CITY OF NOME

NOME, AK

REQUEST FOR PROPOSAL (RFP)

PROFESSIONAL HEATING AND VENTILATION UPGRADE DESIGN SERVICES

CITY FACILITIES

DATE OF ISSUE: December 03, 2021 2:00 PM
CLOSING DATE & TIME: January 13, 2022, 3:00 PM

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1 ADVERTISEMENT

VENDOR	ACCOUNT #	DATE OF ADVERTISEMENT	TYPE OF ADVERTISEMENT

The material herein must be printed in its entirety on the dates shown above. Affidavit of publication is required prior to payment.

CITY OF NOME
PO Box 281
102 Division Street
Nome, AK 99762

REQUEST FOR PROPOSAL: PROFESSIONAL HEATING AND VENTILATION UPGRADE DESIGN SERVICES - CITY FACILITIES

The City of Nome (City) is requesting a proposal to provide professional architectural and engineering services for heating and ventilation design in Nome, Alaska.

Please mail or hand deliver three bound copies and one electronic copy of the proposal to the City Clerk's office. ***Faxed proposals will not be accepted.*** The submittal shall be in a sealed envelope, labeled with the Proposal Name as indicated within the RFP documents.

An emailed copy of proposals may be sent and will be considered received as long as the email is received by the submittal date and time indicated on the RFP. The electronic and hard copies shall still be sent as listed in the RFP. Email size limit is 20MB.

Submittal Deadline: 3:00 P.M. Thursday, January 13, 2022.

Request for proposal documents are available to interested proposers at the office of the City Clerk, PO Box 281, Nome, Alaska 99762. The contact number is (907) 443-6663. Documents will be available after 2:00 P.M. December 03, 2021.

The City reserves the right to reject or accept any and all proposals, to waive irregularities or informalities in the selection process, and to give particular attention to the qualifications of the Proposer. Award of this project is subject to the availability of funding and is at the discretion of the City. Any cost incurred by Proposer for the preparation and submittal of their response is the sole responsibility of the Proposer.

2 SOLICITATION SCHEDULE

The following is the expected implementation schedule for this solicitation.

RFP DATE OF ISSUE	12/03/2021
RFP CLOSING DATE AND TIME	01/13/2022
DEADLINE FOR QUESTIONS	01/04/2022
DEADLINE FOR CORRECTIONS / WITHDRAWAL OF APPLICATION	01/13/2022
NOTICE OF INTENT TO AWARD	01/21/2022
PROTEST CLOSING DATE	01/31/2022
CITY COUNCIL RESOLUTION - AWARD OF CONTRACT	02/07/2022
FINALIZE CONTRACT	02/08/2022

For more information on Nome Contracts and Purchasing Procedures see Nome Code of Ordinances Chapter 17.40.

3 INSTRUCTIONS TO PROPOSERS

3.1 EXAMINATION OF DOCUMENTS AND SITE

Before submitting a proposal, the Proposer is encouraged to:

- Carefully examine and acquaint themselves with all portions of the request for proposal (RFP) and attachments;
- Fully inform themselves of existing conditions and limitations; and
- If material required for proposal purposes by these documents is absent, the Proposer is required to notify the City Engineer.

3.2 INTERPRETATION

Should a Proposer find discrepancies in, or omissions from, the request for proposal documents, or be in doubt as to their meaning, they should at once notify the City Engineer who will send written instructions or addenda to all known request holders. The City Engineer will not be responsible for oral interpretations. All questions must be received in writing at the email address: jblees@bristol-companies.com. Questions received after the deadline for questions date listed in Section 2 may not be answered. All addenda issued during the time of proposals shall become part of the Agreement Documents.

All addenda shall be acknowledged in the proposal cover letter per Section 5.

Reasonable effort will be made to ensure that proposers receive all addenda when issued. All proposers shall register with the City Clerk to ensure proper distribution of addenda. Addenda, shall be sent via email to the individual or company requesting RFP documents, and all proposers shall submit a valid email address to the City Clerk upon registration.

The contact number and email address for the City Clerk are as follows: (907) 443-6663, bhammond@nomealaska.org.

Proposers shall be responsible for ensuring that they have received all addenda for the project. The City Clerk may be contacted for this verification.

Questions or requests for clarification directed to any other member of the City staff, Nome Public Schools Staff, or consultants may be grounds for rejection of proposal as being irregular.

3.3 SUBMITTAL OF PROPOSAL

The proposal submission format shall be as indicated in Section 5.1 and enclosed in a sealed envelope marked as follows:

> Proposal Enclosed
> Professional Heating and Ventilation Upgrade Design Services - City Facilities
> City of Nome, City Hall
> 102 Division Street
> Nome, Alaska 99762

If more than one Proposal is offered by any one party, by or in the name of their clerk, partner, or other person, all such Proposals will be rejected.

The City assumes no responsibility or liability for the transmission, delay, or delivery of proposals by either public or private carriers.

This is an RFP only and is not a guarantee the City will utilize any participant in this solicitation.

All submittals, including all accompanying materials, become City property and may be returned only at their option.

Due to the COVID-19 pandemic, emailed proposals will be accepted. Emails shall indicate in the subject line:

> Proposal Enclosed - Professional Heating and Ventilation Upgrade Design Services - City Facilities

If an emailed proposal is submitted, the hard copies of the proposal must be submitted and postmarked no later than January 13, 2022 at 3:00 PM in order for the emailed submittal to be accepted.

Emailed proposals must be received by the City Manager by 12:00 PM on January 13, 2022 at the following email address: bhammond@nomealaska.org. Email size limit is 20MB.

3.4 CORRECTIONS OR WITHDRAWAL OF PROPOSAL

Proposers may correct or withdraw their proposal either personally or by written request at any time prior to the time set for the proposal closing. No proposal may be withdrawn after the time set for the closing thereof. Proposals may be modified after proposal closing only as a result of negotiations.

No oral or telephone modifications of any proposal submittal will be considered.

3.5 AWARD

The award shall be in accordance with Nome Code of Ordinances *17.40.160 Award to responsible bidder or proposer*.

3.6 CITY'S RIGHT TO REJECT PROPOSAL

The City reserves the right to reject any and all proposals, and to waive irregularities or informalities in the selection process. Informalities that cannot be waived are timeliness and signature requirements.

The Proposer who has failed to satisfactorily perform on a previous contract may be rejected.

3.7 PROTEST OF AWARD

Within ten (10) days of the Notice of Intent to Award, a Proposer who wishes to protest the determination shall file a protest with the City Clerk. The protest shall be in writing. The protest shall describe with particularity the alleged errors in the award recommendation.

The City shall notify all proposers of the filing of the protest within two (2) working days after the protest is filed. The City Council shall hold an informal hearing at which all interested persons may participate no later than five (5) working days after the protest is filed. The City Council

shall issue a written decision on the protest no later than twenty-four (24) hours after the conclusion of the informal hearing. The decision of the City Council shall be final.

In order to receive notice of the apparent successful proposal, the Proposer must provide the City with an associated email address. It is the responsibility of the Proposer to follow the selection process and stay apprised of the proposal due date, the date the Notice of Intent to Award is issued, and the period in which protests can be filed.

