DRAFT

Wildfire Evacuation Plan

Moon Camp

SEPTEMBER 2023

Prepared for:

Kaitlyn Dodson-Hamilton
VICE PRESIDENT — ENVIRONMENTAL SPECIALIST
TOM DODSON & ASSOCIATES

Prepared by:

DUDEK

605 Third Street
Encinitas, California 92024
Contact: Michael Huff

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A1-A2 Wildfire Safety Checklist and “Ready, Set, Go!” Wildland Fire Action Guide
B San Bernadino County OES Family Evacuation Planning Brochure
C Evacuation Modeling Results
D Big Bear Valley Community Wildfire Protection Plan

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ARC	American Red Cross
CAL FIRE	California Department of Forestry and Fire Protection
CBC	California Building Code
CALTRANS	California Department of Transportation
CERT	Community Emergency Response Team
CHP	California Highway Patrol
County	County of San Bernadino
CRA	CR Associates
DOC	Department Operations Center
DEH	Department of Environmental Health Services
EAS	Emergency Alert System
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
FEMA	Federal Emergency Management Agency
FHA	Fire Hazard Abatement Program
Guidance	California Office of the Attorney General's October 2022 Guidance
IC	Incident Command
ICS	Incident Command System
IFTSA	International Fire Service Training Association
LRA	Local Responsibility Area
NIMS	National Incident Command System
NWFCG	National Wildland Fire Coordinating Groups
OA	Operational Area
OES	County of San Bernardino Office of Emergency Services
Project	Moon Camp Project
SBCFD	San Bernadino County Fire Department
SBCSD	San Bernadino County Sheriff's Department
SCAG	Southern California Association of Governments
SB Ready	San Bernardino Ready App
SEMS	State Emergency Management System
SR-38	State Route 38
TEP	Temporary Evacuation Point
TENS	Telephone Emergency Alert System
TRA	Temporary Refuge Area
UC	Unified Command
VOAD	Volunteers Active in Disasters
VoIP	Voice over Internet Protocol
WUI	Wildland-Urban Interface

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Quick Reference - Wildfire Preparedness

The Quick Reference Guide provides helpful tips and educational resources, so occupants are prepared in the event of a wildland fire evacuation.

Figure 1 illustrates the emergency evacuation routes potentially available to the Moon Camp Project and surrounding communities. Figure 2 displays the Project's vicinity location and Figure 3 is the Project's site plan.

The Project's evacuation routes for residents and visitors of the Project are detailed in Section 4 and illustrated in Figure 1. Residents and visitors should know available routes, stay informed, and follow directions provided by law enforcement or fire agencies, news media, and other credible sources. Do not rely on navigation apps that may inadvertently lead persons toward the approaching wildfire.

Nearest Medical Facilities

Hospitals:

Bear Valley Community Hospital
41870 Garstin Drive,
Big Bear Lake, CA 92315

Directions:
Turn left onto CA-38 W towards N Shore Ln (3 miles)
Turn right into Stanfield Cutoff (0.4 miles)
Turn right onto Big Bear Blvd (0.9 miles)
Turn right at Summit Blvd
Hospital on right

Urgent Care Facilities:

Big Bear Urgent Care
41949 Big Bear Blvd,
Big Bear Lake, CA 92315

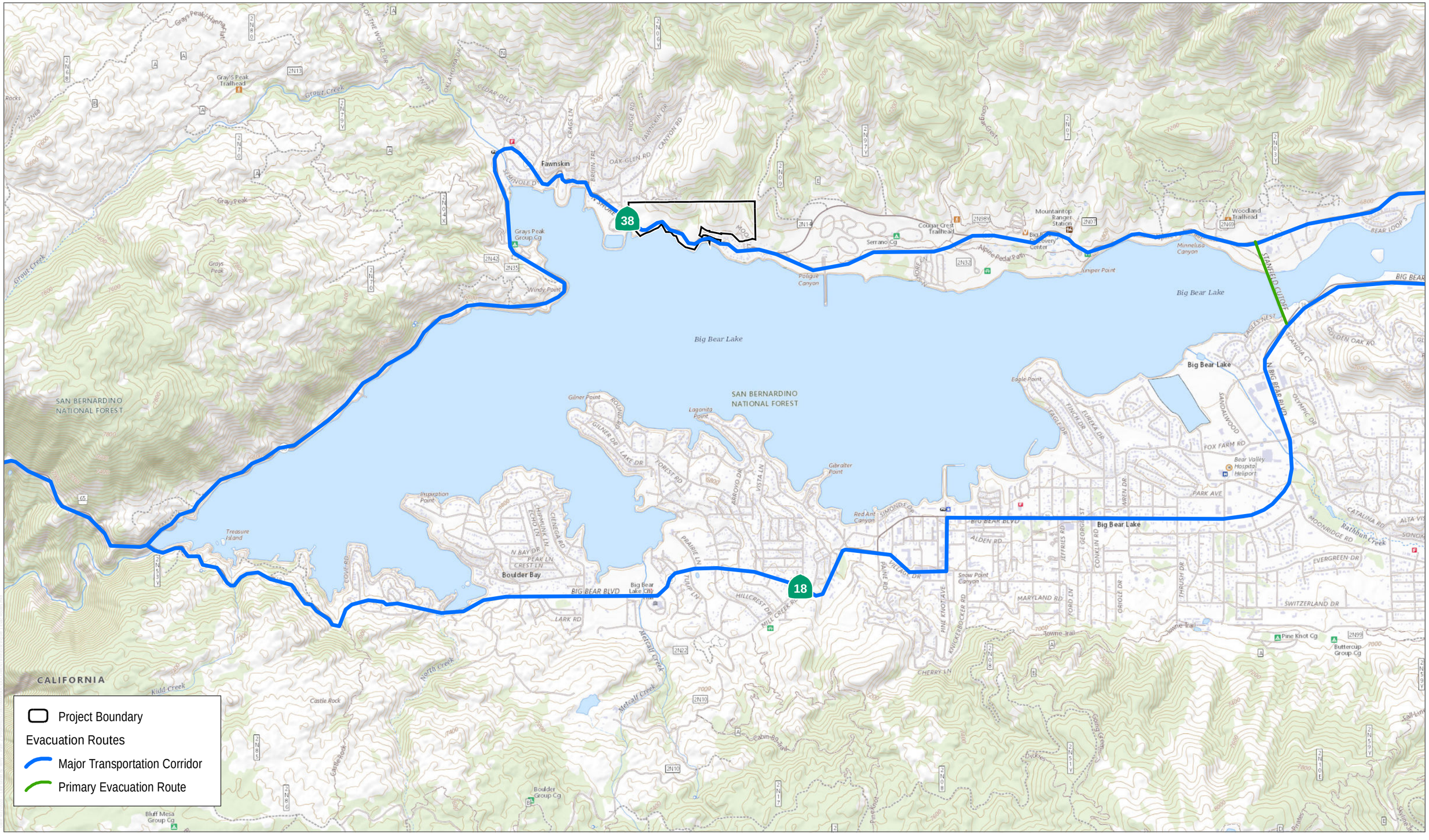

FIGURE 1

Evacuation Routes

Fire Evacuation Plan for the Moon Camp Project

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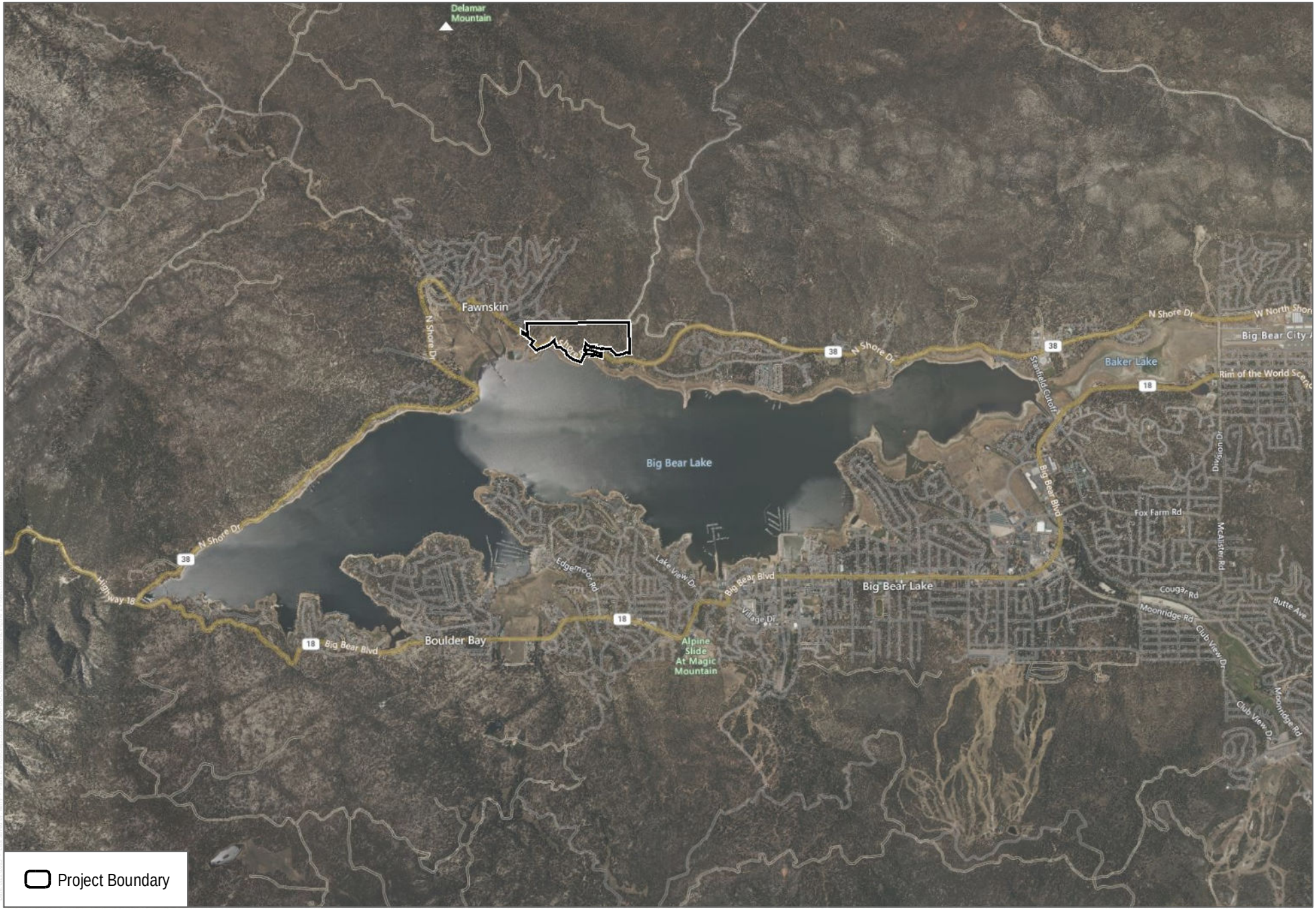

SOURCE: ESRI IMAGERY SERVICE 2022; COUNTY OF SAN BERNARDINO 2022

DUDEK

0 2,000 4,000 Feet

FIGURE 2

Project Location

Fire Evacuation Plan for the Moon Camp Project

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TENTATIVE TRACT No. 16136

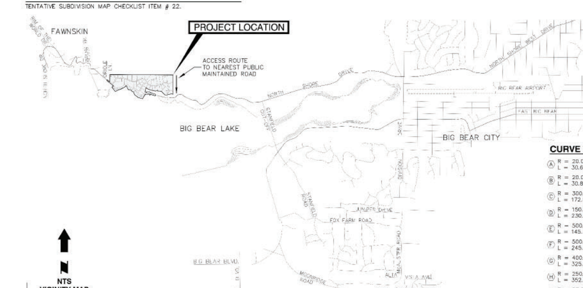
OFFICIAL USE ONLY

ADJACENT PROPERTY OWNERS

1. 0304-102-05 RICHARD L. THOMAS TRUST 6-13-97 1971 W 190TH ST. #100 TORRANCE, CA 90504 TRACT 2627-LOT 32
2. 0304-102-06 HERBERT L. LEATHERMAN P.O. BOX 6105 EL MONTE, CA 91734 TRACT 2627-LOT 33
3. 0304-102-07 SCHWARZ FAMILY TRUST 13038 LOMAS VERDES DR. POWAY, CA 92064 TRACT 2627-LOT 34
4. 0304-102-08 PAUL H. LASKY BARBARA S. LASKY P.O. BOX 310 FAWNSKIN, CA 92333 TRACT 2627-LOT 35
5. 0304-102-09 GEORGE & KATHLEEN STODDARD FAMILY TRUST TRACT 2627 LOT 36
6. 0304-102-10 JOELLA M. NEWFELD 5360 VIA MORENA YORBA LINDA, CA 92886 TRACT 2627-LOT 37
7. 0304-102-11 NORTH SHORE DRIVE LLC TRACT NO 2627 MOON CAMP SUB NO 1 LOT 38
8. 0304-102-12 ANDERSON FAMILY TRUST 4-15-04 P.O. BOX 1320 BIG BEAR LAKE, CA 92315 TRACT 2627-LOT 39
9. 0304-102-13 DOUGLAS R. CIRCLE JAN A. CIRCLE 10242 E CAMDEN CIRCLE VILLA PARK, CA 92861 TRACT 2627-LOT 40
10. 0304-102-14 JAMES A. STOVALL FAMILY TRUST (4-6-84) 2815 STONE PINE ROAD ORANGE, CA 92667 TRACT 2627-LOT 41
11. 0304-102-15 DAVID & BEVERLY RUNT REV LIV TR 4-5-94 TRACT 2627 LOT 42
12. 0304-102-16 JOHN J. MCGRATH 1113 MONTEREY MALIBU, CA 90265 TRACT 2627-LOT 43
13. 0304-102-17 MASSON TRUST 2-11-97 1988 DONNA DRIVE LAGUNA BEACH, CA 92651 TRACT 2627-LOT 44
14. 0304-102-28 JOSEPH M. PLECNIK ANNE M. PLECNIK 1880 SAN ANSILINE LONG BEACH, CA 90815
15. 0304-102-27 JOHN PLECNIK MATTHEW PLECNIK 111 JOHNSTON DRIVE BELMONT, NC 28012 TRACT 2627-LOT 47
16. 0304-102-21 MEB LLC 4 GATEHALL DRIVE IRVINE, CA 92618 TRACT 2627-LOT 48
17. 0304-102-22 CLARENCE R. YOUNG MARYANN P. YOUNG TRACT 2627 LOT 49
18. 0304-102-24 SAN BERNARDINO COUNTY SERVICE AREA 53-B 157 W FIFTH STREET SAN BERNARDINO, CA 91415
19. 0304-091-20 PLATINUM-MARIN TRUST 08-06-97 N/A
20. 0304-091-03 JOHN ROBERTS JOANNE ROBERTS 1600 N. ORANGE GROVE AVE. BOCA RATON, FL 33487
21. 0304-091-04 JAMES K. MORROW JOANNE E. MORROW 428 10TH STREET MANHATTAN BEACH, CA 90266
22. 0304-091-24 ARDASHES K. GOURDIKIAN SETA GOURDIKIAN INTER VIVOS TR-TRUST A 453 S. GRAND AVE. PASADENA, CA 91105
23. 0304-091-06 ROBERT F. SCOTT SHARON K. SKIPPER-SCOTT 16917 CALLE ESPUELA FAWNSKIN, CA 92333-0155
24. 0304-091-07 TERRANCE B. FUJIMOTO DARLYNE H. FUJIMOTO FAMILY TRUST 08/12/91 16917 CALLE ESPUELA CERRITOS, CA 90703
25. 0304-091-17 DENNIS WINDSCHEFFEL VICKI WINDSCHEFFEL 10-17-07 N/A
26. 0304-101-15 ZUEST FAMILY TRUST 01-24-05 PORTION OF TRACT 2627
27. 0304-101-16 WILLIAM J. HEANEY PATRICIA A. HEANEY 16168 BEACH BLVD. #232 HUNTINGTON BEACH, CA 92647
28. 0304-101-04 ERIC J. CROMIE LIVING TRUST 05-03-06 P.O. BOX 222 FAWNSKIN, CA 92333 TRACT 2627-LOT 4
29. 0304-101-05 WAYNE L. HANSON SHARON D. HANSON 5485 CALUMET AVENUE LA JOLLA, CA 92037 TRACT 2627-LOT 5
30. 0304-101-06 DAVE MC HENRY RICHARD MC HENRY 344 E EVERGREEN COVINA, CA 91723 TRACT 2627-LOT 6
31. 0304-101-07 JAMES J. RICE FOX FAM LIVING TRUST 638 S. LINDERO CANYON RD. SANTA BARBARA, CA 93111 #271 TRACT 2627-LOT 7
32. 0304-101-08 WELLS FARGO BANK TR 08-25-08 N/A
33. 0304-101-12 ERIC A. JENSEN LIVING TRUST 494 EL BOSQUE STREET LAGUNA BEACH, CA 92651
34. 0304-101-11 LORETTA L. GARDINER P.O. BOX 258 FAWNSKIN, CA 92333 TRACT 2627-LOT 11
35. 0304-103-01 MARLENE THURSTON TRUST 1-16-02 13620 PIONEER BLVD. FAWNSKIN, CA 92333 TRACT 2627-LOT 12
36. 0304-103-02 JILL S. HELMS 8221 MC GROARTY PLACE SUNLAND, CA 91040 TRACT 2627-LOT 13
37. 0304-103-03 JILL S. HELMS 1653 SHERNANDOAH ROAD SUNLAND, CA 91040 TRACT 2627-LOT 14
38. 0304-103-04 MICHAEL T. WALSH TRUST 11-08-06 29232 RIDGEVIEW DR. LAGUNA NIGUEL, CA 92677 TRACT 2627-LOT 15
39. 0304-103-05 CHAVARIN & ASHKAN 2007 TRUST 23937 VIA PAMILLA RESEDA, CA 91335 TRACT 2627-LOT 16
40. 0304-103-06 MICHAEL H. RIEHLE TR 01-17-01 3671 FENN ST. FAWNSKIN, CA 92333 TRACT 2627-LOT 17
41. 0304-103-07 SHSR TRUST 10-12-06 N/A TRACT 2627-LOT 18
42. 0304-103-08 WILLIAM B. HEDEKIN 1136 HARE AVE. DIAMOND BAR, CA 91789
43. 0304-261-23 UNITED STATES OF AMERICA GOVERNMENT LAND
44. 0304-251-01 UNITED STATES OF AMERICA GOVERNMENT LAND
45. 0304-021-13 UNITED STATES OF AMERICA GOVERNMENT LAND
46. 0304-231-34 CALFAM LLC 29 TERRAZA DRIVE NEWPORT BEACH, CA 92657
47. 0304-423-13 CALFAM LLC 6742 LEMON LEAF DR. NEWPORT BEACH, CA 92657 TRACT 7723-LOT 13
48. 0304-423-12 LINDA STOLL-NEUBURGER KATE NEUBURGER, TRUST 5540 ANAHEIM RD. NEWPORT BEACH, CA 92660 TRACT 7723-LOT 12
49. 0304-423-11 TERRY PAYNE JOHN L. BESSEY 39795 FLICKER DRIVE FAWNSKIN, CA 92333 TRACT 7723-LOT 11
50. 0304-423-10 JOSEPH L. FRANCUZ BARBARA FRANCUZ 817 CORONADO TERRACE LOS ANGELES, CA 90026 TRACT 7723-LOT 10
51. 0304-423-09 GREGORY J. FRAZER CARISSA D. BENNETT 1477 DWIGHT DR. GLENDALE, CA 91207 TRACT 7723-LOT 9
52. 0304-423-08 NIKOLAUS SCHOENBERGER FAMILY TRUST 4-24-00 29732 BADEN PLACE MALIBU, CA 90265 TRACT 7723-LOT 8
53. 0304-423-07 NIKOLAUS SCHOENBERGER FAMILY TRUST 4-24-00 29732 BADEN PLACE MALIBU, CA 90265 TRACT 7723-LOT 7
54. 0304-423-06 THOMAS M. BRICKLEY KIMBERY C. BRICKLEY 957 W REECE STREET SAN BERNARDINO, CA 92411 TRACT 7723-LOT 6
55. 0304-423-05 MICHAEL MC GEE LAURIE MC GEE TRACT NO 7723 LOT 5
56. 0304-423-15 JOHN P. DE LANDTSHEER JOELLE C. DE LANDTSHEER P.O. BOX 311 BIG BEAR CITY, CA 92314
57. 0304-423-14 RICHARD SHAPIRO MADONNA SHAPIRO 5053 FULTON AVENUE TOPANGA, CA 90290
58. 0304-423-03 JOSEPH A. ROACH TRACT NO 7723 LOT 3
59. 0304-215-16 JEAN GRINYER-THILL ALAN J THILL 12-26-2008 N/A
60. 0304-215-11 CHARLES H. CLINE JOAN L. CLINE P.O. BOX 275 FAWNSKIN, CA 92333
61. 0304-215-12 JONI ALLEN 14 HUGHES STREET VALENCIA, CA 91355
62. 0304-215-06 THEODORE D. WRIGHT LINDA D. WRIGHT 16189 QUARTER HORSE ROAD BAKERSFIELD, CA 93314
63. 0304-215-14 HENRICH FAMILY LIV TRUST 8-19-95 P.O. BOX 282 FAWNSKIN, CA 92333
64. 0304-215-13 CHERYL CARTER 1464 ROYAL BLVD. FAWNSKIN, CA 92333
65. 0304-215-04 GEORGE MUHAR MARIE D. MUHAR 10015 CITRUS AVE FONTANA, CA 92335
66. 0304-215-03 WHEELER FAMILY TRUST 08-19-05 4145 PORTILLA PLACE AZUSA, CA 91702
67. 0304-215-01 MARK H. KUNTZ FAMILY CREDIT SHELTER TR 31404 ALTA VISTA DRIVE REDLANDS, CA 92373
68. 0304-215-02 BRUCE KIM PATRICIA E. KIM 18080 GOLDEN LEAF LA. RIVERSIDE, CA 92504
69. 0304-082-11 LORANT LASSU JANICE LASSU 21862 HARBORBREEZE LANE TORRANCE, CA 90504
70. 0304-082-10 LORANT F. LASSU JANICE M. LASSU 21862 HARBORBREEZE LN. TORRANCE, CA 90504
71. 0304-082-23 FLORA J. BRANSON REVOCABLE TRUST 05-22-02 P.O. BOX 445 FAWNSKIN, CA 92333
72. 0304-082-01 WILLIAM C. HAZEWINKEL WILLIAM C. HAZEWINKEL 880 CANYON ROAD FAWNSKIN, CA 92333
73. 0304-205-07 KAREN S. DIGIACOMO FAWNSKIN SUB E 1/2 LOT 76
74. 0304-205-08 DANIEL J. GREENWOOD 1864 TEMPLE AVENUE CAMARILLO, CA 93012
75. 0304-205-09 CITY OF BIG BEAR LAKE P.O. BOX 1929 BIG BEAR LAKE, CA 92315
76. 0304-205-10 JOHN VANDER HORCK JOANN VANDER HORCK 5141 E CARLITA STREET FAWNSKIN, CA 92333
77. 0304-082-18 MARINA POINT DEV. ASSOC 6007 E GRANT ROAD TUCSON, AZ 85712
78. 0304-082-15 MARINA POINT DEV. ASSOC 6007 E GRANT ROAD TUCSON, AZ 85712
79. 0304-082-21 MARINA POINT DEV. ASSOC 6007 E GRANT ROAD TUCSON, AZ 85712
80. 0304-082-17 MARINA POINT DEV. ASSOC 6007 E GRANT ROAD TUCSON, AZ 85712
81. 0304-082-16 MARINA POINT DEV. ASSOC 6007 E GRANT ROAD TUCSON, AZ 85712

VICINITY MAP

TENTATIVE SUBDIVISION MAP CHECKLIST ITEM # 22.



