

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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SOURCE: SanGIS 2013

LILAC HILLS RANCH



**Travel Time from DSFD Station 11 (minutes)**

- 5:00 or less (n=71)
- Greater than 5:00 (n=282)
- Project Boundary

**FIGURE 14**  
**Lilac Hills Ranch Phase 1 Response Analysis from Station 11**

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## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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Appendix A-6 provides a depiction of a wildland fire within the preserved coastal sage scrub to the southeast of the Lilac Hills Ranch Project's developed areas. As indicated, responding stations include DSFPD Station 15, 11, NCFPD Station 4, and DSFPD Station 12. Travel times to the fire are 2:21, 6:50, 6:54 and 11:08, respectively. Additional resources would arrive on the scene from adjacent agencies beyond 10 minutes, but the initial attack by two engines within 10 minutes is consistent (meets or exceeds) standard of cover described in this study.

Appendix A-7 depicts a typical medical emergency call to the Lilac Hills Ranch Project site. As indicated, first due would be from Station 15 with other stations responding, including Mercy Ambulance from station 11. Station 15 arrives on scene at 1:41 travel time, meeting the standard of cover of initial basic response within 4- minutes travel time, which also meets the General Plan standard of 5 minutes travel. Station 11's ambulance arrives on site at 6:37 travel time, meeting the 8-minute travel time for advanced life support. Appendix A-8 provides the 4-minute travel time coverage from a conceptual on-site fire station located on the CPF site within the Neighborhood Center commercial area in Phase 3. The station has been located roughly in the middle of the project, near a major intersection that provides good access in all directions. As presented, and expected, an on-site station would be able to reach all of the developed portions of Lilac Hills Ranch Project within 4-minutes travel, and would provide additional coverage to the north, northwest, northeast, east and south. A fire station at this location would result in redundant coverage with Station 15 for large portions of Station 15's first response area and for a smaller portion of Station 11's response area in Phase 1. Redundancy and need for this station vs. Station 15 is discussed in more detail in Section 5.0

Should the Mountain Ridge Road Fire Station Alternative be approved, Appendix A-9 provides the 5-minute travel time coverage (County Standard) from the on-site fire station in Phase 5. The potential future station has been located along the primary access road on a two-acre site in the commercial area of the project. The model was run with proposed roadway gates and without gates, with each gate adding roughly 15 second delay (automatic gates will open within 15 seconds). If the Mt. Ridge road fire station alternative is approved, the road will be a dedicated public road and built to the County Consolidated Fire Code standards. Public Roads cannot be gated. With or without gates, the station is capable of responding to the entire Lilac Hills Ranch project within the County's 5 minute travel time standard. The coverage areas are almost identical with or without gates due primarily to the area's road network's lack of north-south and east-west connector roads. The Phase 5 Station location includes less overlap with existing Station 15 than the proposed Phase 3 station location, but more overlap with Station 11 coverage area. Should both Phase 3 and Phase 5 include fire stations, the overlap between the two stations would be substantial and there would be additional overlap with both Stations 11 and 15.

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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### **2.4.1 Private Road Gates and Effect on Response**

Under the proposed Project, three of the private access roads into the community are gated roads. These include Covey Lane, Mountain Ridge and Rodriguez Road. These roads are proposed to be gated as they lead into an area of the Project that houses 55+ senior families, independent living, assisted living and dementia care. These types of facilities are often gated for the security and protection of the senior residents. Covey Lane and Rodriguez Road will provide fire access and gating will be consistent with the code. The Fire Code (San Diego County Consolidated Fire Code Section 503.6), states that security gates or devices shall not be installed across a fire access roadway without the fire code official's approval. Gates are generally discouraged by fire agencies as they can slow emergency egress and responder ingress during an emergency. However, gates are allowed according to Fire District Standards and the County's Consolidated Fire Code when a reliable means of firefighter ingress and unobstructed egress is provided. Options for meeting these requirements can include personnel stationed at the gate on a 24-hour basis, strobe detectors, close proximity public safety radio transmissions, battery back-up with "lock open" on power failure, or key operated electric override switch (San Diego County 2010). Exiting through the gate(s) should be unobstructed and not require any activation measures unless the FAHJ assumes responsibility to activate the gate during times of emergency.

There are reliable gate opening options available that will eliminate any delays entering the project. For example, siren or radio activated gates provide a secure, reliable means of emergency entry without delays common to keyed entry gates. Appendices B and C provide details pertaining to siren and radio activated gates, respectively. These systems can be added to most gate opener devices and require no additional equipment for responding emergency personnel as they are already equipped with sirens and radios. To ensure that the gates do not cause an obstruction to ingress or egress during emergencies, a battery back-up would be provided. Battery back-up systems typically remain unused, but charged and if needed during a power outage, are designed to provide a large number of cycles (open/close) using battery power. The gates can also be programmed to remain open in the event of power outage. Appendix D includes specifications for one example automatic gate operator with battery back-up. Gates will be provided one of these systems or Knox key switch override systems along with an approved emergency traffic control-activating strobe light sensor (Opticom).

It is estimated that it takes about one minute to stop the fire engine, operate a KNOX key switch on a gate, get back in engine and go through gate. So the response to the gated areas would be delayed by 1 minute per gate. However, automated gates, such as those recommended herein, will require less time, roughly one-quarter to one-third the time to open and proceed through the gate as the gate can be triggered remotely by siren or radio and results in minimal delay related to the time for the gate to move from closed to open.

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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Covey Lane and Rodriguez Road include one gate each, thus an estimated 15 second delay would be experienced for responders from the south or east. Under the proposed Project, Mountain Ridge Road is an additional access road that would include a gate but will not be used as a fire access road. Mountain Ridge Road merely provides additional ingress/egress. Note that once the first engine is through the gate, it would be “blocked” open and any other responding engines would not have to stop at the gate. If the response is coming from the north, such as Station 15, then the initial response would not be delayed and the second-due engine would be delayed by about 15 seconds from the south. The response coverage in this analysis uses a 4-minute travel time in part to account for the worst-case potential gate delay, resulting in up to a 5-minute travel time (considering the possibility that a gate needs to be manually opened), consistent with the General Plan. Since the gates on Covey Lane and Rodriguez Road are on secondary emergency access roads, affecting second-due engine, rather than the main access road and the first-due engine, the 15-second delay is likely less important.

### **2.4.2 Decommissioning of CAL FIRE Station 15**

This section briefly discusses the impact on the DSFPD if Station 15 were to be decommissioned or were otherwise not available to respond to emergency calls within DSFPD. This scenario is included in the analysis because of DSFPD's assertion that Miller station cannot be depended upon to provide coverage to the project. Currently, the Station provides critical coverage at the northern end of the District's jurisdiction. The Station provides 4- or 5- minute travel time response to an estimated 500 existing structures as well as providing response along I-15 and into Bonsall, VCFPD and southern NCFPD areas, along with others, as requested. The northern part of the District along with a high value asset – Sullivan Middle School and to some extent, the southern portion of NCFPD would be left uncovered within a 4- minute or 5- minute travel time. In terms of wildfire protection, the large open space to the north and east, much of which is in permanent conservation, represents a significant wildfire corridor, especially due to the terrain and Santa Ana wind alignment. Station 15 is situated in a key location for fast response to wildfire ignitions where time is critical for early containment and prevention of exponential fire spread.

Should Station 15 be decommissioned or unavailable, the impact on the remaining three Stations within the District would be primarily slower response times. Station 15's call volume of 1 call per day, with many of those calls being cancels or false alarms, could be absorbed by Station 11, due to its existing 2 calls per day load. With the drop boundary agreement in place, it is possible that NCFPD Station 4 or VCFPD Stations would realize an increase in call volume as they may be the closest Unit for some portions of Station 15's current response area.

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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The response modeling provided in Appendix E indicates the 4-minute, 5-minute and 8-minute travel time areas that can be covered by each of the District's remaining stations, focusing on the northern portion of the District. As depicted, Station 11 can cover the I-15 incidents up to about the West Lilac Road area to the north within a 4-minute travel time and results in very large coverage gaps to the north, and east and west of the I-15 corridor. Eight minute travel time coverage from Station 11 includes a relatively large area, but due to the road system and lack of interconnections, results in large coverage gaps where slower response times would be experienced. Without Station 15, and in the absence of an on-site station in either Phase 3 or Phase 5, the Project site and many of the surrounding areas would be left without response in 4 or 5 minutes travel time. NCFPD's stations are too far north or west to arrive sooner than 5 minutes to the Project and longer than eight minutes to the majority of the site and surrounding DSFPD parcels (Appendix E). Service would be provided to these north DSFPD areas through the automatic aid agreement, but the area would experience service decline.

The Lilac Hills Ranch Project would be serviced by the closest existing station – DSFPD Station 11, the fastest response would be five (northwest corner of Project) to 10 minutes travel time. This situation would be unacceptable for an urban master planned community that generates a calculated 1.9 calls per day. However, DSFPD could own a two-acre site within Phase 5 for a future fire facility that could be used to provide service to the Project or a fire facility could be constructed at the Phase 3 site.

### **2.4.3 General Plan Safety Element; S6.5**

General Plan Policy S-6.4 requires new development to demonstrate that fire services can be provided that meet minimum travel times identified in Table S-1. The policy provides that: "Standards are intended to (1) help ensure appropriate development occurs in areas with adequate fire protection and/or (2) help improve fire service in areas with inadequate coverage by requiring mitigation for service-level improvements as part of project approval." If the appropriate emergency travel time cannot be met for a proposed discretionary project, as explained in the GPU EIR, the project can be approved if sufficient mitigation measures are included as a basis of approval of the project. In addition, the County's Guidelines for Determining Significance provides that where projects exceed these time requirements, the Director of Planning and Land Use may accept mitigation measures that include such measures as Automatic Aid Agreements or offer feasible alternatives that achieve comparable emergency response objectives (Pages 8 and 13). In addition, incremental Growth is allowed to occur until a new facility can be supported by development. (S-6.5). The intent of these provisions, not all of which are specifically set forth in the General Plan, is to explain that other measures, as well as developing technologies may result in a Project that achieves comparable emergency response objectives, even though travel times are technically longer than the travel time standards.

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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In this case, the Lilac Hills Ranch Project complies with the General Plan's travel time requirements. The entire project can be reached within five minutes travel time as provided by any of the alternatives described herein. However, even without the alternatives, the project may still be considered consistent with the General Plan by providing sufficient mitigation that can be used as the "basis of approval." Essentially, the sufficient mitigations offset the need for emergency response within the General Plan five minute standard for this type of community.

Sufficient mitigation measures provided the Lilac Hills Ranch Project include both required measures (such as interior fire sprinklers and ignition resistant construction) as well as project-specific measures. Required measures play a critical role in reducing vulnerability of structures and demands on responding fire agencies. These features assist the fire agency by reducing the need for immediate intervention and lengthening the response time.

Some of the important measures that assist in this role by providing sufficient mitigation include:

- The Project would provide \$2.2 million in Fire Mitigation fees and \$973,000 annually in assessments to DSFPD, CAL FIRE and/or San Diego County (depending on which potential option is selected for fire service) enabling acquisition of appropriate resources
- Over \$250,000 is provided annually to CAL FIRE through San Diego County assistance for year round Station 15 availability
- Over \$650,000 is provided annually to DSFPD by SDCFA for supplemented staffing
- Two existing fire stations (Station 15 and Station 11) can respond to the site within roughly 1–10 minutes travel (Station 15 can respond throughout LHR within 5 minutes travel)
- Approximately 70% of Phases I and II can be responded to in 6 minutes or less from Station 11. Station 15 can respond to over 95% of the Project within 5 minutes travel time
- Automatic aid "drop boundary" agreements are in place that enable closest unit to respond, even if from neighboring district/agency
- Ignition resistant structures and landscape exceeding code requirements that have proven to perform extremely well in wildfires
- Fire sprinklers in all structures which effectively extinguish interior fires over 96% of the time
- Fuel modification for every structure, including alternative measures where 100 feet is not possible



## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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- Roads and access meeting San Diego County Consolidated Fire Code both internal and external
- Roadside fuel modification
- Long-term agriculture areas adjacent the site (reduced, irrigated fuels not native brush)
- No buildings 35 feet or taller minimizing or eliminating the need for a ladder truck
- On-Site EMTs at group care and dementia facilities
- Three emergency access roads in addition to primary access
- Automatic emergency gate operators on emergency access roads enabling access from unit cab
- Redundant water supply of district water, recycled water, grey water and well water
- Automated External Defibrillator's (AED's) installed in any high occupancy uses with staffing for use by trained administrators.

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

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### 3.0 DSFPD BUDGET COMPARISON

This section provides an analysis of the DSFPD's annual operating budget and allocation of that budget between operations and administration. The DSFPD's annual budget was compared against several north county fire agencies. Data for this analysis was acquired from fire agency Web sites, city Web sites, or directly from the fire agencies via email and telephone communications.

The fire agencies selected for comparison with DSFPD are:

- Escondido Fire Department
- North County Fire Protection District
- Oceanside Fire Department
- Rancho Santa Fe Fire Protection District
- San Marcos Fire Department
- Valley Center Fire Protection District
- Vista Fire Department

These stations were selected based on their proximity to the DSFPD, their similarity in response area, similarity in structure, and/or based on their excellent service reputation.

Table 12 provides a summary of each fire agency's critical information utilized in this analysis. The fire agencies in this comparison include some variation in typical response areas, population densities, staffing, stations and apparatus, and total operating budgets. Variations in these agency attributes accounts for some of the variations in the results, as detailed below. However, the comparisons provide perspective on DSFPD's overall budget, operating efficiency, and the potential financial impact from the development of the Lilac Hills Ranch Project.

**Table 12**  
**Vicinity Fire Agency Comparisons with Deer Springs Fire Protection District**

Department	Area (sq mi)	Full-Time Staff	Stations	Population	Calls	Apparatus	Budget
Vista Fire Department	36.5	78	6	114,000	10,616	8 engines, 1 truck, 3 paramedic, misc	\$18,800,000
Escondido Fire Department	50	103	7	146,000	11,950	15 engines, 1 truck, 7 ALS (3 reserves)	\$17,273,000
San Marcos Fire Department	33	79	4	95,000	7,035	4 engines, 1 truck, 4 ambulances	\$10,900,000
Deer Springs Fire Protection District	47	26	4	13,000	1,835*	7 engines, 1 ambulance	\$4,546,000

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

**Table 12**  
**Vicinity Fire Agency Comparisons with Deer Springs Fire Protection District**

Department	Area (sq mi)	Full-Time Staff	Stations	Population	Calls	Apparatus	Budget
Rancho Santa Fe Fire Protection District	38	51	4	27,000	2,500	7 engines, 1 water tender, 3 ambulances	\$11,000,000
Oceanside Fire Department	41	130	8	170,000	15,500	8 engines, 2 quint, 4 ambulances, 1 water tender, 1 rescue	\$23,716,276
Valley Center Fire Protection District	84.5	13	2.5	23,000	1,300	4 engines, 1 rescue squad	\$3,450,000
North County Fire Protection District	92	68	6	50,000	4,107	10 engines, 1 water tender, 1 quick attack, 1 rescue, 3 ambulance	\$14,000,000

**\*Note:** The call volume reported appears to include an anomaly and may actually be lower, which would affect the comparisons in the following Section, most notably, the estimated Cost per Call number would increase proportional to the reduction in the call volume.

### 3.1 Total Budget

The total budgets for each fire agency vary from Valley Center Fire Protection District at \$3.45 million to Oceanside Fire Department at \$22.5 million. DSFPD's total budget is \$4.55 million dollars for fiscal year 2011/2012. According to the district's budget, the majority of the costs are related to the CAL FIRE contract for staffing and apparatus, which is just over \$3.84 million (84%) of the district's annual budget. A total of \$0.27 million (6%) is allocated for "operations" and \$0.29 million (6%) for "administrative." Based on this analysis, and depending on the actual use of the 6% of the budget for "operations," the overall administrative expenditure is less than that in most other districts.

#### 3.1.1 Revenue

Revenue sources for fire agency budgets vary by the type of agency. For example municipal fire agencies (City of Escondido, City of Oceanside, City of San Marcos, City of Vista) typically include funding from a City General Fund that is sourced from a percentage of sales and parcel tax revenues along with other sources. Fire district funding is more complicated and includes a variety of potential sources. Sources include funding through County General Funds, fees from plan review, service zones, facilities districts, and some have approved special assessments/fees, which in some cases, provide the majority of revenue. State law allows fire protection agencies access to two primary sources of sustainable revenue—property tax and voter approved

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

assessment. Proposition 13 and SB 154 have had a significant impact on revenues of some special districts, limiting property tax increases and proportional share of generated taxes to districts with a pre-Prop 13 tax rates.

Table 13 provides a summary of the revenue sources from several north San Diego County fire agencies.

**Table 13**  
**Comparison of Fire Agency Revenue Sources**

Fire Agency	General Fund (Sales and Parcel Taxes)	Special Fire Assessment/Benefit Fees/Melo Roos	Estimate of Revenue Source Allocation
Vista Fire Department	X	N/A	100% General Fund
Valley Center Fire Protection District	X	X	24% General Fund / 76% Standby Fee/Melo Roos-benefit fee CFD
Oceanside Fire Department	X	N/A	100% General Fund
Escondido Fire Department	X	X	98% General Fund / 2% Special Tax
San Marcos Fire Department	X	X	90% General Fund / 10% Melo Roos
Deer Springs Fire Protection District	X	X	10% General Fund / 74% Special Assessments/16% County Augment
North County Fire Protection District	X	N/A	100% General Fund
Rancho Santa Fe Fire Protection District	X	X	93% General Fund / 7% Benefit Fee

As noted in Table 13, Oceanside Fire Department and Vista Fire Department receive funding from typical General Fund sources, primarily through sales taxes, parcel taxes, and occupancy taxes with development services fees also providing revenue. The Cities of Escondido, Vista, and San Marcos fire departments receive the majority of their funding from General Funds, but in the case of Escondido, a small percentage of its overall budget is related to a special tax on 4,000 structures (\$72/structure/year) located within the Rincon Del Diablo Improvement District. San Marcos includes Melo Roos funding at a relatively low level in addition to General Fund sources.