4 SCOPE OF SERVICES

4.1 PROJECT DESCRIPTION

The City is soliciting proposals for professional architecture and engineering design services necessary to replace the aging heating and ventilation systems in several City Facilities in Nome, Alaska.

4.2 BACKGROUND INFORMATION

The City has identified four facilities in need of heating and ventilation upgrades listed in order of priority:

1. Recreation Center, 208 East 6th Avenue, Constructed 1983-84
2. City Hall, 102 Division Street, Constructed 1977
3. Mini-Convention Center, 409 River Street, Constructed 1961
4. Public Works Shop, 404 West 4th Avenue, Constructed 1982

The City intends the Proposer to develop bid ready plans, specifications, engineer's estimate of construction costs, and permits for the top two priority projects initially. The City reserves the right to negotiate with the selected Proposer for the remaining projects as funding allows.

4.3 SCHEDULE

Bid-ready Design and approved permits for the Recreation Center and City Hall shall be completed **no later than August 31, 2022.**

4.4 SCOPE OF WORK AND DESIGN CONSIDERATIONS

The work may include, but is not inclusive or limited to the following tasks:

- Construction drawings, specifications, and estimate of construction costs for three defined submittals (65%, 95% and Final).
- Building material and equipment recommendations based on local conditions, experience, quality, ease of maintenance, and price.
- All work must be in full compliance with the current International Building Codes as well as all other pertinent federal, state and local codes.
- Age of facilities suggest possible hazardous materials may be present in existing construction materials. Proposer shall provide reporting that covers areas impacted by this project and specifications that address safe handling during construction.
- The Proposer is responsible for all aspects of design including, but not limited to, mechanical, electrical, architectural, structural, permitting, and cost estimates.
- The City Hall building's fire alarm system is outdated and will need to be replaced in conjunction with this project.
- The Proposer shall participate in reviews to ensure the project design conforms to applicable code requirements of authorities having jurisdiction and will make any changes required to the Construction Documents for issuance of all permits and legal

authorizations required for construction. The Proposer shall, on behalf of the City, investigate required permits, file the required documents, and secure all permits and authorizations required for construction and occupancy during the design of the project.

- A budgetary estimate of permit fees shall be identified with the Proposer's fee proposal. The City will pay actual permit fees directly to the reviewing agency.
- The City desires all facilities be controlled by SCADA with alarm notifications.
- The City reserves the right to negotiate bid phase and construction administration services with the selected Proposer.

65% DESIGN DOCUMENTS

The Proposer shall provide plans, specifications, hazardous material reporting (if applicable), and an estimate of construction cost at the 65% Design Development stage. The Design Documents shall illustrate and describe the required demolition and design by means of plans, sections, elevations, typical construction details. The 65% Design Documents shall include catalog cuts of proposed equipment and CSI standard specifications that identify major materials, equipment, and systems. Proposer shall attend a conference to review the design with City staff for approval at this stage.

Deliverables: The Proposer shall submit a PDF copy and three bond, half-size copies of drawings. Specifications, hazardous material report (if applicable), catalog cuts, and estimate shall be submitted in PDF format only for the 65% submittal.

95% DESIGN DOCUMENTS

Based upon review comments received from the 65% submittal, the Proposer shall provide updated plans, specifications, and estimate of construction cost at the 95% Design Development stage. Permit applications shall be prepared and submitted during this design stage. Proposer shall attend a conference to review the design with City staff for approval of the 95% design.

Deliverables: The Proposer shall submit a PDF copy and three bond, half-size copies of drawings. Specifications, catalog cuts, and estimate shall be submitted in PDF format only for the 95% submittal. Permit applications and the associated submittal package shall be prepared by the Proposer and delivered to the review agencies at this stage of design development.

FINAL CONSTRUCTION DOCUMENTS

Based upon City or agency review comments received from the 95% submittal, the Proposer shall provide updates to Final Construction Documents. The Final Construction Documents shall set forth in detail the requirements for construction of the project and shall include drawings and specifications that establish in detail all materials and systems required for the project.

The Proposer shall submit a final updated estimate of construction cost and advise the City of any adjustments to previous estimates indicated by design change, changes of requirements or general market conditions.

Deliverables: Final Construction Documents deliverable shall include:

- Electronic Drawings in PDF and AutoCAD formats.

- Specifications in Word and searchable PDF format.
- Equipment Catalog Cuts in PDF format.
- Estimate in PDF format.
- Copies of approved permits or authorizations received from reviewing agencies.

COMPETITIVE BIDDING (If exercised)

The Proposer shall prepare responses to questions from prospective bidders and provide clarifications and interpretations of the bid documents to all prospective bidders in the form of addenda which the City will distribute.

The Proposer shall assist in evaluating bids. The City will execute the contract award and notice to proceed.

The Proposer will submit up to five hard copies, one PDF and AutoCAD drawings of the conformed construction documents based on revisions made during the bidding process.

CONSTRUCTION PHASE ADMINISTRATION OF CONSTRUCTION CONTRACT (If exercised)

The Proposer will provide construction administration of the contract between the City and Contractor per General and Supplementary Conditions of the Contract for Construction commencing with the award of the initial contract for construction and terminating with the final Certificate for Payment. The Proposer will represent the City through the initial contractor warranty period (typically one - two years).

The Proposer shall gather Operations and Maintenance (O&M) Manuals based on Proposer approved submittals from the Contractor. O&M manuals will have a separate section for warranty data. Specifications will require four manuals in hard copy form and searchable PDF format. The Proposer shall furnish four hard copy sets of record drawings based on red-line drawings and other data furnished by the Contractor. Record drawings shall be provided in the latest version of AutoCAD and in searchable PDF format. The Proposer will collect and approve all closing documents required to close the project on behalf of the City to include hazardous abatement documentation (if applicable).

4.5 CITY RESPONSIBILITIES

The City will compile and publish bid documents for the construction contract using the final plans and specifications prepared by the Proposer.

Other responsibilities to be negotiated.

5 PROPOSAL REQUREMENTS, EVALUATION, AND AWARD CRITERIA

5.1 PROPOSAL SUBMISSION REQUIREMENTS

The Proposal shall be submitted at the date, time, and location specified in Sections 2 and 3.

Each Proposer shall submit three (3) bound copies and one electronic copy on a portable USB drive in a sealed package as indicated in Section 3.3. (Required even if proposal is emailed.)

The proposals shall be organized in sections as indicated within the evaluation criteria below. The proposal shall be limited to ten (10) single-sided, single spaced pages in length, with a minimum font size of 12 points.

5.2 PROPOSAL EVALUATION CRITERIA

Responses to this Request for Proposals will be evaluated based on the following:

1. Cover Letter	2 page max	10 points

Provide a proposal cover letter signed by an authorized representative of the firm summarizing the firm's qualifications for this project. The cover letter shall acknowledge any addenda released during the RFP process. If no addenda were released then the letter should state such.

2. Relevant Project Experience	3 page max	30 points

Response must describe at least **three recently completed** projects the team has worked on that are related in size and scope to this project. If project is not completed, please indicate the percentage of completion; indicate if the project was just design, or design with construction services. Describe the dollar amount of the projects and a brief narrative of the successes and challenges of the projects. Provide the scope of work, deliverables, and project schedule performance. Provide references (contact name, phone number, and email) for each project. The City reserves the right to investigate referenced projects, contact references and research other projects that the respondent has worked on.