TENTATIVE SUBDIVISION MAP CHECKLIST

1. INFORMATION DELINEATED ON MAP AS REQUIRED
2. INFORMATION DELINEATED ON MAP AS REQUIRED

3A. RECORD PROPERTY OWNER: RCK PROPERTIES TIM WOOD P.O. BOX 6820 BIG BEAR LAKE, CALIFORNIA 92315 (909) 866-3481

B. SUBDIVIDER: URBAN ENVIRONS 1345 FOUNTAIN PLACE REDLANDS, CA 92373 PH: (909) 798-4446

C. ENGINEER: HICKS & HARTWICK, INC. 37 EAST OLIVE AVE. REDLANDS, CA 92373 PH: (909) 793-2257

4. PUBLIC UTILITY INFORMATION

ELECTRIC: BEAR VALLEY ELECTRIC CO. 42020 GARSTIN ROAD BIG BEAR LAKE, CA. 92315 (909) 866-4678

TELEPHONE: VERIZON 560 BARTLETT ROAD BIG BEAR LAKE, CA. 92315 (909) 866-3773

GAS: SOUTHWEST GAS CO. 40844 BIG BEAR BOULEVARD BIG BEAR LAKE, CA. 92315 (909) 866-4656

SCHOOL DISTRICT: BEAR VALLEY UNIFIED SCHOOL DIST. P.O. BOX 1529 BIG BEAR LAKE, CA 92315 (909) 866-4631

SEWER: COUNTY SERVICE AREA 53B SPECIAL DISTRICTS DEPT. P.O. BOX 5004 VICTORVILLE, CA 92393 (909) 955-9885

WATER: COUNTY SERVICE AREA 53B SPECIAL DISTRICTS DEPT. P.O. BOX 5004 VICTORVILLE, CA 92393 (909) 955-9885

TRASH: BIG BEAR DISPOSAL, INC. 41974 GARSTIN DRIVE BIG BEAR LAKE, CA. 92315 (909) 866-3942

FIRE PROTECTION: SAN BERNARDINO COUNTY FIRE DEPT. FIRE STATION NO. 49 39188 RIM OF THE WORLD DRIVE FAWNSKIN, CA 92333 *MOUNTAIN DISTRICT* 301 S. STATE HIGHWAY 173 LAKE ARROWHEAD, CA 92352 (909) 337-8586 *MAILING:* P.O. BOX 130 LAKE ARROWHEAD, CA 92352

TELEVISION: CHARTER CABLE 41490 BIG BEAR BLVD. BIG BEAR LAKE, CA. 92315 (909) 866-3415

5. INFORMATION DELINEATED ON MAP AS REQUIRED
6. INFORMATION DELINEATED ON MAP AS REQUIRED

SCALE: 1" = 100'
CONTOUR INTERVAL = 1'
DATE OF PHOTOGRAPHY 10-25-2000
PHOTO SCALE: 1"= 300'
THIS MAP COMPILED BY PHOTOGRAMMETRIC METHODS
TOPOGRAPHIC MAP PREPARED BY: HICKS & HARTWICK, INC.

GRAPHIC SCALE
0 50 100 200 300 400
1 INCH = 100 FT.

THE BOUNDARY LINES SHOWN HEREON WERE DERIVED FROM RECORD INFORMATION INCLUDING MAPS, PLATS AND DEEDS AND DOES NOT REPRESENT A FIELD SURVEY.

7. LEGAL DESCRIPTION:
A PORTION OF THE NORTH 1/2 OF SECTION 13, TOWNSHIP 2 NORTH, RANGE 1 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA.

8. INFORMATION DELINEATED ON MAP AS REQUIRED

9A. SITE AREA: APPROXIMATELY 62.45 AC. (2,720,414 SF)

B. NUMBER OF NUMBERED LOTS: 50

C. NUMBER OF LETTERED LOTS: 8 – LOT 'A': 143,306 SF. (3.40 AC.)
LOT 'B': 35,717 SF. (0.82 AC.)
LOT 'C': 126,418 SF. (2.90 AC.)
LOT 'D': 6,000 SF.
LOT 'E': 7,617 SF.
LOT 'F': 16,198 SF.
LOT 'G': 179,544 SF. (4.12 AC.)
LOT 'H': 86,301 SF. (1.98 AC.)

D. SUBDIVISION LOT DENSITY: 0.80 LOTS PER ACRE (1.24 AC / LOT)

E. TOTAL ACREAGE OF PROJECT: 62.46 AC. (2,720,880 SF)

10A. EXISTING ZONING: RL-40

B. PROPOSED ZONING: RS-20,000

11. USE OF LETTERED LOTS: LOT 'A': OPEN SPACE CONSERVATION ESMT.
LOT 'B': OPEN SPACE/NEIGHBORHOOD LAKE ACCESS
LOT 'C': H.O.A. MARINA PARKING
LOT 'D': EXISTING WELL SITE
LOT 'E': EXISTING WELL SITE
LOT 'F': EXISTING WELL SITE
LOT 'G': PRIVATE STREETS
LOT 'H': OPEN SPACE CONSERVATION ESMT.

12. NUMBER OF LINEAL FEET OF NEW STREETS: 6,982 LF

13A. EXISTING LAND USE CLASSIFICATION: RL-40

B. DEV. USES OF ADJOINING PROPERTY: NORTH: RESIDENTIAL/USFS
SOUTH: BIG BEAR LAKE
EAST: RESIDENTIAL
WEST: RESIDENTIAL

14. FRONT & BACK SETBACK LINES DELINEATED ON MAP
FRONT YARD SETBACK OF AT LEAST TWENTY-TWO (22) FEET WITH AN AVERAGE OF TWENTY-FIVE (25) FEET.
REAR YARD SETBACK OF FIFTEEN (15) FEET.
SIDE YARD SETBACK OF TEN (10) FEET ON ONE SIDE AND FIVE (5) FEET ON THE OTHER SIDE. – STREET SIDE YARD SETBACK SHALL BE TWENTY (20) FEET.
A 100 FOOT "FUEL MODIFICATION ZONE" IS ALSO DELINEATED AS REQUIRED AND IS LISTED ON THE LEGEND.

15. INFORMATION DELINEATED ON MAP AS REQUIRED
16. INFORMATION DELINEATED ON MAP AS REQUIRED

17. EXISTING EASEMENTS:
DESCRIPTIONS PER FIRST AMERICAN TITLE REPORT ORDER NUMBER: SC-415823-U.

A. RIGHTS OF THE PUBLIC OVER ANY PORTION OF SAID LAND LYING WITHIN THE BOUNDARIES OF ANY ROAD, STREET OR HIGHWAY.
(A) THE FACT THAT A PORTION OF THE PROPERTY LYING BELOW THE MEAN HIGH WATER MARK OF BIG BEAR LAKE IS SUBJECT TO FLOODING AND INUNDATION OF THE WATERS OF BIG BEAR LAKE, WHICH ARE SUBJECT TO CHANGE PERIODICALLY THROUGH THE YEAR DUE TO WEATHER CONDITIONS AND RUN OFF OF STORM WATERS AND SNOW FALL FROM ADJOINING PROPERTY.
(B) SUBJECT TO INGRESS AND EGRESS OVER THAT PORTION OF THE PROPERTY HEREIN LYING BELOW THE HIGH WATER MARK OF BIG BEAR LAKE, AND THE RIGHTS OF THE PUBLIC TO NAVIGATE AND FISH OVER THAT PORTION WITHIN THE WATERS OF BIG BEAR LAKE, IF SAME SHOULD BE FOUND TO EXIST.

B. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED IN BOOK 29, PAGE 193, OFFICIAL RECORDS.
SAID EASEMENT IS FOR ESTABLISHMENT OF A STATE HIGHWAY.
SAID EASEMENT WAS CONVEYED TO THE ESTATE OF CALIFORNIA BY SUCH DOCUMENT. (AFFECTS PARCEL NOS. 1, 3 AND 4)

17. EXISTING EASEMENTS: (CONTINUED)

C. THE EFFECT OF A CHATTEL MORTGAGE AND A DEED OF TRUST CONVEYING PROPERTY HEREIN DESCRIBED WITH OTHER PROPERTY TO SECURE AN INDEBTEDNESS IN THE ORIGINAL PRINCIPAL SUM OF $342,000.00 AND ANY OTHER AMOUNTS AND/OR OBLIGATIONS SECURED THEREBY, RECORDED JUNE 11, 1938, IN BOOK 1277, PAGE 393, OFFICIAL RECORDS; RE-RECORDED MAY 22, 1942, IN BOOK 1535, PAGE 175, OFFICIAL RECORDS; AND RE-RECORDED APRIL 18, 1946, IN BOOK 1895, PAGE 312, OFFICIAL RECORDS; AND RE-RECORDED MARCH 17, 1950, IN BOOK 2547, PAGE 221, OFFICIAL RECORDS.
DATED: *JUNE 8, 1938*
TRUSTOR: *BEAR VALLEY MUTUAL WATER COMPANY, A CORPORATION*
TRUSTEE: *PIONEER TITLE INSURANCE AND TRUST COMPANY*
BENEFICIARY: *BERKELEY BANK FOR COOPERATIVES, A CORPORATION*
BY PARTIAL RECONVEYANCE DATED NOVEMBER 24, 1967, AND RECORDED DECEMBER 27, 1968, IN BOOK 7154, PAGE 924, OFFICIAL RECORDS, A PORTION OF SAID LAND WAS RELEASED FROM THE LIEN OF SAID TRUST AND IS EXCEPTED FROM THE DESCRIPTION OF THE LAND COVERED BY THIS REPORT.
THE EFFECT OF THE RECONVEYANCE DEED DESCRIBED HEREIN, DATED MAY 5, 1971 AND RECORDED MAY 6, 1971, IN BOOK 7660, PAGE 517, OFFICIAL RECORDS.

D. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED IN BOOK 6682, PAGE 596, OFFICIAL RECORDS.
SAID EASEMENT IS FOR HIGHWAY AND ROAD PURPOSES AND WAS CONVEYED TO THE COUNTY OF SAN BERNARDINO BY SUCH DOCUMENT. (AFFECTS PARCEL NO. 1)

E. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED IN BOOK 6853, PAGE 569, OFFICIAL RECORDS.
SAID EASEMENT IS FOR DRAINAGE AND FLOWAGE AND WAS CONVEYED TO THE COUNTY OF SAN BERNARDINO BY SUCH DOCUMENT.

F. AN EASEMENT FOR THE HEREAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES RECORDED IN BOOK 7160, BOOK 701, OFFICIAL RECORDS.
SAID EASEMENT IS FOR LAKE BOTTOM DOCKS, INGRESS AND EGRESS AND RAMPS. AND WAS CONVEYED TO BIG BEAR DEVELOPMENT COMPANY, A CORPORATION BY SUCH DOCUMENT.
NOTE: REFERENCE IS MADE TO DOCUMENT IN BOOK 8447, PAGE 575, OFFICIAL RECORDS, AND IN BOOK 8463, PAGE 744, OFFICIAL RECORDS. (AFFECTS PARCEL NOS. 1, 2, 3 AND 4)

G. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED IN BOOK 7213, PAGE 858, OFFICIAL RECORDS.
SAID EASEMENT IS FOR INGRESS AND EGRESS FOR VEHICULAR AND PEDESTRIAN TRAFFIC AND TO CLEAN AND REMOVE DEBRIS OF TO ASSIST SWIMMERS OR BOATS THAT MAY BE IN DISTRESS AND OTHER SIMILAR OR RELATED PURPOSES AND WAS CONVEYED TO BEAR VALLEY MUTUAL WATER COMPANY, A CORPORATION BY SUCH DOCUMENT. (AFFECTS PARCEL NOS. 2 AND 3)

H. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED IN BOOK 9261, PAGE 1051, OFFICIAL RECORDS.
SAID EASEMENT IS FOR SANITARY SEWER PURPOSES AND WAS CONVEYED TO BIG BEAR WASTEWATER AGENCY BY SUCH DOCUMENT. (AFFECTS ALL PARCELS)

17. EXISTING EASEMENTS: (CONTINUED)

I. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED IN BOOK 9350, PAGE 1769, OFFICIAL RECORDS.
SAID EASEMENT IS FOR SEWER PIPE LINES AND APPURTENANCES AND THEREIN. WAS CONVEYED TO COUNTY OF SAN BERNARDINO ON BEHALF OF COUNTY SERVICE AREA 53, IMPROVEMENT ZONE "B" BY SUCH DOCUMENT. (AFFECTS PARCEL NOS. 1 AND 4)

J. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED IN BOOK 9350, PAGE 1772, OFFICIAL RECORDS.
SAID EASEMENT IS FOR SEWER PIPE LINES AND APPURTENANCES AND WAS CONVEYED TO THE COUNTY OF SAN BERNARDINO ON BEHALF OF COUNTY SERVICE AREA #53 IMPROVEMENT ZONE "B" BY SUCH DOCUMENT. (AFFECTS PARCEL NO. 2)

K. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED IN BOOK 9350, PAGE 1774, OFFICIAL RECORDS.
SAID EASEMENT IS FOR SEWER PIPE LINES AND APPURTENANCES AND WAS CONVEYED TO THE COUNTY OF SAN BERNARDINO ON BEHALF OF COUNTY SERVICE AREA 53 IMPROVEMENT ZONE B BY SUCH DOCUMENT. (AFFECTS PARCEL NO. 3)

L. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED IN BOOK 9350, PAGE 1772, OFFICIAL RECORDS.
SAID EASEMENT IS FOR SEWER PIPELINES AND APPURTENANCES AND WAS CONVEYED TO THE COUNTY OF SAN BERNARDINO ON BEHALF OF COUNTY SERVICE AREA 53 IMPROVEMENT ZONE "B" BY SUCH DOCUMENT. (AFFECTS PARCEL NOS. 1 AND 4)

M. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED IN BOOK 9498, PAGE 51, OFFICIAL RECORDS.
SAID EASEMENT IS FOR SEWER PIPE LINES AND APPURTENANCES AND WAS CONVEYED TO THE COUNTY OF SAN BERNARDINO ON BEHALF OF COUNTY SERVICE AREA 53 IMPROVEMENT ZONE "B" BY SUCH DOCUMENT. (AFFECTS PARCEL NO. 4)

N. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED JUNE 17, 1981, INSTRUMENT NO. 81-132249, OFFICIAL RECORDS.
SAID EASEMENT IS FOR VEHICULAR AND PEDESTRIAN, INGRESS, EGRESS, ROAD AND PUBLIC UTILITY PURPOSES AND WAS CONVEYED TO ROBERT F. MCNATT, AN UNMARRIED MAN BY SUCH DOCUMENT. (AFFECTS PARCEL NO. 1 AND 4)

O. AN EASEMENT FOR THE HEREINAFTER SET FORTH SPECIFIC PURPOSE AND INCIDENTAL PURPOSES, RECORDED JUNE 24, 1987, INSTRUMENT NOS. 87-214864 AND 87-214867, OFFICIAL RECORDS.
SAID EASEMENT IS FOR INGRESS AND EGRESS FOR ROAD AND PUBLIC UTILITIES.

18-23. INFORMATION DELINEATED ON MAP AS REQUIRED
24. PROJECT SHALL BE FOR **"LOT SALES ONLY"**
25. ALL EXISTING TREES DELINEATED ON MAP.

SURVEYOR'S NOTES

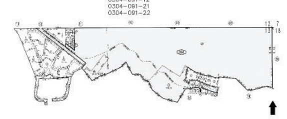
BASIS OF BEARINGS:
THE NORTH LINE OF THE W 1/2 OF THE NE 1/4 OF SEC. 13, T2N, R1W, BEARING N89-39'30"W PER TRACT 7723, MB 100/87-88.

GENERAL NOTE

1. LOTS 27,41, AND 42 MAY REQUIRE ACCESS ACROSS THE ACOE/CDFG JURISDICTIONAL BOUNDARIES.
2. TOTAL NUMBER OF TREES ON ENTIRE MOONCAMP PARCEL: 2,760
3. NUMBER OF TREES REMOVED TO BUILD ROAD WITHIN TRACT: 345

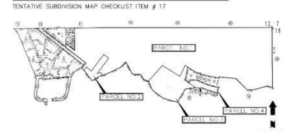
APN INDEX MAP

TENTATIVE SUBDIVISION MAP CHECKLIST ITEM # 1.
ASSESSOR'S PARCEL NUMBER: 0304-082-04
0304-091-12
0304-091-21
0304-091-22



EASEMENT REFERENCE MAP

TENTATIVE SUBDIVISION MAP CHECKLIST ITEM # 17



LEGEND

Symbol	Description	Symbol	Description
	MANHOLE		ROCKS
	ROAD MARKER		CHAIN LINK FENCE
	FIRE HYDRANT		WOOD FENCE
	VALVE		EDGE OF PAVEMENT
	SIGN		BUILDING OUTLINE
	POWER POLE		FOUND MONUMENT
	GUY WIRE		BALD EAGLE PERCH
	STREET LAMP		PROPERTY LINE AND HIGH WATER LINE PER RECORD OF SURVEY (RS 3/103-110) SEPTEMBER 1938 – ELEV.=6742.60
	RETAINING WALL		ACOE/CDFG JURISDICTIONAL BOUNDARIES
	TANK		RUBBER BOA AREA (100' WIDTH)
	EXISTING TREE OF RELATIVE SIZE		STORM DRAIN EASEMENT
	BRUSH LINE		STORM DRAIN STRUCTURE
HVC-10 214.55	CONTROL POINT	DI	STORM DRAIN INLET
G.N.V.	GROUND NOT VISIBLE		CULVERTS (PRELIMINARY SIZE SHOWN)
	CUT SLOPE (1 1/2 :1 OR LESS)		STORM DRAIN IDENTIFICATION NUMBER
	FILL SLOPE (1 1/2 :1 OR LESS)		

LINE TABLE

LINE	BEARING	LENGTH
L1	N53°42'22"W	33.21'
L2	N13°02'39"E	39.09'
L3	N26°57'44"W	16.95'
L4	N21°14'56"E	52.80'
L5	N55°39'15"W	85.15'
L6	N24°05'44"E	46.95'
L7	N13°49'47"E	20.05'
L8	N89°39'39"W	93.08'
L9	N00°02'12"W	51.27'
L10	N88°42'49"W	101.80'
L11	N73°29'48"W	82.84'
L12	N07°22'16"E	76.93'
L13	N46°23'15"E	95.71'
L14	N67°19'24"W	240.63'
L15	N66°02'37"E	170.53'
L16	N33°16'54"W	104.54'
L17	N33°16'54"W	53.77'
L18	N33°16'54"W	50.77'
L19	N70°48'45"E	117.73'
L20	N04°56'40"W	308.82'
L21	N85°03'20"E	27.00'
L22	N40°29'19"W	167.41'
L23	N71°22'41"E	96.68'
L24	N80°53'54"W	146.64'
L25	N28°02'13"E	173.57'
L26	N56°43'06"E	147.68'
L27	N21°20'25"W	29.13'
L28	N21°20'25"W	89.79'
L29	N21°20'25"W	118.91'
L30	N68°39'35"E	51.71'
L31	N46°36'21"E	110.12'
L32	N67°48'44"W	228.65'
L33	N68°39'35"E	74.42'
L34	N01°15'43"W	28.99'
L35	N76°06'21"W	41.29'
L36	N41°58'57"W	79.53'
L37	N78°30'45"W	81.43'
L38	N14°19'13"W	33.35'
L39	N87°41'36"W	54.98'

WATER QUALITY MANAGEMENT PLAN REFERENCE

INDICATES WATER QUALITY MANAGEMENT PLAN REQUIRED FOR INDIVIDUAL HOUSE CONSTRUCTION AT THE TIME OF BUILDING PERMIT ISSUANCE.

(G) INDICATES WATER QUALITY MANAGEMENT PLAN APPROXIMATE BMP TREATMENT CONTROL LOCATION WITH BMP AREA, TREATMENT CONTROL VOLUME, AND TREATMENT CONTROL FLOW RATE.

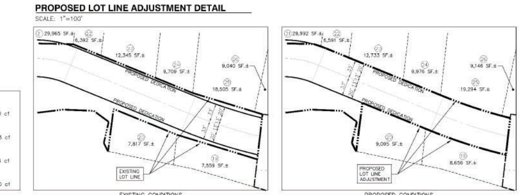
TREATMENT CONTROL INSTALLED WITH STREET IMPROVEMENT CONSTRUCTION.

WATER QUALITY TREATMENT CONTROL TABLE

	AREA	TREATMENT FLOWRATE	TREATMENT VOLUME
A	3.5 ac	–	3,827 cf
B	9.6 ac	–	10,900 cf
C	5.4 ac	–	6,657 cf
D	1.3 ac	–	2,015 cf
E	5.0 ac	–	7,140 cf
F	2.1 ac	–	2,778 cf
G	2.8 ac	–	3,214 cf
H	1.0 ac	–	4,000 cf

PROPOSED LOT LINE ADJUSTMENT DETAIL

SCALE: 1"=100'



CURVE TABLE

CURVE	R	L
A	20.00'	30.64'
B	20.00'	30.81'
C	300.00'	172.84'
D	150.00'	230.04'
E	500.00'	145.36'
F	500.00'	245.10'
G	400.00'	325.56'
H	250.00'	352.01'
I	27.00'	42.41'
J	27.00'	42.41'
K	350.00'	463.68'
L	300.00'	116.27'
M	200.00'	175.68'
N	150.00'	346.53'
O	250.00'	146.40'
P	39.00'	48.70'
Q	40.00'	175.62'
R	NOT USED	
S	600.00'	113.31'
T	180.00'	214.05'
U	450.00'	220.50'
V	150.00'	285.27'
W	150.00'	139.19'
X	200.00'	207.90'
Y	213.00'	211.76'
Z	187.00'	194.38'
AA	20.00'	30.48'
AB	20.00'	31.42'
AC	180.00'	127.62'
AD	NOT USED	
AE	400.00'	200.23'
AF	175.00'	342.25'
AG	170.00'	194.59'
AH	900.00'	134.64'
AI	813.00'	44.01'

1. ASSESSOR'S PARCEL NO: 0304-082-04 0304-091-12 0304-091-21 0304-091-22
2. TRACT NUMBER: TRACT No. 16136
3. APPLICANT/ REPRESENTATIVE: URBAN ENVIRONS 1345 FOUNTAIN PLACE REDLANDS, CA 92373 PH: (909) 798-4446
4. RECORDED PROPERTY OWNERS: RCK PROPERTIES TIM WOOD P.O. BOX 6820 BIG BEAR LAKE, CALIFORNIA 92315 (909) 866-3481
5. MAP PREPARER: HICKS & HARTWICK, INC. 37 EAST OLIVE AVE. REDLANDS, CA 92373 PH: (909) 793-2257
6. MAP PREPARATION DATE: MAY 10, 2005
7. REVISION DATES: AUG 24, 2005 NOV 09, 2005 JAN 25, 2007 JULY 31, 2007 OCT 10, 2007 NOV 06, 2007 DEC 06, 2007 JAN 27, 2009 JUN 18, 2009 AUG 20, 2009 FEB 01, 2010 JUL 23, 2010 APR 03, 2017

UNDERGROUND SERVICE ALERT

SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIG ALERT I.D. NUMBER CALL UNDERGROUND SERVICE ALERT TOLL FREE 1-800-422-4133 TWO WORKING DAYS BEFORE YOU DIG.

REGISTERED PROFESSIONAL ENGINEER MATTHEW C. HICKS No. 63494 CIVIL STATE OF CALIFORNIA

MATTHEW C. HICKS • RCE 63494 DATE

Hicks & Hartwick, Inc.
CIVIL ENGINEERS - LAND SURVEYORS
37 East Olive Avenue, Suite C
REDLANDS, CALIFORNIA
(909) 793-2257

FIELD BOOK REF.

