Cottonwood Sand Mine
FIRE PROTECTION PLAN

Prepared For The

San Miguel Consolidated Fire Protection District

2850 Via Orange Way, Spring Valley, CA 91978

Attn: Brent Napier, Deputy Fire Marshal

And

Prepared for the County of San Diego

5510 Overland Avenue, San Diego, CA 92123

Project # PDS2018-MUP-18-023, PDS2018-RP-001; Environmental Log # - PDS2018-ER-18-19-007

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J. Rogers

A 10 year Sand Mining and Restoration Project to be Located on the 280 acre Cottonwood Golf Club Site

1st iteration, 04/23/2021

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EXECUTIVE SUMMARY

The Cottonwood Sand Mine Project is a proposed 10 year project on 214 acres of the 280 acre Cottonwood Golf Course Property in the unincorporated community of Rancho San Diego in eastern San Diego County, which has operated as the Cottonwood Golf and Country Club since 1962. The Project Site is located on the south side of Willow Glen Drive and is bisected by Steele Canyon Road.

This Project Site is surrounded by a Very High Fire Hazard Severity Zone comprised of Local Responsibility Area (LRA), State Responsibility Area (SRA) and residential development protected by the San Miguel Consolidated Fire Protection District (SMCFPD). The actual Project site is in very Low to Moderate Fire Hazard Severity Zone because of the irrigated and well maintained greens on the golf course. In the event of a wind driven wildfire in the Sweetwater River drainage the site serves as a 280 acre Safety Zone.

The sand mining operation will occur in four phases, starting at the west end of the property and working east. Site restoration work will begin immediately upon the completion of each phase. The entirety of the mined footprint will be revegetated back into a fully functioning river flood plain open space and riparian corridor with pedestrian walkways/trails. The existing isolated riparian vegetation on the widely scattered non continuous 66 acres not slated for mining operations and currently under management as a golf course is in a very poor condition and due to the onsite deterioration of the Cottonwoods (*Populus fremontii*) and other associated vegetation is a Very High Fire Hazard under very dry, hot and windy conditions.

This Proposed Project will not increase or place additional service demands on County Resources.

This submitted Fire Protection Plan (FPP) is in full compliance with the 2019 California Fire Code, including appendices I & N; the 2019 International Fire Code (IFC); the 2020 San Diego County Consolidated Fire Code and Chapter 47 of the County of San Diego Fire Code.

Chapter 1. INTRODUCTION

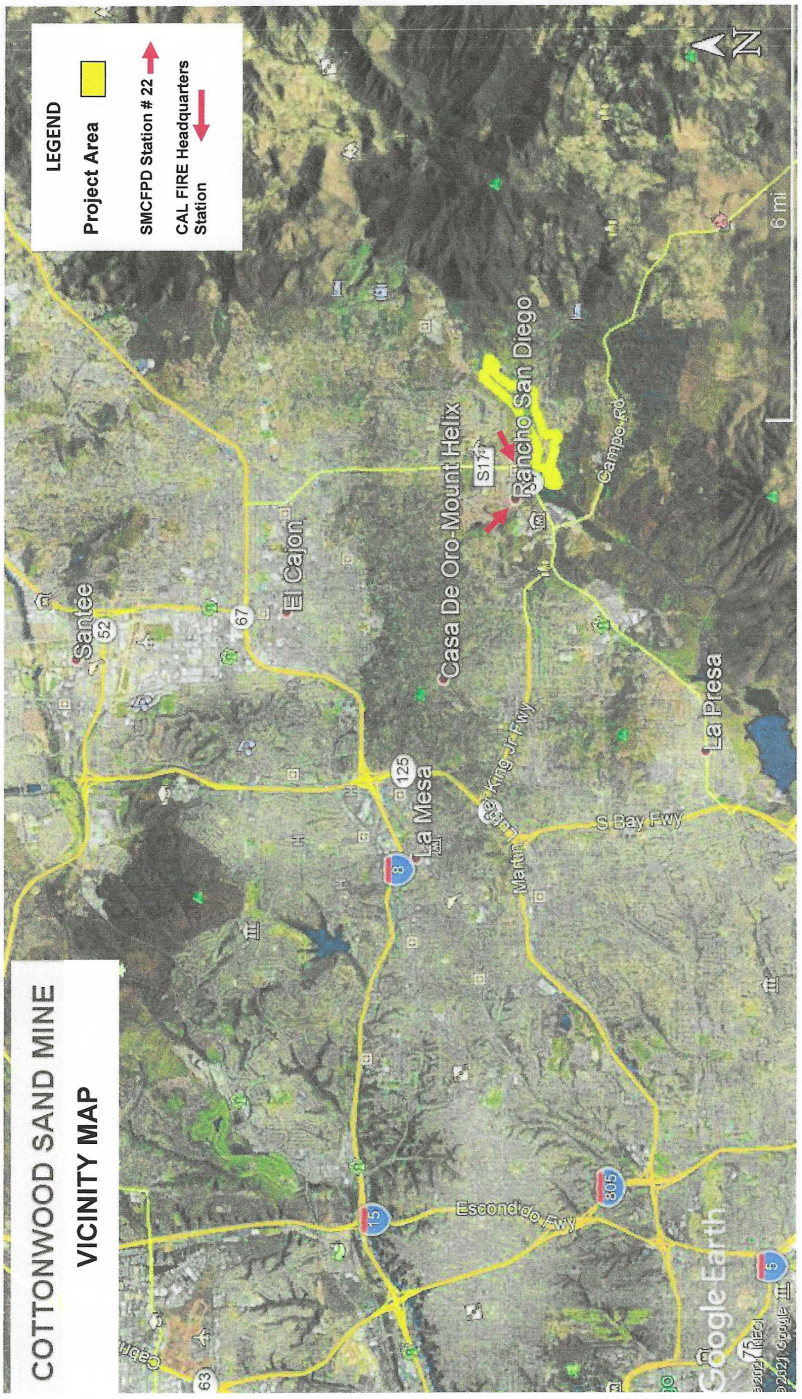
This Fire Protection Plan (FPP) has been prepared for the proposed Cottonwood Sand Mine and Restoration Project. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. As part of the assessment, the plan has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions, and fire history. This plan addresses water supply, access (including secondary/emergency access where applicable), structural ignitability and fire resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect one or more at-risk communities and essential infrastructures. The plan recommends measures that property owners will take to reduce the probability of ignition of structures throughout the area addressed by the plan.

1.1 Project Location, Description and Environmental Setting

1.1.1 Project location

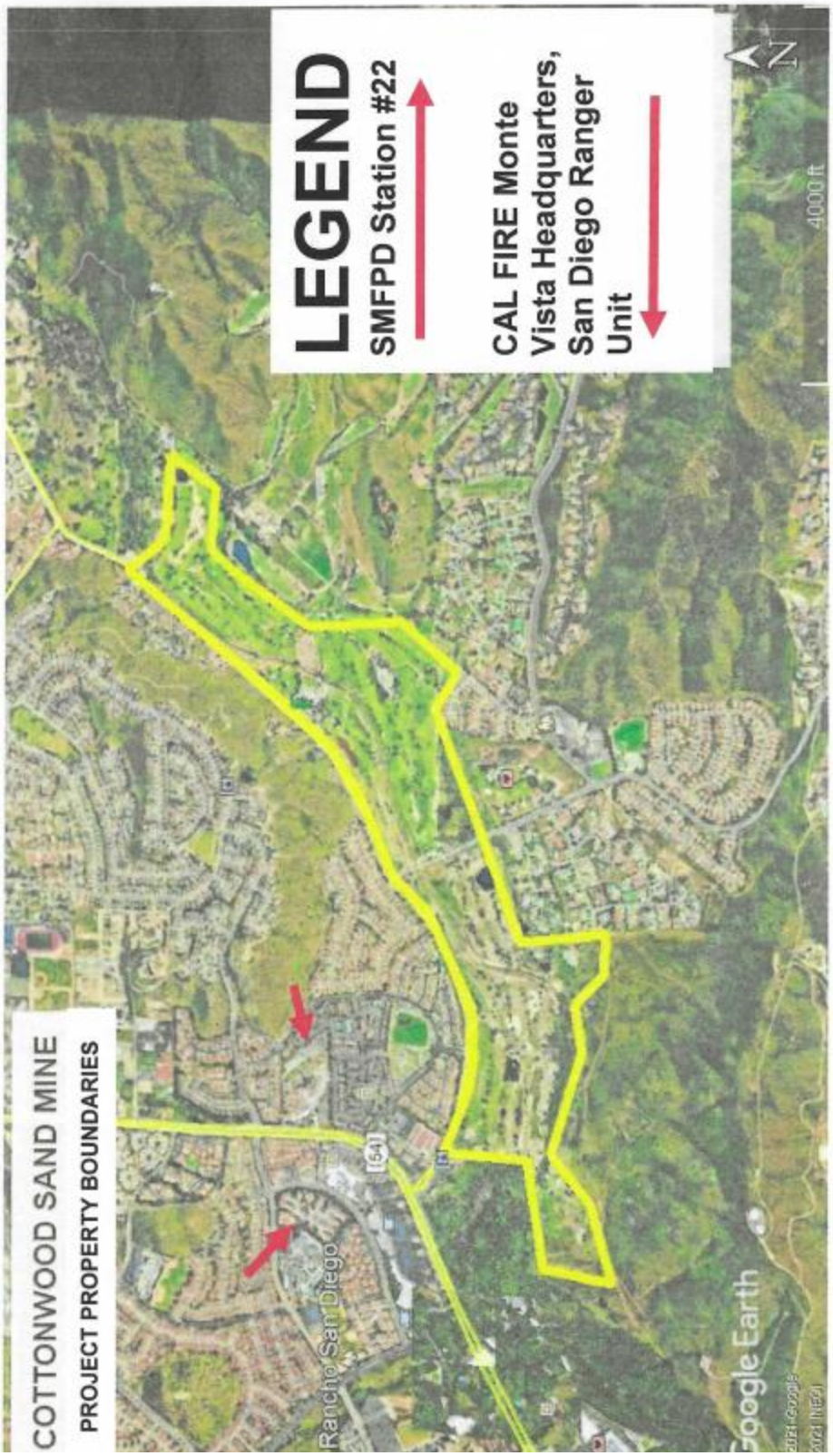
The Cottonwood Sand Mine Project will be located on the 280 acre footprint of the existing Cottonwood Golf and Country Club site and will extract sand and aggregates from 214 acres of the Sweetwater River floodplains deep deposits of alluvial material that has been carried down river over time (see Figure 1 Vicinity Map and Figure 2 Project Boundary Map). This project will reshape an approximately 1.6 mile length of the Sweetwater River flood plain to more closely mimic conditions prior to golf course construction. The project is located mostly within the floodplain of the Sweetwater River, which flows through the central part of the properties, and is located parallel to Willow Glen Drive in Rancho San Diego, CA; an unincorporated area of San Diego County. The western edge of the project areas is approximately 600 feet east of the intersection of Willow Glen Drive and Jamacha Road extending approximately 1.7 miles to the east of that intersection. Steele Canyon Road connects to Willow Glen Drive approximately 0.75 miles east of Jamacha Road. Although the project footprint is classified as a Low Fire Hazard Severity Zone due to the well maintained grass on the golf course, there are pockets of deteriorating riparian vegetation and Cottonwoods, and the Project Boundary is surrounded by High to Very High Fire Hazard Severity Zones (see Figure 4 Fire Hazard Severity Zones). The Sweetwater River drainage is used throughout the year to convey water from Loveland Reservoir, which is located up river from the Project site to Sweetwater Reservoir which is located down river from the Project Site.

Project Vicinity Map, Fig 1

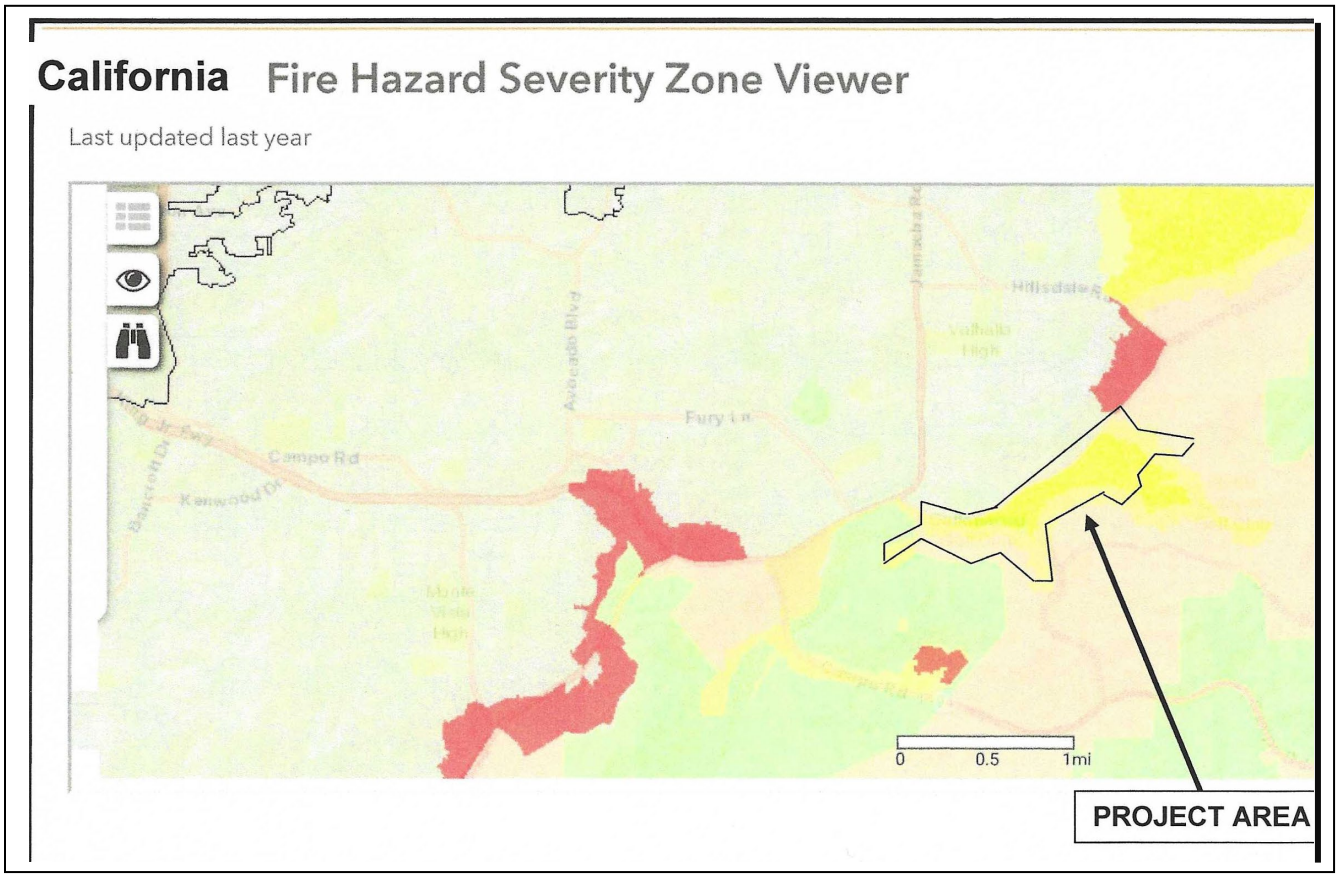


The Cottonwood Sand Mine Project is located on the 280 acre Cottonwood Golf Course and Country Club Property at 3121 Willow Glen Drive and is approximately 1.6 miles east of the intersection of Jamacha Road and Willow Glen Drive.

