



# Emergency Response Platform

EmergencyResponseFlow handles the orchestration of emergency response activities.

This flow coordinates multiple crews and agents to:

1. Monitor emergency events (wildfires) using EONET data
2. Track weather conditions that could affect the emergency
3. Identify high-risk areas within potential spread radius
4. Analyze impact
5. Determine safe zones
6. Plan evacuation routes
7. Deploy resources

The flow maintains state using EmergencyDatabase to share data between steps. Each step builds on previous results to create a comprehensive emergency response.



Initializing emergency response flow...

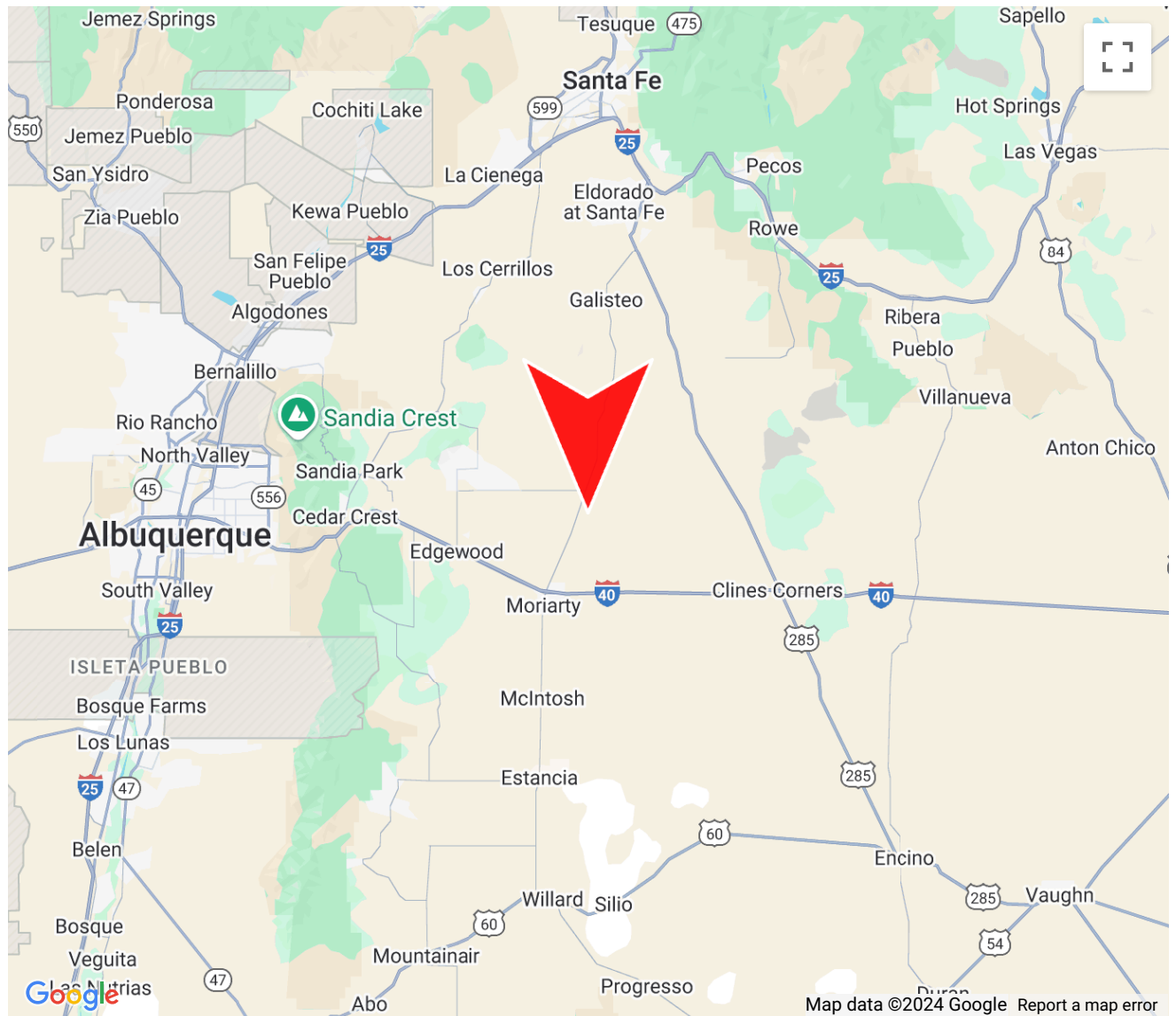


Starting Emergency Monitoring...