MARK	REVISIONS	APPR	DATE
△	ADD LEFT TURN POCKETS AT ENTRIES & BIKE LANE		08/07/18
△	CHANGE PROPOSED STREETS TO PRIVATE (LOT 'G')		08/14/17
△	UPDATE WQMP DATA BASED ON PRELIMINARY WQMP		03/09/17
△	REMOVED LOT 'G' RESERVOIR SITE, NOT NECESSARY UNDER CURRENT WATER SERVICE PROPOSAL		06/01/16

COUNTY OF SAN BERNARDINO

DESIGNED BY AMD
DRAWN BY AMD
CHECKED BY JWH
RECOMMENDED BY
APPROVED BY
DATE
DATE

TENTATIVE TRACT No. 16136
POR. N 1/2 SEC 13, T2N, R1W, S.B.M.
FAWNSKIN, CALIFORNIA

W. O. NO.
ROAD NO.
FILE NO.
SHEET 1 OF 1

SOURCE: HICKS & HARTWICK, INC.

DUDEK

FIGURE 3

Project Site Plan

Fire Evacuation Plan for the Moon Camp Project

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Register to Receive Emergency Alerts

San Bernadino County utilizes the Telephone Emergency Notification System for its Community Emergency Notification System (TENS). TENS is a mass communications hub platform that allows the County to provide secure, reliable, and relevant information to residents in real-time. The County automatically registers landline phones, with updates every six months. Residents of the Moon Camp Project are encouraged to register their cell phones to receive emergency text messages. Additionally, residents can download the San Bernadino Ready App (SB Ready) which provides evacuation alerts and other emergency preparedness resources. In the event of a wildfire threating the Project site, the Incident Command (IC) or San Bernadino County Fire Department (SBCFD) contact/coordinate with the San Bernadino County Sheriff's Department (SBCSD) to release emergency communications to affected populations. The SBCSD has the responsibility to release an emergency notification to affected population via the TENS system or Ready SB app. Therefore, residents of the Moon Camp Project are strongly advised to register all business land lines, mobile phone numbers and email addresses with Reverse 9-1-1, TENS, and the SB Ready (https://sbcfire.org/alertwarning/) alert systems in order to receive emergency evacuation instructions. The occupants of Moon Camp Project are part of the greater Big Bear Lake-San Bernadino media market and the media outlets will also be a good source of information, via television and radio, on overall emergency situations and how occupants should respond. In addition, the San Bernadino Emergency Alert System (EAS) is county-wide and broadcasts emergency information via four radio stations: KFRG 95.1 FM, KHWY 98.9 FM, KZXY 102.3 FM, and 107.7 FM. The following television stations will provide information during an emergency:

- ABC7 - https://abc7.com/
- NBC4 - https://www.nbclosangeles.com/
- KTLA - https://ktla.com/
- FOX LA - http://www.foxla.com/

Social media provides another outlet for news:

City of Big Bear Lake

- https://twitter.com/CityofBBL

San Bernardino County Sheriff Department

- https://twitter.com/sbcountysheriff
- https://www.facebook.com/sbcountysheriff

San Bernadino County Fire District

- https://twitter.com/sbcountyfire
- https://www.facebook.com/SanBernardinoCountyFire

Get Involved in Community Readiness

Residents of Moon Camp Project are encouraged to obtain Community Emergency Response Team (CERT) training through the San Bernadino County Fire Office of Emergency Services' (OES) Fire Corps CERT program. The Owners/Property Manager will organize annual evacuation public outreach for all residents as well as maintain a fire safe page on the Project's website, including this Wildfire Evacuation Plan and links to important preparedness information. This information will be made available to all occupants of the Project.

This Wildfire Evacuation Plan is prepared specifically for the Moon Camp Project and focuses on wildland fire evacuations, although many of the concepts and protocols will be applicable to other emergency situations. Ultimately, this WEP should be used by residents for awareness of evacuation approaches during wildfires and other similar emergencies. It is important for residents to understand the importance of being prepared, so if/when the time comes where evacuation is necessary, they will be able to calmly implement their evacuation plan. Some actions residents can take in advance include:

- Follow the "Ready, Set, Go!" model developed for wildfire evacuations.
    - Moon Camp should encourage residents to create an individual evacuation plan, and share it with all members of the household.
    - All residents should know the available evacuation routes, stay informed and follow directions provided by credible sources.
    - No residents should rely on navigation apps that may inadvertently lead them toward an approaching fire.
    - All residents should be encouraged to prepare a car emergency kit, including cell phone charger, flashlight, jumper cables, water, and food.

Sample emergency preparedness resources available to the Moon Camp Project residents are provided in Appendices A-1 through A-2), and occupants are encouraged to become familiar with the concepts detailed at the following websites:

1. "Ready, Set, Go!" Personal Wildland Fire Action Guide:

   https://www.readyforwildfire.org/prepare-for-wildfire/ready-set-go/
2. Red Cross Emergency Planning:

   http://www.redcross.org/get-help/how-to-prepare-for-emergencies/make-a-plan
3. Hazardous Materials Emergency Preparedness:

   https://www.ready.gov/hazardous-materials-incidents
4. Building a disaster kit:

   http://www.redcross.org/get-help/prepare-for-emergencies/be-red-cross-ready/get-a-kit

5. FEMA Ready Business How-To Guide:

https://www.ready.gov/sites/default/files/2020-04/ready_business_how-to-guide.pdf

Evacuation Plan Purpose and Limitations

Wildfires and other emergencies are often fluid events and the need for evacuations are typically determined by on-scene first responders or by a collaboration between first responders and designated emergency response teams, including OEM and the IC established for larger emergency events. As such, and consistent with all emergency evacuation plans, this WEP is to be considered a tool that supports existing pre-plans and provides for occupants and visitors who are familiar with the evacuation protocol, but this WEP is subservient to emergency event-specific directives provided by agencies managing the event.

1 Introduction

This Wildfire Evacuation Plan (WEP) was prepared based on the San Bernadino County Emergency Operations Plan (EOP) (San Bernadino County Fire OES, 2018). The format of this WEP is also consistent with the recommendations of the Emergency Support Function 16, Evacuation, of the County EOP. A complete copy of San Bernadino County's EOP can be downloaded from the respective links below:

San Bernadino County EOP:

https://www.sbcounty.gov/uploads/SBCFire/documents/OES/2018_EOP_Update.pdf

Evacuation is a process by which people are moved from a place where there is immediate or anticipated danger, to a place of safety, and offered appropriate temporary shelter facilities. When the threat to safety is gone, evacuees are able to return to their normal activities, or to make suitable alternative arrangements. The overarching goal of evacuation planning is to maximize the preservation of life while reducing the number of people that must evacuate and the distance, they must travel to seek safe refuge. The purpose of the County Emergency Operations Plan is to provide an overview of evacuation functions, agency roles and responsibilities, and overall guidelines for the evacuation of people and animals from hazardous areas to areas of safety in incidents with and without warning (San Bernadino County OES, 2018).

This Wildfire Evacuation Plan will outline strategies, procedures, recommendations, and organizational structures that can be used to implement a coordinated evacuation effort in the case of a wildfire emergency effecting the Moon Camp Project. It is noted, that the on-set of a wildfire or other emergency is generally unplanned and more often than not, occupants and visitors will be faced with decisions that need to be made quickly and determined by on-scene first responders or by a collaboration between first responders and designated emergency response teams. Therefore, this Wildfire Evacuation Plan is to be considered a tool that supports existing pre-plans and provides for occupants who are familiar with the evacuation protocol but is subservient to emergency event-specific directives provided by agencies managing the event.

1.1 Project Description

The proposed 62.43-acre Moon Camp project site is located on the north shore of Big Bear Lake, in the unincorporated community of Fawnskin, County of San Bernardino. The Project proposes to construct 50 single family dwelling units with two access points to State Route 38 (SR-38)/North Shore drive.

1.2 Applicable Regulations, Standards and Planning Tools

1.2.1 Federal

1.2.1.1 Disaster Mitigation Act

The Disaster Mitigation Act of 2000 requires that a state mitigation plan, as a condition of disaster assistance, add incentives for increased coordination and integration of mitigation activities at the state level through the establishment of requirements for two different levels of state plans: "Standard" and "Enhanced." States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Disaster Mitigation Act also established a new requirement for local mitigation plans.

1.2.1.2 National Incident Management System (NIMS)

The NIMS guides all levels of government, nongovernmental organizations and the private sector to work together to prevent, protect against, mitigate, respond to and recover from incidents. NIMS provides community members with a shared vocabulary, systems and processes to successfully deliver the capabilities described in the National Preparedness System. The National Preparedness System is a Presidential Policy Directive establishing a common goal to create a secure and resilient nation associated with prevention, protection, mitigation, response and recovery to address the greatest risks to the nation. One core area is fire management and suppression.

NIMS defines operational systems that guide how personnel work together during incidents.

1.2.1.3 Pet Evacuation and Transportation Standards Act

The Pets Evacuation and Transportation Standards Act of 2006 amends the Stafford Act, and requires evacuation plans to take into account the needs of individuals with household pets and service animals, prior to, during, and following a major disaster or emergency.

1.2.2 State

1.2.2.1 Fire Hazard Severity Zones

To assist each fire agency in addressing its responsibility area, California Department of Forestry and Fire Protection (CAL FIRE) uses a severity classification system to identify areas or zones of severity for fire hazards within the state. CAL FIRE is required to map these zones for State Responsibility Areas (SRA) and identify Very High Fire Hazard Severity Zones (VHFHSZ) for Local Responsibility Areas (LRA). The Project is designated as a VHFHSZ within an SRA.

1.2.2.2 California Wildland-Urban Interface Code

On September 20, 2005, the California Building Standards Commission approved the Office of the State Fire Marshal's emergency regulations amending the California Building Code (CBC) (California Code of Regulations [CCR] Title 24, Part 2). Section 701A of the CBC includes regulations addressing materials and construction methods for exterior wildfire exposure and applies to new buildings located in State Responsibility Areas or Very High Fire Hazard Severity Zones in Local Response Areas.

1.2.2.3 California Fire Code

The 2022 California Fire Code (CCR Title 24, Part 9) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas. The County has adopted the 2022 California Fire Code as Chapter 8.16, as amended, including appendices addressing fire-flow requirements for buildings.

1.2.2.4 California Emergency Services Act

The California Emergency Services Act (California Government Code §8550, et seq.), provides for the creation of an Office of Emergency Services, assign and coordinate functions and duties to be performed during an emergency, facilitate mutual aid, and assign resources (including manpower and facilities) throughout the state for dealing with any emergency that may occur.

1.2.2.5 California Office of Emergency Services

The California Office of Emergency Services (OES) is responsible for the coordination of overall state agency response to disasters. Assuring the state's readiness to respond to, recover from all hazards and assisting local governments in their emergency preparedness, response, recovery and mitigation.

1.2.2.5.1 Standardized Emergency Management System (SEMS)

SEMS is the cornerstone of California's emergency response system and the fundamental structure for the response phase of emergency management. The system unifies all elements of California's emergency management community into a single integrated system and standardizes key elements. SEMS incorporates:

- Incident Command System (ICS) - A field-level emergency response system based on management by objectives

- Multi/ Inter-agency coordination - Affected agencies working together to coordinate allocations of resources and emergency response activities

- Mutual Aid - A system for obtaining additional emergency resources from non-affected jurisdictions.

- Operational Area Concept - County and its sub-divisions to coordinate damage information, resource requests and emergency response.

1.2.2.6 Attorney General Guidance

The California Office of the Attorney General issued guidance (Guidance) outlining best practices for analyzing and mitigating wildfire impacts of development projects under the California Environmental Quality Act (CEQA) (October 2022). The Guidance is intended to help local governments' evaluation and approval considerations for development projects in fire-prone areas, and to help project design in a way that minimizes wildfire ignition and incorporates emergency access and evacuation measures. Importantly, the Guidance does not impose additional legal requirements on local governments, nor does it alter any applicable laws or regulations.

The Guidance states that evacuation modeling and planning should be required for all projects located in HFHSZ/ VHFHSZ that present an increased risk of ignition and/or evacuation impacts. It further states that local jurisdictions should require evacuation modeling and planning to be developed prior to project approval to provide maximum flexibility in design modifications necessary to address wildfire risks and impacts. The Project is in an area designated as a VHFHSZ within a SRA and is adjacent to open space areas, which is why this Wildfire Evacuation Plan was prepared for the Project and includes the analysis of several evacuation scenarios, including existing and with Project conditions.

The Guidance further states that evacuation modeling and analysis must augment existing information when necessary to include adequate analysis of the following:

- Evaluation of the capacity of roadways to accommodate project and community evacuation and simultaneous emergency access. Existing and future roadway capacities are analyzed in Section 4 of this Evacuation Plan.

- Assessment of the timing for evacuation. Analysis of evacuation timing is detailed in Section 4.1.

- Identification of alternative plans for evacuation. Alternative plans for evacuation would be feasible due to the high ignition resistance level of Project structures.

- Evaluation of the Project's impacts on existing evacuation plans. Existing evacuation plans do not exist for the area. The Project would utilize primary evacuation routes that would be available to other evacuees. This Evacuation Plan is based on the County's Emergency Operations Plan.

- Consideration of the adequacy of emergency access, including the Project's proximity to existing fire services and the capacity of existing services. Emergency access is provided that is consistent with the fire code requirements.

- Traffic modeling to quantify travel times under various likely scenarios. This Wildfire Evacuation Plan conducted simulations using Vissim, a microscopic, multimodal traffic flow modeling software used to simulate different traffic conditions. In Vissim simulations, roadway capacity is accounted for and each vehicle in the traffic system is individually tracked through the model and comprehensive measures of effectiveness, such as average vehicle speed and queueing, are collected on every vehicle during each 0.1-second of the simulation.

In consideration of the above and that there are currently no established thresholds for determining whether evacuation times are safe, the AG Guidance encourages local jurisdictions to develop thresholds of significance for evacuation times based on community-wide standards. Any conclusion that an increase in evacuation times is a less than significant impact should be based on a threshold of significance that reflects community-wide goals and standards. Thresholds should also consider consistency with an adopted emergency operations or evacuation plan, a safety element updated to integrate wildfire and evacuation concerns, or recommendations developed by CAL FIRE relating to safety of subdivisions. The Project also has the potential to minimize on-road traffic when it is considered necessary and/or safer by temporarily providing refuge on-site in protected structures, which offers a contingency not available to all communities/developments and assists in providing flexibility and options for emergency managers.

At the time this WEP was prepared, there are no established thresholds for evacuation times for this community or any California community to the knowledge of the authors. This is primarily because every location and fire scenario are unique. While it may take one community 20 minutes to evacuate safely, it is not a valid assumption to consider a 3-hour evacuation for another community as unsafe. The 3-hour evacuation can be very safe while the 20-minute evacuation may be unsafe due to the conditions and exposures along the evacuation routes. Therefore, the Project does not utilize a quantitative threshold, but does compare its evacuation times with that of other evacuation plans relying on the FEMA 90-minute timeframe as a reasonable timeframe for most communities to evacuate. Accordingly, as detailed in Section 4, under the most conservative scenario, the Project would evacuate in 25 minutes, and changes in evacuation times are minor for Land Use Areas A through C, with 8-, 5-, and 1-minute increases in evacuation time with the proposed Project, respectively.

1.2.3 Local

1.2.3.1 San Bernadino County Multi-Jurisdictional Local Hazard Mitigation Plan

The purpose of the County's Multi-Jurisdictional Local Hazard Mitigation Plan (San Bernadino County, 2022) is to identify the County's hazards, review and assess past disaster occurrences, estimate the probability of future occurrences, and set goals to mitigate potential risks to reduce or eliminate long-term risk to people and property from natural and human-made hazards. An important San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan component is the Community Emergency Response Team (CERT), which educates community members about disaster preparedness and trains them in basic response skills, including fire safety.

1.2.3.2 San Bernadino County Emergency Operations Plan

The 2018 San Bernadino County Emergency Operations Plan (EOP) describes a comprehensive emergency management system that provides for a planned response to disaster situations associated with natural disasters, technological incidents, terrorism, and nuclear-related incidents. It delineates operational concepts relating to various emergency situations, identifies components of the Emergency Management Organization, and describes the overall responsibilities for protecting life and property and providing for the overall well-being of the population. The plan also identifies the sources of outside support that might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, state and federal agencies, and the private sector.

1.2.3.3 San Bernadino County Fire Code

The San Bernadino County Fire Code consists of Title 2, Division 3, Chapter 1, Sections 23.0101 through 23.011, which adopts the 2022 California Fire Code with some modifications, and applicable sections of the CCR. Provisions of the California Fire Code are described under State Regulations, above.

1.2.3.5 San Bernadino County Building Code

The County's Building Code (Title 6, Division 3, Sections 63.0101 through 63.0105) are intended to regulate the construction of applicable facilities and encompasses (and formally adopts) associated elements of the California Building Code. Specifically, this includes regulating the "regulating the erection, construction, enlargement, alteration, repair, moving, removal, demolition, conversion, occupancy, use, height, area and maintenance of all structures and certain equipment therein."

1.2.3.6 San Bernardino County Fire Hazard Abatement (FHA) Program

To enhance wildfire prevention efforts, the San Bernardino County Fire Hazard Abatement (FHA) Program enforces fire hazard regulations outlined in San Bernardino County Code Section 23.0301–23.0319. The primary goal of this program is to proactively establish defensible space and reduce or remove flammable materials on properties, thus minimizing the risk of fires in communities.

Throughout the year, the Fire Hazard Abatement Program conducts property surveys to identify potential fire hazards. Once hazards are identified, property owners are sent notices to address the hazards within 30 days. Failure to comply may result in citations, penalties, and/or fees imposed by the County. The program is available year-round to respond to complaints in both unincorporated areas and contracting Cities and Fire Districts. The Moon Camp Project is within the San Bernadino County Fire District's Mountain Region, which receives one survey during the summer.

2 Background

This Moon Camp Project Wildfire Evacuation Plan was prepared based on the San Bernadino County Emergency Operations Plan (EOP).

To establish a framework for implementing well-coordinated evacuations, the San Bernadino County Fire District, like most California emergency operations agencies, has adopted evacuation procedures in accordance with the State of California's Standardized Emergency Management System (SEMS) and the National Incident Command System (NIMS). Large-scale evacuations are complex, multi-jurisdictional efforts that require coordination between many agencies and organizations. Emergency services and other public safety organizations play key roles in ensuring that an evacuation is effective, efficient, and safe.

Evacuation is a process by which people are moved from a place where there is immediate or anticipated danger, to a safer place, and offered temporary shelter facilities. When the threat passes, evacuees are able to return to their normal activities, or to make suitable alternative arrangements.

Evacuation during a wildfire is not necessarily directed by the fire agency, except in specific areas where fire personnel may enact evacuations on-scene. The San Bernadino County Sheriff's Department (SBCSD) would be the primary law enforcement agency responsible for evacuations within the County. As detailed in the County's EOP, SBCSD would staff the Law Enforcement Branch, which manages the Evacuation & Reentry Unit. If the evacuation requires coordination with other jurisdictions, the County Sheriff's Department Operations Center (DOC) will coordinate evacuation and re-entry activities and overall San Bernadino County Sheriff's Department emergency response. During any evacuation event that exceeds normal SBCSD capacity, the County's Operational Area (OA) 's Emergency Operations Center (EOC) will be activated. In the event the EOC is activated, the EOC Law Enforcement Branch will activate the Evacuation Re-Entry Unit to coordinate the countywide evacuation and re-entry functions. Incident information and resource needs will be communicated from the Sheriff's DOC to the OA EOC Law Enforcement Branch.

The County Sheriff's DOC works closely with other organizations including SBCFD, with the DOC being in charge of coordinating SBCFD activities. Additionally, the Law Enforcement branch will link the OA EOC to many resources including the Sheriff's DOC, IC for incidents under the management of law enforcement services, as appropriate, Evacuation teams, Shelters, Transportation agencies, and other Supporting agencies.

Every evacuation scenario will include some level of unique challenges, constraints, and fluid conditions that require interpretation, fast decision making, and alternatives. For example, one roadway incident that results in blockage of evacuating vehicles may require short-term or long-term changes to the evacuation process. Risk is considered high when evacuees are evacuating late, and fire encroachment is imminent. This hypothetical scenario highlights the importance of continuing to train responding agencies, model various scenarios, educate the public, provide contingency plans, and take a very conservative approach to evacuation decision timelines.

Equally as important, the evacuation procedures should be regularly updated with lessons learned from actual evacuation events, including the Old Fire in 2003. The authors of this Wildfire Evacuation Plan

recommend that occasional updates are provided, especially following lessons learned from actual incidents, as new technologies become available that would aid in the evacuation process, and as changing landscapes and development patterns occur within and adjacent to the Project site that may impact how evacuation is accomplished. This Moon Camp Project Wildfire Evacuation Plan is consistent with the County evacuation planning standards and can be integrated into a county or regional evacuation plan and other pre-plans when and if the area officials and stakeholders (CAL FIRE, SBCFD, OES, SBCSD, and others) complete one.

As demonstrated during large and localized evacuations occurring throughout San Bernadino County historically, an important component to successful evacuation is early assessment of the situation and early notification via managed evacuation declarations. The County utilizes early warning and informational programs to help meet these important factors. Among the methods available to citizens for emergency information are TENS, a mass communications hub platform that allows the County to provide secure, reliable, and relevant information to residents in real-time, the Ready SB app, in addition to radio, television, social media/internet, neighborhood patrol car or County Sheriff patrol car, and aerial public address notifications. The County instituted this regional notification system that is able to send telephone notifications to occupants and businesses within the County impacted by, or in danger of being impacted by, an emergency or disaster. This system, called TENS, is used by emergency response personnel to notify homes and businesses at risk with information on the event and/or actions (such as evacuation, shelter-in-place, gas leak, missing person, etc.) they are advised to implement. The system utilizes the region's 9-1-1 database, provided by the local telephone company(ies), and thus is able to contact landline telephones whether listed or unlisted. It is TTY/TDD capable.

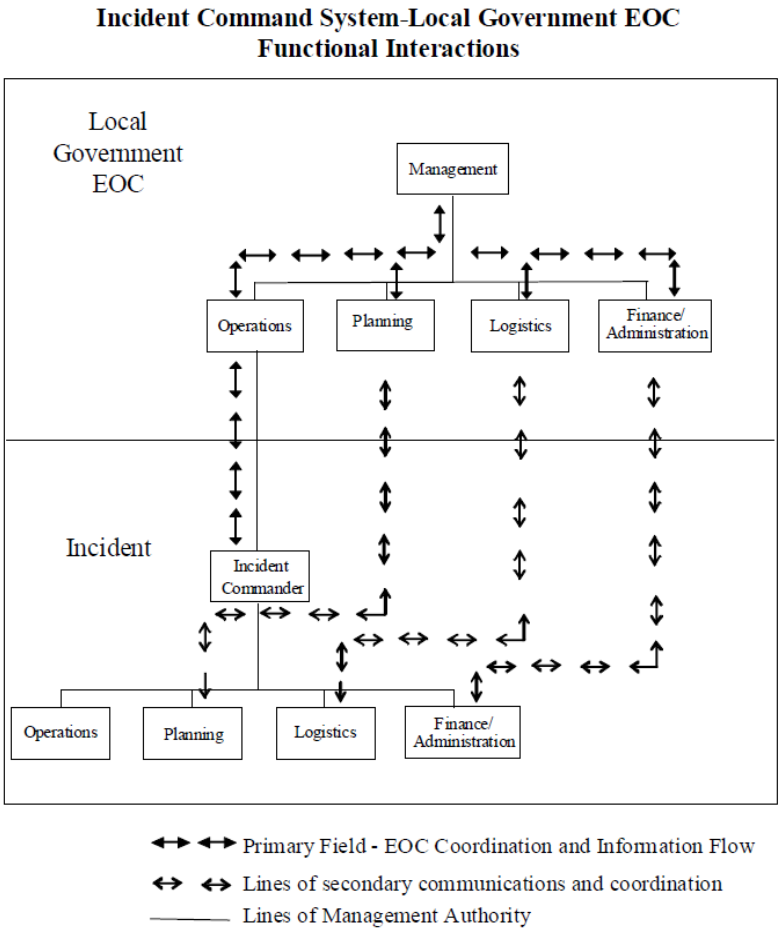
Because the system uses the 9-1-1 database, only landline numbers are in the system. If you have a Voice over Internet Protocol (VoIP) or cellular telephone and would like to be notified over that device, or if you would like an email notification, you must register those telephone numbers and/or email address for use by the system to receive voice, text, and email messages.