Project Location Map, Fig 2



Fire Hazard Severity Zone Map, Fig 3



The Cottonwood Sand Mine Project falls into a Moderate Fire Hazard Severity Zone and is surrounded by Very High Fire Hazard Severity Zones. Cal Fire Engines from the Monte Vista Headquarters and Engines from SMCFPD Station 22, the two closest resources, are 3.25 minutes away from the Cottonwood Country Club Building using the NFPA Standard rate of travel of 35 mph traveling Code 3.

1.1.2 Project Description

The Cottonwood Sand Mine project consists of a plan to produce 4.3 million cubic yards (5.7-million tons for market use) of mineral resource in four Phases (see Phasing Plan, Figure 4 on page 9) over a 10-year period on land that is currently utilized as two 18-hole golf courses known as the Lakes and Ivanhoe courses respectively. Extraction activities will begin on the inactive Lakes course west of the Steele Canyon Bridge in Phase 1. Operations will occur Monday through Friday between the hours of 7:00 AM and 5:00 PM. Processing facilities will be located along the south side of Willow Glen Drive, east of Steele Canyon Road and to the west of the existing Cottonwood Clubhouse. Phase 1 will begin by clearing existing vegetation, stock piling turf and top soil for later use in site reclamation, and removing the sand and aggregate underlining the 1st and 18th fairways of the Lakes course. Phase 2 would be located in the center of the site, east of Steele Canyon Road, on the currently operating Ivanhoe course. Public use of the Ivanhoe golf course would cease upon approval of the project/major use permit. Phase 3 mining operations would encompass the remaining acreage of the project site located to the east of Phase 2. Each phase would include three to four sub-phases that are less than 30 acres each to begin reclamation as soon as possible. Excavation in each sub-phase would be completed before moving the conveyor and excavation equipment to the next sub-phase and reclamation would begin in the completed sub-phase. Areas disturbed by resource extraction would be progressively reclaimed as mine operations within a given sub-phase area are completed. Phase 4 would consist of removal of the processing plant, grading to final contours, final reclamation and revegetation efforts, cleanup, and equipment removal. Revegetation monitoring will continue after this final phase. The flood plain over the length of this project will be reshaped to more closely mimic conditions prior to golf course construction.

There is an existing Utility Corridor that bisects the Project Area and is located just east of Steele Canyon Road, which also bisects the Project Area. This corridor currently provides access for an overhead San Diego Gas and Electric High Voltage Power Line and a buried water/sewer pipe line (see photos 1 and 2).

Photos 1 and 2: The Utility Corridor that parallels Steele Canyon Bridge and divides the Project Area into two. Note the SDG&E high voltage towers and the sewer line (photos by Mike Rogers)

The existing Cottonwood Golf Course facilities and Club House will be removed Phase 3 and the sites of these facilities restored to a natural condition. Road access to County standards will be provided off of Willow Glen Drive into that portion of the Project Area that lies between the intersection of Jamacha Road and Willow Glen Drive and Steele Canyon Road. Road access will also be provided off of Willow Glen Drive to the east of Steele Canyon Road, which bisects the Project Area. A sand and aggregate processing plant, settling ponds and truck scales will be located parallel to the south side of Willow Glen Drive near the current location of the Cottonwood Golf Course Club House (see Figure 5 on page 11). These temporary project related facilities will all be removed in Phase 4 (see page 10 for the schedule for removal of existing golf course facilities and temporary project facilities).

During the 10 year period of active project operation all temporary office structures/portable buildings will be skirted to prevent the accumulation of windblown leaf litter beneath them and 100 feet of Defensible space will be maintained around each temporary portable building and any remaining Cottonwood Golf Course structures not scheduled for removal until a later Phase.

Project Phasing Map, Fig. 4

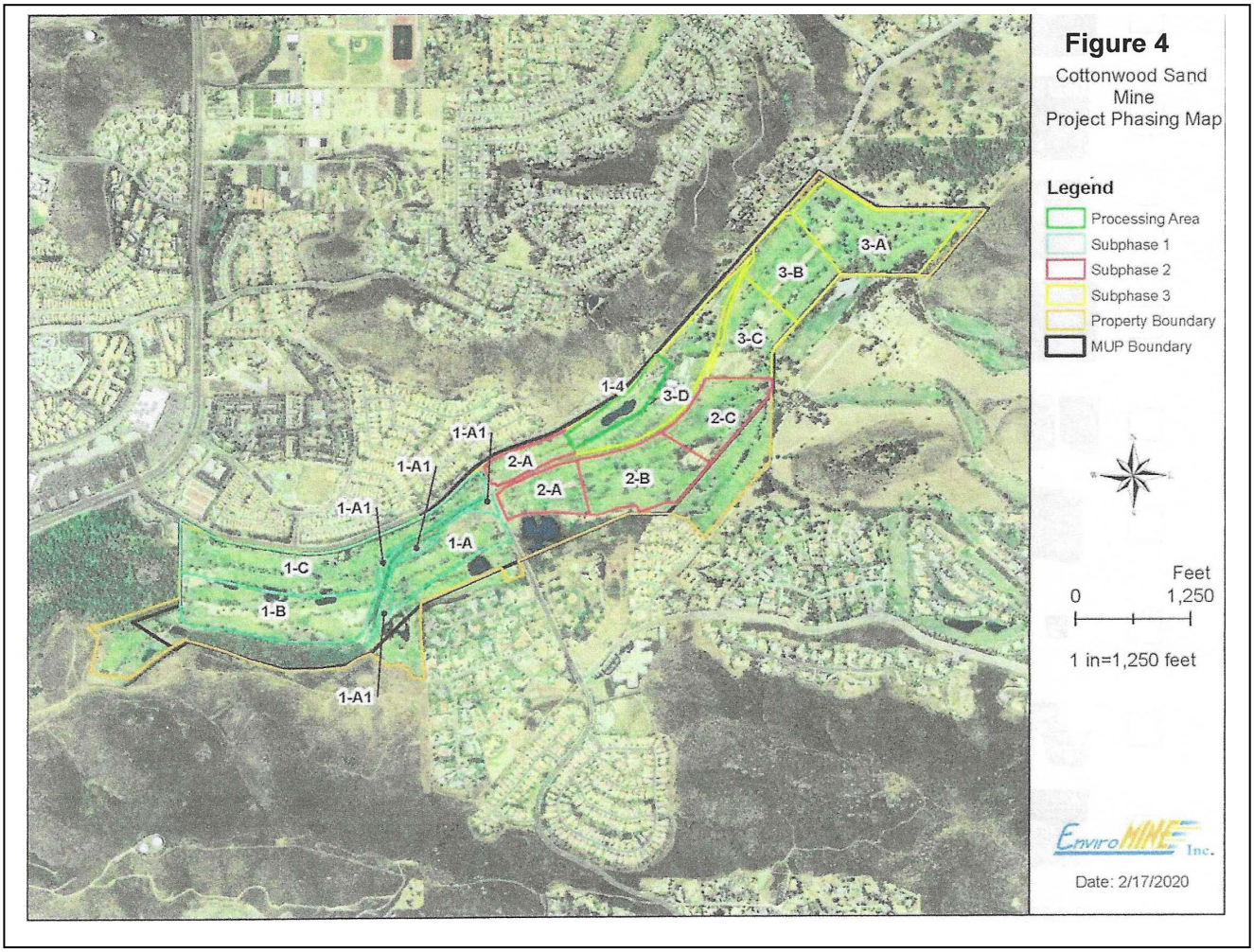


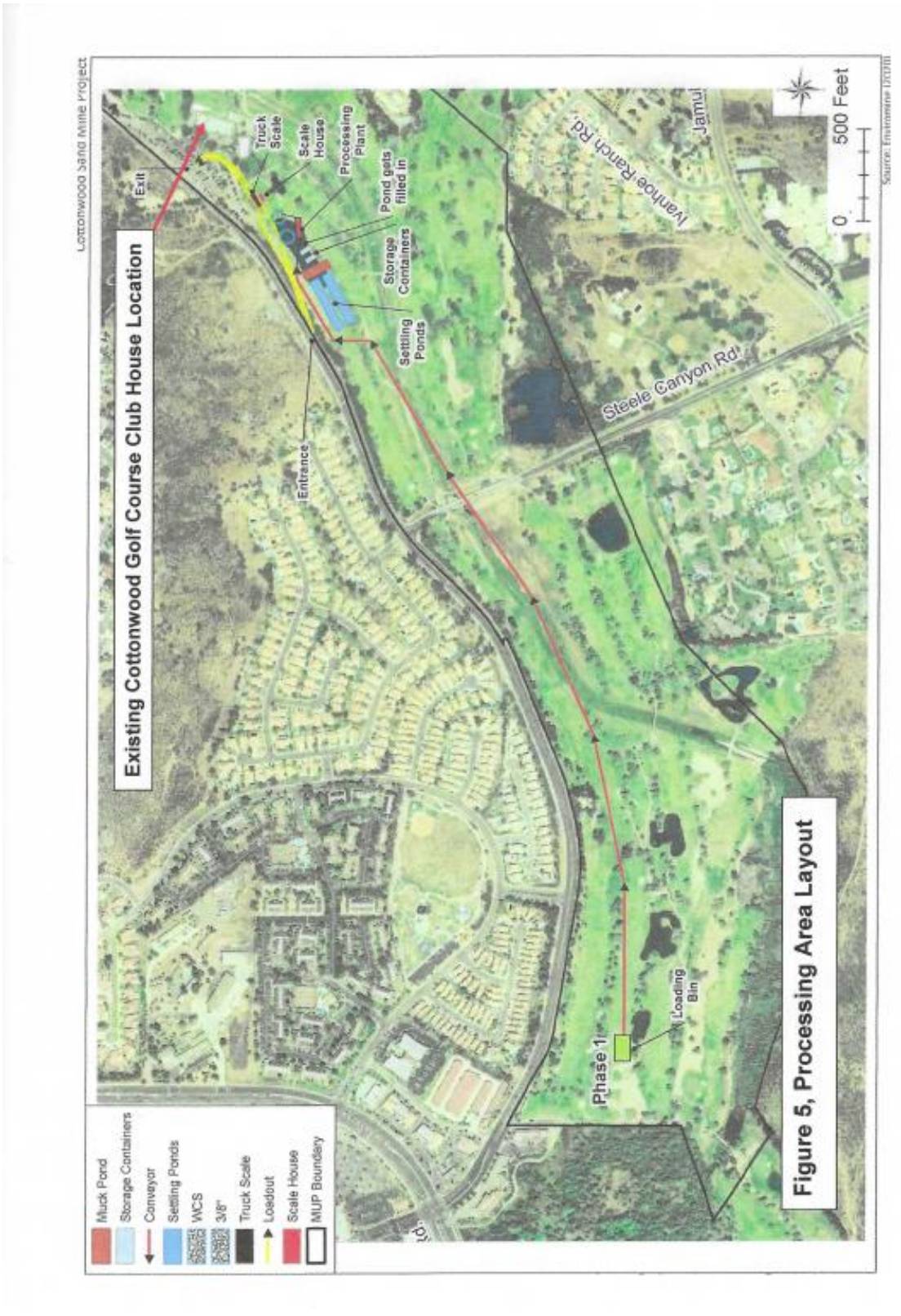
Figure 4: Extraction of alluvial sands and aggregate will begin in Phase 1, Sub Unit 1-A1 on the west end of the project area. As soon as the extraction work is completed restoration work will begin while the extraction work will have moved on to Unit 1-B. By the time the project has progressed on into Phase 2 most of the restoration work in Phase 1 will have been completed. Phase 4 will consist of removing the processing plant and all other operational equipment associated with this project and finishing the restoration work and revegetation work still remaining in Phase 3.

The following table provided by HELIX Environmental Planning displays the schedule for the removal of existing Cottonwood Golf Course and Club House Facilities and Structures by Phase, Site Restoration and removal of facilities associated with the Sand Mine Project over the 10 years the Project will be operational.

EXISTING AND PROPOSED FACILITIES AND STRUCTURES			
Use	**Area**	**Number of Structures**	**Removal Phase**
Golf Club Uses			
Clubhouse	11,590 square feet (sq. ft.)	1	Phase 3
Parking	2.35 acres	0	Phase 4
Maintenance	2.2 acres	3	Phase 3
Garages	3,440 sq. ft, 3,880 sq. ft.	2	Phase 3
Cart Storage	0.3 acre (13,068 sq. ft.)	1	Phase 3
Driving Range	Old fairway	8 tees	Phase 2
Lakes Course Restroom	190 sq. ft.	1	Phase 1
Ivanhoe Course Restroom	190 sq. ft.	1	Phase 3
Lakes - Cart Bridges	Varies	3	Phase 1
Ivanhoe - Cart Bridges	Varies	4	Phase 2 & 3[1]
Other Uses			
Wood House	400 sq. ft.	1	Phase 1
Proposed Mining Uses			
Processing Plant Area (includes plant, conveyor lines, and storage containers)	8.3 acres with ponds, loading and parking	1	Phase 4
Load out Area (includes scales, scale house, office kiosk)	1.9 of 8 acres	1	Phase 4
Mine Parking	0.15 of 8 acres	15 spaces	End of Project

[1] One bridge would be removed during Phase 2. The other three existing bridges within the Ivanhoe Course would be removed during Phase 3.

Project Facilities Map, Fig. 5



1.1.3 Environmental Setting

Site Visits: An initial site visit was conducted by Ron Woychak and Mel Johnson with Firewise 2000, INC. in December of 2018 when it was determined that a Letter Report describing the fire requirements would be all that would be needed for approval of this project by the SMCFPD Deputy Fire Marshal. In preparation for a now required full Fire Protection Plan a second site visit was conducted by Michael J. Rogers with Firewise 2000, LLC on April 1 of 2021.

Topography: The terrain is flat within and adjacent to the project. The north side of Willow Glen Drive opposite the 1.6 mile length of the golf course is a moderate to steep south facing slope consisting of open space and high density residential development.

Geology: There are no geological features that affect access or design of the project.

Flammable Vegetation: Phase 1 of the project area is an inactive golf course (see Figure. 1) and covered by native and non-native weeds and grasses. Native cottonwood trees follow the drainage. The most representative Fuel Model is a gr1 - Low Load Grass, for fire behavior planning purposes and will be considered as the climax vegetation throughout the interior and adjacent areas of the development. The area off-site to the west of the project is designated as a High Fire Hazard Severity Zone by the state and accepted by the San Miguel Consolidated Fire Protection District. This location is designated by the County as a biological reserve and is in a state of decline and has very high fuel loads of dead and dying vegetation. The area within the project boundary is designated as a moderate fire hazard severity zone (see Figure 3). Phases 2 and 3 are currently occupied by an active golf course which is irrigated and well maintained. Mining operations will remove all vegetation in the project area and restore disturbed areas with native grasses, shrubs and riparian vegetation. During the clearing phase all turf and top soil will be stored for later use in site reclamation.

Opposite the 1.6 mile length of existing golf course greens on the north side of Willow Glen Drive there is a moderate to steep south facing slope consisting of high density residential development compromised by highly flammable and inappropriate landscaping and attached wooden fencing immediately bordered by existing open space that supports coastal sage scrub, which burned on December 2, 2020 under strong NE Santa Ana winds (see photos 3, 4 and 5 on the following page).

Photos 3, 4 and 5: The Corte Madera subdivision north of Willow Glen Drive and Steele Canyon Road. Many of these homes are now compromised with attached wooden fencing and inappropriate, highly flammable landscaping (Photos by Mike Rogers)

Two residential neighborhoods bordering the south side of the 1.6 mile long golf course are also compromised by attached wooden fencing and highly flammable inappropriate landscaping that puts these homes at risk. The tract of homes off of Ivanhoe were built in 2010 and therefore would benefit from the numerous Fire Code upgrades that came out of the reviews of the 2003 Cedar Fire and 2007 Witch, Harris and Rice Fires that destroyed thousands of homes, except for the fact that these structures built in 2010 are compromised by the attached wooden privacy fencing and inappropriate, highly flammable landscaping next to these structures.

