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Report to Mayor and City Council

Tuesday, November 17, 2020

Discussion

SUBJECT:

CONSIDER APPROVAL OF A DESIGN-BUILD AGREEMENT BETWEEN TRANE U.S. INC. AND THE CITY OF CARSON CONCERNING NEW AIR FILTRATION AND HVAC SYSTEMS AT CITY HALL AND THE COMMUNITY CENTER IN RESPONSE TO EMERGENCY ACTION AUTHORIZED DURING THE AUGUST 4, 2020 CITY COUNCIL MEETING (CITY COUNCIL)

I. SUMMARY

On July 21, 2020, the City Council supported staff’s use of emergency procedures to address the indoor air quality, specifically the heating, ventilation, and air conditioning (HVAC) systems within City facilities. Staff identified Trane Technologies (Trane) as a potential vendor because of the prior role it played in analyzing the HVAC systems at City Hall and at the Community Center during the California Energy Commission (CEC) grant application process of a prior project.

On August 4, 2020, the City Council approved a Memorandum of Understanding (MOU) with Trane authorizing it to spend a considerable amount of resources to work with City staff to refine the HVAC scope of work at City Hall and at the Community Center, prepare 30% design plans and provide a fixed-fee price for construction (Exhibit No. 1). The cost associated with this initial effort is valued at \$100,000, however, if this design build

agreement is approved this cost will be included and no payment on the MOU is owed. If the City chooses not to move forward with the project, \$100,000 would be owed to the contractor per the MOU.

The partial design plans and scope of work have been prepared and submitted for review and continued refinement. The scope of work, cost, and schedule has been reviewed by staff and are considered reasonable given the complexity and urgency of the work.

Staff is requesting City Council to approve a Design-Build Agreement with Trane for new air filtration and HVAC system replacements at City Hall and the Community Center in the amount of \$5,822,925.00. This includes the base cost of \$5,461,770.00, Option Add No. 1 for \$81,155.00 and Option Add No. 2 for \$280,000.00. Option Add No. 1 is a 4 year extended parts and labor warranty for the main equipment and Option Add No. 2 addresses the deteriorated wood around the exterior perimeter of the City Hall building which should be replaced at the same time as the roof and other City Hall improvements (Exhibit No. 2).

Staff issued a Tax-Exempt Lease Financing Request for Proposals (RFP) last month and proposals are due by November 16, 2020. Staff will provide a verbal update on the initial results of the submitted proposals and discuss potential financing options with the City Council at its November 17, 2020 meeting. With this verbal update, staff is seeking direction on whether to proceed with using reserve funds, outside financing, or a combination of both.

If the Council approves the Design-Build Agreement, staff can proceed with the administrative work necessary to prepare for the project before any work by the contractor begins. Staff will not issue a Notice to Proceed to Trane until the City Council approves the budget appropriations which are tentatively planned for December 1, 2020.

II. RECOMMENDATION

TAKE the following actions:

1. AWARD a Design-Build Agreement for new air filtration and HVAC systems at City Hall and the Community Center in the amount of \$5,822,925.00 to Trane U.S., Inc. subject to the City Council's approval of FY 20/21 budget amendment indicating the proposed funding source that staff will be identifying at a future City Council meeting.
2. AUTHORIZE the expenditure of contingency, if necessary, in an amount not-to-exceed \$349,375.50 (6%) for change orders that may include the removal and remediation of hazardous material, additional scope of work, permit fees, special inspection services, and any unforeseen construction work that may be required to complete this project as specified in section 1.9 of the Design-Build Agreement.
3. AUTHORIZE the Mayor to execute a Design-Build Agreement following approval as to form by the City Attorney.
4. DIRECT staff to review the financing proposals that were received pursuant to RFP No. 20-033 and bring back an item to the City Council for budget appropriation and consideration.

III. ALTERNATIVES

1. DO NOT APPROVE the award of a Design-Build Agreement to Trane U.S. Inc.
2. TAKE another action the City Council deems appropriate, consistent with the requirements of the law.

IV. BACKGROUND

History and Project Needs

Some concern has been expressed by the CDC and other credible medical sources that the Covid-19 virus may be transmitted via aerial (aerosols) as well as droplet methods. Although the role of potential aerial spread of the virus is not clearly understood, the seriousness of the pandemic suggests that out of extreme caution, air filtration systems should be improved to include the most up-to-date technology to address the potential for virus transmission. Staff has determined that the indoor air quality systems, specifically the heating, ventilation, and air conditioning (HVAC) systems within City Hall and the Community Center should be replaced and/or upgraded to improve the air filtration systems.