3 San Bernadino County Evacuation Planning

This Wildfire Evacuation Plan incorporates concepts and protocols practiced throughout San Bernadino County. The County follows basic protocols set forth in the County's EOP and California Master Mutual Aid Agreement, which dictate who is responsible for an evacuation effort and how regional resources will be requested and coordinated.

First responders are responsible for determining initial protective actions before EOCs and emergency management personnel have an opportunity to convene and gain situational awareness. Initial protective actions are shared/communicated to local EOCs and necessary support agencies as soon as possible to ensure an effective, coordinated evacuation. Figure 4 summarizes the functional interactions of local government EOCs under the Incident Command System.

Figure 4. Incident Command System Local Government EOC Functional Interactions



The SBCSD is the lead agency for executing evacuations of the unincorporated areas of the County. The SBCSD, as part of Unified Command, assesses and evaluates the need for evacuations, and orders evacuations according to established procedures. During an evacuation effort, the EOC Law Enforcement Branch Director supports the development of alert and warning messages and provides intelligence regarding road closures and evacuations, this position is staffed by the SBCSD. The SBCSD will be assisted by other law enforcement and support agencies. Law enforcement agencies, highway/road/street departments, and public and private transportation providers will conduct evacuation operations as directed by the OA EOC. Procurement, regulation, and allocation of resources will be accomplished by those designated. Evacuation operations will be conducted by the following agencies:

- San Bernadino County OES
- San Bernadino County Public Works Department
- San Bernadino County Department of Environmental Health Services (DEH)
- San Bernadino County Department of Aging and Adult Services
- San Bernadino County Agricultural Commissioner's Office
- Cal OES Law Enforcement Mutual Aid Region VI
- US Forest Service
- American Red Cross (ARC)
- Volunteers Active in Disasters (VOAD)
- California Highway Patrol (CHP)
- Transportation agencies
- Other County and state agencies, as needed.

As provided in the Big Bear Valley CWPP (Appendix D) the San Bernardino County Sheriff's Department maintains an exhaustive Emergency Evacuation/Reentry Plan for the Big Bear Valley, dated June 2005, to supplement the County EOC. During the Old Fire in 2003, the Emergency Evacuation/Reentry Plan for the Big Bear Valley was successfully implemented. The Emergency Evacuation Plan is a confidential document developed and further refined after the successful mountain evacuation during the 2003 Old Fire. The evacuation plan uses a tiered approach to evacuation, i.e., warning, voluntary, mandatory, immediate, and shelter-in-place.

3.1 P.A.C.E Evacuation Planning

P.A.C.E. evacuation planning is based on a military concept focused on mitigating risk by developing a strong primary evacuation plan along with three back up plans. If the Primary plan is compromised, the Alternate plan would be triggered. If the Alternate is considered not functional or not safe, the Contingency Plan is implemented. If that does not mitigate the risk, then the evacuation reverts to the Emergency plan. P.A.C.E. Planning is a simple and effective tool used to accomplish evacuations with flexibility and redundant contingencies.

A PACE Evacuation plan provides the following:

(1) Based on and includes a documented, facility-based and community-based risk assessment, utilizing hazard analysis approach.

(2) Include strategies for addressing emergency events identified by the risk assessment.

(3) Address participant population, including, but not limited to, the type of services the PACE organization has the ability to provide in an emergency; and continuity of operations, including delegations of authority.

(4) Include a process for cooperation and collaboration with emergency preparedness officials' efforts to maintain an integrated response during a disaster or emergency situation.

Primary: This is the overall preferred plan of action to use based on the most likely and most damaging scenario resulting from hazard analysis.

Alternate: The Alternate plan should be as viable as your Primary plan. That isn't always the case, but that should be the goal whenever possible. Alternate plans are needed because unforeseen circumstances arise during emergency evacuations.

Developing the Alternate plan includes analyzing the most likely problems that could cause your primary plan to fail and then come up with a plan that fits with your situation that won't be affected by those problems. Whenever possible, come up with a few to several vulnerabilities in your primary plan and find an alternate that's just as good but covers all those bases.

Contingency: The contingency evacuation plan is the action that will be implemented if you cannot implement either the Primary or the Contingency action due to compromised safety. The contingency isn't always (or isn't usually) as preferred as the others but is a viable option that doesn't rely on the same actions as the Primary and Alternate.

Emergency: This is the action that is implemented if all three of the previous actions fail. In some respects, it is a last resort that is the least preferred option, but is a viable and safe option, nonetheless. The goal is to utilize an Emergency plan that's independent from reliance on the types of actions in the first three options, is a flexible plan, has the highest probability of succeeding, and offers a reliable option with little potential for compromise.

An emergency plan may not be the most convenient or preferred plan and may include components that are uncomfortable to visitors, but it should be as foolproof as possible.

The Moon Camp Project PACE Evacuation Plan is summarized in Table 1, and must be maintained, reviewed, and updated at least every 2 years.

Table 1. P.A.C.E Evacuation Plan for Moon Camp Project

1. Primary: Project will evacuate via the primary evacuation route(s) early after receiving evacuation notice utilizing the primary evacuation route(s) as directed by law enforcement/emergency managers.
2. Alternate: Project will follow evacuation instructions which may include an alternate plan to utilize secondary routes or to relocate to nearby urban areas based on congested traffic conditions. Notifications that this alternate plan is being implemented will be provided via the notification systems or on-site emergency personnel, media and social media.
3. Contingency: Due to primary and alternate options being compromised or undesirable, the contingency plan of evacuating smaller, highest vulnerability populations will be implemented. For the Project, this may include evacuating until direction is provided to cease evacuation and initiate on-site sheltering of a smaller on-site population.
4. Emergency: When the wildfire or other emergency dictates that off-site evacuation is not advised by the primary or alternate evacuation routes, and conditions are such that open air exposure would be unhealthy or unsafe, the Moon Camp population will be directed to shelter in place. Sheltering in place is possible due to the ignition resistant construction materials and irrigated landscape that creates a fire hardened development. Sheltering in place may also be the preferred option for other emergencies, e.g., active shooter, earthquake. Persons sheltering in place are advised to remain aware of the situation and move out of the building to a designated safe zone if directed to do so or otherwise necessitated.

3.2 Evacuation Objectives

SBCSD is the lead agency for evacuations of areas within the County, including the proposed Moon Camp Project. The SBCSD, as part of a Unified Incident Command System, assesses and evaluates the need for evacuations, and orders evacuations according to established procedures. Additionally, as part of the Unified Incident Command System, the SBCSD identifies available and appropriate evacuation routes and coordinate evacuation traffic management with Caltrans, CHP, other supporting agencies, and all impacted jurisdictions.

The decision whether to evacuate or shelter-in-place must be carefully considered with the timing and nature of the incident. This decision is made by first responders in the field by the established Incident Command (IC) or Unified Command (UC). An evacuation effort involves an organized and supervised effort to relocate people from an area of danger to a safe location. Tactical decisions, such as detailed evacuation areas, specific routes, road closures and temporary evacuation points are decided in the field by IC or UC based upon the dynamics of the incident.

Per the County's EOP, evacuations are led by the Law Enforcement Operations Unit:

- Responsible for an orderly, systematic evacuation of residents and visitors due to an extreme emergency.
- Ensure that all items under the Americans with Disabilities Act are covered for evacuations/movement operations.
- Ensure public safety for incarcerated evacuees.
- Develop an evacuation and or re-entry plan.

3.3 Evacuation Response Operations

An evacuation of any area requires significant coordination among numerous public, private, and community/non-profit organizations. Wildfire evacuations will typically allow time for responders to conduct evacuation notification in advance of an immediate threat to life safety; giving occupants time to gather belongings and make arrangements for evacuation. On the other hand, other threats, including wildfires igniting nearby, may occur with little or no notice and certain evacuation response operations will not be feasible (for example, establishing contra flow requires between 24 to 72 hours to be implemented; a no-notice event will not allow for contra flow to be established). Evacuation assistance of specific segments of the population may also not be feasible.

3.3.1 Evacuation Points and Shelters

When the SBCSD or Incident Command (IC) implements an evacuation order, they coordinate with the responding fire and rescue agency, the EOC, and others, to decide on locations to use as a Temporary Evacuation Point (TEP). The SBCSD will provide emergency alerts through the TENS platform and Ready SB County app to direct evacuees to the established TEPs or shelters. These evacuation points will serve as temporary safe zones for evacuees and will provide basic needs such as food, water, and restrooms. Historical fires have not reached the City of Big Bear and the land uses along Big Bear Lake. In past fire events, the Incident Commander in partnership with the Red Cross have traditionally used local educational facilities as evacuation centers[1]. However, studies indicate that people generally resort to these evacuation centers only as a last option, mainly due to the absence of privacy and convenience[2]. Therefore, it is assumed that evacuees will likely head toward the more urbanized center of the City of Big Bear Lake, where multiple lodging options are available, or to stay with family and friends.

Possible shelters and assembly areas that can provide at least short-term refuge and that would be designated by emergency managers during an evacuation near the Project include:

- Big Bear High School
- Big Bear Middle School

If there are occupants unable to evacuate or in need of transportation assistance to get to a TEP or shelter, the SBCSD or IC may establish transportation points to collect and transport people without transportation resources to evacuation points. These transportation points should be large, well-known sites such as shopping centers, libraries, and schools. Transportation should be accessible to all populations, including people with disabilities and other access and functional needs.

3.3.2 Pet Evacuations

The Pets Evacuation and Transportation Standards Act of 2006 amends the Stafford Act, and requires evacuation plans to consider the needs of individuals with household pets and service animals, prior to, during, and following a major disaster or emergency.

The San Bernadino County Animal Care, a subdivision of the County Department of Public Health, has plans in place to transport and shelter pets in a disaster under ESF 16 of the OA EOP. Domestic animals in need of housing will

[1] http://www.bigbearfire.org/homepage/press-releases/252-radford-fire-update
[2] https://tsrc.berkeley.edu/publications/review-california-wildfire-evacuations-2017-2019

be accepted at and/or transported to animal shelters used by the Animal Control Unit; these may include County animal shelters and/or partner agency shelters. Animal Control will provide provisions for service animals at human shelters to include food, water, relief area identification and any other provisions needed to support the animal. Depending on the severity of the imminent or actual event, it may be necessary to prepare for and operate additional animal shelters. If ARC shelters are open for human evacuees, a determination will be made regarding the feasibility of co-locating animals at shelters. In most cases, humans and animals (not including service animals) cannot be co-located at the same shelter site due to concerns with allergies, bites, etc. Service animals are permitted at human shelters at all times and in every circumstance. If colocation is an option, animal response teams will be dispatched to ARC shelter sites and arrangements will be made to obtain emergency supplies and any specialized equipment needed to care for the animals.

If co-location is not an option, or if the animal is not a service animal, existing animal shelter sites will be utilized as noted above, the Animal Control Unit will provide for the pick-up and transport of animals from human shelter sites to animal shelter sites. Animals at shelter sites will be provided for with shelter, food, water and other necessary provisions. Animal Control has a professional system they use to identify and re-unify animals with their owners.

3.3.3 Shelter-in-Place (County EOP Discussion)

As stated in the County EOP, sheltering-in-place advises people to stay secure at their current location. This tactic shall only be used if an evacuation will cause a higher potential for loss of life. Consideration should be given to assigning incident personnel to monitor the safety of citizens remaining in place. The concept of shelter-in-place is an available option in those instances where physical evacuation is impractical. This procedure may be effective for residential dwellings in the immediately impacted areas, or for large facilities that house a high percentage of non-ambulatory persons (e.g., hospitals and convalescent homes). Sheltering-in-place attempts to provide a safe haven within the impacted area.

The decision on whether to evacuate or shelter-in-place is carefully considered with the timing and nature of the incident (San Bernadino County, 2018). Sheltering-in-place is the preferred method of protection for people that are not directly impacted or in the direct path of a hazard. This will reduce congestion and transportation demand on the major transportation routes for those that have been directed to evacuate by police or fire personnel. The communities adjacent to the proposed Moon Camp Project include homes built in the 2000s and are in varying states of ignition resistance. Unlike most new master planned communities that incorporate ignition-resistant construction and provide defensibility throughout, responding fire and law enforcement personnel may not be able to direct existing occupants of neighboring developments to temporarily refuge in their homes or on-site; however, it would be possible for occupants of Moon Camp Project. Developments that are not built to the ignition-resistant standards can be retrofitted to increase their ability to withstand wildfire and ember storms by focusing on roofs, windows, walls, vents, appendages and defensible space. Attention to these components of a home's fire protection system is recommended for existing home and business owners within the Project Area. The structures within the Project site would conform to the ignition-resistant building codes codified in Chapter 7A of the California Building Code, would be ignition-resistant, defensible and designed to require minimal firefighting resources for protection, which enables this contingency option when it is considered safer than evacuation.

4 Evacuation Road Network

As evidenced by historical mass evacuations in San Bernadino County and throughout Southern California, even with roadways that are designed to the code requirements, it may not be possible, or even the best response, to move large numbers of persons at the same time as part of a mass-evacuation. Instead, informed, phased evacuations enable more streamlined evacuations where those at highest risk are moved first. Road infrastructure throughout the United States, and including San Bernadino County, is not designed to accommodate a short-notice, mass evacuation without some level of congestion (FEMA 2008). The need for evacuation plans, pre-planning, and tiered or targeted and staggered evacuations becomes very important for improving evacuation effectiveness. Among the most important factors for successful evacuations in urban settings is control of intersections downstream of the evacuation area. If intersections are controlled by law enforcement, barricades, signal control, and other means, potential backups and slowed evacuations can be minimized. Multiple evacuation points enable more evacuees the ability to evacuate with less impact on roadways.

Wildfires that occur on non-extreme weather days behave in a much less aggressive manner and pose fewer dangers to life and property because they include less aggressive fire behavior and are easier to control. However, there can be on-shore wind conditions that can lead to aggressive fire behavior. Terrain and fuel are typically the wildfire drivers. During these non-extreme weather days, vegetation is much more difficult to ignite and does not spread fire as rapidly. In these situations, firefighters have a very high success rate of controlling fires and keeping them under 10 acres. The historical fire record shows that most vegetation fires occur during average weather conditions and that such fires account for only a proportionally small amount of the land area burned. Conversely, a small number of wildfires that occur during extreme fire weather account for most of the land area burned. These data highlight that the most dangerous fire conditions are those related to a fire that moves rapidly due to high winds and low humidity, whereas under normal conditions fires are likely to be controlled with no evacuation or possibly limited extent, focused evacuations.

While it is possible that a fire driven by average wind conditions could require evacuation of the Project, such an event would be highly unusual. Moreover, due to the reduced fire behavior during normal weather periods, the evacuation would not be expected to be a large-scale evacuation. Instead, most of the Project area population would be anticipated to remain at their locations and within their communities, with a more targeted evacuation being ordered, if needed.

If a wildfire ignited closer to the Project site during weather that facilitates rapid fire spread, a different evacuation approach would need to be considered. Because it is preferred to evacuate long before a wildfire is near, and in fact, history indicates that most human fatalities from wildfires are due to late evacuations when evacuees are overtaken on roads, it is prudent to consider a contingency option. For example, if a wildfire is anticipated to encroach upon the Project area in a timeframe that is shorter than would be required to evacuate all occupants, then options available to responding fire and law enforcement personnel should include 1) partial relocation where occupants are temporarily relocated to nearby shelter sites or areas, or 2) temporary shelter in place where occupants are instructed to remain in protected on-site structures or at a designated site, while firefighters perform their structure protection function.

The Project site is located within an area that is subject to wildfires and based on the adjacent land uses and open space in the vicinity, the wildfire potential is considered high. However, the fire intensity would be expected to be

moderate within the post-Project's developed footprint and fuel modification zones, and high to very high within the open space areas that occur adjacent to the Project site. This on-site, reduced fire behavior along with specific protection features, would be expected to facilitate evacuations as well as potential on-site sheltering within designated safe shelter structures, if considered safer than a short-notice evacuation. Although not a designated shelter-in-place site, Project structures include the same level of ignition resistance (e.g., enhanced construction materials) and landscape maintenance (e.g., annual FMZ inspection), are defensible against the anticipated wildfire exposure, and are designed to require minimal resources for protection, which enables this contingency option.

The Project roads and adjacent road circulation system will be able to effectively handle average daily trips generated by the Project. However, as evidenced by mass evacuations in San Bernadino and elsewhere, even with roadways that are designed to the code requirements, it may not be possible, or even necessary to move large numbers of persons at the same time. Road infrastructure throughout the United States, and including in the Big Bear region, is not designed to accommodate a short-notice, mass evacuation (FEMA 2008). The need for evacuation plans, pre-planning, and tiered or targeted and staggered evacuations becomes very important for improving evacuation effectiveness.

Among the most important factors for successful evacuations in populated settings is control of intersections downstream of the evacuation area. If intersections are controlled by law enforcement, barricades, signal control, firefighters or other means, potential backups and slowed evacuations can be minimized. Another important aspect of successful evacuation is a managed and phased evacuation declaration. Evacuating in phases, based on vulnerability, location, or other factors, enables the subsequent traffic surges on major roadway to be smoothed over a longer time frame and can be planned to result in traffic levels that flow better than when mass evacuations include large evacuation areas at the same time. This WEP defers to Law Enforcement and EOC to appropriately phase evacuations and to consider the vulnerability of communities when making decisions. For example, newer development in the area, including the Project, will offer its occupants a high level of fire safety on-site, along with options for firefighter safety zones and temporary on-site refuge as a contingency, as discussed further in this WEP.

Fire Access Road Maintenance

Maintenance is an important component for the long-term reliability of all Project roadways. Maintenance obligations for the Moon Camp Project will be the responsibility of the Owner/Property Manager for routine road surface and roadside vegetation maintenance throughout the Project site.

4.1 Evacuation Assumptions and Scenarios

This evacuation analysis was performed for the Project to determine how long it would take for residents of the Project and the surrounding communities to evacuate to the developed areas of the City of Big Bear Lake in case of a fire emergency. This location provides a significant buffer to the north/northeast with Big Bear Lake acting as a large fuel break Current evacuation practice typically targets the scope of the evacuation only to the area in immediate danger and placing a larger area on standby for evacuation. This practice allows for better evacuation operations, reduces gridlock, and reserves sufficient travel way for emergency vehicles. It is assumed that first responders or law enforcement will direct traffic at all major downstream intersections during the evacuation process.

During the evacuation process, which can proceed aided by typical roadside vegetation management, wildfire spread, and encroachment may be slowed by fire-fighting efforts that would likely include fixed wing and helicopter

fire-fighting assets. Hand crews would also be deployed toward containment. None of the evacuation scenarios assumed contraflow lanes, as these lanes are reserved for first responders, law enforcement, and fire fighters in case of unforeseen circumstances.

Since the Project is located amidst residential and recreation land uses, this examination assumes an evacuation directive on a Saturday afternoon when most Project and neighboring residents are expected to be at home, while the Project operations continue. The estimation of vehicles evacuating from the Project's site was derived by multiplying the number of households by the average vehicle ownership per household in the vicinity. Similarly, for the surrounding residential areas, the number of evacuating vehicles was determined using land use information from Parcel Quest parcel map data in conjunction with the average vehicle ownership data provided by the US Census Bureau. For a reasonable analysis, these scenarios assumed that two percent (2%) of the evacuating vehicles are heavy vehicles (trucks with trailers). Two percent is the nationally acceptable ratio of heavy vehicles to all vehicles.

Saturday Afternoon Evacuation: full operation, all residents are home

CRA presumes that the evacuation would transpire on a Saturday afternoon, a time when residents from the Project and nearby communities are home, meaning all residential vehicles would be required to evacuate. Additionally, it is assumed that the parking demand for nearby recreational land uses would be fully occupied, thus the vehicles associated with the recreational land uses would evacuate at the same time as the Project and other residential land uses. In an actual evacuation scenario, the total number of vehicles needing to evacuate may actually be less. The Operation Area commander would prioritize evacuation of land uses located closest to the area with immediate risk, depending on the location of the fire. Additional assumptions during wildfire are as follows:

1. The Operation Area commander would prioritize land uses located adjacent to the Wildland Urban interface area or area with immediate risk, depending on the location of the fire.

2. Because wildfire may burn up to and potentially within urban areas in the Project vicinity, for a conservative analysis, it is assumed that all of the areas shown in Figure 3 of Appendix C would evacuate at the same time.

3. The analysis also operates under the assumption that the traffic to be evacuated would be directed to the developed areas of the City of Big Bear Lake, selecting the path requiring the least traffic time. It is assumed that the Project and surrounding land uses would utilize local thoroughfares including SR-38/North Shore Drive, Stanfield Cutoff, Big Bear Boulevard, using the path requiring the least travel time.

Primary Evacuation Routes

CRA assumed that traffic evacuating from both the Project and nearby communities/land uses would use the closest evacuation routes to leave the area. Evacuation routes were selected based upon review of the Project's site, available evacuation routes, and the quickest way to leave areas located adjacent to the available vegetative fuels. Evacuations during large wildfire events would focus on removing threatened populations from the area, likely off the mountain. For this analysis, we assume a condition where the populations are directed to the developed areas of the City of Big Bear Lake, selecting the path requiring the least travel time. This location provides a significant buffer to the north/northeast with Big Bear Lake acting as a large fuel break. Based on Google's traffic data for a typical Saturday afternoon, the fastest evacuation route for traffic from the Project and areas A through

C would be to head east on SR-38/North Shore Drive and then proceed towards the City of Big Bear Lake via Stanfield Cutoff and Big Bear Boulevard. Conversely, the quickest route for Area D would be to head southwest via North Shore Drive and Big Bear Boulevard. The Google travel time assessment is provided in Attachment A of Appendix C. This assumption selects a reasonable evacuation route for the assumed extreme weather scenario.

No contraflow lanes were assumed to provide access for first responders and law enforcement.[3] Two-way travel was assumed, with evacuating vehicles traveling outbound to the designated Safe Zone. It is assumed that first responders or law enforcement will direct traffic at all major intersections during the evacuation process. Should evacuation managers determine that contraflow is preferred or necessary, evacuation capacity would increase while evacuation times would decrease.

Safe Zone

Based on Dudek's review of the area's fire history[4], fires have halted along areas adjacent to wildland fuels and have not historically progressed into the more densely urbanized, irrigated, and hardscaped areas. Specifically, none of the historical fires encroached beyond the periphery areas within the wildland urban interface area of the City of Big Bear Lake and the land uses along Big Bear Lake. Thus, it is assumed that evacuees are considered to reach a safe area once they are within the more developed areas such as the City of Big Bear Lake.

Evacuation Scenarios

A total of seven evacuation scenarios were analyzed for each fire scenario: fire encroaching on the Project from the north/east and fire encroaching on the Project from the west. The evacuation modelling for a fire encroaching from the west assumed that all evacuation zones including Area D would utilize eastbound evacuation routes.

- **Scenario 1** – *Existing Land Uses*: This scenario estimates the evacuation time for existing land uses within the study area (Area A through D), reference Figure 4. This scenario represents the existing condition, and provides context for how the Project could potentially impact evacuation times in the study area.