3. Project Team Qualifications	2 page max	30 points

Provide a description of the team organization and lines of authority for this project. A graphic depiction should be included. Provide a summary of how the qualifications and experience of the Project Manager, and key team members, will meet the needs of this project. For each person named, identify his or her employer, professional discipline or job classification and state of residency.

4. Methods and Schedule	3 page max	30 points

Describe your approach and describe what, when, where, how and in what sequences the work will be done. Address how particular geographic familiarity, experience, and capabilities of your firm (offeror and proposed subcontractors) and project staff might specifically contribute to the proposed methods. Identify the amount and type work to be performed by any subcontractor.

5. Staff Resumes	**2 page max each** **(not counted in total)**	**Not Scored**

Provide a brief resume for key staff that will be providing services for this project.

6. Proof of Licensing	**No Limit** **(not counted in total)**	**Not Scored**

The Proposer shall include their current State of Alaska business license. The Proposer shall include a City of Nome sales tax license, or a statement of willingness to obtain a license, prior to the execution of the contract. The proposal shall contain the license number of the firm's Alaska Certificate of Authorization to offer the proposed professional services, if the proposing firm is a Corporation, Limited Liability Company or Limited Liability Partnership; and The license number of the Alaska Professional Registration and certificate(s) for key personnel in the firm, and for each professional service discipline.

5.3 PROPOSAL EVALUTION PROCESS

The City will evaluate all proposals received using the following process.

1. All proposals will first be reviewed for conformance with the RFP as listed below. Any proposals not found to be in conformance with the RFP will be rejected.
    a. Was the proposal received on time?
    b. Was the proposal signed by a representative of the company?
    c. Were addenda addressed in the cover letter?
2. If a proposal meets the requirements above then it will be reviewed by the City.
    a. Proposals based on qualifications will be reviewed by a panel of reviewers selected by the City. This panel will not be less than three individuals. The panel will objectively review the proposals, based on the criteria in Section 5.2, and will make a recommendation to the City Manager based on what they determine is in the best interest of the City.
3. A Notice of Intent to Award will be issued upon approval by the City Manager.
4. The City Council shall award a contract in the form of a resolution authorizing the City Manager to enter into a contract under the terms and conditions as set forth in the submittal documents, as established in the Nome Code of Ordinances, and any other conditions as may be deemed necessary to protect the public interest.

The City reserves the right to waive minor informalities, negotiate changes or reject any and all proposals and to not award the proposed contract, if it is determined not to be in their best interest. “Minor Informalities" means matters of form rather than substance that are evident from the submittal, or are insignificant matters that have a negligible effect on price, quantity, quality, delivery, or contractual conditions and can be waived or corrected without prejudice to other Proposers.

5.4 EXECUTION OF AGREEMENT

Notice of Intent to Award does not constitute a formal award of contract.

The successful Proposer shall enter into a contractual agreement with the City, as outlined in the Sample Contract attached to this document.

Prior to the execution of the agreement the following shall occur:

1. The agreement shall be approved by the City Council and / or the City Manager, as required by the City's code of ordinances.
2. The Proposer shall provide the following to the City, to their satisfaction.
    a. Proof of business and professional licensure, as identified in Section 5.4.1
    b. Proof as insurance, as identified in Section 5.4.2
    c. Proof of Bonding, as identified in Section 5.4.3

5.4.1 Licensure Requirements

1. State of Alaska business license;
2. City of Nome Sales Tax license;
3. Proposer's contractors or professional license;
4. Proposer's staff(s) contractor or professional license.

5.4.2 Insurance Requirements

1. Workers Compensation as required under AS23.30 naming all employees;
2. Vehicle liability insurance including applicable uninsured/underinsured coverage with limits of liability not less than one million ($1,000,000) dollars per occurrence combined Single limit bodily injury and property damage, or the minimum amount required by the law whichever is greater;
3. Umbrella policy of not less than one million ($1,000,000) dollars per occurrence;
4. Professional errors and omissions insurance of not less than one million ($1,000,000) dollars per occurrence.

The Proposer shall provide a certificate of insurance with the City of Nome as a named additional insured.

5.4.3 Bonding Requirements

None.

6 STANDARD CONTRACT FORM

CONTRACT FOR

_____

This Agreement is entered into this ____ day of _____, by and between _____, herein referred to as “Consultant” and the City of Nome (herein referred to as “City”). For good and valuable consideration, the receipt whereof is hereby acknowledged, Consultant and City agree as follows:

WHEREAS, City is in need of *(describe what the need is);*

WHEREAS, Consultant, through education and experience, possesses the requisite license and skills to perform such duties;

WHEREAS, City is therefore desirous of engaging the services of Consultant as an independent contractor using independent professional judgment to accomplish assigned tasks;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Employment of Consultant

The work to be performed by Consultant pursuant to this Agreement is all tasks assigned by the City Manager or through a designee. A more specific identification of Consultant's professional services to be provided in accordance with the provisions of this Agreement is listed in Appendix A "Scope of Work," incorporated herein by reference and such other duties as requested by the City.

2. Time of Performance

Consultant shall commence performance within ten days following approval of this Agreement and complete performance no later than _____ *(fill in due date for finished product)*. The time for completion may be extended by mutual written

agreement of City and Consultant. Should any delays in the performance of the Work be caused solely by City, the completion date, but not the Consultant's fee, shall be extended by an amount of time equal to the length of the delay.

3. Fee - (*Complete section A or B, but not both.)*

A. Hourly Rate. City shall pay Consultant at the hourly rate of _____ for all services rendered by Consultant in performance of work authorized pursuant to this Agreement based on providing an average of (identify hours per week of work expected – e.g. ten hours of labor per week), not to exceed _____*(list the total contract amount e.g.$17,000)* for the contract period which begins _____*(date)* and ends _____*(date).* The amounts payable to Consultant shall not exceed the sums identified in this paragraph without the prior written approval of the City. Any additional professional services other than those identified in item 1, Employment of Consultant, shall be requested in writing by City. The fee for such additional services shall be negotiated by the parties.

B. Lump Sum. City shall pay Consultant a lump sum of _____ for all services rendered by Consultant in performance of work authorized pursuant to this Agreement. The amounts payable to Consultant shall not exceed the sums identified in this paragraph without the prior written approval of the City. Any additional professional services other than those identified in item 1, Employment of Consultant, shall be requested in writing by City. The fee for such additional services shall be negotiated by the parties.

4. Payments

City agrees to make payments to Consultant as services are performed and costs are incurred, provided Consultant submits two copies of a proper invoice for each payment, in such form and accompanied by such evidence in support thereof as may be reasonably required by City.

Billing and expense invoices can be submitted once a week. Invoices shall be accompanied by an activity report detailing work and accomplishments.

City may, at its option, withhold ten percent from each payment pending satisfactory completion of the work by Consultant.

All invoices are otherwise due and payable within 15 days of receipt by the City.

5. Services Supplied by City

City shall provide Consultant with _____
(such as a city vehicle, space at City Hall etc.).