Event Info JSON:

```
{'id': 'EONET_12044', 'title': 'B ANAYA Wildfire, Santa Fe, New Mexico', 'description': 'North of Moriarty, NM East of SR 41 SOuth of Stanley NM', 'link':  
'https://eonet.gsfc.nasa.gov/api/v3/events/EONET_12044', 'closed': None, 'categories': [{'id':  
'wildfires', 'title': 'Wildfires'}], 'sources': [{'id': 'IRWIN', 'url': 'https://irwin.doi.gov/observer/'},  
'geometry': [{'magnitudeValue': 795.0, 'magnitudeUnit': 'acres', 'date': '2024-11-24T17:30:00Z',  
'type': 'Point', 'coordinates': [-105.977628, 35.113722]]}]}
```



## Starting Weather Monitoring Flow...



### Weather JSON:

```
{
  "weather": {
    "current": {
      "coord": {
        "lon": -105.9776,
        "lat": 35.1137
      },
      "weather": [
        {
          "id": 800,
          "main": "Clear",
          "description": "clear sky",
          "icon": "01n"
        }
      ],
      "base": "stations",
      "main": {
        "temp": 284.51,
        "feels_like": 282.64,
        "temp_min": 283.2,
        "temp_max": 284.99,
        "pressure": 1010,
        "humidity": 36,
        "sea_level": 1010,
        "grnd_level": 800
      },
      "visibility": 10000,
      "wind": {
        "speed": 4.63,
        "deg": 250,
        "gust": 9.26
      },
      "clouds": {
        "all": 0
      },
      "dt": 1732694716,
      "sys": {
        "type": 2,
        "id": 2005536,
        "country": "US",
        "sunrise": 1732715455,
        "sunset": 1732751578
      },
      "timezone": -25200,
      "id": 5480181,
      "name": "Moriarty",
      "cod": 200
    },
    "forecast": {
      "cod": "200",
      "message": 0,
      "cnt": 4,
      "list": [
        {
          "dt": 1732698000,
          "main": {
            "temp": 284.51,
            "feels_like": 282.64,
            "temp_min": 284.12,
            "temp_max": 284.51,
            "pressure": 1009,
            "sea_level": 1009,
            "grnd_level": 800,
            "humidity": 36,

```

```
"temp_kf": 0.39 }, "weather": [ { "id": 800, "main": "Clear", "description": "clear sky", "icon": "01n"
} ], "clouds": { "all": 0 }, "wind": { "speed": 9.71, "deg": 261, "gust": 17.84 }, "visibility": 10000,
"pop": 0, "sys": { "pod": "n" }, "dt_txt": "2024-11-27 09:00:00" }, { "dt": 1732708800, "main": {
"temp": 284.23, "feels_like": 282.39, "temp_min": 283.68, "temp_max": 284.23, "pressure": 1009,
"sea_level": 1009, "grnd_level": 800, "humidity": 38, "temp_kf": 0.55 }, "weather": [ { "id": 802,
"main": "Clouds", "description": "scattered clouds", "icon": "03n" } ], "clouds": { "all": 30 }, "wind":
{ "speed": 11.02, "deg": 269, "gust": 20.18 }, "visibility": 10000, "pop": 0, "sys": { "pod": "n" },
"dt_txt": "2024-11-27 12:00:00" }, { "dt": 1732719600, "main": { "temp": 283.6, "feels_like": 281.85,
"temp_min": 283.15, "temp_max": 283.6, "pressure": 1010, "sea_level": 1010, "grnd_level": 800,
"humidity": 44, "temp_kf": 0.45 }, "weather": [ { "id": 803, "main": "Clouds", "description":
"broken clouds", "icon": "04d" } ], "clouds": { "all": 67 }, "wind": { "speed": 10.76, "deg": 270,
"gust": 21.34 }, "visibility": 10000, "pop": 0, "sys": { "pod": "d" }, "dt_txt": "2024-11-27 15:00:00" }, {
"dt": 1732730400, "main": { "temp": 284.67, "feels_like": 283.13, "temp_min": 284.67,
"temp_max": 284.67, "pressure": 1010, "sea_level": 1010, "grnd_level": 801, "humidity": 48,
"temp_kf": 0 }, "weather": [ { "id": 804, "main": "Clouds", "description": "overcast clouds", "icon":
"04d" } ], "clouds": { "all": 99 }, "wind": { "speed": 11.64, "deg": 282, "gust": 21.17 }, "visibility":
10000, "pop": 0, "sys": { "pod": "d" }, "dt_txt": "2024-11-27 18:00:00" } ], "city": { "id": 5480181,
"name": "Moriarty", "coord": { "lat": 35.1137, "lon": -105.9776 }, "country": "US", "population":
1910, "timezone": -25200, "sunrise": 1732715455, "sunset": 1732751578 } }, "alerts": [ {
"sender_name": "Simulated Alert System", "event": "High Winds Warning", "start": "2024-11-
27T04:12:09.938896Z", "end": "2024-11-27T05:12:09.938896Z", "description": "Strong winds
expected with gusts up to 60 mph. Please take necessary precautions." } ] }
```



