective descriptions of the sound and evaluate its acoustic signature. GZA then assessed multiple potential transmission pathways rather than assuming a single source. Previous acoustic findings indicated that balcony noise was stronger outdoors and correlated with high winds along the north and south façades, supporting exterior structures as the primary suspected source. GZA also reviewed mechanical systems and evaluated potential internal pathways, including HVAC ducting, fireplace flues, bathroom exhaust systems, the elevator shaft, and trash chute. This process helped distinguish less likely pathways from sources warranting additional consideration.

Based on the findings, GZA developed a focused mitigation strategy that prioritized areas experiencing the greatest reported effects. Rather than recommend wholesale treatment of every balcony, GZA identified approaches for defining the appropriate extent of mitigation using either wind-speed conditions by floor or the geographic pattern of resident complaints.

Benefit: GZA provided the property with a technically supported understanding of likely exterior and interior noise pathways and a practical framework for targeted mitigation. The investigation helped narrow an uncertain, complaint-driven noise issue into identifiable acoustic characteristics and likely source pathways, allowing mitigation decisions to be based on measured and observed conditions rather than assumptions.



Known for excellence.
Built on trust.

7505 Metro Boulevard, Suite 300
Edina, MN 55439
www.gza.com

RAMBOLL

ENVIRONMENT
& HEALTH

Via Electronic Mail

Michael Kerski
Director of Planning and Development
City of Shakopee
mkerski@shakopeemn.gov

Proposal for Mystic Lake Amphitheater Sound Monitoring Design and Low-frequency Investigation

Dear Mr. Kerski:

Ramboll Americas Engineering Solutions, Inc. ("Ramboll") appreciates the opportunity to submit this proposal to the City of Shakopee ("City") to provide acoustical consulting services for Mystic Lake Amphitheater at Canterbury Commons ("Amphitheater"). Based on the Request for Proposals, the City's supplemental information, and our experience with environmental sound measurement and monitoring, we understand that the City seeks an independent investigation of acoustical impacts to neighborhoods close to the Amphitheater, including a study of noise control measures that Live Nation ("LN") and visiting productions can implement, as well as the design and implementation of a permanent sound monitoring network.

Date: October 27, 2026

Ramboll
82 Corporate Woods
10851 Mastin Boulevard, Suite 100
Overland Park, KS 66210
USA

T +1 913 553 5922
https://ramboll.com

Opp: **303442**

PROPOSED TECHNICAL APPROACH

Task 1 – Review and Investigation Plan

Ramboll will coordinate with the City to obtain and review available sound studies, complaint records, prior measurements, building information, and sound-system documentation. This review will include the January 2022 amphitheater sound-impact assessment; the March and October 2021 ambient measurements; the original, relevant Amphitheater design assumptions; prior projected sound contours; and surrounding zoning and land use. Ramboll will also review subwoofer locations and configurations, loudspeaker orientation, relevant sound-check procedures, time-synchronized venue reference measurements, and operational logs, as available from and provided by the City. To the greatest extent possible, reported historical impacts will be mapped by event, location, date, time, show or program type, and description. The review area will include locations approximately (but not exclusively) one mile from the venue.

Ramboll will review relevant acoustical regulation and acoustical standards to establish objective criteria for assessment, both during the investigative testing (Task 2) and throughout permanent monitoring. Criteria are expected to include Minnesota Pollution Control Agency requirements, City of Shakopee requirements, as well as additional standardized low-frequency sound level guidelines (e.g., ANSI/ASA S12.9 Part 4).

Ramboll will prepare a general test protocol for City review. The protocol will provide the framework for the initial investigative testing (Task 2). The protocol will be reviewed with the City to confirm mutual agreement regarding planned work, site access, venue coordination, and available information before field deployment.

Task 1 Fee: $25,000

Task 2 – Field Measurements and Source Attribution

In accordance with the protocol developed in Task 1, Ramboll acoustical consultants will complete a coordinated sound-system test session of up to four hours and will complete simultaneous, attended measurements at representative neighborhood locations throughout. Measurements will include synchronized A- and C-weighted levels and unweighted one-third-octave-band data; one-second time-history data will be collected where supported by the selected instrumentation and study objectives. Ramboll will document instrument settings, measurement durations, microphone height and placement, weather conditions, operating configurations, and observed non-venue sound sources. Data affected by wind, precipitation, or unrelated sources will be flagged and evaluated in accordance with applicable standards. Synchronized or historical data from other sound monitoring sources will be reviewed for reference.

Task 2 Fee: $39,000

Task 3 – Diagnose the Reported Impacts

Ramboll will analyze synchronized sound level data, with emphasis on 20 to 200 Hz and broader-frequency data as necessary for source identification and impact assessment. This analysis will include frequencies down to the 16-Hz octave-band. Significant influence from weather conditions or non-Amphitheater sound sources will be reviewed and analyzed. Corrections or exclusions will be applied as needed in accordance with test and measurement standards. Reported impacts will be correlated with established assessment metrics from Task 1.

Task 3 Fee: $13,000

Task 4 – Recommend and Test Mitigation

Ramboll will evaluate technically feasible changes that can be implemented by the venue operator or coordinated with visiting productions, including subwoofer placement and directional arrays, orientation, equalization, low-frequency roll-off, sound level limiting, maximum operating levels, sound-check procedures, and operator response protocols. Barriers or enclosure modifications will be considered only where their expected low-frequency effectiveness warrants further evaluation. Ramboll will review the original propagation assessment and any subsequent modeling and will identify whether new or materially revised modeling is justified based on the as-built venue, current sound-system configuration, observed complaint distribution, and measured event data.

Where possible, Ramboll will provide an updated test protocol to assess the effect of mitigation measures. Follow-up testing will be coordinated and executed, and preliminary observations will be shared with the City after the test. As appropriate, the long-term viability and cost of permanent mitigations will be assessed. Long-term diagnostic and alerting systems will also be recommended, which will be used as an assessment criteria for the systems assessed in Task 5.

Task 4 Fee: $22,000

Task 5 – Develop and Validate the Network Layout

On the basis of Tasks 1 through 4, Ramboll will recommend 10 permanent outdoor monitoring locations in the neighborhoods surrounding the Amphitheater. A georeferenced map will be provided for the

locations, along with pole or parcel identification, mounting details, relevant unrelated noise sources, and access considerations. One practical alternate location will be provided for each permanent location proposed. Ramboll will recommend the number and placement of weather instruments needed, if any. (Use of extant local sources might be sufficient.) Other practical and logistical details will be assessed for proper deployment of permanent monitors (Task 6). A report will be prepared that summarizes all relevant details for all 10 locations.

Task 5 Fee: $32,000

Task 6 – Compare Systems and Select a Preferred Configuration

Ramboll will compare at least three commercially available monitoring systems from different manufacturers and recommend one. One acceptable alternative will also be identified. Bid review criteria will be developed based on City and project requirements, as well as on criteria established in Task 1. A scoring process will be prepared, reviewed by the City, and implemented to assess the systems objectively. Ramboll will provide the itemized capital costs for 11 complete stations (including 1 spare), annual operating and maintenance costs, and five-year ownership costs (excluding consultant fees).

Task 6 Fee: $13,000

Task 7 – Prepare the Operating Manual

Ramboll will prepare practical written procedures for operating the network, investigating complaints, and communicating results. The manual will include references and attachments for configuration files, as well as procedures for calibration checks, data validation, outage and weather-contamination handling, and maintenance responsibilities.

A complaint-response workflow will be prepared that aligns resident impact reports with real-time and archived sound levels, and consideration of low-frequency spectra. Additionally, procedures for assessing weather, show type, and unrelated sources will be included.

Concert and monthly reporting templates will be included, as well as templates for maps, graphs, charts, and acoustical definitions. Procedures for assessing audio recordings, and consideration of City audio and data privacy requirements will be included to the extent practical.

Task 7 Fee: $20,000

Task 8 – Commission and Train

Ramboll will inspect all 10 monitors and verify correct installation, functionality, and communication. Deficiencies and the party responsible for correction will be documented. Commissioning will include one attended concert for network validation, separate from the diagnostic events. Ramboll will simultaneously measure sound levels at representative residential locations for verification purposes. A minimum seven-day operational check of all stations will be remotely monitored by Ramboll. A reliability report will be prepared that notes any deficiencies and recommends corrective actions. Time is included for training of City personnel on the specific implementation of the Operation Manual prepared in Task 7.

Fee – Task 8: $34,000

STAFFING

Project execution will be by Ramboll acoustical and environmental consultants with requisite experience in acoustical science and engineering, including sound level monitoring technology. Technical oversight will be provided by a senior consultant or principal who is a regular or Board-Certified member of the Institute of Noise Control Engineering ("INCE"). At least one consultant from Ramboll's Edina office will be available as a local liaison.

COST ESTIMATE AND OVERALL SCHEDULE

The estimated cost to complete the scope is provided in the table below. Ramboll proposes to conduct these services on a per-Task Lump Sum basis in accordance with the attached *Terms and Conditions for Single Project Services Agreement*. To authorize Ramboll for this project extension please sign below and return the signed authorization to us. Pricing is valid for 60 days from the date of this proposal.

Task	Fee
Task 1 – Review and Investigation Plan	$25,000
Task 2 – Field Measurements and Source Attribution	$39,000
Task 3 – Diagnose the Reported Impacts	$13,000
Task 4 – Recommend and Test Mitigation	$22,000
Task 5 – Develop and Validate Network Layout	$32,000
Task 6 – Compare Systems and Select a Preferred Configuration	$13,000
Task 7 – Prepare the Operating Manual	$20,000
Total – Tasks 1 through 7	**$164,000**
Task 8 – Commission and Train	$34,000
Combined Total	**$198,000**

EXCLUSIONS

This scope is limited to the tasks described herein and assumes timely access to available City and venue records, reasonable access to approved measurement locations, City and venue coordination for the investigative test (Task 2), and one consolidated City review cycle for each draft deliverable. Field work will be scheduled for suitable operating and weather conditions. If a scheduled event is canceled, access is unavailable, or weather conditions are unsuitable, Ramboll will coordinate a replacement date. Additional labor, travel, or equipment costs resulting from circumstances outside Ramboll's control will be addressed with the City before they are incurred. Ordinance drafting, legal opinions, structural engineering assessment, hardware purchasing, construction, and installation labor are not included unless separately authorized.

Optional services may include additional concerts or residences, additional controlled testing or baseline monitoring, new or materially revised propagation modeling, detailed mitigation design, structural engineering assessment, procurement assistance, installation oversight, ongoing seasonal analysis, additional public meetings, and public-dashboard development. Optional services will proceed only upon written City authorization.

CLOSING

Thank you for the opportunity to assist you in this matter. We look forward to continuing this project. If you have any questions or need further information, please contact us at your convenience.

Sincerely



Jeff Szymanski, PE, INCE Bd. Cert.
Principal
jszymanski@ramboll.com

Authorization to proceed.

Accepted and Agreed to: City of Shakopee

Name: _____

Signature: _____

Title: _____

Date: _____

TERMS AND CONDITIONS FOR SINGLE PROJECT SERVICES AGREEMENT

Proposal by Ramboll Americas Engineering Solutions, Inc. ("Ramboll")

to

City of Shakopee ("Client")

These terms and conditions shall govern and be a part of the proposal issued by Ramboll to Client (the "Proposal") along with any exhibits attached thereto, which, when executed by the parties, shall constitute the sole and complete agreement between the parties with respect to the subject matter of the Proposal, excluding all standard business forms and other oral or written materials (the "Agreement").

1. THE SERVICES

1.1 Scope of Services; Schedule

Subject to the terms and conditions set forth in the Proposal and in the Agreement, Ramboll will perform the scope of services as explicitly set forth in the Proposal (the "Services"). There are no implied Services. The scope of Services or the proposed schedule set forth in the Proposal may not be altered by the Client in any way, unless and until a Ramboll representative has approved such alteration in writing. Ramboll will use reasonable commercial efforts to complete the Services within the time frame stated in the Proposal. Ramboll may utilize employees from any of its affiliates in order to perform the Services. Client represents and warrants that it has full right and authority to have the Services performed, and that it has obtained all necessary licenses and approvals for the Service to be performed.

1.2 Termination

The Agreement may be terminated by either party: (a) upon thirty (30) calendar days prior written notice to the other; or (b) effective immediately upon written notice to the other party if such other party declares itself insolvent, files an action in bankruptcy or becomes the subject of involuntary bankruptcy proceedings, or fails to perform any of its obligations hereunder or otherwise breaches the Agreement and does not remedy such failure or breach within fourteen (14) calendar days after written notice thereof. Client shall pay Ramboll for all Services performed and expenses incurred prior to termination in accordance with section 1.3, plus, in the event of termination by Ramboll under subsection (b), damages under applicable law. Client's obligations under the Agreement shall survive termination of the Agreement and/or completion of the Services hereunder.

1.3 Suspension

The Client may suspend all or part of the Services upon at least fourteen (14) calendar days' written notice to Ramboll. If all Services remain suspended for more than six (6) consecutive months, Ramboll may terminate this Agreement upon fourteen (14) calendar days' written notice, with such termination becoming effective thirty (30) calendar days thereafter unless the suspension is lifted.

Upon any suspension or termination (other than Client termination for Ramboll's uncured breach or failure to perform), the Client shall pay Ramboll:

(a) all fees for Services performed through the effective date of the suspension or termination, including a reasonable portion of any milestone payment that has been partially earned;

(b) all reimbursable expenses properly incurred through that date; and

(c) all reasonable costs, expenses, and losses incurred as a result of the suspension or termination, including demobilization and remobilization costs, costs associated with delay, disruption, or prolongation of the Services, increased costs of performance, financing costs, and overhead and profit attributable to personnel or resources that cannot reasonably be reassigned.

1.4 Additional Cost or Delay

Ramboll and its affiliates shall not be responsible or liable for any additional cost to perform Services or other damages resulting from: (a) the lack or insufficiency of performance by any person or entity not selected by, engaged by, and responsible to Ramboll, (b) changes, delays or additional Services not necessitated by the acts or omissions of Ramboll, (c) delay in response to requests, applications or reviews by Client or third parties, or (d) damage to underground utilities or structures not accurately located on plans, maps or figures furnished to Ramboll.

1.5 Change Order

The parties are entitled from time to time to request changes to a relevant Proposal, including without limitation, changes in the price, Services or time schedule by executing a mutually agreed upon written change order ("Change Order"). The parties will negotiate in good faith and as expeditiously as possible the appropriate adjustments for the Change Order. If a Change Order involves extra work, Ramboll is entitled to a corresponding adjustment of the time schedule and compensation and/or price for such work.

1.6 Reporting Requirements

Client may be required under federal, state, provincial or local statutes, laws, ordinances, codes, rules, orders or regulations ("Laws") to report the results of the Services to appropriate regulatory agencies. Ramboll is not responsible for advising Client about Client reporting obligations and Client agrees that Client shall be responsible for all reporting, except as specifically stated in Ramboll's Proposal as part of scope of work. To the extent Ramboll has an independent duty to report, it will endeavor to provide Client with advance notice.

1.7 Force Majeure

Ramboll and its affiliates shall not be liable in any way because of any delay or failure in performance due to circumstances or causes beyond its control, which shall be deemed to include without limitation strike, lockout, embargo, epidemic, pandemic, or other outbreak of disease, quarantine restrictions, riot, war, act of terrorism, cyber-attack, flood, fire, act of God, act of the federal or state government, accident, failure or breakdown of components necessary to order completion, Client, subcontractor or supplier delay or non-performance, inability to obtain or shortages in labor, materials, protective gear, other supplies or manufacturing facilities, compliance with any Law, or circumstances or conditions which in the discretion of Ramboll may pose a material risk to the health or safety of the employees of Ramboll, its affiliates or subcontractors. In any such event, Ramboll is entitled to equitable compensation from Client for time expended and expenses incurred with respect to the project.

1.8 Scope Dependent Provisions

Certain provisions dependent on the scope of Services are set forth in Exhibit A, attached hereto and incorporated herein.

2. FEES AND CHARGES

2.1 Fees

Client shall pay for all Ramboll time spent in performing the Services, including travelling, at its then-standard rates for the type of Services (except to the extent otherwise stated in the Proposal). Estimates of fees, recommendations and opinions are made on the basis of experience and professional judgment; they are not guarantees. The Parties shall promptly agree to equitable adjustments in the budget and schedule if any of the following will result in increased fees or schedule delays in performing the Services: (a) Client requests changes to the scope or extent of Services, (b) Ramboll encounters site conditions that differ from those specified in the Proposal and are the basis for the scope of work or otherwise are unanticipated, (c) significant changes in relevant Laws, including any change in applicable tax laws, regulations, rulings, permit requirements or other governmental requirements that materially increase the cost of performing the Services, or (d) delays or disruptions for reasons beyond Ramboll's control.

2.2 Reimbursable Expenses

Client shall reimburse Ramboll for all project-related expenses including, without limitation, the following: travel (including, without limitation, vehicle rental, airfare or train fare), priority mail, and overnight delivery, outside reproduction and courier services, which will be billed at cost, plus fifteen percent. Notwithstanding the foregoing, the use of Ramboll owned cars, trucks and vans will be charged at $125.00 per day; the use of equipment and protective clothing will be billed in accordance with Ramboll standard practice; and the cost of project-related communications, digital platforms, information technology systems, data processing, data compilation, and Computer Aided Design and Drafting ("CADD") and similar technologies will be charged at six percent (6%) of total labor charges.

2.3 Taxes

All amounts specified to be paid to Ramboll under this Agreement are exclusive of any indirect taxes and direct taxes required to be paid or withheld outside the United States. To the extent that the Client is required by law to deduct any indirect taxes and/or direct taxes, the amounts payable to Ramboll as per this Agreement shall be increased correspondingly so that after tax deductions Ramboll receives an amount equal to the sum it would have received if no tax deductions had been made. The Client shall pay the taxes to the relevant tax authority in accordance with applicable law and provide Ramboll with the tax receipts.

2.4 Invoicing

Ramboll will invoice Client on a monthly basis using its standard invoice format. This format provides for a general description of work performed and a summary of professional fees, expenses, and other charges covered therein. For more detailed invoicing requests, Client shall pay for invoice preparation time by staff members. Client shall provide an email address to check Ramboll invoice processing status.

2.5 Payment

Client shall pay each invoice within thirty (30) calendar days after the invoice date. Client shall pay late charges at the rate of 1.5 percent per month or the maximum percentage allowed by Law, whichever is less, for any amounts not paid within thirty (30) calendar days of the invoice date. Ramboll has the right to stop work for, withhold work product from, and/or terminate the Agreement or any Services hereunder in accordance with Section 1.2 herein, and/or terminate any other engagement with Client, if any invoice to Client remains unpaid for more than thirty (30) calendar days past the invoice date. Client shall make timely payment without condition, setoff, retainage, or contingency, including without limitation the closing of a transaction or obtaining financing. If Ramboll determines that it is advisable/necessary to engage collection professionals and/or commence collection proceedings (including, without limitation, by commencing formal legal proceedings) to obtain payment on account of an unpaid invoice and Ramboll is the substantially prevailing party in such proceedings, Client also shall pay Ramboll's collection costs and costs associated with any such proceedings, including, without limitation, arbitrator fees, reasonable attorneys' fees and a reasonable fee for the services of Ramboll's internal resources and its out-of-pocket expenses.