The HVAC system at City Hall is original to the building and antiquated. Many of the components have reached the end of their useful life and/or are not functioning, and trying to improve the indoor air quality with the existing system is not effective. Many of the air handlers at City Hall have little to no outside air coming in, which makes diluting the air with outside air - one of the recommendations -- impossible. The equipment is well beyond its useful life, and bringing in more outside air would strain the equipment beyond its operational boundaries.

Many of the exhaust fans at City Hall are no longer functional due to their age. Exhausting the air out to get the new fresh air in is difficult to do with no exhaust fans. Old equipment also contributes to higher humidity levels and it does not exchange heat as well as new equipment, causing moisture to remain in the air because of the higher relative temperatures. Last, cleaning the air with the current HVAC system is challenging, again due to the age and the design of the current system. Adding new filters alone will restrict air to the air handling units, causing lower airflows and uncomfortable indoor environments with not enough air changes.

Finally, the roof at City Hall is in need of replacement and staff has been patching leaks for years. Since the equipment on the roof will be removed and replaced, it was practical to include the roof scope at the same time. In addition, the wood trim around the exterior perimeter of the City Hall building is rotting and also needs to be replaced. The wood is original and a decorative feature of the building but it also helps shield some of the afternoon sunlight keeping the building cooler in the summer.

Scope of Work

The scope of work, at a very high level, includes the following:

- Removal and replacement of the HVAC system at City Hall including chillers, pumps, air handlers, exterior ductwork, reheat coils, exhaust fans, VFDs, and split systems.
- Replacement of the pneumatic controls with DDC controls and installation of a new Building Management System for City Hall that is also integrated with the Community Center.
- Removal and replacement of the roof at City Hall with a new PVC membrane roof to match the Community Center, and the removal and replacement of the deteriorated wood around the exterior perimeter of the building.
- Integration of a new advanced, centralized filtration system such as the Trane Catalytic Air Cleaning System.
- Removal and replacement of a portion of the HVAC system at the Community Center including chillers, pumps, central plant controls system, boilers, and one air handler and associated exterior ductwork for that specific air handler. The new air handler will have an advanced air cleaning system, and the existing air handlers that remain will be enhanced with UV lights and Bi-polar ionization.
- Design, Engineering, Project Management, Startup, Commissioning, and adherence to City of Carson insurance, bonding, labor compliance, and other requirements.
- A more complete scope is included as part of the Contract Attachments.

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

ASHRAE has been around for over 100 years and the society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability within the industry. They also provide guidance and develop standards intended to mitigate the risk of infectious disease transmission in the built environment. In April 2020, they released a position document on infectious aerosols which can be accessed via this link:

[https://www.ashrae.org/File%20Library/About/Position%](https://www.ashrae.org/File%20Library/About/Position%20Statement/Infectious%20Aerosols%20Position%20Statement.pdf)

While continued research is still needed, the document provides strategies that have been found to be effective as controlling/reducing transmission of infectious aerosols (airborne particles). Recommendations include the following:

- Dilute: Making sure plenty of fresh outdoor air dilutes the buildup of indoor contaminants through proper ventilation.
- Exhaust: Getting exhaust air out is equally important, especially air from kitchens, restrooms and combustion systems.
- Contain: Keeping indoor humidity levels within the ASHRAE recommended range maximizes occupant comfort and reduces the risk of microbial growth.
- Clean: Reducing particles, odors, or microorganisms (such as mold, bacteria and viruses).

Benefits

The system proposed by Trane was developed using ASHRAE recommendations for improving indoor air quality and it will address the aging building infrastructure and the roof

at City Hall.

The first recommendation is to dilute the air with large amounts of outside air. Currently, there is no outside air at City Hall. Outside air improves indoor air quality by diluting the building of contaminants (viruses) through ventilation. Trane's project includes new air handlers, new controls, new ductwork to ensure the proper amount of outside air is being brought in the system at all times. Bringing in outside air (when it's cooler outside) improves the buildings' efficiency and helps meet ASHRAE required levels of fresh air, something that is impossible to do with our current infrastructure.