Fire Protection Districts vary, with some relying entirely on General Fund (non-special tax) revenue and others being primarily funded through voter approved taxes. NCFPD receives all of its revenue from non-special tax funds. Rancho Santa Fe Fire Protection District is primarily funded by non-special tax sources, with an approximately 7% benefit fee approved by voters. Valley Center Fire Protection District includes a Melo Roos/benefit assessment for annexed

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

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land that consists of two taxes that generate roughly 33% of their annual budget. The only district in this comparison that receives most of its funding from special taxes is Deer Springs Fire Protection District, which receives roughly 10% of its budget from typical County General Fund sources. Reasons for the low parcel tax income are related to level of development in the District and Proposition 13/SB 154 and the fact that it is a post-Prop 13 District. The County voluntarily conveys a percentage of parcel tax to the District (along with others formed about the same time). The District receives another roughly 36% of its annual budget from a voter approved (1981) special fire standby/availability fee, 36% from a 2004 voter approved fire suppression assessment, 16% of its revenue from a County supplement and 2% from miscellaneous sources (interest, weed abatement, first responder, etc.). In March of 2011, the DSFPD approved a special Fire Mitigation Fee Program, which is intended to collect fees from new projects and hold in a fund for the sole purpose of providing capital facilities and equipment to serve new development.

### 3.1.2 Expenses

Comparing DSFPD's expenditures on salary related costs vs. non-salary related costs with that of five other vicinity fire agencies' (Vista, Oceanside, Escondido, Valley Center, and San Marcos), the results indicate that DSFPD is weighted heavier on the staffing salary expenses (88%) than on all other non-salary expenses (12%). Fire agencies and their salary related to overhead related cost ratios are summarized in Table 14. In general, the industry average ratio is 80/20, salary/non-salary expenses as a rule of thumb. The reasons for the higher ratio for DSFPD are unclear, since the majority of the salary costs are CAL FIRE staffing costs. The District appears to operate with lower overhead costs related to facilities and engine maintenance.

**Table 14**  
**Comparison of Fire Agency Budgets Allocated to Staffing vs. Overhead**

Fire Agency	Budget Allocated to Salary Related Costs	Percentage Salary Related Costs	Budget Allocated to Non-Salary Costs	Percentage Non-Salary Related Costs
Vista Fire Department	\$12,693,616	68%	\$6,106,384	32%
Valley Center Fire Protection District	\$2,655,589	77%	\$794,411	23%
Oceanside Fire Department	\$18,409,167	78%	\$5,307,109	22%
Escondido Fire Department	\$14,887,265	86%	\$2,385,735	14%
San Marcos Fire Department	\$9,427,338	86%	\$1,506,662	14%
Deer Springs Fire Protection District	\$3,986,635	88%	\$559,365	12%
Average %	N/A	80.5%	N/A	19.5%

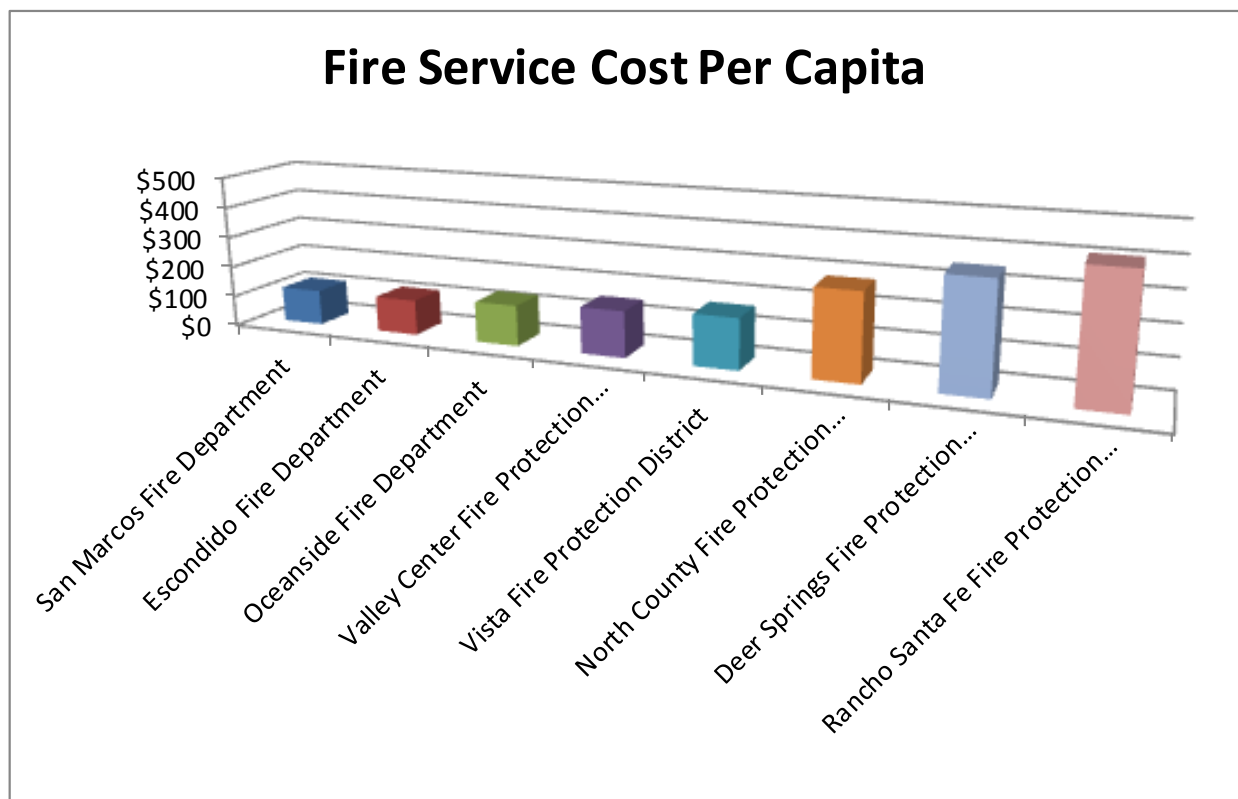
## Lilac Hills Ranch Fire Service Response Capabilities Assessment

Comparing the DSFPD's overall budget with other vicinity fire agencies' included in this assessment results in a shifting ranking, depending on the category being evaluated. Each evaluated category is provided a brief discussion in the following sections.

### 3.2 Cost per Capita

Based on the cost of the fire service per capita, DSFPD is second highest at \$350 per protected citizen (Figure 15). Cost per capita ranges from \$115/citizen in San Marcos and Escondido to \$407/citizen in Rancho Santa Fe. The average cost per citizen for the eight evaluated agencies is \$214. The cost per capita results suggest that municipal fire departments with a denser population are serviced more efficiently than the more rural fire districts.

**Figure 15** Cost per Capita for Fire Service



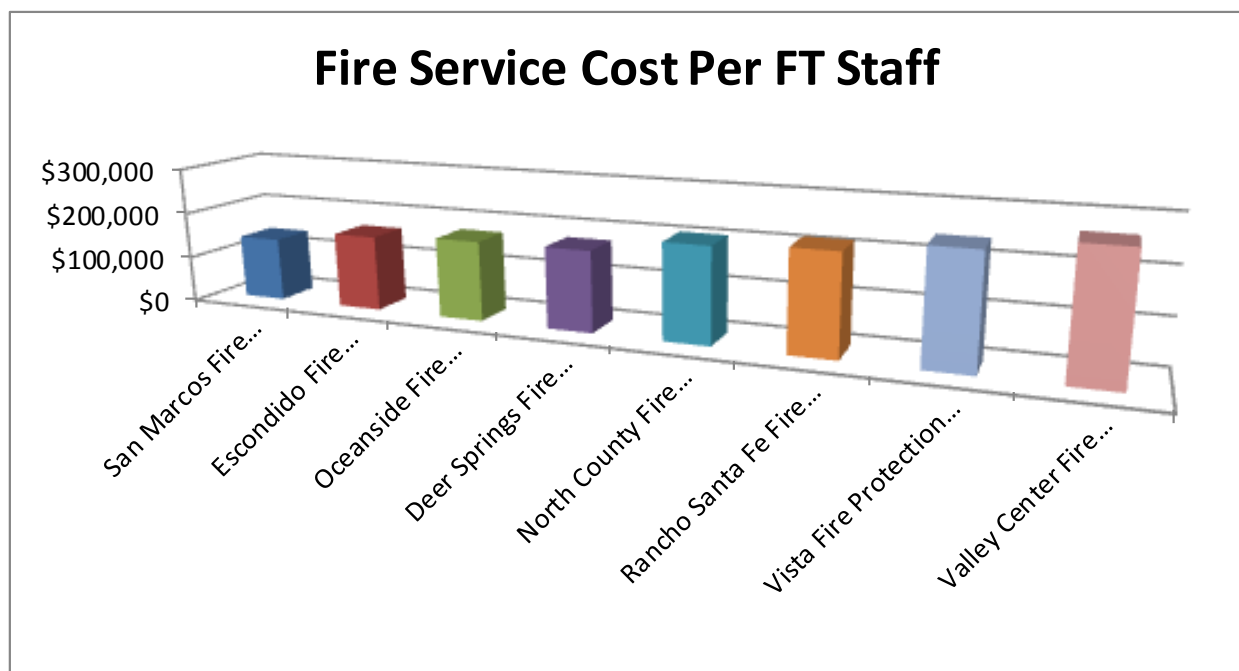
### 3.3 Cost per Full Time Staff

When compared on a cost to staffing ratio, the results indicate that DSFPD is one of the lower cost agencies in the comparison group at just over \$174,000 per full time staff person (Figure 16). Cost per full time staff ranges from roughly \$138,000 in San Marcos Fire Department to

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

\$265,000 in the Valley Center Fire Protection District. The average cost per full time staff person for the eight evaluated fire agencies is \$197,000. The results of the cost per full time staff person suggests again that municipal agencies, which are typically larger and have larger budgets, are able to more efficiently provide fire protection services than smaller, more rural agencies. Certain fixed costs that are common to all agencies are spread over more staff persons in the more urban agencies, resulting in lower overall costs when compared on a staffing basis. Optimizing the number of stations and staff is an important cost consideration for rural agencies.

**Figure 16** Cost per Full Time Staff Person for Fire Service



### 3.4 Cost per Emergency Call

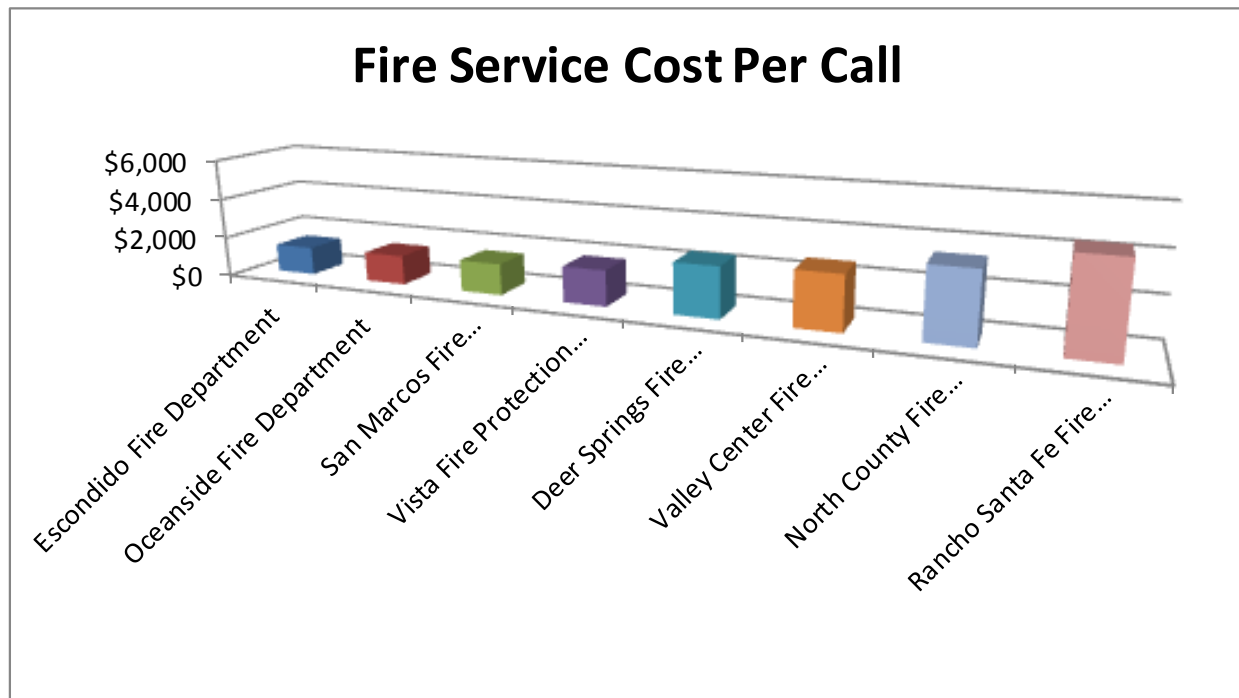
When compared on a cost to emergency call basis, the results indicate that DSFPD is just over the average at roughly \$2,500 per call (Figure 17). Cost per call ranges from roughly \$1,400 in Escondido Fire Department to \$4,400 in the Rancho Santa Fe Fire Protection District. Note: The call volume reported appears to include an anomaly and may actually be lower, which would affect the comparisons in the following Section, most notably, the estimated Cost per Call number would increase proportional to the reduction in the call volume. This anomaly would need to be further explored to determine the potential impact, if any.

The average cost per emergency call for the eight (nine) evaluated fire agencies is roughly \$2,400. These results suggest that fire agencies with higher call volumes, usually the urban fire

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

departments, operate more efficiently because whether on a call or at a station, staff are paid and the more calls responded to, the lower the cost from a cost per call perspective.

**Figure 17** Cost per Emergency Call for Fire Service



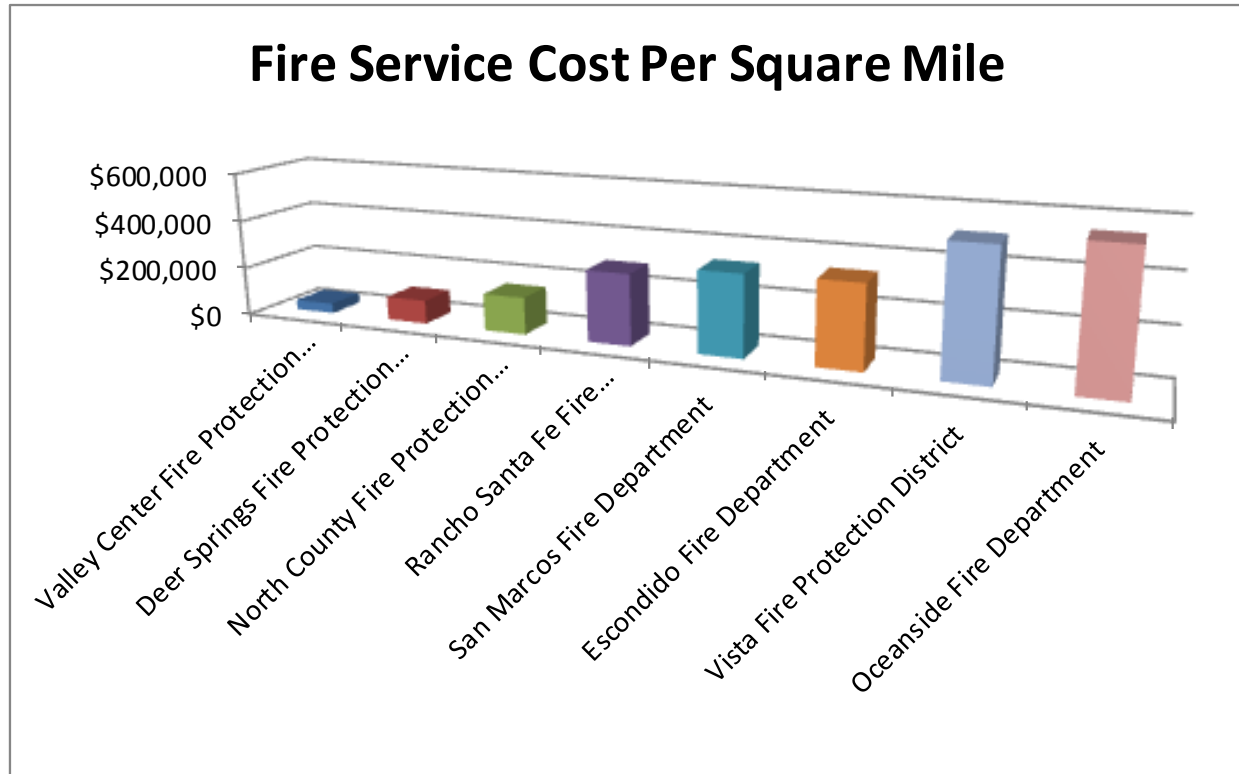
### 3.5 Cost per Square Mile of Coverage Area

When compared on a cost to square mile of coverage area, the results indicate that DSFPD is below the average, second from the lowest cost at roughly \$97,000 per  $\text{mi}^2$  (Figure 18). Cost per  $\text{mi}^2$  ranges from roughly \$40,000 in Valley Center Fire Protection District (responsible for 84.5  $\text{mi}^2$ ) to nearly \$550,000 in Oceanside Fire Department (responsible for 41  $\text{mi}^2$ ). The average cost per  $\text{mi}^2$  for the eight (nine) evaluated fire agencies is roughly \$288,000. The results indicate that agencies with larger service areas, particularly the more rural agencies, include lower costs when viewed from an “area protected” perspective. More compact, urban fire agencies protect more people and structures, but in a smaller total land area.