- **Scenario 2** – *Proposed Project Only*: This scenario assumed full evacuation of the proposed Project without evacuation of existing land uses. This scenario establishes the time needed to evacuate only the Project's occupants.
- **Scenario 3** – *Existing Land Uses with the proposed Project*: This scenario estimates the evacuation time for the all existing land uses within the study area (Area A through D), with the addition of the proposed Project traffic. The scenario represents the potential for the Project to impact evacuation times for the existing condition (Scenario 1).
- **Scenario 4** – *Existing Land Uses with Cumulative Growth*[5]: This scenario estimates the evacuation time for the existing land uses within the study area (Area A through D), with an ambient growth of 5% to represent

[3] Contraflow or lane reversal involves directing traffic to use lanes coming from the source of a hazard to move people away from the hazard. Such a strategy can be used to eliminate bottlenecks in communities with road geometries that prevent efficient evacuations or to facilitate traffic flow out of a major urban area. Among the considerations in planning emergency contraflow are whether sufficient traffic control officers are available, potential negative impact on responding fire apparatus, access management, merging, exiting, safety concerns, and labor requirements. Contraflow configurations must be carefully planned based on on-site factors and should not be implemented in an *ad-hoc* fashion. Dudek July 2014. "Wildland Fire Evacuation Procedures Analysis" for City of Santa Barbara, California, page 65.

[4] 2022 Radford Fire, 2017 Holcomb Fire, others. An unnamed 1987 fire did burn into the Baldwin Lakes area destroying 5 homes, but they were of older construction and water wasn't available for firefighting in the area at that time.

potential cumulative growth in the area, the Marina Point project (120 dwelling units)[6] and TT 17670 (22 dwelling units). This scenario represents cumulative growth conditions without the Project, which considers both ambient growth and other known proposed or approved projects in the area.

- **Scenario 5** – *Existing Land Uses with Cumulative Projects with the proposed Project*: This scenario is similar to Scenario 4, with the addition of the proposed Project traffic. The scenario represents cumulative growth conditions with the Project, which considers both ambient growth and other known proposed or approved projects in the area.
- **Scenario 6** - Existing Land Uses with Cumulative Projects (Area D only): This scenario is similar to Scenario 4, but assuming that only Area D is under an evacuation order. Under this scenario, all of Area D would evacuate eastward via North Shore Drive, then southward via Stanfield Cutoff to arrive at the City of Big Bear. This scenario represents cumulative growth conditions without the Project, which considers both ambient growth and other known proposed or approved projects in the area; however, only Area D is under an evacuation order.
- **Scenario 7** – Existing Land Uses with Cumulative Projects with Project (Area D only) – This scenario is similar to Scenario 6, with the addition of the proposed Project traffic. This scenario represents cumulative growth conditions with the Project, which considers both ambient growth and other known proposed or approved projects in the area; however, only Area D is under an evacuation order.

Evacuating Vehicles

The number of evacuating vehicles was calculated using the following assumptions:

- Project and nearby Residential land uses: Residential units x average vehicle ownership (2 vehicles per household)
- Recreational land uses: full occupancy of parking lots
- RV resorts: full occupancy of parking lots and site.

Average vehicle ownership, residential units, and evacuating vehicles calculations are provided in Attachment A of Appendix C. Table 2 displays the number of vehicles evacuating under each scenario.

Table 2. Evacuating Vehicles

Scenario	Number of Evacuation Vehicles					
	Nearby Land Uses				*Project*	*Total*
	A	*B*	*C*	*D*		
Scenario 1 – Existing Land Uses	112	380	394	1,425	0	1,425
Scenario 2 – Proposed Project Only	0	0	0	0	100	100
Scenario 3 – Existing Land Uses with Proposed Project	112	380	394	1,425	100	1,525
Scenario 4 – Existing Land Uses with Cumulative Projects	120	400	420	1,790	0	1,790
Scenario 5 – Existing Land Uses with Cumulative Projects with the proposed Project	120	400	420	1,790	100	1,890

[6] Source: Moon Camp Focused Traffic Impact Assessment, Urban Crossroad, 2018.

Scenario 6 - Existing Land Uses with Cumulative Projects (Area D only)	0	0	0	1,790	0	1,790
Scenario 7 - Existing Land Uses with Cumulative Projects with Project (Area D only)	0	0	0	1,790	200	1,990

Source: CR Associates (2023), US Census Bureau (2023), Google Maps (2023).

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4.2 Potential for Project Evacuation Impact on Existing Conditions

The potential occurrence of a simultaneous, large evacuation event including evacuation of a large area of existing populations is minimal, but possible. In this case, the existing populations for potential evacuation in the area would be associated with a variety of populations including residential, recreational, and other uses. To analyze the evacuation events, CRA conducted simulations using Vissim, a microscopic, multimodal traffic flow modeling software used to simulate different traffic conditions. In Vissim simulations, roadway capacity is accounted for and each vehicle in the traffic system is individually tracked through the model and comprehensive measures of effectiveness, such as average vehicle speed and queueing, are collected on every vehicle during each 0.1-second of the simulation. This software enables drivers' behaviors during an evacuation to be replicated. A total of 20 simulations were conducted to yield a reasonable sample size to determine the performance of the study area roadways and impacts during evacuation scenarios. To be conservative, CRA assumed a worst-case scenario in which all vehicles belonging to households in the study area would be used in the evacuation, instead of the necessary number of vehicles needed to evacuate the impacted population. Detailed evacuation analysis information is provided in Attachment B of Appendix C.

Based upon review of previous fires and evacuation orders, evacuation modeling considered traffic evacuating from both the Project and nearby developments (Figure 4). A summary of the evacuation time for each scenario is provided below, and shown in Table 3:

- **Scenario 1**: It would take between 37 minutes and 1 hour and 23 minutes to evacuate the existing land uses (Areas A through D).
- **Scenario 2**: It would take 25 minutes to evacuate only the proposed Project occupants. Existing land uses are not considered in the scenario.
- **Scenario 3**: It would take between 37 minutes and 1 hour and 23 minutes to evacuate the existing land uses and the proposed Project. Under this scenario, the Project would not cause an increase in evacuation time to area D, and the Project would cause an increase of 5 minutes to area A and 2 minute to area B. It would take 52 minutes to evacuate the Project's site.
- **Scenario 4**: It would take between 38 minutes and 1 hour and 39 minutes to evacuate the nearby land uses under the cumulative growth scenario.
- **Scenario 5**: It would take between 39 minutes and 1 hours and 39 minutes to evacuate the nearby and Project land use under the cumulative growth with Project scenario. Similar to Scenario 3, the Project would cause an increase of 6 minutes to area A evacuation time and an increase of 2 minute to area B evacuation time. It would take 54 minutes to evacuate the Project's site.
- **Scenario 6:** It would take 1 hour and 40 minutes to evacuate Area D, assuming that all of Area D evacuate eastward via North Shore Drive, then southward via Stanfield Cutoff to arrive at the City of Big Bear.
- **Scenario 7**: It would take 1 hour and 42 minutes to Evacuate Area D, an increase of 2 minutes, and 26 minutes to evacuate the Project.

Table 3. Evacuation Time Summary

Scenario	Total Evacuation Vehicles	Evacuation Time				
		Nearby Land Uses				*Project*
		A	*B*	*C*	*D*	
Scenario 1 – Existing Land Uses	1,425	0:48	0:38	0:37	1:23	N/A
Scenario 2 – Proposed Project Only	100	N/A	N/A	N/A	N/A	0:25
Scenario 3 – Existing Land Uses with Proposed Project	1,525	0:53	0:40	0:37	1:23	0:52
Change in Evacuation Time - Existing Condition (Scenario 3 – Scenario 1)	-	0:05	0:02	0:00	0:00	0:52
Scenario 4 – Existing Land Uses with Cumulative Projects	1,790	0:50	0:41	0:38	1:39	N/A
Scenario 5 – Existing Land Uses with Cumulative Projects with the proposed Project	1,890	0:56	0:43	0:38	1:39	0:54
Change in Evacuation Time – Existing with Cumulative Projects (Scenario 5 – Scenario 3)	-	0:06	0:02	0:00	0:00	0:54
Scenario 6 - Existing Land Uses with Cumulative Projects (Area D only)	1,790	N/A	N/A	N/A	1:40	N/A
Scenario 7 - Existing Land Uses with Cumulative Projects with Project (Area D only)	1,990	N/A	N/A	N/A	1:42	0:26
Change in Evacuation Time – Existing with Cumulative Projects Area D only (Scenario 5 – Scenario 3)	-	N/A	N/A	N/A	0:02	0:26

As noted in Table 3, Project related impacts to existing community evacuation times are considered insignificant with the maximum potential increased evacuation time occurring within Land Use A(Scenario 1 compared to Scenario 3) of 5 minutes. Under the cumulative scenarios (Scenario 4 compared to Scenario 5), the Project's greatest impact is to Land Use A, increasing evacuation time six minutes, with a 2-minute increase to Land Use B and no increase for Land Use C or Land Use D. Additionally, the Project does not contribute to a substantial increase in evacuation times for Land Use D under the cumulative scenarios that include an evacuation order for Area D only, as indicated with a minor increase in evacuation time by two minutes (Scenario 6 compared to Scenario 7).

Under the most conservative scenario, changes in evacuation times (Scenario 1 compared to Scenario 5 and 7) are minor for Land Use Areas A through D, with 6-, 2-, 0-, and 2-minute increases in evacuation time with the proposed Project, respectively. The 1-to-6-minute potential evacuation time increases are considered minimal and do not result in evacuation times for existing residents that would be considered excessive. The minimal increase in evacuation time due to the proposed Project is further insubstantial when considering the thousands of recreationalists who visit the region during and contribute to increased evacuation times. The Project's resident population would be considered a small relative increase to the region's visitor and resident population.

Additionally, it is possible that all evacuees would be instructed to evacuate off the mountain during certain large fires threatening the Big Bear region. In this type of scenario, it is likely that many people from the greater region

would be evacuating, unless told they cannot pass through evacuation roadways. Wildfires requiring off mountain evacuations would likely be driven by distant wildfires approaching the region that would likely provide sufficient time (multiple hours to days) to move evacuees off the mountain. As detailed above, in the event of a mass evacuation off the mountain, the Project would not significantly contribute to the overall evacuation traffic in the study area.

Study of evacuation timeframes and potential increases in evacuation time with a proposed project are relatively new CEQA focus areas. Public safety, not time, is generally the guiding consideration for evaluating impacts related to emergency evacuation. Consistent with CEQA Guidelines Appendix G, a Project's impact on evacuation is significant if the Project will significantly impair or physically interfere with implementation of an adopted emergency response or evacuation plan.

In any populated area, safely undertaking large-scale evacuations may take several hours or more and require moving people long distances to designated areas. Further, evacuations are fluid and timeframes may vary widely depending on numerous factors, including, among other things, the number of vehicles evacuating, the road capacity to accommodate those vehicles, residents' awareness and preparedness, evacuation messaging and direction, and on-site law enforcement control. The "Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act" guidance from the California Office of the Attorney General suggests that jurisdictions set benchmarks of significance based on past successful evacuations or on those from communities in similar situations.

A recent study titled "Review of California Wildfire Evacuation from 2017 to 2019 " provides more insights on the topic. This research involved interviews with 553 individuals (297 evacuees affected by various fires) including the Creek Fire, Rye Fire, Skirball Fire, and Thomas Fire. The study aimed to understand the decision-making processes of these individuals during the fires, such as whether to evacuate or stay, when to leave, the paths taken, chosen shelters, destinations, and modes of transportation. According to this research, the time it took for evacuations ranged from under 30 minutes to over 10 hours. From this dataset , the average evacuation time for the Creek Fire was found to be 3 hours and 40 minutes, involving 115,000 people . For the Thomas Fire, the average time was 4 hours and 25 minutes, impacting 104,607 individuals.

California fire and law enforcement agencies have integrated training, experience, and technology to assist in successful evacuations, which focus on moving persons at risk to safer areas before a wildfire encroaches on a populated area. Timeframes for moving people vary by site specifics, population, road capacities and other factors and there is no one threshold that would be appropriate to all locations. There are no established thresholds for evacuation times for this Project or at the time of this plan's preparation, for any California community, to the knowledge of the authors. This is primarily because every location and fire scenario are unique. While it may take one community 20 minutes to evacuate safely, it is not a valid assumption to consider a 3-hour evacuation for another community as unsafe. The 3-hour evacuation can be very safe while the 20-minute evacuation may be unsafe due to the conditions and exposures along the evacuation routes.

Notwithstanding evacuation challenges and variables, the City/County is safely managing both mass and targeted evacuations to great success. It should be noted that other variables can impact evacuation success. For instance, some individuals may choose to stay behind to defend their property or adopt a wait-and-see approach. Such decisions could delay their evacuation to a point where it becomes too late to leave safely.

Technological advancements and improved evacuation strategies learned from prior wildfire evacuation events have resulted in a system that is many times more capable of managing evacuations. With the technology in use today, evacuations are more strategic and surgical than in the past, evacuating smaller areas at highest risk and phasing evacuation traffic so that it flows more evenly and minimizes the surges that may slow an evacuation. Mass evacuation scenarios where large populations are all directed to leave simultaneously, resulting in traffic delays, are thereby avoided, and those populations most at risk are able to safely evacuate. While mass evacuation scenarios are avoided with the technology in use today, the evacuation simulations conducted in this report are based on mass evacuation scenarios to provide a worst-case scenario, as described previously.

As indicated previously, the evacuation scenarios considered herein represent mass evacuations in the Project vicinity to provide extremely worst-case scenarios. The Incident Commander would direct a focused evacuation of zones situated near the wild urban interface, which are at higher risk. Areas that are not in immediate danger would likely not be provided with an evacuation notice initially and may be instructed to remain in place to prioritize the evacuation of vehicles from areas under direct threat. This would result in phasing evacuation traffic so that it flows more evenly and minimizes the surges that may slow an evacuation. Therefore, evacuation flow would be able to be effectively managed and would not likely lead to mass evacuations, as simulated in this report.

Neither CEQA, nor San Bernardino County has adopted numerical time standards for determining whether an evacuation timeframe is appropriate. Public safety, not time, is generally the guiding consideration for evaluating impacts related to emergency evacuation. San Bernardino County has historically had an extremely high success rate for safely evacuating large numbers of people and doing so in a managed and strategic way using available technological innovations. Safely undertaking large-scale evacuations may take several hours or more and require moving people long distances to designated areas. Further, evacuations are fluid and timeframes may vary widely depending on numerous factors, including, among other things, the number of vehicles evacuating, the road capacity to accommodate those vehicles, residents' awareness and preparedness, evacuation messaging and direction, and on-site law enforcement control.

Due to its location, the Project would also provide the responding emergency managers (e.g., Incident Commander, SBCSD) the alternative option of recommending that all or a portion of the onsite population shelter in place. This on-site sheltering option is a contingency plan, but an important option in the scenario when evacuation is considered infeasible or the less safe option. This would provide emergency managers with a safer alternative to risking a late evacuation.

Based on the Project area's fire environment, its fuels and terrain along with weather factors, wildfire spread rates during extreme fire events are anticipated to be less aggressive than in heavy fuel, steep terrain locations. If ignitions occur nearby the site, then less time would be available for evacuation, and would need to include an alternative approach if the evacuation routes were considered less safe. Based on the results of this comparison, evacuation of the site is possible in all modeled scenarios. Certain scenarios noted above are projected to potentially use alternative actions, like focusing all evacuating vehicles to one of the three available routes and in one example, considering the possibility of a delayed evacuation where parts of the population could be directed to remain on-site until the fire burns out in the sparse fuels around the evacuation route, and then evacuated through evacuation corridors. However, the Project is considered to be well-suited for evacuations given the three potential separate evacuation routes and the alternative option of temporarily seeking refuge on-site in the wide, converted landscapes that would not readily facilitate wildfire spread.

The Project provides several features that would enhance orderly and safe evacuation, but which are not reflected in the average evacuation time results above. These features include evacuation preparedness, fuel modification along Project roadways, structural hardening of Project structures, and temporary refuge areas and "shelter-in-place"[7] options. These evacuation enhancements would reduce the potential for evacuation friction or interruption; however, such enhancements cannot be well depicted by the traffic evacuation model.

4.1.1 Mass Evacuation Vehicle Traffic

Mass evacuation events have become less common as wildfire evacuation technology and capabilities have improved dramatically in the last 15 years. Wildfire evacuations are managed to move smaller populations in a successive phasing to minimize traffic surges. Populated areas are evacuated in phases based on proximity to the event and risk levels. For example, it is anticipated that wildfire evacuations of the Project area will likely include the relocation of residential populations that are closest to open space, along with residents and visitors of the Project first, and then additional populations based on exposure to the wildfire in successive fashion rather than mass evacuating the entire Big Bear area. The Project is built to ignition resistant standards and represent fire-safe fuel breaks that provide emergency managers many options. The result of this type of evacuation is that residents and visitors that may be in locations that would be closest to a wildfire burning in open space areas are temporarily moved from the vicinity and vehicle congestion on evacuation routes is minimized, enabling a more efficient evacuation. Under this evacuation approach, the evacuation would include a much smaller population and would be implemented in a surgical way. The evacuation time would be even lower and would have very little impact on the existing communities.

PHASED EVACUATION The purpose of a phased evacuation is to reduce congestion and transportation demand on designated evacuation routes by controlling access to evacuation routes in stages and sections. This strategy can also be used to prioritize the evacuation of specific populations that are in proximity to the immediate danger. A phased evacuation effort will need to be enforced by law enforcement agencies and coordinated with the EOC and affected jurisdictions.

Dept of Homeland Security (2019) provides supporting data for why jurisdictions have moved to the surgical evacuation approach that leverages the power of situation awareness to support decision making. According to their Planning Considerations: Evacuation and Shelter in Place document, they indicate that delineated zones provide benefits to the agencies and community members. Evacuation and shelter-in-place zones promote phased, zone-based evacuation targeted to the most vulnerable areas, which allows jurisdictions to prioritize evacuation orders to the most vulnerable zones first and limit the need to evacuate large areas not under the threat. Zones help:

- Jurisdictions to understand transportation network throughput and capacity, critical transportation and resource needs, estimated evacuation clearance times, and shelter demand.
- Planners to develop planning factors and assumptions to inform goals and objectives.
- Community members to understand protective actions to take during an emergency.
- Shelters to limit traffic congestion and select locations suitable for the evacuated population.

[7] Shelter-in-place involves the use of a structure, including homes, to temporarily separate individuals from a hazard or threat, and is implemented when a hazard or threat is imminent or occurring and a safe evacuation is not feasible.

The amount of time needed to evacuate the Project would vary by the type of incident, the number of evacuation routes utilized, the amount of mobilization time, actual areas at risk, and other factors. It has also been established herein that the targeted approach would minimize the size of the area being evacuated and use a phased approach, which may further reduce the evacuation time estimates.

There is no evacuation timeframe threshold that Projects must meet in order to avoid a CEQA impact or to be consistent with codes, regulations or policies. Regardless, the Project has provided a comprehensive evacuation evaluation, and the evacuation time results are comparable to similar sized populations under a mass evacuation.

Further, any additional time does not necessarily generate a greater safety risk. Emergency personnel who issue evacuation orders can consider the additional time needed to implement an evacuation when determining when and where to issue evacuation orders. Risk to nearby development, including the Project or existing communities, is assessed on a regular basis in a wildfire event. Hours or days of lead time may be available to assess risk and make evacuation determinations. Further, peak occupancy conditions like those assumed in the modeling typically do not occur as all residents are not typically at home while maximum occupancy at industrial, commercial and office uses is also occurring. Further, drifting smoke, awareness of the risk, road closures, or other factors result in people avoiding the area in a fire event. Additionally, the Project is designed to allow people to shelter-in-place or take temporary refuge within the Project site, which could reduce evacuating traffic from the site.

The potential occurrence of a large evacuation event including evacuation of existing populations is minimal, but possible. In this case, the existing populations for the Project would be existing residential recreational uses to the east and west. During a large wildfire moving from north to south or east to west, it is most likely, that evacuations would be directed to the developed areas of the City of Big Bear Lake, depending on the fire location and movement. The vehicle capacity estimates utilized for this evacuation plan are based the current Highway Capacity Manual methodology for calculating adjusted saturation flow rates and are discounted for various assumed traffic-related slowing, such as higher volume and downstream bottlenecks; therefore, the discounted vehicle capacity includes capability to absorb additional vehicles.

In an actual evacuation scenario, a phased evacuation would be implemented where orders are given to evacuate based on vulnerability, location, and/or other factors, which enables the subsequent traffic surges on major roadways to be smoothed over a longer time frame and improve traffic flow. A phased strategy can also be used to prioritize the evacuation of certain communities that are in proximity to the immediate danger. The limitations of the model used for this analysis are such that it cannot accurately reflect phased evacuation conditions; hence, a worst-case mass evacuation scenario was assumed.

This WEP assumes that law enforcement personnel are controlling downstream intersections to maintain traffic flow out of the area. If traffic flow is not maintained, then the estimated evacuation times would be expected to increase, potentially substantially, as is the case in any urban area. Additionally, this analysis assumes that all existing populations within the Project area and the Project are evacuating simultaneously.

4.2 Evacuation Route Determination

Typically, fire and law enforcement officials will identify evacuation points before evacuation routes are announced to the public. Evacuation routes are determined based on the location and extent of the incident and its spread rate and direction and include as many pre-designated transportation routes as possible. However, field conditions

and shifting fire behavior may result in real-time changes to predetermined routes. Having additional evacuation route options is considered critical in these conditions. Evacuees are considered to reach a safe area once they are within the more densely urban areas such as the developed areas within the City of Big Bear Lake.

5 Wildfire/Evacuation Awareness

The Moon Camp Project HOA or property manager should be active in its outreach to its residents regarding fire safety and general evacuation procedures. There are aspects of fire safety and evacuation that require a significant level of awareness by residents in order to reduce and/or avoid problems with an effective evacuation. Mitigating potential impediments to successful evacuations requires focused and repeated information through a strong educational outreach program. The Moon Camp Project should engage occupants and coordinate with local fire agencies for fire safety awareness through a variety of methods.

This Wildfire Evacuation Plan will be accessible on the Project's website. It is strongly recommended that an annual reminder notice be provided to each resident encouraging them to review this WEP and be familiar with community evacuation protocols. Additionally, it is also recommended that the Developer coordinate with local fire agencies to hold an annual fire safety and evacuation preparedness informational meeting for residents. The meeting should be attended by representatives of appropriate fire agencies and important fire and evacuation information should be reviewed.

The focus of the "Ready, Set, Go!" program (Appendix A) is on public awareness and preparedness, especially for those living and/or working in wildland-urban interface (WUI) areas. The program is designed to incorporate the local fire protection agency as part of the training and education process in order to ensure that evacuation preparedness information is disseminated to those subject to the potential impact from a wildfire. There are three components to the program:

- "READY" – Preparing for the Fire Threat: Take personal responsibility and prepare long before the threat of a wildfire so you and your home are ready when a wildfire occurs. Residents should assemble an emergency kit for their car. Confirm you are registered for Reverse 911, TENS and SB Ready App. Make sure all residents understand the plan, procedures and escape routes.
- "SET" – Situational Awareness When a Fire Starts: If a wildfire occurs and there is potential for it to threaten the Project site and surrounding communities, be ready to evacuate. Stay aware of the latest news from local media and your local fire department for updated information on the fire. If you are uncomfortable, leave the area.
- "GO!" – Leave Early! Leaving early, well before a wildfire is threatening the Project area, provides you with the least delay and results in a situation where, if a majority of neighboring developments also leave early, firefighters are now able to better maneuver, protect and defend structures, evacuate other occupants who couldn't leave early, and focus on citizen safety.

"Ready, Set, Go!" is predicated on the fact that being unprepared and attempting to flee an impending fire late (such as when the fire is physically close to your community) is dangerous and exacerbates an already confusing situation. This Wildfire Evacuation Plan provides key information that can be integrated into the individual evacuation plans, including the best available routes to use in the event of an emergency evacuation.

San Bernadino County OES also provides a brochure providing guidelines and recommendations for family evacuation planning as provided in Appendix B. It is recommended that this brochure me made readily available to project residents.

Situation awareness requires a reliable information source. San Bernadino County using TENS and the SB Ready App Emergency Notification System, and all residents should be encouraged to register for emergency alerts. It is up to individual residents to register their cell phones for TENS. The registration of cell phones can be done online at http://www.sbcounty.gov/SBCFire/TENS/TENSContact.aspx. In addition, the San Bernadino County Emergency Alert System (EAS) is county-wide and broadcasts emergency information via four radio stations, KFRG 95.1 FM, KVCR 91.9 and KXFG 92.9 FM.