Photos 6 and 7: Code compliant Homes off of Ivanhoe Ranch Road that were built in 2010 are now very compromised by attached wooden fencing and inappropriate highly combustible landscaping (Photos by Mike Rogers).

Photos 8 and 9: The Estate Homes off of Heatherwood Drive and west of Steele Canon Road, which border the south side of the golf course are badly compromised with attached wooden fencing and inappropriate, highly combustible landscaping such as the Cypress and Juniper shrubs shown above (photos taken by Mike Rogers).

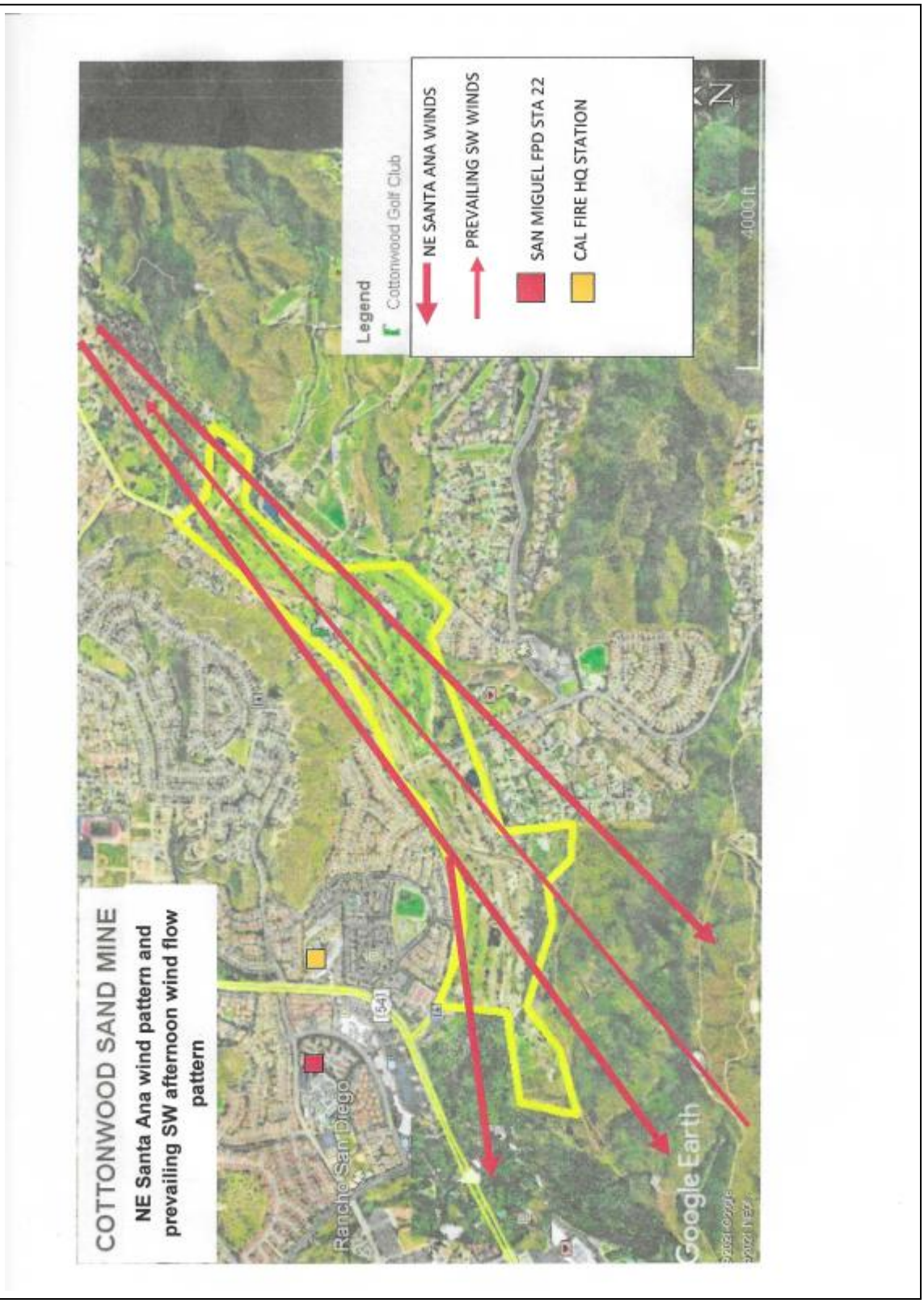
Approval or disapproval of the Cottonwood Sand Mine Project will have no bearing on the future of the surrounding neighborhoods that are out of Code Compliance. This is a compliance matter for the SMCFPD. Grant Funding is available from the Federal Emergency Management Agency (FEMA) via their Hazardous Mitigation Grant Program to help offset the cost of bringing high risk residential areas into compliance. The governmental level having jurisdiction can apply for these Grants.

Fuel loads: The fuel loading within the Project Footprint, with the exception of some badly deteriorating riparian areas, is negligible as most of the 280 acres were maintained as a highly functioning golf course. There is a pocket a little over an acre in size to the immediate east of the south end of the Steele Canyon Bridge that has deteriorated into a highly hazardous condition comprised of coastal sage scrub, tamarisk and dead, dying and down cottonwoods. Similar very high fire hazard conditions exist along the southern project boundary to the west of the south end of Steele Canyon Bridge.

Fire History for the Area: Although there is evidence that wildfires have occurred within the Sweetwater River drainage there is no record of the recent large wildfires the County of San Diego has experienced burning into the Sweetwater River drainage. The most recent wildfire occurred on December 2, 2020 at 10:30 PM under severe Santa Ana wind conditions. This fire started to the north of Willow Glen Drive and to the west of Hillsdale Road and was pushed by strong dry Santa Ana winds in a westerly direction within an open space surrounded by high density residential development. One home was destroyed and six others were heavily damaged and many linear feet of attached wood privacy fencing, backyard wood fencing and combustible landscaping were consumed in the 30 acre Willow Glen Wildfire.

It was noted in the reviews of the devastating 2007 Witch Creek Wildfire that this wildfire ignited by a downed power line during a high intensity Santa Ana wind event spread westerly via the vegetation choked riparian corridors into Ramona, Poway, Rancho Bernardo, the new 4S Ranch Development, Santa Luz and into Rancho Santa Fe. The Witch Creek Fire literally ran down these bone dry corridors and then spread laterally consuming almost 200,000 acres and destroying thousands of homes. These riparian corridors behaved as wicks that rapidly brought wildfire into developed residential areas and communities with devastating results. Without Code Compliant residential areas and fire resistant landscaping all of the homes and commercial areas along Jamacha Road that are within the Sweetwater River Corridor will someday experience this same fate via a Santa Ana wind driven ember laden wildfire. Again, whether the Cottonwood Sand Mine Project is approved or not will have no impact on the outcome of a wind driven wildfire other than continuing to provide a low to moderate Wildfire Hazard Severity Zone within the 280 acre foot print of the Project Area that could be used as a Safety Zone.

Typical Wind Patterns in the Sweetwater River Drainage, Fig. 6



Elevation: The elevation averages 360 feet from the west to the east end of the 1.6 mile long Project Site.

Climate: (general and seasonal) This area is typical of a Mediterranean type climate where warm wet winters and long, hot and very dry summer seasons frequently occur. Occasional, multi-year droughts cause significant plant die back. All of the native vegetation is adapted to this climate and to the intense wildfires they need for species regeneration.

Weather has a dramatic influence on wildland fire behavior. Fire Agencies throughout the western United States rely on a sophisticated system of Remote Automated Weather Stations (RAWS) to monitor weather conditions and aid in the forecasting of fire danger. The data acquired from RAWS is important in modeling wildland fire behavior.

Using data from the closest RAWS, the most critical wind pattern to the project area is an off-shore wind coming out of the north/northeast, typically referred to as a Santa Ana wind. Such wind conditions are usually associated with strong (> 60-MPH), hot, dry winds with very low (< 15%) relative humidity. Santa Ana winds originate over the dry interior desert lands inNevada and Utah and can occur anytime of the year; however, they generally occur in the late fall (September through November). This is also when non-irrigated vegetation is at its lowest moisture content and literally behaves just like dead fuel.

The typical prevailing summer time wind pattern is out of the south or southwest and normally is of a much lower velocity (5-15 MPH with occasional gusts to 30-MPH) and is associated with higher relative humidity readings (> 30% and frequently more than 60%) due to a moist air on-shore flow from the ocean.

All other (northwest, south, west) wind directions may be occasionally strong and gusty: however, they are generally associated with cooler moist air and have higher relative humidity (> 40%). They are considered a serious wildland fire weather condition when wind speeds reach > 20-MPH.

Public And Private Ownership Of Land In The Vicinity, Particularly Any Preserved Lands Adjacent Or Contiguous to The Site:

The west end of the Project Boundary abuts a set aside biological open space that will eventually be extended eastward upon completion of the restoration activities and revegetation associated with this project. This set aside in the Sweetwater River drainage extends to Jamacha Road and continues to parallel a short length of Jamacha Road which is bordered by dense, highly developed Commercial Areas and then continues the length of the Sweetwater River drainage in a south to southwesterly direction to Sweetwater Reservoir. This riparian area set aside is comprised of a high volume of dead, dying and down cottonwoods and sycamores among dense thickets of willow. As seen in the 2007 Witch Fire when these dense thickets dry out and are

subjected to bone dry Santa Ana wind flows, any ignition will readily lead to a wind driven conflagration with disastrous results. Therefore it is recommended that excavation, grading and loading conveyor belts be curtailed on days with down canyon winds at 25 mph and above. Loading finished product on trucks from enclosed storage bins would not be impacted.

Existing On and Off Site Land Uses:

On Site Land Uses:
The propose Project Area has functioned as a well managed golf course since 1962. Golf play on the (western) Lakes Course was suspended indefinitely in 2017 but continues on the (eastern) Ivanhoe Course. This operation will continue up until Project Approval and then cease. The existing facilities will then be removed and a three phase sand and gravel extraction operation will commence at the west end of the Project Area and over the next 10 years will progress to the east end. Site restoration will be continuous as the extraction process moves to the east end of the Project Area. Reclaimed areas would be restored to an end use of open space, recreational trails, and land suitable for uses allowed by the General Plan and existing zoning classifications. Specifically, nearly over half of the project site would be preserved in a biological open space easement to be held by the County

Off site Land Uses:
Off site land uses consist of the Willow Glen Drive transportation corridor, which borders the north side of this Project Area, high density residential development along the north and south sides of the Project Area and the Ivanhoe Ranch pastures and Steele Canyon Golf Club along the southeast and east sides of the Project Area. The west end is bordered by County Biological Preserve. There is a highly vulnerable Health Care Center located south of the Project Boundary and east of Steele Canyon Road. There are a number of portable buildings on the Health Care Center Property located to the west of a highly decadent stand of eucalyptus. There is an abundant amount of highly flammable branch and leaf litter on and around these buildings. In addition the skirting that keeps windblown debris from getting beneath the structures is in a state of disrepair.

Photos 10 and 11: Any wind driven, ember laden fire in the vicinity of these temporary buildings located in the back of the Adeona Health Care facility will be incinerated from below by flaming wind driven leaf litter, bark fragments and small branch wood (photos by Mike Rogers).

Chapter 2. GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

Would this project expose people or structures to a significant risk of loss, injury or death involving wildland fires including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

There is a possibility that in the extraction process and conveyor transport to the processing site rock strikes could cause an ignition; however, there will be a complete absence of any kind of combustible fuels that would support ignition and combustion. Also extraction and conveyor operations will be shut down when wind speeds reach 25 miles per hour to eliminate the possibility of the winds carrying a mechanically induced rock strike spark downwind to offsite combustible fuels. In addition all operational equipment with be equipped with Spark Arrestors.

All interior roads associated with the conduct of this mining operation will be designed to support a 75,000 lb Fire Truck and be a minimum of 24' in width should emergency access ever be needed.

A field inspection conducted on April 1, 2021 indicated that within the surrounding off site residential areas the home owners have overtime compromised the very specific fire resistant design features required in perpetuity by the County of San Diego as a condition of issuing Building Permits for these Residential Areas by planting inappropriate, highly flammable landscaping next to their "once fire resistant" homes and installing attached wooden fencing. Attached wooden fences were a primary source of structure loss two to three hours after the October 2003 wind driven Cedar Fire burned through the communities of Scripps Ranch and Tierrasanta and ultimately resulted in the loss of 14 lives, 2,232 homes, 566 other structures, 22 commercial properties and extensive damage to thousands of homes that were not totally destroyed. This loss of defensible/survivable space in these adjacent neighborhoods makes these homes highly vulnerable to loss from any ignition source, be it traffic accidents on Willow Glen Drive, plane crashes, up river trash burning or structure fires originating from within homes, arson etc. The chance of structure losses expands exponentially under Santa Ana wind conditions. This is not a burden for this proposed project to remedy, but rather a task for the SMCFPD to correct.

Would the project result in inadequate emergency services?

This project will actually reduce the need for Fire and Paramedic Responses when the golf course operation is stopped. No more heat strokes, heat exhaustion cases, heart attacks, golf cart collisions, patrons struck by errant golf balls, etc. All of the existing maintenance buildings and Clubhouse facilities associated with the Cottonwood Golf Course and Country Club operation will be removed and these sites restored to a natural condition.

The Cottonwood Sand Mining Project will have First Aid Kits readily available onsite for the cuts, scrapes and bruises associated with a construction project.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?

There is no need for any expansion of Emergency Fire or Medical Services as a result of the approval of this 10 year long project.

Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Yes, there are 8 operational wells located within the Project Footprint. No new or expanded entitlements or outside water resources will be needed. A fire hydrant will be installed in the vicinity of the temporary processing plant as a ready water source for any fires originating or threatening the processing facilities. The water supply for the hydrant must be capable of supporting a fire flow of 2,500 gallons per minute unless otherwise approved by the Fire Chief for the SMCFPD.

Chapter 3. ANTICIPATED FIRE BEHAVIOR IN THE VICINITY

The project area includes an active and an inactive golf course (see Figure. 2) and is currently vegetated with well maintained golf greens with random pockets of native and non-native weeds and grasses. Native cottonwood trees and sycamores follow the main Sweetwater River drainage. The most representative Fuel Model over this 280 acre property is a gr1 - Low Load Grass for fire behavior planning purposes and will be considered as the climax vegetation throughout the interior and adjacent areas of the Project Area. In each Phase of the project all existing vegetation will be removed and the top soil stored for later replacement in the restoration phase. Any fires within the project area, whether entering the Project Area from outside of the Project Boundary or accidently ignited within the Project Boundaries would typically be a smoldering, creeping ground or surface fire with minimal flame lengths in those areas that are not currently being excavated for mineral resources. Any wildfires ignited up river under Santa Ana wind conditions would have devastating consequences for the areas surrounding the Cottonwood Sand Mine Project but would burn around the Project Area due to the lack of combustible fuels. The 280 acre property could actually serve as a Safety Zone for any trapped evacuees fleeing the rapidly advancing wind driven fire front.