2.6 Currency Conversion

To the extent costs are incurred in currencies other than US dollars, currencies will be converted into US dollars at the prevailing exchange rate(s) as at the end of the month during which Services have been provided or costs have been incurred.

3. THIRD PARTIES

3.1 Subcontractors

Except to the extent specifically agreed in writing by Ramboll, Client shall directly contract/retain all other contractors whose services are required in connection with a project (e.g., drillers, analytical laboratories, transporters). As a service to Client, Ramboll may advise with respect to selecting such other contractors and may assist Client in coordinating and monitoring their performance, but Ramboll is not responsible for such performance. Client shall release, indemnify, defend and hold harmless Ramboll and its affiliates and subcontractors and their respective directors, officers, employees and agents (collectively, the "Ramboll Indemnitees") from and against any and all allegations, claims, costs (including reasonable attorney and expert fees), damages, demands, expenses, fines, judgments, liabilities, liens, obligations, penalties, personal injury, property damage, suits and other losses of any nature whatsoever (collectively "Losses") relating in any way to work performed by any contractor retained/contracted by Client. When, notwithstanding the foregoing, Ramboll contracts/retains a subcontractor to perform a portion of the Services, all related expenses shall be billed to Client as they are incurred, at cost plus 15 percent.

3.2 Third-Party Reliance/Use

a. Reliance Terms

The Services, including, without limitation, related communications and deliverables/work product, and the contents of such communications and deliverables/work product (collectively "Deliverables"), are solely for Client's benefit and may not be relied upon by or disclosed to any third party without Ramboll's express written consent. Any such third party reliance on the Deliverables shall be subject to the terms of Ramboll's standard reliance letter.

b. Non-Reliance Distribution

However, Client may distribute or disclose the Deliverables to its professional advisors or other parties involved in the underlying project or transaction, including disclosures to governmental agencies or regulators, as applicable in connection with Ramboll's Services, in each instance on a non-reliance, informational only basis and without deletion of applicable disclaimers or assumptions stated in the Deliverables. In addition, Client shall not attribute any statement to Ramboll without Ramboll's express written consent. Ramboll shall be entitled to injunctive relief preventing/prohibiting any disclosure or attribution prohibited hereunder, and Client shall release, indemnify, defend and hold harmless the Ramboll Indemnitees from any and all Losses

arising from or related to such unauthorized disclosure or attribution.

4. LIABILITIES

4.1 Performance Standards

In performing the Services, Ramboll agrees to exercise professional judgment, made on the basis of the information available and to use the same degree of care and skill ordinarily exercised in similar circumstances by reputable consultants performing comparable services in the same geographic area as of the time the Services are rendered, and not according to earlier or later standards. Client acknowledges that scientific, medical, and health and safety knowledge and expertise is always evolving, and that Ramboll's work, conclusions and opinions cannot fully anticipate or take into account changes in knowledge or expertise that develop after the Services are performed. A difference of opinion on a question of professional judgment shall not excuse Client from paying when due for Services rendered.

Ramboll makes no guarantee that the Services shall meet any particular specification or result except as specifically stated in the description of Services and then subject to all qualifications, assumptions, changes of condition and correctness of information given to Ramboll.

Ramboll represents that: (i) it shall comply with all Laws which apply to Ramboll in the performance of the Agreement ; (ii) it shall obtain and maintain all permits or licenses which it is required to obtain in order for it to perform the Services; and (iii) to the best knowledge of Ramboll, without inquiry or investigation, the Services and work product provided by Ramboll will not violate or infringe any third party's patents, trade secrets, trademarks, or other proprietary rights.

Other than the representations specifically set forth above in this section, RAMBOLL AND ITS AFFILIATES MAKE NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, EXPRESS, IMPLIED OR STATUTORY, INCLUDING THOSE OF NON-INFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE, OR MERCHANTABILITY OF ANY PRODUCTS, OR AS TO ANY OTHER MATTER, and the representations set forth above shall supersede any oral or written warranties or representations made or implied by Ramboll or any of Ramboll's affiliates or their employees or representatives or in any of Ramboll's brochures, manuals, catalogs, literature or other materials.

The Services and all deliverables are rendered based on the specific circumstances and conditions described in the Proposal and are intended for use by the Client only in connection with the purpose set forth in the Proposal. Ramboll disclaims all warranties relating to any other use and Client shall indemnify, defend and hold harmless the Ramboll Indemnities against any and all Loss relating to such other use.

4.2 Insurance

Ramboll shall maintain the following insurance coverage while it performs the services: (a) statutory Workers Compensation and Employer's Liability Coverage; (b) General Liability for bodily injury and property damage of $1,000,000 aggregate; (c) Automobile Liability with $1,000,000 combined single limit; (d) Professional Liability with a limit of $1,000,000 per claim and in the aggregate; and (e) Contractor's Pollution Liability with a limit of $1,000,000 per claim and in the aggregate. If Client desires additional insurance coverage types or amounts that Ramboll does not carry or special endorsements that Ramboll does not have in its policies, all premiums associated with obtaining those coverages or endorsements shall be promptly reimbursed by Client. At Client's direction, Ramboll will provide Client with a certificate of insurance and Ramboll will add Client and project site owner(s) and/or tenants (if Ramboll will be working on property(s) not owned by Client) and any related or affiliated persons or parties as an additional insured on Ramboll's General Liability, Auto Liability and Pollution Liability policies.

4.3 Indemnities

Ramboll shall release, indemnify and hold harmless Client and its affiliates and their directors, officers, employees and agents from and against Losses, including reasonable attorneys' fees, expert fees, court costs and other defense costs, arising out of or relating to the Agreement or the Services to the extent such Losses are found by a court or other tribunal of competent jurisdiction, in a final and non-appealable order or judgment, to have directly resulted from Ramboll's negligence or intentional misconduct.

Other than as set forth in the preceding sentence, Client shall be solely responsible for and shall release, indemnify and hold harmless the Ramboll Indemnitees from and against Losses, including reasonable attorneys' fees, expert fees, court costs and other defense costs, that the Ramboll Indemnitees suffer or incur as a result of, or are in any way related to, the Agreement or the Services or a Ramboll Indemnitee's presence on a site for the purpose of performing Services.

An indemnified party hereunder ("Indemnitee") will give prompt notice of any indemnified claim to the indemnifying party ("Indemnitor"). Each party shall have the right to control its own defense and retain counsel of its choosing. Attorneys' fees, expert fees, court costs and other defense costs incurred by an Indemnitee shall constitute recoverable Losses only to the extent the applicable indemnity obligations set forth in this Section have been satisfied.

The Indemnitees and Indemnitor shall cooperate with each other in all reasonable respects in connection with the investigation, defense, prosecution or resolution of any claim, including making available records relating to such claim and furnishing to the requesting party management employees as may be reasonably necessary for the preparation of such claim or defense.

4.4 Limitation of Liability

Notwithstanding anything to the contrary set forth in the Agreement:

Under no circumstances shall either party be liable to the other for any type of damages other than direct damages (including loss of profits, loss of opportunity, loss of business, loss of goodwill, or indirect, consequential, special, or punitive damages), even if such party has been advised of the possibility of such damages, or for damages caused by the other party's failure to perform its obligations under Law or contract; and

In no event shall the aggregate liability of Ramboll and its affiliates in connection with the Agreement or the Services exceed an amount equal to three (3) times the amount actually paid to Ramboll by Client for the Services, but in no event more than One Million Dollars ($1,000,000), and Client specifically releases Ramboll and its affiliates for any and all Losses in excess of that amount. Ramboll and its affiliates shall have no liability in connection with the Services, whether in contract, in tort, in negligence, breach of statutory duty or otherwise unless it receives a claim in writing before the first anniversary of completion of the Services.

5. INFORMATION

5.1 Confidentiality

The parties hereto each contemplate that, in connection with the Services and to facilitate performance of their respective obligations hereunder, it may be necessary to provide the other (the "Receiving Party") with information that disclosing

party (the "Disclosing Party") considers to be confidential information. Information received from a Disclosing Party (or from one acting on its behalf) that the Disclosing Party identifies as confidential, or that, by its nature clearly should be treated as confidential hereunder (collectively "Confidential Information"), shall be maintained in confidence by the Receiving Party, which shall follow reasonable and prudent practices to maintain the Confidential Information in confidence. Confidential Information shall be used by the Receiving Party only for the purpose of and in connection with its performance hereunder; provided that Ramboll also may use any information received or generated in connection with the Services for the purpose of improving its products and services.

Confidential Information does not include information that (i) was lawfully known to the Receiving Party before receipt from the Disclosing Party; (ii) is or becomes publicly available through no fault of the Receiving Party; (iii) is lawfully received by the Receiving Party from a third party without a duty of confidentiality; (iv) is independently developed by the Receiving Party without use of Confidential Information; or (v) that counsel for the Receiving Party determines is required to be disclosed by law (including, without limitation, in response to a subpoena), provided that the party intending to make such required disclosure, to the extent permissible and reasonably possible under the circumstances, shall endeavor promptly to notify the Disclosing Party of such intended disclosure in order to provide to the Disclosing Party an opportunity to seek a protective order or other remedy and/or take such other action it deems necessary.

5.2 Legal Process and Service Improvement.

If Ramboll or an affiliate receives a demand via subpoena (or other legal procedure/process) purporting to require that Ramboll, an affiliate, or their respective personnel produce records or appear for deposition or other testimony in connection with, regarding, or otherwise related to this engagement or the Services (except in connection a dispute between Ramboll and Client regarding the Services), Client promptly shall pay Ramboll at its then-current billing rates for the time and efforts of its project and support personnel in addressing such subpoena (or other legal procedure/process) and reimburse Ramboll for related out-of-pocket expenses reasonably incurred.

Ramboll may otherwise collect and use technical information, including Client's data gathered as part of the Services, for the purpose of improving its products and services

5.3 Data Privacy

In performing their respective obligations under the Agreement, the Parties may exchange personal data about certain employees or third parties who are engaged by either Party and are working to fulfil the Agreement. The Parties, as applicable, will collect and process personal data as independent data controllers and they acknowledge and agree that they will each do so in compliance with applicable data protection laws.

Furthermore, each Party agrees to inform the other promptly if they become aware of any circumstances where one Party would process personal data on behalf of the other Party and a data processing or similar agreement is required under applicable law, in which case the Parties will promptly negotiate and sign such an agreement.

5.4 Intellectual Property

If Ramboll is required by the Agreement to deliver a particular final written product to Client (the "Deliverable"), then, subject to section 3.2, the Client shall own the Deliverable. To the extent there is any intellectual property included in the Deliverable, then, subject to section 3.2, Ramboll hereby grants to Client a perpetual, irrevocable, nonexclusive, royalty-free license to use such intellectual property solely as part of the Deliverable, and in connection with the Client project for which the Services were provided. Ramboll retains all other rights to its intellectual property. Client shall release, indemnify, defend and hold harmless the Ramboll Indemnitees from and against any and all Losses relating to Client's modification of or excerpts from the Deliverable or use of the Deliverable other than in connection with the project for which the Services were provided.

6. MISCELLANEOUS

6.1 Independent Contractor

Ramboll is acting as an independent contractor and shall retain responsibility for and control over the means for performing the Services. Nothing in these Terms and Conditions shall be construed to make Ramboll or any of its officers, employees or agents, an employee or agent of Client.

6.2 Conflicts

Client recognizes and agrees that Ramboll and its affiliates may assist other clients in matters that could be perceived as, or, in fact, may be adverse to the interests of Client, including, without limitation, matters that relate to the same site or geographical area, neighboring sites, the same acquisition opportunity or other issues in which Client may have an interest. In each of those situations, Ramboll will take reasonable measures to maintain separation between/among affected engagements, including, for example, by establishing a separate team for each client and implementing reasonable ethical screens between/among them.

6.3 No Direct Claims Against Employees

No claims in contract, tort or breach of statutory duty (including negligence) arising out of or in connection with this Agreement shall be brought personally against any of Ramboll's employees or directors or members involved in the provision of the Services (whether expressly named or not in this Agreement) and any such employees, directors and members may rely on this provision.

6.4 Assignments

Neither party shall assign its rights and obligations under the Agreement or without the prior written consent of the other party, except in connection with a sale of substantially all of the assets of such party; provided that, Ramboll may subcontract or delegate Services or assign the Agreement to an affiliate without prior written consent of Client.

6.5 Severability

The Agreement shall be enforced to the fullest extent permitted by Law. If any provision of the Agreement is found to be invalid or unenforceable the provision shall be construed and applied in a way that comes as close as possible to expressing the intention of the parties with regard to the provisions and that saves the validity and enforceability of the provision.

6.6 Disputes

a. Choice of Law

This Agreement shall be governed by the laws of the State of New York, without regard to its conflict of laws principles.

b. Arbitration

Any dispute arising out of or relating to this Agreement shall be resolved by binding arbitration administered by the American Arbitration Association under its Commercial Arbitration Rules.

For purposes of this Section, 'Permitted State' means New York, New Jersey, or, at Ramboll's election, the U.S. state where the Services are primarily performed.

Unless otherwise agreed by the Parties, the arbitration shall be conducted by a single arbitrator; provided, however, that, if the amount in controversy exceeds $750,000, the arbitration shall be conducted by three arbitrators, one appointed by each Party and the third selected by mutual agreement of the first two arbitrators. Any depositions, hearings, oral arguments, or similar proceedings shall take place at a location selected by Ramboll within a Permitted State.

Subject to Section "2.5 Payment" above, the arbitrator(s) shall have discretion to designate one of the Parties as the prevailing party and to require the other Party to reimburse such prevailing party for all or a portion of the costs and fees incurred in such arbitration, including arbitrators' fees, administrative fees, attorney's fees, and other reasonable out-of-pocket costs.

The arbitrator(s)' decision shall be final and binding and may be entered as a judgment in any court of competent subject matter jurisdiction sitting in a Permitted State. Except in cases of fraud or gross misconduct by the arbitrator(s), no arbitration award shall be subject to appeal.

The arbitration proceedings and award shall remain confidential, except as required by law or court order, as necessary to confirm, vacate, challenge, or enforce an award, or for disclosure in confidence to the Parties' auditors, attorneys, insurers, tax advisors, and similar professional advisors who themselves agree to maintain confidentially in accordance with this subparagraph.

c. Injunctive Relief

The foregoing arbitration requirement shall not apply to any alleged, actual, or threatened breach of Sections "3.2 No Third-Party Reliance/Use", "5.1 Confidentiality", or "5.4 Intellectual Property", or any other matter reasonably likely to cause irreparable harm absent immediate equitable relief. In such circumstances, either Party may seek injunctive or other equitable relief in any court of competent subject matter jurisdiction sitting in a Permitted State. Such remedies are cumulative and in addition to all other remedies available at law, in equity, or otherwise. The prevailing party in any such civil action shall be awarded its costs and fees incurred in such civil action, including attorney's fees and other reasonable out-of-pocket costs.

d. Collection Matters

Notwithstanding the foregoing, Ramboll may bring an action in court, rather than arbitration, solely to collect unpaid invoices of $50,000 or less or to foreclose or enforce a lien. Such action may be brought in any court of competent subject matter jurisdiction sitting in a Permitted State.

6.7 Working with Integrity

The Parties each agree that, at all times in connection with and throughout the duration of this Agreement, including any call-off, purchase order, Change Order or other document executed between the Parties pursuant to the Agreement, each Party will comply with and not cause the other Party to be in violation of any anti-corruption, sanctions and export control laws applicable to each Party and each of their respective parent groups, subsidiaries and branches.

The Parties each agree that, at all times in connection with and throughout the duration of this Agreement, each Party will comply with and not cause the other Party to be in violation of human rights laws applicable to each Party and each of their respective parent groups, subsidiaries and branches, and each Party shall exercise this obligation in a manner consistent with the principles in the United Nations Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises.

The Parties each represent that they shall notify the other Party in writing within thirty (30) calendar days upon becoming aware that it is in breach of the laws listed above or it becomes aware of a government investigation or that a government penalty is likely to be imposed for a violation of the laws referred to above, all to the extent the foregoing relates to this Agreement.

Without prejudice to any of the provisions contained in the Agreement, each Party may suspend performance without termination under this Agreement by written notice upon reasonable conclusion by such Party that continued performance could be in violation of the obligations above. Should the Parties not be able to remedy such violation, the Party that has suspended its performance may terminate its obligations under the Agreement. In such event, Ramboll shall be entitled to all fees and expenses incurred up to the date of such termination, including all costs associated with demobilization.

EXHIBIT A

SCOPE DEPENDENT PROVISIONS

Each of the following provisions shall apply and be part of the Agreement to the extent it is relevant to the scope of Services being performed:

A.1 Authority, Access and Site Information

Client shall (i) maintain a designated representative, who shall be reasonably available to meet with Ramboll on Client's behalf, (ii) grant or obtain for Ramboll reasonable access, at Client's sole cost, to any sites (including adjacent sites) to be investigated as part of Ramboll's scope of work, free from interference by third parties, and (iii) provide all negotiation for, and acquisition of, lands, rights-of-way and easements required for performance of Services. Client shall also specify and describe to Ramboll in writing (a) the boundary lines of the site(s), (b) the location of any underground materials or structures, including tanks, piping, water, telephone, electric, gas, sewer, and other utility lines, (c) all hazardous site conditions or hazardous materials, including providing copies of relevant Safety Data Sheets, and (d) all other information necessary or desirable to allow Ramboll to perform the Services. Client shall obtain and pay for all permits, approvals, licenses, inspections, governmental authorizations, and related fees required for the Project. To the extent expressly included in the Services, Ramboll may assist Client in preparing or supporting applications for such permits, approvals, or licenses, but Ramboll does not warrant, guarantee, or assume responsibility for the issuance, timing, denial, or outcome of any permit, approval, or license. Ramboll shall have no liability relating to the foregoing matters except to the extent specifically included in Ramboll's scope of work; provided that, Client shall be responsible for any personal injury or property damage or other Loss caused by incomplete or inaccurate information provided by the Client or any other party.

A.2 Management of Pre-existing Materials and Differing Site Conditions

a. Client recognizes that there may be pre-existing conditions, contamination, substances, wastes or materials, hazardous or otherwise ("Pre-existing Materials") at sites to be entered as part of the Services and acknowledges that Ramboll has neither created nor contributed to the existence of any Pre-existing Materials. Client also acknowledges that some investigative procedures may carry the risk of release or dispersal of Pre-existing Materials, even when exercising due care, and Client hereby waives any claim with respect thereto except to the extent of damages caused by Ramboll's gross negligence or willful misconduct.

b. Client and not Ramboll shall be responsible for complying with all Laws in connection with transportation, treatment, disposal and management of Pre-existing Materials. If Client and Ramboll execute a Proposal for assistance in meeting such obligations, (i) Client shall make the final selection of and take full responsibility for both the transporter and disposal facility, (ii) Ramboll shall not be deemed to be an operator, generator or party who arranges for transportation, treatment or disposal, and (iii) Client shall release, indemnify, defend and hold harmless the Ramboll Indemnitees from and against any and all Losses relating to a claim or allegation that Ramboll has any obligation or responsibility referred to in this Section. To the extent that any term used above in this Section is defined in one or more applicable Laws, such term as used herein shall have the broadest definition stated herein or in any such Law.

c. Concealed or latent physical conditions or subsurface conditions at the project site that (i) materially differ from the conditions indicated in the Agreement or relevant Proposal or (ii) are of an unusual nature, differing materially from the conditions ordinarily encountered and generally recognized as inherent in the Services are collectively referred to herein as ("Differing Site Conditions"). If Ramboll encounters a Differing Site Condition, Ramboll will be entitled to an adjustment in the price and/or time(s) in accordance with Section 2.1 to the extent Ramboll's cost and/or time of performance are adversely impacted by the Differing Site Condition. Upon encountering a Differing Site Condition, Ramboll shall provide prompt written notice to the Client of such condition. Ramboll shall, to the extent reasonably possible, provide such notice before the Differing Site Condition has been substantially disturbed or altered.