6. Personnel

Consultant agrees to furnish all personnel necessary for expeditious and satisfactory performance of this Agreement, each to be competent, experienced and well qualified for the work assigned. No person objected to by the City shall be employed by Consultant for work hereunder.

7. Independent Contractor Status

In performing under this Agreement, Consultant acts as an independent contractor and shall have responsibility for and control over the details and means for performing the services required hereunder.

8. Indemnification

To the maximum extent permitted by law, Consultant shall defend, indemnify and save harmless City or any agent, employee, or other representative thereof, from and against losses, damages, liabilities, expenses, claims, and demands of whatever nature, including for death, personal injury, property damage or economic loss, to the extent arising out of any negligent act or negligent omission or willful misconduct of Consultant, its agents or employees while performing under the terms of this Agreement.

9. Assignment

Consultant shall not assign this Agreement or any of the monies due or to become due hereunder without the prior written consent of City.

10. Subcontracting

Consultant may not subcontract its performance under this Agreement without prior written consent of City. Any subcontractor must agree to be bound by the terms of this Agreement applicable to the services to be performed by the subcontractor.

11. Designation of Representatives

The parties agree, for the purposes of this Agreement, that City shall be represented by and may act only through the City Manager or such other person as they may designate in writing or is identified in Appendix A. Consultant shall be represented by and may act only through _____ *(name of contact person involved with contract).*

12. Termination

Either party may terminate this Agreement, with or without cause, after first giving thirty days written notice. Consultant shall not be entitled to any anticipated profit on services not performed. **Termination of this agreement by either party may be for any reason, or no reason.**

13. Insurance

Consultant shall, at all times, at its own expense, keep in force the following described insurance for protection against the claims of employees or other persons, insuring both the Consultant and the City against liability that may accrue against them or either of them in connection with the performance of Consultant under this Agreement:

a) Workers Compensation as required under AS23.30 naming all employees;
b) Vehicle liability insurance including applicable uninsured/underinsured coverage with limits of liability not less than one million ($1,000,000) dollars per occurrence combined Single limit bodily injury and property damage, or the minimum amount required by the law whichever is greater;
c) Umbrella policy of not less than one million ($1,000,000) dollars per occurrence;
d) Professional errors and omissions insurance of not less than one million ($1,000,000) dollars per occurrence.

All insurances, workers' compensation insurance, commercial general liability insurance and motor vehicle liability insurance, as described above shall include an endorsement stating the following: sixty (60) days advance written notice of cancellation, non-renewal, reduction change, shall be sent to the City Manager, PO Box 281, Nome, AK 99762.

All insurances, workers' compensation insurance, commercial general liability insurance and motor vehicle liability insurance, as described above shall include an endorsement stating the following: sixty (60) days advance written notice of cancellation, non-renewal, reduction change, shall be sent to the City Manager, PO Box 281, Nome, AK 99762.

14. Insurance Certificate

All insurance shall be placed with an insurance carrier or carriers satisfactory to the City and shall not be subject to cancellation or any material change except after 30 days written notice to the City and shall provide that no failure of Consultant to comply with any condition or provision of this Agreement or other conduct of Consultant or those for whose conduct it is responsible, shall void or otherwise affect the protection under the policy afforded to the City. A Certificate of Insurance reflecting full compliance with these requirements shall, at all times during the term of this Agreement, be kept on deposit at the general offices of the City. If Consultant fails to comply with these insurance requirements, the City may terminate this Agreement on 10 days written notice.

15. Claims Recovery

Claims by City resulting from Consultant's failure to comply with the terms of and specifications of this Agreement and/or default hereunder may be recovered by City by withholding the amount of such claims from compensation otherwise due Consultant for work performed or to be performed. City shall notify Consultant of any such failure, default or damage therefrom as soon as practicable after discovery of such event by written notice. Nothing provided herein shall be deemed as constituting an exclusive remedy on behalf of City, nor a waiver of any other rights hereunder at law or in equity.

16. Compliance with Applicable Laws

Consultant shall, in the performance of this Agreement, comply with all applicable federal, state and local laws, ordinances, orders, rules and regulations applicable to its performance hereunder, including, without limitation, all such legal provisions pertaining to social security, income tax withholding, medical aid, industrial insurance, worker's compensation, and other employee benefit laws. Consultant also agrees to comply with all contract provisions pertaining to grant or other funding assistance which City may choose to utilize to perform work under this Agreement. Services performed under this Agreement shall be in accordance with sound, generally accepted consulting practices and shall comply with all applicable codes and standards.

17. Records and Audit

Consultant agrees to maintain sufficient and accurate records and books of account, including detailed time records, showing all direct labor hours expended and all reimbursable costs incurred for at least three years after receipt of final payment and closure of all pending matters related to this Agreement. Said books shall be subject to inspection and audit by City.

18. Notices

Any official notice that either party hereto desires to give the other shall be delivered through the United States mail by certified mail, return receipt requested, with postage thereon fully prepaid and addressed as follows:

To City:	**To Consultant:**
Glenn Steckman – City Manager City of Nome P.O. Box 281 Nome, AK 99762	

19. Venue and Applicable Law

The venue of any legal action between the parties arising as a result of this Agreement shall exclusively be laid in the Second Judicial District of the Superior Court of the State of Alaska, at Nome, Alaska, and this Agreement shall be interpreted in accordance with the laws of the State of Alaska.

20. Attorney's Fees

In the event either party institutes any suit or action to enforce its rights hereunder, the prevailing party shall be entitled to recover from the other party its reasonable attorney's fees and costs in such suit or action and on any appeal therefrom.

21. Waiver

No failure on the party of either City or Consultant to enforce any covenant or provision herein contained, nor any waiver of any right hereunder unless in writing and signed by the parties sought to be bound, shall discharge or invalidate such covenants or provisions or affect the right of the City or Consultant to enforce the same or any other provision in the event of any subsequent breach or default.

22. Binding Effect

The terms, conditions and covenants contained in this Agreement shall apply to, inure to the benefit of, and bind the parties and their respective successors.

23. Entire Agreement

This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof, and all prior negotiations and understandings are superseded and replaced by this Agreement and shall be of no further force and effect. No modification of this Agreement shall be of any force or effect unless reduced to writing, signed by both parties and expressly made a part of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement on the respective date indicated below.

CITY

Dated: _____ By: _____
City Manager
City of Nome

CONSULTANT

Dated: _____ By: _____
( ) Representative

APPENDIX A

PROFESSIONAL HEATING AND VENTILATION UPGRADE DESIGN SERVICES
CITY FACILITIES

NOME RECREATION CENTER HVAC CONDITION ASSESSMENT, AUG. 2020

Revised August 24, 2020
August 21, 2020

City of Nome
P.O. Box 281
Nome, AK 99762

ATTENTION: Glenn Steckman, City Manager

Dear Glenn,

REFERENCE: Nome Recreation Center HVAC Condition Assessment

This letter was revised to incorporate the correct electrical site information, which was previously incorrectly referencing the City Hall.

BACKGROUND

RSA Engineering visited the Nome Recreation Center on August 10-11 to evaluate the facility's HVAC systems. Of specific importance were the boiler plant and ventilation systems. The site visit was performed by Frank Silberer, electrical engineer, and Adam Wilson, mechanical engineer. Dave Barron, building inspector with the city of Nome, provided access to the facility and described building deficiencies he was aware of. The following information is a description of our findings on site, and our recommendations for improvement.