As part of the Project, the Developer will be responsible for providing access to this Wildfire Evacuation Plan, including materials from the "Ready, Set, Go!" Program and County OES Family Evacuation Planning Guidelines. As part of the approval of the Moon Camp Project, it shall be binding on Owner(s)/Property Manager to actively participate as a partner with the SBCFD to assist with the coordination and distribution of fire safety information they develop to residents.

6 Evacuation Procedures

6.1 Relocation/Evacuation

It is estimated that the conservatively calculated minimum amount of time needed to move the exiting and Project populations to urbanized and/or designated evacuation areas may require approximately up to 1 hour and 39 minutes under varying constraints that may occur during an evacuation. This does not include additional allowances for the time needed to detect and report a fire, for fire response and on-site intelligence, for phone, patrols, and aerial based notifications, and for notifying special needs citizens.

Wolshon and Marchive (2007) simulated traffic flow conditions in a computer derived WUI under a range of evacuation notice lead times and housing densities. To safely evacuate more people, they recommended that emergency managers (1) provide more lead time to evacuees and (2) control traffic levels during evacuations so that fewer vehicles are trying to exit at the same time.

Wildfire emergency response procedures will vary depending on the type of wildfire and the available time in which decision makers (IC, SBCFD, CAL FIRE, SBCSD, and/or OES) can assess the situation and determine the best course of action. Based on the Moon Camp Project and surrounding communities, its road network, and the related fire environment, the first and primary type of evacuation envisioned is an orderly, pre-planned evacuation process where people are evacuated to more urban areas further from an encroaching wildfire (likely to urban areas west) well before fire threatens. This type of evacuation must include a conservative approach to evacuating; i.e., when ignitions occur and weather is such that fires may spread rapidly, evacuations should be triggered on a conservative threshold that includes time allowances for unforeseen, but possible, events that would slow the evacuation process.

The second type of evacuation is considered by many to offer the highest level of life protection to the public, but it can result in evacuees being placed in harm's way if the time available for evacuation is insufficient (Cova et al. 2011). An example of this type of evacuation, which is highly undesirable from a public safety perspective, is an evacuation that occurs when fire ignites close to vulnerable communities. This type of situation is inherently dangerous because there is generally a higher threat to persons who are in a vehicle on a road when fire is burning in the immediate area than in a well-defended, ignition-resistant home. Conditions may become so poor that the vehicle drives off the road or crashes into another vehicle, and flames and heat overcome the occupants. A vehicle offers little shelter from a wildfire if the vehicle is situated near burning vegetation or catches fire itself. This type of evacuation must be considered a very undesirable situation by law and fire officials in all but the rarest situations where late evacuation may be safer than seeking temporary refuge in a structure (such as when there are no nearby structures, the structure[s] is/are already on fire, or when there is no other form of refuge). Temporary refuge would be possible within the newer Project structures that are built to ignition resistant levels, but some structures within surrounding communities, as previously discussed, are less may have a higher vulnerability to ignitions based on their older construction dates and the fire and building codes enforceable at that time.

The third potential type of evacuation is a hybrid of the first two. In cases where evacuation is in process and changing conditions result in a situation that is considered unsafe to continue evacuation, it may be advisable to direct evacuees to pre-planned temporary refuge locations, including their own home if it is ignition-resistant and defensible, such as those within Moon Camp Project. As with the second type of evacuation discussed above, this situation is considered

highly undesirable, but the evacuation pre-planning must consider these potential scenarios and prepare decision makers at the IC level and at the field level for enacting a contingency to evacuation when conditions dictate.

Indications from past fires and related evacuations, in San Bernadino County and throughout Southern California, which have experienced increasingly more frequent and larger fires, are that evacuations are largely successful, even with a generally unprepared populace. It then stands to reason that an informed and prepared populace would minimize the potential evacuation issues and related risk to levels considered acceptable from a community perspective.

Evacuation orders or notifications are often triggered based on established and pre-determined model buffers, which are based on topography, fuel, moisture content of the fuels and wind direction. Evacuations are initiated when a wildfire reaches or crosses one of these pre-determined buffers. Evacuations can also be very fluid. The IC, law enforcement and OES would jointly enact evacuations based on fire behavior.

6.2 Project Evacuation Baseline

For purposes of this Wildfire Evacuation Plan, the first and most logical choice for all of the occupants within the boundaries of Moon Camp Project is to adhere to the principles and practices of the "Ready, Set, Go!" Program previously mentioned in this document. As part of this program, it is important that educational and training programs, organized by Owner(s)/Property Manager, are available to all residents. In addition, it is imperative that the "Ready, Set, Go!" program information be reviewed on a routine basis along with the accompanying maps illustrating evacuation routes, temporary evacuation points and pre-identified evacuation points. It must be kept in mind that conditions may arise that will dictate a different evacuation route than the normal roads used on a daily basis.

Residents are urged to evacuate as soon as they are notified to do so or earlier if they feel uncomfortable. Directions on evacuation routes will be provided in most cases, but when not provided, residents of the Project will proceed according to known available routes away from the encroaching fire as detailed in the Quick Reference section of this WEP. Occupants are cautioned not to rely on navigation aid apps which may inadvertently lead them toward an oncoming fire. Depending on the type of emergency and the resulting evacuation, it could take approximately up to 1 hour and 39 minutes to complete an evacuation of the Project Area, based on road capacities and competing use of the roads by occupants from other areas.

Note: This Wildfire Evacuation Plan will require adjustment and continued coordination by the Owner(s) and/or Developer and/or Property Manager and fire/law enforcement agencies during each of the construction phases. With each phase, the evacuation routes may be subject to changes with the addition of both primary and secondary evacuation routes.

6.3 Civilian and Firefighter Evacuation Contingency

As of this document's preparation, no community in California has been directed to shelter-in- place during a wildland fire. This is not to say that people have not successfully sheltered-in-place during wildfire, where there are numerous examples of people sheltering in their homes, in hardened structures, in community buildings, in swimming pools, and in cleared or ignition-resistant landscape open air areas. The preference will always be early

evacuation following the "Ready, Set, Go!" model, but there exists the potential for unforeseen civilian evacuation issues, and having a contingency plan will provide direction in these situations that may result in saved lives.

Potential problems during wildfire evacuation from the Project area include:

- Inadequate time to safely evacuate;
- Fire evacuations during rush hour traffic or when large events are occurring;
- Blocked traffic due to accidents or fallen tree(s) or power pole(s);
- The need to move individuals who are unable to evacuate.

It is recommended that local law enforcement and fire agencies conduct concerted pre-planning efforts focusing on evacuation contingency planning for civilian populations when it is considered safer to temporary seek a safer refuge than evacuation. Moon Camp' structures would allow for the possibility of temporary sheltering while structures in surrounding communities would not typically be considered ignition-resistant and therefore, not appropriate for temporary refuge.

6.3.1 Safety Zones

The International Fire Service Training Association (IFTSA; Fundamentals of Wildland Fire Fighting, 3rd Edition) defines "safety zones" as areas mostly devoid of fuel, which are large enough to assure that flames and/or dangerous levels of radiant heat will not reach the personnel occupying them. Areas of bare ground, burned over areas, paved areas, and bodies of water can all be used as safety zones. The size of the area needed for a safety zone is determined by fuel types, its location on slopes and its relation to topographic features (chutes and saddles) as well as observed fire behavior. Safety zones should never be located in topographic saddles, chutes or gullies. High winds, steep slopes or heavy fuel loads may increase the area needed for a safety zone.

The National Wildland Fire Coordinating Groups (NWFCG), Glossary of Wildland Fire Terminology provides the following definitions for safety zones:

> *Safety Zone*. An area cleared of flammable materials used for escape in the event the line is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks; they are greatly enlarged areas, which can be used with relative safety by firefighters and their equipment in the event of blowup in the vicinity.

According to NWFCG, safety zone(s):

- Must be survivable without a fire shelter
- Can include moving back into a clean burn
- May take advantage of natural features (rock areas, water, meadows)
- Can include constructed sites (clear-cuts, roads, helispots)
- Are scouted for size and hazards
- Consider the topographic location (larger if upslope)

- Should be larger if downwind
- Should not include heavy fuels
- May need to be adjusted based on site-specific fire behavior

The definition for a safety zone includes provisions for separation distance between the firefighter and the flames of at least four times the maximum continuous flame height. Distance separation is the radius from the center of the safety zone to the nearest fuels.

The urbanized areas nearby the Project site offer the best possibility for a safety zone for firefighter use. The Moon Camp Project will also include the ability for firefighters to seek safety zones within the ignition-resistant landscapes, but identification of other potential safety zones will require additional focused study by SBCFD and other fire and law enforcement agencies.

6.3.2 Temporary Firefighter Refuge Areas

Firescope California (Firefighting Resources of Southern California Organized for Potential Emergencies) was formed by legislative action to form a partnership between all facets of local, rural, and metropolitan fire departments, CAL FIRE and federal fire agencies. Firescope defines a contingency plan when it is not possible to retreat to a safety zone. This contingency includes establishment of firefighter temporary refuge areas (TRAs), which are defined as:

> A preplanned area where firefighters can immediately take refuge for temporary shelter and short-term relief without using a fire shelter in the event that emergency egress to an established safety zone is compromised.

Examples of a TRA may include the lee side of a structure, inside of a structure, large lawn or parking areas, or cab of a fire engine, amongst others. Differences between a TRA and a Safety Zone is that TRAs are closer to the immediate firefighting area, are considered a contingency to being able to get to a safety zone, do not include a requirement for a large area set back four times the flame lengths of adjacent fuels, and cannot be feasibly pre-planned until firefighters arrive on-scene and size up the situation.

Firescope appropriately notes that although safety zones and viable escape routes shall always be identified in the WUI environment, they may not be immediately available should the fire behavior increase unexpectedly. Often a TRA is more accessible in the WUI environment. A TRA will provide temporary shelter and short-term relief from an approaching fire without the use of a fire shelter and allow the responders to develop an alternate plan to safely survive the increase in fire behavior.

The major difference between a TRA and a safety zone is that a TRA requires another planned tactical action; i.e., TRAs cannot be considered the final action, but must include self-defense and a move out of the area when the fire threat subsides. A TRA should be available and identified on site at a defended structure. TRAs are NOT a substitute for a safety zone. TRA pre-planning is difficult, at best because they are very site- and fire behavior-specific. For the existing uses, TRAs would likely include navigating into any of the within the more densely developed areas where firefighters would be separated from the unmaintained wildland fuels by wide areas including site-wide maintained landscapes, ignition-resistant structures, and wide roads that offer numerous opportunities for TRA.

The entire Project site would be developed and paved surfaces, such as the parking areas, are considered potential TRAs. This is an important concept because it offers last-resort, temporary refuge of firefighters, and in a worst-case condition, occupants. This approach would be consistent with Firescope California (2013), which indicates that firefighters must determine if a safe evacuation is appropriate and if not, to identify safe refuge for those who cannot be evacuated, including civilians.

Each of the Project site's structures that can be considered for TRA include the following features:

- Ignition-resistant construction
- Annual landscape inspections by 3rd party inspectors
- Wide roadways with fire hydrants
- Maintained landscapes and roadside fuel modification
- Ember-resistant vents
- Interior fire sprinklers

Because there is the possibility that evacuation of the Project and surrounding communities may be less safe than temporarily refuging on site, such as during a fast-moving, wind-driven fire that ignites nearby, including temporary refuge within some properly designed, constructed and maintained structures onsite is considered a contingency plan for the Moon Camp Project. This concept is considered a component of the "Ready, Set, Go!" model as it provides a broader level of "readiness" should the ability to execute an early evacuation be negated by fire, road congestion, or other unforeseen issues.

Note: This approach would be considered a last-resort contingency during wildfire with the primary focus being on early evacuation. The decision for evacuation or temporarily refuging on site will be made by responding law enforcement and/or fire personnel.

6.4 Social Aspects of Wildfire Evacuation

Orderly movement of people is the result of planning, training, education, and awareness, all of which are promoted in San Bernadino County. Evacuation has been the standard term used for emergency movement of people and implies imminent or threatening danger. The term in this Wildfire Evacuation Plan, and under the "Ready, Set, Go!" concept, indicates that there is a perceived threat to persons and movement out of the area is necessary, but will occur according to a pre-planned and practiced protocol, reducing the potential for panic.

Citizen reactions may vary during an evacuation event, although several studies indicate that orderly movement during wildfire and other emergencies is not typically unmanageable. Evacuation can be made even less problematic through diligent public education and emergency personnel training and familiarity. Social science research literature indicates that reactions to warnings follow certain behavior patterns that are defined by people's perceptions (Aguirre 1994; Drabek 1991; Fitzpatrick and Mileti 1994; Gordon 2006; Collins 2004) and are not unpredictable. In summary, warnings received from credible sources by people who are aware (or have been made aware) of the potential risk, have the effect of an orderly decision process that typically results in successful evacuation. This success is heightened when evacuations are not foreign to occupants (Quarantelli and Dynes 1977; Lindell and Perry 2004) as will occur within the Project area. Further, in all but the rarest circumstances, evacuees will be receiving information from credible sources during an evacuation. It would be anticipated that law enforcement and/or fire personnel would be on site to help direct traffic and would be viewed by evacuees as

knowledgeable and credible. The importance of training these personnel cannot be overstated and annual education and training regarding fire safety and evacuation events will be essential for successful future evacuations.

6.4.1 Evacuation of Special Populations

Vogt (1990 and 1991) defines special populations as those groups of people who, because of their special situations or needs, require different planning strategies from those of the general population. Special needs populations in Moon Camp Project include the hearing or visually impaired, foreign speaking, and temporary visitors such as customers or day workers.

6.4.3 Re-Entry Procedures

Although re-entry procedures were not identified within San Bernardino County emergency planning documents reviewed by the consultant, re-entry procedures generally incorporate the following actions.

An important component of evacuations is the citizen re-entry process. The County's EOP Re-Entry Protocol establishes guidance and procedures to ensure a coordinated, safe, and orderly re-entry into impacted communities following an incident.

The EOC Law Enforcement Branch will serve as the primary agency re-entry activities with support from other agencies including SBCSD, San Bernadino OES, Cal OES Law Enforcement Mutual Aid Region VI, ARC, VOAD, CHP, and more. In most cases, the EOC will remain activated until full re-entry is complete. In the event that the EOC has been deactivated, the IC or the Liaison Officer of the Incident Management Team will initiate re-entry procedures. The impacted areas must be thoroughly investigated to ensure it is safe for occupants to return and normal operations have been restored.

The public will be notified of the re-entry status through emergency broadcast radio, television, press releases, internet, TNES, Ready SB Alert App, community briefings, and informational updates at shelters. Once evacuees are permitted to return, it is important that procedures are established to properly identify occupants and critical support personnel, as well as ensure the legitimacy of contractors, insurance adjustors, and other personnel. Re-entry points should be staffed by law enforcement personnel.

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7 Implementing Conditions

1. Moon Camp will designate a Fire Safety Coordinator(s) to oversee implementation of this WEP and overall fire coordination with BPD and SBCFD.
2. The Fire Safety Coordinator(s) will coordinate an annual fire evacuation drill/fire exercise to ensure proper safety measures have been implemented, facility awareness and preparation of a facility-wide **"Ready, Set, Go!"** plan. The Fire Safety Coordinator will also organize resident training and awareness through various practices:
    i. New hire fire awareness and evacuation training
    ii. Ongoing staff training
    iii. Facility sweeps by trained staff
    iv. Strategically placed fire safety and evacuation/sheltering protocol information, as determined by the Fire Safety Coordinator.
3. The Moon Camp Project will include a proactive facility wildfire education program utilizing a multi-pronged approach to fire safety following the **"Ready, Set, Go!"** approach to wildfire evacuation, to include, but not limited to:
    i. Annual wildfire and evacuation safety awareness meeting in coordination with local fire agencies.
    ii. Annual reminder notices will be provided to each resident encouraging them to review this WEP and be familiar with evacuation protocols.
    iii. The Project website will host a webpage dedicated to wildfire and evacuation education and awareness, which should include a copy of this Wildfire Evacuation Plan and the resources provided herein.
4. The Project includes a contingency plan for the rare occurrence that evacuation is not safe that includes residents sheltering in place within onsite structures.

8 Limitations

This Wildfire Evacuation Plan incorporates concepts and protocols consistent with industry standards and has been developed based on San Bernadino County wildfire and evacuation standards per the County's EOP documents and is specifically intended as a guide for evacuations for the Moon Camp Project. This Wildfire Evacuation Plan provides basic evacuation information that will familiarize residents of the Project with the evacuation route options that may be available to them during an emergency. However, because emergencies requiring evacuation have many variables and must be evaluated on a case-by-case basis, real-time law enforcement and fire personnel/agencies' decision-making and direction during an emergency requiring evacuation would supersede this WEP.

This WEP analyzes the existing community's evacuation times currently and with the proposed Moon Camp Project. The estimated evacuation times are based on several assumptions as detailed in this WEP. However, actual evacuation times may be faster or slower than the estimates, depending on the type of emergency, the extent of the evacuation, the time of day, and other factors. A collective, community–wide evacuation of existing populations and the proposed population from the Project would include congested roads in its existing condition that are improved, but still congested, with the Moon Camp Project. Congested roads are normal in any urban setting when a large evacuation is declared unless it is managed and evacuation areas are staggered to reduce the potential traffic surges that can significantly impact evacuations. Therefore, there would likely still be congestion and delays.

This Wildfire Evacuation Plan promotes the "Ready, Set, Go!" model, adopted by SBCFD, CAL FIRE, and many fire agencies statewide. The goal is to raise agency and citizen awareness of potential evacuation issues and get a majority of the public "Ready" by taking a proactive stance on preparedness, and evacuation planning efforts. The Moon Camp populace will be "Set" by closely monitoring the situation whenever fire weather occurs and/or when wildland fire occurs and elevating pre-planned protocol activities and situation awareness. Lastly, officials will implement the plan and mandate that populations "Go" by executing pre-planned evacuation procedures in a conservative manner (i.e., evacuation will occur based on conservative decision points, as proposed in this evacuation plan or when directed by fire and law enforcement personnel, whichever is more conservative). The preferred alternative will always be early evacuation. However, there may be instances when evacuation is not possible, is not considered safe, or is not an option based on changing conditions. For example, should a fire occur and make evacuation from the Project area ill advised, a contingency plan for residents should be available. This contingency would include moving people to pre-designated TRAs until it is safe to evacuate or the threat has been mitigated.

Ultimately, it is the intent of this Wildfire Evacuation Plan to guide the implementation of evacuation procedures such that the process of evacuating people from the Moon Camp Project is facilitated in an efficient manner and according to a pre-defined evacuation protocol as well as providing a contingency option of temporarily refuging onsite, if evacuation is considered less safe. The Project's residents should be aware of this Wildfire Evacuation Plan and components of it shall be posted on the Project's website. It is also recommended that the Owner(s)/Property Manager provide reminders to residents on at least an annual basis. This educational outreach will result in a populace that understands the potential for evacuations and the routes and options that may be presented to them.

During extreme fire weather conditions, there are no guarantees that a given structure will not burn or that evacuations will be successful all the time. Wildfires may occur in the area that could damage property or harm

persons. However, successful implementation of the procedures outlined in this Wildfire Evacuation Plan will provide for an informed populace regarding evacuations.

This WEP does not provide a guarantee that all persons will be safe at all times because of the procedures discussed. There are many variables that may influence overall safety. This WEP provides a summary for implementation of standard evacuation protocols and public outreach, which should result in reduced wildfire related risk and hazard. Even then, fire can compromise the procedures through various, unpredictable ways. The goal is to reduce the likelihood that the system is compromised through implementation of the elements of this WEP and regular occurring program maintenance and updates.

It is recommended that the evacuation process is carried out with a conservative approach to fire safety. This approach must include embracing a "Ready, Set, Go!" stance on evacuation. Accordingly, evacuation of the wildfire areas should occur as soon as they receive notice to evacuate, which may vary depending on many environmental and other factors. Fire is a dynamic and somewhat unpredictable occurrence, and it is important for anyone living at the wildland-urban interface to educate themselves on practices that will improve safety.

Limitations

The underlying planning principle for fire preparedness, given the dynamic nature of a fire, is to demonstrate the availability of multiple route alternatives and response strategies to permit emergency professionals to manage their response according to the specific circumstances. The Study Area provides ample route and response alternatives. Emergency responders will coordinate the safest possible evacuation based on the dynamic circumstances of the actual event, including the appropriate phasing of the evacuation, and utilization of the most appropriate ingress and egress routes for area residents and emergency responders.

The breadth of route alternatives and response strategies available to emergency professionals to manage a potential fire in this region cannot and should not be evaluated using the CRA's Evacuation Analysis – Technical Memorandum alone. A comprehensive view of Project fire safety is gained by understanding this memo, the Project's Wildfire Evacuation Plan, along with the standard protocols and "in-the-field" decision making of emergency responders.

This Wildfire Evacuation Plan presents a reasonable vehicle travel time estimate based on professional judgments made by CRA with input from Dudek. Changing any number of these assumptions can lengthen or shorten the average vehicle travel time.

For instance, a situation could arise in which professionals *may* choose to utilize additional roadways for evacuation not utilized in the Dudek/CRA analysis and *may also* choose to send more vehicle trips to certain evacuation routes, and *may also* choose to guide vehicle trips to more or different route permutations relative to what has been modeled in this the Dudek/CRA analysis.

The net result of changing the variables selected could yield an average evacuation travel time shorter or longer than the results detailed in the Dudek/CRA analysis. Many factors can shorten or lengthen the vehicle time from the results shown herein. For example:

1. Changing the possible evacuation routes selected would affect the results. For instance, utilizing roads for ingress and/or egress that are not utilized in this analysis could shorten vehicle travel times relative to the results shown herein.

2. Increasing or decreasing the number of path permutations and percentage of the population utilizing each route that leads out of the immediate area could shorten or lengthen vehicle travel time relative to the results shown herein.
3. Emergency professionals electing to reserve certain road lanes for emergency vehicle ingress for portions of time could affect the travel time relative to the results shown herein.
4. Assuming evacuees utilize fewer or more vehicles to evacuate from the Project or surrounding communities relative to the Vehicle Utilization Rate selected in the analysis would shorten or lengthen vehicle travel time relative to the results shown herein.
5. Changing the mix of vehicle trips allocated to each evacuation route could shorten or lengthen vehicle travel time relative to the results shown herein.
6. Assuming a different road capacity adjustment factor could shorten or lengthen the vehicle travel time relative to the results shown herein.
7. Assuming fewer people are at home when the evacuation notice is given would reduce the number of vehicle trips and shorten vehicle travel time relative to the results shown herein. For instance, an evacuation during daytime hours would typically result in fewer outbound trips than assumed in this analysis.
8. Assuming some portion of vehicle trips are made in advance of the evacuation notice would reduce the number of vehicle trips relative to the results shown herein.
9. Assuming some homeowners and their families are not in the Study Area when evacuation notice is given (most likely in a daytime evacuation event), could reduce the number for vehicle trips relative to the results shown herein.