Starting Image Analysis Flow...

# Image Analysis



Satellite Image: Wildfire Area



### Image Analysis:

## Wildfire Event Analysis Report: B ANAYA Wildfire, Santa Fe, New Mexico

### 1. Description of the Wildfire Event

The B ANAYA Wildfire is currently active in the state of New Mexico, specifically north of Moriarty, east of SR 41, and south of Stanley NM. According to the provided event details, the wildfire has affected an area of approximately 795 acres as of November 24, 2024, at 17:30:00Z. The location of the wildfire is identified by the coordinates  $[-105.977628, 35.113722]$ . The intensity of the wildfire is not explicitly stated, but the affected area suggests a moderate to high level of intensity.

### 2. Analysis of Smoke Density and Movement Patterns

Upon analyzing the satellite image, it is evident that the wildfire is producing a significant amount of smoke, which is visible in the form of a large plume extending from the fire location. The smoke density appears to be moderate to high, with a visible impact on the surrounding atmosphere. The movement pattern of the smoke suggests a north-easterly direction, which may be influenced by local wind patterns. Further analysis of wind direction and speed is necessary to accurately predict the movement of the smoke plume.

### 3. Estimation of Wildfire Spread

Based on visual cues from the satellite image, it is estimated that the wildfire has the potential to spread further in the north-easterly direction, driven by the prevailing wind patterns. The affected area is likely to increase, potentially impacting nearby settlements and natural habitats. The spread of the wildfire may be influenced by factors such as topography, vegetation, and weather conditions.

#### 4. Environmental Impact Assessment

The B ANAYA Wildfire has the potential to impact the local flora and fauna, as well as nearby settlements. The affected area is likely to include natural habitats, such as forests and grasslands, which may be damaged or destroyed by the wildfire. The smoke plume may also impact air quality in the surrounding areas, potentially affecting human health and wildlife. Nearby settlements, including Moriarty and Stanley NM, may be at risk of being impacted by the wildfire, either directly or indirectly through smoke and ash.

#### 5. Recommendations for Further Monitoring or Intervention

Based on the analysis of the satellite image and event details, the following recommendations are made:

- Continue to monitor the wildfire using satellite imagery and ground-based observations to track its spread and intensity.
- Conduct further analysis of wind patterns and weather conditions to predict the movement of the smoke plume and potential impact on nearby settlements.
- Assess the risk of the wildfire impacting nearby settlements and natural habitats, and develop contingency plans for evacuation or other necessary measures.
- Consider deploying firefighting resources to the affected area to contain the wildfire and prevent further spread.
- Collaborate with local authorities and emergency responders to coordinate response efforts and ensure public safety.

By following these recommendations, it is possible to mitigate the impact of the B ANAYA Wildfire and minimize the risk to people and the environment.



Starting High Risk Areas Assessment Flow...