EXISTING CONDITIONS

The building is approximately 25,170 sqft, located on 6th Street between D Street and E Street in Nome, constructed in the early 1980's. It is comprised of three distinct sections broken up as bowling alley/kitchen (hereafter referred to as "west wing"), gymnasium/rock-climbing/racquet ball court, and weight lifting/aerobics/locker rooms (hereafter referred to as "east wing"). The 2009 building condition code analysis prepared by NorthWind Architects indicated that the building is Type IIB construction. The building has two boiler rooms and minimal ventilation. Heating is done primarily with large hydronic unit heaters in each space.

The building is heated by two boiler plants. One serves the west wing and gymnasium areas, and the other serves the east wing. The two boilers located in the west wing appear to be Weil-McClain model 686 with 1,160 MBH I-B-R output each. The system temperature is set at 175 deg. F supply. Each boiler has a Grundfos circulator, which serve as the main circulators for the system. Two small Grundfos pumps circulate heating glycol through PEX piping for heat tracing of below floor waste piping at restrooms in the bowling alley and gymnasium. The boilers are enabled using wall disconnect switches, and temperatures and firing are controlled with aquastats. The heating fluid is a water-glycol mixture of unknown glycol percentage, that is manually added to the system using a pump mounted to a glycol tank of about 30-gallon capacity. Heating piping is a mix of copper, steel and PEX, with a little more than half of it insulated. The piping insulation likely has asbestos given the building's age. Each boiler has a dedicated vent stack about 15-feet high that terminates on the roof. The boiler vents are single-wall galvanized on the lower half, and stainless-steel on the upper half, and are in poor condition due to corrosion. A third stainless vent was abandoned in place, presumably when an oil-fired water heater was changed out with a 40-gallon Amtrol hot water generator, which is relatively new and in good condition. Combustion air is provided through a hole in the floor that is undersized. There is not a ventilation fan and consequently the room is hot. Equipment in the boiler plant appears to be original to the building, making it almost 40 years old. The equipment seems to be operating sufficiently but is well past its useful service life and warrants replacement.

The boiler located in the east wing is a Weil-McClain BL-776 with 480 MBH gross output. The system temperature is set at 175 deg. F supply. The boiler has a Grundfos circulator, which serves as the main

circulator for the system. Multiple small Grundfos pumps circulate heating glycol through PEX piping for heat tracing of below floor waste piping below the locker rooms. The boiler is enabled using a wall disconnect switch, and temperature and firing are controlled with an aquastat. The heating fluid is a water-glycol mixture of unknown glycol percentage. It is not evident how glycol is added to the system. Heating piping is primarily copper with some PEX, most of it insulated. The piping insulation likely has asbestos given the building's age. The boiler has a single-wall galvanized steel vent stack that transitions to double wall insulated stainless steel as it passes through the second floor Rec Center manager's office, and terminates on the roof. There is considerable corrosion on the galvanized. The galvanized stack also has a capped tee connection from when an oil-fired water heater was changed out with an 80-gallon Amtrol hot water generator. The hot water generator does not appear to be large enough to serve the locker rooms, but it is relatively new and in good condition. There is no combustion air opening nor ventilation fan, consequently the room is very hot, which is causing the Rec Center manager's office above to be hot as well. Equipment in the boiler plant appears to be original to the building, making it almost 40 years old. The equipment seems to be operating sufficiently but is well past its useful service life and warrants replacement.

The ventilation system for the building is inadequate. The bowling alley does not have any ventilation equipment. The kitchen hood has a sidewall exhaust fan, and the men's and women's restrooms have exhaust fans. The kitchen hood, ductwork and fan do not appear to meet current codes for handling of grease-laden vapor.

Gymnasium ventilation consists of an exhaust fan that runs continuously, and a make-up air duct on the other end of the space with a duct coil for tempering outside air. It is likely that most of the space make-up air is drawn in from the adjacent bowling alley and weight room. Six ceiling paddle fans help to destratify the space, sending heat to the floor. The rock-climbing room and racquetball court do not have ventilation, nor does the front entrance office. There are ceiling fans in the rock-climbing and racquetball court, but they are used for heating only.

The weight room, locker room and aerobics room are ventilated with a heat recovery ventilator (HRV) installed in the second floor above the locker rooms, which is likely supplying about 1,000 cfm of outside air, as well as 1,000 CFM of exhaust from the locker rooms. These airflow rates are not sufficient to meet code or the cooling demands of the spaces, causing the spaces to be uncomfortably warm. The HRV is in poor condition due to lack of maintenance.

Space heating thermostats are the only controls in the building, and they are in fair to poor condition, with some missing cover plates. They are well past their useful service life and warrant replacement.

There are limited amounts of fintube baseboard throughout the building, installed in the main entry, small restrooms, the men's locker room, and Rec Center manager's office. All of it is in fair to poor condition. The numerous unit heaters in the building appear to be in fair condition and working sufficiently. All terminal heating equipment appears to be original to the building and warrants replacement due to age and condition. However, it appears to be functioning fine and is not as high of a priority as the boiler plant and air handling equipment. The ceiling heaters in the rock-climbing room and racquetball court could also be replaced.

Fuel oil for the boilers is stored outside in an above ground, single-wall tank of approximately 500-gallon capacity, north of the west wing. Fuel is transferred to the boiler room using rusted steel piping routed under the building. The fuel tank has substantial rust, no secondary containment, is mounted in concrete saddles without being anchored, has no labeling and does not have code required trim and accessories. The tank and piping should be replaced.

The electrical distribution consists of four 3-pole, double throw switches on the exterior of the building for switching panel board feeders between utility and standby generator power. The utility provides an 800 amp service and the generator is rated for 400 amps. The four panel branch circuit distribution areas are:

- Panel 'RC-A': Located in back of bowling alley. Primarily supports bowling alley equipment, lights and other locations specific items.

- Panel ‘RC-B’: Located in kitchen. Primarily supports kitchen, café, and concessions area of the bowling alley.
- Panel ‘RC-BR’ & ‘RC-BR1’: Located in gym boiler room. Primarily supports the boiler room, gym, and weight room.
- Panel ‘RC-C’, ‘RC-D1’, and ‘RC-D2’. RC-C is located in the hall near the Aerobics room and primarily serves the Aerobics room, locker rooms and jacuzzi. RC-1&2 are located in the second floor office above the weight room. It primarily serves the gym and weight rooms.

All the electrical distribution equipment was replaced in 2010 and are in good conduction. However, most of the panels are near capacity for physical breaker space.

There are concerns that the existing panel boards may not have the available space or amp capacity to support the new loads. Under normal circumstances, a panel with available space would have a power analyzer set up to record for a code required 30 days to determine the capacity of an existing system. Due to the ongoing pandemic, the use of a power analyzer may not accurately depict the building load as it currently well under normal operating conditions.