## Lilac Hills Ranch Fire Service Response Capabilities Assessment

**Figure 18** Cost per Coverage Area Square Mile for Fire Service

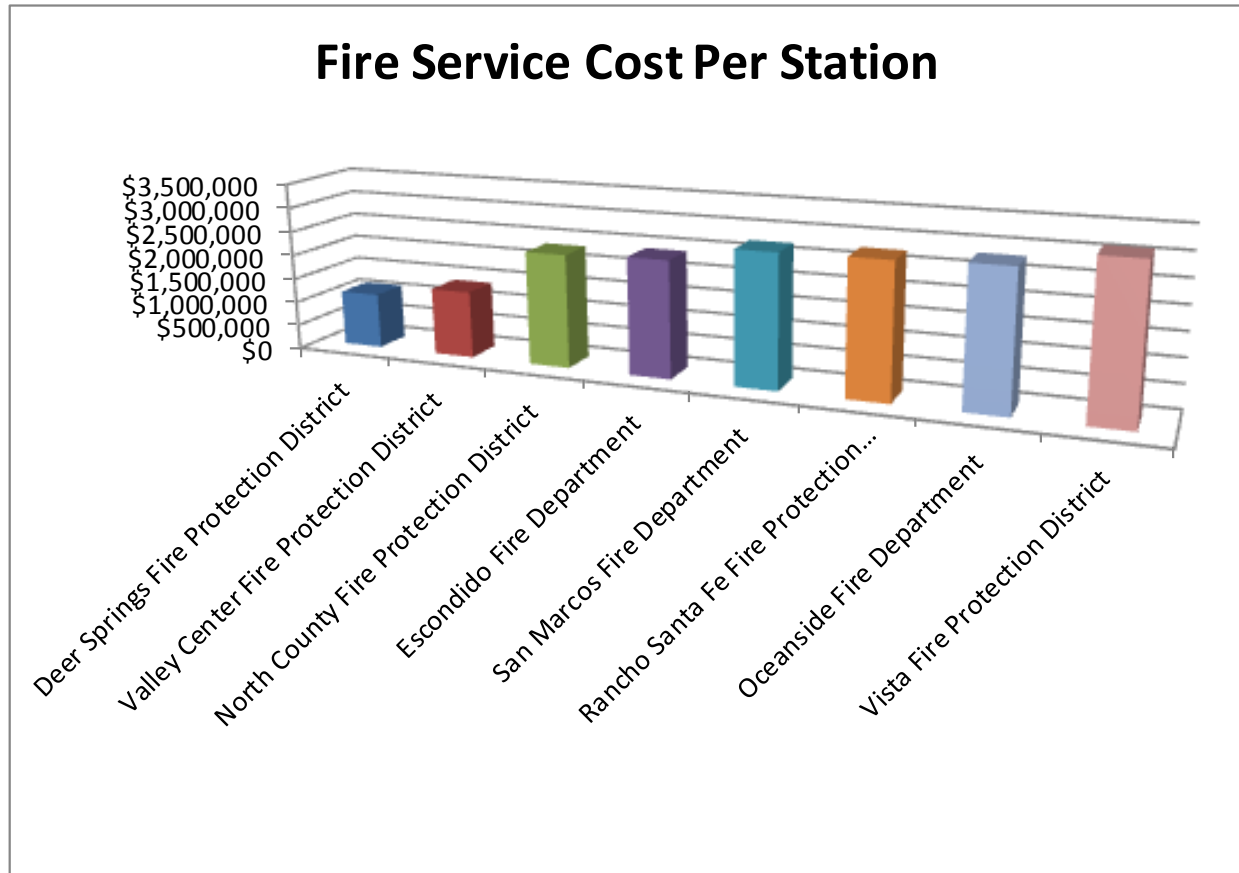


### 3.6 Cost per Agency Fire Station

When compared on a cost to fire station basis (i.e., overall annual budget divided by the number of fire stations), the results indicate that DSFPD is below the average, and the lowest cost of the agencies reviewed at roughly \$1,137,000 per station, including the Miller Station (Figure 19). When the Miller Station is excluded from the calculation, DSFPD's cost per station is \$1,515,000, second lowest behind Valley Center Fire Protection District. Cost per fire station ranges from roughly the low \$1.1 million to \$3.1 million in Vista Fire Department. The average cost per station for the eight evaluated fire agencies is roughly \$2.3 million. The results do not clearly indicate a trend related to the number of fire stations resulting in higher per station costs except that the CAL FIRE Contract agencies (DSFPD and VCFPD) have lower per station costs and appear to be benefitting from the volume-based discounts realized through CAL FIRE.

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

**Figure 19** Cost per Agency Fire Station for Fire Service



### 3.7 Project Financial Impact

Preliminary project estimates of total funding to the DSFPD or another entity that will result from the project's completion are summarized in Table 15. As presented, one-time fire mitigation fees of \$2.2 million would be generated by the project's five phases. In addition, annual fees of \$0.97 million would be provided through property tax assessments for fire standby and suppression. In addition, the recently passed Assembly Bill x1 29 State Responsibility Area Fire Prevention Fee would generate in the range of \$0.2 million dollars annually for fire prevention activities. Because AB x1 29 appeals threaten to repeal the fee, and because it is not clear that the money will all be returned to the District, this significant amount of potential District funding is not included in this budget impact analysis.

The funding that would be generated by the Project could be utilized in a manner that could be determined through a cooperation between Accretive Investments, Inc. and DSFPD and/or

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

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potentially between DSFPD and CAL FIRE. This report's analysis and conclusions provide direction on possible solutions for providing acceptable response to the Lilac Hills Ranch Project without creating a reduction in service to existing residents. The funding generated by the project will provide the ability to improve the distribution and concentration of resources, adding weight to the response resources and potentially providing funding to offset all or a portion of the SDCFA \$250,000 funding of the Amador Contract with CAL FIRE and possibly creating substantial excess revenue for the County, depending on which option is considered.

**Table 15**  
**Fire District Funding Provided by the Lilac Hills Ranch Project**

<b>Phase</b>	<b>Ad-Valorem Taxes</b> <i>(Annual Amount)</i>	<b>Fire Standby/Availability Assessment</b> <i>(Annual Amount)</i>	<b>Fire Suppression Assessment</b> <i>(Annual Amount)</i>	<b>Fire Mitigation Fee</b> <i>(One Time Amount)</i>
1	36,411	\$55,117	\$103,547	\$453,376
2	44,649	\$72,366	\$112,801	\$480,378
3	43,548	\$75,194	\$135,632	\$580,060
4	23,894	\$28,314	\$72,628	\$298,448
5	30,825	\$47,352	\$90,979	\$295,186
<i>Subtotal</i>	<i>179,329</i>	<i>\$278,343</i>	<i>\$515,587</i>	<i>\$2,207,448</i>
<b>Grand Total</b>	<b>\$973,259</b>			<b>\$2,207,448</b>

Based on the District's current call volumes, which are low when compared to the industry standard, and the addition of up to 1.9 calls per day (mostly medical) anticipated from the Lilac Hills development, there is expected to be a measureable financial increase in the current operating costs with build out of the project. Property taxes and related assessments generated by the Project will cover the incremental costs associated with providing fire services to the Project with the District realizing a net increase in annual operating budget of \$0.97 million dollars. In addition, the Project will generate \$2.2 million dollars in fire mitigation fees at project build out to address the Project's proportional impact on capital facilities and equipment. Table 16 provides an analysis of the budgetary categories previously analyzed focusing on DSFPD currently vs. DSFPD at project build out should a fire service option within the District be enacted.

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

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**Table 16**  
**Comparison of Deer Springs Fire Protection District Current Budget**  
**with Post-Lilac Hills Ranch Budget.**

DSFPD	Budget	\$/Capita	\$/Call	\$/Staff	\$/Sq Mi	\$/Station
Current Budget	\$4,546,000	\$350	\$2,273	\$174,846	\$96,723	\$1,136,500
With Lilac Hills Ranch Project	\$5,347,000	\$243	\$1,959	\$205,654	\$113,766	\$1,336,750

Depending on the final emergency service configuration selected for the Project, the generated assessment and mitigation fees will provide a surplus of funds to the District for both on-going annual assessments and for mitigation fees, as described in more detail in Section 5.

As presented, with the Lilac Hills Ranch Project:

- District's total budget increases from \$4,546,000 to \$5,519,000 (+18%).
- Per Capita cost is substantially decreased from \$350 to \$251 (-28%). The increased budget is spread over 22,000 people (a 70% increase in District), includes the addition of 9,000 people from the Lilac Hills Ranch Project.
- Per Call costs are reduced from \$2,273 to \$2,022 (-11%). Per call costs decreases because the number of persons in the Lilac Hills Ranch community are projected to generate lower number of calls per person than the District as a whole, since the population will include a high percentage of younger families.
- Per Staff costs are slightly increased from \$174,846 to 183,967 (+5%). This number depends on the addition of full-time staff/firefighters based on the response coverage negotiated. With no additional staff, costs appear to go up, but in reality, reflect the larger budget divided by existing staff, i.e., there is more money in the budget but no additional staff to offset that amount. Should a response coverage be selected that increases the full time staff from 26 to 29, the per staff cost would be \$190,310 and if full time staffing went to 35, the per staff costs would be \$157,685.
- Per Mi2 Coverage area costs are increased from \$96,723 to \$117,426 (+21%). This cost changes directly proportional to the budget increase since the service area does not change. This does not represent an increase in total costs, but reflects the larger budget spread over the same area.
- Per Station costs are increased from \$1.136 million to \$1.380 million (21%). This cost changes directly in proportion to the budget increase since the number of stations does not change. This budget analysis will vary depending on the ability to service the Project with Station 15. If not, then an additional Station within the development may be necessary and the new cost per station would decrease by 6 % to \$1.07 million.

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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### **4.0 CUMULATIVE IMPACTS**

Cumulative impacts from multiple projects within a fire protection district like DSFPD can cause fire response service decline and must be analyzed. The Lilac Hills Ranch Project represents a significant development that would increase the existing District population by up to a calculated 70%, from 13,000 to 22,000 at maximum calculated usage, and to 18,000 considering permanent residents. The resulting impact on fire services has been analyzed in detail within this report and despite the large population increase, the existing fire service delivery system is considered underutilized on a call volume basis, based on the results of this study's analysis and when compared to standard utilization rates for busy (5 or 6 calls per day for a rural station) fire stations. However, the system would need to be augmented to respond to a population change like that associated with the Project, as discussed further in the following Recommendations section of this report. Further, when considered cumulatively with other projects planned in the DSFPD's jurisdictional area or within automatic aid response areas, the cumulative impact is considered potentially significant.

The most significant foreseeable DSFPD project is in the southern/central portion of the District in the Merriam Mountains area. There is no current application for this area. However, the San Diego County Board of Supervisors, in June 2012, approved the project owner specific request of 1,200 units. Based on the size, substantial one-time fire mitigation fees and on-going property tax fire availability and suppression fees will be generated by a potential project, similar to the Lilac Hills Ranch Project. DSFPD Station 12 is located in close proximity to the southern end of this project and would be the first responder for fire and emergency medical calls to the entire site. Based on the currently low call volume at Station 12 and the proximity and low call volumes associated with Stations 13 and 11 as secondary responders, and the likely aid received by San Marcos Fire Department, the area may be able to be serviced by existing stations.

No other DSFPD significant, large master planned communities were identified as reasonably foreseeable. However, just north of the District (I-15 and SR-76), and within Station 15's 8 minute travel time response area, a large master planned community is being constructed. This population would be served primarily by NCFPD's Station 4. Certain portions of this community have been approved while others are still being entitled. This project includes several components including:

- Meadowood: 900 units, commercial, school
- Campus Park: 751 units
- Campus Park West: 355 units
- Palomar College Campus: up to 5,000 students

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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Based on the low anticipated call volume and the existing anticipated call volume, along with the new fire station proposed for this project, the cumulative impact is estimated to be below significant. In addition, each of these Projects will be required to show compliance with the five minute response time standard and will be required to mitigate its impacts by providing significant fire mitigation fees. The Projects will also provide fire availability and suppression assessments that are intended to enable the fire agencies to proportionally augment and enhance staffing, which would in turn off-set the growing population and call volume and result in a favorable condition.

# **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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## **5.0 RECOMMENDATIONS**

DSFPD has indicated that it will be able to service the Lilac Hills Ranch Project, but only under District imposed conditions that have not been considered in context of future facilities that would be required to be provided by the proposed project or the overall fire service delivery system. To that end, this report seeks to provide options for DSFPD to provide service to the Lilac Hills Ranch Project.

The Project's contributions to fire resources through mitigating fees and ongoing property taxes and fire assessments, combined with similar contributions from future development in the Project area, are expected to result in funding that could be used for enhancing DSFPD's and/or CAL FIRE's response capabilities and at least maintaining the current standards, but likely enhancing firefighting and emergency response. Over the long term, it is anticipated that fire agencies will be able to perform their mission into the future at levels that exceed current standards.

### **5.1 Interim Fire Service Response**

Temporary fire service may be provided in a variety of ways, including from existing stations such as Miller Station, or from a temporary, on-site station. The Project would provide for interim fire service that conformed with the County General Plan 5 minute travel time standard.

#### **Potential Options for Interim Fire Service at Lilac Hills Ranch**

Interim fire service, which includes emergency response for fires, medical emergencies, and rescues, amongst others, can be provided via any of a number of options until provisions for permanent fire service are triggered. This type of arrangement is utilized in many fire agency jurisdictions. Interim fire service is commonly provided for large master planned communities, like Lilac Hills Ranch until enough units have been permitted, constructed and occupied, related revenues are available to fund the station and call volumes are high enough to justify additional coverage. As build out occurs, there are typically very few calls generated by a project in its initial phases. The County General Plan requires that new development demonstrate that fire services can be provided that meets the 5 minute travel time coverage. These standards are intended to (1) help ensure development occurs in areas with adequate fire protection and/or (2) help improve fire service in areas with inadequate coverage by requiring mitigation for service-level improvements as part of project approval. Incremental Growth is allowed to occur until a new facility can be supported by development. (S-6.5). Lilac Hills Ranch has General Plan consistent response coverage through the 72nd unit from DSFPD's Station 11 and 100% coverage within 5 minutes by CAL FIRE's Miller Station. Beyond the 72nd unit, DSFPD's Station 11 would not be able to provide 5 minute travel time coverage.



## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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Various solutions for interim fire service are available, including 1) providing service from an existing station, 2) entering an agreement with a neighboring fire agency with capacity to cover the project within acceptable timeframes, 3) providing other mitigation measures, if such measures are approved by the County as a part of the Project's approval, or 5) constructing a temporary station (usually a mobile home with a steel building or similar that serves as an engine bay) and siting it so that it can effectively respond to the developing project. Any of these options may be available to DSFPD for providing interim coverage of LHR and would conform with the General Plan Policies of allowing incremental growth to occur until a new facility can be supported by development and providing fire services within the 5 minute travel time.

Options for Interim Fire and Emergency Medical Service considered by this analysis include:

### ***Miller Station***

It has been established in this Capabilities Assessment that Miller Station is located where it can respond to the entire Lilac Hills Ranch Project site within 5 minutes, has capacity to respond to the calls that would be anticipated from LHR at build out, and would be a cost-effective fire and emergency response resource. This option provides the ability for DSFPD to consider fiscal ramifications into the equation by providing an interim service without provisions for an on-site interim fire station, which would require a considerable amount of funding that would otherwise be available for permanent fire service, and deciding on a longer term basis where they want to locate a permanent fire station in the future. I interim service from Miller could be provided in one of the following forms.

1. Miller Station would provide fire and medical emergency services to the Project in the manner currently being provided within the District under the existing Amador Agreement (fire services during the offseason) and the Automatic Aid Agreement between Deer Springs Fire Protection District and NCFPD. It would respond as it currently does as part of the response weight to any emergency within LHR. The interim period of coverage would be expected to generate a very low volume of any type of calls, but particularly structure fires. A Type I engine may be considered necessary and if so, then Option 2 (below) could be considered.
2. DSFPD could enter into an agreement with CAL FIRE to locate a Type I engine at Miller Station that could be cross-staffed by Miller's existing 3 person engine company. If a Type I reserve engine is available from DSFPD's fleet, LHR would in effect lease the engine for the interim period from DSFPD. The lease rate would essentially pay for the engine depreciation (roughly \$50,000 per year) and operating costs. If a reserve engine is not available, LHR could purchase a Type I engine for DSFPD and to their specifications and it could be located at Miller Station for the existing CAL FIRE crew to cross-staff the engine

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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for use into LHR. Based on the existing engine room at Miller Station, either one of these options would likely require a temporary structure at the Miller site (such as a sturdy tent-garage commonly used for this purpose) and minor site driveway improvements to accommodate the engine.

### ***On-Site Station***

LHR could provide a temporary fire station (2,500 to 3,000 square feet manufactured home/mobile home) and a single bay, dual load engine room (1,500 square feet tent-garage). Staffing could be provided by DSFPD or, a more cost-effective approach would be to explore an agreement with SDCFA to utilize trained volunteers from their volunteer program. LHR would cover the cost of the volunteer daily stipend. A two person crew would suffice for the interim period considering Miller Station's close proximity and Station 11's ability to respond in a reasonable time frame. The interim engine could be, 1) a reserve engine from DSFPD leased by LHR, 2) a reserve engine from SDCFA leased by LHR, 3) a reserve engine from CAL FIRE leased by LHR, or 4) a new engine purchased by LHR that would remain with DSFPD once final fire station location/solution is determined.

As indicated in Figures 11 and 12, any location within the Project area is capable of responding to an emergency call within 5 minutes travel. Further, the LHR Specific plan allows for fire stations to be located within any use on site. Therefore, should an interim fire station be considered necessary, DSFPD and LHR would agree upon a location that would best provide coverage until permanent fire services were in place and this location could be anywhere on-site.

