E.3.15 Fire and Fuels Management

A fireshed approach to analysis is taken in this section. Firesheds are regional landscapes that are delineated based on fire history, fire regime, vegetation, topography, and potential wildfire behavior. Firesheds are useful assessment tools for identifying high fire risk areas and predicting future fire behavior with the objective of reducing fire risk and protecting communities. Fire and fuels impacts are analyzed using supporting information and fire behavior model results for each fireshed as defined in Section D.15.2. Section D.15.4.3 provides an explanation of how fireshed boundaries were delineated and presents a detailed description of the computer models and data inputs, and Appendices 3A and 3B present detailed information on field data collection techniques and data coding protocols.

Firesheds along the Route D Alternative route are described in Sections E.1.15.1 and E.3.15.1, and environmental impacts and mitigation measures for the Route D Alternative are presented in Section E.3.15.2, below. Figure D.15-2 (in Section D.15 Fire and Fuels Management) shows the boundaries of the firesheds along the Proposed Project and alternative project routes. The impact analyses and conclusions below summarize the results of fireshed modeling.

E.3.15.1 Environmental Setting

The Route D Alternative passes overhead for 17.3 miles through two firesheds: the Boulder Creek Fireshed and the Pine Hills Fireshed. The Boulder Creek Fireshed is described in Section E.1.15.1, and the Pine Hills Fireshed is described below. Figure E.3.15-1 shows the Route D Alternative and the Boulder Creek and Pine Hills Fireshed boundaries.

Pine Hills Fireshed (AFS-6)

Total assessment area: 53,093 acres

The Pine Hills Fireshed is bordered by State Highway 78 to the north and State Highway 79 to the east. The Route D Alternative would pass overhead for 9.2 miles through this fireshed. The communities of Pine Hills, Wynola, Harrison Park and Pinezanita Ranch are included within the fireshed area. The 2003 Cedar Fire started near the center of this assessment area. Much of the central portion of the fireshed has been recommended as wilderness by local citizens and conservation groups due to its remote nature and unique natural resource values. The elevation ranges from 5,993 on North Peak and 4,420 in Julian, to 1,900 feet in the San Diego River Canyon. The average annual rainfall range is between 32.5 inches in the Cuyamaca Mountains to 22.5 inches in the far southwestern corner of the fireshed. The western portion of the Pine Hills Fireshed overlaps the east side of the Santa Ysabel Fireshed (Section D.15.8).

The Pine Hills Fireshed is composed of almost half private land and half public lands consisting of CNF, BLM and Cuyamaca Rancho State Park (see Table D.3.15-1). The private land is mainly concentrated in the northeast section of the fireshed and private land holdings throughout Cleveland NF. The average parcel size is nine acres indicating development potential within the private lands.

The population density within the private lands is 58 people per square mile. Potential future population growth within the Pine Hills Fireshed will be concentrated within these private land-holdings which will increase the human influence on the surrounding wildlands thereby expanding the WUI. This fireshed is

categorized as an Intermix WUI.[1] Intermix WUI areas have an elevated risk of wildfires due to the intermediate scale of development that has fragmented the wildlands, but not enough to disrupt the spread of wildfires (Syphard et al., 2007). In other words, wildlands are sufficiently contiguous to provide continuous fuels, which makes this fireshed prone to large fires. Because development is interspersed so extensively with wildland areas, human ignitions are more frequent, and fires sweeping through this fireshed have a high potential to be damaging to the intermixed community. The intermixed community is developed at a relatively low density (28-250 persons/square mile) compared with Interface WUI communities (250+ persons/square mile; see Section D.15.6, Ramona Fireshed, for a description of an Interface WUI).

Table D.3.15-1. Land Ownership Summary of Pine Hills Fireshed

Ownership	Acres	Portion of Fireshed
City of SD	10	<1%
County of SD	1,327	2%
BLM	5,320	10%
USFS	19,133	36%
Military	0	0%
Native American Reservation	1,031	2%
State of CA (ABDSP)	2,790	5%
SDG&E	0	0%
Other (private, etc.)	23,483	44%
Total	53,094	100%

Source: Forester's Co-Op Fire Atlas Data.

Fire History

Fire frequency: 24 recorded fires/50 years.
Extended attack between 500 – 1,000 acres: 1 fire/50 years.
Major events (over 1,000 acres): 5 fires/50 years.
Cumulative acres burned: 98,100 acres/50 years.