Second, the proposed system will exhaust the stale air out of the building. Many of the exhaust fans at City Hall are no longer functional due to their age. Exhausting the air out to get the new fresh air in is difficult to do with the non-operational exhaust fans because you would create negative pressure in the buildings. The pneumatic controls, antiquated and inoperable equipment make it impossible to exhaust the right amount of air and maintain the proper building static pressure. The proposed project will replace/install new exhaust fans, replace the pneumatic control with direct digital controls (DDC) that will be automated and optimized to bring in and exhaust out the right amount of air.

Third, the proposed system will contain, keeping humidity levels controlled within the ASHRAE-recommended ranges by replacing the older equipment and incorporating automation and optimization in to the system. The existing chillers and pumps are at the end of their useful life and not functioning properly, and maintaining the chilled water temperatures and flows needed to do this is not currently possible. Furthermore, the existing pneumatic controls that provide zero visibility into system performance, programming, temperature and humidity levels make humidity and comfort control very difficult if not impossible to achieve.

Last, cleaning the air with the current HVAC system is challenging, again due to the age and the design of the current system and inability to upgrade the filters because it will cause lower airflows and uncomfortable indoor environments. The new proposed system will utilize the highest level of filters and ultraviolet (UV) lamps in ductwork and air-handling equipment and ensure proper shielding to prevent damage to materials or eyes and skin.

In addition to improving the indoor air quality, the building will operate more efficiently. Annual energy savings of approximately 370,000 KWh and 2000 therms, annual energy cost savings of approximately \$56,000 and one-time utility rebates in the amount of approximately \$27,000 are expected. This represents approximately 15% reduction in the energy used for City Hall and the Community Center.

Alternatives Considered

A project of this scope and cost should not be taken lightly and staff looked into alternative approaches such as (1) maintaining status quo, (2) gradually replacing the system over time, and (3) adding UV lights and high grade filters into the existing system.

Status Quo

Maintaining status quo or the "do nothing" approach is not in the best interest of the City or the building occupants and visitors. The system needs constant repair, the short-term fixes are ineffective, and ASHRAE recommended improvements are not achievable.

Gradual Replacement

Gradually replacing the system section by section, at this point in time, is not recommended because it would take many years to accomplish, most of the system is far beyond its useful life, and parts of the system are expected to fail any day. The City will be endlessly responding to a failed system every time a major part fails. ASHRAE recommendations may be achievable in the new sections, however, the building as a whole would not operate at acceptable levels. Replacing piecemeal will require decisions about what system component to replace first, the central plant, the air handling units on the roof, air handling units within the building, controls and building automation, roof and exhaust fans, etc. all of which need immediate attention. A system such as this works as a whole, and it is difficult to attach new modern equipment to old infrastructure. In addition, it would be years before users of the building will gain any additional protection from virus, mold, allergen, or other air quality contaminants that would be immediately provided by a new system. And finally, piecemeal replacement will be more costly in the long run than full replacement all at the same time.

Ideally, the system should have been replaced over the years. The City received more than 40 years from the existing system and replacement in one manner or another is imminent. Doing it as one project will be the most cost-effective method and provides the best system for the money. This new system with proper preventative maintenance will likely last for up to 30 years.

Addition of UV Lights and Filters over time

Adding new UV lighting and high-grade filters into the existing system may help reduce some of the airborne particles, but it will restrict airflow in the system and further reduce the comfort within the building. Furthermore, it is not possible to meet the other ASHRAE recommendations because many of the building exhaust fans do not work and the City Hall air handling units are not able to bring in fresh air.

The turn-key project proposed by Trane incorporates a range of strategies that are in line with ASHRAE recommendations and it is a comprehensive solution to address the aging system. This project will make the building more efficient and healthier to work in for decades.

Construction Management

Staff intends to issue a project specific Request for Proposals (RFP) seeking construction management support services for this project and to assist with the HVAC and electrical work planned at the other 12 City sites. Staff will be looking for a firm that has full knowledge of and extensive experience in managing the construction of similar projects. The construction phase of the project is projected to be 8-10 months and construction management support is planned for 12 months to ensure adequate time is available at the end of the project to address outstanding and close-out activity. The construction manager will oversee the day to day activities; attend progress meetings; monitor the construction schedule; review plans; coordinate inspections; review invoices, submittals, and requests for information; monitor and confirm compliance with prevailing wage including PLA monitoring, Enhanced Electrical Safety Policy and local hire provisions of the contract;

provide weekly updates to the contract officer; and other related work. Staff intends to budget \$349,375.50 which is 6 percent of the project cost for this work. If the RFP is released in the latter part of November, following City Council approval, a construction management firm could be available by late-January 2021.