Implementation of the final fire service option, when temporary service was suspended and a permanent station constructed, would be based on an appropriate trigger, such as prior to the first building permit in Phase 3, if the Phase 3 fire station is enacted or the first building permit in Phase 5, if the Mountain Ridge Road options is approved.

### **Mitigation Measures**

Mitigation measures provided by the Lilac Hills Ranch Project would serve to enhance any interim fire service option chosen for the project. Mitigation measures such as interior fire sprinklers and ignition resistant construction as well as other project-specific measures can play a critical role in reducing vulnerability of structures and demands on responding fire agencies. These features assist the fire agency by reducing the need for immediate intervention and lengthening the response time.

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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### **5.2 Permanent Fire Service**

Based on the fire service capabilities analysis outlined in this report, which has considered the District's unique response area, land uses, call volume and type, station distribution and concentration, automatic aid, budgets and required speed and weight of response, the authors of this report offer the following recommendations. In light of economic conditions over the last several years, which have led to substantial budget balancing issues for many fire agencies throughout California, with several in San Diego County, DSFPD included, it would not be prudent to unwisely utilize project-generated fire assessments and fees on duplicative fire and emergency medical services. The existence of CAL FIRE's Miller Station in close proximity to the project, and with the physical ability to respond to the entire project site within five minutes travel, must be strongly considered when determining a fire and medical emergency response approach either as a temporary basis or pursuant to the options listed below. Wasteful spending of generated funding on duplicative service would be a significant error that may not be realized in the short-term, but over the long term, would compound existing DSFPD and fire agency budget shortfalls. Therefore, the following recommendations seek to provide options for providing service that meets fire and medical emergency safety standards in an efficient manner.

#### **Option 1. Station 15 Apparatus and Staffing Augmentation**

The most efficient and cost-effective approach to providing fire services to Lilac Hills Ranch from the perspective of the overall fire delivery system would be for the DSFPD and CAL FIRE to service the project from existing stations (Station 15 and Station 11). This option would be based upon Miller Station providing fire and medical emergency services to the Project in the manner currently being provided within the District under the existing Amador Agreement (fire services during the offseason) and the Automatic Aid Agreement between Deer Springs Fire Protection District and NCFPD. The existing Station 15's location is optimal for servicing the Lilac Hills Ranch Project. Specific augments would be provided so that the response capability of the station's engine company would be enhanced for the type of responses it would routinely receive. Lilac Hills Ranch would provide a suitable level of funds to DSFPD for DSFPD to use to augment the fire and emergency medical services capabilities of Miller Station, which could include adding a cross-staffed Type I engine at this site. This amount would be in addition to the fire mitigation fees that will be paid to DSFPD pursuant to the Fire Mitigation Fee Ordinance. This option may also include a remodel of the existing station to add a dual bay engine room, or to increase the living quarters.

The existing Type III engine at Station 15 is designed for wildland fire response. It does not meet NFPA guidelines for structure fires (ladders, hose, etc.) and includes a smaller water capacity. Despite these limitations, this engine can still provide on-scene resources and personnel, as it does in its current capacity. Adding a Type I engine will provide more appropriate response to structure

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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fires, vehicle accidents, and medical aid in Lilac Hills. On medical or structure fire calls, the Type I engine would be used. On fire calls, the Type III engine would be used. With the addition of the Lilac Hills Ranch Project, a total of 1,746 residences plus other large site structures at build out would be added to the station's current coverage responsibility area. Station 15 is currently operating under an existing Amador Agreement to stay open year-round and based on the current call volume statistics, responds to emergencies in addition to wildfire suppression and prevention. With the build out of the Project, the total call volume would increase from one call per day to a total of 2.9 calls per day. Based on this analysis, even though the total call volume would increase by a factor of three, Station 15 even under the current condition would be able to absorb the additional calls generated by the Lilac Hills Ranch Project and would not be likely to change the focus and mission of the station from wildland fire/watershed health. In order for CAL FIRE to provide these services to LHR, they may require that certain findings would be made pursuant to the Public Resources Code. The preparers of this report have reviewed PRC 4141 through 4145 and have spoken with CAL FIRE concerning interpretation of the Code and conclude that measures that would be available with the project, as described in the recommendations section of this report, would enable Station 15 to continue its primary wildland fire mission while also serving the project in this capacity and the PRC findings could be made.

This alternative is consistent with the General Plan goal of regional coordination among fire protection agencies (Goal S-5), as mentioned previously in this report. Further, GP Policies S-5.1 and S-5.2 support this goal by encouraging regional coordination and supporting fire service provider agreements. Further, the opening paragraph of this PRC echo the "good government" recommendations of the Governor's Blue Ribbon Fire Commission (California 2008) for co-cooperation of entities to maximize resources, as is being done at other CAL FIRE station sites in San Diego County and throughout the state, for similar reasons/scenarios. Based on historical call volumes and noting that a very small portion of Station 15's calls are related to vegetation fires, combined with the designation of Station 15 as a "move-up" station, where coverage would be provided even if the engine is out of District on a large fire, and considering that the current limited staffing would be augmented and that the "move-up" would mean only that personnel may be needed and not apparatus, it seems within reason that coverage would be provided at a level consistent with existing fire stations throughout the area. For example, any of the DSFPD's engine companies could be sent out of District to wildland fires. In these cases, CAL FIRE would determine where resources could be relocated into the District and Monte Vista dispatch would send the closest unit to calls within the District.

Based on CAL FIRE input, it is clear that CAL FIRE is capable and open to providing these services. CAL FIRE may need to be assured that their primary wildland fire protection mission will not be reduced or impaired, that funding for the Station will be sufficient to provide the services, and that the wildland fire mission would not be compromised would need to be secured

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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in an agreement. Assurance that these findings can be made may require additional resources at Station 15, as discussed above.

Under this alternative, the existing drop boundary mutual aid agreement would remain unchanged. Response to emergencies within LHR would be provided by Station 15 (one or both engines) as first responder, and DSFPD Station's 11 and 12, and NCFPD Station 4 would provide additional weight. Funding for the capital facilities under this option consists of the County disbursement of collected one-time fire feesto DSFPD and funds payable to CAL FIRE from DESFPD. Further, based on the cost estimate below, it is anticipated that there would be a surplus of annual revenues, above and beyond what is needed to add staffing and contribute to operations and maintenance at Station 15, which the County would have discretion over for County fire safety enhancements or for disbursement to Lilac Hills Ranch Project area mutual aid fire agencies (DSFPD, NCFPD) that would respond to project calls.

Timing for implementation of this option would be based on an agreed upon trigger such as a pre-determined occupied unit, a call-volume threshold (such as 1 call per day), or some other arrangement determined by the County.

### ***Option 1 Estimated Cost***

Miller Station Augment Fund: To be determined.

Fire Engine: To be determined.

Annual Recurring Expenses: To be determined.

**Option 1 Estimated Cost:** To be determined.

### **Option 2. Co-Location of DSFPD Station at Station 15**

The second option would be co-location of a DSFPD engine company at a re-modeled or new Station 15, depending on cost efficiency, and equipping it with a Type I engine. This option inherently includes higher costs and inefficiency than Option 1 due to the duplication of engine company personnel and the fact that ongoing expenses associated with fire service are largely from salary costs. In this option, a new engine company would need to be housed at the site and this study assumes that they would co-locate in a new, larger station. From the perspective of the overall county wide fire services delivery system, this option provides duplicative service and capabilities as already provided by Station 15 at a much higher on-going financial cost with funding remaining with DSFPD, and no surplus fire assessment revenues to the County.

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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In addition to the CAL FIRE personal at Station 15, the new engine company would be a 3 person crew with one of those positions possibly being staffed by a Reserve Firefighter and with one paramedic. A Reserve program in DSFPD is recommended for implementation with this project. If a Reserve program is not established, a firefighter I would fill that position at greater cost to the District. As previously mentioned, the County currently provides \$250,000 in Amador funding to CAL FIRE to continue “off-season” (winter months) staffing at Station 15. Under this Option, SD County would be able to cease funding of the Amador contract because a 24/7 engine company would be in the area which minimizes the need for the CAL FIRE engine during the winter “off-season.” This savings would enable San Diego County to utilize the funding to offset the added expense of a new fire station and additional fire personal at the same location as Station 15 or to pay for other fire service priorities or unfunded projects.

Design of the station would be dependent on final agreement, with roughly 1,500 additional square feet would be necessary along with a second engine bay or perhaps a dual bay, double stacked engine room could be provided. Assuming a 7,000-square-foot station (2,500 ft<sup>2</sup> engine room and 4,500 ft<sup>2</sup> living quarters), costs are anticipated to be as follows:

### ***Option 2 Estimated Costs***

#### Fire Station:

- Engine room upgrade to accommodate two, double stacked Engine Bays: up to \$1,125,000 (50x50 ft<sup>2</sup> x \$450/ft<sup>2</sup>)
- Quarters update to house additional 3 person Paramedic Assessment Engine company (in addition to existing 3 person EMT company): 4,500 square feet x \$450/foot: \$2,025,000
- Station Contingency – 15% = \$315,000
- Total Station Estimated Costs: \$3,465,000

#### Fire Engine:

- Type I Fire Engine: alternative 1 is to reassign a Type I engine from Station 11 with no additional cost to DSFPD
- Alternative 2 is to purchase a new Type I engine at \$600,000

#### Annual Recurring Expenses:

- 15 year engine replacement: \$40,000/year – only if a new engine is needed
- Incremental Station and Engine Operations/Maintenance/Administrative costs: \$75,000/year

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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- 3 Person Medic crew (1 Reserve firefighter): \$833,000/year or 966,000/year with a firefighter 1 instead of a reserve firefighter
- Total Estimated Annual Costs: \$908,000 to \$1,081,000 (plus \$40,000 if new engine is purchased and not re-assigned from Station 11)

**Option 2 Estimated Cost:** \$3,465,000–4,065,000 one-time + \$908,000 to \$1,081,000 annually. However, it is expected that the medic engine will conduct several ALS transports per week, providing revenues of up to \$100,000 per year, adjusting annual costs downward to roughly \$800,000. The project’s fair-share would be \$2.2 million and therefore, additional funds would be needed, possibly phasing in improvements as other development funding becomes available.

### **Option 3. On-Site Fire Station in Phase 3**

Option 3 may be implemented in addition to Option 1, in-lieu of Option 1 or if an agreement cannot be reached between the County and/or DSFPD and CAL FIRE under option 2. or in addition to Option 1, The developer could agree under this Option 3 to provide a fire station within the Lilac Hills Ranch Project’s Phase 3. This option, based on our initial analysis, is not considered the best option in terms of efficiency, with Station 15 currently located so close to the Project and the overlap with Stations 15 and 11 that would result. However this would be a potential solution in order to avoid a response time gap throughout the Project if it is too difficult to amend existing agreements under Option 2. This option is financially more efficient than Option 2 due to the ability to construct a station off state property less expensively, but recurring annual costs would be consistent with Option 2. As previously mentioned, the County currently provides \$250,000 in Amador funding to CAL FIRE to continue “off-season” (winter months) staffing at Station 15. Under this Option, SD County would be able to cease funding of the Amador contract because a 24/7 engine company would be in the area which minimizes the need for the CAL FIRE engine during the winter “off-season.” This savings would enable San Diego County to utilize the funding for other fire service priorities or unfunded projects.

The fire station envisioned to serve this community would be a station similar to the neighborhood station provided for the Hidden Meadows community (Station 13) and many other stations in north San Diego County. This station will overlap with both Station 15 and Station 11 coverage areas. Fire stations support the needs of the fire department and the community in which they are located. They must accommodate various functions, including housing, recreation, administration, training, equipment and vehicle storage and maintenance, and hazardous materials storage.

Fire station design varies in some part depending on specific mission, i.e., the types of emergencies that will be responded to or the types of fires that will be fought. Usually, the facility differences

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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relate to the size of the firefighting apparatus and facility location. The location of the facility is largely driven by the need to minimize response time. Therefore, the Lilac Hills Ranch option for a fire station internal to the project includes positioning the station at a central location with good access to primary roadways within Phase 3, as indicated in Figure 20.

An estimated 4 person on duty crew Station should be about 3,000 square feet of livable space and designed to blend into the community (a 4 bedroom residence similar to those provided in the community would be adequate). The structure would also need an engine room of about 50 feet X 50 feet; or 2,500 square feet. The total land area for this type of station would be 25,000 square feet. Figure 21 provides conceptual details for a feasible fire station design given the 25,000-square-foot site and need for various fire station equipment, parking, fuel, and washing areas, amongst others. As the conceptual station designs indicate, the engine bay would be a two bay, double stacked bay, providing 4 spaces. The bay would include pull-through access, minimizing the need for additional driveway for turning around an engine upon return to the station. The site would include 8 parking spaces for firefighters and 2 spaces for the public. It would be a fully functioning fire station that is the equivalent of existing stations throughout similar areas of San Diego County.

For comparison, the existing DSFPD Station 13 site includes approximately 29,700 square feet, including landscape areas that total an estimated 3,300 square feet for a net fire station footprint of 26,400 square feet (estimated). Station 11, DSFPD headquarters, is situated on a 27,500-square-foot site, including roughly 3,500 square feet of landscaping. The existing DSFPD/CAL FIRE Station 15 includes roughly 27,300 square feet of paved/improved surfaces on roughly 2.2 acres. DSFPD Station 12 includes improved area of roughly 26,500 square feet, but includes significant driveway in that total as it is not a pull-through bay. Other north San Diego County rural fire stations occur on similarly sized sites, including NCFPD station 4, which includes roughly 24,000 square feet of improved area on a roughly 1.2-acre site. NCFPD Station 4 includes approximately 12,000 square feet of improved area, roughly 12,000 square feet of landscaping on an estimated 26,000-square-foot site. NCFPD Station 5 includes an approximately 27,500-square-foot improved site with about 3,000 square feet of that as landscaping. Valley Center Fire Protection District, Station 72 occurs on a 56,000-square-foot site with improved/useable areas of 38,000 square feet, but due to the driveways required for ingress/egress being shared, roughly 12,000 square feet of driveway and landscaping occur within this area, resulting in approximately 26,000 square feet for the useable area.

The applicant will pay its proportionate share of the cost of the station and land through the payment of the fire mitigation fees. Typically, providing a new fire station would not occur until a time when the call volume in the Lilac Hills Ranch Project reaches 1 call per day or some other negotiated timeframe, as long as the General Plan travel time is met. Station 15 could also be



## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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used as an interim facility, through an agreement, until such facility is built. Should station 15 not be available as an interim service provider, then an interim station could be provided on-site by the project applicant (out of funds obligated by fire fees and assessments), and in place until the appropriate trigger to provide for permanent fire service is funded.

### ***Option 3 Estimated Costs***

#### **Fire Station:**

- Estimated Land (25,000 ft<sup>2</sup>): \$150,000
- Station to accommodate two, double stacked Engine Bays: up to \$612,500 to \$900,000 (50x50 ft<sup>2</sup> x \$450/ft<sup>2</sup>)
- New Fire Station: 3,000 ft<sup>2</sup> x \$245 to \$360/ft<sup>2</sup>: \$735,000 to \$1,080,000
- Station Contingency – 10% = \$135,000 to \$200,000
- Total Station Estimated Costs: \$1,482,000 to \$2,180,000

#### **Fire Engine:**

- New Type I Engine: \$600,000

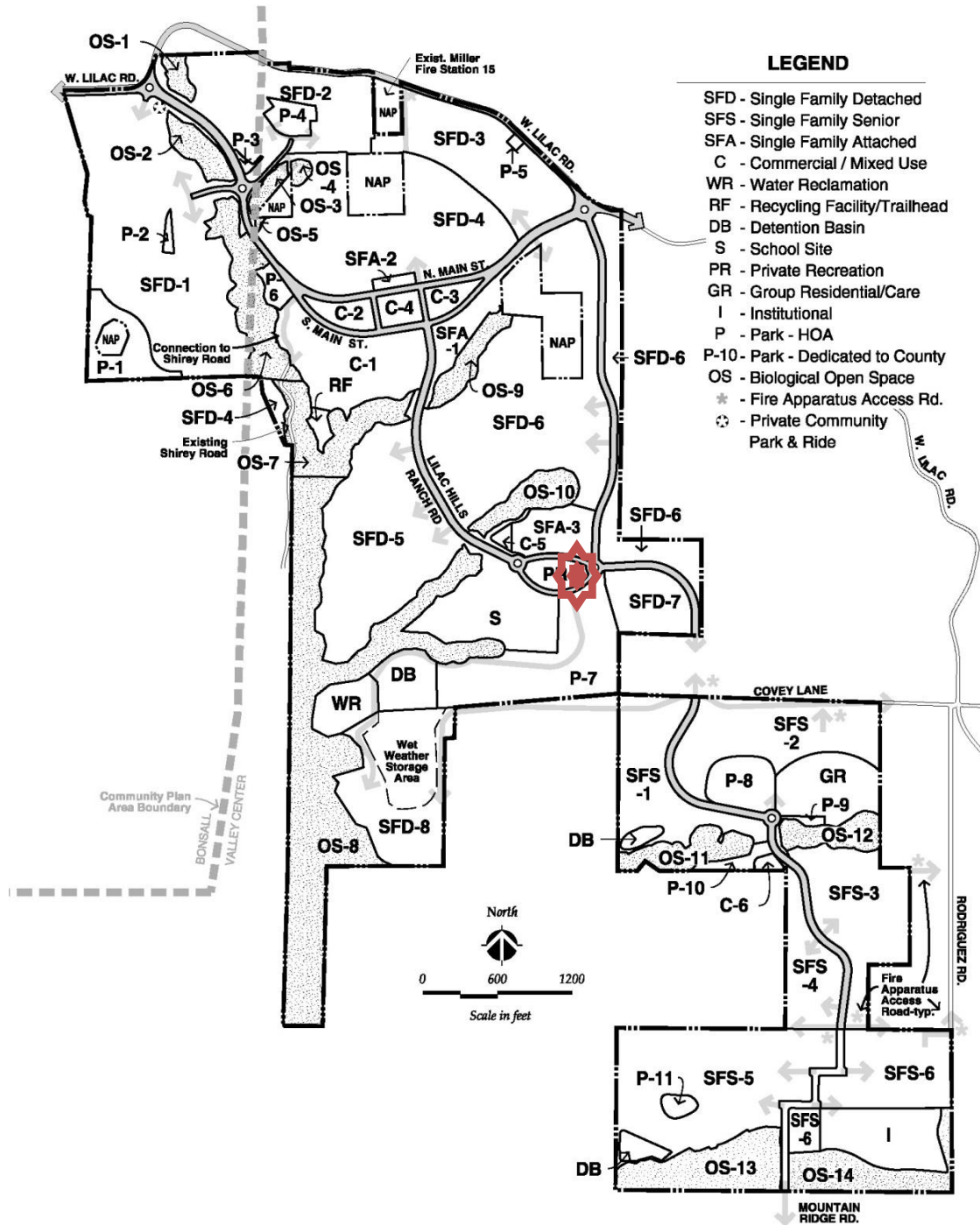
#### **Annual Recurring Expenses:**

- 15 year engine replacement: \$40,000/year
- Station and Engine Operations/Maintenance/Administrative costs: \$75,000/year
- 3 Person Medic crew (1 Reserve firefighter): \$833,000/year to \$966,000/year with firefighter 1 instead of reserve
- Total Estimated Annual Costs: \$948,000 to \$1,081,000

**Option 3 Estimated Cost:** \$2.1 million to \$2.8 million one-time + \$948,000 to \$1,081,000 annually. It is expected that the medic engine will conduct several ALS transports per week, providing revenues of up to \$100,000 per year, reducing the annual costs proportionately. A more detailed summary of anticipated costs follows.

