FACILITIES ASSESSMENT AND MASTER PLAN
Executive Summary

JACKSON COUNTY FIRE DISTRICT No. 5

Neil Creek Fire Station (Station #2)
Phoenix City Fire Station (Station #3)

May 14, 2019
Job No. 18095
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover Page</td>
<td>1</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>2</td>
</tr>
<tr>
<td><strong>Executive Summary</strong></td>
<td></td>
</tr>
<tr>
<td>a. Introduction</td>
<td>4</td>
</tr>
<tr>
<td>b. Cost Summary</td>
<td>4</td>
</tr>
<tr>
<td>c. Service Area Growth Projections</td>
<td>4</td>
</tr>
<tr>
<td>d. Impacts of Projected Growth</td>
<td>5</td>
</tr>
<tr>
<td>Fire District 5 Service Area Map</td>
<td>5</td>
</tr>
<tr>
<td><strong>Existing Facilities Overview</strong></td>
<td></td>
</tr>
<tr>
<td>a. Condition Report - Station #2 - Neil Creek</td>
<td>7</td>
</tr>
<tr>
<td>b. Condition Report - Station #3 - Phoenix City</td>
<td>11</td>
</tr>
<tr>
<td><strong>Remodel vs. Replacement</strong></td>
<td></td>
</tr>
<tr>
<td>a. Remodel vs. New Building</td>
<td>15</td>
</tr>
<tr>
<td>b. Remodel Options / Scope</td>
<td>15</td>
</tr>
<tr>
<td>c. Site Criteria</td>
<td>17</td>
</tr>
<tr>
<td><strong>Design Options</strong></td>
<td></td>
</tr>
<tr>
<td>a. Single Story Plan</td>
<td>20</td>
</tr>
<tr>
<td>b. Two Story Plan</td>
<td>21</td>
</tr>
<tr>
<td>c. Partnerships with City of Phoenix</td>
<td>22</td>
</tr>
<tr>
<td><strong>Sample Site Layouts</strong></td>
<td></td>
</tr>
<tr>
<td>a. Station 2 - Neil Creek</td>
<td>23</td>
</tr>
<tr>
<td>a. Station 3 - Phoenix City</td>
<td>24</td>
</tr>
</tbody>
</table>
New Building Cost

Land Cost

Funding Opportunities

a. Financing - Mortgage Loan 26
b. Financing - Developer Lease / Lease to Own 26
c. General Obligation Bonds 27
d. Certificates of Participation (COP’s) 27
e. Capital Pledge Campaign 27
f. Private Source Founding 27
g. Partnerships and Landswaps 27
h. Grants 28
i. Privatized development and Tax-Exempt Financing 28

Project Delivery Options

a. Design-Bid-Build 28
b. CMGC 29
c. Design-Build 29

Construction Options

a. Wood Framed / Traditional Construction 30
b. Pre-Engineered Metal Building 30
c. Modular Construction 31
d. Modular Buildings 31
e. Modular Interiors 32
f. Adaptive Reuse 32

Appendix

a. Structural Facility Condition Assessment A
b. Civil Facility Condition Assessment B
c. Mechanical & Electrical Assessment C
EXECUTIVE SUMMARY

Introduction
Soderstrom Architects has been contracted to do a conditions assessment of the Jackson County Fire District No. 5 Station Number 2 (Neil Creek Station) and Station Number 3 (Phoenix City Station) and a Master Plan indicating requirements for repair and options for replacement. This will allow the District to make a determination of the best approach for modernization of their facilities that best serves the communities within its boundaries. This report provides observations of the existing facilities, replacement options, and probable cost ranges for repairs and replacement options.

The replacement options explored for each station are replacement at existing location using either a single story station or two story station, and replacement at new location. Options for obtaining land and for funding the project are discussed. In the case of the Phoenix City Station, there is the opportunity to do a combined project with the City of Phoenix. This option would be a combined building housing the City Hall, Police Department and the Fire Station. This option would take advantage of shared resources to reduce the footprint of the building (or buildings).

Cost Summary
At the high end of estimates, cost for Repair/Addition of existing facilities is estimated to be $4 million per building. Cost to replace is $4.3 million for a two story building (not including land), and $6.7 million for a combined Fire/Police/City Hall facility. See breakdown of costs in the Remodel Vs. Replacement section of the report – this also includes information on the cost of purchasing new land.

Service Area Growth Projections
Jackson County Fire District No. 5 has served the Talent and Phoenix metro area in one form or another since 1963. Today, three stations serve an area of 125 square miles, including 24 miles of I-5. This includes the cities of Phoenix and Talent, plus parts of Ashland and unincorporated Jackson County. The Fire District provides fire and emergency medical services to the community, including support for motor vehicle incidents along the I-5 corridor. On average, the Fire District responds to 3,400 calls per year, and that is increasing at a rate of roughly 200 calls per year. According to the 2018 Major Incident Type breakdown for the District, over 55% of all calls were rescue or emergency medical assistance, while roughly 5% were fire related.

Currently, stations are situated at both the north and south ends of the District. Station Number 3 is co-located with the city of Phoenix police station and City Hall. This places it on the extreme north edge of Fire District No. 5 service area, although it is centrally located in an east-west direction. Station Number 1 is located two miles south along Hwy 99, at the north edge of the city of Talent. It too is on the north edge of its service area, but is roughly centrally located in a east west area. Both of these stations have quick access to I-5. Station 2 is located south of Ashland, and serves a response area that is both larger in square footage and travel distance, as well as serving I-5 all the way to the California border. It is centrally located within this area, but is several miles from I-5 access points, limiting quick response to freeway incidents in the area.