It was within the Pine Hills Fireshed that the 2003 Cedar Fire originated, and the fire consumed all but a few acres of the total fireshed area. The 2007 Witch Fire also consumed a large portion of this fireshed: 45% or 23,669 acres. This fireshed is a recognized fire corridor since the topography that forms the deep San Diego River Canyon easily channels Santa Ana wind-driven wildfires to the southwest. The rugged terrain makes it extremely difficult and dangerous to conduct ground-based fire suppression activities. Another major fire that spread down the San Diego River Canyon was the 1956 Inaja Fire in which 11 firefighters were killed and 46,601 acres burned. Two other fires of significance burned in the eastern portion of this fireshed, a 29,083 acre fire in 1967 and the 1970 Boulder Fire that burned 12,829 acres.

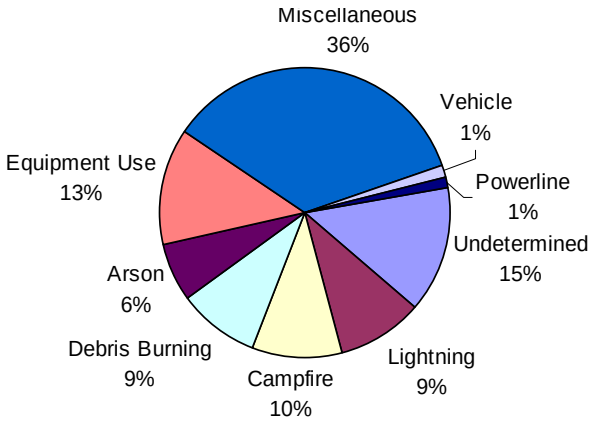
There have been 161 ignitions in this rural fireshed over the last 13 years with equipment use and campfires representing the most common identified causes (Figure E.3.15-2). Equipment use ignitions (13%) have occurred along roads within the Cleveland NF and private lands throughout the fireshed. Campfire ignitions (10%) are prevalent near the San Diego River Canyon and undeveloped areas around the town of Santa Ysabel. Lightning strike ignitions are frequent due to the high peaks and ridges throughout the fireshed. One of the two powerline ignitions within the fireshed started near Cedar Creek which is in close proximity to the proposed Route D Alternative. Cedar Creek flows into the San Diego River Canyon which is an area known to funnel the high speed Santa Ana winds; which was probably the cause of this previous powerline ignition.

[1] Intermix WUI: where structures are scattered throughout a wildland area and wildland fuels are continuous outside of and within developed areas (population density of 28-250 people per square mile and the average parcel size is less than 40 acres). (Federal Register (USDA/USDI 2001))

Figure E.3.15-1. Route D Alternative Overview Map
CLICK HERE TO VIEW

Figure E.3.15-2. Reported 13-Year Wildfire Ignition History in Alternative Route Pine Hills Fireshed

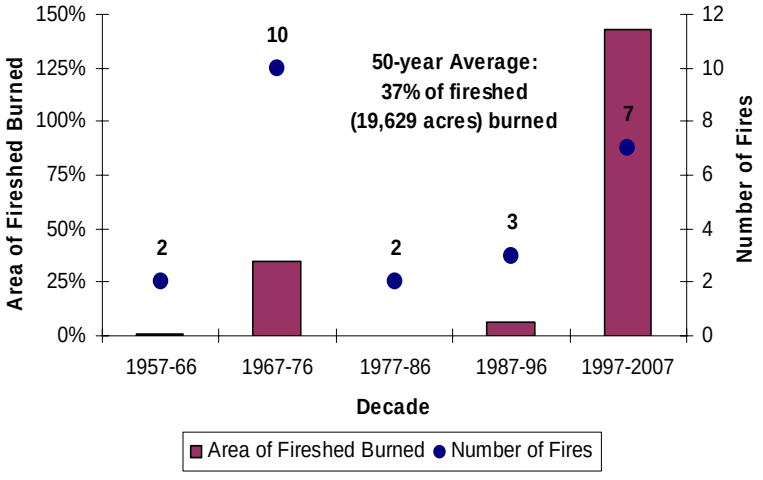
Cause	Number of Ignitions
Undetermined	23
Lightning	15
Campfire	16
Debris Burning	15
Arson	10
Equipment Use	21
Miscellaneous	57
Vehicle	2
Powerline	2
Total	161