# Lilac Hills Ranch Fire Service Response Capabilities Assessment

Figure 20 Estimated Location of Fire Station Site



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Figure 21 Fire Station Design



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## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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### **Option 4. On-Site Fire Station in Phase 5**

If the Mountain Ridge Fire Station Alternative is approved, a fire station could be located within the Lilac Hills Ranch Project's Phase 5. Initial modeling, utilizing the proposed road network and speeds at or just above the typical 35 mph speed enables 5 minute coverage of every project structure. This option, like Option 3, is not considered the best option in terms of financial efficiency, with Station 15 currently located so close to the Project and the overlap with Stations 15 and 11 that would result. However this would be a potential solution that may offer DSFPD flexibility in terms of reconfiguration of existing station locations. This option would be best implemented with Mountain Ridge Road converted to a public roadway and provide improvements that will meet the DSFPD Fire Standards and the Consolidated Fire Code. This option would also be enhanced with the removal of the proposed gates once the road was made a public road. This option is financially more efficient than Option 2 due to the ability to construct a station off state property less expensively, but recurring annual costs would be consistent with Options 2 and 3. The developer would provide the two-acre site and available fire fees and assessments would be used to construct a station consistent with Option 3.

#### ***Option 4 Estimated Costs***

##### Fire Station:

- Estimated Land (two acres): \$200,000 Station to accommodate two, double stacked Engine Bays: up to \$612,500 to \$900,000 (50x50 ft<sup>2</sup> x \$450/ft<sup>2</sup>)
- New Fire Station: 3,000 ft<sup>2</sup> x \$245 to \$360/ft<sup>2</sup>: \$735,000 to \$1,080,000
- Station Contingency – 10% = \$135,000 to \$200,000
- Total Station Estimated Costs: \$1,482,000 to \$2,180,000

##### Fire Engine:

- New Type I Engine: \$600,000

##### Annual Recurring Expenses:

- 15 year engine replacement: \$40,000/year
- Station and Engine Operations/Maintenance/Administrative costs:\$75,000/year
- 3 Person Medic crew (1 Reserve firefighter): \$833,000/year to \$966,000/year with firefighter 1 instead of reserve.
- Total Estimated Annual Costs: \$948,000 to \$1,081,000

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

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**Option 4 Estimated Cost:** \$2.1 million to \$2.8 million one-time + \$948,000 to \$1,081,000 annually. It is expected that the medic engine will conduct several ALS transports per week, providing revenues of up to \$100,000 per year, reducing the annual costs proportionately. A more detailed summary of anticipated costs is found below.

### Example Funding Calculation – Option 3

#### *One Time Expenses*

Fees associated with construction of the fire station are based on costs of similar stations and a square footage price of \$250 to \$360. This price may be reduced by the developer, but is considered conservative for providing cost estimates. Costs associated with the purchase of a fire engine are based on actual costs incurred by local fire agencies within the past three months for a similarly equipped, engine. Actual costs may vary.

Fire Station: 5,500 square feet (including living quarters and engine bays and a 10% contingency fee): up to \$2.2 million.

Fire Engine: New Ferrara Type I engine, equipped: \$600,000

One-time expenses to construct and place an engine within a community fire station are estimated to be at maximum \$2.8 million. This exceeds the calculated \$2.2 million that will be generated by the project at build out.

#### *Ongoing Expenses*

This Funding calculation assumes CAL FIRE’s Schedule A contract salary and benefit packages, augmenting the fire apparatus engineer position with a paramedic (\$30,000 per year more for 3 medic/engineers), and replacing the firefighter II position with a reserve firefighter. Table 17 indicates Fire Station salary costs.

**Table 17  
Fire Station Salary Costs**

Position	Salary	Benefits and Additional Overhead	Total Per Position	Annual Total (X3 Positions)
Captain	\$97,908	\$47,412	\$145,320	\$435,960
Fire Apparatus Engineer/Medic	\$89,152	\$36,648	\$125,800	\$377,400
Reserve firefighter	Stipend	Stipend	Stipend	\$20,000
Optional firefighter 1 (instead of reserve)	36,000	\$14,800	\$50,800	\$152,400
<b>Total</b>	<b>\$187,060</b>	<b>\$84,060</b>	<b>\$271,120</b>	<b>\$833,360 to \$965,760</b>

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

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Based on DSFPD's actual budgeted line items for station related costs, the following additional estimated costs along with an approximated administration expense are estimated.

- |  |  |
|--|--|
| • Office supplies: \$1,250                     | • Station maintenance/repairs: \$5,000 |
| • Office equipment: \$1,500                    | • Utilities: \$12,000                  |
| • Engine equip/maintenance repairs: \$2,000    | • Computer service/software: \$3,000   |
| • SCBA supplies/maintenance: \$1,250           | • PPE maintenance and repair: \$4,000  |
| • Miscellaneous supplies and services: \$2,000 | • Medical supplies and Drugs: \$4,500  |
| • Fire hose replacement: \$2,500               | • Diesel: \$8,000                      |
| • Telephone, cell, etc.: \$2,000               | • General Administrative: \$26,000     |
|  | • <b>Total: \$75,000</b>               |

- \* Fire engine depreciation is not included in this estimate as it is not verifiable if a new engine would be needed for this project or whether an existing DSFPD Type I engine would be located at this site, in which cases, depreciation is already being accounted. Should a new engine be needed, annual depreciation, assuming a 15 year useful life, would be expected to cost an estimated \$40,000/year.

The total ongoing maintenance costs associated with the on-site fire station in Option 3 includes staff salary and overhead costs of \$833,000 (to \$965,760) and related operating costs of \$115,000, totaling \$948,000 to \$1,081,000. However, it is expected that the medic engine may conduct several ALS transports per week, providing revenues of up to \$100,000 per year. The operations and maintenance of the station are within or near the generated revenues from the project and the additional response capability benefits to the District, neighboring districts, and future projects must be considered as justification for the station. It may also be possible to allow the Miller Station Amador Contract to expire, enabling a portion of the \$250,000 in current County funding to CAL FIRE to be re-assigned to DSFPD to allow further benefits to the District, and the remainder (estimated at \$273,000 per year) to be available for other County fire priorities and a proportional savings to the County without loss of area fire and emergency medical coverage during the "off-season."



## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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## Lilac Hills Ranch Fire Service Response Capabilities Assessment

### 6.0 ESTIMATED FUNDING TO IMPLEMENT

The Project can be conditioned to provide one of the Options discussed in the preceding section which will allow the project to meet the Response Standards set forth in the General Plan. The following analysis describes general funding for implementation of the Recommended Options.

Depending on the option selected, The Lilac Hills Ranch Community will participate in the County of San Diego's DSFPD's Fire Mitigation Fee program. The Project will fund its fair share of fire facilities within the DSFPD through payment of this fee. If Option 1 is selected, the fair share funding could be provided to San Diego County for disbursement to CAL FIRE or DSFPD and other fire agencies, per a final agreement. The Fire Mitigation Fee is presently calculated at \$14.97 per benefit unit and totals \$2.2 million.

The dedication of land for the public safety site, if required, may be credited against the total Fire Mitigation Fee obligation. Table 18 depicts the Fire Mitigation Fees anticipated to be generated by the project.

**Table 18**  
**Lilac Hills Ranch Project Fire Fees to District.**

Phase	Fire Mitigation Fee
	(One Time Amount)
1	\$453,376
2	\$480,378
3	\$580,060
4	\$298,448
5	\$395,186
<b>Grand Total</b>	<b>\$2,207,448</b>

In addition to the fee programs described above, the DSFPD (or CAL FIRE through San Diego County) will receive 1.8989% or 1% of property taxes, fire standby/availability assessments, and fire suppression fees generated from the Lilac Hills Ranch Project, or an estimated \$973,000 per year to fund staffing and operations, increasing the District's current totals (Standby Fee - \$1.47 million and Fire Suppression Fee - \$1.45 million) by 27%.

Depending on which of the presented options, or another hybrid option, is selected for fire service, there could be a surplus of assessments and fees and annual fees available to offset a portion of the SDCFA funding that may be unavailable to the DSFPD in any given year. For example, if Option 1 were implemented, preliminary estimates indicate that a total of nearly

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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\$673,000 per year thereafter would be available from the annual assessments in excess of the needed amount to implement the option. This significant “excess revenue” from LHR under Option 1 could be utilized to offset a the \$650,000 currently supplemented to DSFPD by SDCFA or to cover the \$250,000 Amador contract paid to CAL FIRE, or for payments to CAL FIRE for providing fire services to LHR, or for other fire service priorities.

If either Option 2, 3 or 4 are selected, the County could benefit by the potential to end the current \$250,000/year Amador Contract funding, freeing that money to be used for DSFPD funding or other fire service priorities. Additionally, a Reserve firefighter program, as recommended in this study, would potentially be capable of replacing the full-time positions that are currently funded by SDCFA at two DSFPD stations if/when that funding ceases.

Other sources for funding fire and EMS facilities and ongoing staffing and maintenance costs, if necessary, include local, state, and federal grants and loans, establishment of a County Service Area assessment district and/or formation of a CFD.

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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### **7.0 STUDY LIMITATIONS**

The recommendations provided in this Fire Services Capabilities Study are the result of an unbiased assessment of the existing DSFPD area response system and how the Lilac Hills Ranch Project may impact that system.

This document is designed to provide information on fire service operations and integrated risk management planning. It is not intended to be a stand-alone document but to be used in conjunction with DSFPD area strategic planning documents to determine the best use of the available funding for servicing the Lilac Hills Ranch Project and improving the capabilities of the fire services in the area. While this Capabilities Assessment provides an overview of risk assessment, deployment of resources and an analysis of current and projected performance, the strategic plan outlines the resources needed to address current deficiencies and future service demands.

This report is based on available data and information provided from publicly available resources, personal interviews, and reconnaissance of the DSFPD. Assumptions have been made in order to complete this analysis and the accuracy of those assumptions is based on the available information. This report provides recommended options for fire service availability, but is not intended to be considered the only potential options to accomplish the stated goal of servicing the Lilac Hills Ranch Project while minimizing impacts to the existing fire services.

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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### **8.0 LIST OF PREPARERS**

#### **Project Manager and Author**

Michael Huff

Fire Protection Planning Consultant; San Diego County CEQA Consultant List  
Dudek

Michael Huff is Manager of Dudek's Urban Forestry + Fire Protection Planning team with 20 years' professional experience as a natural resources planner and 15 years as a fire protection planner. His education includes a BS in Forest Management/Fire Ecology and he maintains certifications as a wildland fire ecologist, arborist, and forester. Mr. Huff is an approved Fire Protection Planning Consultant and is listed on the San Diego County CEQA consultant qualified list. He specializes in preparation of Fire Protection Plans, hazard reduction plans, fire management plans, cumulative impact studies, and emergency response plans. He is particularly focused on complex and controversial projects that require creative solutions and collaboration with the fire authority. Mr. Huff also has a strong background in tree management, forest management and woodland restoration planning. He conducts tree and landscape assessments, fuel modification zone inspections, analyzes large data sets, and develops comprehensive management programs for cities, developers, school districts, and other private and public entities. Mr. Huff has developed a fire protection planning practice throughout California working on marquee development projects on 30,000+ acre sites as well as assisting municipalities, counties, special districts, and homeowners with fire protection planning.

#### **Standards of Cover and Fire Service Technical Expert**

Jim Hunt

Fire Protection Planning Consultant; San Diego County CEQA Consultant List  
Hunt Research Corporation

Jim Hunt is a retired firefighter/fire officer and President of Hunt Research Corporation. He has 49 years of experience in the field of Fire Protection and Emergency Response. He spent 16 years as an active firefighter including experience at three major Southern California Fire Departments. He achieved rank of Fire Battalion Chief. He has 33 years as a Fire Protection Consultant involved in Fire Protection Planning, Fire Code and Building Code compliance, plan reviews, Hazardous Materials planning, code compliance, Emergency Planning, Fire Department management and Fire Station location studies for Fire Agencies and Community Fire Protection Planning. He has served as Adjunct Faculty member of the FEMA National Fire Academy and the California State Fire Marshal's Fire Academy. He is an approved CEQA Fire Protection Consultant for County of San

## **Lilac Hills Ranch Fire Service Response Capabilities Assessment**

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Diego. Mr. Hunt holds AA and BS Degrees in Fire Science and an AA degree in Police Science. He is also a graduate of the UCSB Hazardous Materials Management program and holds a lifetime Community College teaching credential in Fire Science.

### **GIS Fire Behavior Modeling and Response Coverage Modeling**

Scott Eckardt

Registered Professional Forester

Dudek

Scott Eckardt is a Registered Professional Forester, ISA Certified Arborist, and AFE Certified Wildland Fire Manager with Dudek specializing in fire protection planning, oak woodland and forest management and mitigation planning, habitat restoration, urban forest management, and GIS analysis and modeling. He is responsible for project and plan development, field data collection and mapping, fire and fuel hazard assessments, geographic data and image processing, GIS analysis, fire behavior modeling, fire department response modeling, and long-term project management and reporting. He is responsible for preparing fire protection plans, wildland fire management plans, forest and resource management plans, oak woodland and forest mitigation plans, and CEQA technical documents. He holds a bachelor's degree in forestry and natural resources management from California Polytechnic State University, San Luis Obispo, and a master's degree in geography from California State University, Long Beach. His graduate research focused on the effect of wildfire frequency on vegetation community boundaries for a study area in the Santa Monica Mountains of Southern California.

## Lilac Hills Ranch Fire Service Response Capabilities Assessment

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### 9.0 REFERENCES

- Anderson, Hal E. 1982. *Aids to Determining Fuel Models for Estimating Fire Behavior*. USDA Forest Service Gen. Tech. Report INT-122. Intermountain Forest and Range Experiment Station, Ogden, Utah. [http://www.fs.fed.us/rm/pubs\\_int/int\\_gtr122.pdf](http://www.fs.fed.us/rm/pubs_int/int_gtr122.pdf)
- Andrews, Patricia L.; Collin D. Bevins; and Robert C. Seli. 2004. BehavePlus fire modeling system, version 3.0: User's Guide. Gen. Tech. Rep. RMRS-GTR-106 Ogden, Utah: Department of Agriculture, Forest Service, Rocky Mountain Research Station. 132p.
- Blanda, M. 2005. Geriatric Trauma: Current Problems, Future Directions. Retrieved from <http://www.saem.org/download/02blanda.pdf>.
- California. 2008. Governor's Blue Ribbon Fire Commission Task Force Report. 106 pp.
- Cal Fire. California Department of Forestry and Fire Protection. 2007. Fire and Resource Assessment Program (FRAP). Website Accessed July 18. <http://frap.cdf.ca.gov/>
- Chandler, Michael R. 2007. Residential Sprinklers – Protection of Life and Property Through a Proactive Response. Columbus Fire and Rescue; Columbus, Mississippi. 53 pp.
- Citygate Associates, LLC. 2010. Regional Fire Services Deployment Study for the County of San Diego Office of Emergency Services. 3 volumes.
- Deer Springs Fire Protection District Web Site: <http://www.deerspringsfire.org/>
- Finney, M.A. 2004. FlamMap 3.0. Missoula, Montana: USDA Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.
- FireFamily Plus. 2002. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 124 p
- Minnich, R.A. 1987. Fire behavior in Southern California chaparral before fire control: the Mount Wilson burns at the turn of the century. *Annals of the Association of American Geographers*. 77(4): 599–618.
- Moritz, M.A. 2003. Spatiotemporal analysis of controls on shrubland fire regimes: age dependency and fire hazard. *Ecology*. 84(2):351–361.  
[http://nature.berkeley.edu/moritzlab/docs/Moritz\\_2003\\_Ecology.pdf](http://nature.berkeley.edu/moritzlab/docs/Moritz_2003_Ecology.pdf)



## Lilac Hills Ranch Fire Service Response Capabilities Assessment

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Odom, Darrell C. 2000. Measuring Correlations Between Crime and Fire/Emergency Medical Service Delivery in Prince George's County, Maryland.