A.3 Environmental Professionals

Ramboll employees may serve as Environmental Professionals under various state or Federal programs, which may include rendering opinions about site assessments or remediation programs or outcomes and/or which may have Ramboll employees assuming quasi-regulatory roles. In carrying out these functions for Client, the Environmental Professional will select the investigations, data collection activities, remediation or other services which, in the Environmental Professional's judgment are appropriate under applicable statutes and regulations, to establish a basis for the Environmental Professional's opinions. Client acknowledges that, under certain state or federal programs, the Environmental Professionals may have an independent duty to report site conditions or other information to a regulatory agency and Client agrees that the Environmental Professional may make such disclosures as are required by Law without violating any confidentiality obligations under the Agreement, provided that the Environmental Professional gives the Client notice before (or if circumstances do not reasonably allow concurrently with) notifying the regulatory agency. Client also acknowledges that a federal, state or local agency may review, comment and/or audit Ramboll's services and may require additional site activities, even though Ramboll and its Environmental Professionals have each performed its services in accordance with the standard of care set forth in Section 4.1 of the Agreement (the "Performance Standards" section). Client agrees to compensate Ramboll for services performed in response to such an audit at Ramboll's billing rates then in effect.

A.4 Laboratory Services

Ramboll will conduct toxicology tests as prescribed in standard industry methodology, which includes test acceptability requirements. From time to time the quantity or quality of test organisms cannot be obtained. Ramboll will notify Client when this occurs and suggest delaying the testing until such organisms become available. Ramboll will conduct the tests at Client's request but Ramboll will not be responsible for any test failures that might occur under those circumstances.

A.5 Engagement by Law Firms

If the Agreement is being executed by a law firm on behalf of its client, the firm represents that the client has reviewed the Agreement and both the firm and the client are bound by all limitations on liability and other provisions of the Agreement; provided that, the client and not the firm will have the obligation to pay Ramboll's fees and costs.

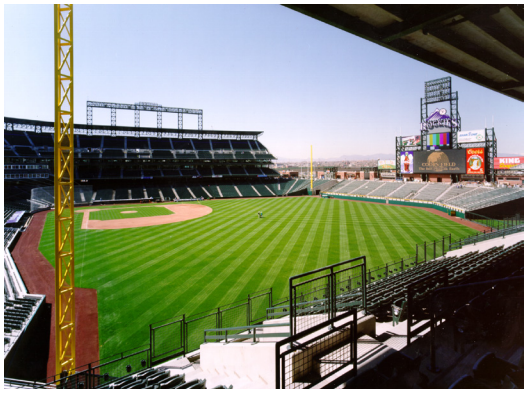
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Company Profile

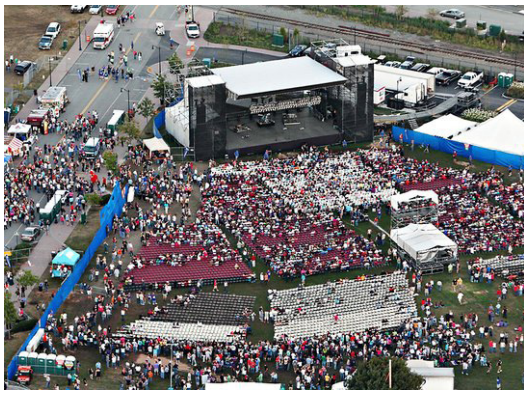
Whether you're looking to perfect the acoustics of a performance space, implement cutting-edge systems technology, or quiet a noisy product, Acentech is your resource. We provide acoustics, technology, and noise and vibration consulting to clients across the US and beyond.



BUILDING ACOUSTICS



TECHNOLOGY



NOISE AND VIBRATION CONTROL

Acentech is a multi-disciplinary acoustics, technology, and vibration consulting firm. We are one of the oldest and largest organizations of our type, with roots stretching back more than 75 years. We are unequaled partners to architects, engineers, institutions, manufacturers, planners, and designers worldwide.

Acentech's acousticians, engineers, scientists, and technical consultants bring collective expertise and innovative thinking to the critical design relationship between sound, technology, and the built environment.

Our fully integrated consulting capabilities offer planning, design, and problem resolution in the areas of: building acoustics; noise and vibration control; environmental noise; and technology planning and design.

Acentech's experience includes outdoor performance venues, cultural and community facilities, museums, visitor destinations, and flexible event spaces. From early planning through design, our team helps clients navigate the relationship between sound, technology, visitor experience, and the built environment to create high-performing spaces that can adapt to a wide range of public and private uses.

CONSULTING SERVICES

- Building Acoustics
- Mechanical Systems Noise and Vibration
- Environmental Noise
- Vibration
- Audiovisual
- ICT/Telecommunications
- Physical Security
- Product Noise and Sound Quality

SPECIALTY SERVICES

- 3DListening® (3DL) Acoustic Simulation and Evaluation
- Real-Time, Remote Monitoring of Noise and Vibration
- Technology Advisory Services
- Research and Development
- Sound Power Measurements

ACENTECH
ACOUSTICS TECHNOLOGY VIBRATION

Staffing + Availability

Due to the nature of our work and that of the design and construction process, it is typical of Acentech's consultants to work on many projects concurrently. Our current backlog of work includes over 800 projects, from large to small, in various stages of completion, in dozens of locations across the country.

For the Amphitheater Sound Monitoring Design and Bass Investigation project, our proposed team will treat this project as a top priority. The consultants dedicated to this effort have the availability and resources to meet all project goals, and will work diligently to exceed expectations. With the depth and expertise of Acentech's staff, we ensure every project receives sustained attention, continuity, and the highest level of professional focus.

Team Roles + Availability

Michael Bahtiarian, INCE Bd. Cert., INCE Fellow will be the Principal-in-Charge. **Alex Odom** will be the Project Manager/Lead Acoustician and **Josh Grybinas** will be Field Staff. Additional personnel may be involved where appropriate or required.

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EDUCATION

M.S. Mechanical Engineering, Rensselaer Polytechnic Institute, 1988

B.S. Mechanical Engineering, Pennsylvania State University, 1985

CERTIFICATION

Institute of Noise Control Engineering (INCE), Board Certified, 2004

PROFESSIONAL SOCIETIES

Institute of Noise Control Engineering (INCE-USA), Fellow
President, 2020-2022;
Nominations Committee, Chair;
Long Rang Planning Committee, Member

ISO Technical Committee 43/SC 3, U.S. Technical Advisory Group (TAG) Chair, 2011-2017

ISO Technical Committee 43/SC 3/WG 1 (underwater ship noise), Convener 2011-2017

American Society of Mechanical Engineers (ASME), Noise Control & Acoustics Division, 1985-present

HONORS

INCE, William W. Lang Award, Distinguished Noise Control Engineer, 2018

Michael Bahtiarian, INCE Bd. Cert., INCE Fellow

Principal | Noise & Vibration

EXPERIENCE AND RESPONSIBILITIES

Michael Bahtiarian is an accomplished noise and vibration control engineer, specializing in environmental acoustics, noise control, and sound and vibration testing, measurement and mitigation. His engineering career spans 39 years in consulting management for the assessment and design of noise control treatments such as barriers, enclosures, damping and vibration isolation. He provides litigation support and expert witness testimony for dispute resolutions and matters related to noise and vibration issues.

Michael serves as Acentech's Energy market leader, and is responsible for marketing strategy, client development, and thought leadership.

REPRESENTATIVE PROJECTS

- Antrim Wind Project, Antrim, NH
- Battery Storage Facility, Brookhaven, NY
- Boston College, Fieldhouse Community Noise, Newton, MA
- Catholic Medical Center, Central Utility Plant, Manchester, NH
- Energy Recovery Ventilation Unit, Malden, MA
- Fitness Center Sound Test, Boston, MA
- New York Energy Developer, Battery Energy Storage Systems Sites, Haupage, Southampton and, Southold, NY
- Kingwood Solar, Clifton, OH
- Marblehead Municipal Light Department, Wilkins Station Generator, Marblehead, MA
- National Grid Substations, Multiple Locations
- Next SunEnergy, Fairfield Farm Solar Project, Norton, MA
- Orange Theory Fitness, Wellesley, MA
- Saltonstall Park Sound Control Evaluation, Watertown, MA
- Solar Facility Noise Evaluation, Watertown, MI
- Skybox, Data Center Noise Study, Lancaster, TX
- Town of Hingham, Public Pickleball Courts Noise Evaluation, Hingham, MA
- Town of Palm Beach, Pickleball Courts Noise Evaluation, Palm Beach, FL

ACENTECH
ACOUSTICS TECHNOLOGY VIBRATION



EDUCATION

M.Eng. Acoustics, Pennsylvania State University, 2022

B.M.E., Mechanical Engineering, University of Minnesota - Twin Cities, 2016

Alex Odom

Project Manager/Lead Acoustician | Building Acoustics, Noise & Vibration

EXPERIENCE AND RESPONSIBILITIES

Alex Odom has over 9 years of experience consulting on a wide range of projects within Acentech's Acoustics and Noise and Vibration Groups, assisting in the certification of lab/sensitive facilities, construction monitoring, and environmental noise issues. He has been involved in environmental noise modeling, mechanical systems noise control, and psychoacoustic analysis of the audibility of police sirens. He applies these skills across a broad range of environmental, transportation, renewable energy, and commercial facility types.

PRESENTATIONS | PUBLICATIONS

- "Good Noise Neighbor: Data Center Design for Community Noise," *Building Design + Construction*, January 2026
- "Healthcare Communication in Acoustical Consulting Practice," A. Odom and B. Davenny, Acoustical Society of America, December 2022
- "Addressing Noise Concerns in Cleanroom Environments," ESTECH, 2020
- "Boston's Construction BOOM: Help Me Understand My Noise Problem," Architecture Boston Expo (ABX), October 2018

REPRESENTATIVE PROJECTS

- Brown University, Lindemann Performing Arts Center Vibration Measurements, Providence, RI
- City of Portland, Citywide Sound Monitoring, Portland, ME
- Confidential Outdoor Restaurant Music Venue, Sound Monitoring and Expert Witness Support, Fort Wayne, IN
- Dartmouth College, Thayer Hall Construction Noise Monitoring, Hanover, NH
- Freedom Hill Amphitheatre, Sound Monitoring, Sterling Heights, MI
- Harvard University, Allston Campus District Energy Facility, Noise & Vibration Mitigation, Allston, MA
- The Hub on Causeway, TD Garden, Boston, MA
- Landmark Center Phase 3 Development, Noise & Vibration Monitoring, Boston, MA
- Norton Estates, Industrial Noise Measurements, Norton, MA
- Prudential Center, Mechanical Noise & Vibration Monitoring, Boston, MA
- The Quin House, Remote Environmental Noise & Vibration Monitoring, Boston, MA
- Waterfront Concerts, Sound System Expansion Study and Sound Monitoring, Bangor, ME
- WVCO Railroad Systems, Embedded Track Vibration Study, Bloomington, MN
- WBUR CitySpace Studios, Boston, MA

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ACOUSTICS TECHNOLOGY VIBRATION



EDUCATION

M.Eng., Mechanical Engineering, Concentration in Acoustics, Boston University, 2020

M.A., Preservation & Presentation of the Moving Image, University of Amsterdam, 2013

B.A., Philosophy, Minor in Biology, Certificate in Film Studies, Saint Louis University, 2011

Josh Grybinas

Field Staff | Building Acoustics

EXPERIENCE AND RESPONSIBILITIES

Josh Grybinas has over six years of acoustical consulting experience, providing support to in-house teams in the areas of acoustical design and noise and vibration control. His areas of concentration include room shaping, sound isolation, and mechanical systems noise and vibration control. Josh's portfolio of work includes projects ranging from healthcare and higher education facilities to performing arts spaces and corporate commercial developments.

PRESENTATIONS

> "Prediction of Sound and Vibration, Levels from Heavy-hard Impacts in a Cross Laminated Timber-Concrete Hybrid Building," 186th Meeting of the Acoustical Society of America/Canadian Acoustical Association, J. Brophy and A. Callaghan, Ottawa, Canada, May 16, 2024

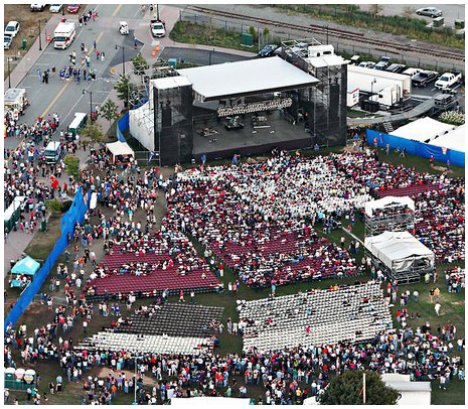
REPRESENTATIVE PROJECTS

> Bay Chamber Concert and Music School Relocation, Camden, ME
> Berklee College of Music Performance Center Upgrades, Feasibility Study, Boston, MA
> Confidential Post Construction Sound Monitoring, Antrim, NH
> Coolidge Corner Theater Addition, Brookline, MA
> Crockett Theater, Lawrenceburg, TN
> Detroit Music Hall Expansion, Detroit, MI
> Edens Plaza Club Studio Sound Isolation, Wilmette, IL
> Groton School, Office Sound Isolation, Groton, MA
> The Hub Transit Station, Springfield, IL
> Lincoln Center Damrosch Park Redevelopment, New York, NY
> Lloyd Event Center Music Venue, Portland, OR
> MIT, Museum Installation Mechanical Noise, Cambridge, MA
> MIT, Kresge Auditorium, Cambridge, MA
> Seaport Square Big Night Restaurant Sound Isolation, Boston, MA
> Somerville Theater Renovation, Somerville, MA
> Sprague School, Community Noise, Wellesley, MA

ACENTECH
ACOUSTICS TECHNOLOGY VIBRATION

Selected Experience

Outdoor Performance Venues



Waterfront Concerts

Sound System Expansion Study and Sound Monitoring

Bangor, ME

Completed: 2012 - Ongoing | Size: 15,000 patrons | Acentech Services: Acoustics, Remote Monitoring of Sound Levels

Client: City of Bangor | Reference Contact: Tracy Willette, Director, Parks and Recreation tracy.willette@bangormaine.gov

Staff Roles: Alex Odom, Noise & Vibration Project Manager/Consultant

Description: Assessment of amplified outdoor music's impact on neighboring community. Low-frequency noise criteria were established and permanent, real-time noise monitoring in the venue and surrounding community were implemented.



Freedom Hill Amphitheatre

Sound Monitoring

Sterling Heights, MI

Completed: 2022 - Ongoing | Size: 15,000 patrons | Acentech Services: Remote Monitoring of Sound Levels

Client: 313 Presents (Venue Operator) | Reference Contact: Karli Flesher, Event Production Coordinator. karli.flesher@313presents.com

Staff Roles: Alex Odom, Noise & Vibration Consultant

Description: Permanent, real-time noise monitoring within the venue to address community noise concerns.



Confidential Outdoor Restaurant Music Venue

Sound Monitoring and Expert Witness Support

Fort Wayne, IN

Completed: 2025 | Acentech Services: Remote Monitoring of Sound Levels

Client: Legal Counsel for Neighborhood Group | Reference Contact: References available upon request.

Staff Roles: Alex Odom, Noise & Vibration Project Manager

Description: Assessment of amplified outdoor music's impact on neighboring community, including low-frequency noise impacts and potential for noise-induced vibration. Expert witness support to demonstrate community noise impacts and recommendations for mitigation and permanent, real-time noise monitoring.

ACENTECH
ACOUSTICS TECHNOLOGY VIBRATION

October 22, 2026

Michael Kerski
Director of Planning & Development
City of Shakopee
485 Gorman Street
Shakopee, MN 55379

Via Email: MKerski@shakopeemn.gov

Subject: **Amphitheater Acoustical Engineering RFP**
Amphitheater Sound Monitoring Design and Bass Investigation
Mystic Lake Amphitheater at Canterbury Commons operated by Live Nation
Shakopee, MN
Proposal Number 641050.01

Dear Michael:

Acentech appreciates the opportunity to provide this proposal for acoustical consulting services for the Amphitheater Sound Monitoring Design and Bass Investigation project, related to the Mystic Lake Amphitheater at Canterbury Commons, operated by Live Nation, located in Shakopee, MN. We are happy to lend our extensive experience on the acoustics of performance venues, in particular for low-frequency impacts on the surrounding community. Our proposal is based on your RFP dated October 6, 2026.

We understand that there has been a history of noise complaints related to low-frequency noise (i.e., bass) associated with the Mystic Lake Amphitheater. These complaints have included noise-induced vibration of windows or other building components. The proposed study would evaluate the current impacts, recommend noise mitigation strategies, and propose a network of permanent sound monitoring locations for long-term management of the venue sound levels. Recommendations may include maximum allowable levels within the venue, as well as other changes to the venue sound systems.

We present this proposal based on our understanding of the project's scope and needs. Please contact me with any questions at aodom@acentech.com or 312-815-4090. We look forward to working with you and the City of Shakopee, MN.

Sincerely,



Alex Odom
Associate Principal | Noise & Vibration

Enclosures: Qualifications
Fee Proposal
Terms and Conditions

cc: Michael Bahtiarian (Acentech)

PROPOSAL FOR ACOUSTICAL CONSULTING SERVICES

Project Name

Amphitheater Sound Monitoring Design and Bass Investigation

Submitted To

Michael Kerski
City of Shakopee

Acentech Proposal Number: 641050.01

October 22, 2026

PROJECT UNDERSTANDING

The Mystic Lake Amphitheater is a 19,000-seat venue that opened in June 2026. Since opening, the City of Shakopee has been receiving noise complaints from community members regarding the venue's amplified music, in particular low-frequency bass impacts. This proposal outlines the study requirements as defined by the City's RFP.

In addition to the immediate area surrounding the venue in Shakopee, some complaints have been recorded in adjacent cities, including Eden Prairie. We understand that some studies were completed by the venue operator in the past, including some noise monitoring during concerts, but the City does not have access to the underlying data from those studies. In response to community complaints, Live Nation has implemented the following mitigation strategies:

- Installed acoustically absorptive materials in the bowl of the amphitheater
- Modified the placement of the stage's upper loudspeakers to direct downward into the bowl
- Reduced the volume of loudspeakers located in outer gathering areas
- Deployed staff to locations of noise complaints to measure what residents are experiencing and work on individual mitigation efforts

The City's RFP outlines a detailed scope to understand the existing conditions in relation to past complaints, proposed mitigation as necessary, and develop a plan for long-term noise monitoring to assist in enforcement of any potential noise limits established as part of the study.

Acentech has a long history of consulting on concert noise and low-frequency noise is often a significant challenge for venues to ensure concert activities are compatible with the surrounding areas. We are excited to lend our expertise in understanding this issue and communicating solutions to the City and the wider public.

SCOPE OF SERVICES

Based on our understanding of this project and experience with similar projects, we expect to perform the following Tasks 1 through 8, following the RFP.