Projected Growth
By 2043, Jackson County is expected to see a 24% population increase. For the Fire District No.5 service area, that is expected to be closer to a 28% increase in population. That includes an estimated total of 8,386 residents in Talent, and 5,967 in Phoenix in 2043 (as of 2018, populations in those jurisdictions were 6,416 and 4,861 respectively). Additionally, an increase in the number of older residents is expected to be significant – ‘from 2018 to 2030, the proportion of the county population 65 years of age and older is forecast to grow from roughly 22 to 26 percent, and then to maintain that proportion through 2043.”

*(source: Population Resource Center “Coordinated Population Forecast 2018-2068, Jackson County”)*
Figure 3. Jackson County and Sub-Areas—Historical and Forecast Populations, and Average Annual Growth Rates (AAGR)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>2000</td>
<td>2010</td>
<td>2018</td>
<td>2043</td>
<td>2068</td>
<td></td>
</tr>
<tr>
<td>Jackson County</td>
<td>181,269</td>
<td>203,206</td>
<td>219,270</td>
<td>277,226</td>
<td>320,852</td>
<td>0.9%</td>
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<tr>
<td>Ashland</td>
<td>20,023</td>
<td>20,626</td>
<td>21,501</td>
<td>23,625</td>
<td>24,177</td>
<td>0.5%</td>
</tr>
<tr>
<td>Butte Falls</td>
<td>440</td>
<td>423</td>
<td>419</td>
<td>444</td>
<td>452</td>
<td>-0.1%</td>
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<tr>
<td>Central Point</td>
<td>13,310</td>
<td>17,736</td>
<td>19,101</td>
<td>27,803</td>
<td>38,008</td>
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<tr>
<td>Eagle Point</td>
<td>4,952</td>
<td>8,508</td>
<td>9,188</td>
<td>14,114</td>
<td>20,172</td>
<td>0.9%</td>
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<tr>
<td>Gold Hill</td>
<td>1,173</td>
<td>1,228</td>
<td>1,234</td>
<td>1,382</td>
<td>1,477</td>
<td>0.1%</td>
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<tr>
<td>Jacksonville</td>
<td>2,256</td>
<td>2,785</td>
<td>2,985</td>
<td>4,203</td>
<td>5,643</td>
<td>0.8%</td>
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<td>Medford</td>
<td>67,855</td>
<td>76,581</td>
<td>82,566</td>
<td>108,638</td>
<td>136,046</td>
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<td>Phoenix</td>
<td>4,379</td>
<td>4,774</td>
<td>4,861</td>
<td>5,967</td>
<td>7,124</td>
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<tr>
<td>Rogue River</td>
<td>2,544</td>
<td>2,714</td>
<td>2,846</td>
<td>3,468</td>
<td>4,076</td>
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<tr>
<td>Shady Cove</td>
<td>2,528</td>
<td>3,050</td>
<td>3,288</td>
<td>4,338</td>
<td>5,533</td>
<td>0.9%</td>
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<tr>
<td>Talent</td>
<td>5,683</td>
<td>6,123</td>
<td>6,416</td>
<td>8,386</td>
<td>10,617</td>
<td>0.6%</td>
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<tr>
<td>Outside UGBs</td>
<td>56,116</td>
<td>58,658</td>
<td>64,865</td>
<td>69,857</td>
<td>67,527</td>
<td>1.2%</td>
</tr>
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</table>

Sources: U.S. Census Bureau, 2000 and 2010 Census; Forecast by Population Research Center (PRC).

Note: For simplicity each UGB is referred to by its primary city’s name.

Impacts of Projected Growth

Not only will the population growth increase the number of people served by the Fire District, it is likely the developed area served will also increase significantly in order to accommodate the population growth. At a minimum, station locations will need to be reviewed to make sure they are optimally located to serve the updated population map, and may require additional staffing and relocated or additional stations to cover the expanded population centers.
The aging nature of the population will also have an impact on the types of service calls performed by the Fire District. An older populace is likely to need more medical or general assistance (slips, falls, etc) than the current population. These items already represent a significant proportion of the Fire District’s response, and could be expected to increase in number and possibly share of total. Increased EMT/Ambulance staffing, apparatus, and equipment may be required, along with potentially additional bases of operation for these services.

As the population increases and developed area expands, the built environment will start to encroach on previously “unmanaged” areas. This expands the amount of service area that needs active protection from wildfires, as areas that were formerly uninhabited become homes and businesses. The Fire District will need to work closely with the communities served to create design standards that reduce fire danger and to plan for response in the event that wildfires threaten developed areas. Additionally, more residents and visitors means more recreational use of non-developed areas, increasing the opportunity for accidental fires in undeveloped areas. Frequency and size of wildfires in general has been increasing in recent years, and can be expected to continue. This is a high priority issue for the Fire District and community. Additional staff and stations may be required to better protect an expanded developed community. Partnerships with nearby Fire Districts already supplement response to these issues, and may need to be expanded to cover future needs.

Traffic along the I-5 corridor will see increases corresponding with increased population growth. A 60% increase in freight traffic by 2035 is predicted for the State of Oregon as a whole. As I-5 is the major truck route along the west coast, a similar traffic increase can be expected in the Fire District 5 service area during this time. The loss of the major shipping terminal in Portland has compounded this increase in truck traffic. Based on current transportation funding levels, the Medford metro area is expected to experience an increase of 40% in traffic delays.*This will likely correspond with increased incidents requiring response from the Fire District, along with potentially slower response times due to congestion levels. Access to I-5 will be a priority to the Fire District.

