



# City of Denton

City Hall  
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Denton, Texas  
[www.cityofdenton.com](http://www.cityofdenton.com)

## AGENDA INFORMATION SHEET

**DEPARTMENT:** Transportation

**CM/ DCM/ ACM:** Mario Canizares

**DATE:** December 12, 2017

### **SUBJECT**

#### **..Title**

Receive a report, hold a discussion and provide direction on design concepts and schedule for the proposed reconstruction of Fire Station 3.

#### **..Body**

### **BACKGROUND**

On September 12, 2017, staff presented the City Council with schematic design details for the replacement of Fire Station 3. This station is scoped to be larger than the existing station to accommodate an additional Ladder Truck, based the Fire Department's Facility Study. This larger footprint was incorporated into the Fire Department's 2014 Bond Proposal to address the operational life of the building which is programmed to be in excess of fifty years and to adequately serve reasonable expansion projections of the Fire Department.

Plans that were presented, during the Council Work Session in September, represented approximately 40-percent of the design level for the proposed facility. The intent of the presentation was to demonstrate spatial relationships, scale and form of the station and provide Council the opportunity to weigh in on design components. The presentation included three facility scopes or floor plans were developed and considered as well as three options for foundations and two façade options. Staff received direction to advance the architect recommended foundation, drilled pier with structural slabs, a more robust foundation providing the best structural support for the building, considering anticipated useful life of the station to be greater than 50 years. Council also provided direction to advance the facility design with a traditional masonry façade similar to the recently completed Station 2 and Station 4, currently under construction.

The third design option considered by Council as part of the schematic design presentation was the floor plan. Three scopes were presented as follows:

- Scope 1 with an approximate area of 16,100 square feet,
- Scope 2 phased construction of a 15,332 square foot facility (initial floor plan of 13,457) and
- Scope 3, a 14,092 square foot phased floor plan (initial floor plan of 12,217 square feet).

Each of the three scopes considered incorporated similar design layouts and features from Station 2 and Station 4, as well as lessons learned from the recently completed Station 2. Council advised staff to move forward with a final design on Scope 1, in order to capitalize on economies of scale as part of the construction process and to reduce the potential of inflated construction costs of phased construction in the out years. Council asked staff to seek opportunities to reduce the proposed 16,100 square foot floor plan presented. Kirkpatrick Architectural Studio worked closely with Fire Department design representatives and City of Denton Facilities Management representatives in identifying a total reduction of 420 square feet

to scope. This resulted in a floor plan of 15,680 square feet. The vehicle bay was reduced by 340 square feet, the living quarters were reduced by 44 square feet and the support areas by 36 square feet.

The design team is seeking Council direction for two remaining design options: The type of roofing system and type of heating ventilation and air conditioning (HVAC) system. The architect has determined the cost of two different roof options and two different HVAC options for Station 3. Each of these options are outlined below:

### **Roofing Options:**

#### **Hyload Roof System:**

- \$248,108 – base bid
- Hyload is standard for City facilities
- Roofing membrane 60 mil thick with a flood coat (tar) and gravel
- Twenty year warranty no dollar limit restriction, no pedestrian traffic restrictions, includes up to 4” hail
- Hyload Manufacturing representative provides the City with architectural services and professional inspection services throughout the construction phase at no cost to the City

#### **Thermoplastic Polyolefin (TPO) Roof System:**

- \$169,698 (\$78,410 less than base bid Hyload roof)
- Economical roofing system that can be purchased, scoped cost is 45 mil thickness
- No flood coat (tar) or gravel
- No warranty against hail
- No warranty against gale force winds (40 mph or over)
- No warranty against pedestrian traffic associated with roof or HVAC maintenance
- Anticipated higher life-cycle cost due to maintenance and replacement schedule

### **HVAC Options:**

#### **Variable Refrigerant Flow (VRF):**

- \$275,000 – base bid
- City of Denton Facilities Management team believes the VRF is the best system for this facility due to enhanced ability to control multiple zones independently allowing the opportunity to better control infrequently occupied spaces, thus reducing operational cost.
- Engineer’s estimate indicates payback of 3.8 years.
- VRF system anticipated life 20 – 25 years

#### **Roof Top Units (RTU):**

- \$262,218 (\$12,782 less than VRF base bid)
- RTUs are less expensive to install but cost more to operate and have higher life cycle maintenance cost
- RTUs add weight to the roof and require more foot traffic on roof
- RTUs require aesthetic screening from street elevation
- RTUs have anticipated life of 12-15 years

## **ESTIMATED SCHEDULE OF PROJECT**

Finalization of Construction Documents is estimated to take 18 weeks, followed by submittal of plans for building permit, advertising and Council consideration/award of construction contract in the fall of 2018. Construction phase is estimated to take 18 months and is estimated to start in December of 2018.

## **PRIOR ACTION/REVIEW (Council, Boards, Commissions)**

December 13, 2016 – Station 4 Construction Contract

January 10, 2017 – Station 4 design process

April 11, 2017 – Station 3 design process

April 18, 2017 – Station 3 design contract awarded

September 12, 2017 – Station 3 schematic design review

## **FISCAL INFORMATION**

The 2014 Bond Program estimated the reconstruction cost of Station 3 to be \$8,620,000. The City of Denton closed on the property in May 2016 in the amount of \$1,776,000. Kirkpatrick Studios was awarded a design contract in the amount not to exceed \$652,000 for the design of Station 3 on April 18, 2017. The revised opinion of probable cost for the recommended design is \$6,280,163. As reported in September, the current project account has a deficit due to transfers to Station 4 and to the Burn Tower. Based on recommended design elements of Station 3 the project has a deficit of approximately \$1,682,750 as estimated in the professionally developed Opinion of Probable Cost (Exhibit 3)

## **STRATEGIC PLAN RELATIONSHIP**

The City of Denton's Strategic Plan is an action-oriented road map that will help the City achieve its vision. The foundation for the plan is the five long-term Key Focus Areas (KFA): Organizational Excellence; Public Infrastructure; Economic Development; Safe, Livable, and Family-Friendly Community; and Sustainability and Environmental Stewardship. While individual items may support multiple KFAs, this specific City Council agenda item contributes most directly to the following KFA and goal:

**Related Key Focus Area:**     **Safe, Liveable & Family-Friendly Community**

**Related Goal:**               **1.1 Manage financial resources in a responsible manner**

## **EXHIBITS**

1. Agenda Information Sheet
2. Fire Station 3 PowerPoint Presentation
3. Opinion of Probable Cost

Respectfully submitted:  
Mark Nelson  
Transportation Director