GENERAL COORDINATION AND NOTES

1. Provide progress updates at least every two weeks during active work.
2. All reports will be provided in draft form with one consolidated City review cycle.

TASK 1: REVIEW AND INVESTIGATION PLAN

The first task will be to review prior sound studies and propose specific procedures for the current investigation.

Background Information

1. Attend an in-person kick-off meeting with the project team to discuss the project goals, including a walkthrough of the project site.
2. Develop a records request list to identify information needed from the City, including prior studies, complaint histories, and other records. As available, the City will provide relevant information, including prior studies, approvals, complaints, mapping, sound records, and assist with introductions to other relevant parties.
3. Review available sound studies (e.g., Canterbury Amphitheater Sound Impact Assessment, David Brauslau Associates, Inc., 2002), prior measurements, approvals, and complaint records.
4. Develop a map of reported noise and/or vibration impacts by location, date, time, and description. This will include areas approximately one mile from the venue and other affected distances and directions.

Venue Design Details

5. Review previous subwoofer locations and configuration, loudspeaker orientation, available processing and limiter settings, and sound-check procedures. Request time-synchronized venue reference measurements and operational logs, subject to operator access. We will rely on the City to provide information from the venue, including building data and sound system information.
6. We have budgeted for one virtual meeting with the City and Venue for coordination.

Work Plan

7. Review applicable measurement requirements with City staff and recommend appropriate standards. We will prepare a *Work Plan* that defines measurement locations, instrument capabilities, calibration procedures, weather criteria, source-identification methods, and uncertainty. Criteria may include low-frequency impacts on home interiors and recommended outdoor noise levels.

TASK 2: FIELD MEASUREMENTS AND SOURCE ATTRIBUTION

The second task includes more detailed review of specific concert noise measurement history completed by Live Nation, alongside a future controlled mitigation test. The data review will be included in the *Bass Investigation Report* developed under Task 3; a single report for the *Controlled Mitigation Test* is included under Task 2.

Complaint and Live Nation Data Review

1. Review sound data from past concert measurements, completed by Live Nation, and reported complaint areas. These complaint areas will inform the controlled mitigation test described below.
2. Review temporary noise monitoring results from Live Nation (four temporary noise monitors), including background noise levels on non-concert days.
3. We have budgeted for one virtual meeting with the City and Venue for coordination.

Controlled Mitigation Test

4. Conduct a single coordinated sound system test for up to four hours, with City and venue approval. In addition to a measurement location within the venue, we propose to make short-term, attended noise measurements at up to four locations in the community. We have budgeted for two Acentech staff members, one within the venue and another at community locations. This test is assumed to be completed in the new amphitheater season (beginning May 2027). Additional measurement locations may be included if permanent noise monitoring has been implemented by this time.
5. The sound system test will evaluate any existing mitigation strategies Live Nation has implemented, and potentially mitigation strategies developed under Task 4. If mitigation options require more than four hours of testing, we have provided an additional service option for additional testing. After the *Controlled Mitigation Test*, we will update the *Mitigation Plan* developed under Task 4 to summarize the measurement results and provide recommendations for any changes.
6. We have budgeted for one virtual meeting with the City and Venue for coordination.

TASK 3: DIAGNOSE THE REPORTED LOW-FREQUENCY IMPACTS

The third task is focused on evaluating the low-frequency noise impacts reported by community members, with a detailed review of prior data collected by Live Nation.

Bass Investigation Report

1. Review sound data from past concert measurements, completed by Live Nation. Data provided by Live Nation or the City will include A- and C-weighted overall levels, as well as unweighted one-third octave spectra. The analysis will focus on frequencies from 20-200 Hz, with additional data from 10-16 Hz evaluated if Live Nation equipment was able to measure that low in frequency.
2. Weather data from a nearby weather station, including wind speed/direction, temperature, humidity, and precipitation, will be reviewed and the impacts on the Live Nation data will be noted. Where possible, we will comment on the potential impacts of other environmental effects and noise sources.
3. Develop assessment criteria based on published standards, industry guidance, and our experience on past projects. These criteria may include audibility, annoyance, perceptible vibration, and noise-induced vibration.
4. Prepare a report summarizing the investigation of low-frequency impacts.
5. We have budgeted for one virtual meeting with the City and Venue for coordination.

TASK 4: RECOMMEND AND TEST MITIGATION

The fourth task is focused on developing potential mitigation options for Live Nation to implement to their sound system. The mitigation test is assumed to be conducted under Task 2, as described above.

Mitigation Development

1. Review existing noise propagation modeling completed by Live Nation and identify any need for new noise modeling. Based on our understanding of the requested mitigation evaluation, we are recommending including noise modeling to evaluate the mitigation as described within this task, which has been priced as an additional service.
2. Evaluate feasible changes to subwoofer placement and directional arrays, orientation, frequency-specific limiters, and general venue operating procedures. It is understood that noise barriers and enclosures would only be considered where low-frequency performance is significant.
3. Provide a prioritized mitigation matrix, including both recommended immediate operating changes and long-term improvements. For each mitigation measure, we will identify the responsible party, work with the City to estimate capital and operating costs, timing for implementation, expected reduction in sound levels (including attenuation by frequency) with uncertainty noted, and a proposed verification method.
4. A controlled mitigation test is described under Task 2. Task 4 will be limited to evaluation of mitigation with modeling methods.
5. We have budgeted for two virtual meetings with the City and Venue for coordination.

Alert Criteria Development

6. Recommend alert criteria (level, averaging period, frequency content, etc.) associated with specific measurement locations, which could include a measurement point within the venue and the proposed community permanent monitors. Develop a response procedure when alert criteria are triggered. These proposed alert criteria may be distinct from any adopted enforceable limits.
7. We have budgeted for one virtual meeting with the City and Venue for coordination.

TASK 5: DEVELOP AND VALIDATE THE NETWORK LAYOUT

The fifth task is focused on developing ten recommended outdoor sound monitoring locations for community locations. Permanent venue reference monitoring locations will be considered additional.

Monitoring Location Layout

1. Identify ten locations based on a variety of factors, including field results, complaint patterns, terrain, sound system-directionality, and installation feasibility. For each location, one practical alternate location will be identified. Locations on public property and poles with practical maintenance access will be prioritized. We will work with the City to identify necessary owner permissions to install equipment. We have budgeted for a site visit completed by one Acentech staff member to observe potential locations.
2. Provide a georeferenced map identifying the measurement locations in relation to the venue, explaining the distinct purpose and area represented by each monitor. Affected neighborhoods and coverage gaps will be identified.
3. Provide a site sheet for each location, including coordinates, photographs, proposed microphone height and offset, recommended mounting details, and commentary related to nearby noise sources and reflecting surfaces.
4. The number and placement of weather instruments necessary to evaluate the noise monitoring data will be recommended. Limitations of a smaller number of weather stations will be discussed.
5. We have budgeted for one virtual meeting with the City for coordination.

Location Validation Measurements

6. Conduct short-term (~10-15 minutes) attended measurements during a live concert event at each location (and alternate) to validate the ten proposed sites. Feedback from nearby affected residents near each location will be sought. We have budgeted for one site visit during with attended observations by two Acentech staff members.
7. Prepare a final report which identifies the ten preferred sites, their alternates, and if possible, results from the live event validation. Recommendations for additional validation will be provided if access is unavailable for specific locations.
8. We have budgeted for one virtual meeting with the City for coordination.

TASK 6: COMPARE SYSTEMS AND SELECT A PREFERRED CONFIGURATION

The sixth task is focused on evaluating long-term noise monitoring systems. Three commercially available monitoring systems from different manufacturers will be evaluated with a review method suitable for the City purchasing process. A single option will be recommended, with at least one acceptable alternative identified.

Monitoring System Comparison Matrix

1. Prepare a scored comparison matrix evaluating the three noise monitoring system manufacturers, detailing system capabilities (claimed and supported) and budgetary quotes. Evaluation criteria will include:
   a. Class 1 measurement performance under applicable IEC 61672 and IEC 61260 requirements.
   b. Simultaneous A- and C-weighted sound levels, including unweighted one-third octave band spectra from 20-200 Hz, with potential inclusion of 10-16 Hz data.
   c. One-second logging and configurable reporting intervals, with data sufficient for statistical metrics (e.g., L10, L50, etc.).
   d. Suitability for year-round outdoor conditions in Minnesota.
   e. Remote display of real-time data of all ten stations, with frequency-specific alerts, configurable staff access, and usable reporting features. Public dashboard costs will be evaluated.
   f. Triggered recording of anomaly events to verify sources (e.g., siren vs amphitheater music).
   g. Calibration and verification procedures, service availability, expected service life, training, and references for comparable permanent outdoor installations.

Cost and Purchasing Package

2. Provide itemized capital costs for ten complete stations, annual operating cost, and a five-year total ownership cost. Costs to include software, cellular service, storage, calibration, maintenance, replacements, training, and identified taxes or shipping.
3. We have budgeted for one virtual meeting with the City for coordination.

TASK 7: PREPARE THE OPERATING MANUAL

The seventh task is focused on developing written procedures for the City's use in operating the noise monitoring network, investigating complaints, and explaining results.

Operating Manual

1. Create a workflow to relate resident noise complaints with measured sound levels, weather, and venue records. Define how to preserve original data, apply corrections/exclusions, and flag unrelated noise sources.

2. Provide recommended data retention, access, security, and export procedures. Detail recommendations around privacy controls if audio recordings are proposed, and identify alternative methods.
3. We have budgeted for two virtual meetings with the City for coordination.

Reporting Templates

4. Develop two unique report templates (concert, monthly summary) with maps, measurement data example plots, including time history and frequency-band results. Provide explanations of acoustic terminology, including dBA and dBC, and how they relate to potential conclusions.

TASK 8: COMMISSION AND TRAIN

The eighth task is focused on commissioning the monitoring systems and training City staff on its use. Installation of the monitoring systems is to be completed by others. The proposed fees for this task assume commissioning will occur in 2027. Network validation tests require a minimum of 3 weeks' notice for Acentech to mobilize.

Monitoring System Inspection

1. Inspect all ten monitors to verify microphone placement, configuration, calibration, time synchronization, and other operating details. Identify deficiencies and responsible parties for correction. Provide recommended data retention, access, security, and export procedures. Detail recommendations around privacy controls if audio recordings are proposed, and identify alternative methods.

Network Validation

2. Review a minimum monitoring period of seven days to assess valid data recorded, noting interruptions and corrective action.
3. Conduct short-term (~10-15 minutes) attended measurements during a live concert event near each permanent location to validate the equipment operation. We have budgeted for one site visit with attended observations by two Acentech staff members.
4. Prepare a *Commissioning Report* and updated site inventory documenting the network validation.

Staff Training Session

5. Conduct one in-person training session (assumed up to 8 hours) to review equipment operating procedures, data management, and the reporting workflow.
6. We have budgeted for two virtual meetings with the City and Venue for coordination.

ADDITIONAL SERVICES

Additional Controlled Testing

- Task 2 of the base scope assumes 4 hours of coordinated sound system tests. Should additional mitigation options require evaluation beyond the initial four hours, we proposed to conduct tests in an additional 4-hour period, presumed to take place on different days/evenings.

Baseline Monitoring

- Some background data may be available from Live Nation. Should additional background measurements be warranted, we propose to conduct an ambient sound survey over a period of up to 5 days, including weekday and weekends, to evaluate the existing background (non-concert) sound levels in the area. We have budgeted for up to four monitoring locations.

Sound Modeling

- We propose to develop a new noise model using CadnaA, predicting community sound levels from concert activities at key locations and preparing sound contours. Modeling will be informed by prior noise modeling and additional detail provided by the venue, to evaluate community sound levels for up to six mitigation scenarios, to be identified by us with agreement from the City.

Installation Oversight

- We will travel to the site in advance of the concert season to observe setup and calibration of the monitoring systems. We will also ensure that the City is able to access the required data remotely and that appropriate reporting systems are in place. We will provide a brief memo summarizing our visit and detailing any issues that should be corrected.

Ongoing Seasonal Analysis

- Review the measured data for each concert event and provide a memo summarizing compliance with the community noise recommendations and regulatory. Report frequency (per concert, per months, etc.) to be determined, so no fee has been proposed at this stage.

Public Meetings

- Acentech is available to attend public meetings, which could include an informational panel with the local officials to discuss the noise monitoring project and answer community questions. We will work with your team to prepare relevant information on the project's design and associated noise for presentation to community members. For planning purposes, we have budgeted for a single 4-hour in-person meeting.

DELIVERABLES

Based on the tasks listed above, we will deliver up to the following:

BASE SCOPE

Task	Reports	Online Meetings	Site Visits
1. Review and Investigation Plan	1	2	1
2. Field Measurements and Source Attribution	1	2	1
3. Diagnose the Low-Frequency Impacts	1	1	-
4. Recommend and Test Mitigation	1	3	-
5. Develop and Validate the Network Layout	2	2	2
6. System Comparison and Selection	1	1	-
7. Prepare the Operating Manual	3	2	-
8. Commission and Train	1	2	2

SCHEDULE

The RFP requests the schedule to be proposed in terms of weeks from notice to proceed (NTP). We note that for some tasks, it will be dependent not on the NTP date, but rather the opening of the 2027 amphitheater season. We understand that the next scheduled concert is May 23, 2027.

Task	Weeks from NTP
Work Plan	NTP + 8 weeks
Bass Investigation Report	NTP + 10 weeks
Mitigation Plan	NTP + 12 weeks
Controlled Mitigation Test	Estimated from May-June 2027
Ten-Monitor Siting Package	NTP + 14 weeks
Final Location Validation Report	Estimated from May-June 2027
Equipment Recommendation	NTP + 14 weeks
Operating Manual	NTP + 18 weeks
Commissioning Package	Installation + 4 weeks

PERSONNEL

Michael Bahtiarian will be the Principal-in-Charge. Alex Odom will be Project Manager and Lead Acoustician. Additional personnel may be involved where appropriate or required.

INDEPENDENCE AND EXCEPTIONS

Acentech has worked on a variety of performing arts spaces, but we don't have any direct relationship with Live Nation or the Mystic Lake Amphitheater at Canterbury Commons.

FEES

We propose to provide the services described above on a fixed-fee basis, including expenses, in accordance with the attached Terms and Conditions or other mutually agreeable terms. The following is a division of fee by discipline and phase:

TASKS 1-7

Task	Fee
1. Review and Investigation Plan	$26,500
2. Field Measurements and Source Attribution	$25,000
3. Diagnose the Low-Frequency Impacts	$13,000
4. Recommend and Test Mitigation	$20,000
5. Develop and Validate the Network Layout	$27,500
6. System Comparison and Selection	$10,000
7. Prepare the Operating Manual	$20,000
Total Task 1-7	**$142,000**

TASK 8

Task	Fee
8. Commission and Train	$38,000
Total Task 8	**$38,000**

FEE SUMMARY

Task	Fee
Task 1-8	$180,000

ADDITIONAL SERVICES

Task	Fee
Additional Controlled Testing (per day)	$15,000
Baseline Monitoring	$20,000
Sound Modeling	$26,000
Installation Oversight	$8,000
Ongoing Seasonal Analysis	TBD
Public Meetings	$8,000

CLARIFICATIONS

GENERAL

1. Proposal: This proposal is valid for 90 days.
2. Consulting Fees: Acentech may reallocate fees by task, as outlined above, over the course of the project; however, we will not exceed the total estimate without your written authorization.
3. Schedule: Based on the included schedule it is understood that Acentech's participation in this project will end no later than September 2027. Additional services may result from the project schedule being extended by more than two months. Our involvement beyond this period will be billed at our then current hourly rates.
4. Trips: The total number of trips to your office and/or the project site is as detailed above. Any additional meetings or trips will be considered Additional Services and will be billed separately at current hourly rates.
5. Expenses: Reimbursable expenses (mainly for travel) are included in the fee.
6. Document Format: Our documents will be delivered electronically in PDF format, or in native format if requested by you or the Owner.
7. Ownership of Documents: Drawings, specifications, and reports are instruments of service and are the property of Acentech Inc. They are not to be used for other projects or extensions of this project except by written agreement with Acentech. Acentech documents will not be provided to contractors without them first signing a Release of Liability for use of Electronic Media.

APPROVALS

We appreciate the opportunity to present this proposal. Our proposed scope is based on our understanding of the project needs and background information provided. Please feel free to contact us, however, if there are questions or if we can modify the proposal to better suit your needs. Otherwise, if you are in agreement with this proposal, please indicate your acceptance by returning a signed copy.

ACCEPTED BY:

Firm: _____

Name (Print): _____

Signature: _____

Title: _____

Date: _____

ACENTECH
ACOUSTICS TECHNOLOGY VIBRATION

2026 ACENTECH TERMS AND CONDITIONS

Acentech Incorporated (Acentech) will perform the work ("Services") specified in the Scope of Services contained in the Proposal to which these Terms and Conditions are attached, in accordance with the following provisions. Unless a superseding agreement with alternative terms and conditions is mutually agreed to, these Terms and Conditions will be in effect from the time that Acentech receives notice to proceed from the Client.

I. SERVICES TO BE PROVIDED; STANDARD OF CARE

Acentech and its Subconsultants will perform the Services with the degree of care and skill ordinarily exercised by similarly situated consultants. Client agrees that the Services will be provided without warranty, express or implied, except as may be stated explicitly in the Proposal. Acentech will exercise usual and customary professional care in its efforts to comply with applicable codes, regulations, laws, rules, ordinances and other such requirements in effect as of the date of the acceptance of the Proposal.

II. COMPENSATION AND PAYMENT

Client will compensate Acentech on a time-and-materials or fixed price basis as specified in Acentech's Proposal.

A. Time and Materials

1. Best Efforts: Acentech will use reasonable efforts to complete the Scope of Services within the estimated fees specified in the Proposal. Acentech will not provide the proposed Services beyond the estimated fee without the Client's authorization for additional funds.
2. Professional Staff: Acentech will furnish the services of its employees at its standard hourly rates at the time Services are provided.
3. Other Services and Costs: Expenses incurred by Acentech required for the completion of the Scope of Services, including travel, meals, supplies and professional services obtained from third parties are reimbursable at cost plus a 10% administrative handling charge. Other services provided, including instrumentation usage and reproductions, will be billed at Acentech's standard rates. All applicable sales tax, customs and Project-specific insurance premiums will be billed at cost.

B. Fixed Price

1. Services Specified: Acentech will deliver the services specified in the Scope of Services on a fixed price basis billed on a percentage of work completed unless an alternative billing schedule has been accepted. Any Project or phase fully billed at 100% will be considered complete unless otherwise agreed.
2. Reimbursable Expenses: Unless specifically included in the fixed fee, reimbursable expenses including travel, meals, supplies and other professional services obtained from third parties are reimbursable at cost plus a 10% administrative handling charge.

C. Changes in Scope of Services / Additional Services

1. Any services authorized by Client not explicitly included in the Scope of Services within the Acentech Proposal will be considered Additional Services and will be billed on a time and materials basis unless a contract modification or change order has been agreed to by Acentech and Client.
2. Additional Services result from, but are not limited to: a) changes in the Project size, budget or programmed use; b) the Project schedule is significantly delayed; c) changes from the Client requiring redesign of previously completed work; d) Acentech's design recommendations are not reviewed in a timely manner resulting in additional work; e) any rework required for the Documents or additional services due to design changes; and, f) any other delays beyond Acentech's control.
3. Document modifications or additional construction administration services requested by Client due to issues beyond Acentech's control will be considered additional services and will be billed on a time and materials basis as outlined in paragraph B.1.

