

**Pala Band of Mission Indians**

# **PALA HAZARD MITIGATION PLAN UPDATE**

---

**OCTOBER 2020**

**Coordinating Agency:**

Pala Environmental Department  
12196 Pala Mission Road  
Pala, CA 92059  
[ped.palatribe.com](http://ped.palatribe.com)



**Prepared by:**

**JAMIE CAPLAN CONSULTING LLC**  
Emergency Management Services

351 Pleasant Street, Suite B # 208 · Northampton, MA 01060  
Phone: 413-586-0867 · Fax: 413-727-8282 · [www.jamiecaplan.com](http://www.jamiecaplan.com)

## Acknowledgements

### Pala Executive Committee

- Robert Smith, Chairman
- Anthony Ravago Senior, Vice-Chairman
- Theresa J. Nieto, Treasurer
- Theresa Villa, Secretary
- Sheila Lopez, Council Member
- Bradly Gauchino, Council Member

### Pala Environmental Department Advisory Board

The Pala Band of Mission Indians would like to thank the following people and organizations for supporting the development of this plan. This group was integral to the development of this plan.

- Shasta C. Gaughen, Pala Environmental Director
- Heidi Brow, Water Resources Specialist
- Matthew Deveney, Pala GIS
- Steve Eagleton, Pala Utilities Director
- Bob Halsted, Pala Casino
- Doretta Musick, Pala Learning Center Director
- Chris Nejo, Pala community member
- Joe Nejo, Pala Tribal Services Director
- Eric Ortega, Pala community member
- Anthony Ravago, Pala Fire Chief
- Ann Trujillo, Pala Housing Director

### Consulting Team

- Jamie Caplan, Principal, Jamie Caplan Consulting LLC
- Caroline Cunningham, Principal, Hazard Mitigation Services Lead, Stantec
- Christina Hurley, Hazard Mitigation Planner, Stantec
- Darrin Punched, Principal, Punched Consulting LLC

## Adoption Resolution

*E2. Does the plan include documentation that it has been formally adopted by the governing body of the tribal government requesting approval? [44 CFR § 201.7(c)(5)]*

A hazard mitigation plan must document that it has been formally adopted by the governing body of the jurisdiction requesting federal approval of the plan, as outlined in 44 CFR Section 201.7(c)(5). Disaster Mitigation Act of 2000 (DMA) compliance and its benefits cannot be achieved until the plan is adopted. This plan will be submitted for a pre-adoption review to Federal Emergency Management Agency (FEMA) Region IX. Once pre-adoption approval has been provided, The Tribe will formally adopt the plan. A copy of the resolution is provided below.

# Hazard Mitigation Plan Update, Pala Band of Mission Indians



## **PALA BAND OF MISSION INDIANS**

PMB 50, 35008 Pala Temecula Road  
Pala, CA 92059

Phone 760-891-3500 | Fax 760-742-1411

### **G.C. Resolution Number 21-04**

#### **ADOPTION OF PALA BAND OF MISSION INDIANS' 2020 AMENDED HAZARD (PRE-DISASTER) MITIGATION PLAN**

At a general meeting of the Pala Band of Mission Indians, duly noticed and called at **6:00 p.m.** on the **14<sup>th</sup> day of April, 2021** for the purpose of transacting such business as might be brought before the members in general assembly, and

**WHEREAS**, the Pala Band of Mission Indians is a Federally recognized Indian Tribe ("Pala Band"), with the inherent sovereignty and duty to regulate the territory of the Pala Band; and

**WHEREAS**, the Pala Band of Mission Indians is governed by a federally recognized Tribal Constitution, which establishes a General Council and Executive Committee to govern the affairs and business within in its external boundaries; and

**WHEREAS**, the General Council, under the Pala Band's Constitution, has the authority to make policy and business decisions concerning the general welfare of all tribal members; and