The level of human influence within this fireshed is a key indicator of future wildfire ignitions. Humans are responsible for 76% of the wildfire ignitions over the past 13-years as compared to 9% of the ignitions naturally occurring from lightning. The random occurrence of lightning ignitions is expected to remain constant throughout the landscape. Over the 13-year ignition history, humans started 18 of the 23 wildfires that burned within the fireshed, lightning started 3 wildfires and the rest of the wildfire sources were undetermined. The number of historically undetermined wildfire sources may be attributed to outdated wildfire reporting and source identification practices, which have become more accurate in recent times. The level of human wildfire influence is expected to increase within this Intermix WUI fireshed in the future due to the development potential on private lands surrounded by extensive wildland fuels.

An average of 37% or 19,629 acres burned per decade in the Pine Hills Fireshed based on the 50-year fire records (Figure E.3.15-2; for methods see Section D.15.1.2). This is the highest acreage burned on average per decade out of all 14 project firesheds. There was a peak in the number of fires and acreage burned during the 1967-76 decade as a result of a fire in 1967 and the Boulder Fire in 1970 which collectively burned 16,880 acres within the fireshed. In the past decade (1997-2007), the 2003 Cedar Fire burned 51,795 acres and the 2007 Witch Fire burned 23,669 acres within this fireshed, causing the recent upward trend in the acreage burned.

Figure E.3.15-3. Pine Hills Fireshed 50-year Wildfire History



Source: Forester's Co-Op Fire Atlas Data.

Vegetation

The vegetation near the Route D Alternative is a mix of chaparral and coastal sage scrub. There are scattered oak woodlands in ravines. Large portions of this fireshed appear to have been type-converted from native shrublands to non-native grasslands, possibly due historical grazing and fire activity. Fuel levels within native shrubland vegetation communities will slowly increase as the chaparral recovers from the Cedar and Witch Fires, and will likely reach extreme fuel loading levels again within 25 to 30 years with adequate rainfall and no additional disturbances. Table E.3.15-2 presents a complete vegetation summary.

Table E.3.15-2. Vegetation Composition of Pine Hills Fireshed

Vegetation Type	Acres	Cover
Chaparral	1,965	29%
Live Oak	624	9%
Scrub	2,586	38%
Oak Woodland	1,437	21%
Out Area	228	3%
Total	6,840	100%

Fire Prevention Practices & Resources

The responsibility for fire suppression and prevention in this fireshed is shared between the USFS, the Julian-Cuyamaca Fire Protection District, and CAL FIRE. There is one part-time station in the fireshed: Julian-Cuyamaca Station 74. Lake Cuyamaca in the far eastern portion of the fireshed provides water resources for fire suppression. The communities of Wynola, Harrison Park, and Inaja are federally designated communities at risk of wildfire. Recent fire prevention programs include the establishment of local Fire Safe Councils that has promoted fuels reduction programs and the building and maintenance of strategic fuel-breaks. In 2002, the BLM completed an 805-acre fuel reduction treatment. In 2004, the USFS and BIA completed a total of 936 acres of fuels treatments. The Sunrise Fuel Break that was built in the 1950s was restored with the help of the BLM, CAL FIRE, and the Julian-Cuyamaca Fire Protection District in order to protect the towns of Julian and Whispering Pines. The effectiveness of this fuelbreak was proven in the 2007 Banner Fire, in which numerous acres are estimated to have been spared.

E.3.15.2 Environmental Impacts and Mitigation Measures

Environmental impacts and mitigation measures are presented below for the Route D Alternative. The objective of the mitigation measures, when applicable, is to reduce the impacts to a less than significant level. Due to the large scale of the Route D Alternative and the very high fire risk in San Diego County one of these impacts are not mitigable to a less than significant level. Table E.3.15-3 presents fire and fuels management impacts identified for the Route D Alternative.

Table E.3.15-3. Impacts Identified – Route D Alternative – Fire and Fuels Management

Impact No.	Description	Impact Significance
Route D Alternative and Central South Substation Alternative		
F-1	Construction and/or maintenance activities would significantly increase the probability of a wildfire.	Class II
F-2	Presence of the overhead transmission line would significantly increase the probability of a wildfire.	Class I
F-3	Presence of the overhead transmission line would reduce the effectiveness of firefighting.	Class III
F-4	Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread.	Class II

Wildfire Model Results

Burn Probability Model Results

The Burn Probability model (see Section D.15.4.3 for methods) indicates that 6% of the border zone area has a very high burn probability, 17% has a high burn probability, 32% has a moderate burn probability, and 45% has a low burn probability. Figures E.3.15-4 and E.3.15-5 show the burn probabilities of areas in the Boulder Creek and Pine Hills Firesheds along the Route D Alternative border zone.