*(source: One Oregon Transportation Vision Panel Report to Gov Kate Brown, 2016)
EXISTING FACILITIES OVERVIEW

Condition Report
Station #2 - Neil Creek

The Neil Creek Fire Station is located at 40 Neil Creek Road, Ashland. It is a two functional apparatus bay station (+/- 3,400 SF) with attached dorm facility. It is owned by Jackson County Fire District No. 5. This is a pre-engineered metal building, originally built in the 1970's.
Major Noted Deficiencies:

- Station Envelope does not meet current building codes
- Site does not meet current ADA accessibility standards
- Manufactured steel moment frame structural system is difficult to attach to or modify
- Generator not adequate for back-up service and often suffers from mechanical issues
- Truck bay drains need to route through approved oil/water separator
- One apparatus bay not usable because of reduced depth
- Two apparatus bays are too narrow for safe vehicle movement and access
- Turnout wash and air tank fills are conducted at Station #1.
- Single approach apparatus bays require back in
- Existing well does not have adequate flow rate to support station and has poor water quality. Water is currently trucked to the site.
- Location does not provide quick access to I-5 which accounts for a large percentage of emergency calls.

Structural Deficiencies:

Due to the age of the pre-fabricated metal building structure, it was not designed for seismic loading, and has a high risk of failure during an earthquake situation. At this time, it appears that there may not be adequate capacity in the structure to perform to current snow loading requirements, but additional study is required to make a final determination. Substantial retrofits would be required to modify the building to perform in compliance with current Oregon Structural Specialty Code loading requirements. Additionally, seismic bracing of mechanical systems is required to ensure the safety of the occupants during an earthquake event, and to increase the ability of the systems to perform following a quake. See the Structural Facility Condition Assessment in Appendix A for additional detail.

The concrete floor inside the vehicle bay exhibited visible deflection when vehicles were moved in or out of the structure. This indicates that the sub-base below the building needs to be repaired, which would require removing the existing concrete slab and earthwork below, and rebuilding. Additionally, all the exterior paving at the site is severely degraded and should be replaced. See the Civil Facility Condition Assessment in Appendix B for additional information.
Services

Utility services are important to the operation of the Fire Stations, both for the comfort of the occupants but also ensure adequate services for fire fighting operations themselves. This includes basic electrical, water, sewer, communications, and possibly gas service.

Electrical: Stations should be on the municipal power grid. However, as Essential Facilities, stations need to remain in operation in the event of a power failure, so an onsite generator is required. Any station site will need to have adequate space to allow for a generator sized to run the station.

Water: Water is needed both for domestic uses (toilets, showers, cooking, etc), but also to fill tanker trucks and other fire fighting apparatus. Water may be supplied either by a municipal supply (both domestic and hydrant service), or via an on-site well, provided flow rates are acceptable.

Sewer: Sewer is needed for domestic uses, and can be provided either by municipal system or a septic system.

Communications: Communications such as phone, fiber and/or cable are required to serve station sites in order to provide for communication with the service area.

Gas: While not critical for facility operation, natural gas service is a cost effective method of providing heating needs for the fire station. If natural gas is not available to a selected site, electricity or a propane delivery service can be used.

Station 2: Station 2 has adequate electrical and communications services. However, domestic water is provided by an on-site well that is having difficulty fulfilling basic needs. Fire water is trucked in from offsite via tanker. The nearest municipal water source is two miles away, and would require a significant financial investment to bring water to the property. Sewer is provided via an on-site septic field, which appears to need replacement to serve current needs, and may require expansion if the facility is expanded.

Water Utility Expansion:
Expansion of water utility lines to the existing site at Neil Creek is estimated at a cost of $2 million.
Limited space shop area. Non-ADA compliant door hardware. Furnishing materials and construction does not accommodate washdown, i.e., no concrete curbs, or stainless steel fixtures. Possible more power/data outlets could be useful in this area.

Apparatus bay very tight against vehicle. Access in encumbered by tight passageway to driver side door.

More storage issues. Air compressor should ideally be in an enclosed room away from potential hazards. Equipment needs dedicated shelving/racks for easy access. Floor space not ideal for storage -- washdown not possible.

Exposed electrical ground bus, and cabling creates a potential hazard. Inadequate storage and cable management system. More electrical outlets are needed.

Non-ADA compliant toilet. Non-compliant clearances, and no grab bar.
**Structural Deficiencies:**

Due to the age of concrete block (CMU) structure, it was not designed for current seismic requirement, and has a high risk of failure during an earthquake situation. It appears the building is capable of performing under current design snow load requirements. Substantial retrofits would be required to modify the building to perform in compliance with current Oregon Structural Specialty Code loading requirements. Additionally, seismic bracing of mechanical systems is required to ensure the safety of the occupants during an earthquake event, and to increase the ability of the systems to perform following a quake.

The Dormitory building was not reviewed for structural performance, as it is considered a temporary construction type. If it is to be retained, it is likely that significant upgrades would be required to meet OSSC seismic requirements. See Structural Report in Appendix A for additional detail.

It was noted by the reviewing civil engineer that while utility service appears adequate, a complete repaving of the site is recommended due to the condition of the asphalt. Additionally, the nearby intersection of 2nd St and S Pacific Highway is exhibiting wear due to fire vehicle traffic and may need repair. See the Civil Report in Appendix B for additional detail.
Structural columns in the apparatus bay are tight against truck parking, and do not have bollard protection. Potential for structural damage due to truck backup.

Non-ADA compliant toilet.

Damaged tile, and non-ADA compliant threshold condition.

Concrete slab showing cracking.

Non-ADA compliant door hardware, inadequate door access control can not be controlled by tap out system.

Residential garage on site in state of deterioration, potential hazard.
REMODEL VS. REPLACEMENT

Remodel vs. New Building

Fire Stations are considered to be Essential Facilities under Oregon Law, and therefore are expected to be operational following a major seismic event. This requires the structure not only to remain intact enough to safely allow use, but also that critical mechanical, electrical, and plumbing systems are operational. Existing stations should be retrofit to meet this criteria, and new stations are required to be designed to this level.

Based on the above survey, it is clear that Stations 2 and 3 in their current states are not adequately meeting the needs of the Fire District. Several options exist for the District to consider: remodeling the existing structures to current code and use requirements, replace with new facilities at the current locations, or construct new stations at new locations.