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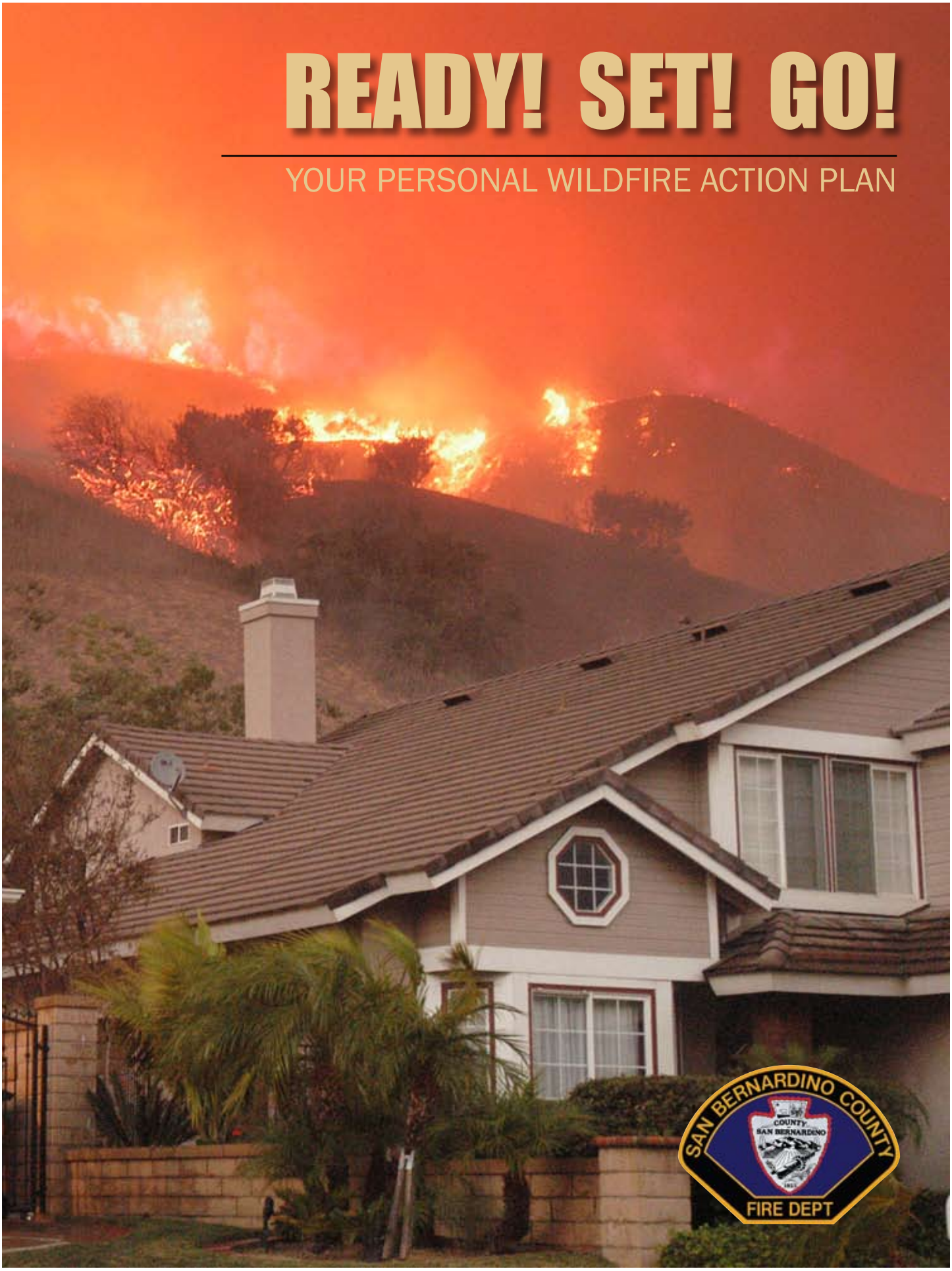
Appendix A1

"Ready, Set, Go!" Wildfire Action Plan

READY! SET! GO!

YOUR PERSONAL WILDFIRE ACTION PLAN



READY! SET! GO!

Wildfire Action Plan

Saving Lives and Property through Advance Planning

Dear Resident,

San Bernardino County is one of the most beautiful places to live, but for those living in what are called “urban interface areas,” it does not come without risks. Fire is, and always has been, a natural part of this landscape. Many of us have chosen to live in brush-covered canyons and on hillsides which have historically burned long before homes were built. The fire season is now year-round, requiring firefighters and residents to constantly be on heightened alert for the threat of wildfire.

The San Bernardino County Fire Department takes every precaution to help protect you and your property from wildfire. In the event of a major wildfire, however, firefighting resources will be stretched. This reality requires you to take personal responsibility for protecting yourself, your family, and your property.

We have published this Ready, Set, Go! Personal Wildfire Action Plan to give you the tips and tools to successfully prepare for a wildfire. It will give you guidance on retrofitting your home with fire-resistive features. It will help you create the necessary defensible space around your home. This publication will help you prepare your home, yourself, and your family so that you can leave early, well ahead of a fast-approaching wildfire.

In San Bernardino County, wildfires are often fueled by dry vegetation and driven by hot, dry “Santa Ana” winds, making them extremely dangerous and impossible to control. However, many residents have built their homes and landscaped without fully understanding the impact that a wildfire could have on them. Few have adequately prepared their families for a quick evacuation. Many don’t fully know the potential consequences of choosing to ignore an evacuation order until it is too late. We always recommend that you comply with any evacuation orders resulting from wildfire.

It’s not a question of “if” but “when” the next major wildfire will occur in San Bernardino County. That’s why the most important person in protecting your life and property is not the firefighter, but yourself. Through advance planning and preparation, we can all be ready for the next wildfire. I hope that you find the tips included in this publication helpful in creating heightened situational awareness and a more fire-safe environment for you and your family.

Stay safe,

Your San Bernardino County Fire Chief

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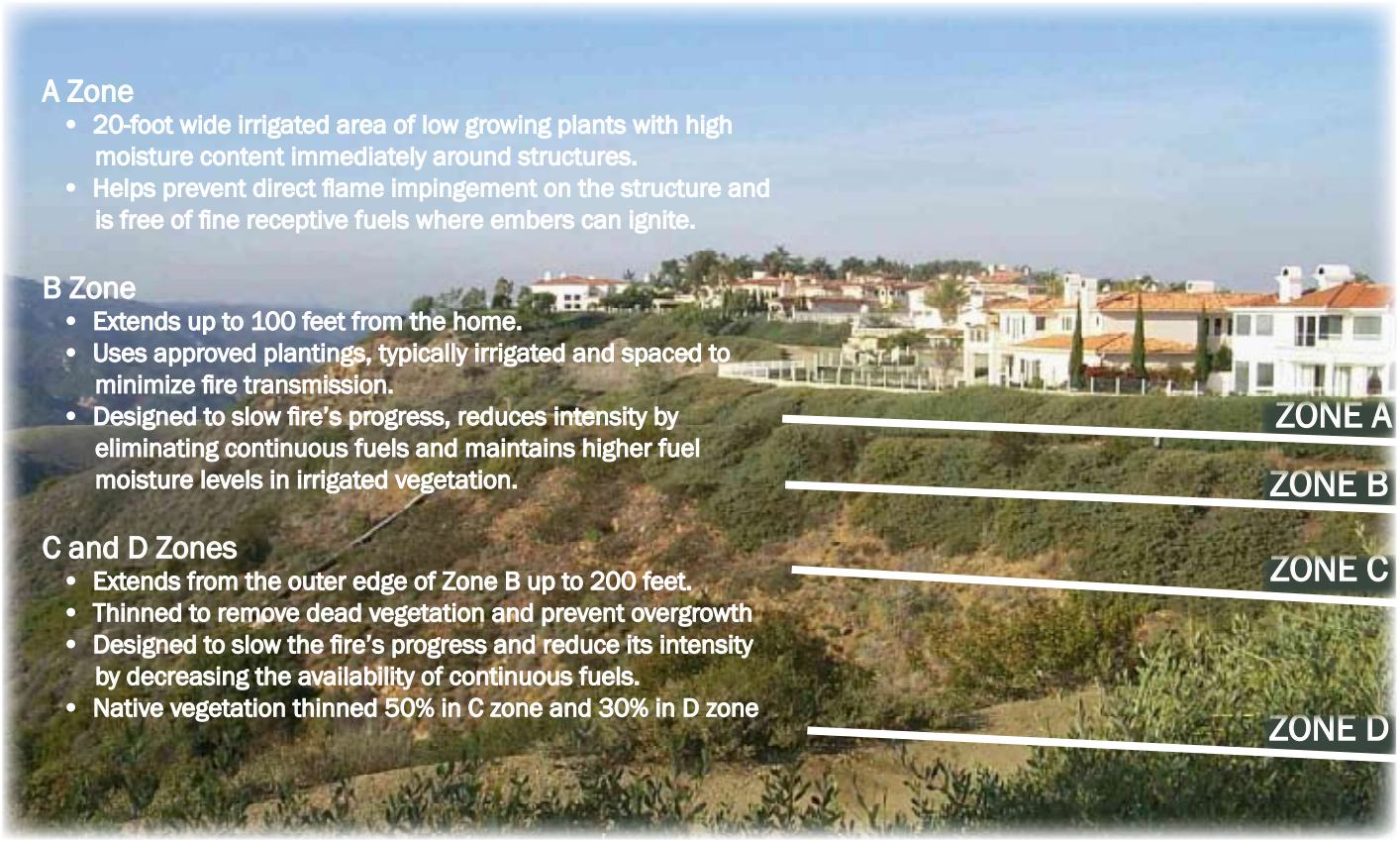
Ready! Set! Go! is also supported by:

Get READY - Create a Defensible Home

A defensible home is a home that has the greatest potential for surviving a wildfire. Defensible homes are those homes that are in compliance with the County of San Bernardino Brush Clearance requirements or have been through the Fire Department's Fuel Modification Program and have been constructed in accordance with the latest building standards for the fire zones.

What is Fuel Modification ?

The Fuel Modification Program affects new structures and developments built in the high fire hazard areas. A plan is approved by the Fire Department that helps protect homes and neighborhoods by requiring vegetation planted in zones around structures to be selected from an approved list and identifies areas that require brush clearance or thinning.



What is Defensible Space ?

Defensible space is the required space between a structure and the wildland area that, under normal conditions, creates a sufficient buffer to slow or halt the spread of wildfire to a structure. It protects the home from igniting due to direct flame impingement and radiant heat. Compliance is essential for structure survivability during wildfire conditions.

ZONE 1

Extends 30 feet out from buildings, structures, decks, etc.

- Remove all dead or dying vegetation
- Trim tree canopies regularly to keep their branches a minimum of 10 feet from structures and other trees
- Remove leaf litter (dry leaves / pine needles) from yard, roof, and rain gutters
- Relocate woodpiles or other combustible materials into Zone 2
- Remove combustible material and vegetation from around and under decks
- Remove or prune vegetation near windows
- Remove “ladder fuels” (low-level vegetation that allows the fire to spread from the ground to the tree canopy). Create a separation between low-level vegetation and tree branches. This can be done by reducing the height of low-level vegetation and/or trimming low tree branches.

ZONE 2

Extends 30 - 100 feet out from buildings, structures, and decks. Reduce the continuity of fuels by removing dead material and removing and/or thinning vegetation. Minimum spacing between vegetation is 3 times the dimension of the plant.

- Remove “ladder fuels”
- Cut or mow annual grass down to a maximum height of 4 inches
- Trim tree canopies regularly to keep their branches a minimum of 10 feet from other trees

What is a "Hardened" Home ?

The ability of your home to survive wildfire depends on its construction materials and the quality of the "defensible space" surrounding it. Embers from a wildfire will find the weak link in your home's fire protection scheme and gain the upper hand because of a small, overlooked or seemingly inconsequential factor. However, there are measures you can take to safeguard your home from wildfire. While you may not be able to accomplish all of the measures listed below, each will increase your home's, and possibly your family's, safety and survival during a wildfire.

ROOFS
A roof is the most vulnerable surface for embers to land, lodge and start a fire; this includes roof valleys, open ends of barrel tiles, and rain gutters.

EAVES
Embers gather under open eaves and ignite exposed wood or other combustible material.

VENTS
Embers enter the attic or other concealed space and ignite combustible materials. Vents in eaves and cornices are particularly vulnerable, as are any unscreened vents.

WALLS
Combustible siding or other combustible or overlapping materials provide a surface and crevice for embers to nestle and ignite.

WINDOWS & DOORS
Embers can enter gaps in doors, including garage doors. Plants or combustible storage near windows can be ignited from embers and generate heat that can break windows and/or melt combustible frames.

BALCONIES & DECKS
Embers collect in or on combustible surfaces or undersides of decks and balconies, ignite the material, and enter the home through walls or windows.

ADDED PROTECTION
Consider protecting your home with a residential fire sprinkler system. In addition to extinguishing a fire started by an ember that enters your home, it also protects you and your family 24/7, year-round, from any fire that may start in your home, not just wildfire.

Tour a Wildfire Ready Home

Home Site and Yard: Ensure that you have at least a 100-foot radius of defensible space (cleared vegetation) around your home. Note that even more clearance may be needed for homes in severe hazard areas. This means looking past what you own to determine the impact a common slope or neighbor's yard will have on your property during a wildfire.

Cut dry weeds and grass before noon when temperatures are cooler to reduce the chance of sparking a fire.

Landscape with fire-resistant plants with high moisture content and are low-growing.

Keep woodpiles, propane tanks and combustible materials away from your home and other structures, such as garages, barns, and sheds.

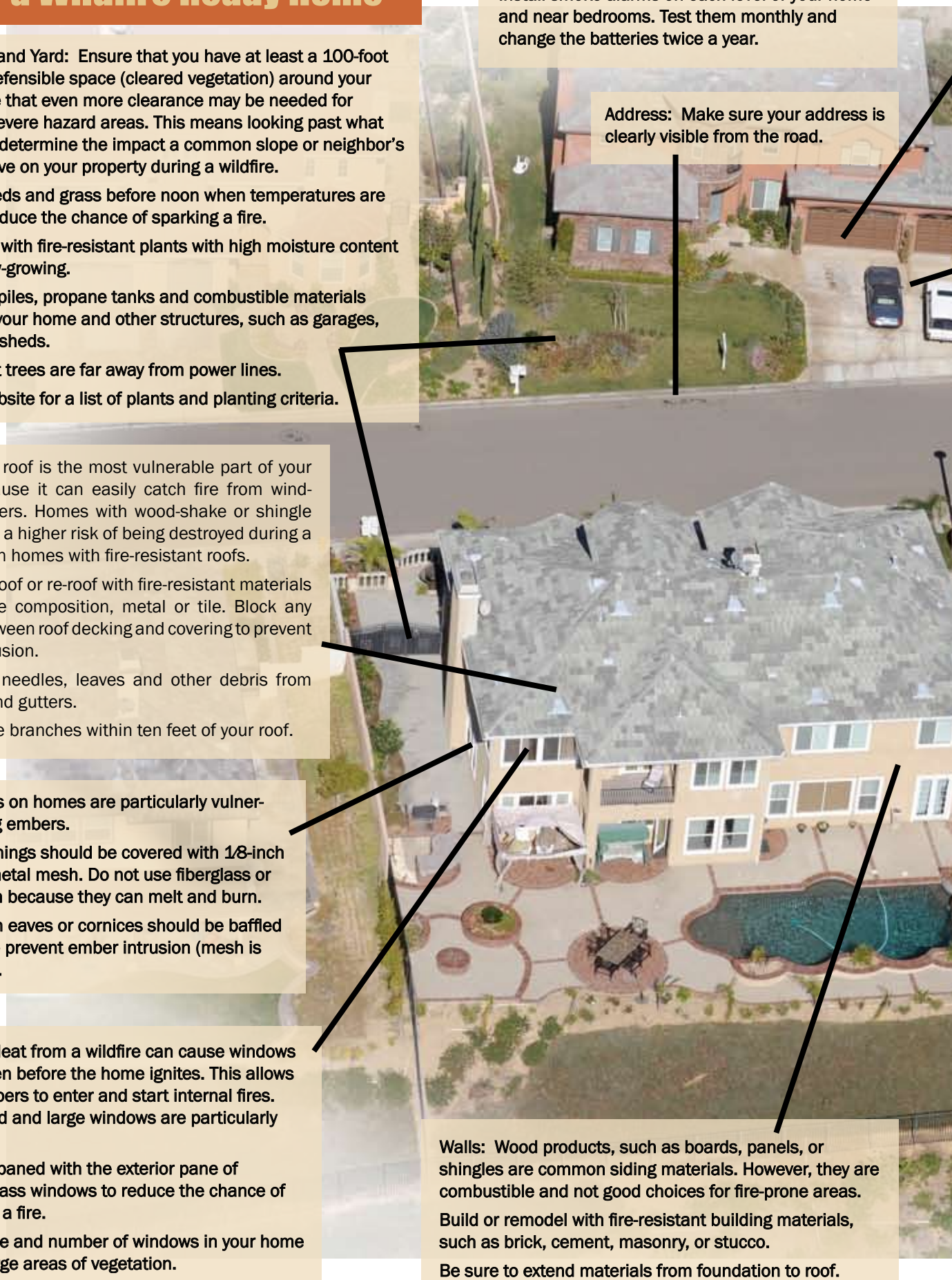
Ensure that trees are far away from power lines.

See our website for a list of plants and planting criteria.

Inside: Keep working fire extinguishers on hand.

Install smoke alarms on each level of your home and near bedrooms. Test them monthly and change the batteries twice a year.

Address: Make sure your address is clearly visible from the road.



Roof: Your roof is the most vulnerable part of your home because it can easily catch fire from wind-blown embers. Homes with wood-shake or shingle roofs are at a higher risk of being destroyed during a wildfire than homes with fire-resistant roofs.

Build your roof or re-roof with fire-resistant materials that include composition, metal or tile. Block any spaces between roof decking and covering to prevent ember intrusion.

Clear pine needles, leaves and other debris from your roof and gutters.

Cut any tree branches within ten feet of your roof.

Vents: Vents on homes are particularly vulnerable to flying embers.

All vent openings should be covered with 1/8-inch or smaller metal mesh. Do not use fiberglass or plastic mesh because they can melt and burn.

Attic vents in eaves or cornices should be baffled or otherwise prevent ember intrusion (mesh is not enough).

Windows: Heat from a wildfire can cause windows to break even before the home ignites. This allows burning embers to enter and start internal fires. Single-paned and large windows are particularly vulnerable.

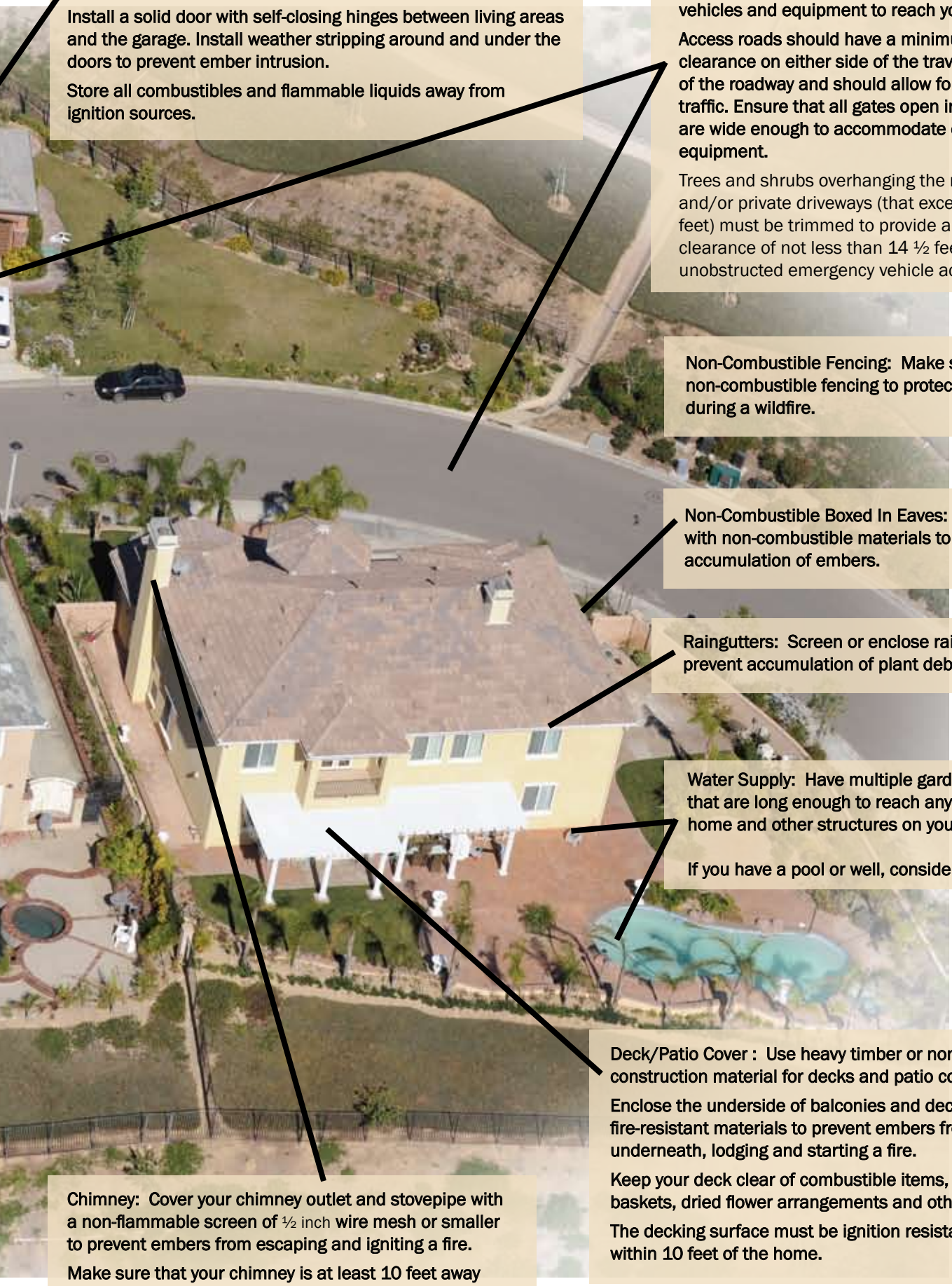
Install dual-paned with the exterior pane of tempered glass windows to reduce the chance of breakage in a fire.

Limit the size and number of windows in your home that face large areas of vegetation.

Walls: Wood products, such as boards, panels, or shingles are common siding materials. However, they are combustible and not good choices for fire-prone areas.

Build or remodel with fire-resistant building materials, such as brick, cement, masonry, or stucco.

Be sure to extend materials from foundation to roof.



Garage: Have a fire extinguisher and tools such as a shovel, rake, bucket, and hoe available for fire emergencies.

Install a solid door with self-closing hinges between living areas and the garage. Install weather stripping around and under the doors to prevent ember intrusion.

Store all combustibles and flammable liquids away from ignition sources.

Driveways and Access Roads: Driveways should be designed to allow fire and emergency vehicles and equipment to reach your house.

Access roads should have a minimum 10-foot clearance on either side of the traveled section of the roadway and should allow for two-way traffic. Ensure that all gates open inward and are wide enough to accommodate emergency equipment.

Trees and shrubs overhanging the road and/or private driveways (that exceed 150 feet) must be trimmed to provide a vertical clearance of not less than 14 ½ feet to allow for unobstructed emergency vehicle access.

Non-Combustible Fencing: Make sure to use non-combustible fencing to protect your home during a wildfire.

Non-Combustible Boxed In Eaves: Box in eaves with non-combustible materials to prevent accumulation of embers.

Raingutters: Screen or enclose raingutters to prevent accumulation of plant debris.

Water Supply: Have multiple garden hoses that are long enough to reach any area of your home and other structures on your property.

If you have a pool or well, consider a pump.

Deck/Patio Cover : Use heavy timber or non-flammable construction material for decks and patio covers.

Enclose the underside of balconies and decks with fire-resistant materials to prevent embers from blowing underneath, lodging and starting a fire.

Keep your deck clear of combustible items, such as baskets, dried flower arrangements and other debris.

The decking surface must be ignition resistant if it's within 10 feet of the home.

Chimney: Cover your chimney outlet and stovepipe with a non-flammable screen of ½ inch wire mesh or smaller to prevent embers from escaping and igniting a fire.

Make sure that your chimney is at least 10 feet away from any tree branches.

Create Your Own Wildfire Action Plan

Your Wildfire Action Plan must be prepared with all members of your household well in advance of a fire.

Use these checklists to help you prepare your Wildfire Action Plan.

Each family's plan will be different, depending on their situation.

Once you finish your plan, rehearse it regularly with your family and keep it in a safe and accessible place for quick implementation.