The majority of high to very high burn probability areas occur where the corridor is adjacent to fuel-laden wildlands. The model output for each fireshed and a route summary is presented in Table E.3.15-4.

Table E.3.15-4. Route D Alternative Burn Probability Model Summary

Fireshed	Low	Moderate	High	Very High
Boulder Creek	47%	32%	12%	9%
Pine Hills	44%	22%	22%	2%
Route Summary	45%	32%	17%	6%

Source: Forester's Co-Op Model Output

Fire Behavior Trend Model Results

During normal weather conditions, ignitions started within the Route D Alternative corridor would burn outside of the transmission border zone towards the northeast into the heavily vegetated areas of CNF and into the private lands of Echo Valley, Witch Creek, and Eagle Peak Preserve. As many as 6 homes and 8,442 acres would be at risk during two burn periods during normal weather conditions. Figures E.3.15-6 and E.3.15-7 show the fire behavior trend during normal weather conditions (Map A) compared to the fire behavior trend during extreme fire weather conditions (Map B) for the Route D Alternative through the Boulder Creek Fireshed and Pine Hills Fireshed, respectively. Table E.3.15-5 summarizes the Fire Behavior Trend Model results.

Table E.3.15-5. Route D Alternative Fire Behavior Trend Model Summary

	Normal Weather		Extreme Weather	
Fireshed	Homes at risk	Acres at risk	Homes at risk	Acres at risk
Boulder Creek	3	4,045	99	26,106
Pine Hills	3	4,397	2	20,258
Total	6	8,442	101	46,364

Extreme fire weather conditions would cause ignitions started within the corridor to burn extensive areas of public and private lands to the southwest including the surrounding CNF and the Capitan Grande and Viejas Reservations. The potential burn area from a wildfire started along the Route D Alternative within the Boulder Creek Fireshed would be more than six times greater during extreme Santa Ana weather conditions compared to normal conditions. The potential burn area from a wildfire started along the Route D Alternative within the Pine Hills Fireshed would be more than four times greater during extreme Santa Ana weather conditions compared to normal conditions. Potentially more than 101 homes and 46,364 acres would be at risk if a fire were to ignite in the corridor during extreme weather conditions.

Wildfire Containment Conflict Model Results

Tactical firefighting management decisions made during wildfires are based on assessment of fire behavior and the ability of ground and aerial firefighters to safely attack a fire. The Wildfire Containment Conflict Model is used to identify areas along the transmission line where significant conflicts

with wildfire suppression efforts would be created by the introduction of the proposed overhead transmission line, defined as segments with at least 1.5 consecutive miles of very high conflict ranking (see Section D.15.4.3 for methods). The model indicates that for the length of the Route D Alternative through the Boulder Creek and Pine Hills Firesheds, 6% would present a very high conflict, 23% a high conflict, 32% a moderate conflict, and 39% a low conflict (Table E.3.15-6 and Figures E.3.15-8 and E.3.15-9). No significant conflict areas are identified by the model, due to the alternative route being located in a largely indefensible landscape with steep topography and abundant fuels.

Table E.3.15-6. Route D Alternative Wildfire Containment Conflict Summary

Fireshed	Low	Moderate	High	Very High
Boulder Creek	53%	35%	12%	0%
Pine Hills	26%	31%	32%	11%
Route Summary	39%	32%	23%	6%

Construction Impacts

Impact F-1: Construction and/or maintenance activities would significantly increase the probability of a wildfire (Class II)

Construction activities associated with the Route D Alternative would include, but not be limited to, use of heavy equipment for vegetation removal and grading, the construction of transmission tower pads and towers, and the installation of conductors. Additional heavy equipment, vehicles and tools would be used for the construction of staging areas and the Central South Substation Alternative, and many miles of new roads. The use of construction equipment such as earth movers, generators, vehicles, or chainsaws along with the personnel required to construct the transmission line introduces the potential for a variety of wildfire ignition sources to surrounding vegetation fuels or combustible materials associated with project construction. Construction-related ignitions within the Route D corridor have the potential to escape initial attack containment and become catastrophic fires. The areas with heavy fire fuels, steep topography, and exposure to Santa Ana winds would have a higher burn probability and a higher potential for an ignition to escape.