At Risk Off Site Residential Areas Under Worst Case Santa Ana Winds, Fig. 7

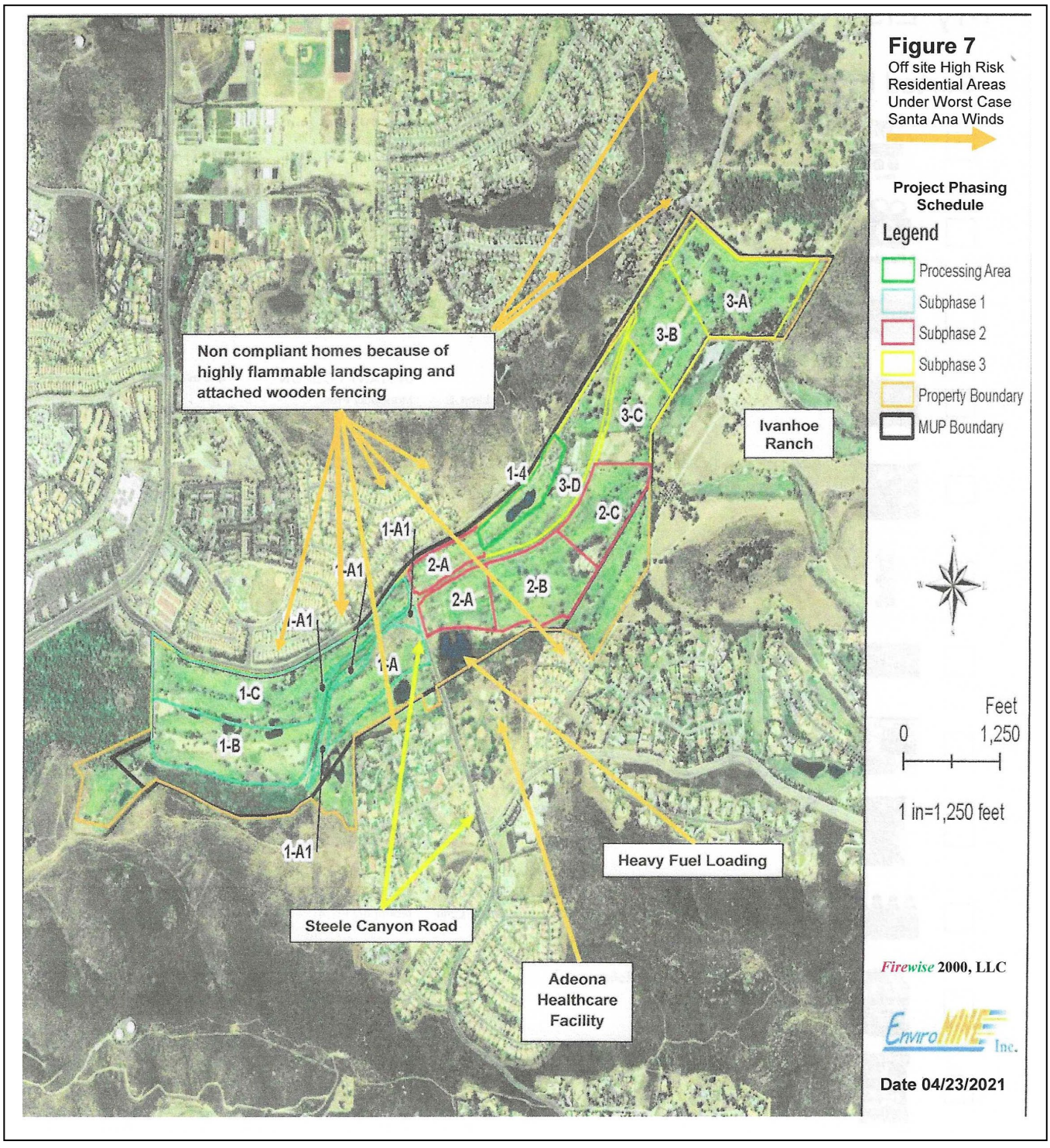


Figure 7: Off site residential areas at high risk of damage or loss from any ember laden wildfire originating up river under Santa Ana wind conditions due to the home owner installed attached wooden fencing and highly flammable landscaping. This is the responsibility of the home owners and of the Fire Agency Having Jurisdiction (FAHJ) and is outside the responsibility of this project.

Chapter 4. ANALYSIS OF PROJECT EFFECTS

4.1 Adequate Emergency Services

Existing Emergency Services will continue to be adequate in the vicinity of this Project Area. The Sand Mining activities will not create any additional burden on existing facilities or services.

4.2 Fire Access

Fire access will actually be improved. Willow Glen Drive would be widened to accommodate bike lanes on each side of Willow Glen Drive and to provide a right-turn lane for entering the Project's ingress driveway and a center lane for exiting the Project's egress driveway. Temporary access to the Project Area will be provided consisting of 24' wide travel ways capable of supporting a 75,000 pound fire engine. A paved ingress/egress 24' wide access way will be constructed off of Willow Glen Drive near the west end of the Project Area that is west of Steele Canyon Road. Paved ingress and egress will be constructed off of Willow Glen Drive to that part of the Project Area that lies to the east of Steel Canyon Road in the vicinity of the proposed location of the processing plant. All ingress/egress access ways will be a minimum of 24' in width. All Project Parking Areas will be paved during the life of the Project and removed upon completion of the Project in Phase 4.

4.3 Water

The Project Site is independent of water furnished from a Public or Private Water District. There are eight fully functioning and operational wells located throughout the Project Area that were used for golf course landscaping/maintenance. The pumped water will essentially be recycled (used and returned) within the Project Area. Existing onsite water will be used for application via a water truck for dust abatement purposes on the interior roads as they are used in support of extraction activities and at the processing plant for separating and washing aggregate and sand that will be marketed and for collecting wash fines that will be returned to the Project Area.

4.4 Ignition-Resistant Construction and Fire Protection Systems-Residential

Temporary portable buildings used for office and administrative purposes will be skirted to prevent the accumulation of windblown leaf litter and other combustible debris beneath these temporary facilities. Portable rest rooms will be brought in for use of employees involved in the operation of the processing plant. A portable rest room will also be provided at the active sand mining/excavation site. These facilities will be routinely pumped out by a contracted service provider for disposal off site. All construction equipment and any power generators will be maintained and equipped with Spark Arrestors. Fire extinguishers will be provided in all temporary structures and vehicles. A Fire Hydrant will be located in the vicinity of the Processing Plant capable of supporting a fire flow of 2,500 gallons per minute.

4.4.1 Emergency Responder Travel Times

See Figure 8 on the following page:

Emergency LRA, SRA Response Travel Times, Fig. 8

San Miguel Fire District Station 22
11501 Via Rancho San Diego, El Cajon, CA 92019

1. Head north on Via Rancho San Diego toward Brabham St — 0.1 mi
2. Turn right onto Brabham St — 0.1 mi
3. Turn right onto Jamacha Road
   Pass by Jack in the Box (on the left in 0.4 mi) — 0.4 mi
4. Use the left 2 lanes to turn left onto Willow Glen Dr — 1.2 mi
5. Turn right — 253 ft
6. Turn right — 82 ft
7. Turn left
   Destination will be on the right — 59 ft

Cottonwood Golf Club
3121 Willow Glen Dr, El Cajon, CA 92019

TRAVEL TIME CALCULATION

Travel Time Calculation for San Miguel Fire Protection District Engine #22, the closest Engine, using the NFPA Standard of 35 mph going Code 3 using the formula d (distance) = r (rate) X t (time) or (d=rXt) where d is 1.9 miles, r is 35 mph; solving for t we have t = (1.9miles /35 mph X 60 minutes/hr) or 3.257 minutes from Station 22 to the Cottonwood Golf Course Club House.

LRA is the Local Responsibility Area, which includes all of the SMCFPD Emergency Responders and SRA is the State Responsibility Area, which includes all of the CAL FIRE Emergency Responders. Travel times are calculated from the closest available station, regardless of jurisdiction.

4.5 Fire Fuel Assessment

4.5 Fire Fuel Assessment

The entire Cottonwood Sand Mine Project Area is in a low to moderate Fire Hazard Severity Zone due to its history as a well maintained operational golf course since 1962. Although there are random clumps of native coastal sage scrub vegetation and riparian species they are not continuous over the entirety of this 280 acre site. At the present any wildfire originating within the Project Boundaries or burning into the Project area from upriver under Santa Ana wind conditions or from down river under a prevailing afternoon Southwest Wind Condition would produce smoldering, very low, creeping surface fires within the Cottonwood Sand Mine Project Boundaries. In addition, over the course of the 10 year Project Life of extracting sand and aggregates for the San Diego Construction Industry 30 acre portions of the 214 acres being actively mined will be barren of any vegetation, let alone combustible vegetation. The existing site was modeled in BehavePlus; Version 6.0 as a GR1, low dry climate grass (lawn) and under extreme conditions could produce 2.2 foot flame lengths.

The real question will come 10 to 11 years down the road as the site is fully restored as a fully functioning riparian corridor. As pointed out earlier some of the largest and most damaging wildfires in the County of San Diego since 2000 were the direct result of these overgrown, unmanaged riparian corridors of dried out vegetation acting as wicks when Santa Ana wind driven wildfires entered these corridors, which rapidly carried fire into highly developed urban areas like Ramona, Poway, Escondido, Rancho Bernardo, 4 S Ranch and Rancho Santa Fe and Santa Luz. Under the right extreme fire weather conditions, any ignition getting into the overgrown tangle of riparian vegetation located between the west end of the Cottonwood Golf Course and Sweetwater Reservoir will have disastrous impacts on the developed Commercial Infrastructure that is immediately adjacent to this riparian corridor. If the former golf course area is allowed to eventually mirror the vegetation characteristics of the lower river this property will become a Very High Fire Hazard Severity Zone and will be a constant threat to all of the existing and future surrounding development.

4.6 Fire Behavior Modeling

BehavePlus Version 6.0 was used to model predicted wildland fire behavior within the Project footprint and in the area surrounding the Project footprint. The Project Area will continue to provide a very low to moderate Fire Hazard Severity Zone while the surrounding area remains in a High to Very High Fire Hazard Severity Zone. The area outside the Project footprint will continue to be a challenge for the SMCFPD personnel. Rates of Spread and Flame Lengths inside the Project Area are very low at 23.5 feet per minute and 2.2 feet in Flame Lengths while the Rates of Spread and Flame Lengths outside the Project Area for coastal sage scrub depicted by a Shrub Model (SH5) are projected to be 1,071.2 feet per minute and produce 52.9 foot Flame Lengths. These projections are borne out by the wildfire behavior exhibited by the December 2, 2020 Willow Fire that was detected at 10:30 PM under intense Santa Ana wind conditions. That fire spread rapidly, destroying one structure and damaging six

additional structures and consuming hundreds of feet of backyard wooden fencing before being contained at 30 acres.

4.7 Defensible Space and Vegetation Management

There will be no permanent housing on the Project Site. There are no permanently occupied structures. Temporary mobile offices and/or construction trailers are the only facilities planned and would only be occupied during operational hours, Monday through Friday, between the hours of 7:00 AM and 5:00 PM. Some of the existing structures left over from the golf course operation will not be removed until Phase 3 and have the potential to become an attractive nuisance. The Project will be required to remove all flammable annuals and perennials down to a 4" stubble height by mowing or weed whipping for 100 feet as measured horizontally from the exterior of each structure that is not immediately removed until a later operational Phase. Well spaced (20' between single shrubs or clumps of shrubs) fire resistant shrubs and trees (retained trees must have 20' of physical separation between the outer edges of the tree crowns) can remain provided fuel continuity is eliminated. If the golf course turf is still viable around these structures, the turf may remain provided it is irrigated and mowed. All portable buildings brought in for the operation of the Sand Mine Project will be skirted to prevent the accumulation of windblown leaf litter and debris beneath these temporary buildings. In addition 100 feet of defensible space will be required from all sides of each portable building. Defensible space can include paved parking lots, walk ways and graveled area that have been cleared down to mineral soil.

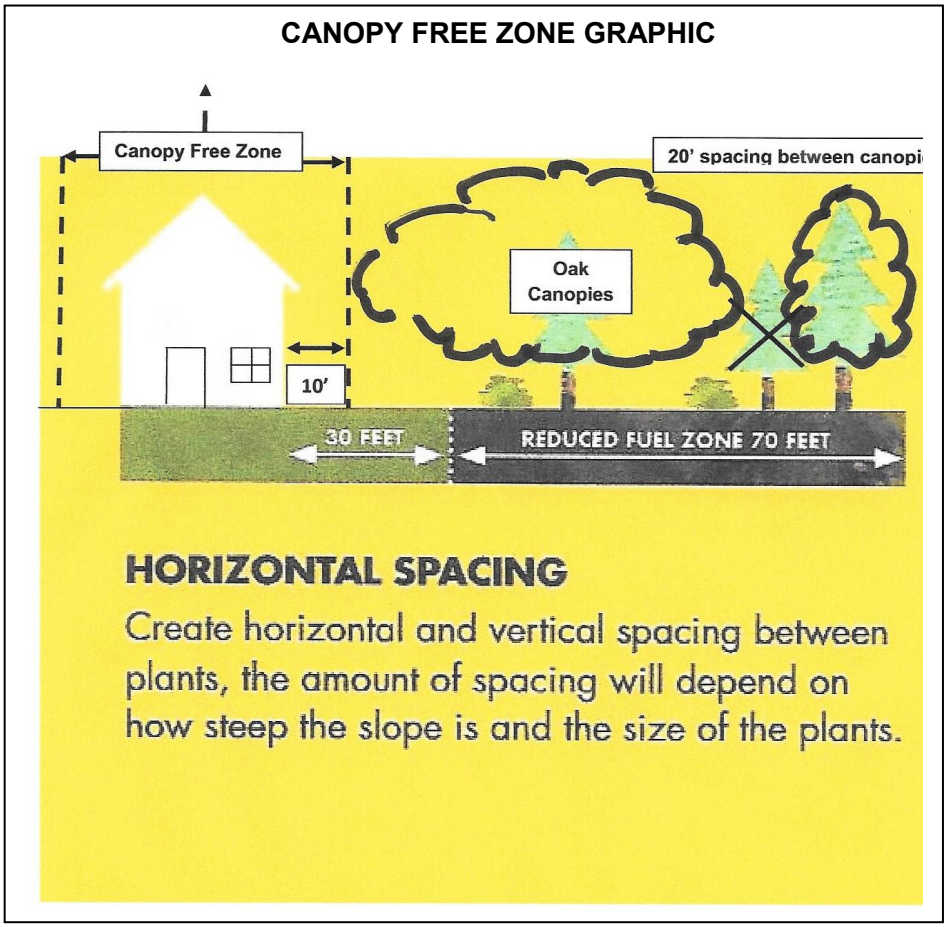
The Concept Landscape Plan for the Project site shows the presence of existing highly flammable and highly invasive non native species, specifically Brazilian Pepper Trees (*Schinus molle*) and Eucalyptus spp. that were planted for screening the golf course from travelers using Willow Glen Drive. Both of these spp. burn explosively and are highly invasive and directly border a major evacuation route in the event of a wildland fire emergency. These two specific spp. will be temporarily retained for screening purposes along the south side of Willow Glen Drive in Phases 1, 2 and 3 and will be removed and permanently eliminated from the Property in Phase 4. In the interim they must be maintained, i.e. 6' of physical vertical separation between lower limbs and the height of retained ground covers and all leaf litter, peeling bark and limb wood removed as needed from beneath these retained trees.

A list of all species proposed for planting in the restoration phase is provided in the Technical Appendices (see Appendix C).