Due to the age, configuration, and poor condition of the existing buildings, remodeling them to suit current needs and to be operational after an earthquake would be difficult and costly. Many items, such as building envelope, mechanical and electrical equipment, and interior layout, have reached the end of their useful lives. A more in-depth discussion of remodel requirements is discussed below. A full tear down of the existing structures, to allow for redevelopment of the existing sites, is recommended.

Size comparisons of the existing stations as compared to what is required for a typical modern facility are shown below. Both stations are significantly smaller than what is usual for a modern station. Expansion of Station 3 in particular is complicated by lack of space on the existing site.

<table>
<thead>
<tr>
<th>Existing Station #2</th>
<th>Existing Station #3</th>
<th>New Single Story Station</th>
<th>New Two Story Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,400 SF +/-</td>
<td>5,900 SF +/-</td>
<td>8,300 SF +/-</td>
<td>8,600 SF +/-</td>
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</table>

From a cost standpoint, remodel costs are not significantly less than new construction, when the cost of land is excluded. Remodel costs are expected to be $350-$500/sq foot, while new construction is in the $400-$500/sq foot range. Costs are discussed in more detail below.

REMODEL OPTIONS / SCOPE

Structural upgrades:

Structural upgrades at both stations would be considered top priority from a remodel point of view. Both stations will require the addition of additional framing and bracing members to handle earthquake loads. These items will need to be attached to the face of existing walls (the CMU walls at Station 3) or to/between existing framing (steel frame at Station 2). Additionally, new or added sheathing and strapping is required at the roof of both buildings to help with seismic loading. See the Structural Facility Condition Assessment in Appendix A For additional information about specific solutions.

Structural upgrades alone are expected to cost roughly $160/sq foot. This only includes items like structural bracing, new straps, increased footings, and mechanical bracing – it does not include the cost to retrofit other components of the facility. Some cost and disruption may be mitigated by combining structural work with other construction performed on the facility – for example, roof strapping could be added at same time as new roofing material, or wall bracing at the same time as new exterior envelope.
Architectural upgrades:
Both Station 2 & 3 are uninsulated or have limited insulation. Not only does this fail to meet current Oregon Energy Code requirements, it results in increased heating costs for the Fire District. Adding insulation at Station 2 is relatively easy – the exterior siding needs replacement as it is at the end of its useful life, and new exterior wall insulation could be added at this time. However, adding insulation to Station 3 will require adding a layer of insulation to the inside face of the CMU walls. While the insulation can be left exposed with only a plastic vapor barrier, this is typically subject to heavy abuse and frequent replacement in an environment such as an apparatus bay. A layer of plywood is recommended, but this does increase the cost of adding insulation. This also results in shrinking the usable space of the building slightly, as the walls are now thicker by several inches.

Neither station meets current ADA requirements. The State of Oregon has determined that the majority of areas within a fire station need to meet Accessibility requirements. While many requirements can be met by swapping out door handles and restroom fixtures for those meeting ADA, other items will be more difficult to solve. This includes clearances at hallways and door openings, counterspace and appliance access at the kitchens, and access to the building itself. Any remodel at the stations will be required to spend up to 25% of its budget on ADA upgrades, so this requirement will be triggered by structural retrofits.

Station 2 could be expanded to provide for additional apparatus parking, equipment storage, and living quarters, although significant utility upgrades would be required. However, Station 3 is constrained by the City Hall and Police uses onsite, and expansion options are limited. While minor remodels may be able to be performed while the stations remain operational, it is likely that temporary quarters and/or vehicle storage may be required during the remodel process.

Remodel Costs:
Cost to repair or expand the existing structures is broken down below:

<table>
<thead>
<tr>
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<th>$350 / SF</th>
<th>$500 / SF</th>
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</thead>
<tbody>
<tr>
<td><strong>Station 2 (3,400 SF + 4,000 SF expansion)</strong></td>
<td>$2.59 million</td>
<td>$3.70 million</td>
</tr>
<tr>
<td>Site Repair</td>
<td>$195,000*</td>
<td>$300,000*</td>
</tr>
<tr>
<td>Site Utilities</td>
<td>$195,000*</td>
<td>$300,000*</td>
</tr>
<tr>
<td>Structural Upgrades</td>
<td>$1,200,000</td>
<td>$1,700,000</td>
</tr>
<tr>
<td>Envelope / Interior</td>
<td>$1,000,000</td>
<td>$1,400,000</td>
</tr>
<tr>
<td><strong>Station 3 (5,900 SF + 4,000 SF expansion)</strong></td>
<td>$3.465 million</td>
<td>$4.95 million</td>
</tr>
<tr>
<td>Site Repair</td>
<td>$465,000</td>
<td>$770,000</td>
</tr>
<tr>
<td>Structural Upgrades</td>
<td>$1,600,000</td>
<td>$2,280,000</td>
</tr>
<tr>
<td>Envelope / Interior</td>
<td>$1,400,000</td>
<td>$1,900,000</td>
</tr>
</tbody>
</table>

* Does not include expansion of city utility / water lines to site, or replacement of septic drainage field.
SITE CRITERIA

An appropriate site for a fire station is subject to several criteria. The adequacy of the existing station sites should be compared against the below criteria just as a new location would be. While it is certainly an initial cost savings if a site the Fire District already controls is used, either via remodel or a replacement structure, there may be long term operational effects of an inadequate site.

**Size**

In order to accommodate a new single story fire station, a site of approximately 0.75 acres is required. This will allow for apparatus circulation around the entire building, along with parking for staff and visitors. If a septic system is required, this amount may need to increase to accommodate the drainage field.

For a two-story fire station, a site of approximately 0.66 acres is required. This allows for apparatus circulation around the entire building and parking for staff and visitors. If a septic system is required, this amount may need to increase to accommodate the drainage field.