**WHEREAS**, the Pala Band and the Pala Indian Reservation (Reservation) have historically experienced severe damage from natural and human-caused hazards such as flooding, wildfire, earthquake, drought, high winds, pandemic disease, climate change, and hazardous materials incidents on many occasions in the past century, resulting in loss of property, economic hardship, and threats to its lands, natural resources, economic interests, and threats to public health and safety; and

**WHEREAS**, the Pala Band has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for the Pala Band's Hazard Mitigation Plan (the Plan) under the requirements of 44 CFR 201.7; and

**WHEREAS**, the Plan specifically addresses hazard mitigation strategies and Plan maintenance procedures for the Pala Band; and

**WHEREAS**, the Plan recommends several hazard mitigation actions that will provide mitigation for specific natural and human-caused hazards that affect the Pala Band, and will protect people and property from losses associated with those hazards; and

**WHEREAS**, the Pala Band's adoption of the Plan will make it eligible for Federal funding to alleviate the effects of future hazards and the Reservation; and

**WHEREAS**, the Executive Committee finds that adoption of the Pala Band's Hazard Mitigation Plan, and the Pala Band's compliance with the Plan, its maintenance and mitigation actions are in the best interests of the Pala Band:

**NOW THEREFORE BE IT RESOLVED** that the Pala Band, acting through its Executive Committee, hereby approves adoption of the Plan; and

**BE IT FURTHER RESOLVED** that the future revisions to the Plan and Plan maintenance required to comply with 44 CFR 201.7 and related Federal laws and regulations applicable to the Pala Band and the Plan shall be adopted as part of the Plan for a period not to exceed five (5) consecutive calendar years from the date of the Pala Band's adoption of this Resolution; and

**-Office of the Secretary-**

G.C. Resolution 21-04  
Pala Band of Mission Indians  
April 14, 2021  
Page 1 of 2

# Hazard Mitigation Plan Update, Pala Band of Mission Indians

**BE IT FURTHER RESOLVED**, an annual report on the progress and implementation elements of the Plan shall be presented to the Tribal Chairperson by December 30 of each year for which this Resolution is in effect; and

**BE IT FURTHER RESOLVED**, that the Pala Band will comply with all Federal laws and regulations to the Pala Band and in effect with respect to the periods of time for which this Resolution remains in effect and the Pala Band received Federal grant funding in compliance with 44 CFR 13.119(c), and will amend the Plan as necessary to reflect changes in the laws of the Pala Band or the United States applicable to the Pala Band and the Plan, as required by 44 CFR 13.11(d); and

**BE IT FURTHER RESOLVED**, that the Pala Band, acting through its Executive Committee, hereby grants and provides the Tribal Chairperson all requisite authority and power to execute, deliver, and perform this Resolution and to take such other actions in connection with the execution of the Plan and associated documents. The approval and authorization granted to the Tribal Chairperson by this Resolution shall extend to any modification, amendment, or cancellation of the Plan and related documents, if such is necessary, to the extent such changes are in the best interests of the Pala Band; and

**BE IT FURTHER RESOLVED**, that this Resolution shall supersede any Resolution(s) or other action(s) of the Pala Band, its officers, employees, or agents, either written or established by tradition, which are in conflict or inconsistent with the terms of this resolution; and


**WHEREAS**, the Pala Band through its General Council hereby adopts the Pala Band of Mission Indians' 2020 Amended Hazard (Pre-Disaster) Mitigation Plan, as updated amended in April 14, 2021; and


**BE IT FURTHER RESOLVED THAT**, this Resolution shall become effective as of the date and time of its approval by the General Council.

## **CERTIFICATION**

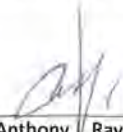
We, the undersigned members of the Executive Committee, certify that the Pala Band drafted and amended the Pala Band's Pre-Disaster Plan as of June 2009 and was approved by FEMA in April 2009 and was adopted by EC Resolution 09-14 on June 5, 2009, which was ratified by GC Resolution 09-20 at a duly called regular meeting of the General Council at which a quorum was present on July 8, 2009, with a vote of 95 in favor and 1 opposed, and that the Pala Band's 2016 Hazard Mitigation Plan Update as of January 2016 was approved by FEMA in May 2016 and was adopted by GC Resolution 16-16 at a duly called regular meeting of the General Council at which a quorum was present on May 11, 2016, with a vote of 48 in favor and 0 opposed, and that the above resolution GC XX-21 was by a vote of the **General Council**, with **33** in favor and **0** in opposition and **12** abstaining, at a duly called meeting of the General Council, at which a quorum was present, on this **14<sup>th</sup> day of April, 2021**.