Extraction activities will have a minimum 50 foot setback from Project Property Boundaries where the property line directly abuts offsite improvements. This does not preclude conducting required fuel management activities in these set back zones, for example maintaining a defensible fuel loading along the south side of Willow Glen Drive, along the north side of Ivanhoe Ranch Road and on both sides of Steele Canyon Road, which will serve as primary evacuation routes in an emergency, and behind the

homes that directly abut the south side of the golf course on either side of Steele Canon Road to Fuel Management Zone A standards, that is, removal of all flammable and invasive species (refer to the plant lists in the Technical Appendices D and E) and maintaining a low growing mix of non continuous fire resistant vegetation no taller than 12 inches in height. All annual and perennial grasses will be weed whipped down to a 4 inch stubble height by May 1 of each year. Trees retained or later planted in these road edge Fuel Management Zones must be pruned up a minimum of 6' from bare ground. If low growing non invasive, non flammable grasses and small shrubs are desired beneath retained or planted trees the trees must have a minimum of 6' of vertical separation between the lower limbs of the tree and the tops of the vegetation beneath the tree. Permitted vegetation beneath established trees must be kept at no more than 12 inches in height or lower. All trees overtopping current structures (clubhouse, maintenance buildings, restrooms) must be pruned or removed (see following graphic illustrating required canopy free zone). The outer edge of the 30' FMZ's will be marked with fence posts painted a high visibility color so that they are readily visible from each fence post location.

Required Canopy Free Zone Illustration, Figure 9



Required off site Defensible Space is the responsibility of each individual property owner with over site and enforcement by the SMCFPD.

4.8 Cumulative Impact Analysis

This project will actually produce a beneficial aspect as the hundreds of golfers each day will no longer be present resulting in less demand for medical emergency services such as heat exhaustion, heat strokes, heart attacks, golf ball strikes, golf cart collisions and overturns, insect attacks and the like. This proposed Project will not result in the placement of additional burdens and demands on existing County of San Diego services.

Chapter 5. MITIGATION MEASURES AND DESIGN CONSIDERATIONS

In no uncertain terms any wind driven ignition burning under extreme Santa Ana conditions poses a threat to lives and property. For the residential areas surrounding the Cottonwood Sand Mine Project the best defense in addition to Ready, Set, Go where Ready not only means having critical records ready to grab at a moments notice but also insuring homes and the adjacent landscaping surrounding 100' on all sides of the home are fire resistant and well maintained so the possibility exists that there will be a home to return to after the emergency situation is contained and evacuation orders are lifted. And where Set means paying attention when there is a wildfire that could impact the immediate area and having the escape vehicle packed, vehicle route planned to a safe destination out of harms way and where Go means leaving early so as not to be overrun by a wind driven conflagration when attempting to evacuate. Sadly most of the 14 people who perished in the 2003 Cedar Fire were last minute evacuees. With regard to the Sweetwater River drainage any wind driven wildfire being driven down the River drainage will have little to no impact on the 280 acre Cottonwood Sand Mining Project Area. Instead this property could very well serve as a refuge/Safety Zone for evacuees trapped along Willow Glen Drive. The BehavePlus Modeling data indicates that under extreme hot dry weather and north east Santa Ana wind conditions millions of windblown embers will proceed downwind well ahead of the main fire front. The wind and fuel conditions modeled indicate that every one of these million embers has a 78% probability of igniting new fires well ahead of the main fire front. Because of the increased fire danger brought by warm, very dry NE winds the Cottonwood Sand Mining Project will cease the excavation of sand and aggregate and raw material transport via a series of conveyor belts when wind speeds reach 25 miles per hour to eliminate the Project Area as a source of accidental ignitions. Wildfires entering the drainage in the vicinity of the Project Area will have devastating impacts on the residential areas surrounding the Project Area. This is not a responsibility of the Cottonwood Sand Mine Project, but is a big Prevention and Preparedness responsibility for the SMCFPD.

Chapter 6. CONCLUSION

Each of the potentially significant impacts described in Chapter 2 of this FPP have been addressed in Chapters 2, 3, 4 and 5 with the end result that each potential significant impact is not applicable on this project. In fact this project does the opposite by eliminating significant impacts. The Cottonwood Sand Mine proposed Project is in full accordance with the County of San Diego Guidelines for Determining Significance dated August 31, 2010, second revision and will not result in any new or increased demands placed on existing County resources.

Chapter 7. LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

David Sibbet, Fire Marshal, San Diego County Fire Authority;
Brent Napier, Deputy Fire Marshal, San Miguel Consolidated Fire Protection District;
Mel Johnson, Firewise 2000, LLC;
Andrea Bitterling, HELIX Environmental Planning;
Dennis Fransway, Enviro Mine Inc.

Chapter 8. REFERENCES

County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements
Standard Fire Behavior Fuel Models: A Comprehensive Set For Use with Rothermel's Surface Fire Spread Model
BehavePlus fire modeling system, version 5.0 Design and Features

TECHNICAL APPENDICES

- ☐ Exhibit 1: Completed Map of Required Fuel Management Zones within the Project Area
- ☐ Appendix A: Completed and signed Memorandum of Understanding
- ☐ Appendix B: Completed and signed form PDS-399F (Project Facility Availability Form for Fire)
- ☐ Appendix C: Completed List of Plants to be used in the Restoration Phase
- ☐ Appendix D: Completed List of Prohibited Highly Flammable Plants
- ☐ Appendix E: Completed List of Prohibited Highly Invasive Plants
- ☐ Appendix F: Completed Fire Behavior Model
- ☐ Appendix G: Completed Version 6.0 BehavePlus Runs

TECHNICAL APPENDICES

EXHIBIT “A”
FUEL TREATMENT LOCATION MAP
(2 SHEETS)

MEMORANDUM OF UNDERSTANDING

COMPLETED PDS FORM 399F

LIST OF PLANTS
TO BE PLANTED
IN THE RESTORATION PHASE

LIST OF HIGHLY FLAMMABLE PROHIBITED PLANTS

LIST OF PROHIBITED HIGHLY INVASIVE PLANTS

FIRE BEHAVIOR MODEL AND ANALYSIS

BEHAVEPLUS 6.0 OUTPUTS FOR A FALL SEASON NORTH EAST SANTA ANA WIND

BEHAVEPLUS 6.0 OUTPUTS FOR AN AFTERNOON PREVAILING WIND FROM THE SOUTH WEST

EXHIBIT “A” MAP HOLDER

FUEL TREATMENT LOCATIONMAP

(Two Sheets)

APPENDIX “A”

Signed 3 Party MOU

COUNTY OF SAN DIEGO

MEMORANDUM OF UNDERSTANDING
ENVIRONMENTAL IMPACT REPORT / TECHNICAL STUDY PREPARATION
AND HANDLING OF THE COTTONWOOD SAND MINE PROJECT

This AGREEMENT, hereinafter referred as the "MOU", is made and entered into by and between the **County of San Diego, ("COUNTY")**, **New West Investment Group, INC. ("APPLICANT")**, Michael J. Rogers **("CONSULTANT")**, and *Firewise 2000, LLC*. **("FIRM" which employs the Consultant)** for the purpose of establishing rights and responsibilities of all undersigned parties hereto in relation to the preparation and handling of a TECHNICAL STUDY or ENVIRONMENTAL IMPACT REPORT ("EIR") for the above-referenced project ("PROJECT").

WHEREAS, the COUNTY is the Lead Agency with the land use and planning jurisdiction in the above-referenced PROJECT area of unincorporated San Diego County, as it pertains to the California Environmental Quality Act ("CEQA"); and

WHEREAS, the APPLICANT has submitted an application for development of the above-referenced PROJECT; and

WHEREAS, the COUNTY has determined that the PROJECT necessitates the preparation of a TECHNICAL STUDY / EIR; and

WHEREAS, the CONSULTANT is a professional environmental consultant included on the County official CEQA Consultant List for the applicable Subject Area (All CONSULTANT rights and responsibilities within this MOU extend to the FIRM, which employs the consultant (if applicable), and any consultant hired to assist with the preparation of the TECHNICAL STUDY / EIR); and

WHEREAS, the APPLICANT, CONSULTANT, and COUNTY understand and agree that CONSULTANT has the primary responsibility to ensure that the TECHNICAL STUDY / EIR is adequate and COUNTY review is for the benefit of the public generally and not for the benefit of the APPLICANT or CONSULTANT; and

WHEREAS, the APPLICANT, CONSULTANT, and COUNTY wish to define their relationships and areas of responsibility in the preparation and management of a TECHNICAL STUDY / EIR and the CEQA process.

NOW, THEREFORE, in view of the foregoing, and in consideration of the mutual covenants and agreements contained herein, the APPLICANT, CONSULTANT, and COUNTY do hereby agree as follows:

I. NECESSITY OF A TECHNICAL STUDY OR EIR

The COUNTY has determined that the PROJECT necessitates the preparation of a TECHNICAL STUDY / EIR.

II. SUBMISSION OF DOCUMENTS AND DISCLOSURE OF INFORMATION

The APPLICANT and CONSULTANT shall submit all environmental documents under this MOU pursuant to the terms and conditions set forth herein and in accordance with the "County of San Diego CEQA Guidelines."

This MOU requires the disclosure of certain information by the APPLICANT and CONSULTANT to the COUNTY. Disclosure may initially be through verbal communication with the COUNTY Project Manager. The COUNTY maintains the right, upon reasonable notice to the APPLICANT and CONSULTANT, to: 1) review draft documents and relevant correspondence; 2) require that it be copied on correspondence subject to the disclosure requirements; and/or 3) require a written or emailed (instead of verbal) report of disclosures.

III. CERTIFICATIONS

By executing this MOU:

A. The APPLICANT certifies that it has an ongoing obligation and commitment to the COUNTY to disclose all information that is relevant to the environmental consequences of the PROJECT and the preparation of the TECHNICAL STUDY / EIR, and further certifies that no relevant information has been or will be omitted or withheld from the COUNTY, the CONSULTANT, or any sub-consultant(s).

B. The CONSULTANT certifies:

That it is included on the COUNTY official CEQA Consultant List for the applicable Subject Area (or the COUNTY official Environmental Consultants List if the list has not been reestablished pursuant to the February 28, 2006 COUNTY CEQA Guidelines) and it is prepared to undertake all necessary technical and analytical work required in conjunction with the TECHNICAL STUDY / EIR, either directly, under the CONSULTANT's direct supervision and management, and/or through the use of any sub-consultant(s).

IV. APPLICANT'S RIGHTS AND RESPONSIBILITIES

A. Subject to the terms and conditions of this MOU and County CEQA Guidelines, the COUNTY agrees to allow the APPLICANT to select and retain the undersigned CONSULTANT for preparation of the TECHNICAL STUDY / EIR. For this purpose, the APPLICANT shall enter into a direct agreement with the CONSULTANT, and such agreement shall govern the entire scope of their arrangement. Such agreement shall comply with all terms and conditions set forth in this MOU, and no term therein shall be inconsistent with any provision herein.

B. The APPLICANT shall be responsible for one hundred-percent (100%) of all costs associated with the CONSULTANT's work, including but not limited to, any sub-consultant(s) costs, TECHNICAL STUDY / EIR preparation and document circulation costs incurred by the APPLICANT or CONSULTANT, and all costs associated with participation in scoping meetings or community outreach meetings, as necessary. The APPLICANT shall also be responsible for one hundred-percent (100%) of all costs incurred by the COUNTY related to its independent review of the TECHNICAL STUDY / EIR.

C. The APPLICANT shall ensure that any consultant(s) hired in conjunction with the preparation of the TECHNICAL STUDY / EIR and related to the PROJECT shall comply with the COUNTY CEQA Guidelines and all relevant terms and conditions set forth in this MOU.

D. The APPLICANT shall not enter into any form of confidentiality agreement with the CONSULTANT or any other consultant hired to assist with the preparation of the TECHNICAL STUDY / EIR, which prohibits disclosure of information related to substantive land use or environmental issues to the COUNTY. This provision may be waived or modified at the discretion of the COUNTY, if such an agreement would reveal a trade secret as defined by Government Code Section 6254.7.

V. CONSULTANT'S RIGHTS AND RESPONSIBILITIES

A. The CONSULTANT shall have an ongoing obligation and commitment to the COUNTY to disclose all information within its Subject Area that is relevant to the environmental consequences of the PROJECT and the preparation of the TECHNICAL

STUDIES / EIR. The CONSULTANT shall not omit or withhold any relevant information from the COUNTY at the request of the APPLICANT or for any other reason. The CONSULTANT shall require any CONSULTANT-hired sub-consultant(s) to certify these same obligations and commitments to the COUNTY as a condition of their contract or by signing a copy of this MOU and shall provide a copy of such certification to the COUNTY within ten (10) days of retaining such sub-consultant(s).

B. The CONSULTANT shall enter into a direct agreement with the APPLICANT for purposes of preparing the TECHNICAL STUDY/ EIR, and such agreement shall govern the entire scope of their arrangement. Such agreement shall comply with all terms and conditions set forth in this MOU, and no term therein shall be inconsistent with any provision herein.

C. The CONSULTANT's responsibility is to provide a complete and accurate TECHNICAL STUDY / EIR. The CONSULTANT's accountability under this MOU shall be solely to the COUNTY, and not to the APPLICANT or to any other person or entity.

D. The CONSULTANT shall ensure that any sub-consultant(s) hired by the CONSULTANT in conjunction with the preparation of the TECHNICAL STUDY / EIR shall comply with the COUNTY CEQA Guidelines and all relevant terms and conditions set forth in this MOU.

E. The CONSULTANT shall draft the TECHNICAL STUDY / EIR for the PROJECT in accordance with CEQA, State CEQA Guidelines, COUNTY CEQA Guidelines, relevant COUNTY technical study and EIR content and report formats, and with the directions and specifications set forth by the COUNTY.

F. The CONSULTANT shall verify and ensure that all TECHNICAL STUDY / EIR documents prepared under its contract utilize accurate and verifiable field techniques and professional work performance standards, and are in conformance with all applicable CEQA requirements, and all applicable County, State, and Federal rules, regulations and laws.

G. The CONSULTANT shall verify and ensure that all TECHNICAL STUDY / EIR documents prepared under its contract, including the draft EIR, final EIR, TECHNICAL STUDIES, and response to comments (as applicable), represent its complete and independent professional judgment and provide an analysis of

the specific environmental issues, setting, potential impacts, and mitigation measures associated with the PROJECT. In addition the CONSULTANT shall verify and ensure that all TECHNICAL STUDY / EIR documents prepared under its contract include all changes provided by COUNTY and comply with all direction given by COUNTY irrespective of direction, changes or comments provided by the APPLICANT. Notwithstanding the above responsibility, all CEQA documents shall reflect the independent judgment of the COUNTY. The TECHNICAL STUDY / EIR shall be signed as true and accurate by CONSULTANT.

H. The CONSULTANT shall disclose any revisions made to the draft TECHNICAL STUDY / EIR and specifically identify any revisions made at the request of the applicant. Unless waived by the COUNTY, all revisions to CEQA documents prior to submittal for public review shall be shown in strikeout/underline.

I. The CONSULTANT shall maintain a record of communications with the APPLICANT related to substantive land use or environmental issues, and such record shall be submitted to the COUNTY for review upon request.

J. The COUNTY shall retain the right to attend, or participate in, meetings (including conference calls) between the APPLICANT and the CONSULTANT when such meetings include discussion of substantive land use or environmental issues and has the right to request such meetings. The CONSULTANT shall provide the COUNTY with reasonable notice of all such meetings at the earliest time possible and no less than one business day. Upon the request of the COUNTY, the CONSULTANT shall disclose all substantive land use and environmental issues discussed at meetings the COUNTY does not attend. At the discretion of the COUNTY, notice of meetings may be waived in lieu of periodic summary reports disclosing issues discussed.

K. The CONSULTANT may not be a subsidiary or division of the APPLICANT or have an ownership interest in the proposed PROJECT or any other property or development in which the APPLICANT has a financial interest. Additionally, the CONSULTANT shall not accept performance incentives associated with a certain density, intensity, or configuration of development. This prohibition does not preclude performance incentives related to project schedules.

L. The CONSULTANT shall not enter into any form of confidentiality agreement with the APPLICANT or any sub- consultant(s), which prohibits disclosure of information related to substantive land use or environmental issues to the COUNTY. This provision may be waived or modified at the discretion of the COUNTY, if such an agreement would reveal a trade secret a defined by Government Code Section 6254.7.