For the combined Fire/Police/City Hall facility, a site of a minimum of 1 acre is required. For this facility, a secure Police impound lot, secure Police parking, and substantial visitor parking would be required.

**Station 2:** The size of the site at Neil Creek is adequate for both an expanded or new facility. Adequate circulation space is provided to allow for a pull-through style station, and there is ample room for parking. An existing septic system is in use, and needs to be reviewed, but there appears to space on site to expand the drainage field if necessary.

**Station 3:** The size of the City Hall site would likely support a stand-alone fire station with full pull-through circulation and parking, but police and City operations would have to move elsewhere. Alternately, if adjacent parcels can be added to the project property, a combined facility can be provided at the current location. If the existing City Hall and Police structures cannot be moved or replaced, it may still be possible to put a two-story, single-side access station on this site.

**Location**

Station location is critical in order for the Fire District to provide the best service to the community. Per NFPA 1710, "The travel times for units responding on the first alarm were clarified to indicate the first unit must arrive within 4 minutes travel time and all units must arrive within 8 minutes travel time." Stations need to be centrally located to their service areas in order to provide prompt response times to the majority of residents. Access to I-5 is critical in order to quickly respond to freeway incidents.

**Station 2:** The majority of calls serviced by the Neil Creek Fire Station are associated with incidents on I-5 from just south of Station No 1 south to the California border. Its current location was driven by a property donation to the Fire District and has placed the station in location that does not have fast and safe access to I-5. The map below indicates travel distance from the fire stations to north and south bound I-5 on ramps. The access roads from the station to these on-ramps are narrow with many curbs. In the case of the closest ramp for south bound access, the road is a narrow windy road with unpaved sections and a non-controlled rail road crossing. The on-ramp accessed by this road is a gravel emergency vehicle access point that is not open during snow or other severe inclement weather events. From this entrance point to Exit 6, the nearest safe turn around point for north bound access is 7.9 miles south, making the round trip to north-bound sections of I-5 a total of over 15 miles from the access ramp. (See map on following page).

Relocation of the station to a site adjacent bi-directional free way on-ramps would reduce response time to a majority of calls and reduce the risk of accidents associated with vehicle and pedestrians on narrow windy roads.
Site Location:

While the Neil Creek site is large, its siting and utility services have major deficiencies that decrease its viability as a fire station location. In addition to items discussed in this section several additional issues were identified by the reviewing Civil Engineer.
Station 3: The City of Phoenix station is located at the north end of the service area, allowing service to South areas of Medford as needed, as it is fairly centerally located. It has good access to I-5 that is less than a mile away, allowing for quick and easy access to freeway incidents.

**Pros / Cons of Existing building Sites**

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<thead>
<tr>
<th>Station 2 (Neil Creek)</th>
<th>Pros</th>
<th>Cons</th>
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<tbody>
<tr>
<td></td>
<td>Owned by Fire District</td>
<td>Distance from I-5</td>
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<tr>
<td></td>
<td>Adequate space for expansion or new station</td>
<td>Distance from primary service area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inadequate water service</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost to add water service</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Septic replacement and expansion likely needed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of pedestrian access</td>
</tr>
<tr>
<td>Station 3 (City of Phoenix)</td>
<td>Centrally Located</td>
<td>Leased from City of Phoenix</td>
</tr>
<tr>
<td></td>
<td>Distance to I-5</td>
<td>Odd shape &amp; small size limit</td>
</tr>
<tr>
<td></td>
<td>Adequate utility service</td>
<td>development options</td>
</tr>
</tbody>
</table>
DESIGN OPTIONS

Sample Floor Plans
Sample floor plans have been provided to give a sense of potential size and building layout. These plans are based on similar facilities designed recently for other Fire Station clients, and represent the current baseline for facility services. While these stations are model facilities, any design would be modified to the realities of a selected site. A drive-through apparatus bay is easiest for site circulation, but if a single entry or corner lot property is obtained, a viable back-in station could be designed to meet Fire District needs.

Single Story vs Two Story
Both single story and two story fire stations are common, and there are pros and cons to each design. A single story station is easier and cheaper to build, as it doesn’t require elevators, stairs, or rated floor construction. However, it requires a larger site than a two-story station. A two story station will allow the Fire District to do more with a smaller piece of property, and may have some non-functional advantages such as better views, opportunities for outdoor living spaces, and a stronger neighborhood presence.

Single vs. 2 Story

Single Story Plan
The single story facility places all the necessary functions for the Fire Station on a single level.

Apparatus Bay and Support:
Three double, drive-through apparatus bays are provided, allowing for up to six pieces of equipment to be parked within the building. Turnout storage is provided in a separate room off of the apparatus bay, as is a clean room to process dirty gear and equipment. A separate EMS storage room and a general work/storeroom are also located off the apparatus bay. A roughly 10x20 exercise room is the last component of the support bar.
Public/Office:
A public entry is provided between the apparatus bay and the living quarters. The entry has a large secure vestibule, allowing visitors to wait out of the elements while still restricting access to the apparatus bay and living areas. A public restroom and office are also accessed from this common area.

Living Quarters:
Four dorm rooms are provided for on-site personnel. Three single-occupant restrooms are provided, along with two separate private showers. The large kitchen includes standard appliances, along with storage for three separate shifts of employees. It is open to the dayroom, which includes space for dining and recreation. This area is separated from the dorms by the restroom bar, which allows for noise and privacy buffering. Access to the apparatus bay is through the dayroom and common entry hall.

Two Story Plan
The two story facility is similar to the single story layout, but places the living quarters above the apparatus bay. It allows for a smaller site, and creates the opportunity for second floor private patio spaces.