RECOMMENDATIONS

Both boiler plants will be demolished in their entirety including boilers and trim, pumps, expansion tanks, fuel piping, controls, glycol fill, and all piping in the boiler rooms. Abatement will likely be necessary for the piping insulation. Two new high-efficiency 3-pass cast iron sectional fuel oil boilers will be installed in the bowling alley boiler room which will be sized to serve the entire facility. The boiler room in the weight room will no longer serve as a boiler room. Each boiler will have a dedicated pump and will be connected into the building heating loop in a primary-secondary arrangement. Each boiler will be sized at 65% of the building heating load. A wall-mounted boiler control panel will be provided. The boilers will use Tigerloop deaerators with integral return fuel recirculation, so no fuel oil return piping will be necessary. Only a fuel oil supply pipe will be needed.

Three new variable frequency drive (VFD) circulation pumps will be installed to distribute heating fluid, each sized at 50% of the building heating load. VFD pumps will provide energy savings by varying speed and electrical consumption based on the heating demand of the building. All new piping will be installed in the boiler room. Portions of the piping serving the gymnasium and east wing will be demolished and replaced with new to accommodate the larger heating loads anticipated with larger ventilation equipment. There are numerous holes in the boiler room walls and ceiling that will need to be patched, and pipe penetrations sealed at wall.

Other new boiler plant equipment will include a 55-gallon polyethylene glycol storage/fill tank with integral pump and control panel, air separator/dirt strainer, expansion tank, gauges and thermometers. Boiler vents will be double-wall insulated factory-fabricated stainless-steel construction and each boiler will have a dedicated vent up to the roof.

The existing heating units throughout the building should be replaced with new, though they are not the primary focus of this condition survey. They could be replaced one-for-one with similar equipment of the same size, which would require minimal changes to existing piping and power connections.

New hot water generators will be installed in the east wing to serve the locker rooms. Two or three units would be necessary, which would likely be installed in the abandoned boiler room, or on the second floor above the locker rooms.

The west wing and gymnasium will be provided with air handling units to provide ventilation air required by code. Both units will be installed in the gymnasium. The air handler serving the gymnasium will be installed on the mezzanine above the front office. The west wing air handler will be installed on the mezzanine above the gymnasium restrooms. Placing the units on mezzanines will require providing a permanent means of access for maintenance. The mezzanines will also require analysis by a structural engineer to confirm they are constructed sufficiently to support air handlers. Both units will include a pre-heat coil, mixing box, filters, heating coil and fan. The air handlers will be sized for economizer (outside

air) cooling and provided with VFDs to increase airflow for cooling. Heat recovery will also be provided for each unit to reduce fuel oil consumption.

Bowling alley ductwork will be installed above the existing suspended acoustical ceiling as there appears to be adequate space. Diffusers will be placed in the acoustical ceiling grid in the occupied portions of the space. The space above ceiling will serve as a return air plenum to transfer air back to the unit. It is recommended that the commercial kitchen exhaust hood, ductwork and exhaust fan be demolished and replaced with equipment that meets current code requirements. The requirement for kitchen hood make-up air would be met with the new air handler.

There will need to be discussion about installation of gymnasium ductwork. There are a few ways it could be installed, with each option making a trade-off between effectiveness and cost. Generally, the basic options are to install ductwork and grilles at one end of the gymnasium and blow air toward the other side, or install ductwork the full length of the gym with diffusers that will blow down toward the floor. The first option would cost the least, but the second option would be the most effective for occupant comfort. Since it is our understanding that the gymnasium is used as a community gathering space as well as for athletics, it may be prudent to focus on occupant comfort. Sound will also be a consideration, to avoid loud equipment operation. Ductwork for the gymnasium will be installed exposed in the space, with diffusers mounted to the ducts. It is assumed at this time that the rock-climbing gym and racquetball court will be served by the gymnasium air handler. Two new hoods will be installed for each air handling unit on the front (south) exterior wall of the building for intake and exhaust for the two air handling units. It may be possible to combine them so only two hoods total are needed.

The east wing will receive two new ventilation units for code required ventilation. A heat recovery ventilator (HRV) will serve the locker rooms, providing continuous air changes, with duct mounted heating coils to temper the supply air. The weight room and aerobics room will be served by the same air handler, which will also have heat recovery, likely provided by a smaller HRV connected to the outside air ductwork. The air handler will be sized for economizer cooling and provided with a VFD to increase airflow for cooling. Both spaces will relieve air through a duct to the outdoors. New exterior hoods would be installed on the east side of the building for these units.

A combustion air duct and ventilation fan and duct will need to be installed in the boiler room. Two hoods will be placed on the west exterior wall and ductwork will be routed above the bowling alley ceiling to the boiler room to support these functions.

The new heating and ventilating equipment will be operated using direct digital controls (DDC). The size of the facility and proposed amount of equipment warrant DDC for more effective management of the HVAC systems. It will allow adjustment and flexibility in equipment operation, and alarms and troubleshooting tools for maintenance personnel. The intent will be to keep the web interface simple, and to provide only the data that maintenance personnel find useful. A CO2 sensor will be used with each air handler to monitor occupant load and control the amount of outside air that is brought into the spaces, reducing outside airflow during low occupancy. Reducing outside air will greatly reduce fuel oil consumption. The unit heaters heating large spaces could be provide with new thermostats, or could be operated by the DDC system. Operation by the DDC system would allow better control of equipment and space temperatures. The fintube baseboard heaters in the building will receive new control valves and programmable thermostats to allow reduction of space temperatures for energy savings when the building is not occupied.

The fuel tank and all fuel oil piping will be demolished and replaced with a new. The new tank will be an above ground UL-142 double wall tank, with code required trim. The volume of the tank will be determined after energy calculations are performed on the HVAC upgrade work. A mounting pad will be provided, constructed of concrete or timbers. New Schedule 40 steel piping will be installed above grade routed under the building to the boiler room.

Electrical will provide support for all new and modified branch circuits. Existing equipment scheduled for removal will have disconnect demolished and circuits demolished back to panel boards they were served from. New three-phase motors not utilizing VFDs will be provided with combination motor

starter disconnects with phase loss, phase reversal, and low voltage protection. Hand-off-auto switches and indicating lights will be included for maintaining and operating the equipment. All single-phase fractional horsepower motors will be provided with manual disconnect switches with thermal protection.

If the building operation has returned to normal operating conditions by the time of design, it is recommended that a power analyzer be set up on Panel 'RC-BR1' for 30 days to determine the available amp capacity to support the new mechanical loads. If the panel is determined to have capacity for the new loads than a new 100A, 208Y/120V, 3-Phase, 4-Wire panel board would be sub-fed from 'RC-BR1' to serve as a new mechanical equipment panel. The new panel will be located in the boiler room. If the panel 'RC-BR1' has limited capacity, then a second metering would be necessary and recommended to be placed on 'RC-D1' with the intent to balance new loads between these two panels.

If the building does not return to normal operating conditions by the time of design, or if in the case that the existing panelboards do not have the capacity to support the new loads, it is recommended that a new 3-pole, double throw switch be installed along side the existing on the exterior of the building to support a new 200A panel board. The new panel will be located in the boiler room and be intended to serve mechanical loads only.

Because the city considers the building to be an emergency shelter. The generator capacity will need to be carefully looked at. If during design, the generator is determined to be undersized for the new building loads, it will immediately be brought to the attention of the project manager for further discussion.