Remote Automated Weather Stations (RAWS). 2007. <http://www.fs.fed.us/raws/>

Rothermel, Richard C. 1983. *How to Predict the Spread and Intensity of Forest and Range Fires*. USDA Forest Service Gen. Tech. Report INT-143. Intermountain Forest and Range Experiment, Ogden, Utah. <http://www.treeseearch.fs.fed.us/pubs/24635>

Scott, Joe H. and Robert E. Burgan. 2005. *Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model*. Gen. Tech. Rep. RMRS-GTR-153. Fort Collins, Colorado: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 72 p.

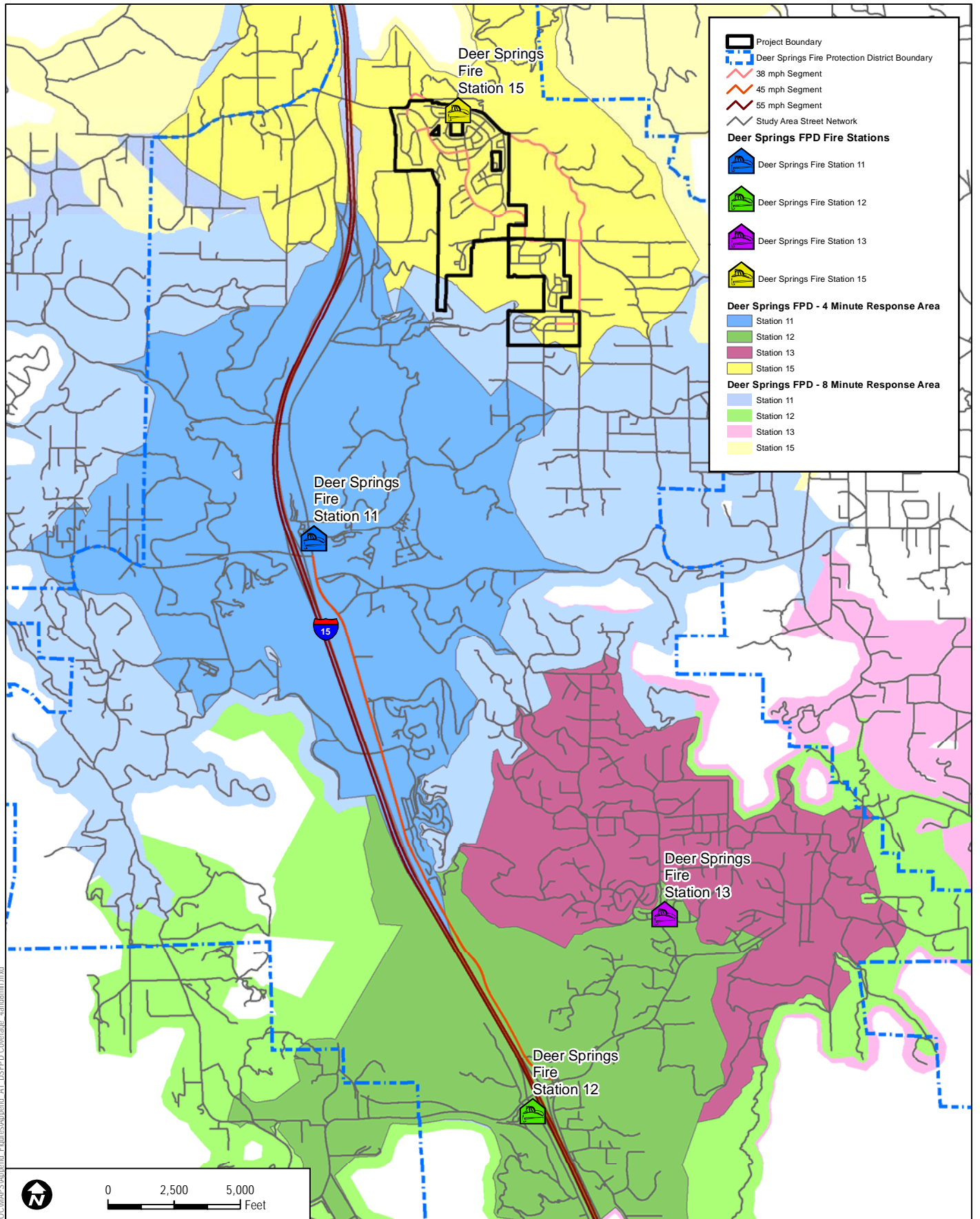
San Diego County. 2012. County General Plan, Chapter 3 – Safety Element.  
[http://ceres.ca.gov/planning/counties/San\\_Diego/plans.html](http://ceres.ca.gov/planning/counties/San_Diego/plans.html)

Shroeder, M.J. and C.C. Buck. 1970. Fire weather – A guide for application of meteorological information to forest fire control operation. USDA Forest Service Agricultural Handbook 36D.

Weise, D.R. and J. Regelbrugge. 1997. Recent chaparral fuel modeling efforts. Prescribed Fire and Effects Research Unit, Riverside Fire Laboratory, Pacific Southwest Research Station. 5p.

# **APPENDIX A-1**

*DSFPD Station Coverage – 4 Minutes/8-Minutes  
Travel Time (NFPA 1710) Coverage Area*



0 2,500 5,000 Feet

**DUDEK**

7449-01

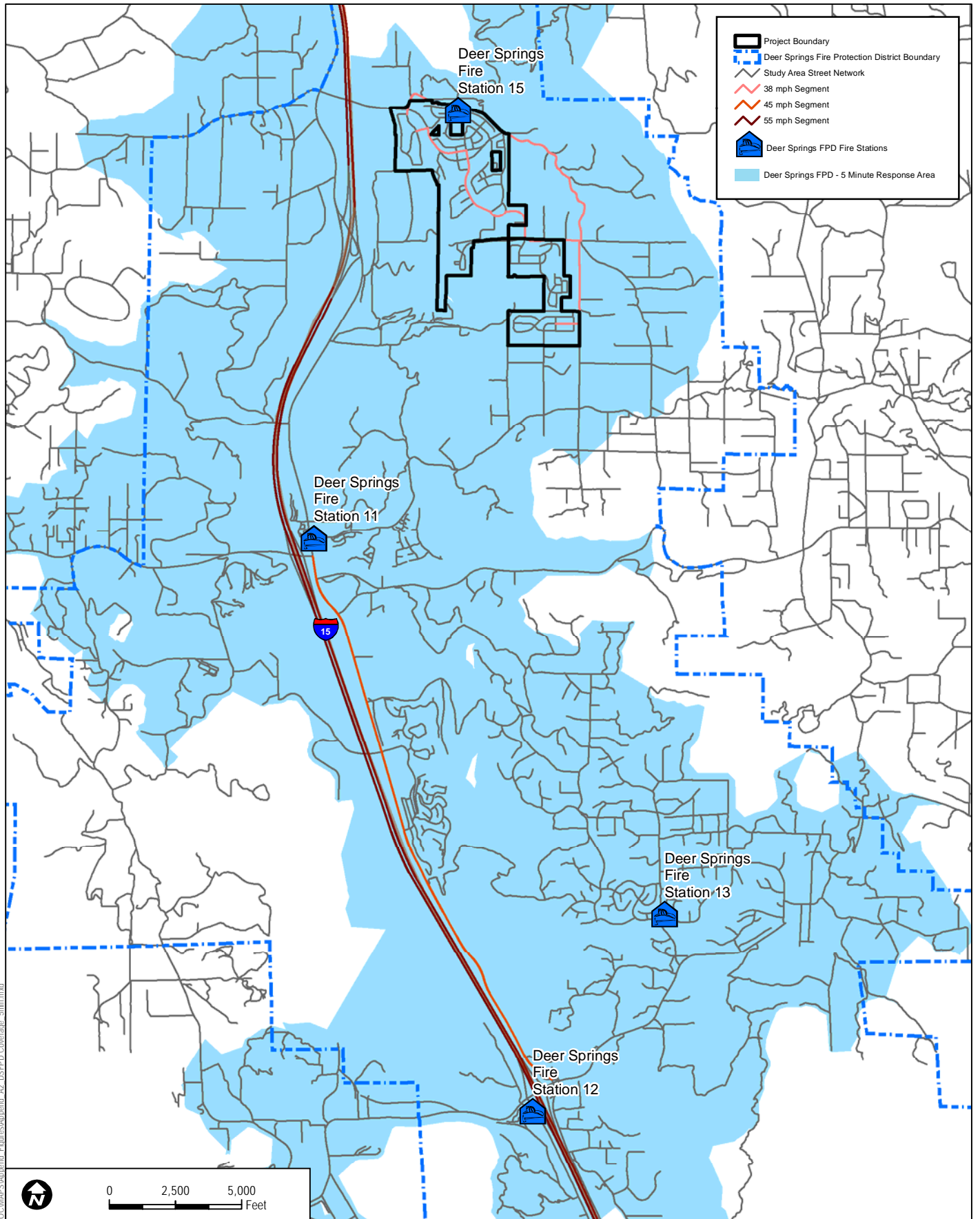
**FIGURE A-1**  
**DSFPD Coverage Area - 4 and 8 Minute Travel Time**

DEER SPRINGS FIRE PROTECTION DISTRICT CAPABILITIES ASSESSMENT

NOTE: Drive times calculated using a 35 mph average speed except where indicated.

## **APPENDIX A-2**

*DSFPD Station Coverage – 5 Minutes Travel Time  
(SD County General Plan) Coverage Area*



**DUDEK**

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**FIGURE A-2**  
**DSFPD Coverage Area - 5 Minute Travel Time**

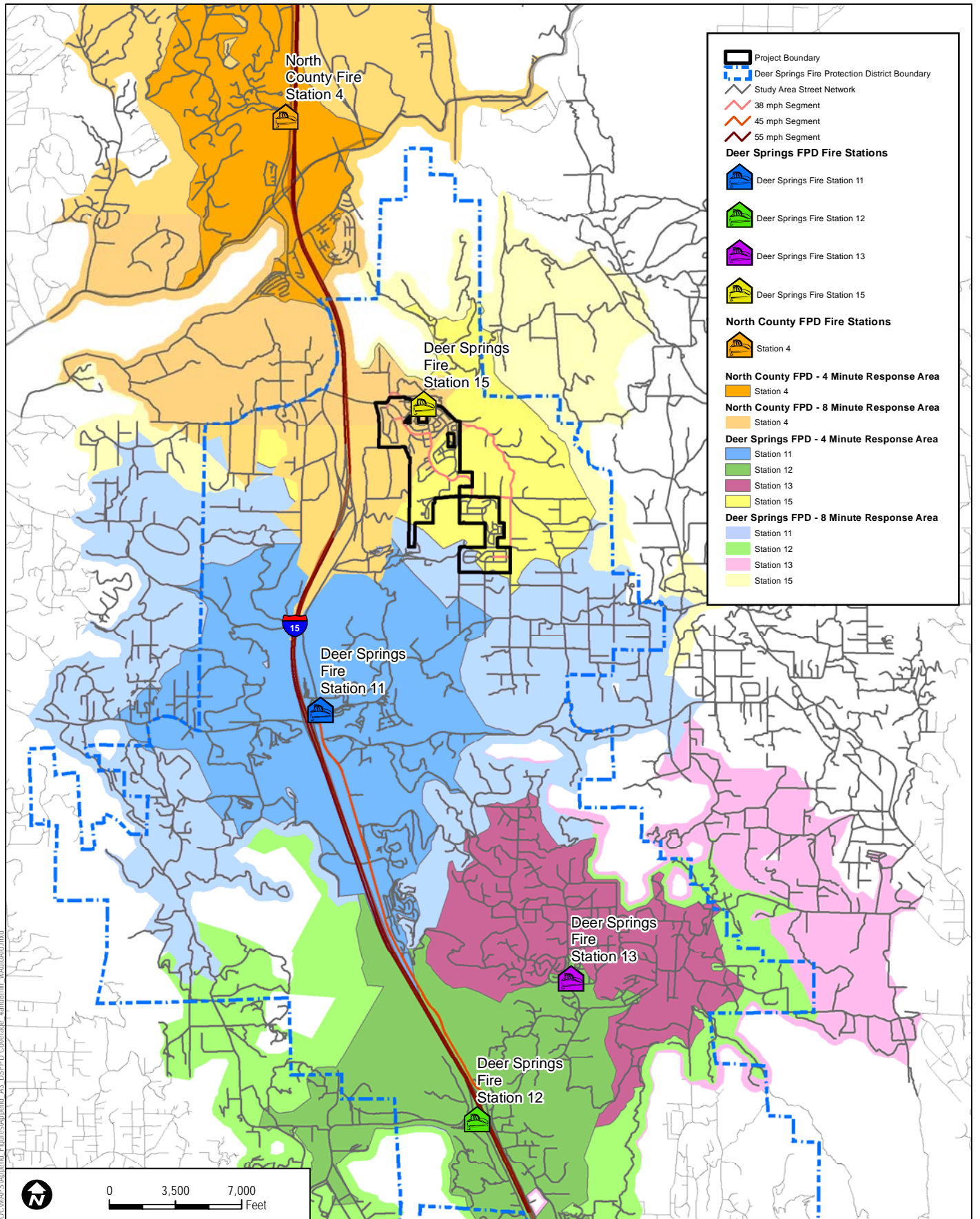
DEER SPRINGS FIRE PROTECTION DISTRICT CAPABILITIES ASSESSMENT

NOTE: Drive times calculated using a 35 mph average speed except where indicated.

## **APPENDIX A-3**

*DSFPD with Auto Aid Station – 4 Minutes/8  
Minutes Travel Time Coverage Area*





**FIGURE A-3**

**DSFPD Coverage Area - 4 and 8 Minute Travel Time with Automatic Aid**

DEER SPRINGS FIRE PROTECTION DISTRICT CAPABILITIES ASSESSMENT

NOTE: Drive times calculated using a 35 mph average speed except where indicated.

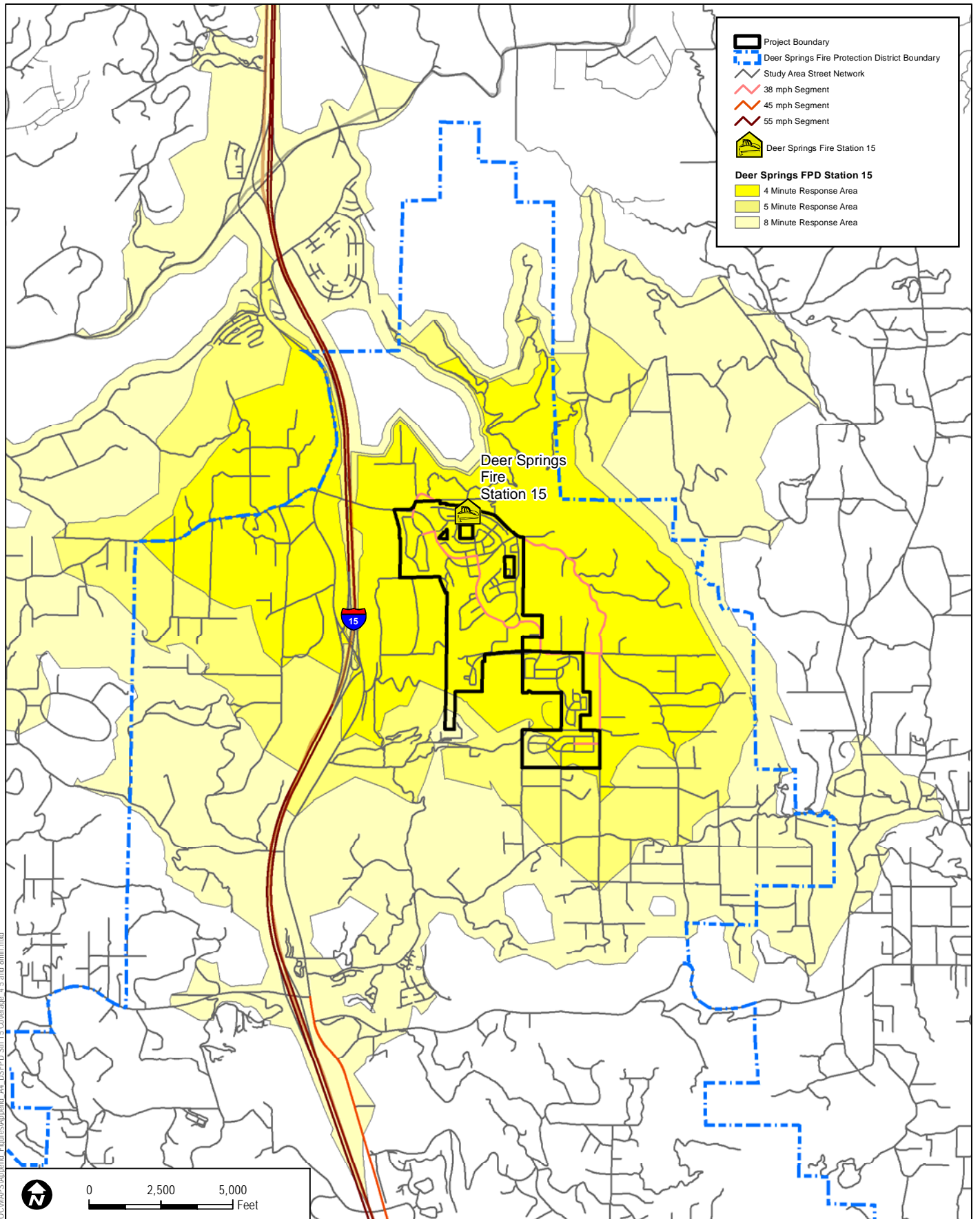
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## **APPENDIX A-4**