Get SET - Prepare Your Family

CERT COMMUNITY EMERGENCY RESPONSE TEAM

- ☐ **Create a Family Disaster Plan that includes** meeting locations and communication plans, and rehearse it regularly. Include in your plan the evacuation of large animals, such as horses.
- ☐ Have fire extinguishers on hand and train your family how to use them.
- ☐ Ensure that your family knows where your gas, electric and water main shut-off controls are and how to use them.
- ☐ Plan several different escape routes.
- ☐ Designate an emergency meeting location outside of the fire hazard area.
- ☐ Assemble an emergency supply kit as recommended by the American Red Cross.
- ☐ Appoint an out-of-area friend or relative as a point of contact so that you can communicate with family members who have relocated.
- ☐ Maintain a list of emergency contact numbers posted near your phone and in your emergency supply kit.
- ☐ Keep an extra emergency supply kit in your car in case you can't get to your home because of fire.
- ☐ Have a portable radio or scanner so that you can stay updated on the fire.

As the Fire Approaches

- [ ] Alert family and neighbors.
- [ ] Dress in appropriate clothing (i.e., clothing made from natural fibers, such as cotton, and work boots). Have goggles and a dry bandana or particle mask handy.
- [ ] Ensure that you have your brush fire survival kit on hand that includes necessary items, such as a battery-powered radio, spare batteries, emergency contact numbers, and ample drinking water.
- [ ] Stay tuned to your TV or local radio stations for updates, or check the Fire Department website at www.sbcfire.org
- [ ] Until you evacuate, remain close to your house, drink plenty of water and keep an eye on your family and pets.

OUTDOOR CHECKLIST

- [ ] Gather up flammable items from the exterior of the house and bring them inside (e.g., patio furniture, children's toys, doormats, etc.) or place them in your pool.
- [ ] Turn off propane tanks.
- [ ] Connect garden hoses to outside taps.
- [ ] Don't leave sprinklers on or water running - they can waste critical water pressure.
- [ ] Leave exterior lights on.
- [ ] Back your car into the garage. Shut doors and roll up windows.
- [ ] Have a ladder available.
- [ ] Patrol your property and extinguish all small fires.
- [ ] Seal attic and ground vents with pre-cut plywood or commercial seals.

INDOOR CHECKLIST

- [ ] Shut all windows and doors, leaving them unlocked.
- [ ] Remove flammable window shades and curtains and close metal shutters.
- [ ] Remove lightweight curtains.
- [ ] Move flammable furniture to the center of the room, away from windows and doors.
- [ ] Shut off gas at the meter. Turn off pilot lights.
- [ ] Leave your lights on so firefighters can see your house under smoky conditions.
- [ ] Shut off the air conditioning.

IF YOU ARE TRAPPED: SURVIVAL TIPS

- [ ] Shelter away from outside walls.
- [ ] Patrol inside your home for spot fires and extinguish them.
- [ ] Wear long sleeves and long pants made of natural fibers such as cotton.
- [ ] Stay hydrated.
- [ ] Ensure you can exit the home if it catches fire (remember if it's hot inside the house it is four to five times hotter outside).
- [ ] After the fire has passed, check your roof and extinguish any fires, sparks or embers.
- [ ] Check inside the attic for hidden embers.
- [ ] Patrol your property and extinguish small fires.
- [ ] If there are fires that you cannot extinguish with a small amount of water or in a short period of time, call 9-1-1.

GO Early

By leaving early, you will give your family the best chance of surviving a wildfire. You also help firefighters by keeping roads clear of congestion, enabling them to move more freely and do their job.

Make a Kit

- Keep a pair of old shoes and a flashlight handy for a night evacuation.
- Keep the six "**P**'s" ready, in case an immediate evacuation is required:
  - **P**eople and pets
  - **P**apers, phone numbers, and important documents
  - **P**rescriptions, vitamins, and eyeglasses
  - **P**ictures and irreplaceable memorabilia
  - **P**ersonal computers (information on hard drive and disks)
  - "**P**lastic" (credit cards, ATM cards) and cash

WHEN TO LEAVE

Leave early enough to avoid being caught in fire, smoke, or road congestion. Don't wait to be told by authorities to leave. In an intense wildfire, they may not have time to knock on every door. If you are advised to leave, don't hesitate!

WHERE TO GO

Leave to a predetermined location (it should be a low-risk area, such as a well-prepared neighbor or relative's house, a Red Cross shelter or evacuation center, motel, etc.)

HOW TO GET THERE

Have several travel routes in case one route is blocked by the fire or by emergency vehicles and equipment. Choose an escape route away from the fire.

WHAT TO TAKE

Take your emergency supply kit containing your family and pet's necessary items, such as cash, water, clothing, food, first aid kits, medications, and toys. Also, don't forget valuables, such as your computer, photos, and important documents.

Organize your family members and make arrangements for your pets.

Write up your Wildfire Action Plan and post it in a location where every member of your family can see it. Rehearse it with your family.

My Personal Wildfire Action Plan

During High Fire Danger days in your area, monitor your local media for information on brush fires and be ready to implement your plan. Hot, dry, and windy conditions create the perfect environment for a wildfire.

Important Phone Numbers

Emergency: _____ _____ _____

_____ _____ _____

School: _____ _____ _____

_____ _____ _____

Family: _____ _____ _____

_____ _____ _____

Friends: _____ _____ _____

_____ _____ _____

Animal Shelter: _____

_____

When to go: _____

_____

Where to go: _____

_____

How to get there: _____

_____ Destination: _____

What to take: ☐ Insurance Papers ☐ Photos ☐ Prescriptions ☐ Important Documents

_____

Who to tell (before and after): _____

San Bernardino County Fire Department
If you have an emergency, call **911**
Public Information Office **(909) 387-5950**
Web site: **www.sbcfire.org**

Ready! Set! Go!

TO REPORT AN EMERGENCY, CALL

9-1-1

San Bernardino County
Fire Incident Information Line

(909) 355-8800

During an emergency tune to your local EAS radio broadcast stations listed below or a station in your area.

93.3 FM	**KBHR**	**Big Bear Valley**
95.1 FM	**KFRG**	**High Desert/Valley**
98.9 FM	**KHWY**	**High Desert**
102.3 FM	**KZXY**	**Victor Valley**
107.7 FM	**KCDZ**	**Yucca Valley/Joshua Tree**
1620 AM		**CalTrans Information Station**

Photo by Troy Whitman - Southern California Edison

Appendix B

San Bernadino County OES Family Evacuation Planning Brochure

PETER R. HILLS, FIRE CHIEF

STEPS TO DEVELOPING YOUR EVACUATION PLAN

GARY PENROD, SHERIFF

San Bernardino County
Office of Emergency Services
(909) 356-3998

Family Evacuation Planning

Where will your family be when disaster strikes?

How will you find each other? Will you know if your children are safe?

Disasters can strike quickly and without warning. It can force you to evacuate your neighborhood or confine you to your home. What would you do if basic services including water, gas, electricity or telephones were cut off? Local officials and relief workers will be on the scene after a disaster, but they cannot reach everyone right away.

Families can and do cope with disasters by preparing in advance and working together as a team. Follow the steps listed in this brochure to create your family's disaster plan. Knowing what to do is for your protection and is your responsibility.

Various agencies such as the County Fire Department, the Sheriff, County Animal Care and Control, and the Red Cross partner together to facilitate your safe evacuation.

SPECIAL POPULATIONS

Do you know a senior or someone with a disability?

- Seniors and people with disabilities that are self-sufficient under normal circumstances may have to receive help of others in a disaster.
- Create a self help network of relatives, friends, and coworkers to assist in an emergency.
- Wear medical alert tags and bracelets to identify your disability in case of an emergency.
- If you have a severe speech, language, or hearing disability: keep on hand a writing pad and pencil to communicate with others.

EVACUATION ROUTES

- Residents should be familiar with all routes that lead in and out of their area.
- It is difficult to predetermine evacuation routes. Many factors such as the type of incident, location and weather conditions play a critical role in the selection of evacuation routes.
- Use travel routes specified by local authorities. Do not use off- road shortcuts when evacuating a National Forest Area. The National Forest could have these roads closed and you could be trapped by locked gates.

SHELTER TYPES

There are two types of shelters:

1. Evacuation Centers, which are for short-term sheltering.
2. Red Cross shelters, which are for long-term sheltering.

You may also be told to "shelter in place" if conditions warrant. This involves staying in your home/business with doors and windows closed.

ANIMALS

Many pets are injured or killed every year because no provisions were made for them in family disaster plans. The time to contact animal shelters for information on caring for pets during emergencies is before disaster strikes. Public emergency shelters often exclude pets for space and health reasons.

EVACUATION

Evacuate immediately if told to do so:

- Local Government agencies have developed plans to coordinate evacuations.
- Obey orders from law enforcement and fire officers. Your failure to evacuate could jeopardize your family and emergency responder safety. Lives take priority over property.
- Load your "important stuff" (important documents, photographs, medications, etc.) and Emergency Supply Kit into your car. Load pets at the last minute when the family leaves.

EVACUATION CON'T

You have been asked to leave:

- Drive with your headlights on for visibility.
- Drive calmly with special attention to public safety vehicles.

Do not attempt to re-enter the area until officials declare it safe for re-entry.

And if there's time…

- Be sure that all windows and doors are closed.
- Close metal window blinds.
- Lock your home.
- Cluster lawn furniture and other things that might snag firefighter hose lines.
- Remove light curtains and other combustibles from windows.
- Leave exterior lights on. It helps firefighters find the house in the smoke.
- Don't leave garden sprinklers on, they can waste critical water pressure.
- Shut off water, gas, and electricity before leaving, if instructed to do so.
- Post a note telling others when you left and where you are going.
- Listen to your battery-powered radio and follow the instructions of local emergency officials.
- Wear protective clothing and sturdy shoes.
- Take your family disaster supplies kit.

Emergency Alert System

The EAS is a warning system to provide the public with immediate messages that affect life and property. EAS is a way to provide emergency information quickly by radio, television, and cable licensees to the public. During an emergency tune to your local EAS radio broadcast stations listed below or a station in your area.

93.3 FM	**KBHR**	**Big Bear Valley**
95.1 FM	**KFRG**	**High Desert/Valley**
98.9 FM	**KHWY**	**High Desert**
102.3 FM	**KZXY**	**Victor Valley**
107.7 FM	**KCDZ**	**Yucca Vly/Joshua Tree**
1620 AM	**CalTrans Information Station**	

Additional information available at:
www.fema.gov
www.oes.ca.gov
www.redcross.org

THREE STEPS TO SAFETY

1) Create a disaster plan:

Meet with your family and discuss why you need to prepare for a disaster. Explain the dangers of fire, severe weather and earthquakes to children. Plan to share responsibilities and work together as a team.

❒ Discuss the types of disasters that are most likely to happen. Explain what to do in each case.

❒ Pick two places to meet:

1. Right outside your home in case of an emergency, like a fire.

2. Outside your neighbor- hood in case you can't return to your home.

Everyone must know their address and phone number.

❒ Ask an out of state friend to be your "family contact." After a disaster, it's often easier to call long distance. Other family members should call this person and tell them where they are. Everyone must know your contact's phone number.

2) Complete this checklist:

❒ Post emergency telephone numbers by phone (fire, police, ambulance, etc.).

❒ Teach children how and when to call 911 or your local Emergency Services number for emergency help.

❒ Show each family member how to turn off the water, gas and electricity at the main switches.

❒ Teach each family member how to use a fire extinguisher (ABC type), and show them where it is kept.

❒ Install smoke detectors of each level of your home, especially near bedrooms.

❒ Stock emergency supplies and assemble a Disaster Supplies Kit.

❒ Determine the best escape routes from your home. Find two ways out of each room.

❒ Find the safe spots in your home for each type of disaster.

❒ Second story homes should have a ladder for escape and know how to use it.

3) Practice and maintain your plan:

❒ Quiz your kids every six months so they remember what to do.

❒ Conduct fire and emergency evacuation drills.

Year	Drill Date
_____	_____
_____	_____
_____	_____

❒ Replace stored water every three months and stored food every six months.

❒ Test and recharge your fire extinguisher(s) according to manufacturer's instructions.

❒ Test your smoke detectors monthly and change batteries at least once a year.

Jan.	❒	July	❒
Feb.	❒	Aug.	❒
Mar.	❒	Sep.	❒
Apr.	❒	Oct.	❒
May	❒	Nov.	❒
June	❒	Dec.	❒

Change batteries in _____ (month) each year.

Appendix C
Evacuation Modeling Results

TO:	Kaitlyn Dodson-Hamilton; Tom Dodson & Associates
FROM:	Phuong Nguyen, PE; CR Associates (CRA)
DATE:	September 26, 2023
RE:	Moon Camp Fire Evacuation Analysis – Technical Memorandum

The purpose of this technical memorandum is to assess the time required for emergency evacuation under several scenarios, assuming a wind-driven fire that results in an evacuation affecting the First Moon Camp Project ("Project") and surrounding communities.[1] The following discussion of evacuation traffic simulations is not intended to be an Evacuation Plan, nor include elements typically found in an Evacuation Plan. The sole purpose of the traffic simulations is to focus on the vehicle travel times in simulated evacuation events.

Background and Purpose

This memorandum provides a summary of the traffic simulations conducted for evacuation of the Project and surrounding community due to a wildfire. The simulations have been conducted for a variety of evacuation scenarios described below. Modeling potential evacuation traffic impacts requires that numerous assumptions be made to address many variables that will impact a real-life evacuation scenario, including the number of existing vehicles in the community, the number of Project vehicles that will need to evacuate, the roadway capacities and whether enhancements are provided (e.g., extra lanes, lane widening, signaling intersections), the total number of intersections and how they will be operating, the final destination, the targeted evacuation area, the total mobilization time, vegetation communities, weather and wind, fire spread rates, humidity, topography, risk to homes, locations of ignitions and new fire starts, and lead time needed, etc. There are many hundreds or thousands of potential model scenarios, and every fire scenario poses variations that regularly change and are reassessed "real-time" during a wildfire. Agencies involved in implementing an evacuation order would not rely on a project-specific evacuation plan, but on situational awareness and agency created wildfire pre-plans, which act as operational tools to provide high-level fire assessments and assets at risk, preferred evacuation approaches, and safety information to inform evacuation decision-making.

The following analysis is intended to present representative evacuation scenarios using available information, conservative assumptions, and an industry based modeling technology. In an actual emergency, unified command will take into account numerous factors including fire location and spread rates, wind speeds and direction, humidity, topography, fuel loading, emergency access routes, evacuation routes, shelter-in-place options, time needed to evacuate, and other variables, and will issue specific evacuation or shelter-in-place directives consistent with the process and protocols outlined in the County's Emergency Operations Plans. During a wildfire, nearby residents and the Project's residents should comply with those directives from authorities and first responders conducting the evacuation or emergency response. The evacuation traffic model used herein is appropriate for planning and comparison purposes but will likely not be relied on by first responders and should not be relied on by Incident Commander in time of an emergency; however, it provides useful information that will be provided to agencies and emergency managers and may inform strategic response plans in terms of evacuation timeframes and contingency options.

The roadway network and vehicle input assumptions also have been selected to simulate a "worst-case" evacuation scenario that would occur during a weekend day (Saturday) when the Project's

[1] This memorandum was prepared with technical fire behavior input from Dudek's fire protection planning team.

residents are home, nearby vacation homes are likely to be fully occupied, and full occupancy of public parking lots within the study area. While evaluation of the "worst-case" scenario is not required by law, out of an abundance of caution, the Project has opted to consider this scenario. The assumption that a mass evacuation would occur when the Project is in operation and all residents in the surrounding community are at home when the evacuation order is provided represents an extreme, worst-case condition. In an actual wildfire event, it is most likely that phased evacuation orders would be given to provide for a more orderly evacuation. It is also likely that fewer residents would be present nearby if the evacuation happened during a time that the Project not at full occupancy such as a weekday afternoon.

The wildfire evacuation scenarios selected for this analysis were based on a comprehensive approach that included review of fire history, review of Butler #2 fire in 2007[2], the Fawnskin Fire in 2013[3], and the Radford Fire in 2022[4], review of relevant documents from the County and Cities within the study area[5], fire behavior science, area topography, fuel types and the evolved approach to evacuations which have become increasingly more surgical instead of large, area-wide. Accordingly, given the highest probability wildfire scenarios that would result in evacuation, it is anticipated that specific neighborhoods and communities would be evacuated in a phased approach, as possible. The Project will provide wildfire safety strategies and hardening, which will offer significant structural protection against exposure to wildfire. However, during a wildfire, the Project site's population would likely be evacuated as a precautionary measure. This may be combined with targeted evacuations within existing communities along State Route 38/North Shore Drive. This type of evacuation is consistent with management of recent wildfires throughout southern California and San Bernardino County, where the phased evacuation practice has been implemented with great success and continues to be refined through real-time application.

Project Description

The proposed 62.43-acre Moon Camp project site is located on the north shore of Big Bear Lake, in the unincorporated community of Fawnskin, County of San Bernardino. The Project proposes to construct 50 single family dwelling units with two access points to State Route 38 (SR-38)/North Shore drive. **Figure 1** displays the proposed Project location and study area, and **Figure 2** displays the proposed Project site plan. **Figure 3** displays the Fire Evacuation Routes and Evacuation Zones.

Assumptions

This evacuation analysis was performed for the Project to determine how long it would take for residents of the Project and the residents/visitors surrounding communities to evacuate to nearby more defensible spaces in case of a fire emergency. Current evacuation practice typically targets the scope of the evacuation only to the area in immediate danger and placing a larger area on standby for evacuation. This practice allows for better evacuation operations, reduces gridlock, and reserves sufficient travel way for emergency vehicles. It is assumed that first responders or law enforcement will direct traffic at all major downstream intersections during the evacuation process. Caltrans, the San Bernardino County Fire Department, and the Big Bear Fire Authority, in conjunction with the City of Big Bear Lake and the Big Bear City Community Service District, have various strategies in place for a sustainable[6] evacuation plan. It is presumed that if a fire breaks out close to the Project site, a large-scale evacuation of both the Project area and adjacent lands would be necessary.

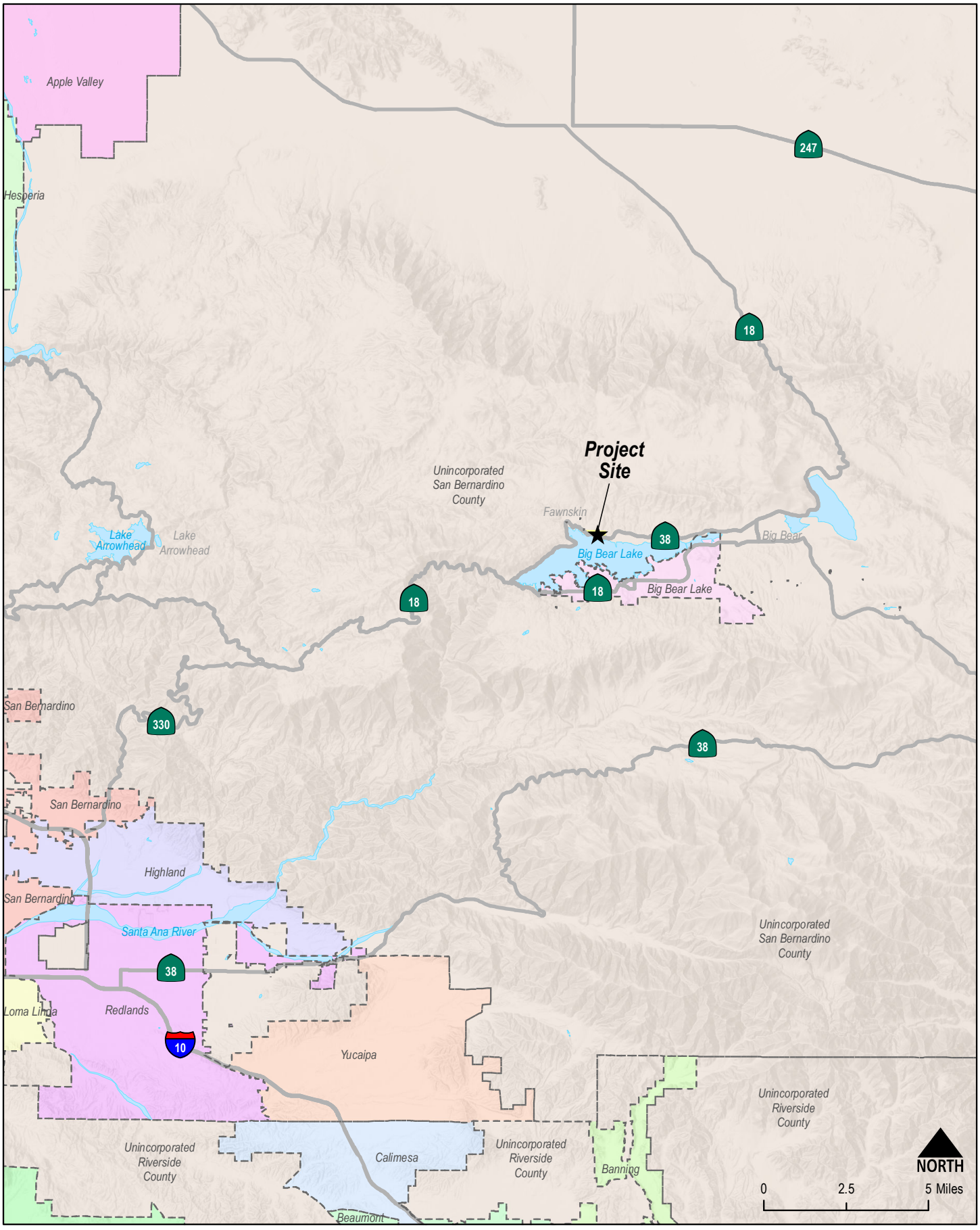
[2] https://calfire.blogspot.com/2007/09/butler-2-fire-perimeter-map.html
[3] https://www.fs.usda.gov/detail/sbnf/news-events/?cid=STELPRDB5417310
[4] https://inciweb.nwcg.gov/incident-information/cabdf-radford
[5] List of applicable reports are provided at the end of this memorandum.
[6] Caltrans indicates that the roadway network can provide a sustainable evacuation and emphasize the important of early evacuation to avoid a large-scale evacuation scenario.
https://www.vvdailypress.com/story/news/politics/county/2019/05/08/big-bear-s-fire-escape/5219035007/

During the evacuation process, wildfire spread, and encroachment may be slowed by fire-fighting efforts that would likely include significant fixed wing and helicopter fire-fighting assets. Hand crews would also be deployed toward containment. None of the evacuation scenarios assumed contraflow (reverse) lanes, as these lanes are reserved for first responders, law enforcement, and fire fighters in case of unforeseen circumstances.

Given the project's location, surrounded by residential areas and recreational land uses, this analysis takes into account a hypothetical evacuation scenario on a Saturday afternoon. At this time, it is anticipated that the majority of residents will be home, neighboring vacation properties will be at full capacity, and nearby public and private parking lots—including those linked to nearby marinas, the Big Bear Discovery Center, and other hiking trails—will also be fully occupied. The estimation of vehicles evacuating from the Project's site was derived by multiplying the number of households by the average vehicle ownership per household in the vicinity. Similarly, for the surrounding residential areas, the number of evacuating vehicles was determined using land use information from Parcel Quest parcel map data in conjunction with the average vehicle ownership data provided by the US Census Bureau. For both public and private recreational areas, the assumption was made that parking lots would be at full capacity. The inventory of these parking spaces was sourced from Nearmap aerial imagery.

For a reasonable analysis, these scenarios assumed that two percent (2%)[7] of the evacuating vehicles are heavy vehicles (trucks with trailers). Two percent is the nationally acceptable ratio of heavy vehicles to all vehicles.

[7] https://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_599.pdf (p.5).



Moon Camp
Evacuation Analysis

C+R

Figure 1
Project Location

Moon Camp
Evacuation Analysis

C+R

Figure 2
Project Site Plan