D. Payments

Invoices are due upon receipt. Client shall be responsible to Acentech for payments, and such obligation shall not be conditioned upon Client's receipt of payments from the Owner or any other party.

III. INSTRUMENTS OF SERVICE / OWNERSHIP OF DOCUMENTS

A. Ownership

Acentech shall be deemed the author and owner of all Instruments of Service, including drawings, reports and specifications, and shall retain all common law, statutory and other rights, including copyrights in such Instruments of Service, subject only to a limited, non-exclusive, non-transferable license to use the Instruments of Service solely in connection with the Project. Submission or distribution of Instruments of Service to meet official regulatory requirements or for similar purposes in connection with the Project is not to be construed as publication.

B. Do Not Distribute
The Client agrees not to use or distribute the Instruments of Services for future additions or alterations to this Project or any other project(s), and agrees not to make changes or modifications to such Instruments, without Acentech's express written consent. Acentech reserves the right to seek remedies for unauthorized use of Acentech documents.

C. Unauthorized Use
Unauthorized use or modification of the Documents by the Client will be at the Client's sole risk and without liability to Acentech or its Subconsultants. Client shall defend, indemnify, and hold harmless Acentech from and against any and all losses, claims, demands, liabilities, suits, actions, damages and expenses (including reasonable attorney's fees) arising out of or resulting from such unauthorized use or modification, including any expenses incurred by Acentech to enforce its rights hereunder.

IV. PUBLICITY

Acentech may publish its role in the Project unless otherwise directed by the Client.

V. INSURANCE AND LIMITATIONS OF LIABILITY

A. Acentech will furnish appropriate insurance certificates for general and professional liability upon request.

B. Acentech and the Client waive consequential damages, including but not limited to, damages for loss of profits, loss of revenue and loss of business, loss of business opportunities, for claims, disputes or other matters in question arising out of or relating to this Agreement. The Client agrees that Acentech's total aggregate liability to the Client or any third party for any and all injuries, claims, losses, expenses, or damages including reasonable attorney's fees, arising out of or in any way related to the Project or this Agreement from any cause or causes, including, but not limited to, ACENTECH'S AND/OR SUB- CONSULTANTS' NEGLIGENCE, ERRORS, OMISSIONS, STRICT LIABILITY OR BREACH OF CONTRACT, SHALL NOT EXCEED THE GREATER OF $25,000 OR TWO TIMES THE FEE FOR THE SERVICES PROVIDED BY ACENTECH UNDER THIS AGREEMENT.

C. Acentech and Client mutually agree, to the fullest extent permitted by law, to indemnify and hold each other harmless from any and all damage, liability or cost (including reasonable attorney's fees and defense costs) to the extent caused by their own negligent acts, errors or omissions and those of anyone for whom they are legally liable and arising from the Project that is the subject of this Agreement and due to their failure to perform their obligations hereunder.

D. Acentech shall not be in default of its obligations to the extent that its performance is delayed or prevented by causes beyond its control, including but not limited to acts of God, delays in delivery by vendors, and strikes or other labor disturbances.

VI. TERMINATION

Either party may terminate this Agreement in whole or in part at any time by written notice to the other; such notice is effective upon receipt. In the event of a termination initiated by the Client, Acentech shall be compensated in accordance with this Agreement for the services rendered and expenses incurred or committed to up to the effective date of notice of termination. The provisions of this Agreement that contemplate surviving the expiration or termination of this Agreement and the Services shall survive the completion of the Services and/or termination or expiration of this Agreement.

VII. GENERAL AGREEMENT

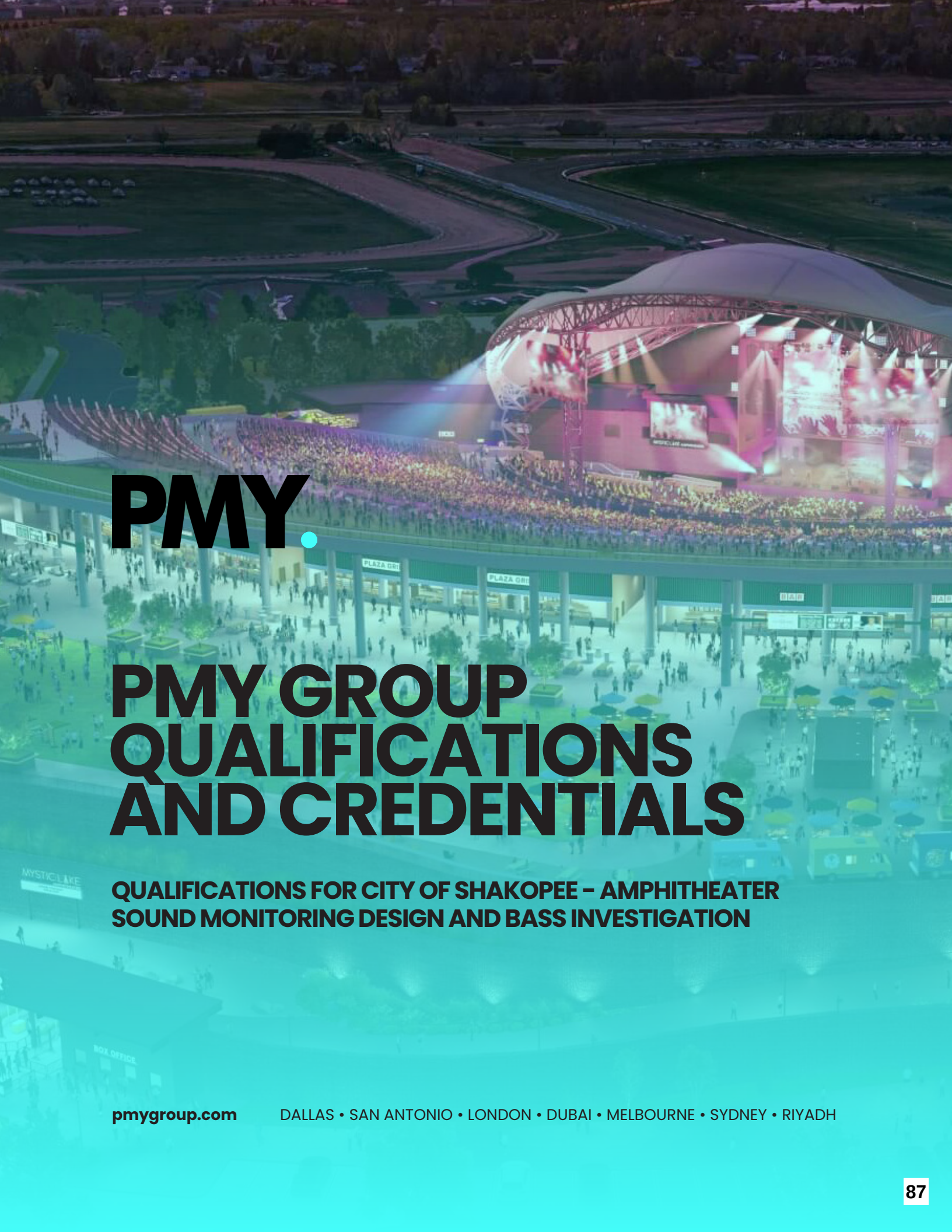
A. The Agreement between the parties consists solely of the Proposal and these Terms and Conditions and represents the entire agreement between the parties with respect to the Services and supersedes all prior agreements.

B. Governing Law
The substantive laws of the Commonwealth of Massachusetts shall govern any disputes between Acentech and the Client arising out of the interpretation and performance of this Agreement.

C. Mediation
Acentech and the Client agree that any disputes arising under this Agreement and the performance thereof shall be subject to nonbinding mediation as a prerequisite for further legal proceedings.

D. Certification
Acentech shall not be required to sign any documents that would result in Acentech's having to certify, guaranty or warrant the existence of conditions that would require knowledge, services or responsibilities beyond the proposed Scope of Services.

E. Relationship of Parties
In furnishing the Services, Acentech is acting as an independent contractor. The Parties do not intend to create a contract of agency, a joint venture or a partnership of any type. Acentech is not an agent of Client and has no authority to represent Client as to any matters, except as expressly authorized in the Agreement.



PMY.

PMY GROUP QUALIFICATIONS AND CREDENTIALS

QUALIFICATIONS FOR CITY OF SHAKOPEE – AMPHITHEATER SOUND MONITORING DESIGN AND BASS INVESTIGATION

FIRM OVERVIEW.
BRIEF HISTORY AND FIRM LEADERSHIP

A powerful global perspective, decades of experience, and deep local knowledge in key markets has established PMY as a trusted partner to the world's most prestigious venues, places, and major events. At PMY we offer cutting edge strategy, design, and operational services across the full technology ecosystem, fuelled by proprietary and bespoke intelligence solutions, and activated by our world class experience team.

Our deep expertise and vendor agnostic approach ensures short- and long-term benefits for you. We deliver all our solutions using a highly tailored and personalized approach and are focused on building long term mutually beneficial partnerships.

Since 2009, PMY Group has been at the forefront of technology, shaping live environments from behind the scenes to centre stage. Built on technology, driven by intelligence, and focused on enhancing the customer experience, our approach is grounded in collaboration, helping clients design and deliver solutions that enhance how people connect, experience, and engage. As the world continues to change, we evolve alongside it offering flexible, future-ready solutions that meet the needs of an increasingly dynamic landscape. At PMY Group, we exist to empower live environments, enabling smarter technology, deeper insights and captivating customer and brand experiences.

Through collaboration with WJHW, a PMY Company, the firm delivers integrated consulting services that span technology infrastructure, audiovisual systems, acoustics, theatrical and performance space design, and venue safety and security systems. WJHW's nationally recognized expertise in acoustics, audiovisual design, and performance venue consulting enhances PMY's ability to support instructional spaces, fine arts facilities, and multipurpose environments—particularly within sports and entertainment settings. Together, WJHW and PMY Group provide the experience, continuity, and depth of expertise necessary to support complex technology initiatives while remaining responsive to the day-to-day needs of sport and entertainment clients.

DESCRIPTION OF FIRM LEADERSHIP

- Paul Yeomans is the Founder and CEO of PMY Group.
- The firm has seven Board members who bring together a wealth of global expertise across technology, infrastructure, and business strategy.
- Their leadership and vision guide our mission to deliver innovative technology, creative and data solutions for major venues, events, and organisations worldwide.
- With deep industry experience and a commitment to driving sustainable growth, our board ensures PMY remains at the forefront of technological advancement and client success.
- Our Board of Directors have experience from well known companies such as Warner Bros., Amazon, IMG and Rio Tinto.

GREG HUGHES

PRINCIPAL | Acoustics & Noise Control



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ghughes@wjhw.com

23 Years of Experience, All with PMY

Greg Hughes brings over 20 years experience in the field of architectural acoustics and leads the acoustics division of PMY. Throughout his career, he has applied his knowledge and skills to a wide range of project types, including performance halls, educational institutions, public assembly spaces, arenas and sports facilities, hospitality, government and commercial projects. Greg holds a degree in Architectural Engineering which provides him with a strong foundation in both the technical and design aspects of building acoustics.

Concentrating on a collaborative approach and attention to detail, Greg consistently delivers tailored acoustic solutions that enhance the function and experience of each space. His deep understanding of building acoustics and related systems has made him a valuable consultant for architects, engineers, and clients across the industry.

EDUCATION:
BACHELOR OF SCIENCE, ARCHITECTURAL ENGINEERING; UNIVERSITY OF KANSAS, LAWRENCE, KANSAS, 2001

PROFESSIONAL ASSOCIATIONS:
ACOUSTICAL SOCIETY OF AMERICA

INSTITUTE OF NOISE CONTROL ENGINEERING

AVAILABILITY
15-18%

REPRESENTATIVE PROJECTS:

- ADDISON CIRCLE AMPHITHEATER | ADDISON, TEXAS
- ATHENS GEORGIA AMPHITHEATER | ATHENS, GEORGIA
- CLARK COUNTY AMPHITHEATER | RIDGEFIELD, WASHINGTON
- RIVER CITY COMMUNITY CHURCH AMPHITHEATER | SAN ANTONIO, TEXAS
- SUNKEN GARDENS AMPHITHEATER | SAN ANTONIO, TEXAS
- ALAMO COMMUNITY COLLEGE DISTRICT | NORTHEAST LAKEVIEW CAMPUS FINE ARTS BUILDING | SAN ANTONIO, TEXAS
- ALAMO COMMUNITY COLLEGE DISTRICT | NORTHWEST VISTA CAMPUS FINE ARTS BUILDING | SAN ANTONIO, TEXAS
- ALAMO COMMUNITY COLLEGE DISTRICT | PALO ALTO CAMPUS FINE ARTS BUILDING | SAN ANTONIO, TEXAS
- DEL MAR COLLEGE | FINE ARTS AND STUDIO | CORPUS CHRISTI, TEXAS
- HOWARD COLLEGE | FINE ARTS BUILDING | BIG SPRING, TEXAS
- LAMAR STATE COLLEGE | PERFORMING ARTS CENTER | BEAUMONT, TEXAS
- SAN JACINTO COLLEGE | RECORDING STUDIO | PASADENA, TEXAS
- SOUTHERN METHODIST UNIVERSITY | MCFARLAND MEMORIAL AUDITORIUM RENOVATION | DALLAS, TEXAS
- TARRANT COUNTY COLLEGE - NORTHEAST CAMPUS | PERFORMING ARTS CENTER | HURST, TEXAS
- TRINITY UNIVERSITY | RUTH TAYLOR ART & MUSIC CENTER | SAN ANTONIO, TEXAS
- WEST TEXAS A&M UNIVERSITY | FINE ARTS COMPLEX | CANYON, TEXAS
- COUSHATTA CASINO RESORT | KINDER, LOUISIANA
- GOLDEN NUGGET CASINO | LAS VEGAS, NEVADA

IRINEO JAIMES JR.

CONSULTANT | Acoustics

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ijaimes@wjhw.com
10 Years of Experience, <1 with PMY



Irineo Jaimes joined the firm in 2025 with more than ten years of experience in architectural, building, and environmental acoustics. His experience spans a diverse range of projects throughout South Florida and the U.S., including higher education campuses, worship spaces, amphitheaters, civic facilities, performing art centers, residential developments, healthcare facilities, and commercial projects. With a Bachelor of Science in Acoustics, Irineo uses his background to support multidisciplinary teams through all phases of building design including design reviews, acoustic modeling, data analysis, and evaluation of sound and noise control solutions.

EDUCATION:
BACHELOR OF SCIENCE, ACOUSTICS; COLUMBIA COLLEGE, CHICAGO, ILLINOIS, 2015

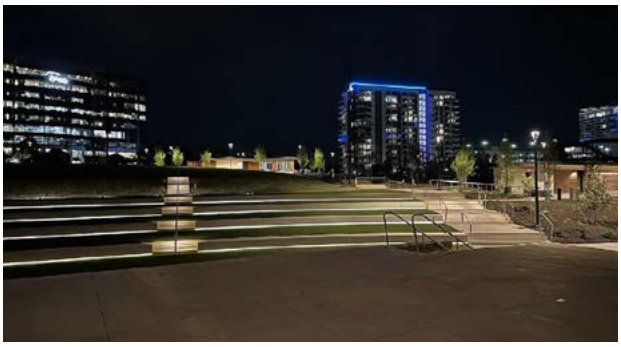
PROFESSIONAL ASSOCIATIONS:
ACOUSTICAL SOCIETY OF AMERICA

AVAILABILITY
15-18%

REPRESENTATIVE PROJECTS:

- FLORIDA OCEANOGRAPHIC COASTAL CENTER | STUART, FLORIDA*
- MDC NEW KEY BISCAYNE BRANCH LIBRARY | KEY BISCAYNE, FLORIDA*
- FEDERAL RESERVE MIAMI BEACH | DORAL, FLORIDA*
- INDIAN RIVER COUNTY COURTHOUSE | VERO BEACH, FLORIDA*
- BROWARD COUNTY GOVERNMENT CENTER | FORT LAUDERDALE, FLORIDA*
- PALM BEACH GARDENS CITY HALL | PALM BEACH GARDENS, FLORIDA*
- AMAZON | WASHINGTON, D.C.
- FACEBOOK MIAMI HEADQUARTERS | MIAMI, FLORIDA*
- MICROSOFT MIAMI HEADQUARTERS | MIAMI, FLORIDA*
- JW MARRIOTT MARCO ISLAND BEACH RESORT | MARCO ISLAND, FLORIDA*
- KING JESUS HOUSE OF PRAYER | MIAMI, FLORIDA*
- BAGATELLE MIAMI BEACH | MIAMI BEACH, FLORIDA*
- EARLS KITCHEN AND BAR | EDMONTON, ALBERTA, CANADA*
- E11EVEN MIAMI NIGHTCLUB | MIAMI, FLORIDA*
- PBAU BUSINESS SCHOOL | WEST PALM BEACH, FLORIDA*
- UNIVERSITY OF FLORIDA HEALTH JACKSONVILLE | JACKSONVILLE, FLORIDA*
- UNIVERSITY OF MIAMI | FIRST YEAR CENTENNIAL VILLAGE | CORAL GABLES, FLORIDA*
- UNIVERSITY OF MIAMI | COLLEGE OF LAW | CORAL GABLES, FLORIDA*
- AUDUBON COUNTRY CLUB | PALM BEACH GARDENS, FLORIDA*
- MARINER SANDS COUNTRY CLUB | HOPE SOUND, FLORIDA*







BALLANTYNE AMPHITHEATER

BALLANTYNE, NORTH CAROLINA

PROJECT OVERVIEW

Ballantyne is an iconic large format amphitheater integrated with retail district development including mixed use and ad-hoc retail space as well as future dining development on-site. The project was developed to be a turnkey facility operating with limited full-time staff for use with daily and weekly events but attractive for use as a rental space with groups such as live nation monetizing the space with crowd traffic and performance support built in from day one.
A comprehensive and powerful AV system including high performance sound, environment acoustical design, and theatrical lighting integrated with areal and architectural lighting for seamless control are provided with a simple "push button" control to allow momentary setup of anything from "yoga moms" to "a fully fledged music performance by a band or ensemble". A fully developed ICT system for IT and Security/Access control locally and fully connected with the larger developed district were developed and deployed as well.
Acoustical design and support ensured that adjacent high density residential and hotel developments are not adversely impacted by the permanent system and performance guidelines were developed larger events to limit impacts and adhere to local codes.