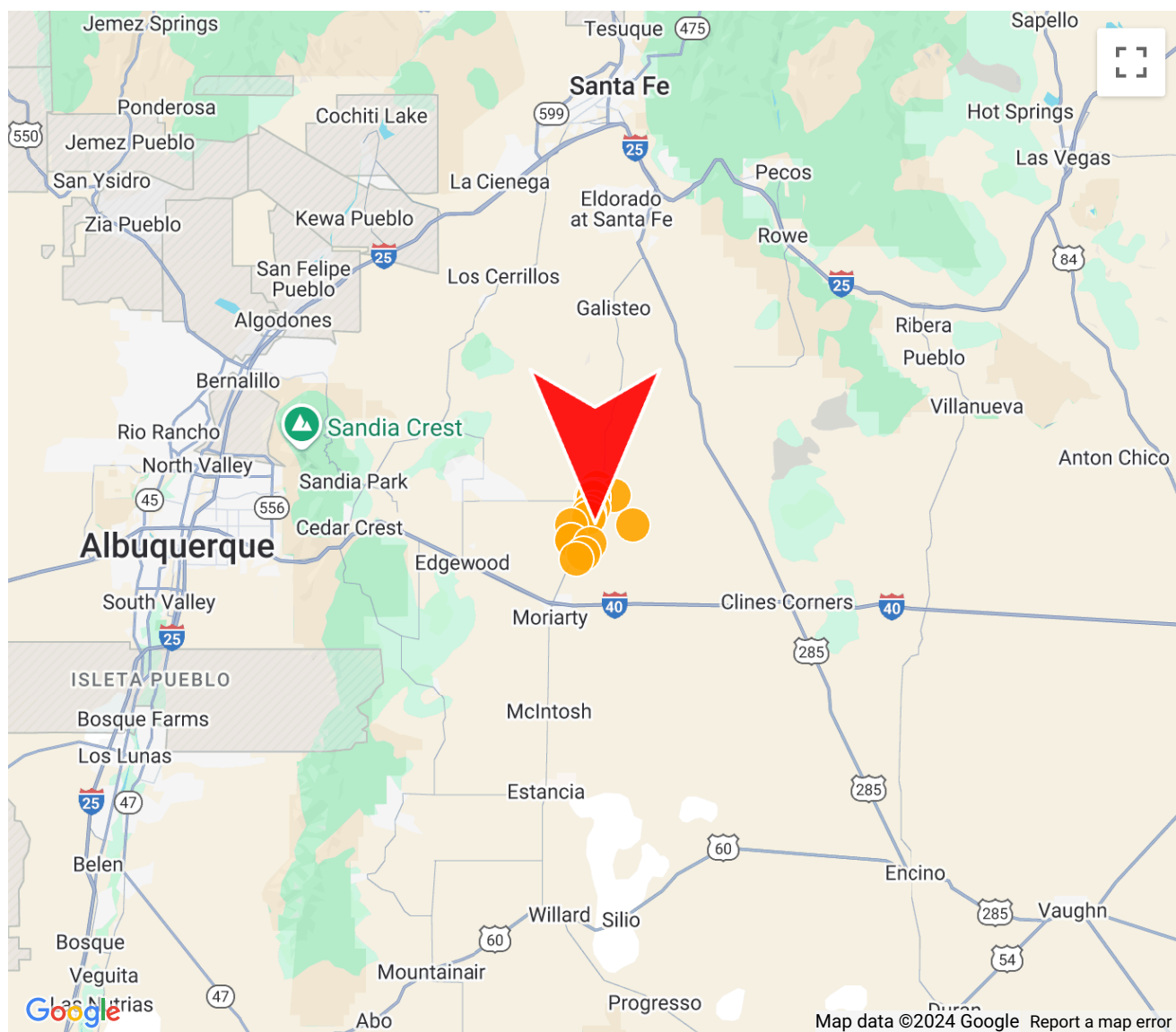


High Risk Areas JSON:

```
{'spread_radius': 7000, 'high_risk_areas': [{'name': 'Stanley', 'location': {'lat': 35.1485724, 'lng': -105.98027}}, {'name': 'Komtek Communications', 'location': {'lat': 35.1343336, 'lng': -105.9794945}}, {'name': 'VISUALDREAMS', 'location': {'lat': 35.1275606, 'lng': -105.9870773}}, {'name': 'Robbins Ranch Art Glass', 'location': {'lat': 35.072043, 'lng': -105.997406}}, {'name': 'J Bar Cane', 'location': {'lat': 35.11989200000001, 'lng': -105.987394}}, {'name': 'Enchanted Mill and
```