Project Cost

Below is an approximate breakdown of the project costs

| Description of Work | Cost |
|---|------------------------|
| Mobilization (10%) | \$ 538,600.00 |
| Design Engineering | \$ 175,500.00 |
| Project Development and Energy Engineering | \$ 90,000.00 |
| Install Plasma Air | \$ 175,500.00 |
| City Hall Roof | \$ 819,000.00 |
| City Hall Chiller Replacement | \$ 450,000.00 |
| Install New Pumps and VFD's | \$ 225,000.00 |
| Community Center Chiller Replacement | \$ 472,500.00 |
| Community Center Boiler Replacement | \$ 117,000.00 |
| City Hall Air Handler Replacements | \$ 1,170,000.00 |
| Community Center Air Handler Replacement | \$ 247,500.00 |
| Move 'N Cool Rentals | \$ 30,000.00 |
| Remove and Replace Antennas | \$ 10,000.00 |
| City Hall Split Systems | \$ 49,500.00 |
| City Hall Exhaust Fans | \$ 99,000.00 |
| Controls Integration / Tracer Ensemble | \$ 121,500.00 |
| Community Center Controls | \$ 103,500.00 |
| City Hall Controls | \$ 464,000.00 |
| Air and Water Balance | \$ 59,400.00 |
| Building Electrical Repair Work | \$ 44,270.00 |
| TOTAL BASE PRICE | \$ 5,461,770.00 |
| Optional Add No. 1 (4 year Parts and Labor Warranty) | \$81,155.00 |
| Optional Add No. 2 (Remove and Replace decorative wood) - | \$280,000.00 |
| | |
| OTHER ASSOCIATED PROJECT COSTS | |
| Budget for network cable/installation | \$25,000.00 |
| Construction Management Support | \$349,375.50 |
| Contingency | \$349,375.50 |
| TOTAL PROJECT COST | \$6,546,676.00 |

Financing Options

On October 29, 2020, the City issued an RFP titled, "Tax Exempt Lease Purchase

Financial Services” seeking proposals from qualified and eligible financial institutions to provide up to \$6 million in outside financing. Proposals are due on November 16, 2020. Staff will provide a verbal update on the initial results of the submitted proposals and discuss potential financing options with the City Council. Staff is seeking direction on whether to proceed with using reserve funds, outside financing, or a combination of both. Subsequent to the discussion, staff will make budget recommendations and present its finding at a future City Council meeting.

The City’s Emergency Services Manager will be exploring grant options through FEMA, the City is monitoring potential COVID relief funding opportunities, and City staff will be looking for other options to obtain grant funding. If financing is selected for some or all of the project, there is a possibility that provisions for no prepayment penalties could be included so that any grant funding can be applied to the project thus lowering the financed amount.

Risk

When work is performed on older buildings and equipment, exposure to asbestos is a real concern that needs to be investigated. Trane hired a firm to perform asbestos testing throughout the proposed work zones and the results were better than expected. Trane’s scope includes spot abatement on some roof sealant and some stucco. If new work is added, additional asbestos testing and possible abatement may be needed. The contingency budget is available to address this potential risk.

The project plans will need to be reviewed by the Building and Safety Department before permits can be issued. Currently, the City contracts with Los Angeles County Building and Safety Department for these services. Staff has identified a potential delay in plan checking review time that could impact the schedule. Staff is looking into the possibility of designating someone other than the City’s current building official to assist with this issue.

The equipment proposed for this project is in high demand and there may be significant lead times. Staff is looking into the possibility of ordering material in advance of final plan approval or issuance of permits. The equipment is customized for individual use and if the wrong equipment is ordered it cannot be returned. Staff will endeavor to approve equipment submittal as soon as practicable without running the risk of plan check changes.

Requirements

Trane is required to adhere to the City’s Project Labor Agreement and the Enhanced Electrical Safety Policy and prepare and submit compliance reports. The work is also subject to compliance monitoring and enforcement by the Department of Industrial Relations (DIR). Trane will need to register with the DIR and pay prevailing wages.