Transmission line maintenance activities would include the periodic use of vehicles and presence of personnel for line inspections, and could also include the use of heavy equipment for conductor repairs or replacement. These activities would be far less intensive than construction activities; however, they would recur periodically over the life of the project, supplying an ongoing source of ignitions for 50 years or more.

The Burn Probability Model for the Route D Alternative (Figures E.3.15-4 and E.3.15.5) indicates that along the length of the alternative, a total of 77% of the border zone area has a high to very high probability of fire escapes and wildfire recurrence. The Fire Behavior Trend Model (Figures E.3.15-6 and E.3.15-7) indicates that a random fire ignition under normal weather conditions within the Route D Alternative corridor would burn extensive areas of public and private lands to the southwest including the surrounding CNF and the Capitan Grande and Viejas Reservations, putting six homes and 8,442 acres at risk in two burn periods. The potential area burned would be almost six times greater during extreme fire weather conditions, putting 101 homes and 46,364 acres at risk in two burn periods. Wildfire risk is extremely high in the Pine Hills Fireshed and moderate in the Boulder Creek Fireshed based on wildfire history and fuels present. A low-density WUI in these intermix WUI firesheds situates low-density large parcels intermixed with extensive wildland fuels. Many acres and at least 101 homes would be at risk if a project-related fire were ignited during Santa Ana wind conditions.

Figure E.3.15-4. Boulder Creek Fireshed Route D Alternative Burn Probability Model
CLICK HERE TO VIEW

Figure E.3.15-5. Pine Hills Fireshed Route D Alternative Burn Probability Model
CLICK HERE TO VIEW

Figure E.3.15-6. Boulder Creek Fireshed Route D Alternative Fire Behavior Trend Model
CLICK HERE TO VIEW

Figure E.3.15-7. Pine Hills Fireshed Route D Alternative Fire Behavior Trend Model
CLICK HERE TO VIEW

Figure E.3.15-8. Boulder Creek Fireshed Route D Alternative Wildfire Containment Conflict Model
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Figure E.3.15-9. Pine Hills Fireshed Route D Alternative Wildfire Containment Conflict Model
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The Route D Alternative would require construction and maintenance activities and thereby create a significant risk of a fire with potentially damaging impacts to communities, firefighter health and safety, and natural resources in the Boulder Creek and Pine Hills Firesheds. This increase can be mitigated to a less than significant level (Class II) in these moderate- and high-risk firesheds through the implementation of Mitigation Measures F-1a, Develop and implement a Construction Fire Plan, F-1b, Ensure coordination for emergency fire suppression, F-1c, Ensure coordination for emergency fire suppression, F-1d, Remove hazards from the work area, and F-1e, Contribute to defensible space grants fund.

Mitigation Measures F-1a, Develop and implement a Construction Fire Plan, and F-1b, ~~Finalize and implement SDG&E 2006 Draft Fire Plan for Electric Standard Practice~~Amend and implement Sempra Utilities Wildland Fire Prevention and Fire Safety Guide (2007), would reduce the number of project-related ignitions in this fireshed by requiring personnel training, fire risk management oversight, and open communications with fire agencies. These measures would also reduce the potential impact to communities and natural resources by prohibiting project construction and maintenance activities during Red Flag Warning events, as issued by the National Weather Service, which would eliminate work during extreme fire weather and have the effect of substantially reducing the potential acres burned (from more than 46,364 acres to approximately 8,442 acres) and the number of homes at risk (from more than 101 to six) in these two firesheds. Combined with Mitigation Measure F-1e, described below, this measure would reduce the risk of homes sustaining damage in a project construction- or maintenance-related fire to a less than significant level.

Mitigation Measure F-1c, Ensure coordination for emergency fire suppression, ensures open communication channels and unobstructed emergency access roads. This measure would reduce firefighting response time in the event of an ignition, which would have the effect of reducing the potential impact to communities and natural resources.

Mitigation Measure F-1d, Remove hazards from the work area, would reduce the severity of construction- and maintenance-related ignitions that escape initial containment efforts by minimizing fuel loads within the corridor. This would reduce the potential impact to communities and natural resources in the event of a project construction- or maintenance-related ignition.