INSTALLATION AND OPERATIONS COSTS

The scope of work for this contract included investigation and recommendations for HVAC upgrades, with particular attention to central heating and ventilation equipment. It did not include cost estimation for the proposed upgrades. There are a few items that are worth noting with respect to costs.

The facility currently has minimal ventilation. According to current building codes, more ventilation is required. It will provide a healthier indoor environment for building occupants, and prolong the life of the building. It will also require more heating energy, which will increase operating costs. The design intent is to apply energy recovery technology to help curb those costs, but they cannot be eliminated altogether. The 2009 facility assessment identified ventilation as "not a priority at this time" due to the anticipated increase in energy costs. It is important to understand the implications of increasing ventilation prior to performing the work.

Direct digital control systems provide an excellent means of operating equipment efficiently and monitoring remotely for equipment failures. They are also expensive and generally require outside help from control contracting firms to maintain. There are almost limitless bells-and-whistles options available for DDC system, so it will be important to identify the minimal level of control and monitoring desired to help keep installation and operation costs down.

If you have any questions concerning the above, please do not hesitate to call me.

Sincerely,

Adam W. Wilson, PE
Senior Mechanical Engineer

aww/fs/hhm
20-0381R1/M0133

APPENDIX B

PROFESSIONAL HEATING AND VENTILATION UPGRADE DESIGN SERVICES
CITY FACILITIES

NOME CITY HALL HVAC CONDITION ASSESSMENT, AUG. 2020

Revised August 24, 2020
August 21, 2020

City of Nome
P.O. Box 281
Nome, AK 99762

ATTENTION: Glenn Steckman, City Manager

Dear Glenn,

REFERENCE: Nome City Hall HVAC Condition Assessment

This letter was revised to incorporate the correct electrical site information, which was previously incorrectly referencing the Recreation Center.

BACKGROUND

RSA Engineering visited the Nome City Hall on August 10-11 to evaluate the facility's HVAC systems. Of specific importance were the boiler plant and central ventilation system. The site visit was performed by Frank Silberer, electrical engineer, and Adam Wilson, mechanical engineer. Dave Barron, building inspector with the city of Nome, provided access to the facility and described building deficiencies he was aware of. The following information is a description of our findings on site, and our recommendations for improvement.

EXISTING CONDITIONS

The building is a two-story office of approximately 6,000 sqft, located on Front Street in Nome, constructed in 1976. It shares a heating plant with an adjacent senior center building.

The boiler plant consists of two Weil-McLain ABL-476 boilers of 229.6 MBH I-B-R output each. The system temperature is set at 170 deg. F supply. Two Grundfos circulators distribute heating glycol to the building. It is assumed only one runs at a time and the other is a back-up. A third Grundfos pump serves the XYZ Building (senior center) next door to the City Hall. They XYZ has baseboard heaters, but no air handlers. Boilers are operated using wall-mounted control panels with on-off switch, indicating lights, and alarms. Boiler temperatures and firing are controlled with aquastats. The heating fluid is a water-glycol mixture of unknown glycol percentage, that is manually added to the system using a pump mounted to a 55-gallon barrel. Heating piping is a mix of copper, steel and PEX, with roughly half of it insulated. The heating piping in the air handler room appears to have asbestos insulation on elbows. The boiler vent is a stainless-steel stack, approximately 20 feet tall, on the outside of the building, and is in poor condition. Other boiler plant problems include boilers installed inside of the code-required clearance for electrical equipment, which is a safety issue, and combustion air intake that is poorly protected from weather and likely undersized. All equipment in the boiler plant appears to be original to the building, making it almost 45 years old. The equipment seems to be operating sufficiently but is well past its useful service life and warrants replacement.

The ventilation system for the building consists of two constant-volume air handlers of approximately 5,000 CFM each, located on the second floor, stacked one on top of the other. The top unit serves the second floor and the bottom unit serves the first floor. Each unit has a mixing box for outside and return air, angled filter box, a face and bypass damper at the heating coil, a heating coil with 3-way control valve, and supply fan. The air handler room serves as a return air plenum. Two return fans – one serving the first floor and one serving the second floor – draw air back to the air handler room, where it enters the space and is either drawn into the air handler return opening, or goes out a 70"x 40" relief louver on the north wall. An exhaust fan is also installed in the air handler room, which serves the building restrooms

and exhausts directly to the outdoors. Outside air is provided through a 70”x 40” intake lover on the west side of the building, which connects to a sheet metal plenum that each air handler connects to. Air is distributed to spaces through ductwork installed above the acoustic tile ceiling. The space above ceiling also serves as a return air plenum, drawing air back to return air ductwork above ceiling that connects to the building return fans. The supply air temperature of each air handler is controlled using a space thermostat located on its respective floor. Similar to the boiler plant, the air handling equipment is original to the building and warrants replacement based on age. Significant improvements can also be made in unit control to improve space comfort and energy savings.

The building HVAC equipment is operated using electric controls original to the building. They are antiquated and warrant replacement. Space heating thermostats are in poor condition, with many missing cover plates. Most of the thermostats are mercury-based.

The fintube baseboard throughout the building appears to be in good to fair condition. Most of it appears to be original to the building, which would warrant replacement due to age. However, it appears to be functioning fine and is not as high of a priority as the boiler plant and air handling equipment. The front entry cabinet unit heater should be replaced due to having and old fan and motor.

Fuel oil for the boilers is stored in an above ground, double-wall tank of approximately 500-gallon capacity, next to the facility. Fuel is transferred to the boiler room through below grade piping that appears to be installed in a plastic corrugated carrier pipe. The fuel tank has substantial rust, with aggressive corrosion where the tank is mounted to the support saddle. The tank should be replaced. It was not possible to inspect the below grade piping but it is assumed it will need replaced as well due to corrosion. The above grade piping appears to be single-wall metal construction rather than double-wall plastic.

The main power distribution panel is a Square-D Power Style Type SW, 400 Amp, 3-Phase, 4-Wire. The Type SW models are no longer in production, and any new circuit breakers would need to be retrofitted for the panel. The physical branch circuit breaker space is about 60% full but is expected to have enough space to support any additional loads due to upgrades.

Branch circuit panel boards are Square-D Type NQOD 3-Phase, 4-Wire with varying amp ratings from 100-224. The Type NQOD models are no longer in production but listed circuit breakers are still readily available. Branch circuit panels located in the boiler room are near their physical capacity for additional circuits with few spare circuit breakers or space provisions. The branch circuit panel in the second-floor mechanical room is about 75% full on physical breaker space with several spare breakers available for use. At the time of the site visit, an instantaneous power reading was performed on each panel and found to be well under the amp capacity of the branch circuit. It should be noted that these readings were taken during an ongoing pandemic and that the building is likely seeing a reduced load than under normal operations. However, an office building like this one is not likely to see large swings in electrical load and an available ampacity of the panels could be determine with a safety factor and an engineer’s judgement of loads based on panel board circuit directories.