M. The CONSULTANT shall always disclose to the COUNTY Project Manager all project related emails and written correspondence between the APPLICANT and CONSULTANT regarding substantive land use or environmental issues, unless waived by the COUNTY.

N. Upon request from the COUNTY, the CONSULTANT shall submit all field notes, resource documents and supplemental technical studies used in the preparation of the TECHNICAL STUDY / EIR to the COUNTY.

O. Upon request from the COUNTY, the CONSULTANT shall allow the COUNTY to view its contract with the APPLICANT. The COUNTY maintains the right to require submittal of the contract to the COUNTY. Any cost estimates or hourly rates may be blacked out or omitted.

VI. COUNTY'S RIGHTS AND RESPONSIBILITIES

A. In accordance with the Public Resources Code Section 21082.1, it is the responsibility of the COUNTY to provide its independent review and analysis of all documentation for the PROJECT prepared and submitted by the CONSULTANT, and sub- consultant(s), and the APPLICANT. This independent review is undertaken for the benefit of the general public and is not intended to relieve the consultant of any of its responsibilities.

B. The COUNTY shall be responsible for evaluating the extent and detail of topic area discussions in the TECHNICAL STUDY / EIR. The COUNTY shall also be responsible for scheduling and providing the public notice for the public meetings and hearings related to the PROJECT, and for distributing the draft and final EIR or other applicable CEQA document.

C. The COUNTY shall have the right to reasonable notice and to attend, or participate in, any and all meetings or conference calls as

described in paragraph V.J of this MOU, and has the right to request such meetings and be informed of the subject matter.

D. The COUNTY shall have the right to request copies of any and all correspondence, meeting schedules, minutes, and draft documents generated by the CONSULTANT, any sub-consultant(s) and the APPLICANT, in connection with the preparation of the TECHNICAL STUDY / EIR. Upon request by the COUNTY, the CONSULTANT shall make available to the COUNTY any and all field notes, resource documents, and supplemental technical studies used in the preparation of the TECHNICAL STUDY / EIR.

E. The COUNTY shall be responsible for reviewing the content of the draft TECHNICAL STUDY / EIR and providing clear and consistent comments on the scope and adequacy of the document in a timely manner. The COUNTY shall strive to provide thorough reviews and comments on initial reviews to avoid raising new issues that should have been known as the project progresses. The COUNTY shall always inform the APPLICANT of comments requiring additional information or substantive changes to the TECHNICAL STUDY / EIR.

F. At the request of the APPLICANT or CONSULTANT and after completion of the PROJECT, the COUNTY shall provide an evaluation of the CONSULTANT's performance on the project.

VII. EXPIRATION

This MOU shall expire upon any of the following:

A. The PROJECT and the TECHNICAL STUDY / EIR becomes final by decision of the authorized County decision-maker, all appeal timelines have expired, and all legal challenges associated with the PROJECT and the TECHNICAL STUDY / EIR have been finally adjudicated; or

B. The PROJECT is withdrawn or denied and all appeal timelines have expired; or

C. Written notice from the COUNTY, APPLICANT, or CONSULTANT to the other parties to this agreement terminating the MOU.

Notwithstanding expiration of the MOU, all information obtained prior to said expiration shall be disclosed to the COUNTY pursuant to the MOU disclosure requirements. Expiration of the MOU does not relieve the

parties of their responsibilities under the MOU for activities that took place prior to the expiration date.

IN WITNESS WHEREOF, the COUNTY, the APPLICANT and the CONSULTANT/FIRM have caused this agreement to be executed. Further, the APPLICANT and CONSULTANT, under penalty of perjury, agree that all documents submitted to the COUNTY are in conformance with all requirements set forth in this MOU.

ATTESTED:

COUNTY OF SAN DIEGO

Kathleen Flannery
Acting Director of Planning

Dated: _____

APPLICANT

Warren R. Coalson
Authorized Agent

New West Investment Group, INC.
Company Name

Dated: _____

CONSULTANT

S/ *Michael J. Rogers*
Michael J Rogers
Consultant

Dated: 04/06/2021

FIRM

Firewise 2000, LLC.
Firm Name

Mel Johnson
Principal of Firm

Dated: 04/06/2021

SUB-CONSULTANT

Fire Management Consulting
Sub-Consultant Firm Name

Michael J. Rogers **S/** *Michael J. Rogers*
Principal of Firm
Dated: 04/06/2021

Project # PDS2018-MUP-18-023, PDS2018-RP-001; Subject Area: Fire Protection Planning
Environmental Log # - PDS2018-ER-18-19-007

parties of their responsibilities under the MOU for activities that took place prior to the expiration date.

IN WITNESS WHEREOF, the COUNTY, the APPLICANT and the CONSULTANT/FIRM have caused this agreement to be executed. Further, the APPLICANT and CONSULTANT, under penalty of perjury, agree that all documents submitted to the COUNTY are in conformance with all requirements set forth in this MOU.

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Company Name

Dated: 04/06/2021

CONSULTANT

S/ Michael J. Rogers
Michael J Rogers
Consultant

Dated: 04/06/2021

FIRM

Firewise 2000, LLC.
Firm Name

Mel Johnson
Principal of Firm

Dated: 04/06/2021

SUB-CONSULTANT

Fire Management Consulting
Sub-Consultant Firm Name

Michael J. Rogers *S/ Michael J. Rogers*
Principal of Firm
Dated: 04/06/2021

APPENDIX "B"

County of San Diego, Planning & Development Services
PROJECT FACILITY AVAILABILITY - FIRE
ZONING DIVISION

Please type or use pen

New West Investment Group, Inc. (Greg Brown) 1-619-441-1463
Owner's Name — Phone

565 N. Magnolia Avenue
Owner's Mailing Address — Street

El Cajon — CA — 92020
City — State — Zip

ORG_____ **F**
ACCT_____
ACT_____
TASK_____
DATE_____ AMT $_____
DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A.
- ☐ Major Subdivision (TM)
- ☐ Minor Subdivision (TPM)
- ☐ Boundary Adjustment
- ☐ Rezone (Reclassification) from_____ to_____ zone.
- ☒ Major Use Permit (MUP), purpose: Surface Mine, Reclamation
- ☐ Time Extension...Case No._____
- ☐ Expired Map...Case No._____
- ☐ Other_____
- ☐ Specific Plan or Specific Plan Amendment
- ☐ Certificate of Compliance:_____

B.
- ☐ Residential . . . . . Total number of dwelling units_____
- ☐ Commercial . . . . . Gross floor area_____
- ☐ Industrial . . . . . Gross floor area_____
- ☐ Other . . . . . Gross floor area_____

C. Total Project acreage 280 Total lots NA Smallest proposed lot_____

Assessor's Parcel Number(s)
(Add extra if necessary)

506-021-1900	506-020-5200
518-012-1300	518-012-1400
518-030-050	518-030-0600
518-030-0700	all attached

Thomas Guide. Page 1272 Grid 5B,5C&4D

3121 Willow Glen Dr. El Cajon, CA
Project address — Street

Valle De Oro — 92019
Community Planning Area/Subregion — Zip

OWNER/APPLICANT AGREES TO COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: _____ Date: 6/3/2019

Address: 565 N. Magnolia Avenue, El Cajon, CA 92020 Phone: 1-619-441-1463

(On completion of above, present to the district that provides fire protection to complete Section 2 and 3 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: SAN MIGUEL FIRE PROTECTION DISTRICT

Indicate the location and distance of the primary fire station that will serve the proposed project:
STA. 22 - 11301 VIA RANCHO SAN DIEGO, EL CAJON 92019 1.9 MILES

A. ☒ Project is in the District and eligible for service.
- ☐ Project is not in the District but is within its Sphere of Influence boundary, owner must apply for annexation.
- ☐ Project is not in the District and not within its Sphere of Influence boundary.
- ☐ Project is not located entirely within the District and a potential boundary issue exists with the _____ District.

B. ☐ Based on the capacity and capability of the District's existing and planned facilities, fire protection facilities are currently adequate or will be adequate to serve the proposed project. The expected emergency travel time to the proposed project is 5 minutes.
- ☐ Fire protection facilities are not expected to be adequate to serve the proposed development within the next five years.

C. ☐ District conditions are attached. Number of sheets attached:_____
- ☒ District will submit conditions at a later date.

SECTION 3. FUELBREAK REQUIREMENTS

Note: The fuelbreak requirements prescribed by the fire district for the proposed project do not authorize any clearing prior to project approval by Planning & Development Services.

☒ Within the proposed project 100 feet of clearing will be required around all structures.
☐ The proposed project is located in a hazardous wildland fire area, and additional fuelbreak requirements may apply. Environmental mitigation requirements should be coordinated with the fire district to ensure that these requirements will not pose fire hazards.

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Natalie Grimes — NATALIE GRIMES, DEPUTY FIRE MARSHAL — 619 660-5357 — 6-7-19
Authorized Signature — *Print Name and Title* — *Phone* — *Date*

On completion of Section 2 and 3 by the District, applicant is to submit this form with application to:
Planning & Development Services – Zoning Counter, 5510 Overland Ave, Suite 110, San Diego, CA 92123

PDS-399F (Rev. 09/21/2012)

APPENDIX "B"

Table of Tax Assessor's Parcel Numbers to accompany PDS Form 399F

Table 1

ASSESSOR'S PARCELS

Assessor's Parcel Number	Total Acres	Owner	Zoning[1]	Land Use Designation[2]
506-021-1900	8.20	Cottonwood Cajon ES, LLC	S88	OS-R
506-020-5200	4.01	Cottonwood Cajon ES, LLC	S80	OS-R
518-012-1300	2.97	Cottonwood Cajon ES, LLC	S90	OS-R
518-012-1400	46.61	Cottonwood Cajon ES, LLC	S90	OS-R
518-030-0500	2.30	Cottonwood Cajon ES, LLC	S90	OS-R
518-030-0600	5.58	Cottonwood Cajon ES, LLC	S90	OS-R
518-030-0700	2.59	Cottonwood Cajon ES, LLC	S90	OS-R
518-030-0800	0.69	Cottonwood Cajon ES, LLC	S90	OS-R
518-030-1000	7.16	Cottonwood Cajon ES, LLC	S90	OS-R
518-030-1200	6.88	Cottonwood Cajon ES, LLC	S90	OS-R
518-030-1300	10.20	Cottonwood Cajon ES, LLC	S90	OS-R
518-030-1500	4.04	Cottonwood Cajon ES, LLC	S90	OS-R
518-030-2100	56.71	Cottonwood Cajon ES, LLC	S90	OS-R
518-030-2200	19.43	Cottonwood Cajon ES, LLC	S90	OS-R
519-010-1500	33.72	Cottonwood Cajon ES, LLC	S90	OS-R
519-010-1700	14.59	Cottonwood Cajon ES, LLC	S90	OS-R
519-010-2000	19.22	Cottonwood Cajon ES, LLC	S90	OS-R
519-010-2100	1.10	Cottonwood Cajon ES, LLC	S90	OS-R
519-010-3300	1.76	Cottonwood Cajon ES, LLC	S90	OS-R
519-010-3400	7.17	Cottonwood Cajon ES, LLC	S90	OS-R
519-010-3700	1.06	Cottonwood Cajon ES, LLC	S90	OS-R
519-011-0300	23.80	Cottonwood Cajon ES, LLC	S88	OS-R
Totals:	**279.79**			

APPENDIX C: PLANT SPECIES TO BE UTILIZED IN THE PROJECT RESTORATION PLAN

Table 1-5
RIPARIAN SCRUB PLANT PALETTE

Container Plantings[1]

Species	Common Name	Spacing on Center (feet)	Grouping Size	Number Per Acre
Artemisia dracunculus	tarragon	5	5	100
Baccharis salicifolia	mule fat	6	10	230
Croton californicus	California croton	5	5	100
Distichlis spicata	saltgrass	10	3	150
Iva hayesiana	San Diego marsh elder	5	5	120
Platanus racemosa	western sycamore	15	3	30
Populus fremonti ssp. *fremonti*	western cottonwood	15	3	30
Salix exigua	sand bar willow	8	3	120
Salix gooddingii	black willow	12	5	100
Salix laevigata	red willow	12	5	100
Salix lasiolepis	arroyo willow	12	5	100
Sambucus nigra	Mexican elderberry	10	3	50
			Total	**1,230**

Seed Mixture[1]

Scientific Name	Common Name	% Purity/ Germination	Pounds Per Acre
Ambrosia psilostachya	western ragweed	45/45	4
Anemopsis californica	yerba mansa	55/80	1
Artemisia douglasiana	Douglas mugwort	15/40	3
Artemisia palmeri	Palmer's sagebrush	20/50	2
Baccharis salicifolia	mule fat	10/20	3
Baccharis sarothroides	broom baccharis	7/42	1
Bolboschoenus maritimus	bulrush	90/60	1
Croton californicus	California croton	90/40	1
Eleocharis macrostachys	pale spike-rush	95/60	1
Isocoma menziesii	goldenbush	18/40	1
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	95/80	0.5

Table 1-5 (cont.)
RIPARIAN SCRUB PLANT PALETTE

Seed Mixture[1]

Scientific Name	Common Name	% Purity/ Germination	Pounds Per Acre
Juncus effusus var. *pacificus*	Pacific rush	95/60	0.5
Oenothera elata ssp. *hookeri*	evening primrose	98/84	0.5
Pluchea odorata	salt marsh fleabane	30/40	2
		Total	**22.0**

[1] The quantities and amount of container stock and seed to be order would be determined following reclamation of each phase/subphase based on the exact of area disturbed as part of mining activities. Substitutions require approval of the Restoration Specialist.

* No less than 22 lbs. per acre of seed shall be installed.

Table 1-6
DIEGAN COASTAL SAGE SCRUB PLANT PALETTE

Container Plantings[1]				
Species	**Common Name**	**Spacing on Center (feet)**	**Grouping Size**	**Number Per Acre**
Artemisia californica	California sagebrush	5	25	250
Bebia juncea	rough sweetbush	10	3	50
Encelia californica	California encelia	5	20	100
Eriogonum fasciculatum	California buckwheat	5	25	250
Hazardia squarrosa	saw-toothed goldenbush	5	10	100
Hesperoyucca whipplei	chaparral yucca	3	3	50
Heteromeles arbutfolia	toyon	10	3	150
Mimulus aurantiacus	bush monkey flower	5	10	100
Rhus integrifolia	lemonadeberry	10	5	50
Salvia mellifera	black sage	5	10	250
			Total	**1,350**

Seed Mixture[1]			
Scientific Name	**Common Name**	**% Purity/ Germination**	**Pounds Per Acre**
Acmispon glaber	deerweed	95/80	0.5
Amsinkia intermedia	common fiddleneck	45/65	1
Artemisia californica	California sagebrush	30/60	4
Deinandra fasciculata	fascicled tarplant	25/65	3
Encelia californica	California encelia	30/45	3
Eriogonum fasciculatum	California buckwheat	50/20	5
Eriophyllum confertiflorum	golden-yarrow	N/A	2
Eschscholzia californica	California poppy	98/80	2
Lupinus bicolor	miniature lupine	98/85	1
Phacelia parryi	Parry's phacelia	95/80	1
Salvia apiana	white sage	88/30	3

Table 1-6 (cont.)
DIEGAN COASTAL SAGE SCRUB PLANT PALETTE

Seed Mixture[1]			
Scientific Name	**Common Name**	**% Purity/ Germination**	**Pounds Per Acre**
Stipa lepida, deawned	foothill needlegrass	90/71	3
Stipa pulchra, deawned	purple needlegrass	90/75	3
		Total	**32.5***

[1] The quantities and amount of container stock and seed to be order would be determined following reclamation of each phase/subphase based on the exact of area disturbed as part of mining activities. Substitutions require approval of the Restoration Specialist.