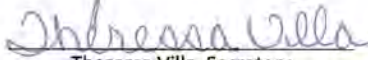
  
Robert H. Smith, Chairman

  
Theresa J. Nieto, Treasurer

  
Bradly Guachino, Committee



  
Anthony J. Ravago, Sr. Vice-Chairman

  
Theresa Villa, Secretary

  
Shelia L. Smith-Lopez, Committee

**-Office of the Secretary-**

G.C. Resolution 21-04  
Pala Band of Mission Indians  
April 14, 2021  
Page 2 of 2



## Table of Contents

<b>Acknowledgements</b> .....	<b>2</b>
Pala Executive Committee .....	2
Pala Environmental Department Advisory Board .....	2
Consulting Team .....	2
<b>Adoption Resolution</b> .....	<b>3</b>
<b>Record of Changes</b> .....	<b>6</b>
<b>Table of Contents</b> .....	<b>7</b>
Table of Figures.....	11
Table of Tables .....	13
<b>Chapter 1. Introduction</b> .....	<b>15</b>
1.1 Purpose .....	15
1.2 Tribal / FEMA Relationship.....	16
1.3 Mitigation Plan Goals .....	17
1.4 Plan Adoption and Assurances.....	17
1.5 Summary of Plan Contents.....	18
1.6 Plan Updates .....	19
1.6.1 Changes in Development .....	19
1.6.2 Mitigation Action Status .....	20
1.6.3 2016 Incorporation of Mitigation Actions into other Planning Mechanisms.....	26
1.6.4 Updates Made to the 2016 Plan .....	26
<b>Chapter 2. Reservation Profile</b> .....	<b>29</b>
2.1 Introduction and Location.....	29
2.2 Tribal History .....	32
2.3 Demographics and Housing .....	34
2.4 Tribal Government .....	34
2.5 Climate .....	34
2.6 Geologic and Hydrologic Settings .....	35
2.6.1 Water .....	36
2.7 Land Use.....	40
2.7.1 Culturally Sensitive Areas .....	42
2.7.2 Development Trends .....	42
2.8 Tribal Economy.....	43
2.8.1 Pala Casino Resort & Spa .....	43
2.8.2 Pala Casino Warehouse .....	44
2.8.3 Pala Casino RV Park.....	44
2.8.4 Pala Mini Mart and Gas Station .....	44
2.9 Tribal Facilities .....	45
2.9.1 Pala Administration Center .....	45
2.9.2 KOPA Rez Radio Station .....	45
2.9.3 Pala Postal Annex.....	46