RECOMMENDATIONS

The boiler plant will be demolished in its entirety including boilers and trim, pumps, expansion tank, fuel piping, controls, glycol fill, and all piping in the boiler room. Abatement will likely be necessary for the piping insulation. Two new cast iron sectional fuel oil boilers will be installed, each with a dedicated pump, and will be connected to the building heating loop in a primary-secondary arrangement. Each boiler will be sized at 65% of the building heating load. A wall-mounted boiler control panel will be provided. The boilers will be installed on the east side of the room to avoid conflicts with electrical equipment clearances. The boilers will use Tigerloop deaerators with integral return fuel recirculation, so the fuel oil return piping to the fuel tank can be demolished. Only a fuel oil supply pipe will be needed.

Two new variable frequency drive (VFD) circulation pumps will be installed to distribute heating to City Hall and the XYZ Building, each sized at 65% of the building heating load. VFD pumps will provide

energy savings by varying speed and electrical consumption based on the heating demand of the building. The original building plans indicate there is a pressure by-pass valve in the heating system, which will be removed as it will not be necessary with VFD pumps. All new copper piping will be installed in the boiler room and connected to the existing pipes serving the buildings' heating systems. There are numerous holes in the boiler room walls and ceiling that will need to be patched, and pipe penetrations sealed at wall and ceiling assemblies.

Other new boiler plant equipment will include a 55-gallon polyethylene glycol storage/fill tank with integral pump and control panel, air separator/dirt strainer, expansion tank, gauges and thermometers. Boiler vents will be double-wall insulated factory-fabricated stainless-steel construction and will connect to a common vent of the same construction. The common vent could be installed outside of the building similar to the existing condition, but it will also be evaluated whether the vent can be installed up through the fan room and out the roof, reducing the wear and tear the vent would experience.

The two existing air handlers will be demolished, as will the two return fans and exhaust fan. Heating piping insulation in the fan room will likely require abatement. A new air handler will be provided to serve the whole building. The air handler will be sized for economizer (outside air) cooling and provided with a VFD to increase airflow for cooling. The return ductwork will be reconfigured in the air handler room to be ducted directly to the air handler, and to a building relief fan. The relief fan will have a VFD and will adjust speed to maintain a positive building pressure. A heat recovery ventilator (HRV) will be installed to provide continuous exhaust for the restrooms, and temper the air handler outside air with heat recovered from restroom exhaust. This will help to reduce building fuel oil consumption.

There are currently two exterior wall openings in the air handler room, one for the outside air louver and one for the relief air louver. The outside air louver will be demolished and the wall opening enlarged to provide a means of installing the new air handler. Once the air handler is installed the wall will be patched such that it can be opened again in the future, and a hole large enough for outside airflow to the air handler will remain. A new 90-degree downturned hood will be installed for outside air intake in place of a louver. The hood dimensions and placement will be coordinated with the boiler vent location. The relief louver will remain. It is recommended that all of the existing ductwork and ceiling grilles and diffusers in the building be cleaned as they likely have dust and debris in them from many years of service.

The air handler room walls and ceiling will be modified to provide better maintenance access and overall use of the space. The acoustical tile ceiling will be demolished and not replaced so the room will be open to structure. The platform and short wall supporting the return and exhaust fans will be demolished, as will the full-height wall next to the platform. This will provide sufficient space to perform air handler maintenance and future removal of heating coils. All of the interior walls enclosing the fan room will be extended up to the roof deck and sealed off from the adjacent above-ceiling spaces, constructed to provide an acoustic barrier.

The combustion air opening in the boiler room will likely need to be enlarged to provide sufficient combustion air. The filter on the exterior will be removed, a hood will be installed just sufficient to avoid rain penetrating the opening, and a 3/4" birdscreen will cover the opening. An upturned 90-degree hood will be installed on the inside of the wall opening in the boiler room. The room will also be provided with a cooling fan that will have a dedicated exterior hood.

The new heating and ventilating equipment will be operated using direct digital controls (DDC). This will allow adjustment and flexibility in equipment operation, and better alarms and troubleshooting tools for maintenance personnel. The intent will be to keep the web interface simple, and to provide only the data that maintenance personnel find useful. The DDC system will monitor the building temperature in one location on the first floor and one on the second floor, to alarm if the building gets too cold. A carbon dioxide (CO_2) sensor will be placed in the Council Chambers to monitor occupant load and control the amount of outside air that is brought into the spaces, reducing outside airflow during low occupancy. Since the Chambers are not used continuously, reducing outside air to the space will greatly reduce fuel oil consumption. All of the regularly occupied spaces that have baseboard heaters will receive programmable thermostats to allow reduction of space temperatures for energy savings when the building is not occupied. Utility and storage spaces will receive new on-off heating thermostats. All baseboard in

the building will receive new control valves to be operated with the new thermostats. The cabinet unit heater in the front entry vestibule will be demolished and replaced with a new unit. The fintube under the vestibule walk-off grille will also be demolished, but will not be replaced. The new cabinet unit heater will be installed as an inverted flow unit, blowing warm air across the floor, providing the same melting and evaporating function that the walk-off fintube was presumably installed to provide.

The fuel tank will be demolished and replaced with a new above ground UL-142 double wall tank of the same volume, with code required trim. The below grade fuel oil supply and return piping will be demolished, but the below grade carrier pipe will remain. A new double wall plastic fuel oil supply pipe will be installed from the fuel tank concrete mounting slab to the concrete slab outside of the boiler room. Above grade fuel oil piping will be schedule 40 steel.

Electrical will provide support for all new and modified branch circuits. Existing equipment scheduled for removal will have disconnect demolished and circuits demolished back to panel boards they were served from. New three-phase motors not utilizing VFDs will be provided with combination motor starter disconnects with phase loss, phase reversal, and low voltage protection. Hand-off-auto switches and indicating lights will be included for maintaining and operating the equipment. All single-phase fractional horsepower motors will be provided with manual disconnect switches with thermal protection.

If during design, it is determined that the branch circuit panels within the boiler room will not be able to support the new equipment, either by physical circuit capacity or ampacity, it would be recommended that the existing Panel EM be upgraded from a 30-Space, 100 Amp panel to a 42-space 225 Amp. Upgrading the panel is preferred over a new panel to prevent issues with code-required working space within the boiler room.

If you have any questions concerning the above, please do not hesitate to call me.

Sincerely,

Adam W. Wilson, PE
Senior Mechanical Engineer

aww/fs/hhm
20-0382R1/M0133

APPENDIX C

PROFESSIONAL HEATING AND VENTILATION UPGRADE DESIGN SERVICES

CITY FACILITIES

LIST OF AVAILABLE DOCUMENTS FOR REVIEW

REC CENTER

- Rec Center Ceiling Upgrade Project Plans
- Photos of Past Project Plan Documents
- Interior Photos
- Floor Plan Showing Panel Locations
- Emergency Boiler Replacement Permit Drawings and Photos (2021)

CITY HALL

- 1970 Plans
- 1975 Plans
- 1977 Plans
- Control Drawings
- Sketches of First and Second Floor Door Swings
- New City Hall Roof Plans, June 2013.
- Nome City Hall HVAC Condition Survey Report, December 2015

PUBLIC WORKS SHOP

- Photos of Old Plan Set
- Public Works Slab on Grade Foam Injection Plan

MINI CONVENTION CENTER

Repair Bowling Alley Building Partial Plan Set (Previous Use)