Ranch LLC', 'location': {'lat': 35.11989200000001, 'lng': -105.987394}}, {'name': 'Aerostar International LLC Winter Lodge', 'location': {'lat': 35.08662959999999, 'lng': -105.9853483}}, {'name': 'Bill King Ranch', 'location': {'lat': 35.1098109, 'lng': -106.0150007}}, {'name': 'Stanley Union Church', 'location': {'lat': 35.14678749999999, 'lng': -105.9798751}}, {'name': 'STANLEY CYCLONE CENTER', 'location': {'lat': 35.1470419, 'lng': -105.9829536}}, {'name': 'NM-41 & Kinsell Avenue', 'location': {'lat': 35.1477951, 'lng': -105.9795147}}, {'name': 'Bowman construction services', 'location': {'lat': 35.1478813, 'lng': -105.9804665}}, {'name': 'AMA Mobile RV Repair', 'location': {'lat': 35.14870289999999, 'lng': -105.9805289}}, {'name': 'Dennisson Drilling Of New mexico Inc.', 'location': {'lat': 35.1488673, 'lng': -105.9747273}}, {'name': 'Bryan Farms', 'location': {'lat': 35.0904018, 'lng': -106.0163084}}, {'name': 'Mountainview Tractor & Equipment', 'location': {'lat': 35.09032539999999, 'lng': -106.0164291}}, {'name': 'Bear Essentials Riding', 'location': {'lat': 35.1501412, 'lng': -105.9454548}}, {'name': 'Stanley Cemetery', 'location': {'lat': 35.1598946, 'lng': -105.9732927}}, {'name': 'NORTHWINDS', 'location': {'lat': 35.11071259999999, 'lng': -105.9164245}}, {'name': 'Cerrillos', 'location': {'lat': 35.0669968, 'lng': -106.0067357}}}]





## Starting Impact Assessment Flow...



## Event Analysis: **Wildfire Event Analysis Report: B ANAYA Wildfire, Santa Fe, New Mexico**

### 1. Event Description

The B ANAYA Wildfire is currently active in the state of New Mexico, specifically north of Moriarty, east of SR 41, and south of Stanley NM. According to the provided event details, the wildfire has affected an area of approximately 795 acres as of November 24, 2024, at 17:30:00Z. The location of the wildfire is identified by the coordinates [-105.977628, 35.113722]. The intensity of the wildfire is not explicitly stated, but the affected area suggests a moderate to high level of intensity.

### 2. Impact of Weather on the Event

The current weather conditions in the area are characterized by clear skies, with a temperature of 284.51 K (11.36°C or 52.45°F) and a relative humidity of 36%. The wind speed is moderate, at 4.63 m/s (10.3 mph), with a gust speed of 9.26 m/s (20.7 mph). The wind direction is 250°, which is approximately west-southwest.

The forecast for the next 24 hours indicates a slight increase in cloud cover, with a chance of scattered clouds and a high of 284.67 K (11.52°C or 52.74°F). The wind speed is expected to increase, with gusts up to 21.34 m/s (47.8 mph).

The weather conditions are likely to contribute to the spread of the wildfire, particularly the moderate winds and low relative humidity. The clear skies and increasing cloud cover may also impact the fire's behavior, potentially leading to increased activity during the day.

### 3. Image Analysis

The satellite image analysis indicates a significant amount of smoke production from the wildfire, with a visible plume extending from the fire location. The smoke density appears to be moderate to high, with a visible impact on the surrounding atmosphere. The movement pattern of the smoke suggests a north-easterly direction, which may be influenced by local wind patterns.

### 4. Potential Spread Path

Based on the analysis of the satellite image, weather conditions, and event details, the potential spread path of the wildfire is estimated to be in a north-easterly direction, with a radius of approximately 5-7 kilometers (3.1-4.3 miles). The affected area is likely to increase, potentially impacting nearby settlements and natural habitats.

### 5. High Risk Areas

The following high-risk areas have been identified:

- Stanley, NM
- Moriarty, NM
- Komtek Communications
- VISUALDREAMS
- Robbins Ranch Art Glass
- J Bar Cane
- Enchanted Mill and Ranch LLC
- Aerostar International LLC Winter Lodge
- Bill King Ranch
- Stanley Union Church
- STANLEY CYCLONE CENTER
- NM-41 & Kinsell Avenue
- Bowman construction services
- AMA Mobile RV Repair
- Dennisson Drilling Of New mexico Inc.
- Bryan Farms
- Mountainview Tractor & Equipment
- Bear Essentials Riding
- Stanley Cemetery
- NORTHWINDS
- Cerrillos

These areas are at risk of being impacted by the wildfire, either directly or indirectly through smoke and ash.

## 6. Analysis of the Entire Event

The B ANAYA Wildfire is a moderate to high-intensity wildfire that has affected a significant area in New Mexico. The weather conditions, particularly the moderate winds and low relative humidity, are likely to contribute to the spread of the wildfire. The satellite image analysis indicates a significant amount of smoke production, with a visible plume extending from the fire location.

The potential spread path of the wildfire is estimated to be in a north-easterly direction, with a radius of approximately 5-7 kilometers (3.1-4.3 miles). The affected area is likely to increase, potentially impacting nearby settlements and natural habitats.