Apparatus Bay and Support:
Three double, drive-through apparatus bays are provided, allowing for up to six pieces of equipment to be parked within the building. Turnout storage is provided in a separate room off of the apparatus bay, as is a clean room to process dirty gear and equipment. A separate EMS storage room and a general work/storeroom are also located off the apparatus bay. A roughly 10x20 exercise room is the last component of the support bar.

Public/Office:
A public entry is provided to the side of the apparatus bay, opposite the support spaces. A small secure lobby is provided, offering access to the station office and restricting access to apparatus bay and living quarters. In this layout, no public restroom is provided on the ground floor level, but this could be added as an option. From the lobby, a small hall provides access to the apparatus bay in addition to the stairs and elevator for access to the second floor.
Living Quarters:
Four dorm rooms are provided for on-site personnel. Three single-occupant restrooms are provided, along with two separate private showers. The large kitchen includes standard appliances, along with storage for three separate shifts of employees. It is open to the dayroom, which includes space for dining and recreation. This area is separated from the dorms by the restroom bar, which allows for noise and privacy buffering. Access to the apparatus bay is through the dayroom and down the stairs. A second exit stair is provided from the roof area outside the kitchen.

Partnerships with the City of Phoenix
The combined City facility builds off of the two story fire station option discussed above. A single story police station and City Hall component is added adjacent to the apparatus bay.

Police Station
The police portion of the facility has a squad room with adjacent Chief’s office. The squad room can be easily accessed from a police-only rear entry hall which also provides access to the interview room and armory. Alternately, it can be accessed via a hall from the public corridor, which also gives access to the break and locker rooms.

City Hall
City hall spaces include a large open office for City staff, separated from the public area via a service counter. Three private offices are provided, which could be used for City Manager, Public Works, the Clerk, or other city staff functions. A secure records room is also provided.

Shared Spaces
A large meeting/training room seating approximately 10 people is provided for the building as a whole, to be shared between the three occupant groups. Two public single-occupant restrooms are provided. A shared building mechanical room is included – one of the benefits of a shared facility is the ability to use a single unit for spaces which, if constructed separately, would each require a mechanical system.
SAMPLE SITE LAYOUTS

Station 2 - Neil Creek

Sample site layouts, based on the existing site, are below. These site layouts are based on the attached exhibits showing sample building floor plans. A single story and a two story option have been shown on the existing site.

- Desired Amenities and Layout
- Three drive-through bays (for up to 6 apparatus), with support spaces
- Dorms for four personnel
- Dayroom/kitchen/exercise area
- Office

Single Story layout at Existing Site. Parking at front of building, with full apparatus circulation.

Two Story Option at Existing Site. Parking at front of building with full apparatus circulation.
Station 3 - Phoenix City

Sample site layouts, based on the existing site, are below. These site layouts are based on the attached exhibits showing sample building floor plans. A single story and a two story option have been shown on the existing site, along with a shared Fire/Police/City Hall facility.

In the exhibits, the red shaded areas represent parcels that could be acquired by the City and/or Fire District to increase the site area available for development. These areas could be used for increased program uses, additional parking or storage, or to streamline site circulation.

Desired Amenities and Layout

- Three drive-through bays (for up to 6 apparatus), with support spaces
- Dorms for four personnel
- Dayroom/kitchen/exercise area
- Office
- Option to include City Hall and Police facilities in new building.

Feasibility of Current Site

The current site can support either a stand-alone Fire Station or a combined Fire, Police, and City Hall facility. However, in the current configuration, site circulation is convoluted and parking is limited.

The City and Fire District have the option of acquiring some adjacent parcels to the existing site. The site to the northwest of the existing buildings provides more immediate benefit to site circulation than the property to the east.
Station 3 - Phoenix City

Two Story Option at Existing Site. Retain existing City Hall and Police buildings

Shared Fire, Police, and City Hall facility. Two-story fire station
NEW BUILDING COST

Cost of new buildings at existing locations:

<table>
<thead>
<tr>
<th>Building Type</th>
<th>$400 / SF</th>
<th>$500 / SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Story (8,300 SF)</td>
<td>$3.32 million</td>
<td>$4.15 million</td>
</tr>
<tr>
<td>Two Story (8,600 SF)</td>
<td>$3.44 million</td>
<td>$4.3 million</td>
</tr>
<tr>
<td>Shared Facility (13,400 SF)</td>
<td>$5.36 million</td>
<td>$6.7 million</td>
</tr>
</tbody>
</table>

LAND COST

Land Costs for the Phoenix/Talent area are running roughly $16-21 per square foot. Purchase costs for new project sites can be estimated as follows:

<table>
<thead>
<tr>
<th>Building Type</th>
<th>$16 / SF</th>
<th>$21 / SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Story (.66 Acre)</td>
<td>$464,000</td>
<td>$609,000</td>
</tr>
<tr>
<td>Two Story (.75 Acre)</td>
<td>$523,000</td>
<td>$686,000</td>
</tr>
<tr>
<td>Shared Facility (1 Acre)</td>
<td>$697,000</td>
<td>$915,000</td>
</tr>
</tbody>
</table>

FUNDING OPPORTUNITIES

Financing / Mortgage Loan

Borrowing money from a lender can be used to purchase property and fund construction of the new fire station. These loans are typically for durations of 10, 15 or 30 years with periodic payment influenced by interest rate terms of the loan. Value of existing properties and station and revenue for periodic operating revenue can be used to back loans. If JCFD#5 utilized this method of financing, periodic payments would be made from the District's general operation funds and would impact the amount of funds available for operations, maintenance and capital projects and expenditures.

As an example of equivalent monthly payments, assuming a five million dollar property acquisition and construction of new fire station, 4.5% APR loan with one million dollar applied to the project by the Fire District through alternate sources, the monthly payments on a fifteen year four million dollar loan would be $30,660/month. This money would be paid from of general operating funds and could have direct impact on the quality of services provided to the community.