SCOPE OF DESIGN SERVICES

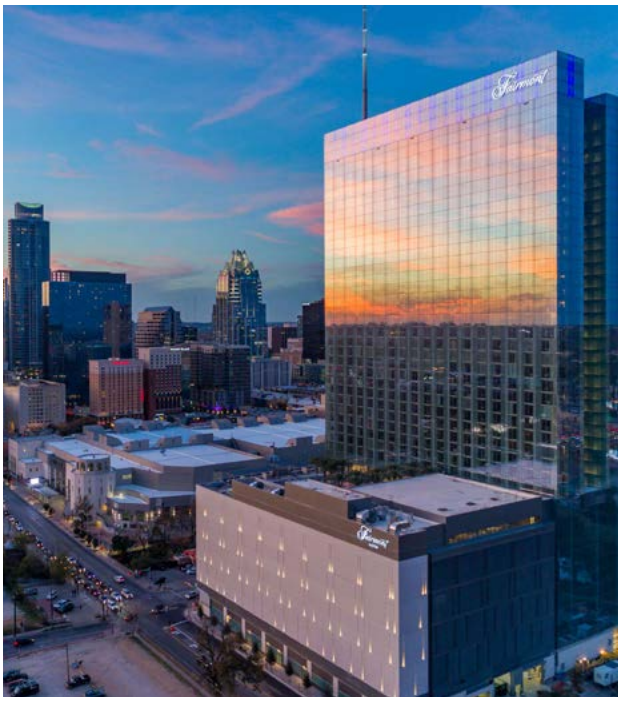
- Amphitheater Planning & Consulting
- Audio-Visual Systems
- Sound Systems
- Intercomm Systems
- Rigging Systems
- Performance Lighting & Controls
- WJHW Coordinated:
- Security/Access Control Systems
- Acoustics Consulting & Design
- Environmental Acoustics Design

PROJECT KEY FACTS

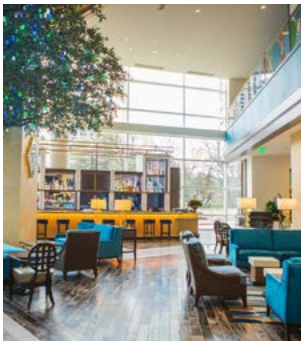
New Construction
Capacity for up to 3,500
Covered Stage
Completed in 2023

KEY PERSONNEL

Charles Adkinson and Fritz Schwentker.









FAIRMONT AUSTIN

AUSTIN, TEXAS

PROJECT OVERVIEW

An icon of the Central Business District, Fairmont Austin is located in downtown Austin and the largest of the Fairmont hotel chain. The 37-story luxury hotel features 1,048 guests rooms and suites. PMY provided design and consulting services throughout the hotel for acoustics, vibration, and noise control, structured cabling systems, facility monitoring, lighting control systems, audio-visual, sound, distributed TV/CATV, and background music systems.

KEY PERSONNEL

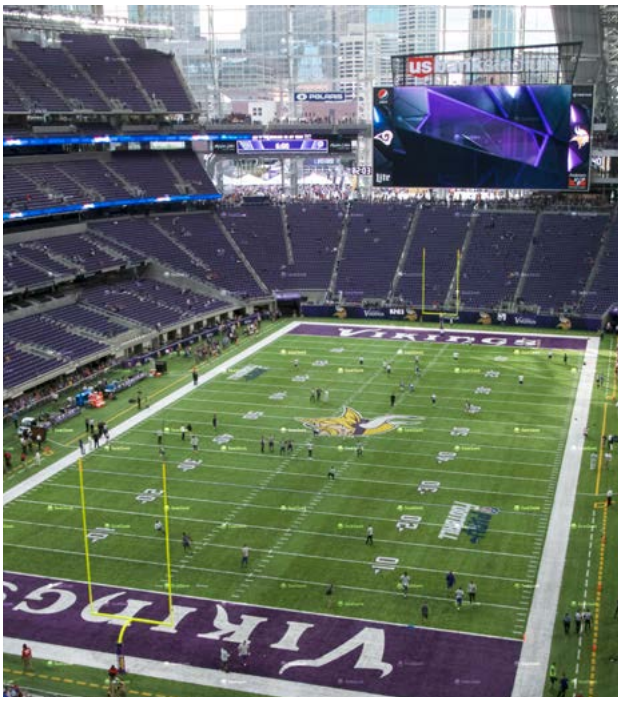
Fritz Schwetker, Greg Hughes, and Christopher Ainley.

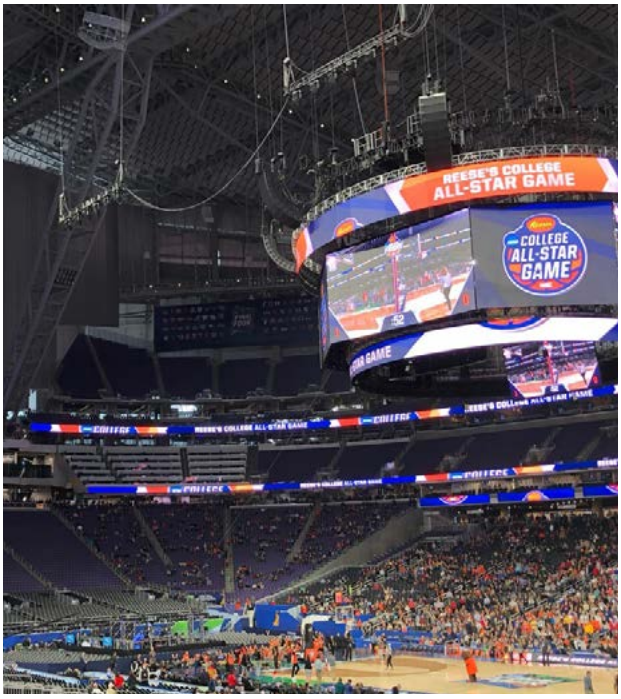
SCOPE OF DESIGN SERVICES

- Audio-Visual Systems
- Sound System Design
- Background Music Systems
- Acoustics, Noise, & Vibration Control
- Structured Cabling Systems
- Lighting Controls
- Video Surveillance & Access Control Systems (Facility Monitoring)
- Distributed TV & CATV Systems

PROJECT KEY FACTS

Luxury Hotel	
Number of Rooms	1,048
Construction Cost	$247 Million
Completed	March 2018





U.S. BANK STADIUM MINNESOTA VIKINGS

MINNEAPOLIS, MINNESOTA

PROJECT OVERVIEW

The new Vikings fixed roof stadium opened in 2016 with a project cost of $1 billion. The stadium will have 65,000 seats, expandable to 72,000 . WJHW is providing design for sound systems, audio/visual systems, distributed video/satellite systems, broadcast cable systems and provisions, scoreboard/video display, video replay system, IT structured cabling systems, Telecom/Data Equipment, high density Wi-Fi and neutral host DAS, onsite production studio facilities, coaching video system infrastructure, video surveillance systems and access control as well as well as recommendations for acoustics, noise and vibration control throughout the stadium.

KEY PERSONNEL

Jack Wrightson.

SCOPE OF DESIGN SERVICES

- Sound System Design
- Broadcast Cable Systems & Provisions
- Scoreboard/Video Display Systems
- Video Coaching Systems
- Audio/Visual Systems
- Distributed TV & Satellite Systems
- Tel/Data Structured Cabling
- Recommendations for Acoustics, Noise & Vibration Control

PROJECT KEY FACTS

Capacity:

Standard	65,000
Expandable	72,000

New Construction
$1 Billion Construction Cost

REFERENCES.

- **Clifton Coble, Senior Vice President, Development - Northwood Office**
  Ballantyne Amphitheater
  P: 704.248.2000
  E: ccoble@northwoodoffice.com
- **Ted Chuckmala, Executive Director, Regional Technology - ACCOR Hotels**
  Fairmont Austin
  P: 416.874.2570
  E: ted.chuckmala@accor.com
- **Kemal Dodds, MBA, Director of Broadcast and Production - U.S. Bank Stadium, ASM Global**
  U.S. Bank Stadium
  P: 612.777.8744
  E: kemal.dodds@usbankstadium.com

PMY.

PROPOSAL FOR TECHNOLOGY CONSULTING SERVICES FOR

CITY OF SHAKOPEE AMPHITHEATER SOUND MONITORING DESIGN AND BASS INVESTIGATION

OCTOBER 27, 2026

PREPARED FOR:

City of Shakopee, MN

SHAKOPEE

PREPARED BY:

Jiggs Lee – Senior Consultant
Greg Hughes – Principal, Acoustics
Todd Semple – Principal, Practice Leader
Fritz Schwentker – Principal Theatre Consultant
Shelby Jurca – Marketing Coordinator

INTRODUCTION

The City of Shakopee Planning & Development has requested that **PMY** (the Consultant, or PMY) provide a technology design and consulting proposal for **Amphitheater Sound Monitoring Design and Bass Investigation of the Mystic Lake Amphitheater at Canterbury Commons.** The Consultant's proposed services include services specified in the City's RFP, dated October 6, 2026.

For this project, PMY has engaged its highly qualified Acoustics division of **WJHW, Inc.** (a PMY company) from Carrollton, Texas.

As part of this consulting scope, PMY/WJHW shall work closely with the Owner's representatives and stakeholders and adhere to the project's specific needs and design requirements.

The project contains the following tasks:

Project Scope and Work Plan

- Task 1 – Review and Investigation Plan
- Task 2 – Field Measurements and Source Attribution

Bass Investigation and Mitigation

- Task 3 – Diagnose the Reported Impacts
- Task 4 – Recommend and Test Mitigation

Placement of Ten Permanent Monitors

- Task 5 – Develop and Validate the Network Layout

Equipment Evaluation and Brand Recommendation

- Task 6 – Compare Systems and select a preferred configuration

Operating Procedures and Commissioning

- Task 7 – Prepare the Operating Manual
- Task 8 – Commission and Train

Michael Kerski
Director of Planning & Development
City Of Shakopee
485 Gorman Street
Shakopee, MN 55379

VIA EMAIL: mkerski@shakopeemn.com

Subject: **Mystic Lake Amphitheater at Canterbury Commons**
Proposal for Amphitheater Sound Monitoring Design & Bass Investigation

Dear Mr. Kerski:

Thank you for requesting this proposal for acoustic design and consulting services for the Mystic Lake Amphitheater at Canterbury Commons.

PMY and WJHW, Inc. are pleased to have the opportunity to work with you on this project. This proposal represents our current understanding of the project and the required scope. If you feel we have misunderstood the requirements or scope for work, we would be pleased to revise this proposal upon request.

PROJECT UNDERSTANDING

We understand the project to include the investigation of low frequency sound emissions from the Mystic Lake Amphitheater to local community spaces. The scope of the project is to evaluate reported neighborhood impacts including window and building-component vibrations, recommended practical mitigation, and a design for permanent outdoor sound monitors for decibel and bass monitoring. Additionally, efforts are required to determine maximum allowable decibel levels generated within the venue to mitigate bass impacts on the surrounding areas as well as potential changes or improvements to the sound system and operations at the venue.

PROJECT SCOPE AND WORK PLAN

Task 1: Review and Investigation Plan

The first task is to review available sound studies, approvals, operating conditions, complaint records, prior measurements, terrain and building date, and sound system information related to the Amphitheatre and surrounding community. Further, identify information gaps and prepare a City-approved work plan before field deployment,

and review applicable measurement requirements with City Staff and identify standards and editions proposed for each analysis.

We will:

- Map reported impacts by location, date, time, and description. Include areas within approximately one mile of the venue and other affected distances and directions (one mile is not specifically the study boundary)
- Review previous subwoofer locations and configuration, loudspeaker orientation, available processing and limiter settings, and sound-check procedures. As part of this effort, time-synchronized venue reference measurements and operation logs will be requested, subject to operator access.
- Define sampling locations instrument capabilities, calibration procedures, weather criteria, source-identification methods, and uncertainty. A report will be generated summarizing the study conditions and describing how bass impact on residential homes and other outdoor conditions well be assessed.

Task 2: Field Measurements and Source Attribution

Task 2 will involve the review and monitoring of field acoustic measurements at and around the Amphitheater area. Based on the findings in Task 1, additional noise monitoring requirements may be recommended.

We will:

- Evaluate the current sound system noise emissions via SoundPLAN modeling based on the design documents for the Amphitheater, including Amphitheater buildings, sound system configuration, assumed concert spectral content, and surrounding community buildings and environmental configurations
- Provide at least four (4) temporary noise monitoring stations within the community based on our findings in the SoundPLAN modeling. Monitoring stations will be deployed for up to three (3) months to gather ambient sound levels as well as event sound levels
- Attend at least three (3) concerts to observe operations, monitor noise at the mix position, and establish conditions related to the use and operation of the facility related to acoustics and noise emissions to the surrounding community
- Provide a written summary of the current observed conditions and operations including noise monitoring from Live Nation and PMY/WJHW, event noise levels,

ambient noise levels, one-third octave sound levels, statistical noise metrics, and any other information required to describe the current operations of the facility
- Hold one coordinated sound-system test session of up to four (4) hours with simultaneous neighborhood acoustic measurements to measure proposed mitigation and to provide initial recommendations for noise reduction
- Provide a summary document of the noise monitoring, operations, and noise mitigation testing

Task 3: Diagnose Reported Noise Impacts

Task 3 will include the efforts to analyze the measured field data collected in Task 2 with a report summarizing the findings, including measured noise levels, atmospheric conditions, impact on the surrounding community, and subjective response to noise emissions from the Amphitheater.

We will:

- Collect synchronized A- and C-weighted sound level data and unweighted one-third octave spectra, covering at least the 20-200 Hz frequency range for bass analysis with wider frequencies for source identification. Frequencies as low as 10-16 Hz will be evaluated where warranted and disclosure will be made of instrument response, self-noise, and wind limitations at the lowest frequencies.
- Review weather, including wind speed and direction, temperature, humidity, and precipitation. Assessments will be made of weather-related propagation, terrain, reflections, and competing sources such as traffic aircraft, mechanical equipment, and local activity impact noise measurements.
- Distinguish between audibility, annoyance, perceptible vibration, rattling, and any separate question of structural effects. A report will be provided explaining the findings as well as limitations of published criteria.

Task 4: Recommendations and Testing Mitigation

As part of Task 4, evaluate potential options for noise mitigation related to the sound system design, operation, and orientation. These mitigation efforts would be tested under controlled environments to determine effectiveness of the mitigation options.

We will:

- Evaluate the feasible changes to subwoofer placement and direction arrays, orientation, delay and phase alignment, equalization, low-frequency roll-off, frequency-specific limiters, and operating procedures. Barriers or enclosures will be evaluated only if a likely low-frequency effective solution can be supported.
- Use controlled testing to compare agreed operating configurations with documentation of the bass reduction at the selected neighborhood locations. Measured results will be compared to modelled or estimated benefits and will include effects on audience coverage, operator feasibility, and any changes to noise transmission to other neighborhoods.
- Provide a prioritized mitigation matrix identifying each measure, responsible party, estimated capital and operating cost, expected reduction by frequency band at stated locations, implementation timing, confidence, and verification method. Recommendations for immediate operating changes and longer-term improvements will be provided to support the acoustic findings.
- Recommendations for diagnostic or operational alert levels will be provided with associated measurement location, averaging period, basis, and response procedure. Comments will distinguish between proposed alerts and adopted enforceable limits.

Task 5: Permanent Monitoring – Develop and Validate Network Layout

Task 5 includes the evaluation and recommendations for ten (10) outdoor monitoring stations within the neighborhood receiving areas. This effort will include the evaluations of the systems, including equipment, weather instruments, space equipment, or portable instruments, for monitoring noise emissions to the community. Further, locations for field measurement stations will include complaint patterns, populated areas, terrain, sound-system directionality, weather exposure, and instrument installation feasibility.

We will:

- Provide a georeferenced map identifying locations for locations 1 through 10, affected neighborhoods, venue orientation, relevant distances, and coverage gaps. A description of the purpose and area represented by each monitoring location will be provided in writing.
- Provide a site sheet with coordinates, pole or parcel identification, photographs, proposed microphone height and offset, mounting details, nearby reflective surfaces, unrelated noise sources, and maintenance access for each monitoring station.
- Review solar power, communication signal testing, outage buffering, winter operation, vandalism exposure, installation cost, and required permissions or permits for each monitoring station location. Alternative locations will be recommended where utility power is unavailable.
- Provide one alternative mounting location for each monitoring station with a written list of trade-offs.
- Use temporary measurements along with identified calls from residents to validate all ten (10) proposed measurement sites.
- Specify mounting isolation and details to prevent pole or hardware vibration from impacting acoustic measurements and readings.
- Recommend number and location of weather instruments necessary to describe network readings. A description of the limitations of relying on one weather station or remote weather feed will be provided. Weather stations to include remote feed for document access, time synchronization, calibration, and continuity arrangements.
- Provide a report identifying the preferred site acoustic monitoring locations and their alternates as w ell as site access approval or live-event validation.

Task 6: Compare Systems and Select Preferred Configuration

For Task 6, a comparison of at least three (3) commercially available sound monitoring systems will be explored with a recommendation for one specific brand and model, outdoor microphone configuration, required licenses, communications equipment, weather integration, and cloud or local software platform. One alternative to the preferred system will be identified. A scored matrix will be developed comparing matrix supported by current manufacturer documentation, demonstrations or sample

data, reference installations, and budgetary quotations. Any reseller relationships, commissions, and other financial interests will be disclosed with the documentation.

We will:

- Evaluate the commercial sound monitoring systems based on the criteria described
    - Class 1 measurement performance per IEC 61672 with one-third octave filter under applicable IEC 61260 requirements; verification of the complete system – including microphone, weather enclosure, and instrument configuration – to meet the standards outlined
    - Simultaneous A- and C-weighted equivalent levels, appropriate maxima, and stored unweighted one-third octave spectra covering at least 20-200 Hz; extension to 10-16 Hz will be evaluated
    - One-second logging and configurable reporting intervals, statistical metrics (e.g. L10, L90), synchronized weather records, and clear flags for invalid data, overloads, calibration, and communication gaps
    - Suitability for year-round use in Minnesota including documented operating temperature, moisture and icing protection, windscreen performance, power and communications reliability, local storage during outages, remote health alerts, and safe firmware updates
    - Remote display of all ten (10) monitoring stations, frequency specific alerts, configurable staff access, ease of exports, and useable investigation reports
    - Ability to record anomaly events (audio recordings)
    - City ownership and continuing access to original measurements, processed results, settings, and metadata
    - Calibration and verification procedures, service availability, warranty, replacement parts, repair turnaround, expected service life, training and references for comparable permanent outdoor installations

- Provide an itemized capital cost for ten (1) complete noise monitoring stations, annual operating cost, and five year total ownership cost including software, cellular service, storage, calibration, maintenance, replacements, training, and identified taxes or shipping.
- Provide performance specifications for an equivalent-product review method for subsequent City purchasing process.

Task 7: Prepare Operating Manual

Task 7 will include the written procedures that City staff can use to operate the network, investigate complaints, and explain results. This is to include configuration files or setting schedules, calibration checks, data validation, handling of outages and weather contamination, and periodic maintenance responsibilities.

We will:

- Create a workflow to align resident reports with sound, bass spectra, weather, and venue records with definition of how staff will flag unrelated sources and preserve the original data, corrections, exclusions, and audit trail.
- Provide concert and monthly reporting templates with maps, trends, frequency-band results, valid-data coverage, uncertainty, and plain-language findings
- Set recommended retention, access, security, and export procedures

Task 8: Commissioning and Training

Task 8 will include the commissioning of the sound monitoring systems and training of City staff after the installation of the equipment (by others).

We will:

- Inspect all ten (10) sound monitoring station locations and verify microphone placement, configuration, calibration, time synchronization, communications, weather integration, data buffering, alerts, exports, and user access. Deficiencies will be documented with indication of responsible party for correction
- Attend one (1) concert for network validation and two (2) diagnostic events; for these events, compare permanent readings with simultaneous portable (spot) measurements at representative residential locations, confirm station behavior, and document any remaining coverage limitations
- Complete a minimum seven-day operational check of all ten stations, report valid-data availability, interruptions, and corrective actions
- Provide a written commissioning report and updated site inventory
- Complete one (1) in-person training session for City staff

Optional Services

The following optional services may be provided as an additional service for an agreed upon fee.