# Hazard Mitigation Plan Update, Pala Band of Mission Indians

2.9.4 Vivian Banks Charter School .....	46
2.9.5 Pala Learning Center .....	46
2.9.6 Pala Child Care Center .....	46
2.9.7 Pala Youth Center .....	47
2.9.8 Tribal Assistance for Needy Families .....	47
2.9.9 Mission San Antonio de Pala.....	47
2.9.10 San Juan Diego Center .....	48
2.9.11 Pala Fitness Center.....	48
2.10 First Responder Facilities .....	48
2.10.1 Pala Fire Station .....	48
2.10.2 Emergency Operations Center & Training Center .....	49
2.10.3 Pala Tribal Law Enforcement (TLE) Station .....	49
2.11 Reservation Utilities and Infrastructure.....	50
2.11.1 Pala Tribal Yard .....	50
2.11.2 Cell/Communications Tower .....	50
2.11.3 Transfer Station .....	50
2.11.4 Pala Utilities Department.....	51
2.11.5 Pala Wastewater Treatment Plant and Lift Stations.....	51
2.11.6 Water Tanks.....	52
2.12 Regional Resources .....	54
2.12.1 Gas and Electric.....	54
2.12.2 Hospitals .....	54
2.12.3 California Highway Patrol .....	54
<b>Chapter 3. Planning Process .....</b>	<b>55</b>
3.1 Project Timeline .....	55
3.2 Pala Environmental Department Advisory Group.....	56
3.3 Public Engagement and Outreach.....	58
3.3.1 Public Preparedness Survey.....	60
3.3.2 Stakeholder Engagement.....	61
3.3.3 Neighboring Communities and Regional Partners.....	61
3.4 Review and Incorporation of Studies and Reports.....	63
3.5 Integrating the Planning Process with other Planning Efforts .....	63
3.5.1 County, State and FEMA Program Integration.....	64
3.6 Review of Draft Plan.....	66
3.7 Plan Adoption.....	67
<b>Chapter 4. Risk Assessment.....</b>	<b>68</b>
4.1 Introduction .....	68
4.2 Sources of Information .....	68
4.2.1 Local, State, and Federal Sources .....	68
4.3 Building Data .....	69
4.3.1 Critical Facilities .....	69



# Hazard Mitigation Plan Update, Pala Band of Mission Indians

4.3.2 Changes in Development and Future Development.....	72
4.4 Risk Assessment Process and Tools .....	74
4.4.1 Quantitative Analysis .....	74
4.4.2 Qualitative Analysis.....	75
4.4.3 Priority Risk Index (PRI).....	75
4.5 Limitations.....	77
4.5.1 Data Availability .....	77
4.5.2 Loss Estimates.....	77
4.5.3 Unreported Events.....	78
4.6 Hazard Identification.....	78
4.6.1 Disaster Declarations .....	80
4.7 Hazard Profiles .....	81
4.7.1 Air Pollution .....	82
4.7.2 Agricultural Pests and Diseases (including Tree Mortality) .....	86
4.7.3 Drought.....	94
4.7.4 Earthquake and Liquefaction.....	102
4.7.5 Epidemic/Pandemic.....	125
4.7.6 Erosion .....	134
4.7.7 Extreme Freeze .....	138
4.7.8 Extreme Heat .....	144
4.7.9 Flood .....	155
4.7.10 High Wind .....	176
4.7.11 Landslide .....	186
4.7.12 Lightning .....	191
4.7.13 Tornado.....	196
4.7.14 Wildfire and Structural Fire .....	204
4.7.15 Dam Failure (redact for public consumption).....	219
4.7.16 Hazardous Materials Incident (HazMat) .....	226
4.7.17 Lifeline Incident (Power Outage) .....	230
4.8 Summary of Overall Risk .....	232
4.8.1 Critical Facility Analysis .....	232
4.8.2 Priority Risk Index Results.....	235
4.8.3 Hazard Ranking .....	236
4.8.4 Key Points on Vulnerability.....	236
<b>Chapter 5. Capability Assessment.....</b>	<b>240</b>
5.1 Planning and Regulatory .....	240
5.1.1 Tribal Ordinances.....	241
5.1.2 Environmental Management Plans.....	241
5.1.3 Pala Fire Department MOUs.....	243
5.1.4 Emergency Evacuation Planning and Recommendations.....	243