*Station 15 – 4 Minute/5 Minute/8 Minute Travel  
Time Coverage Area*





**FIGURE A-4**

**DSFPD Station 15 Coverage Area - 4, 5, and 8 Minute Travel Time**

DEER SPRINGS FIRE PROTECTION DISTRICT CAPABILITIES ASSESSMENT

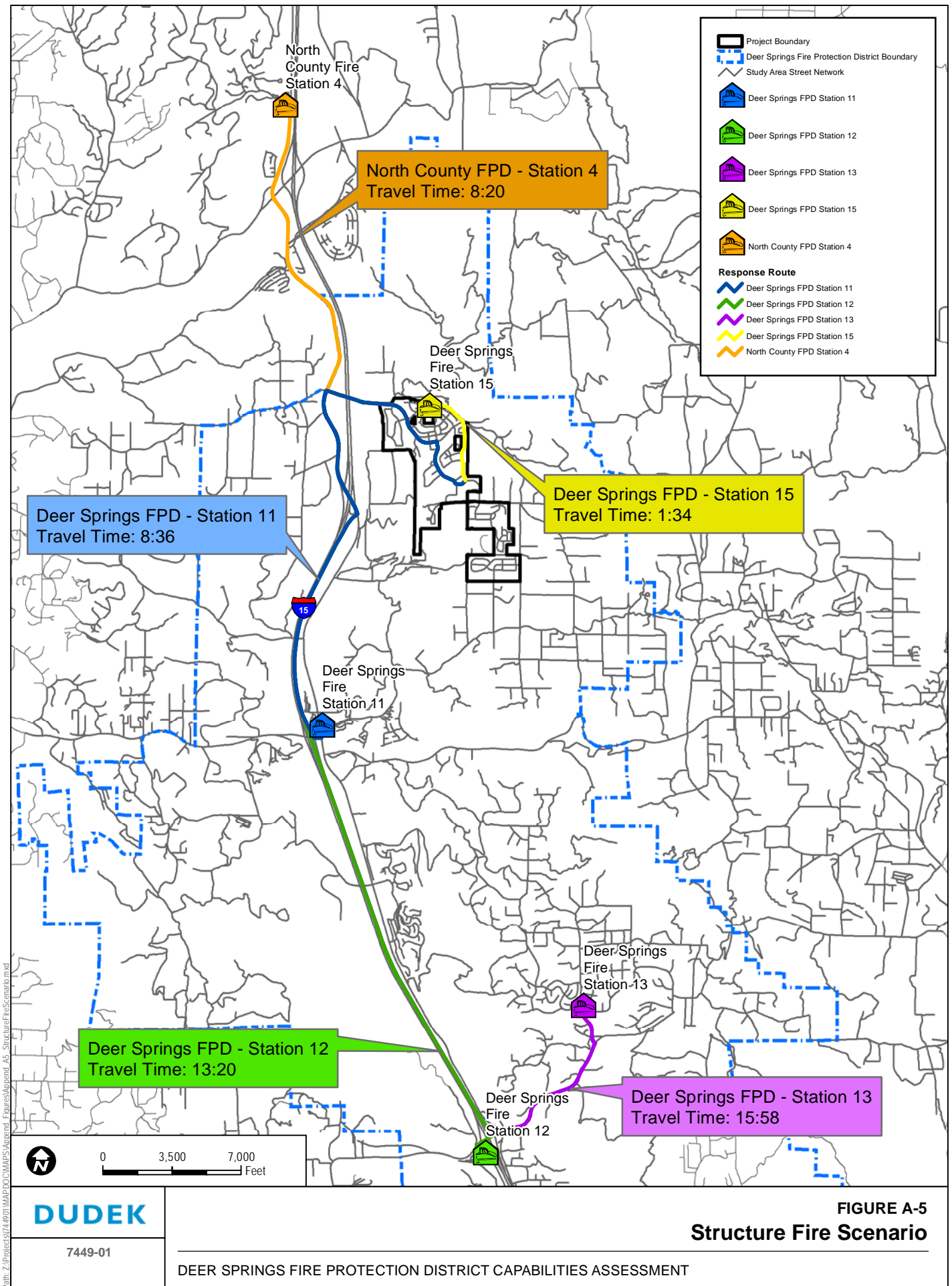
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## **APPENDIX A-5**

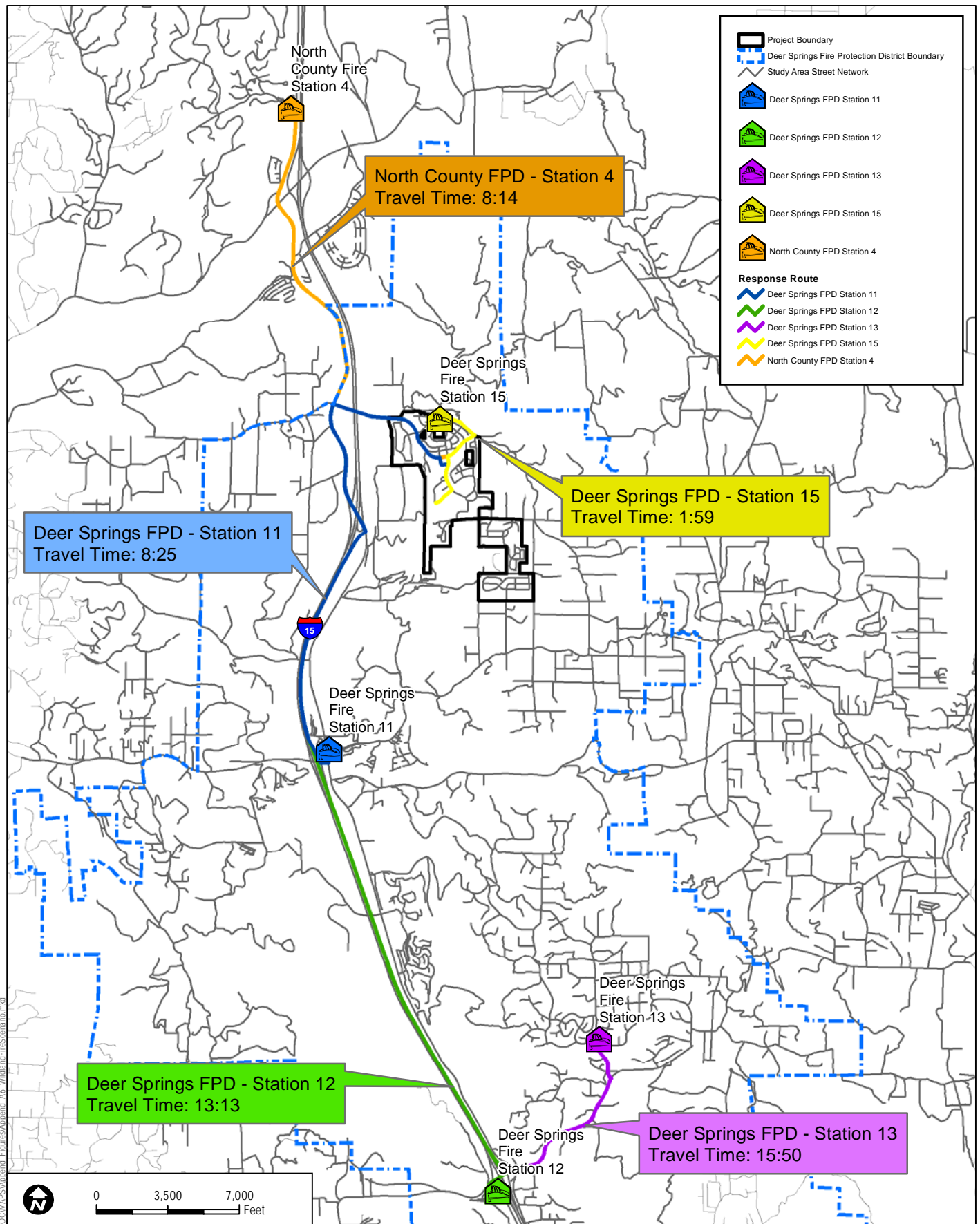
*Situation #1: Fire in Lilac Hills Ranch Structure*



**FIGURE A-5**  
**Structure Fire Scenario**

## **APPENDIX A-6**

*Situation #2: Wildland Fire Threatening  
Lilac Hills*



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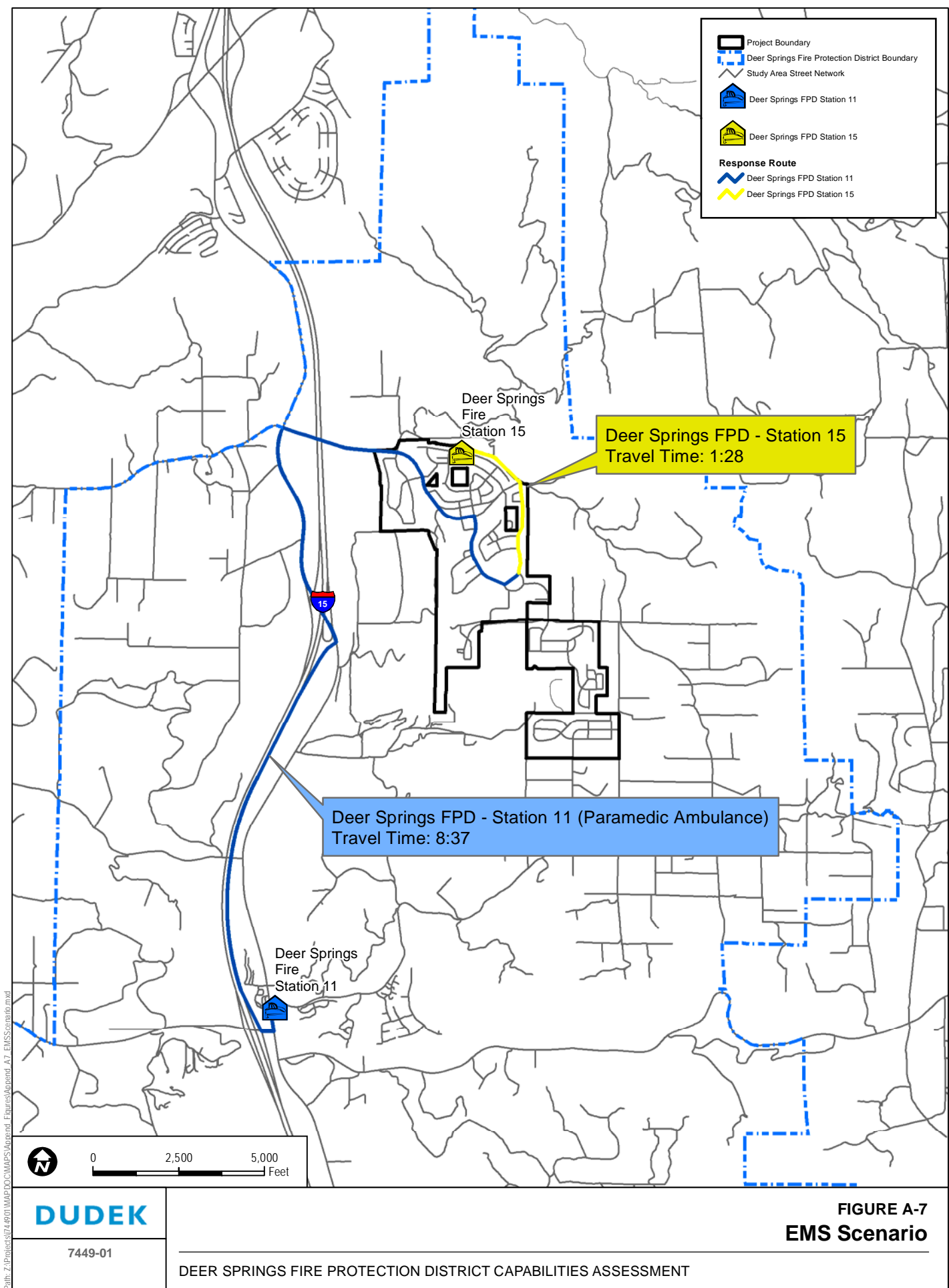
DEER SPRINGS FIRE PROTECTION DISTRICT CAPABILITIES ASSESSMENT

**FIGURE A-6**  
**Wildland Fire Scenario**

# **APPENDIX A-7**

*Situation #3: Medical Response in  
Lilac Hills Ranch*

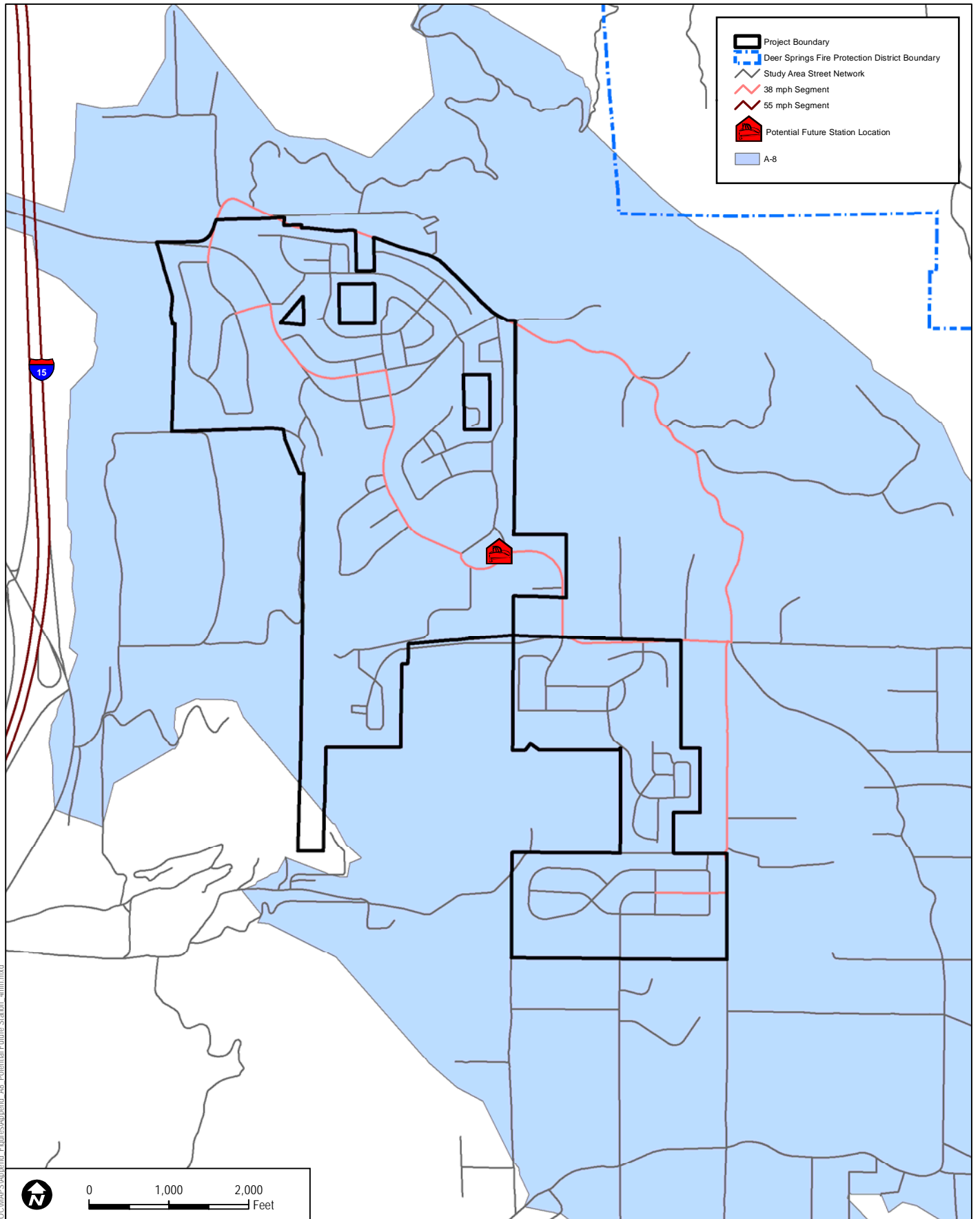




## **APPENDIX A-8**

*Phase 3 On-Site Station – 4 Minutes Travel Time  
Coverage*





**FIGURE A-8**

**Potential Future Station - 4 Minute Travel Time**

DEER SPRINGS FIRE PROTECTION DISTRICT CAPABILITIES ASSESSMENT

NOTE: Drive times calculated using a 35 mph average speed except where indicated.