Mitigation Measure F-1e, Contribute to defensible space grants fund, would facilitate firefighting efforts and reduce structure damage at the WUI by making financial contributions toward compliance with defensible space requirements for homeowners most at risk of sustaining structure damage as a result of a project-related wildfire. The full text of all mitigation measures can be found in Appendix 12.

Mitigation Measures for Impact F-1: Construction and/or maintenance activities would significantly increase the probability of a wildfire

F-1a **Develop and implement a Construction Fire Prevention Plan.**

F-1b **~~Finalize and implement SDG&E 2006 Draft Fire Plan for Electric Standard Practice~~Amend and implement Sempra Utilities Wildland Fire Prevention and Fire Safety Guide (2007).**

F-1c **Ensure coordination for emergency fire suppression.**

F-1d **Remove hazards from the work area.**

F-1e **Contribute to defensible space grants fund.**

Operational Impacts

Impact F-2: Presence of the overhead transmission line would increase the probability of a wildfire (Class I)

The presence of the overhead transmission line would create an ongoing source of potential wildfire ignitions for the life of the project. Line faults can be caused by such unpredictable events as conductor contact by floating debris, gun shots, and helicopter collisions; these events are rare but would be unavoidable. The Boulder Creek Fireshed is a moderate-risk fireshed and the Pine Hills Fireshed is a high-risk fireshed based on wildfire history, fuels present, and assets at risk (see Fireshed Summary and Model Results, above), and any line faults that create sparks or ignite nearby vegetation could result in a large and catastrophic wildfire, putting 101 or more households and 46,364 or more acres (see Fire Behavior Trend Model results, above) at risk if transmission line ignitions were to occur during extreme weather conditions.

Impact F-2 is considered a significant impact because certain ignition sources are unavoidable. Due to the potential for unavoidable ignitions related to the presence of the overhead transmission line to occur during extreme fire weather, the presence of the project would significantly increase the likelihood of a catastrophic wildfire (Class I). The risk of ignitions and the risk of damage from a project-related ignition can be reduced, though not to a less than significant level, through implementation of adequate line clearances, rigorous hardware inspections, ~~elimination of nearby wood poles,~~ and by aiding in the creation of defensible space around homes at the WUI.

Mitigation Measure F-2a, Establish and maintain adequate line clearances, would reduce the risk of vegetation contact with conductors. This measure requires a higher performance standard than the CPUC's GO 95 (See Section D.15.3.2) justified by the regular occurrence in this area of extreme Santa Ana winds that have enough force to blow trees into conductors.

Transmission component failure ignitions would be substantially reduced through implementation of Mitigation Measure F-2c, which would require rigorous inspections of hardware. The unavoidable sources of ignition from the presence of the overhead transmission line would remain, however, and therefore the potential for the project to ignite a catastrophic wildfire during severe fire weather would remain significant overall.

Mitigation Measure F-1e, Contribute to defensible space grants fund, would reduce the potential damage to homes from project-related wildfires; however, the creation of defensible space would not guarantee structure protection during severe fire weather, and the potential for the project to ignite a catastrophic wildfire would remain significant overall.

Mitigation Measures for Impact F-2: Presence of the overhead transmission line would increase the probability of a wildfire

F-2a Establish and maintain adequate line clearances.

F-2c Perform climbing inspections.

F-1e Contribute to defensible space grants fund.

Impact F-3: Presence of the overhead transmission line would reduce the effectiveness of firefighting (Class III)

The 17.3 miles of overhead transmission line associated with this alternative route occur in a non-defensible landscape with rugged topography and abundant fuels. This alternative would not create a significant linear obstacle to fire suppression, defined as 1.5 contiguous miles of very high conflict criteria. The overhead segment would therefore have an adverse but less than significant impact on firefighting (Class III). No mitigation is required.