# Hazard Mitigation Plan Update, Pala Band of Mission Indians

5.2 Administrative and Technical.....	244
5.2.1 Pala Casino Spa & Resort .....	247
5.2.2 Flood and Stream Gages .....	248
5.2.3 Pala Rez Radio.....	248
5.2.4 Inter-Tribal Longtime Recovery Foundation .....	249
5.3 Financial .....	249
5.3.1 Federal Emergency Management Agency .....	252
5.3.2 Additional Funding Sources .....	254
5.4 Education and Outreach .....	258
5.4.1 Pala Environmental Department Climate Change Series.....	258
5.4.2 Planet Pala .....	258
5.4.3 Additional Activities .....	259
<b>Chapter 6. Mitigation Strategy .....</b>	<b>260</b>
6.1 Mitigation Goals and Objectives .....	260
6.2 Mitigation Actions.....	261
6.3 Mitigation Action Plan.....	264
6.4 Opportunities to Incorporate the Mitigation Plan .....	277
<b>Chapter 7. Implementation Plan .....</b>	<b>279</b>
7.1 System for Reviewing Implementation Progress .....	279
7.2 Method and Schedule to Keep the Plan Current .....	281
7.2.1 Monitoring.....	281
7.2.2 Evaluating .....	282
7.2.3 Updating .....	282
7.3 Continued Public Involvement .....	283
<b>List of Acronyms.....</b>	<b>285</b>
<b>Resources .....</b>	<b>288</b>
<b>Appendix .....</b>	<b>297</b>
Appendix A. Planning Process Supporting Materials .....	297
Pala Environmental Department Advisory Group Formation Memos.....	298
December 2019 Kick-off Meeting.....	300
February 2020 PEDAG Meeting .....	301
July 2020 PEDAG Meeting.....	302
August 2020 PEDAG Meeting .....	304
Public Survey Outreach Flyer .....	306
Public Survey Results .....	307
Appendix B. Risk Assessment Supporting Materials .....	330
San Luis Rey Watershed Municipal Boundaries.....	330
San Luis Rey Watershed Hydrography.....	331
San Luis Rey Watershed Indian Reservations .....	332
Hazus-MH Assumptions.....	333
Elsinore Fault at Pala. 7.5 Earthquake Based off USGS Scenario ShakeMap. (not an actual event) 335	

# Hazard Mitigation Plan Update, Pala Band of Mission Indians

100-year Flood Event Derived from Hazus Generated Flood Depths.....	401
500-year flood event derived from Hazus generated flood depths .....	467
Average Annualized Loss Based off of the 100-Year and 500-Year Flood Events Derived from Hazus Generated Flood Depths.....	536
Appendix C. Capability Assessment Supporting Materials.....	603
Outreach Flyers for Hazard Risks and Climate Change .....	603
Appendix D. Mitigation Strategy Supporting Materials .....	616
Priority Ranking Scores for Mitigation Actions .....	616
Mitigation Actions Sorted by Mitigation Category .....	622
Mitigation Actions Sorted by Goal Statement .....	626
Appendix E. Implementation Plan Supporting Materials.....	635
Mitigation Action Progress Worksheet.....	635
Mitigation Plan Annual Review Questionnaire .....	636
FEMA’s Closeout Toolkit .....	638

## Table of Figures

Figure 1. New Structures, Businesses and Infrastructure. ....	20
Figure 2. Reservation Location in San Diego County.....	30
Figure 3. Boundary of Pala Reservation. ....	31
Figure 4 Cupeño at Cupa 1902. ....	33
Figure 5. Land Ownership Status.....	41
Figure 6. Neighborhoods on the Reservation.....	42
Figure 7. Pala Shooting Range. ....	43
Figure 8. Pala Casino. ....	44
Figure 9. Pala Administration Center Fountain. ....	45
Figure 10. Mission San Antonio de Pala. ....	47
Figure 11. Pala Fire Station.....	48
Figure 12. Water Tanks. ....	52
Figure 13. Project Timeline.....	56
Figure 14. Pala Tribal Chairman Robert Smith. ....	56
Figure 15. PEDAG Formation Memo. ....	57
Figure 16. PEDAG Members at February 2020 Meeting. ....	58
Figure 17. Flyer for Survey.....	60
Figure 18. Climate Adaptation Plan Cover.....	63
Figure 19. Pala Critical Facilities. ....	72
Figure 20. New and Planned Development on the Pala Reservation.....	73
Figure 21. Number of Days Per Year Exceeding the National Standard for Particulate Matter in the Air. ....	84
Figure 22. Number of Days Per Year Exceeding the California Standard for Ozone Levels.....	84
Figure 23. Asian Citrus Psyllid Infestations and Quarantines in the Southwestern U.S. ....	89
Figure 24. Glassy-winger Sharpshooter Infestations in Southern California. ....	90
Figure 25. PSHB and KSHB Detections in Southern California.....	91
Figure 26. Average Monthly Precipitations at the Pala Reservation. ....	96