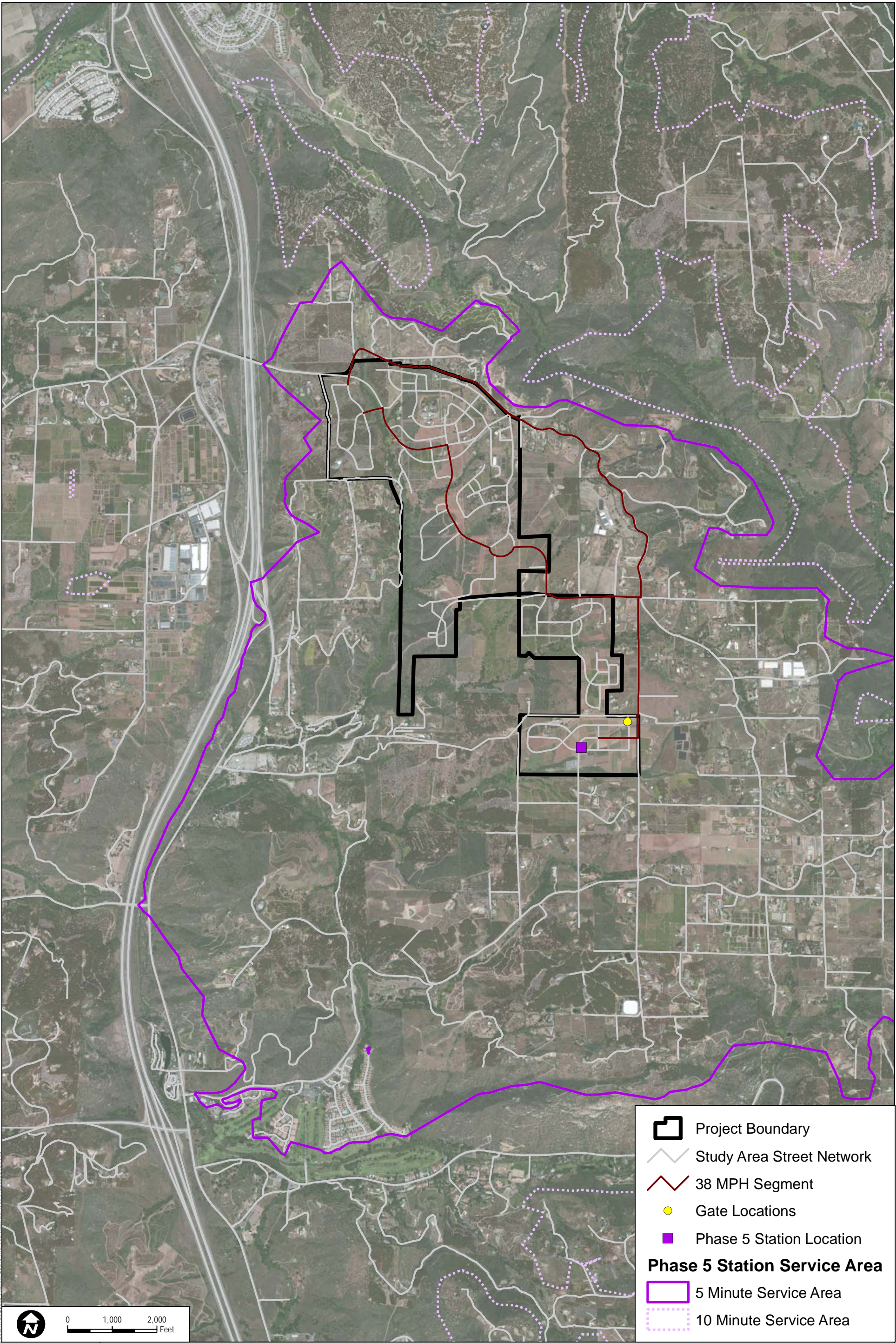
**DUDEK**


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## **APPENDIX A-9**


*Phase 5 On-Site Station – 5 Minutes Travel Time  
Coverage*







 Project Boundary


 Study Area Street Network


 38 MPH Segment

 Gate Locations

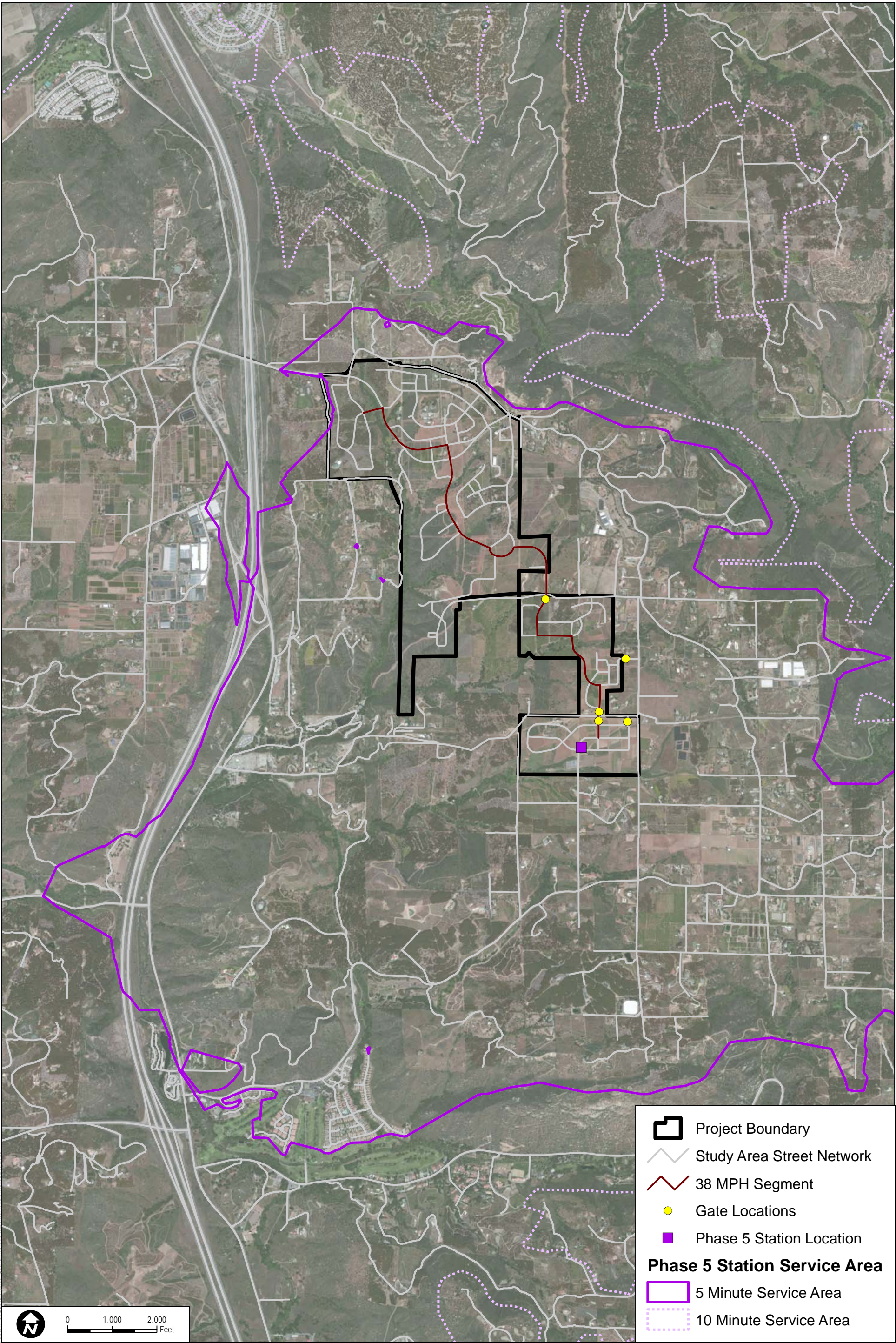
 Phase 5 Station Location

**Phase 5 Station Service Area**

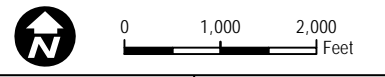
 5 Minute Service Area

 10 Minute Service Area





- Project Boundary
- Study Area Street Network
- 38 MPH Segment
- Gate Locations
- Phase 5 Station Location
- Phase 5 Station Service Area**
  - 5 Minute Service Area
  - 10 Minute Service Area



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7449-01  
MARCH 2014

SOURCE: ESRI 2013, San GIS 2012

DEER SPRINGS FIRE PROTECTION DISTRICT CAPABILITIES ASSESSMENT

**FIGURE A-9b**  
**Phase 3 Station Response Area- Route B**

NOTE: Drive times calculated using a 35 mph average speed except where indicated.  
Gates assume 15 second of additional travel time.



# **APPENDIX B**

*Siren Activated Gate Operator*

## Technical Specifications

### Basic Concept

The Siren-Operated Sensor (SOS) is designed to respond swiftly to the “YELP” mode of all standard sirens. A reminder decal is provided to be placed on each entry gate. Responders already own their siren. This device represents Public Safety without spending Public Funds. The SOS is the nation’s most widely used Uniform Emergency Gate Access.

### Installation and Testing

Since all gate operators use 9 to 30 Volts AC or DC for their electronic controls, this source can easily be used to power the mini requirements of the SOS. A demonstration “YELP audio CD is provided, along with instructions, with each SOS sold.

### Technical Specifications

The Frequency response of the Siren-Operated Sensor is from 900Hz to 6Khz. The SOS relies on a time-varying frequency input in this range. This, plus proprietary techniques, allows the microprocessor to respond to the siren’s “YELP” with a dry relay closure in 2.5 seconds.

- The SOS uses an unidirectional microphone. Alignment is not necessary.
- Range of the SOS is adjustable – 5 to 50 feet or more. A potentiometer located on the PC Board provides this adjustability. The SOS is not affected by ambient light.
- The PC board is mounted in a 3.5” x 4.7” x 2.4” weather-tight enclosure.
- The unit weight is approximately 8 oz.
- The power requirements are 9-30 Volts AC or DC with approximately .1 mA Draw.
- Programmable to be momentary relay activation , 15 minute hold, or Latch.

### Warranty

The SOS has a five year warranty when installed according to the manufacturer’s Specifications.

# **APPENDIX C**

## ***Radio Triggered Gate Operator***

# Access as Quick as



## Click, Click...You're In! WITH CLICK2ENTER,

### YOUR MOBILE OR PORTABLE RADIO IS THE KEY

- Click2Enter taps the state-of-the-art electronics now designed into modern scanner radio technology to give public safety personnel (Law Enforcement, Fire, Ambulance/Rescue or any authorized user) a quick, safe, reliable and stealthy means to activate gates and security control mechanisms using their portable or mobile radios.
- Click2Enter does away with the cumbersome keys, remote control actuators and access control codes required by other systems because every emergency response vehicle already has the "key"—their radio transmitter (mobile or portable). No need to buy extra equipment or modify your radios.
- The technology is secure. Public safety agencies are issued FCC-assigned radio frequencies for restricted use only. Possession of transmitting devices by non-authorized personnel is tightly controlled and transmitting on those frequencies by outsiders is against the law (both Federal and State statutes).
- Click2Enter responds only to the frequencies and sub-audible private line codes currently programmed into its memory. Editing those frequencies can be done with any RS-232 keyboard interface and standard modem protocol software.
- You now have near-instant access to secure areas to deal with emergencies as they occur. To activate the Click2Enter, the operator must be proximate to the device. A single or double pulse of your radio transceiver is all that is required to initiate immediate entry.

Innovative Reliable Flexible Safe Quick

**ACCESS USING YOUR  
TRANSMITTER RADIO  
for PUBLIC SAFETY and  
AUTHORIZED USERS**



**Click2Enter, Inc.**

U.S. Patent #5,955,947 and #5,903,216  
PO Box 1532 Sonoma, CA 95476  
Tel 707 939-3800 Fax 707 996-3739

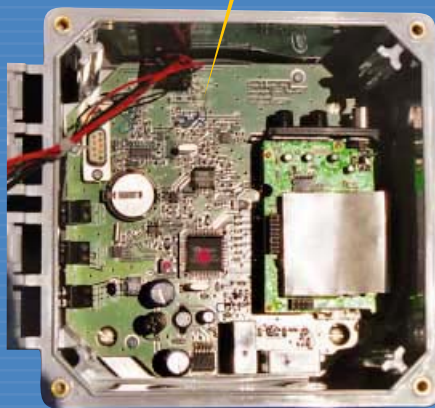
info@click2enter.net  
www.click2enter.net

**Toll Free  
877-939-3800**



## Click2Enter-I SPECIFICATIONS

- Scanner/receiver radio.
- Variable activation range via programming.
- One or two radio transmission "clicks" for activation.
- 50 channel capacity.
- Mutual aid compatible.
- Independent relay control for roll-up doors.
- Bright activation LED and power LED.
- Time/day/agency memory recall.
- CTCSS, PL/DPL private line (PL) programming capability.
- Auto detect and load of private line codes.
- Compatible with analog or digital radio transmitters, using private line sub-audible transmissions.
- Will operate with carrier only for use with digital radio systems.
- Able to use talk around carriers (car to car) of trunk line radio systems. Also able to operate in on-trunk mode.
- Able to receive radio transmissions to include 900 MHz bands.
- Able to use aircraft AM band frequencies for airport access control operations.
- Latch open and close features.
- Enhanced user-programmable latch open feature lets you specify gate open periods from one minute to unlimited.
- Ability to handle high power mobile transmitters and lower power hand held portable transmitters.
- Proprietary programming software built into each unit.
- Field programmable using a Windows CE PDA or laptop computer.
- Programmable via RS-232 interface.
- User-selected PIN for security of programmed frequencies.
- Able to capture and exhibit activation data log, via software.
- Computer software programmable using standard terminal emulation software (Hyper-Terminal).
- Ability to adapt and use 12V to 24V DC (Click2Enter-I power will be a regulated 12V DC).
- Lightning surge current protected (current/surge limiting circuit).
- Reflective logo for night identification.
- Unit enclosed in a NEMA Type 4 box, with security screws supplied.
- Relay or dry contact ready.
- Extra set of relay contacts to activate a multitude of devices.
- Separate device available to perform external test/operation of Click2Enter-I.
- Five year manganese dioxide lithium battery for memory backup.
- Retrofit kits available for operation beyond temperature range specifications (hot & cold).



- Click2Enter adapts the technology inherent in most radio broadcast equipment to work as a radio control mechanism, but one with built-in security features.
- Click2Enter will authorize access only after it verifies the FCC-assigned carrier frequency and agency assigned sub-audible communication (private line code) of the transmitter seeking entry. (It takes one or two separate radio pulses and verifications to complete the authorization sequence.)
- Click2Enter can afford access to any public safety agency as long as their frequencies are programmed into its memory, thus solving the mutual aid problem which limits the effectiveness of competing devices.
- Programming the Click2Enter is easy. All you need is an RS-232 keyboard interface and standard modem protocol software.



# Click2Enter®

**Click2Enter, Inc.**

**TOLL FREE**

**877-939-3800**

# **APPENDIX D**

*Automatic Gate Operator with Battery Backup*



# SLIDE GATE OPERATOR

1600<sub>LBS</sub> CAPACITY

NEW

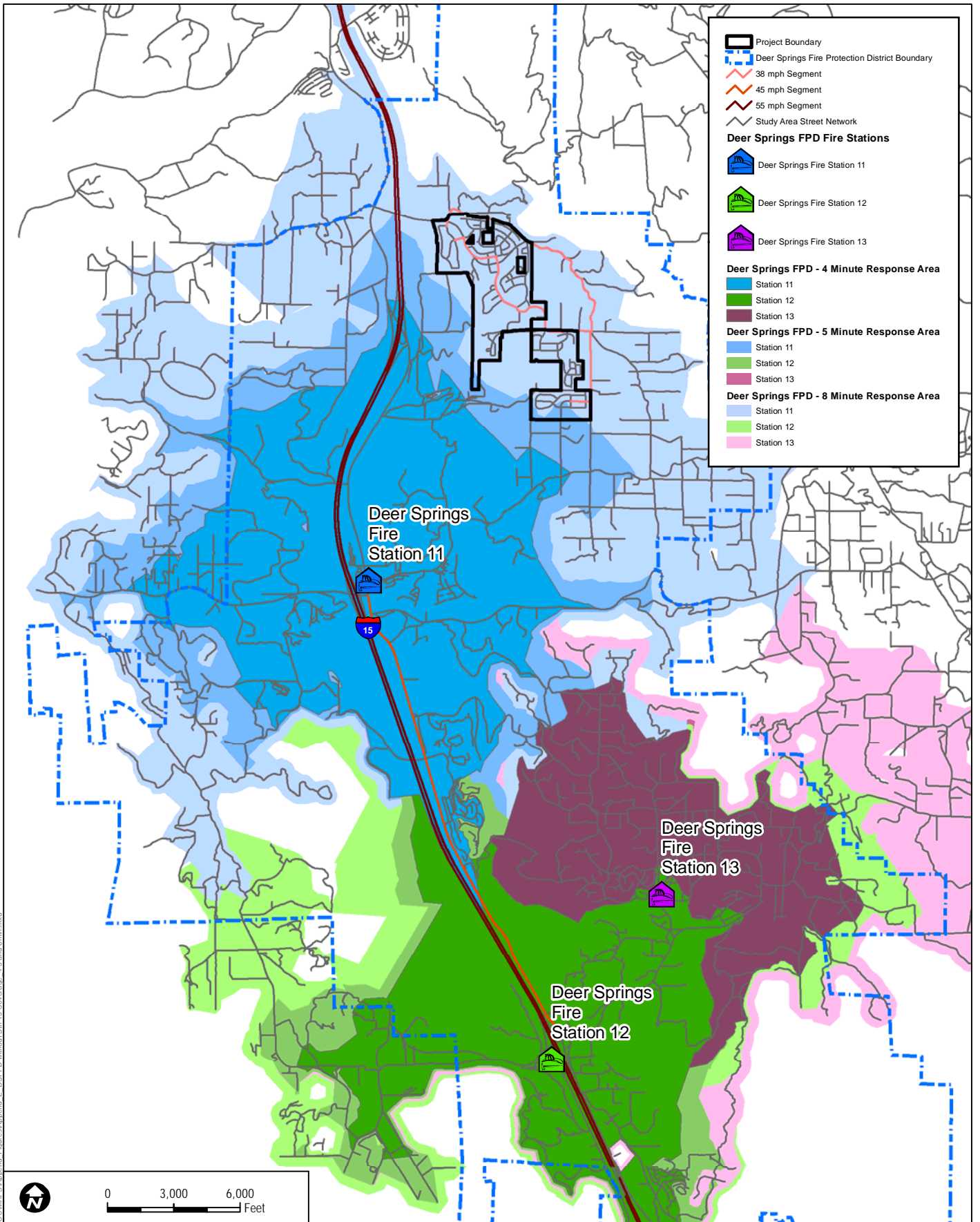


**RESIDENTIAL AND COMMERCIAL**  
CLASS I, CLASS II, CLASS III, AND CLASS IV VEHICULAR GATE OPERATOR



# **APPENDIX E**

*Station 15 Decommissioning –  
Remaining Station Coverages*



**DUDEK**

7449-01

**FIGURE E**  
**DSFPD Coverage Area - 4, 5, and 8 Minute Travel Time**

DEER SPRINGS FIRE PROTECTION DISTRICT CAPABILITIES ASSESSMENT

NOTE: Drive times calculated using a 35 mph average speed except where indicated.