CITY OF COMMERCE
AGENDA REPORT

Item No. _____

TO: Honorable City Council

FROM: City Administrator

SUBJECT: Final Report regarding the Brenda Villa Aquatic Center Air Quality Evaluation

MEETING DATE: August 16, 2016

RECOMMENDATION:

Approve a Resolution authorizing:

1. Recommended priority phase 1 repairs/improvements including some HVAC modifications for spectator area;

2. A cost analysis for future replacement of HVAC unit 1R and additional units as necessary and/or additional circuit to dehumidifier units;

3. A structural engineer to assess the feasibility and cost of modifying the BVAC wall structure to allow natural ventilation;

4. A Dewberry (consultant) to re-evaluate the air quality conditions with completion of the lap pool project, model and provide specifications for replacement dehumidification units based on continued site conditions to accommodate various water temperatures;

5. Drafting of preliminary conceptual plans for expanding the mechanical room on both sides of the building to place new dehumidifier units on the ground level and provide much needed storage to the Aquatic Center; and

6. An appropriation of $300,000.

BACKGROUND/ANALYSIS:

Since construction in 2001, the Aquatic Center hashadissues with ventilation. Shortly after construction, the City engaged the service of EMC Engineers to conduct an Indoor Air Quality Study. Their final report was issued in March 2006 and included various recommendations. The City implemented all recommendations, except recommendation 5b (Increase outside air using operable windows).

On July 7, 2015, the City Council approved an agreement with BOA Architecture in the amount of $43,000, to conduct a new air quality evaluation and recommend options for City consideration. Staff received their final report on March 14, 2016 (see attached report.)

According to consultants' evaluation, the air quality issues arise from the following "system deficiencies":

1. Exhaust fan #1 running at 80% capacity and needing repairs.
2. Exhaust fan #2 running slowly and then surging and not operating per design.
3. Outside air dampers for the dehumidifiers are closed or nearly closed and do not have automatic operation.
4. Bypass dampers of the dehumidifiers are locked in a partially open position and allowing unconditioned air to bypass the cooling coils.
5. Leaking dehumidifier valve.
6. Dehumidifiers are at the end of their life expectancy of 15 years and not working at full capacity any longer.
7. Control points need calibration.
8. R-22 refrigerant used by the dehumidifiers is being phased out since it does not meet current environmental standards for non-ozone depleting refrigerants. The use of reclaimed gas, until which time the City replaces the dehumidifiers, will become increasingly expensive.
9. The mechanical room is a poured-in place concrete structure that makes it difficult, if not impossible, to cost-effectively replace aging equipment. Two dehumidifiers are located on the second floor of two concrete structures. One is on the northwest side facing the North Annex and the other is on the northeast side, facing the parking lot and park. The access to the second level is through a small, approximate 3'x3'access opening in the ceiling on the ground level.

Mechanical Room - concrete structure

Facilities Maintenance can address some of the system deficiencies through a contracted maintenance provider used for the pool's mechanical equipment. This includes repairs to

the exhaust fans, leaking valve, and calibration until which time major equipment is replaced.

The two major challenges are aging equipment (mechanical) and wide ranging pool user temperatures (user preferences). The Aquatic Center structure is a complicated building with expensive equipment that requires specialized and constant care. In addition, the design configurations of the equipment and enclosed structure were not intended for various groups of users wanting different water temperatures ranging from a low of 77 degrees Fahrenheit (F) for collegiate meets to a high of 89 degrees F for the warm up pool. *It was designed for an indoor condition of 82 degrees F for the pools at 50-60% relative humidity. Changes in temperatures, especially wide ranging temperatures, make all the difference in user and visitor comfort in an enclosed pool facility.*

The consultant recommends the following:

1. Ventilation fan system repairs including some HVAC modifications for spectator area.
2. Leaking valve repair on dehumidifier unit 1.
3. Bypass damper repair on the dehumidifier.
4. Use of a pool cover already owned by the City.
5. Installation of spot cooling for the spectator areas.

Staff recommends that the City pursue the consultants' recommendations and also:

1. Direct a structural engineer to assess the feasibility of modifying the pool structure to allow natural ventilation.
2. Direct Dewberry to re-evaluate the air quality conditions based on the completed lap pool filtration project, model the pool equipment needs based on various water usage temperatures and provide new dehumidifier unit specifications.
3. Perform a cost analysis for future replacement of HVAC unit 1R and/or additional circuit to dehumidifier units; and
4. Draft preliminary conceptual plans for expanding the mechanical room on both sides of the building to place new dehumidifier units on the ground level for easier access and provide much needed storage for the Aquatic Center.

Per the attached report, the consultant also recommends as an option adding natural ventilation in phases through the replacement of existing fixed in place glass enclosures with roll up openings and other manually controlled openings. However, staff recommends that since the main source of the challenge is mechanical and user temperature preference, the wisest course of action is to first address the initial recommendations and staff's additional recommendations before expanding the scope of work to include costly structural changes without addressing the equipment changes needed. Staff also recommends that the consultant's "natural ventilation option" be considered as a Phase 3 and that re-evaluation of the Aquatic Center's air quality should be conducted following completion of Phase 1 and 2 improvements before considering implementing any natural ventilation options.

Staff will return to Council for authorization to replace the dehumidifiers in a future fiscal year to address the Air Quality Evaluation's reported "second priority repairs (Phase 2)" once Phase 1 repairs, re-evaluation, and conceptual plans for their placement are completed. The consultant estimated their replacement, including design, demolition and construction cost, at $3,000,000 to $4,000,000.

ALTERNATIVES:

1. Approve staff recommendation.
2. Disapprove staff recommendation.
3. Provide further direction to staff.

FISCAL IMPACT:

The fiscal impact is $300,000 ($96,500 for consultant recommendations and $203,500 for staff's additional recommendations, which includes $5,000 for a structural engineer assessment, $35,000 for re-evaluation of air quality conditions and determination of dehumidifier unit specifications and $120,000 for the spectator area modifications, and $19,000 for conceptual plans for mechanical room modifications, and $24,500 [5%] for changes in scope).

The City Council approved $300,000 as part of the Fiscal Year 2016/17 budget and CIP list from Measure AA Capital Outlay proceeds.

RELATIONSHIP TO STRATEGIC GOALS:

This item is related to the specific 2012 Strategic Goal to develop a tangible environmental mitigation plan.

Approved by: Maryam Babaki, Director of Public Works and Development Services
Approved by: Robert Lipton, Director of Parks and Recreation
Prepared by: Gina Nila, Deputy Director of Public Works Operations
Reviewed by: VilkoDomic, Finance Director
Approved as to form: Eduardo Olivo, City Attorney
Respectfully submitted: Jorge Rifá, City Administrator

Attachment: Resolution
Air Quality Evaluation Report dated March 14, 2016
PowerPoint Presentation