## Hazard Mitigation Plan Update, Pala Band of Mission Indians

Figure 27. Pala Reservation Water Wells. ....	101
Figure 28. Earth’s Sub Layers.....	102
Figure 29. Global Plate Tectonics and Seismic Activity. ....	103
Figure 30. United States Earthquake Hazard Map. ....	104
Figure 31. Active Fault Lines in Southern California.....	109
Figure 32. Liquefaction Risk Areas on the Pala Reservation.....	111
Figure 33. SA and PGA Comparison.....	115
Figure 34. PGA (2% in 50 years) on the Pala Reservation. ....	116
Figure 35. PGA (10% in 50 years) on the Pala Reservation. ....	116
Figure 36. PGA for a M7.5 Earthquake on the Elsinore Fault.....	120
Figure 37. Pala Buildings at Risk to Liquefaction. ....	122
Figure 38. Critical Facilities at Risk to Liquefaction. ....	125
Figure 39. Erosion Hotspots Identified by Tribal Officials. ....	136
Figure 40. National Weather Service (NWS) Wind Chill Index Chart.....	139
Figure 41. Average Minimum Temperatures in the Pala Reservation Vicinity, 1901-2016.....	141
Figure 42. Average Minimum Temperature Projections for Pala (Paloma location point). ....	143
Figure 43. NWS Heat Index Chart.....	145
Figure 44. Average Maximum Temperatures in Pala, California.....	147
Figure 45. Average Maximum Temperature Projections for the Pala Reservation.....	153
Figure 46. Projected Extreme Heat Days per Year for the Pala Reservation.....	154
Figure 47. San Diego County Flood Hazard Areas and USGS Streams.....	159
Figure 48. Arizona (Low-Water) Crossings. ....	161
Figure 49. South Side Low-Water Crossings.....	162
Figure 50. North Side Low-Water Crossings.....	163
Figure 51. Low-Water Crossings that Frequently Flood. ....	164
Figure 52. Culvert Built to Prevent Flooding. ....	165
Figure 53. Allers Development Retaining Wall.....	165
Figure 54. Areas Subject to Flooding. ....	168
Figure 55. Pala Buildings in the 100-year Floodplain. ....	172
Figure 56. Critical Facilities and the Flood Risk Area (100-year Floodplain).....	173
Figure 57. Critical Facilities in Hazus-Generated Flood Areas. ....	175
Figure 58. ASCE 7-98 U.S. Wind Zone.....	177
Figure 59. Average Number of Days with Thunderstorms (1993-2018). ....	180
Figure 60. Wind Statistics for Lake Wohlford, CA.....	184
Figure 61. USGS Landslide Susceptibility Index.....	188
Figure 62. Average Lightning Strikes per square mile per year.....	192
Figure 63. United States Tornado Activity.....	197
Figure 64. Tornadoes in San Diego County (1950-2020). ....	201
Figure 65. USDA Wildfire Hazard Potential (Wildfire Hazard Location). ....	206
Figure 66. Example of Wildland Urban Interface and Intermix Areas.....	207
Figure 67. WUI Areas (Silvis Lab).....	208
Figure 68. Pala Wildfire Burn History (SANDAG GIS Data). ....	210
Figure 69. Pala Buildings in the Wildland Urban Interface or Intermix.....	217
Figure 70. Critical Facilities and the Wildland Urban Interface/Intermix.....	218
Figure 71. Lake Henshaw Dam in 1932. ....	220
Figure 72. Lake Henshaw Dam and Inundation Area. ....	221