* No less than 30 lbs. per acre of seed shall be installed.

Table 1-7
EROSION CONTROL SEED MIX

Species	**Common Name**	**Pounds Per Acre[1]**
Ambrosia psilostachya	western ragweed	6
Bromus carinatus	California bromegrass	8
Vulpia microstachys	small fescue	6
Plantago insularis	plaintain	20
	Total	**40**

[1] The final quantities and amount of container stock and seed to be order would be determined following reclamation of each phase/subphase based on the exact of area disturbed as part of mining activities. Substitutions require approval of the Restoration Specialist.

* No less than 35 lbs. per acre of seed shall be installed.

Table 1-8
PERFORMANCE STANDARDS*

Vegetative Cover (m: meters)	Species Composition / Species Richness	Percent Cover	Density
Seed Mix	Target Goal: 100% of the most prevalent species shall be native species 12 randomly placed 50-meter by 1-meter transects	Target Goal: 50% cover (all native species combined) 12 randomly placed 50-meter by 1-meter transects	N/A
Container Stock	Target Goal: 5 tree species 12 randomly placed 50-meter by 1-meter transects	N/A	Target Goal: 30 total trees per acre (80% survival) 12 randomly placed 50-meter by 1-meter transects

* Performance Standards may be modified based on mitigation requirements.

Table 1-9
WEED SPECIES OF CONCERN

Common Name	Scientific Name
Giant Reed, Arundo	*Arundo donax*
Mustard	*Brassica sp.*
Ripgut Brome	*Bromus diandrus*
Foxtail brome	*Bromus madritensis*
Pampas Grass	*Cortaderia spp.*
Eucalyptus	*Eucalyptus spp.*
Pepperweed	*Lepidium latifolium*
Tree Tobacco	*Nicotiana glauca*
Castor Bean	*Ricinus communis*
Russian Thistle, Tumbleweed	*Salsola tragus*
Tamarisk, Salt Cedar	*Tamarix spp.*

APPENDIX 'D'

PROHIBITED PLANT LIST

The following species are highly flammable and shall be avoided when planting within 100 feet of a structure. The plants listed below are more susceptible to burning, due to rough or peeling bark, production of large amounts of litter, vegetation that contains oils, resin, wax, or pitch, large amounts of dead material in the plant, or plantings with a high dead to live fuel ratio.

BOTANICAL NAME	COMMON NAME
Abies species	Fir Trees
Acacia species	Acacia (trees, shrubs, groundcovers)
Adenostoma sparsifolium**	Red Shanks
Adenostoma fasciculatum**	Chamise
Agonis juniperina	Juniper Myrtle
Araucaria species	Monkey Puzzle, Norfolk Island Pine
Artemesia californica**	California Sagebrush
Bambusa species	Bamboo
Cedrus species	Cedar
Chamaecyparis species	False Cypress
Coprosma pumila	Prostrate Coprosma
Cryptomeria japonica	Japanese Cryptomeria
Cupressocyparis leylandii	Leylandii Cypress
Cupressus forbesii**	Tecate Cypress
Cupressus glabra	Arizona Cypress
Cupressus sempervirens	Italian Cypress
Dodonea viscosa	Hopseed Bush
Eriogonum fasciculatum**	Common Buckwheat
Eucalyptus species	Eucalyptus
Heterotheca grandiflora**	Telegraph Plant
Juniperus species	Junipers
Larix species	Larch
Lonicera japonica	Japanese Honeysuckle
Miscanthus species	Eulalia Grass
Muehlenbergia species**	Deer Grass
Palmae species	Palms
Picea species	Spruce Trees
Pickeringia Montana**	Chaparral Pea
Pinus species	Pines
Podocarpus species	Fern Pine
Pseudotsuga menziesii	Douglas Fir
Rosmarinus species	Rosemary
Salvia mellifera**	Black Sage
Taxodium species	Cypress
Taxus species	Yew
Thuja species	Arborvitae
Tsuga species	Hemlock
Urtica urens**	Burning Nettle

** San Diego County native species

APPENDIX ‘B’ References:

Gordon, H. White, T.C. 1994. Ecological Guide to Southern California Chaparral Plant Series. Cleveland National Forest.

Willis, E. 1997. San Diego County Fire Chief’s Association. Wildland/Urban Interface Development Standards

City of Oceanside, California. 1995. Vegetation Management. Landscape Development Manual. Community Services Department, Engineering Division.

City of Vista, California 1997. Undesirable Plants. Section 18.56.999. Landscaping Design, Development and Maintenance Standards.

www.bewaterwise.com. 2004. Fire-resistant California Friendly Plants.

www.ucfpl.ucop.edu. 2004. University of California, Berkeley, Forest Products Laboratory, College of Natural Resources. Defensible Space Landscaping in the Urban/Wildland Interface. A Compilation of Fire Performance Ratings of Residential Landscape Plants.

County of Los Angeles Fire Department. 1998. Fuel Modification Plan Guidelines. Appendix I, Undesirable Plant List, and Appendix II, Undesirable

APPENDIX 'E'

HIGHLY INVASIVE PLANT LIST

The following non native species are highly invasive and shall be routinely eliminated from the entirety of the property. Once established they will dominate the site and crowd out highly desirable native species. Most of these plants are prolific seeders and sprouters. Their seeds are widely dispersed by wind, birds and other vectors. Unfortunately many of these plants are often used in residential landscaping and easily spread well beyond the intended planting site. Invasive species are those highly competitive non-native plants capable of reproducing and spreading into native, non-irrigated areas and displacing those communities. Non-native plant species are prohibited in all areas adjacent to open space lands. Noxious weeds that have been introduced to San Diego County over the years tend to be more widespread and therefore more difficult to contain. The plants listed below have been identified as invasive and/or as noxious weeds and should not be planted or allowed to sprout in any transitional landscapes (landscapes planted with non-native species next to undeveloped areas). Some of these plants are on both the highly flammable and invasive species lists.

BOTANICAL NAME	COMMON NAME
Ailanthus altissima	Tree of Heaven
Anthemis cotula***	Mayweed, Stinking Chamolile
Arctotheca calendola	Cape Weed
Arundo donax	Giant Cane
Atriplex semibaccata	Australian Saltbush
Brassica species***	Mustard
Cardaria draba***	Hoary Cress, Perennial Peppergrass
Carpobrotus edulis	Ice Plant
Centaurea solstitialis	Yellow Starthistle
Cirsium vulgare***	Wild Artichoke
Conium maculatum	Poison Hemlock
Conyza Canadensis***	Horseweed
Cortaderia selloana	Pampas Grass
Cotoneaster lacteus	Cotoneaster
Cupressus macrocarpa	Monterey Cypress
Cynara cardunculus***	Artichoke Thistle
Cytisus species	Scotch Broom, French Broom, etc
Elaeagnus angustifolia	Russian Olive
Eucalyptus globulus	Eucalyptus Blue Gum
Foeniculum vulgare	Fennel
Gensita species***	Broom
Hedera helix	English Ivy
Hypericum perforatum	St. John's Wort
Ilex aquifolium	English Holly
Lactuca serriola***	Prickly Lettuce
Lantana camara	Lantana
Lepidium latifolium	Perennial Pepperweed
Myoporum parvifolium	Trailing Myoporum
Nerium oleander	Oleander
Nicotiana species	Tree Tobacco
Olea europaea	Olive
Pennisetum setaceum	Fountain Grass
Ricinus communis	Castor Bean
Robinia pseudoacacia	Black Locust
Salsola australis***	Russian Thistle, Tumbleweed

Schinus molle	California Pepper
Schinus terebinthifolius	Brazilian Pepper
Silybum marianum***	Milk Thistle
Spartium junceum	Spanish Broom
Tamarix species	Tamarisk
Ulex europea***	Gorse
Vinca major	Periwinkle
Washingtonia robusta	Mexican Fan Palm

*** Introduced Weeds to San Diego County

References: Bell, Carl, Regional Advisor – Invasive Plants. 2004. University of California Cooperative Extension.

California Exotic Pest Plant Council. October, 1999. Exotic Pest Plants of Greatest Ecological Concern in California. Most Invasive Wildland Pest Plants. www.caleppc.org/info/99lista.html.

APPENDIX "F"

FIRE BEHAVIOR MODEL AND ANALYSIS

The Fire Behavior Modeling for this project is based on the most recent BehavePlus Version 6.0. The work sheets for this latest version can be found in Appendix G. Although there are a variety of slopes and aspects surrounding the 280 acre project area, the project area is wholly located on the relatively flat Sweetwater River flood plain, which parallels Willow Glen Drive. The midpoint of the Project Area is located approximately 1.6 miles east of the Jamacha Road Willow Glen Drive intersection. The proposed project area has operated as a golf course since 1962. That part of the golf course west of Steele Canyon Road known as the Lakes Course, ceased operations in 2017, while the east side Ivanhoe course is still operational. The entire 280 acres can best be modeled as a short, sparse dry climate grass (gr1).capable of a Rate of Spread of 23.5 feet per minute and 2.2 foot Flame Lengths, although is most cases, under strong Santa Ana winds the fire will be spreading in a smoldering phase due to the short sparse fuels. The Fuel Moistures used in the BehavePlus runs depict the worst case 1 hr, 10 hr and 100 hr fuel moistures recorded in worst case fire weather conditions in San Diego County. Although the site is on the edge of the coastal climate zone, climate and fuels behave more like the climate and fuels in the dryer transitional climate zone.

Currently within the Cottonwood Golf Club Property Boundaries there is primarily one fuel model that predominates throughout the property, a short grass represented best by the gr1 fuel model beneath widely scattered mature cottonwoods, sycamores and eucalyptus trees. Under these worst case conditions fire brands (windblown embers) entering the Project Area from the east, northeast, or originating from within the Project Area have a 78% chance of igniting new fires down wind. Hot burning embers can travel a mile or more down wind and start new fires if they land in a receptive fuel. The importance of keeping dry grasses short by mowing or weed whipping down to a 4" stubble height can be seen by observing what happens if the grasses are allowed to take over the Project Area. This can be visualized by running a gr7 fuel model, thick, dry climate grass stands over 3' in height. The Rate of Spread jumps from 23.5 feet per minute to 3,520 feet per minute and flame lengths increase dramatically from 2.2 feet to 87.9 feet. This kind of fire behavior will lead to the loss of all living vegetation within the Project Area and will have adverse impacts on the surrounding residential areas. The biggest threat to the residential areas that surround the Cottonwood Golf Course is from windblown embers being carried down river from a wildfire burning to the east, northeast of the Project Area. The residential neighborhoods adjacent to the Cottonwood Golf Course are surrounded by highly flammable landscaping and attached wooden fencing and open space areas supporting healthy stands of coastal sage scrub that is best modeled by a sh5 Fuel Model. An sh5 Fuel Model comprises dry climate shrubs 4 to 6 feet in height and will produce a Rate of Spread of 1,071.2 feet per minute and a 52.9 foot Flame Length. The only and best defense the occupants of these homes have is 50' of Zone A irrigated well maintained fire resistant landscaping and an additional 50' of Zone B fire resistant landscaping and the elimination of attached wooden fencing. Home owners that adhere to these measures will survive wildfires directly threatening their neighborhoods. Vinyl fencing is an excellent alternative to wood fencing and they look great, however, they will melt in a wildfire but will not support ignition/combustion and therefore will not pose a direct threat to the home that wood fencing does.

Although historical records dating back to the 1900's show no evidence of major wildfires in the Sweetwater River drainage it is not a question of if it will burn, but rather, when it will burn?

Inputs: SURFACE, IGNITE

Description: Cottonwood Project and adjacent areas under NE wi

Fuel/Vegetation, Surface/Understory

Fuel Model		GR1, GR7, GS1, SH1, SH5, SH

Fuel Moisture

1-h Fuel Moisture	%	4
10-h Fuel Moisture	%	6
100-h Fuel Moisture	%	8
Live Herbaceous Fuel Moisture	%	30
Live Woody Fuel Moisture	%	60

Weather

Midflame Wind Speed (upslope)	mi/h	40
Air Temperature	oF	90
Fuel Shading from the Sun	%	0

Terrain

Slope Steepness	%	0

Run Option Notes

Maximum effective wind speed limit IS imposed [SURFACE].

Fire spread is in the HEADING direction only [SURFACE].

Wind is blowing upslope [SURFACE].

Wind and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Output Variables

Surface Fire Rate of Spread (ft/min) [SURFACE]

Surface Fire Flame Length (ft) [SURFACE]

Probability of Ignition from a Firebrand (%) [IGNITE]

(continued on next page)

Input Worksheet (continued)

Notes

Due to a lack of available flammable fuels the Cottonwood Project Area will not support high fire intensity and spread. The project area is modeled as a GR1, grass. Additional fuel models were run in grass and grass shrub fuel types to model potential fuel combinations on the project site following restoration. Shrub models were also run to depict a Santa Ana wind driven wildfire in the native fuels outside the Project Boundaries. The home owners of the adjacent residential areas have seriously compromised the surviability of their homes in a wind driven wildfire because of inappropriate landscaping and attached wooden fencing.

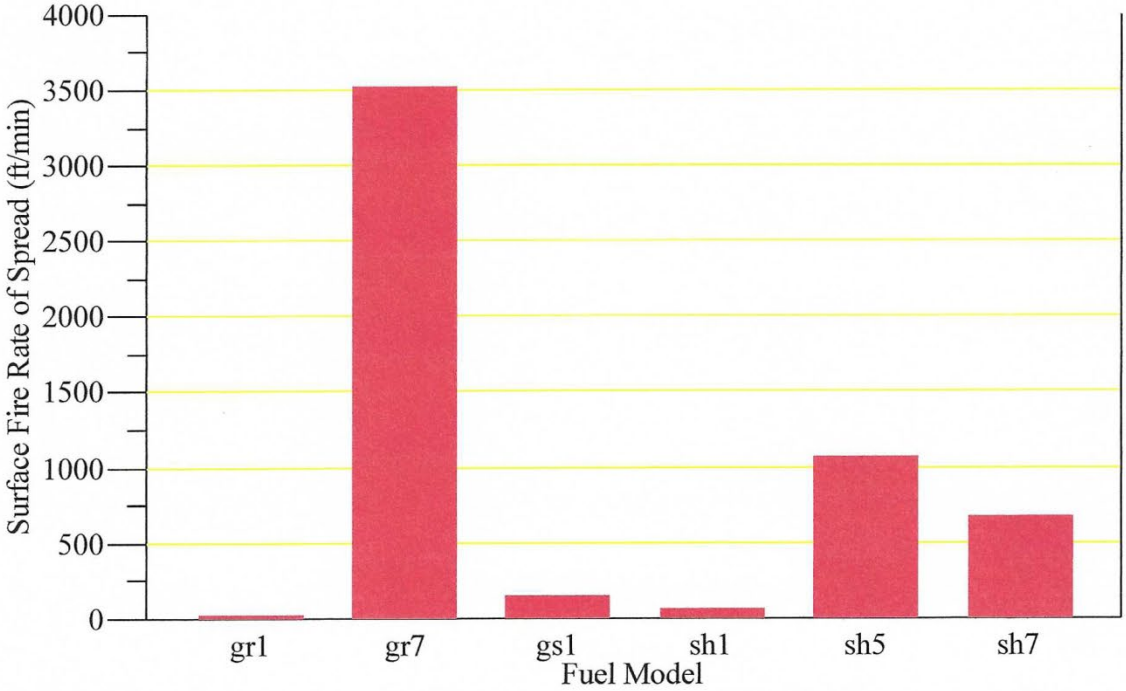
Cottonwood Project and adjacent areas under NE winds