Financing / Developer – Lease or Lease to Own

A developer can be engaged to front the money as the initial owner of the building. The Fire District would then lease the building from the developer for a predetermined period of time and then would have the option to renew the lease or purchase the building. There is also an alternative agreement where the Fire District would lease from the developer with a percentage of the payments being applied to the purchase. At the end of the lease period, the Fire District would own the station.

There are several disadvantages to this funding mechanism. The developer, as owner, has control over the design and construction of the Fire Station putting the desired quality and final building performance at risk. There is also risk of ownership change and modifications to initial agreements.
**General Obligation Bonds**

General Obligation Bonds are debt securities that are issued by a municipality to finance the renovation or replacement of government owned infrastructure. The capital for the project is generated by the sale of an approved number of bonds at a set value. It is typically repaid, including accumulated interest, through increases in tax rates. In Oregon, property taxes are generally the pursued mechanism. The implementation of a municipal bond requires approval by the impacted communities through a voter approved bond measure authorizing additional taxes to support back the bonds.

Bringing a bond measure to vote requires initial development of project in order to establish budget, Performa, and to sell the need of the project to the community. Typically this development is initiated six months to a year ahead of the anticipated election date.

Once approved, the bonds are sold all at once or in phases depending on the length, size and complexity of the project or multiple projects associated with approved initiative. The money is kept in an interest bearing account and generates income through the duration of the project(s). This interest is then rolled back into the project to cover short falls or develop related scope.

Evaluating bonding capacity for the district is outside the scope of this report, but the 25% projected population growth rate for the region over the next 20 years and the projected continued increase in property value over the foreseeable future implies that capacity exists to establish a favorable rate.

**Certificates of Participation (COP's)**

COP's are taxed exempt government securities used to raise funds to improve and construct buildings or purchase equipment. Unlike general obligation bonds, COPs are not secured by the full faith and credit of the issuer. Instead they must be approved by the issuing government bodies. The sale of COP's can be approved by a government body or a group of government bodies in the case of a partnership and do not require public approval. Should the government body fail to payback the COP's they may be denied use of the financed building and/or equipment. Because of the higher risk they typically carry a higher interest rate. COP's are typically used in conjunction of other funding mechanisms and are often used as bridging funds to move a project forward before revenue from other sources are available.

**Capital Pledge Campaign**

A capital pledge campaign solicits the public for donations for a capital investment with opportunities for naming rights for components of projects such as a community class rooms or apparatus bays. Other typical applications include the sale of commemorative opportunities such as having a donor’s name placed a brick used in construction.

**Private Source Founding**

Founding from private sources can be secured through promoting the project to individuals and organizations and building relationships with entities that have vested interests in the project. Typical sources are solicitations of foundations, corporate donations and public/private partnerships.

**Partnerships and Land Swaps**

Currently Station Number 3 (Phoenix City) is located on property owned by the City of Phoenix and is sited directly adjacent the Phoenix City Hall and the police station. The City of Phoenix has been exploring the possibility of renovations to the City Hall and possible modifications to the police department. There is an opportunity for the City of Phoenix and Jackson County Fire District No. 5 to partner in the redevelopment of the current site. This redevelopment could produce a single building that house the police station, city hall and the fire station. This consolidation of program would allow shared resources thus reducing the square foot of construction, provide better on site vehicular circulation, and provide and area for police impoundments. There
are a couple opportunities for acquisition of land adjacent the City property. If this were to happen there would be opportunity for drive through apparatus bays, additional police parking and impoundment area, and additional onsite parking. This same combined program could be applied to a new site outside of the City of Phoenix's center.

A Partnership between the City and the Fire District would increase the potential for funding opportunities through and increased tax base for bond initiatives, grants through alternate means such as urban renewal, and shared capital and financial resources to secure better financing and funding opportunities.

**Grants**

There are opportunities to supplement the funding of the fire station renovation or replacement through local, state and federal grants. Grants rarely cover the full capital expenditure of programs or capital improvement projects but are available to assist with funding. Examples of possible grant types:

- Seismic Retrofit Grants through the State of Oregon or Federal Programs or Organizations such as FEMA
- USDA grants through rural assistance and development grants. These grants are related such issues as:
  - Forest and Range Fire control
  - Rural Community Development and Preservation
  - Rural Emergency Services Preservation and Expansion.

State and Federal Urban Renewal Grants – In the case of a redevelopment of the Phoenix City property with a combined City Hall, Police and Fire Station project, urban renewal grants through county, state and federal programs may be available because of the sites’ proximity to the historic urban core of Phoenix City.

**Privatized development and Tax-Exempt Financing**

Specialized development companies exist that will assist public entities with the financing, design, development and construction of 501-C3 corporations and public infrastructure. These companies utilize their non-profit development entities to provide tax-exempt financing for up to 100% of the project cost or portion thereof. These loans are paid back through payments or through lease to own contracts. As the developer, these companies can assist in financing, programming, planning, scheduling, and design and construction oversite. Unlike some other developer models, the public entity can retain ownership of properties related to the project.

**PROJECT DELIVERY STRATEGIES**

There are multiple methods for contracting the design and construction of the project. Each method has its own pro’s and con’s and each may be a best fit for a particular funding mechanism, location, construction and market conditions.

**Design – Bid – Build**

The architect works directly with the owner, stakeholders and user to design and detail a construction project. Detailed drawings and specifications are produced by the architect and used to solicit bids from all interested general contractor or from a select pre approved group of general contractors. The contract is typically awarded to the lowest bid. In many jurisdictions accepting the lowest bid is a statutory requirement, but this varies by location. If legally allowed, a contractor can be selected based on qualifications, proposal for approach and schedule, and cost.