Emergency Contracting for Public Projects

On August 4, 2020, after the City Council made the requisite findings for the City to operate under the Public Contract Code (“PCC”) emergency procedures, the City Council authorized by at least a four-fifths vote implementation of emergency procurement procedures to enable staff to move forward with an initiative intended to help reduce the proliferation of the Covid-19 virus. The emergency procedures allow the City to dispense

with the normal bidding requirements under the PCC for replacement of indoor air filtration systems, specifically, the HVAC systems at City Hall and the Community Center, which project will require design and construction work. As part of the PCC’s emergency procedures, the City Council was required to review the emergency action at all regularly scheduled City Council meetings following the August 4 meeting until the action is terminated. On August 18, 2020 and during all subsequent regularly scheduled Council meetings thereafter, the Council reviewed the emergency action and determined, by at least a fourth-fifths vote, that there was a need to continue the emergency action because the project was still in the design phase. Awarding the Design-Build Agreement with Trane will terminate the need to continue with the emergency action.

Legal Considerations with Design-Build Agreement

Typically, when the City’s negotiations with a contractor results in deviations from the City’s standard contract language, the City Attorney notes those changes in the applicable staff report, when material. Because the subject design-build agreement is unique and no standard City contract exists, there are no deviations to call to the Council’s attention; however, a couple of noteworthy issues will be raised here.

First, while typically the City’s contracts provide that City will retain ownership of all design documents produced during the course of performance of the contract, here, Trane will retain ownership due to proprietary concerns while City will be granted a royalty-free license to use the documents. The City will also be permitted to use modified versions of the documents at its own risk in the event any future use or reuse is desired.

Additionally, Trane requires inclusion of a “Limitation of Liability” provision that limits both parties’ liability for consequential and special damages under the contract. This type of limitation of liability clause is typical for public works contracts.

Post Construction Maintenance and Service Agreement

After the initial one-year parts and labor workmanship warranty from Trane, the City should consider if a preventive maintenance program is needed. Staff estimates O&M support at an average cost of approximately \$75,000 per year that would cover the major components, including the chillers, air handlers, split systems, and the new server-based control systems. The proposal also includes ongoing hosting, hardware, and software licensing costs.

Project Schedule

The anticipated schedule for the project is as follows:

| | |
|--|---|
| Award of Design-Build Agreement | November 17, 2020 |
| City Council Consideration of Funding Package | December 1, 2020 |
| Issue Notice to Proceed with Phase 1 | After City Council Appropriates Funding |
| City Council to award Contract for CM support | January 2021 |
| Phase 1 - Complete balance of design work, formal plan check, and permitting | January - February 2021 |
| City Council to Adopt project plans | February 2021 |
| Phase 2 - Construction | March - November 2021 |

| | |
|---|-------------------------------|
| Completion of Construction & Punch List | November 2021 |
| City Council to Accept Project as Complete | December 2021 - February 2022 |
| One Year Labor and Material Warranty Period (Trane) | 12 months post construction |

Other Facilities

The City Council provided direction to utilize an informal bidding process to secure on-call local contractors to perform HVAC and Electrical work at the other 12 City sites, however, after consultation with the City Attorney’s office, it was determined that individual awards would be more appropriate for this type of work.

Staff is in the process of developing individual RFPs with site specific scope of work to be released site by site starting December 2020. Site specific awards will be presented to the City Council for consideration throughout the 2021 calendar year. To accelerate delivery of the HVAC projects at the 12 smaller sites, City staff will take on some of the improvements. Most of the HVAC equipment at the park buildings consists of roof top package units or split systems with outdoor condensing units and heating furnaces with cooling coils located in building mechanical rooms. A very rough budget of approximately \$1,000,000 is an estimated cost of what would be needed to replace the package units, condensing units, furnaces, boilers, thermostats, and controls at all the other sites.

V. FISCAL IMPACT

The cost of the Design-Build Agreement with Trane for new air filtration and HVAC system replacements at City Hall and the Community Center is \$5,822,925.00 plus City contingency funds of \$349,375.50.

The other associated project cost includes \$25,000 for network cable installation and \$349,375.50 for construction support.

City reserve funds, outside financing, or a combination of both can be used to fund this work. Staff will make budget recommendations and present its finding at a future City Council meeting which is tentatively scheduled for December 1, 2020.

VI. EXHIBITS

1. MOU dated August 4, 2020. (pgs.11-20)

2. Agreement between Trane U.S., Inc. and the City of Carson.

(pgs. 21-75)

Prepared by: Reata Kulcsar, Sustainability Administrator - Utilities & Gilbert Marquez, P.E.
City Engineer