Head Fire

Fuel Model	Surface Fire Rate of Spread ft/min	Surface Flame Length ft	Firebrand Ignition %
gr1	23.5	2.2	78
gr7	3520.0	87.9	78
gs1	149.8	9.8	78
sh1	57.6	6.2	78
sh5	1071.2	52.9	78
sh7	679.0	49.2	78

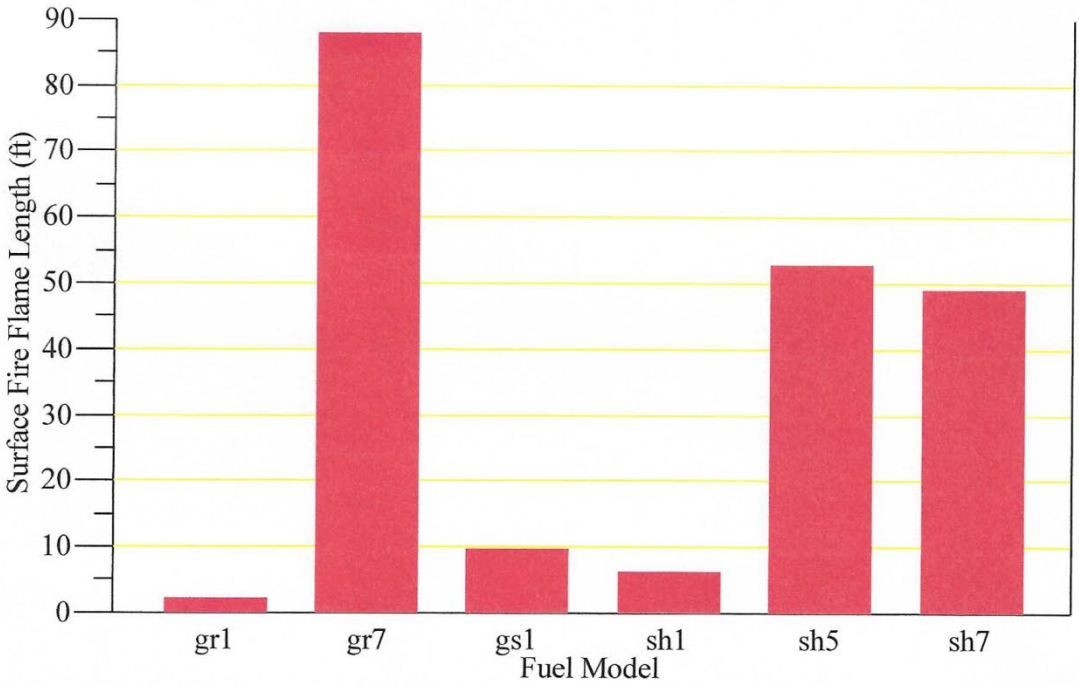
Cottonwood Project and adjacent areas under NE winds

Head Fire



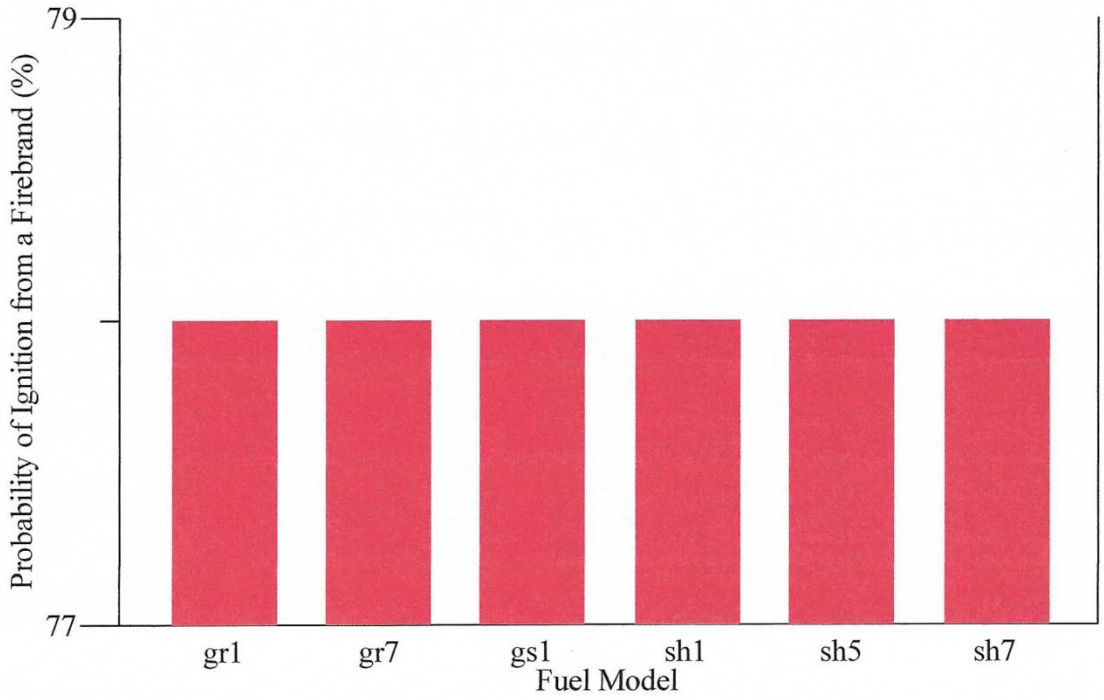
Cottonwood Project and adjacent areas under NE winds

Head Fire



Cottonwood Project and adjacent areas under NE winds

Head Fire



Discrete Variable Codes Used

Cottonwood Project and adjacent areas under NE winds

Fuel Model		
101	gr1	Short, sparse, dry climate grass (D)
107	gr7	High load, dry climate grass (D)
121	gs1	Low load, dry climate grass-shrub (D)
141	sh1	Low load, dry climate shrub (D)
145	sh5	High load, dry climate shrub (S)
147	sh7	Very high load, dry climate shrub (S)

Inputs: SURFACE, IGNITE

Description: Cottonwood Project, adjacent areas under SW wind

Fuel/Vegetation, Surface/Understory

Fuel Model		GR1, GR7, GS1, SH1, SH5, SH

Fuel Moisture

1-h Fuel Moisture	%	4
10-h Fuel Moisture	%	6
100-h Fuel Moisture	%	8
Live Herbaceous Fuel Moisture	%	30
Live Woody Fuel Moisture	%	60

Weather

Midflame Wind Speed (upslope)	mi/h	30
Air Temperature	oF	75
Fuel Shading from the Sun	%	0

Terrain

Slope Steepness	%	0

Run Option Notes

Maximum effective wind speed limit IS imposed [SURFACE].

Fire spread is in the HEADING direction only [SURFACE].

Wind is blowing upslope [SURFACE].

Wind and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Output Variables

Surface Fire Rate of Spread (ft/min) [SURFACE]

Surface Fire Flame Length (ft) [SURFACE]

Probability of Ignition from a Firebrand (%) [IGNITE]

(continued on next page)

Input Worksheet (continued)

Notes

Due to a lack of available flammable fuels the Cottonwood Project Area will not support high fire intensity and spread. The project area is modeled as a GR1, grass. Additional fuel models were run in grass and grass shrub fuel types to model potential fuel combinations on the project site following restoration. Shrub models were also run to depict a typical prevailing South West wind driven wildfire in the native fuels outside the Project Boundaries. The home owners of the adjacent residential areas have seriously compromised the surviability of their homes in a wind driven wildfire because of inappropriate landscaping and attached wooden fencing.

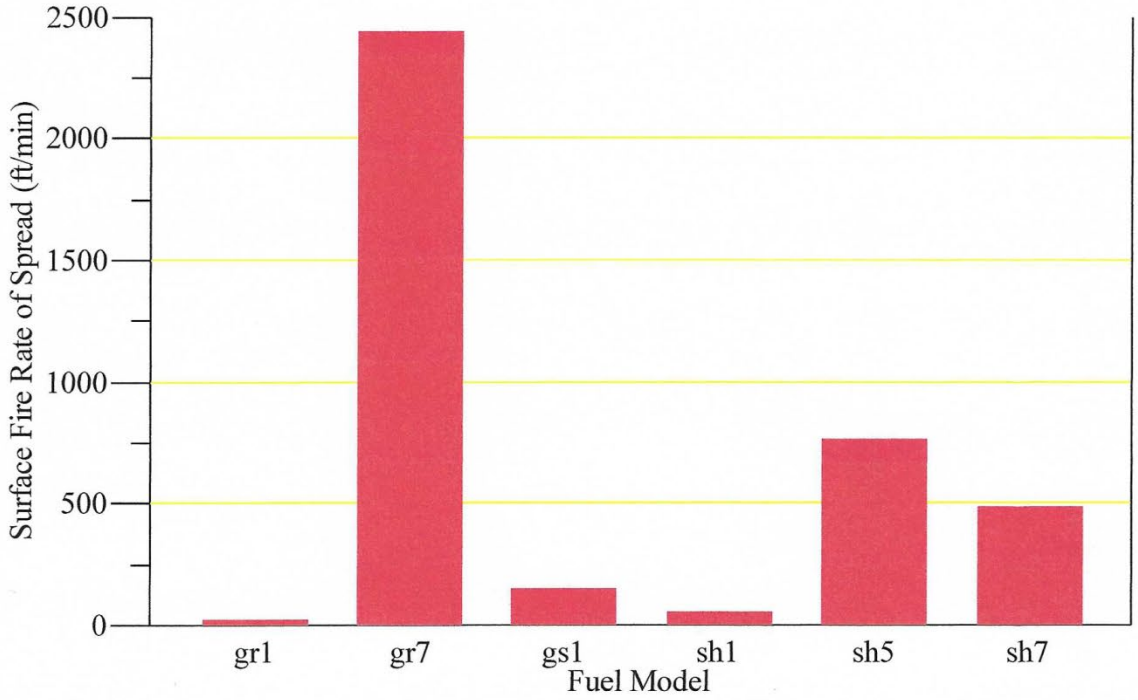
Cottonwood Project, adjacent areas under SW wind

Head Fire

Fuel Model	Surface Fire Rate of Spread ft/min	Surface Flame Length ft	Firebrand Ignition %
gr1	23.5	2.2	74
gr7	2438.8	74.2	74
gs1	149.8	9.8	74
sh1	57.6	6.2	74
sh5	762.0	45.3	74
sh7	484.5	42.1	74

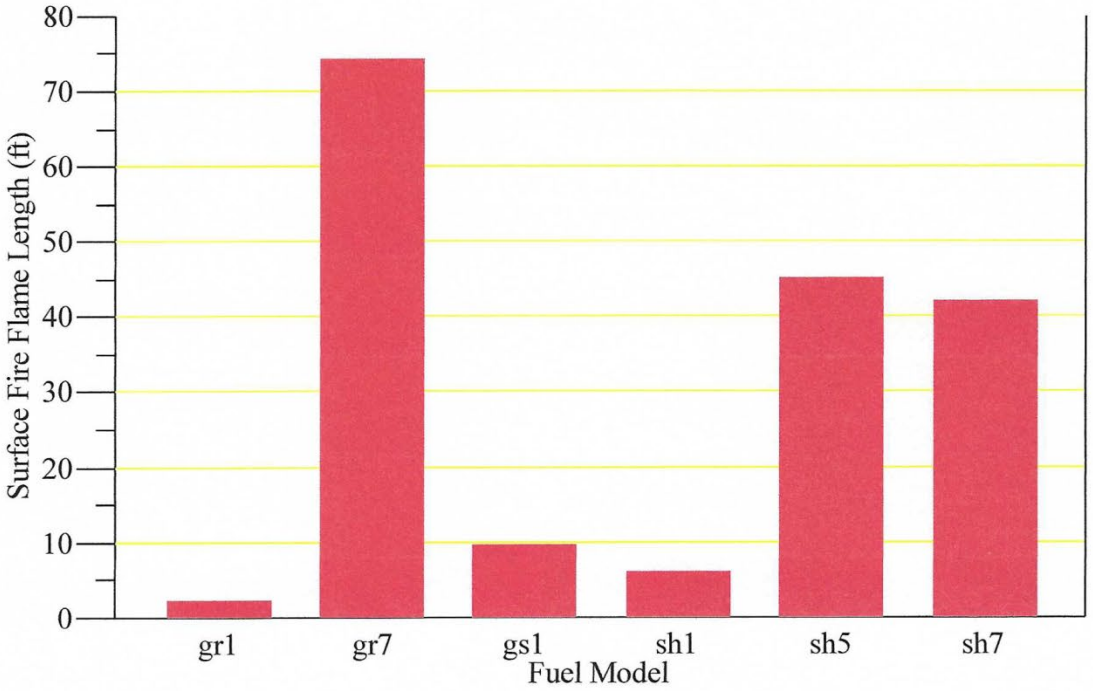
Cottonwood Project, adjacent areas under SW wind

Head Fire



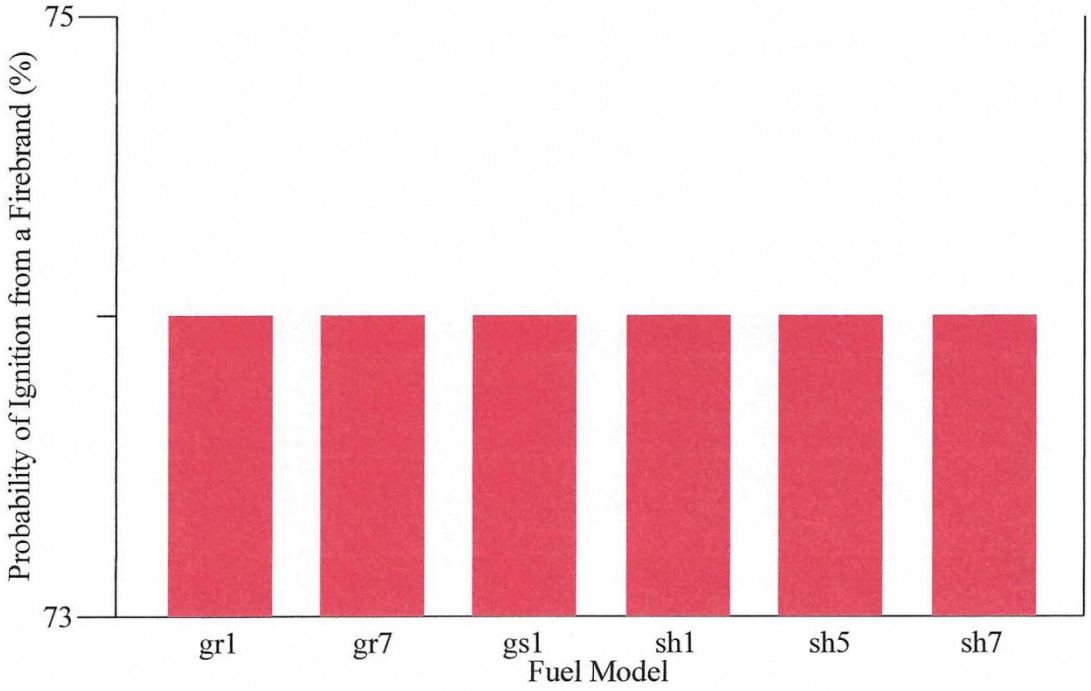
Cottonwood Project, adjacent areas under SW wind

Head Fire



Cottonwood Project, adjacent areas under SW wind

Head Fire



Discrete Variable Codes Used

Cottonwood Project, adjacent areas under SW wind

Fuel Model		
101	gr1	Short, sparse, dry climate grass (D)
107	gr7	High load, dry climate grass (D)
121	gs1	Low load, dry climate grass-shrub (D)
141	sh1	Low load, dry climate shrub (D)
145	sh5	High load, dry climate shrub (S)
147	sh7	Very high load, dry climate shrub (S)