- Additional concert or residential testing
- Additional controlled testing or baseline monitoring
- Additional sound propagation modelling, based on significant changes to proposed mitigation or system changes
- Noise mitigation plan for the Amphitheater
- Structural engineering assessment
- Procurement assistance and installation oversight for noise monitoring stations
- Ongoing seasonal analysis and/or assessment
- Attendance at public meetings
- Development of public dashboard

TECHNICAL APPROACH

PMY/WJHW will approach the technical assessment, mitigation options, and permanent noise monitoring at the Amphitheater by breaking down the work into individual tasks as outlined in the RFP. The approach will be to identify and quantitate the impacts of the noise emissions in order to evaluate appropriate steps to mitigate noise emissions and monitor the success of the solutions put in place. These will include:

Task 1: Evaluate the existing conditions including the areas impacted, the causes of increased noise impact (such as system use and configuration, atmospheric conditions, and terrain), and potential frequency distribution of evaluated acts. Based on the information gathered, a field study will be developed to best evaluate real-time noise emissions and potential improvements which may resolve issues observed by the surrounding community. This field plan will be presented in writing to the City for review and input prior to implementation.

Task 2: Based on the discovery information and field testing plan approved, a series of temporary noise monitoring stations will be deployed for long term noise measurements. PMY/WJHW will conduct local "spot" measurements in the community during specific events, including at the Amphitheater and at surrounding residential properties. Where practical and approved, measurements on residential properties may occur – including interior noise and vibration measurements. Approval of residential

measurements will be on a volunteer basis as part of a community outreach related to the noise assessments. A final report will be issued to the City to include documentation of our methodologies, results, and observed relationship between concert activities and community impact.

Task 3: A thorough review of the measured noise and vibration with analysis of the contribution of low frequency sound on the community and relevant vibration analysis related to concert activities. An assessment will be made of the likely sources, transmission pathways, affected areas and operating conditions which have the greatest impact on the community. This analysis will inform potential noise mitigation strategies which can be implemented, broken into immediate remedies versus future design or operational considerations. A written report will be provided to the City for consideration and discussion on best path forward for noise mitigation and the likely improvements which can be expected for the community.

Task 4: Efforts will be made to evaluate the practical improvements suggested for noise mitigation. SoundPLAN, an industry standard environmental sound prediction software, will be implemented to understand the improvements for suggested noise mitigation. The results of these analyses will be presented to the City in a written report summarizing the strategy and anticipated impact on the surrounding community. Where practical, these efforts can be implemented for testing at the Amphitheater and acoustic measurements can be made to determine if specific solutions can be implemented immediately.

Task 5: Based on the information gathered to date, a network of sound monitoring stations can be evaluated to determine the best or most suitable locations to monitor Amphitheater noise emissions. Option for location will be presented for discussion with the City to determine how the network should be optimized for monitoring, maintenance, and operational considerations. Feedback from the City and community will be used to adjust the monitoring station locations to best serve the community. A final station layout will be presented including specific location, mounting condition, communications and power requirements, and rationale. A budget will be established for the monitoring stations.

Tasks 6: Sound monitoring systems will be evaluated and ranked for City considerations based on the outlined requirements for the systems. A review of the systems will be presented as a matrix for appropriate considerations listed for analysis. A

recommendation will be provided based on the overall functionality and appropriateness of the systems.

Task 7: Based on the final assessments of the monitoring systems and a final selection of the preferred system(s), an operating manual will be developed for the City to use in operations. This will include a written document to be used for operations and training of City staff, templates for reports as required, data management, and for compliance assessments.

Task 8: Upon completion of the noise monitoring system installation, commissioning of the systems will be completed by PMY/WJHW staff. This will include verifications, instrument configurations, functional checks, and noise measurement consistency evaluations. Where corrections are required, installers will be notified or corrections in configurations will be made to meet the specifications of the selected units. City staff will be trained in one (1) or two (2) sessions determined by the City requirements on the operations, maintenance, and corrective actions necessary to operate the equipment efficiently and effectively. A final commissioning report will be provided to the City for their use and review. An inventory report will also be provided for records.

As the concert series for an outdoor Amphitheater is generally conducted through the summer months, coordination will be provided to ensure equipment and man-power is provided to be prepared for the 2027 concert season. Task 1 is anticipated to occur through the early months of 2027 with a written report and field evaluation strategy to be presented prior to the 2027 season. Initial field evaluations will occur during the early portion of the concert season, depending on the number of concerts as well as time of occurrence. Evaluation will continue through midsummer with noise mitigation strategies presented and tested prior to the end of the concert season. Permanent noise monitoring stations will be installed upon acceptance of the proposed systems and availability of the equipment at the time of purchase. The anticipation is all monitoring systems will be in place with final commissioning and training prior to the 2028 concert season.

INDEPENDENCE AND EXCEPTIONS

As part of PMY, WJHW, Inc. is an independent technology and acoustics consultancy with no ties to specific manufacturers, representatives, installers, developers, operators, or suppliers.

SCHEDULE

PMY/WJHW has the staffing and technical resources available to provide consulting and design services within the current project schedule.

DESIGN AND CONSULTING FEES

We propose to perform the design efforts described in this proposal on an hourly basis for following fixed fee shown below plus reimbursable expenses. Fees will be billed monthly based on percent completion of the project.

This fee indicates a level of professional service which is consistent with our past work on similarly sized facilities.

Task	Fee
Task 1: *Review and Investigation Plan*	$ 22,000
Task 2: *Field Measurement and Source Attribution*	$ 110,000
Task 3: *Diagnose Reported Noise Impacts*	$ 32,000
Task 4: *Recommendations and Testing Mitigations*	$ 48,000
Task 5: *Permanent Monitoring - Develop and Validate Network Layout*	$ 38,000
Task 6: *Compare Systems and Select Preferred Configuration*	$ 16,000
Task 7: *Prepare Operating Manual*	$ 18,000
Task 8: *Commissioning and Training*	$ 35,000
TOTAL:	**$ 319,000**

- PMY/WJHW reserves the right to renegotiate our fee estimates should the project's final program, design direction, and/or scope differ from what is outlined in this proposal.
- Reimbursable expenses will be charged at our expense and include, but are not limited to, coach airfare, hotel, parking, subsistence, and mileage at current IRS rates.

- **EXCLUSIONS**
- Any services not specifically described in our scope of services as basic services are specifically excluded from the services that PMY/WJHW will provide on this assignment.

OTHER PROJECT PROVISIONS

STANDARD OF CARE

- PMY/WJHW will endeavor to perform our services in accordance with generally accepted standards of practice in effect at the time of performance. PMY/WJHW owes no fiduciary responsibility to any party involved in this agreement.

PROFESSIONAL SEAL

- There is no "seal" for our design services; therefore, the contract documents produced will not be sealed by PMY/WJHW.

RE-DESIGN

- PMY/WJHW will perform programming, analysis and design work one time. If we are requested to provide re-design or value engineering changes, after our design is issued for bid and/or incorporated, due to something beyond our control (change in overall project budget, changes based on Owner's request, etc.), we would be pleased to comply on an additional services basis, either hourly or for a negotiated fee.

INSURANCE:

- PMY/WJHW carries Professional Liability, General Liability and Workers Compensation in accordance with typical requirements, and will, upon request, provide a certificate of insurance. Increases in insurance coverage limits beyond these limits which are carried by PMY/WJHW as directed by Architect or Owner can be added to our proposal as a line item or invoiced as a reimbursable expense.
- Our coverage amounts and limits are:

Coverage Type	Per Occurrence	Aggregate/Limit
General Liability	$2,000,000	$4,000,000
Automobile	$1,000,000	NA
Umbrella	$10,000,000	$10,000,000
Workers Comp	$1,000,000	$1,000,000
Professional Liability	$3,000,000	$3,000,000
Cyber Liability	$5,000,000	$5,000,000

- These fees are based on our best assessment of the needs of the project. If our understanding of the scope requires modification, please let us know; we will work with you on a changed scope of services and fee structure.

Thank you for the opportunity to be of service. Please let me know if you have any questions or need further information.

Best Regards,
WJHW, INC.



Greg Hughes
Principal

ACCEPTED:

_____
By

_____
Title

_____
Date

Shakopee Economic Development Authority
November 4, 2026

4.b

Agenda Item: First Amendment to Contract for Private Redevelopment - Mystic Lake Amphitheater
Prepared by: Michael Kerski, Planning and Development Director
Reviewed by: Michael Kerski

Action to be considered:
Approve

Motion Type:
Simple Majority

Background:

On July 7, 2023, the City of Shakopee, the EDA, and Bloomington Investments, LLC entered into a redevelopment agreement supporting construction of the approximately 19,000-seat Mystic Lake Amphitheater at Canterbury Park.

The agreement established the responsibilities of the parties regarding development of the amphitheater, construction of supporting infrastructure and parking facilities, and the use of tax increment financing (TIF) to reimburse certain eligible redevelopment costs.

As part of the original development arrangement, the developer constructed a public parking lot and subsequently conveyed the property to the EDA for $1. The parking lot provides parking for amphitheater events while remaining available for free public use when not reserved for events. The lot has been deeded to the EDA.

Now that the amphitheater and associated parking facilities have been constructed, the parties have negotiated an amendment to clarify the financial arrangements, parking lot ownership provisions, and ongoing responsibilities of the developer.

Summary of Proposed Amendment

The First Amendment makes several modifications to the original redevelopment agreement.

1. Parking Lot Reimbursement

The EDA will reimburse Bloomington Investments, LLC $1 million for eligible public redevelopment costs associated with the project. The payment will be made from the previously approved $6.3 million interfund loan established for the redevelopment project.

The developer has already incurred and paid eligible public redevelopment costs of at least $1 million. The amendment requires the reimbursement to be paid within 30 days of the effective date.

2. Continued Public Parking

The parking lot is owned by the EDA and will remain available for free public parking except when reserved for amphitheater events.

The existing license agreement allows the amphitheater operator exclusive use of the parking lot for up to 75 days annually.

Additional dates may be authorized through an amendment to the license agreement.

This arrangement provides parking for major events while maintaining the property as a public parking resource throughout the remainder of the year.

3. Parking Lot Repurchase Option

The amendment establishes a process allowing the developer to repurchase the parking lot from the EDA.

If the developer exercises this option, the repurchase price will be based on the remaining unamortized portion of the $1 million reimbursement, calculated over a ten-year period.

For example:

- After one year, the repurchase price would be $900,000.
- After five years, the repurchase price would be approximately $500,000.
- After ten years, the repurchase price would be $1.

Any future change in the use of the property would remain subject to applicable City zoning, subdivision regulations, and planned unit development requirements.

4. Tax Increment Financing

The amendment clarifies that the EDA may use tax increment generated by the redevelopment district to reimburse the interfund loan associated with the parking lot payment.

Following reimbursement of the interfund loan for this payment, the EDA may use any remaining eligible tax increment for other authorized purposes under the TIF plan or terminate the district.

5. Developer Responsibilities and Default Provisions

The amendment maintains the developer's responsibility for payment of property taxes and continued maintenance of the amphitheater improvements and the lot.

It also updates the contractual remedies available to the City and EDA in the event of a default, including provisions applicable after issuance of a certificate of completion.

Financial Impact

The amendment authorizes payment of $1 million to Bloomington Investments, LLC from the EDA's previously approved $6.3 million interfund loan.

The payment represents reimbursement for eligible redevelopment costs already incurred by the developer rather than funding for additional construction.

The amendment also establishes a mechanism for recovering a portion of the reimbursement should the developer repurchase the parking lot within the first ten years.

The EDA anticipates using eligible tax increment revenues generated within Redevelopment TIF District No. 18 to reimburse the interfund loan.

The amendment also addresses the allocation of any property taxes imposed as a result of the developer's private use of the publicly owned parking lot.

The Mystic Lake Amphitheater represents a significant private investment in Shakopee's entertainment and tourism economy. The project has established Canterbury Park as a major regional entertainment destination and supports additional economic development opportunities in the surrounding area.

The proposed amendment updates the original redevelopment agreement to reflect the completed parking improvements, establishes the final reimbursement arrangement, preserves public access to the parking lot when it is not being used for events, and clarifies the ongoing responsibilities of the parties.

Recommendation:

Approve the First Amendment to the Contract for Private Redevelopment between the City of Shakopee, the Shakopee Economic Development Authority (EDA), and Bloomington Investments, LLC, related to the Mystic Lake Amphitheater and associated public parking facilities.

Budget Impact:
Payment now will save the EDA and city money since the TIF note was a 7%.

Attachments:
Parking Lot Amendment.docx

FIRST AMENDMENT TO CONTRACT FOR PRIVATE REDEVELOPMENT

BY AND AMONG

ECONOMIC DEVELOPMENT AUTHORITY FOR THE

CITY OF SHAKOPEE, MINNESOTA

CITY OF SHAKOPEE, MINNESOTA AND

BLOOMINGTON INVESTMENTS, LLC

This document drafted by:

Kennedy & Graven, Chartered
150 South Fifth Street
Suite 700
Minneapolis, MN 55402
(612) 337-9300 (RHB)

FIRST AMENDMENT TO CONTRACT FOR PRIVATE REDEVELOPMENT

This First Amendment to Contract for Private Development (the "First Amendment") is made this ____ day of _____, 2026 (the "First Amendment Effective Date"), by and among the Economic Development Authority for the City of Shakopee, Minnesota, a public body corporate and politic under the laws of the State of Minnesota (the "Authority"); the City of Shakopee, a statutory city and political subdivision of the State of Minnesota (the "City") and Bloomington Investments, LLC, a Minnesota limited liability company (the "Redeveloper"), each a "Party" and, collectively, the "Parties."

RECITALS

WHEREAS, the Authority, the City and the Redeveloper previously entered into a Contract for Private Development (the "Agreement") dated July 7, 2023, and which was recorded on August 10, 2023, as doc. no. A1177781 in the office of the County Recorder in Scott County, Minnesota, and on August 10, 2023 as Document No. T281566 in the Office of Registrar of Titles in Scott County, Minnesota concerning the property legally described on Exhibit A, attached hereto; and

WHEREAS, the Authority, City and the Redeveloper wish to modify the Agreement as provided in this First Amendment.

AGREEMENT

In consideration of the promises made by and among the Authority, the City and the Redeveloper, the Parties agree to amend the Agreement to read as follows:

1. The Table of contents is amended to read as follows:

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2. Section 1.1 Definitions is amended to read as follows:

"Additional Property" means the property legally described in EXHIBIT B attached hereto.

"Agreement" means this Contract for Private Redevelopment, as the same may be from time to time modified, amended, or supplemented.

"Authority" means the Economic Development Authority for the City of Shakopee, Minnesota.

"Authority Property" means the property legally described in EXHIBIT A attached hereto.

"Authority Property Purchase Price" has the meaning set forth in Section 3.2 hereof.

"Authority Representative" means the Executive Director of the Authority.

"Available Tax Increment" means, on each Payment Date, the Tax Increment attributable to the Tax Increment Property and paid to the Authority by the County in the six (6) months preceding the Payment Date after first deducting therefrom ten percent (10%) of the Tax Increment to be used to reimburse the Authority for administrative expenses. Available Tax Increment shall not include any Tax Increment if, as of any Payment Date, there is an uncured Event of Default under this Agreement.

"Board" means the Board of Commissioners of the Authority.

"Business Subsidy Act" means Minnesota Statutes, Sections 116J.993 to 116J.995, as amended.

"Certificate of Completion" means the certification provided to the Redeveloper pursuant to Section 4.4 hereof and set forth in EXHIBIT D.

"City" means the City of Shakopee, Minnesota.

"City Council" means the City Council of the City.

"City Representative" means the City Administrator of the City, or any person designated by the City Administrator to act as the City Representative for the purposes of this Agreement.

"Closing" has the meaning given such term in Section 3.2 hereof.

"Construction Plans" means the plans, specifications, drawings and related documents on the construction work to be performed by the Redeveloper on the Redevelopment Property, including the Minimum Improvements, which (a) shall be as detailed as the plans, specifications, drawings and related documents which are submitted to the appropriate building officials of the City; and (b) shall include at least the following: (1) site plan; (2) foundation plan; (3) floor plan for each floor; (4) cross-sections of each (length and width); (5) elevations (all sides, including a building materials schedule); (6) landscape and grading plan; and (7) such other plans or supplements to the foregoing plans as the City may reasonably request to allow it to ascertain the nature and quality of the proposed construction work.

"County" means Scott County, Minnesota.

"EDA Act" means Minnesota Statutes, Sections 469.090 through 469.1082, as amended.

"Event of Default" means an action by the Redeveloper listed in Article IX hereof.

"Holder" means the owner of a Mortgage.

"HRA Act" means Minnesota Statutes, Sections 469.001 through 469.047, as amended.

"Interfund Loan" means the interfund loan in the amount of $6,300,000 previously approved by the Authority pursuant to the TIF Act.

"License Agreement" means the License Agreement between the Authority and the Redeveloper regarding the use of the Parking Lot by Redeveloper for events at the Amphitheater.

"Material Change" means a change in construction plans that adversely affects generation of tax increment.

"Maturity Date" means the date that the TIF Note has been paid in full or terminated, whichever is earlier.

"Master Developer" means Canterbury Park Holding Corporation, a Minnesota corporation and the parent of Canterbury Development LLC.

"Minimum Improvements" means the development on the Redevelopment Property of an approximately 19,000-seat amphitheater with associated back-of-house facilities, a roof over the seating area, a large outdoor/lawn area and support facilities, infrastructure, utilities, streets, and parking facilities.

"Mortgage" means any mortgage made by the Redeveloper which is secured, in whole or in part, with the Redevelopment Property and which is a permitted encumbrance pursuant to the provisions of Article VII hereof.

"Payment Date" means each February 1 and August 1 on which principal of and interest on the TIF Note is paid.

"Parking Lot" means the parking lot to be constructed by Redeveloper based on the designs set forth in EXHIBIT F. The Parking Lot will be available for free public parking except for the days the Redeveloper has events at the Amphitheater pursuant to the terms of the License Agreement.

"Parking Lot Parcel" means Lot 1, Block 2, Canterbury Amp Addition.

"Public Redevelopment Costs" means costs related to the development of the Minimum Improvements and eligible to be reimbursed with Tax Increment, including but not limited to land acquisition costs, site improvement costs, infrastructure costs, utility costs, demolition and remediation costs, and the parking facilities.

"Purchase Agreement" means the purchase agreement, dated June 1, 2023, between the Authority and the Redeveloper.

"Redeveloper" means Bloomington Investments, LLC, a Minnesota limited liability company, or its permitted successors and assigns.

"Redevelopment Plan" means the Redevelopment Plan for the Redevelopment Project approved and adopted by the Board and the City Council.

"Redevelopment Project" means the Minnesota River Valley Housing and Redevelopment Project No. 1.

"Redevelopment Property" means the real property described in EXHIBIT A and EXHIBIT B attached hereto.

"State" means the State of Minnesota.

"Tax Increment" means that portion of the real property taxes which is paid with respect to the Tax Increment Property and which is remitted to the Authority as tax increment pursuant to the TIF Act.

"Tax Increment Property" means the property from which the Available Tax Increment will be derived. A depiction of the Tax Increment Property is set forth in EXHIBIT G.

"Tax Official" means any County assessor, County auditor, County or State board of equalization, the commissioner of revenue of the State, or any State or federal district court, the tax court of the State, or the State Supreme Court.

"TIF Act" means the Tax Increment Financing Act, Minnesota Statutes, Sections 469.174 through 469.1794, as amended.