The high-risk areas identified include several settlements, businesses, and natural habitats. It is essential to continue monitoring the wildfire and take necessary measures to mitigate its impact.

Recommendations:

- Continue to monitor the wildfire using satellite imagery and ground-based observations to track its spread and intensity.



- Conduct further analysis of wind patterns and weather conditions to predict the movement of the smoke plume and potential impact on nearby settlements.
- Assess the risk of the wildfire impacting nearby settlements and natural habitats, and develop contingency plans for evacuation or other necessary measures.
- Consider deploying firefighting resources to the affected area to contain the wildfire and prevent further spread.
- Collaborate with local authorities and emergency responders to coordinate response efforts and ensure public safety.



Review the wildfire emergency and its impact.



Please choose an option from the console:

1. False emergency.
2. Redo high risk areas assessment with additional feedback.
3. Proceed with emergency response.



Starting Safe Zone Determination Flow...



Starting Resource Deployment Flow...



Resource Deployment:

## High risk areas identified

1. Stanley, NM - 35.1485724, -105.98027
2. Moriarty, NM - No coordinates found
3. Komtek Communications - 35.1343336, -105.9794945
4. VISUALDREAMS - 35.1275606, -105.9870773
5. Robbins Ranch Art Glass - 35.072043, -105.997406
6. J Bar Cane - 35.11989200000001, -105.987394
7. Enchanted Mill and Ranch LLC - 35.11989200000001, -105.987394
8. Aerostar International LLC Winter Lodge - 35.08662959999999, -105.9853483
9. Bill King Ranch - 35.1098109, -106.0150007
10. Stanley Union Church - 35.14678749999999, -105.9798751

11. STANLEY CYCLONE CENTER - 35.1470419, -105.9829536
12. NM-41 & Kinsell Avenue - 35.1477951, -105.9795147
13. Bowman construction services - 35.1478813, -105.9804665
14. AMA Mobile RV Repair - 35.14870289999999, -105.9805289
15. Dennisson Drilling Of New mexico Inc. - 35.1488673, -105.9747273
16. Bryan Farms - 35.0904018, -106.0163084
17. Mountainview Tractor & Equipment - 35.09032539999999, -106.0164291
18. Bear Essentials Riding - 35.1501412, -105.9454548
19. Stanley Cemetery - 35.1598946, -105.9732927
20. NORTHWINDS - No coordinates found
21. Cerrillos - No coordinates found

## Resource allocation plan

Based on the high-risk areas identified, the resource allocation plan is as follows:

- Deploy 2 fire engines to Stanley, NM (35.1485724, -105.98027)
- Deploy 1 fire engine to Komtek Communications (35.1343336, -105.9794945)
- Deploy 1 fire engine to VISUALDREAMS (35.1275606, -105.9870773)
- Deploy 1 fire engine to Robbins Ranch Art Glass (35.072043, -105.997406)
- Deploy 1 water dropping helicopter to J Bar Cane (35.11989200000001, -105.987394)
- Deploy 1 water dropping helicopter to Enchanted Mill and Ranch LLC (35.11989200000001, -105.987394)
- Deploy 1 fire engine to Aerostar International LLC Winter Lodge (35.08662959999999, -105.9853483)
- Deploy 1 fire engine to Bill King Ranch (35.1098109, -106.0150007)
- Deploy 1 fire engine to Stanley Union Church (35.14678749999999, -105.9798751)
- Deploy 1 fire engine to STANLEY CYCLONE CENTER (35.1470419, -105.9829536)
- Deploy 1 fire engine to NM-41 & Kinsell Avenue (35.1477951, -105.9795147)
- Deploy 1 fire engine to Bowman construction services (35.1478813, -105.9804665)
- Deploy 1 fire engine to AMA Mobile RV Repair (35.14870289999999, -105.9805289)
- Deploy 1 fire engine to Dennisson Drilling Of New mexico Inc. (35.1488673, -105.9747273)
- Deploy 1 fire engine to Bryan Farms (35.0904018, -106.0163084)
- Deploy 1 fire engine to Mountainview Tractor & Equipment (35.09032539999999, -106.0164291)
- Deploy 1 water dropping helicopter to Bear Essentials Riding (35.1501412, -105.9454548)
- Deploy 1 fire engine to Stanley Cemetery (35.1598946, -105.9732927)

Note: The resource allocation plan is based on the assumption that the fire engines and water dropping helicopters are available and can be deployed to the high-risk areas. The actual deployment of resources may vary depending on the situation and the availability of resources.