Impact F-4: Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread (Class II)

Project activities create the potential for the introduction and spread of non-native, invasive plants. Non-native plants are often spread by human and vehicle vectors in areas of large-scale soil disturbance and importation. These actions along with the opening of the vegetation canopy through the clearing of trees and shrubs involved with the construction and maintenance of the Route D Alternative will contribute to the introduction and proliferation of non-native, invasive plants. Certain invasive plants, like cheatgrass, medusa head and Saharan mustard, can contribute to changes in wildfire frequency, timing and spread (Cal-IPC, 2007). Cheatgrass and medusa head, for example, dry out earlier in the season than native grasses creating fine fuels that are easily ignited. These fine fuels contribute to wildfires igniting earlier in the year and an increased level of fire recurrence. In addition, non-native grasslands have a "spotting" effect during a wildfire, where embers from these grasslands are blown ahead of the fire line, contributing to an increased rate of fire spread. Invasive annual grasses also influence fire spread by creating a fine fuel continuum between patchy, perennial shrubs allowing wildfires to expand further into otherwise sparsely vegetated wildlands (USGS, 2007). Saharan mustard creates dense stands of dry vegetation in desert scrub and coastal sage scrub communities which increases the fire fuels in these otherwise low fire risk areas (Cal-IPC, 2007). The introduction and spread of specific invasive plants within the Route D Alternative ROW will adversely influence fire behavior by increasing the fuel load, fire frequency and fire spread.

The introduction of non-native plants with an increased ignition potential and rate of wildfire spread is considered a significant impact (Class II) that can be mitigated by following the prevention and management protocol outlined in Mitigation Measure B-3a, Prepare and Implement a Weed Control Plan. The Weed Control Plan requires pre-construction and long-term weed surveys and implementation of control methods that require consultation and approval of the San Diego County Agriculture Commissioner and appropriate land-holding public agencies. Invasive weeds that influence wildfire behavior are considered a high control priority (such as cheatgrass [Bromus tectorum], Saharan mustard [Brassica tournefortii] and medusa head [Taeniatherum caput-medusae]) along with the priority species determined by the San Diego County Agriculture Commissioner and the California Invasive Plant Council (Cal-IPC, 2007). This measure also requires that proper actions are taken to prevent the introduction of invasive plants through materials and equipment used for the construction and maintenance of the transmission line.

Mitigation Measure for Impact F-4: Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread

B-3a Prepare and implement a Weed Control Plan.

E.3.15.3 Central South Substation Alternative

The Central South Substation Alternative would be a required component of the Route D Alternative. It would be located at MP D-17.3 in the Pine Hills Fireshed (see Figure E.3.1-2). Impacts for this substation are included in the analysis of the Route D Alternative, above.

E.3.15.4 Future Transmission System Expansion

For the Proposed Project and route alternatives along the Proposed Project route, Section B.2.7 identifies Future Transmission System Expansion routes for both 230 kV and 500 kV future transmission lines. These routes are identified, and impacts are analyzed in Section D of this EIR/EIS, because SDG&E has indicated that transmission system expansion is foreseeable, possibly within the next 10 years. For the SWPL alternatives, 500 kV and 230 kV expansions would also be possible. The potential expansion routes for the Route D Alternative are described in the following paragraphs.

230 and 500 kV Future Transmission System Expansion

The Route D Alternative would begin at approximately MP I8-70 and would head northward until it reached the Central South Substation Alternative at approximately MP 114.5 of the Proposed Project. The Route D Alternative would convert to 230 kV at the Central South Substation and a double-circuit 230 kV line would be constructed southwest from that substation to the Sycamore Canyon Substation. The Central South Substation would accommodate up to six 230 kV circuits and an additional 500 kV circuit. Only two 230 kV circuits are proposed at this time, but construction of additional 230 kV circuits and a 500 kV circuit out of the Central South Substation may be required in the future. There are two routes that are most likely for these future lines; each is addressed below. Figure E.1.1-6 illustrates the potential routes of the future transmission lines.

Additional 230 and 500 kV circuits could follow the Proposed Project corridor starting at MP 114.5. The routes could either: (1) follow the Proposed Project corridor southwest to the Chicarita Substation and then follow the Proposed Project's 230 kV Future Transmission Expansion System (see description in Section B.2.7) from Chicarita to the Escondido Substation; or (2) the Proposed Project northeast to the Proposed Central East Substation and then follow the Proposed Project's 500 kV Future Transmission Expansion route shown in Figure B-12b (see description in Section B.2.7). See Section D.15.2, for the Fire and Fuels Management setting, and see Section D.15.6 through D.15.11 for the impacts and mitigation measures for the Central, Inland Valley, and Coastal Links of the Proposed Project. See Section D.15.13 for the Fire and Fuels Management setting, impacts, and mitigation measures for the Future Transmission System Expansion of the Proposed Project.