# Hazard Mitigation Plan Update, Pala Band of Mission Indians

Figure 73. Pala Buildings in the Lake Henshaw Dam Inundation Area. ....	224
Figure 74. Pala Critical Facilities in the Lake Henshaw Dam Inundation Area.....	225
Figure 75. Propane Tanks on Pala Reservation. ....	228
Figure 76. Point System for Prioritization. ....	265

## Table of Tables

Table 1. Summary of Changes. ....	6
Table 2. 2016 Mitigation Action Status. ....	21
Table 3. Updates Made to the 2016 Plan. ....	26
Table 4. Land Types Defined. ....	40
Table 5. Public Outreach and Engagement. ....	59
Table 6. Pala Reservation Building Types and Estimated Replacement Values. ....	69
Table 7. Pala Reservation Critical Facilities. ....	70
Table 8. Priority Risk Index Scoring Criteria.....	76
Table 9. 2020 Pala Band Hazard Mitigation Plan Identified Hazards. ....	78
Table 10. Justification for Exclusion of Hazards. ....	79
Table 11. Historic Federally Declared Disasters for San Diego County.....	80
Table 12. Drought Classification Definitions. ....	94
Table 13. Drought Monitor Categories.....	95
Table 14. Historic Drought Occurrences in San Diego County.....	97
Table 15. Richter Scale. ....	105
Table 16. Moment Magnitude Scale. ....	105
Table 17. Modified Mercalli Intensity Scale for Earthquakes.....	106
Table 18. Richter v. Moment Magnitude Values.....	107
Table 19. PGA on the Pala Reservation. ....	115
Table 20. Hazus-MH 4.2 Dollar Exposure for the Pala Reservation.....	118
Table 21. Hazus-MH 4.2 Earthquake Event Damages Per Percent Chance.....	119
Table 22. Buildings in Liquefaction Risk Areas on the Pala Reservation. ....	120
Table 23. Critical Facilities in Liquefaction Risk Areas on the Pala Reservation. ....	123
Table 24. Previous Extreme Cold and Freeze Occurrences. ....	141
Table 25. NCEI Extreme Heat Events (1996-2020). ....	147
Table 26. Flood Occurrences Impacting the Pala Reservation. ....	165
Table 27. Buildings in Flood Risk Areas (100-year Floodplain) on the Pala Reservation. ....	170
Table 28. Critical Facilities in Flood Risk Areas (100-year Floodplain) on the Pala Reservation.....	170
Table 29. Hazus-MH 4.2SP3 Building Value Exposure.....	174
Table 30. Hazus-MH Estimated Losses from the 1.0-percent Annual Chance Flood.....	174
Table 31. Hazus-MH Estimated Losses from the 0.2-percent Annual Chance Flood.....	174
Table 32. Beaufort Wind Scale. ....	178
Table 33. NCEI Lightning Events (1996-2020).....	193
Table 34. The Fujita Scale (Effective Prior to 2005).....	198
Table 35. The Enhanced Fujita Scale (Effective 2005 and Later). ....	199
Table 36. Historic Fires Impacting the Pala Band Reservation (1920-2019).....	211
Table 37. Buildings in the WUI (Interface and Intermix) on the Pala Reservation. ....	215
Table 38. Critical Facilities in Liquefaction Risk Areas on the Pala Reservation. ....	215

## Hazard Mitigation Plan Update, Pala Band of Mission Indians

Table 39. Buildings in the Lake Henshaw Dam Inundation Area on the Pala Reservation. ....	222
Table 40. Critical Facilities in Dam Inundation Areas on the Pala Reservation. ....	223
Table 41. Critical Facility Potential Risk Analysis. ....	232
Table 42. Summary of PRI Results for Pala Band of Mission Indians. ....	235
Table 43. Ranking of Hazards. ....	236
Table 44. Administrative and Technical Departments. ....	244
Table 45. Grants Funding Received Since 2015 for Hazard Mitigation. ....	250
Table 46. Funding Sources. ....	254
Table 47. Mitigation Action Categories. ....	261
Table 48. Hazard Concerns and Potential Mitigation Actions. ....	262
Table 49. Five-year Schedule to Update the Mitigation Plan. ....	282