Pros:

- In the right market conditions this method has the potential to produce the lowest cost project,
- Multiple bids generate comparative data as a check to the accuracy and appropriateness of the bid results. As an example if out of five bids, four bids are within 5% of each other and the fifth bid is 20% lower than the next lowest, it indicates that a check should be made to ensure that all scope and conditions are covered in the lowest bid prior to proceeding with a contract.

Cons:
- The contractor selection is typically based on lowest cost established by documents used for the bid. Any modifications due discrepancies in documents, unforeseen conditions, design changes made after award of bid (including those required by permit review), and other scenarios become modifications to the contract often a higher than market rates and layers of markups.
- A hard bid does not guarantee the lowest price. In a robust market where trades are not looking for work and often times do not have the capacity to perform, they will inflate numbers to ensure that if awarded they will be compensated for the additional impacts on resources.

**Construction Manager – General Contractor (CMGC)**

The architect works directly with the owner, stakeholders and user to develop the design and project scope. A CMGC is selected during the initial stages of design, typically through an RFP process and negotiated fees. After selection, the CMGC participates in the design process providing constructability reviews, schedule development, cost estimating and pricing. Typically in the early stages of construction documents, the CMGC bids the project to a select group of sub-contractors and develops a Guaranteed Maximum Price for construction that is then negotiated prior to final contract.

Pros:
- The contractor is selected by evaluation of qualifications based on criteria that best represents the owner’s priorities and objective.
- The owner can elect to be involved in the subcontractor bid evaluation and selection.
- The contractor is involved in during the design therefore vested in constructability, cost, and schedule prior to the final construction contract – thus less friction between parties and more predictability of the cost, construction and schedule outcome.
- In robust market conditions, the contractor can often utilize relationships with sub-contractors to manage value to the owner.

Cons
- Typically does not produce the lowest initial contract value.

**Design - Build**

The contractor (and their design team) are selected through an RFP or Bid process to design and construct a project based on a scope description and program that may or may not include a preliminary concept design. The contractor is involved in managing the design process and is involved throughout the process, design through final construction. The stipulated sum or guaranteed maximum price for delivery of the project is typically established with a minimal amount of information. Engaging a design team to establish project criteria and concept prior to establishing a design build contract is recommended.

Pros:
- If owner has a fixed construction budget for the project, design build is the most likely method to ensure that final cost and contracted value meets the budget.
- Contractor, architect, mechanical/electrical engineers and subcontractors work as team from start of project through completion so all vested in the outcome.
- Construction cost is managed and owned by the contractor from the beginning of design services.

Cons:
- Owner’s program, performance and design objectives are at risk of compromise because of contractor
control of the design under a pre-established construction contract value. 
• With contractor’s involvement in defining performance and product criteria, the owner is a risk of losing value at the expense of contractor profit.

CONSTRUCTION OPTIONS

Once a station design is selected, there are several methods for constructing the project. These options vary in permanence, cost, and construction time.

Wood Framed / Traditional Construction

With traditional construction, the building is built like most other projects. Work is all performed onsite, with the exception of a few pre-built items like door frames and cabinetry. Depending on the design, the station might be wood or light gauge metal framed in traditional stick construction, or it may use CMU for both structure and exterior envelope. This type of construction has the advantage in that it is familiar to the majority of people (both contractors and potential partners/stakeholders). It is likely, though not guaranteed, to have longest construction time of the various methods. Material and design choices will determine if it is cheaper, similarly priced, or more expensive than the options discussed below.

Pre-engineered Metal Building

Pre-engineered buildings are used for everything from warehouses to churches. In this method, a metal building manufacturer is brought on board during the design process and performs the engineering for the metal frame, which they will then fabricate and assemble once construction begins. Most kinds of building skins can be applied to pre-engineered frames, so from the outside, the pre-engineered nature will not be obvious. This style of design does place some limitations on the form of the building – typically, these are simple rectangles with standard pitched roofs. Any additional stories would contained within the main building envelope – some changes in level or plane can be accommodated but increase the cost and complexity of the structure. Additionally, since the pre-engineered building designer needs to be onboard during the design process, either a General Contractor will need to be hired before a full bid can occur, or the Fire District will need to contract with the metal building supplier directly.
Modular Construction

Modular construction is increasingly being seen in the industry. With this method, entire sections of the building are fabricated offsite, and brought to the site and assembled into a whole. This might be as simple as framing and sheathing all the walls offsite, or as complex as building entire rooms in a factory. This has the advantage of allowing large portions of construction to take place offsite, which can be important when weather, site size, or other factors limit site availability and access. While it can allow for greater oversite of construction in the factory, helping to limit errors or defects, once it reaches the field, it has limited ability to be modified, making reacting to as-built conditions difficult, and requiring greater precision from site-built components and partner trades. Modular construction is typically used when there are frequently repeating components (such as apartments) and may not be cost competitive for a more unique structure such as a fire station.

Modular Buildings

In addition to modular construction systems and modular building component, there are complete modular fire stations that are constructed with apparatus bay modules and office/living quarter modules. These building are designed to meet a particular clients requirements, constructed of site, shipped to the site in the largest pieces possible and then assembled on site constructed foundations and pads. All of the required site and utility infrastructure to service these station needs to be in place and operational prior to occupation thus adding a substantial cost above the building purchase price and shipping expenses.

Examples of a modular building system for a Fire Station
Modular Interiors

Modular interior construction can be paired with pre-engineered metal buildings or adaptive re-use projects to create spaces within a larger structure. This would allow more control over conditioning of specific spaces such as offices within a larger structure of a warehouse.

Adaptive-Reuse

An existing structure could be re-used as a fire station, given the correct building and location. This is likely to be something along the lines of a barn, warehouse, or manufacturing facility. Any existing facility that is being re-used will need to be evaluated from a structural standpoint to see what modifications are required to meet Critical Facility requirements. Depending on the structure, there could be a significant cost savings to reuse an existing building, or remodel costs could be similar to those discussed above for the current existing facilities.