"TIF District" means the Tax Increment Financing (Redevelopment) District No. 18, a redevelopment district within the Redevelopment Project.

"TIF Plan" means the Tax Increment Financing Plan for the TIF District approved by the City Council of the City on March 6, 2018, as amended by the City Council of the City on August 8, 2018, as further amended by the City Council of the City on April 21, 2020, as further amended by the City Council on September 7, 2021, and as it may be further amended.

"Unavoidable Delays" means delays beyond the reasonable control of the Buyer as a result thereof which are the direct result of strikes, other labor troubles, prolonged adverse weather or acts of God, fire, or other casualty to the Minimum Improvements, inability to obtain materials or supplies for reasons outside the Buyer's reasonable control, pandemic, litigation commenced by third parties which, by injunction or other similar judicial action, directly results in delays, or acts of any federal, state, or local governmental unit (other than the Seller in exercising its rights under this Agreement) which directly results in delays. Unavoidable Delays shall not include delays in the Buyer's obtaining of permits or governmental approvals necessary to enable construction of the Minimum Improvements by the dates such construction is required under this Section 35 of this Agreement.

3. Section 3.3 Parking Lot Payment.

Section 3.3 is amended to read as follows:

(a) To reimburse the Redeveloper for certain Public Redevelopment Costs, the Authority shall pay the Redeveloper $1,000,000 from the Authority's Interfund Loan (the "Parking Lot Payment") within thirty (30) days from the First Amendment Effective Date. The Authority and the Redeveloper agree that the consideration from the Redeveloper for the Parking Lot Payment consists of the Redeveloper's payment of the Public Redevelopment Costs in at least the amount of the Parking Lot Payment and that as of the First Amendment Effective Date, the Redeveloper has incurred and has paid Public Redevelopment Costs in at least the amount of the Parking Lot Payment.

4. Section 3.4 is amended to read as follows:

Section 3.4. Additional Subsidy. The Authority has provided a land write-down in the amount of $1,000,000, described in Section 8 of the Purchase Agreement. The Redeveloper has constructed the Parking Lot based on the designs set forth in EXHIBIT F and has conveyed the Parking Lot to the Authority for $1.00. The conveyance of the Parking Lot to the Authority was subject to all easements, restrictions, and reservations of record, including without limitation the nonexclusive easement for parking running in favor of the owner of Outlot B, Canterbury Amp Addition. The Authority and the Redeveloper have entered into the License Agreement to allow the Redeveloper to have exclusive use of the Parking Lot for a maximum of 75 days per year for amphitheater parking. The License Agreement can be amended to include additional dates for Redeveloper's use, if needed. The Parking Lot shall be available to the public at all other times at no charge. The Redeveloper acknowledges and understands that Scott County may levy personal taxes against the Redeveloper pursuant to Minn. Stat. Section 272.01, subd. 2(a) which states "when any real or personal property which is exempt from ad valorem taxes, and taxes in lieu thereof, is leased, loaned, or otherwise made available and used by a private individual, association, or corporation in connection with a business conducted for profit, there shall be imposed a tax, for the privilege of so using or possessing such real or personal property, in the same amount and to the same extent as though the lessee or user was the owner of such property." If the County assesses such ad valorem tax against Redeveloper, Redeveloper's obligation to pay such tax shall be prorated based on and limited by Redeveloper's proportional rights to exclusively use the Redevelopment

Property pursuant to the License Agreement and the Authority and the City shall be responsible for the payment of any balance of such ad valorem tax.

5. Section 3.6 is amended to read as follows:

Section 3.6. Repurchase of Parking Lot Parcel. Redeveloper may, at its option and upon sixty (60) days written notice to the Authority (the "Repurchase Notice") elect to repurchase the Parking Lot Parcel (the "Repurchase"). If Redeveloper elects the Repurchase, the closing date for the Repurchase shall be thirty (30) days after the date the Redeveloper delivers the Repurchase Notice to the Authority. On the closing date of the Repurchase (the "Closing Date"), Redeveloper shall pay to the Authority a purchase price equal to the "Unamortized Parking Lot Payment" as of the Closing Date. For purposes of this Section 3.6, the Parking Lot Payment shall be deemed to be amortized in equal annual amounts over a ten (10) year period commencing on the Effective Date. The "Unamortized Parking Lot Payment" shall be the unamortized portion of the Parking Lot Payment prorated on a daily basis from the date Redeveloper receives the Parking Lot Payment (the "Lot Payment Date"). The Parking Lot Payment shall be deemed to be fully amortized on a date ten (10) years from the Lot Payment Date (the "End Date"). If the Closing Date is subsequent to the End Date, the purchase price shall be One Dollar ($1.00). By way of example: (a) if the Closing Date occurs on a date one year from the Lot Payment Date, the purchase price shall be $900,000.00; (b) if the Closing Date occurs 18 months from the Lot Payment Date, the purchase price shall be $850,000.00 and (c) of the Closing date occurs eleven years after the Lot Payment Date, the purchase price shall $1.00. At closing the Authority shall convey title to the Parking Lot Parcel to Redeveloper in materially the same condition as title existed on the date Redeveloper conveyed the Parking Lot Parcel to the Authority. Redeveloper shall pay the closing costs attributable to the repurchase of the Parking Lot Parcel, including title insurance premiums, recording fees and the fees of the closer. On the closing date the parties shall execute a termination of the License Agreement in a form reasonably acceptable to the parties. The Authority's conveyance of the Parking Lot Parcel shall be subject to all applicable zoning and subdivision ordinances and the then existing PUD governing the development and use of the Parking Lot Parcel (the "PUD"). Any modification of the permitted use of the Parking Lot Parcel will be subject to the terms and conditions the PUD and such modification may require an amendment of the PUD in accordance with applicable City ordinances and regulations.

6. Section 3.7 is amended to read as follows:

Section 3.7. Termination of TIF District. At any time following the payment of the Parking Lot Payment and reimbursement of the Authority's Interfund Loan for the Parking Lot Payment through Tax Increments, the Authority may use the remaining Tax Increment for any other authorized uses set forth in the TIF Plan or may terminate the TIF District.

7. Section 6.1 is amended to read as follows:

Section 6.1. Right to Collect Delinquent Taxes. The Redeveloper acknowledges that the Authority is providing substantial aid and assistance in furtherance of the redevelopment through the financial assistance under this Agreement and the Purchase Agreement. The Redeveloper understands that the Tax Increments pledged to payment of the Interfund Loan are derived from real estate taxes on the Redevelopment Property, which taxes must be promptly and timely paid. To that end, the Redeveloper agrees for itself, its successors and assigns, in addition to the obligation pursuant to statute to pay real estate taxes, that it is also obligated by reason of this Agreement to pay before delinquency all real estate taxes assessed against the Redevelopment Property and the Minimum Improvements. The Redeveloper acknowledges that this obligation creates a contractual right on behalf of the Authority to sue the Redeveloper or its successors and assigns to collect delinquent real estate taxes and any penalty or interest thereon and to pay over the same as a tax payment to the county auditor. In any such suit, the Authority shall also be entitled to recover its costs, expenses and reasonable attorneys' fees.

8. Section 9.2 is amended to read as follows:

Section 9.2. Remedies on Default. Whenever any Event of Default referred to in Section 9.1 hereof occurs, the non-defaulting party may exercise its rights under this Section 9.2 after providing thirty (30) days' written notice to the defaulting party of the Event of Default, but only if the Event of Default has not been cured within said thirty (30) days or, if the Event of Default is by its nature incurable within thirty (30) days, the defaulting party does not provide assurances reasonably satisfactory to the non-defaulting party that the Event of Default will be cured and will be cured as soon as reasonably possible:

(a) suspend its performance under this Agreement until it receives assurances that the defaulting party will cure its default and continue its performance under this Agreement;

(b) cancel and rescind or terminate this Agreement, subject to the provisions of Section 9.3; or

(c) take whatever action, including legal, equitable or administrative action, which may appear necessary or desirable to collect any payments due under this Agreement, or to enforce performance and observance of any obligation, agreement, or covenant under this Agreement.

9. Section 9.3 is amended to read as follows:

Section 9.3. Remedies After Certificate of Completion. After the Authority has issued its Certificate of Completion for the Minimum Improvements, the Authority and the City may exercise its rights under Section 9.2 hereof only for the following Events of Default:

(a) the Redeveloper fails to pay real estate taxes or assessments on the Redevelopment Property or any part thereof when due, and such taxes or assessments shall not have been paid, or provision satisfactory to the Authority made for such payment, within thirty (30) days after written demand by the Authority to do so; or

(b) the Redeveloper fails to comply with Redeveloper's obligation to operate and maintain, preserve, and keep the Minimum Improvements or cause such improvements to be maintained, preserved, and kept with the appurtenances and every part and parcel thereof, in good repair and condition, pursuant to Sections 4.1 and 5.1 hereof.

10. Exhibits C and D are deleted in their entirety.

11. Except as modified by this First Amendment, the Agreement is confirmed by the Parties and continues to be valid and binding. In case of any conflict between this First Amendment and the Agreement, the terms of this First Amendment will control.

12. This First Amendment may be executed in one or more counterparts, each of which shall be deemed an original and all such counterparts together shall constitute one and the same document.

* * * * * * *

IN WITNESS WHEREOF, the Authority, the City, and the Redeveloper have caused this First Amendment to Contract for Private Redevelopment to be duly executed by their duly authorized representative as of the date first above written.

ECONOMIC DEVELOPMENT AUTHORITY
FOR THE CITY OF SHAKOPEE,
MINNESOTA

By: _____
Jay Whiting, President

By: _____
William H. Reynolds, Executive Director

STATE OF MINNESOTA)
) ss.
COUNTY OF SCOTT)

The foregoing instrument was acknowledged before me this _____ day of _____, 2026, by _____, the President of the Economic Development Authority for the City of Shakopee, Minnesota, a public body corporate and politic under the laws of the State of Minnesota, on behalf of the Authority.

_____
Notary Public

STATE OF MINNESOTA)
) ss.
COUNTY OF SCOTT)

The foregoing instrument was acknowledged before me this _____ day of _____, 2026, by William H. Reynolds, the Executive Director of the Economic Development Authority for the City of Shakopee, Minnesota, a public body corporate and politic under the laws of the State of Minnesota, on behalf of the Authority.

_____
Notary Public

CITY OF SHAKOPEE

By: _____
Matt Lehman, Mayor

By: _____
William H. Reynolds, City Administrator

STATE OF MINNESOTA)
) ss.
COUNTY OF _____)

The foregoing instrument as acknowledged before me this _____ day of _____, 2026, by Matt Lehman, the Mayor of the City of Shakopee, a statutory city organized and existing under the laws of the State of Minnesota, on behalf of the City.

_____
Notary Public

STATE OF MINNESOTA)
) ss.
COUNTY OF _____)

The foregoing instrument as acknowledged before me this _____ day of _____, 2026, by William H. Reynolds, the City Administrator of the City of Shakopee, a statutory city organized and existing under the laws of the State of Minnesota, on behalf of the City.

_____
Notary Public

BLOOMINGTON INVESTMENTS, LLC

By: _____
Its: _____

STATE OF _____)
) ss.
COUNTY OF _____)

The foregoing instrument was executed before me this _____ day of _____, 2026, by _____, the _____ of Bloomington Investments, LLC, a Minesota limited liability company, on behalf of the Redeveloper.

_____
Notary Public

EXHIBIT A TO FIRST AMENDMENT
Legal Description of Property

[to be completed]

Shakopee Economic Development Authority
November 4, 2026

Agenda Item: Change order with Gensler for additional work at Canterbury Southeast Development and a new contract for Creation of Marketing Video and Images for Shakopee Gravel Pit
Prepared by: Michael Kerski, Planning and Development Director
Reviewed by: Michael Kerski

Action to be considered:
Approve

Motion Type:
Simple Majority

Background:
Gensler has been working for the past year on development of design concepts and ideas to help create an entertainment district south of the Mystic Lake Amphitheater that will generate traffic all year. There has been interest from a number of potential users and this will allow some additional site iterations to finalize interest in the redevelopment area.

Once these concepts are completed, staff will bring forward a contract for an Alternative Urban Areawide Review that will use the various scenarios to evaluate the cumulative environmental impacts of the multiple development scenarios. Canterbury will reimburse the city one hundred percent of those costs.

Staff believes the success of the imagery and videos developed for Canterbury will also help the attraction of users and developers of specific buildings for the Shakopee Gravel Pit. Confluence has a contract to design the park area and they will work with Gensler on integrating those concepts into a short video to promote the entire project.

Recommendation:
Approve one change order with Gensler for $38,500 for additional design work for Canterbury Southeast Development to modify some design elements and a new contract for $47,500 for design boards and a video creation for Shakopee Gravel.

Budget Impact:

The EDA will share with Canterbury 50/50 of the costs for the Canterbury work as we have on the other design work that has already been completed. Funding is from Canterbury TIF Administration funding.

The EDA will fund the Gravel Pit work out of the TIF Administrative Funds, which by statute, can only be spent within the Gravel Pit Redevelopment Area.

Attachments:
WA03 Additional Services.docx
Shakopee Gravel Pit_LOA draft.docx

Gensler

WORK AUTHORIZATION FOR ADDITIONAL SERVICES NUMBER **WA03**

Project: Canterbury Park Southeast Development	**Date:** October 14, 2026
Project Location: Shakopee, MN	**Project Number:** 030.7873.000
Client: City of Shakopee	**File:** 3 WA **This Page** 1 of 2

Services to be performed pursuant to the Original or Master Agreement, date
Agrement for Design Services - Canterbury Park Southeast Development
Dated january 15, 2026

If there is no Original or Master Agreement referenced above Gensler's current Standard Terms and Conditions ("STC") shall apply. A copy of the STC is attached or available upon request.

Other References NA

Services not included (this list is not exhaustive)

Fee and Basis	☒ Lump Sum of $ __38,500	☐ Plus Reimbursable Expenses (15% administrative fee)
	☐ Hourly	☐ Plus Consultants which are not listed as included in fee (15% adminstrative fee)
	☐ Hourly, not to exceed $ _____without prior authorization	☐ Other: _____
Date Services to Begin	☐ _____ (specify date)	
	☒ Immediately after Work Authorization approval	
Services projected to be completed no later than the following, if indicated	☒ 11/30/2026 (specify date)	
	☐ _____ Working days after Work Authorization approval	

Services requested by:	Bill Reynolds, Executive Director	**Date of Request:**	October 7, 2026
Gensler Authorization by:	_____ Bill Baxley	**Date Signed:**	
Client Authorization by:	_____	**Date Signed:**	

Authorization is confirmed for Gensler to perform the following services:

- Incorporate Dakota cultural concepts, river inspired materials and indigenous art
- Imagine an all-season district with flexible multi-use event spaces such as winterized plazas and heated outdoor spaces and fire pits
- Highlight signature architectural elements enhancing destination appeal.
- Showcase immersive event experiences contributing to a dynamic comprehensive district concept

Gensler

October 27, 2026

Michael Kerski
Director of Planning and Development
City of Shakopee
485 Gorman Street
Shakopee, MN 55379

Subject: Agreement for Design Services – Shakopee Gravel Pit

Dear Michael:

Thank you for the opportunity to collaborate on the master plan for Shakopee Gravel Pit development. We share your interest in getting this project moving forward as quickly as possible. We propose the following agreement to confirm our understanding.

This Agreement is between The City of Shakopee ("Client") and M. Arthur Gensler Jr. & Associates, Inc. ("Gensler"), for Gensler to provide design services Shakopee Gravel Pit Development (the "Project").

The Project site is in the city of Shakopee adjacent to Canterbury Park and south of the new Mystic Lake Amphitheater. The area of study is approximately 170 acres bordered on the east by Mystic Lake Drive, 17th Avenue East to the north and Thrush Street to the south. The client has developed a masterplan with Confluence and construction has begun on the pond and surrounding areas.

Client's primary representatives for the Project are Michael Kerski. Gensler's primary representative for the Project is Bill Baxley. The primary representatives have authority to render decisions on matters related to the Project and are authorized to negotiate a formal agreement once the appropriate Councils and Boards have approved.

Gensler's Basic Services authorized by this Agreement and under our current Master Services Agreement include: Gensler will provide overall project minor design update for the masterplan on the site, coordination with consultant (Confluence), Meetings with the Client and client team, final drawings/diagrams including site plan, 3 renderings,

and an animation video of approximately 2min 30 seconds in duration. The video will showcase the property and present activities and engagement like recent efforts we have completed for the Canterbury East Development with the City. Gensler may provide Additional Services if requested by Client and confirmed in writing by Gensler. Client shall make monthly progress payments for Basic and Additional Services based on Master Services Agreement. If Gensler retains consultants to perform any Basic or Additional Services, compensation for such services shall be based on amounts invoiced to Gensler plus fifteen percent (15%). Compensation for Reimbursable Expenses incurred in connection with the Project will be billed at cost. A service charge of one and one-half percent (1½ %) per month shall be added to balances unpaid thirty days after invoice date.

Fee

Our proposed fee for this work is a lump sum of **$47,500.**

We will work with The City to establish a schedule of meetings including the charette. We anticipate this work effort to take **8-9 weeks**.

Outline schedule

1 wk.
Discovery – Review of existing previous work, meet with Shakopee team leaders, meet with Confluence team, meet with other development partners, gather site information.
Deliverables - agenda, meeting minutes, basic program/use matrix, site analysis

1 wk.
Workshop- One (1)-day in person workshop with all stakeholders facilitated by Gensler.
Deliverables - agenda, meeting minutes, basic program/use matrix development, concepts described via analog and digital means, video/scenario narrative idea

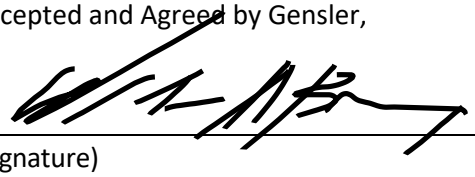
2-3 wks.
3-D modeling and Block Planning/Design Refinement - Concept development and minor modifications to the Masterplan based on information and outcomes from the Workshop.
Deliverables - Final program/use matrix for each scenario, scenario narratives, site plans, aerial 3-D views, experience vignettes, site analysis, meeting minutes

3 wks.
Renderings/Video- Development of Three (3) highly developed renderings of agreed upon views and 2 min. 30 second animated video. **Deliverables** - Digital copy of three (3) renderings and video

1 wk.
Final presentation - In person or virtual presentation, including preparation. **Deliverables** - Final renderings, digital copy of final presentation and renderings and Animation video.

Either party may terminate this Agreement upon not less than seven days written notice should the other party fail substantially to perform its obligations under this Agreement.

Please sign below to accept this Agreement and return one signed copy to Gensler.
We look forward to working with you.

Accepted and Agreed by Gensler,	Accepted and Agreed by Clients,
By 	By _____
(Signature)	(Signature)
Principal	_____
(Title)	(Title)
10/27/2026	_____
(Date)	(Date)
	By_____
	(Signature)
	_____
	(Title)
	_____
	(Date)

Shakopee Economic Development Authority
November 4, 2026

5.a

Agenda Item: EDA Bill List
Prepared by: Becky Smith, Accounting Specialist
Reviewed by:

Action to be considered:
Review EDA Bill List

Motion Type:
Informational only

Background:
EDA Bill List provided to EDA Commissioners

Recommendation:
Information Only

Budget Impact:
N/A

Attachments: