# NEVADA DIVISION OF ENVIRONMENTAL PROTECTION


# ANALYSIS OF EXCEPTIONAL EVENTS CONTRIBUTING TO HIGH $PM_{10}$ CONCENTRATIONS IN THE PAHRUMP VALLEY

Final Report
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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| **°F** | degrees Fahrenheit |
| **µg/m$^3$** | micrograms per cubic meter |
| **AQS** | Air Quality System |
| **BACM** | Best Available Control Methods |
| **BAM** | Beta Attenuation Monitor |
| **BAQP** | Bureau of Air Quality Planning |
| **CFR** | Code of Federal Regulations |
| **FEM** | Federal Equivalence Method |
| **FRM** | Federal Reference Method |
| **Master Plan** | Pahrump Regional Planning District Master Plan |
| **mph** | miles per hour |
| **NAAQS** | National Ambient Air Quality Standards |
| **NAC** | Nevada Administrative Code |
| **NDEP** | Nevada Division of Environmental Protection |
| **$PM_{10}$** | Particulate Matter Smaller than 10 Micrometers |
| **U.S. EPA** | United States Environmental Protection Agency |

# ANALYSIS OF EXCEPTIONAL EVENTS CONTRIBUTING TO HIGH $PM_{10}$ CONCENTRATIONS IN PAHRUMP VALLEY ON OCTOBER 26, 2011, MARCH 6, 2012, AND APRIL 15, 2013

## 1.0 INTRODUCTION

### 1.1 PURPOSE

This document substantiates the request by the Nevada Division of Environmental Protection (NDEP) to flag exceedances of the 150 micrograms per cubic meter ($\mu g/m^3$) of particulate matter smaller than 10 micrograms ($PM_{10}$) 24-hour National Ambient Air Quality Standard (NAAQS)[1] in Pahrump Valley as exceptional events under the United States Environmental Protection Agency (U.S. EPA) regulation for *The Treatment of Data Influenced by Exceptional Events*, known as the Exceptional Events Rule (40 Code of Federal Regulations (CFR), Sections 50.1 and 51.14). Natural events caused exceedances of the federal standard at one Federal Equivalent Method (FEM) Beta Attenuation Monitor (BAM) on October 26, 2011 and March 6, 2012 with midnight-to-midnight 24-hour average concentrations of 193 $\mu g/m^3$ and 167 $\mu g/m^3$, respectively, at the Manse air monitoring station in Nye County (Air Quality System (AQS) Site Code 32-023-0014). On April 15, 2013, natural events caused exceedances of the federal standard at all of the Pahrump FEM BAMs. The midnight-to-midnight 24-hour average concentrations for April 15, 2013 were 219 $\mu g/m^3$ (Manse), 197 $\mu g/m^3$ (Church), 181 $\mu g/m^3$ (Glen Oaks), and 166 $\mu g/m^3$ (Linda).

The elevated particulate matter concentrations observed on October 26, 2011, March 6, 2012, and April 15, 2013 occurred as a result of the entrainment of fugitive windblown dust from high winds that impacted much of Pahrump Valley on those dates. The NDEP has submitted the hourly $PM_{10}$ data from the affected monitors for those dates to the U.S. EPA AQS database, and has placed the appropriate AQS flags throughout the data to indicate that the data was affected by exceptional events due to high winds. This flagging indicates that the ambient air quality data was influenced by windblown dust-related emissions and ensures that the data is properly represented in the regulatory process. This document provides evidence in support of this request.

Additional information included in the October 26, 2011, March 6, 2012, and April 15, 2013 $PM_{10}$ analyses beyond what is included in Section 2 is provided in separate appendices.

[1] NAAQS are pollutant-specific thresholds set by the U. S. EPA at levels to protect human health. The NAAQS for $PM_{10}$ is 150 micrograms per cubic meter ($\mu g/m^3$) averaged over 24 hours.

## 1.2 EXCEPTIONAL EVENTS RULE AND BACKGROUND

In 1977, the U.S. EPA began implementing policies to address the usage of ambient air quality monitoring data that has been affected by exceptional and/or natural events. In July 1986, the U.S. EPA issued a document entitled *Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events*, which introduced a flagging system to identify air quality measurements that were influenced by exceptional events, and to exclude such data from consideration in determining compliance. This data, if left unidentified, could lead to possible misinterpretation or misuse of the data. In 1996, the U.S. EPA developed a guidance document entitled *Areas Affected by PM-10 Natural Events*, which provided states with the criteria and procedures to request flagging for exclusion of data affected by natural events such as wildfire, high wind, and volcanic and seismic activity. On March 14, 2007, the U.S. EPA promulgated a formal rule, entitled *The Treatment of Data Influenced by Exceptional Events*. Exceptional events are either anthropogenic events that are unlikely to recur at a particular location, or natural events, which may recur, sometimes frequently. These exceptional events must affect air quality and may not be controllable or preventable using techniques that tribal, state, or local air agencies could reasonably implement in order to achieve and maintain the NAAQS. After an event is classified by the U.S. EPA as an exceptional event, the data related to that event is flagged as such in the U.S. EPA AQS database. The flagged data remains available to the public but is not considered in determining attainment status. The U.S. EPA Exceptional Event Rule:

- Ensures that air quality measurements are properly evaluated and characterized with regard to their cause(s);
- Identifies reasonable actions that should be taken to address the air quality and public health impacts caused by exceptional events;
- Intends to avoid imposing unreasonable planning requirements on state, local, and tribal air quality agencies related to exceedances of the NAAQS due to exceptional events; and
- Ensures that the use of air quality data, whether afforded special treatment or not, is subject to full public disclosure and review.

Packages requesting the exclusion of data affected by high wind dust exceptional events must demonstrate that:

- The event affected air quality;
- The event was not reasonably controllable or preventable;
- The event is unlikely to reoccur at a particular location or was a natural event;

- There was a clear causal relationship between the data under consideration and the event that affected the air quality in the area;

- The event is associated with a measured concentration in excess of normal historical fluctuations, including background; and

- There would have been no exceedance or violation but for the event (72 FR 13560).

The Exceptional Events Rule does not require states to submit formal mitigation plans; however, states must provide public notice, public education, and provide for the implementation of reasonable measures to protect public health when an event occurs. In the preamble of the Exceptional Event Rule, the U.S. EPA specifically includes *High Wind Events* as an example of a Natural Event, which is a type of Exceptional Event. The rule defines Natural Events as follows:

> *... natural events, which are one form of exceptional events according to this definition, may recur, sometimes frequently (e.g., western wildfires). For the purposes of this rule, EPA is defining ''natural event'' as an event in which human activity plays little or no direct causal role to the event in question. We recognize that over time, certain human activities may have had some impact on the conditions which later give rise to a ''natural'' air pollution event. However, we do not believe that small historical human contributions should preclude an event from being deemed ''natural.''*

## 1.3 GEOGRAPHIC SETTING

Pahrump Valley is a northwest-trending basin approximately 50 miles long and 18 miles wide, located in the northern Mohave Desert approximately 50 miles northwest of Las Vegas (Figure 1-1). Pahrump Valley is part of hydrographic area 162, and is bounded to the east and north by the Spring Mountains, to the northwest by the Last Chance Range, and to the west and southwest by the Nopah and Resting Springs Ranges. Mesquite Valley is to the south-southeast over a low pass. Approximately 60 percent of the land in the valley has been disturbed by clearing for development or for use as agricultural land. As of 2011, approximately five percent of the land that had been cleared for development remained disturbed, but undeveloped (NDEP, 2013).

Due to the rain shadow effect of the Sierra Nevada and other mountain ranges to the west and southwest, moisture associated with Pacific storms rarely reaches the valley. Pahrump Valley has an arid climate (an average of approximately five inches of precipitation per year) typical of the northern Mohave Desert region. The average daily maximum temperature in July is approximately 100 degrees Fahrenheit (°F) and approximately 57 °F in January. Average daily minimum temperatures vary from 57 °F in July to 26 °F in January.

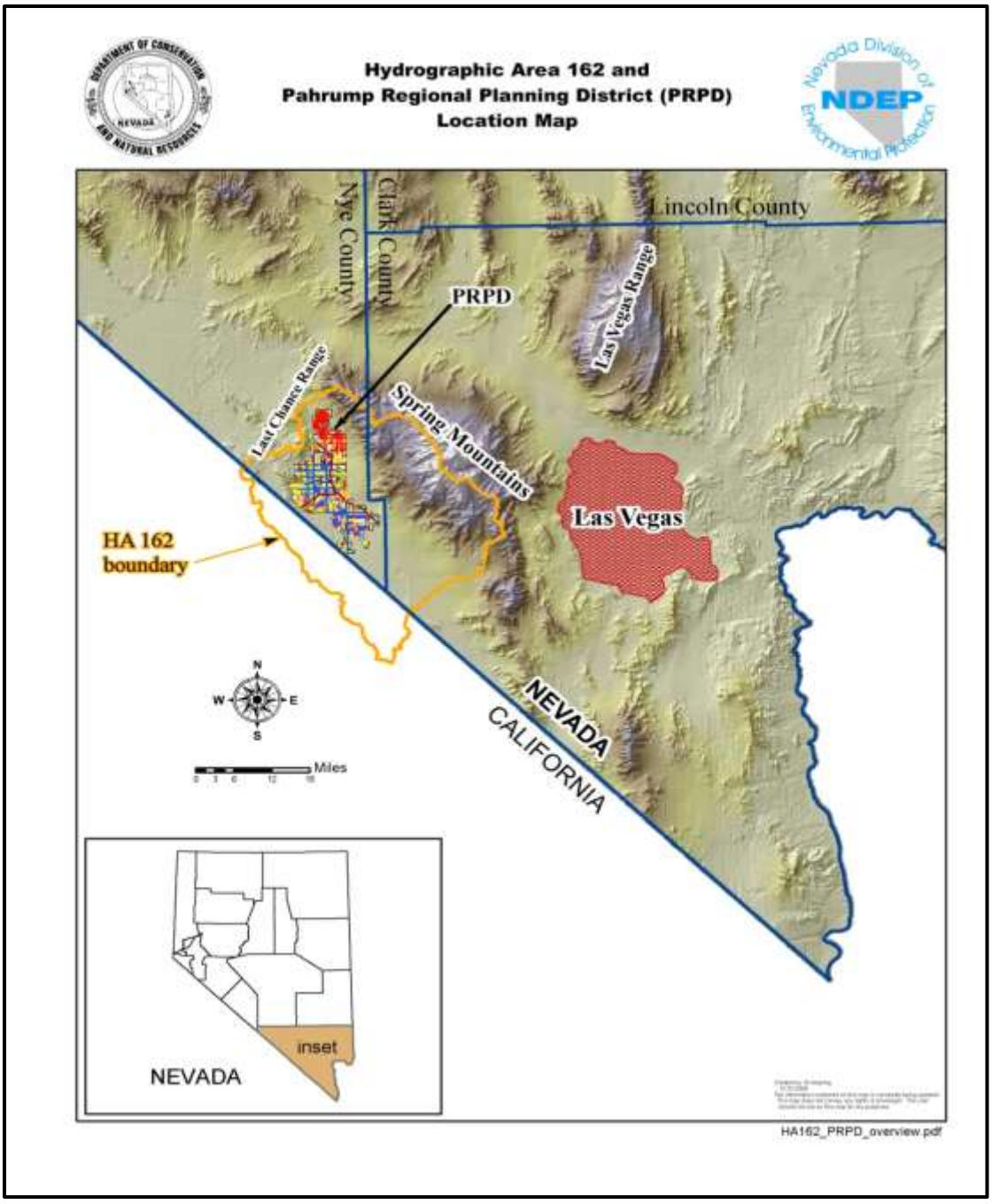


**Figure 1-1 Hydrographic Area 162**

The geology of Pahrump Valley is characteristic of basins throughout the desert southwest; relatively coarse alluvial deposits in the higher elevations near the range fronts grading to more finer-grained basin-fill deposits with increasing distance from the mountains. These basin-fill deposits in Pahrump Valley are generally described as loose, friable, and lacking soil development (dePolo, et al., 1999; dePolo and Ramelli, 2002; dePolo, et al., 2003; Lundstrom, et al., 2002; Ramelli, et al., 2003; and Workman, et al., 2008). These characteristics result in surface deposits that can be susceptible to wind erosion, particularly where disturbed.

$PM_{10}$ concentrations in Pahrump Valley display a distinct seasonal pattern. Most of the major wind events (winds greater than 25 miles per hour (mph)) occur in the spring and fall. While high wind events can and do occur in the winter months, these events are more likely to be accompanied by measureable precipitation than those occurring in the spring and fall months. $PM_{10}$ concentrations approaching or exceeding the NAAQS generally occur during these spring and fall high wind events. Wind events in excess of 25 mph create blowing sand and dust; this fugitive dust[2] is largely responsible for exceedances of the 24-hour $PM_{10}$ air quality standard. Fine-grained basin-fill geologic deposits comprise the majority of the land surface within Pahrump Valley. These deposits are the most common source of dust in Pahrump Valley, especially where the surface has been disturbed. Minor dust sources include paved and unpaved roads, stabilized vacant land, and construction activities. As a result of the dry desert climate and sparse vegetation, low levels of fugitive dust have been present in the Pahrump Valley historically, with higher levels occurring during fire and wind events.

Figure 1-2 shows the locations of $PM_{10}$ BAMs in Pahrump Valley.

[2] Fugitive dust is particulate matter suspended in the air either by mechanical disturbance of surface material or by wind action blowing across surface areas.

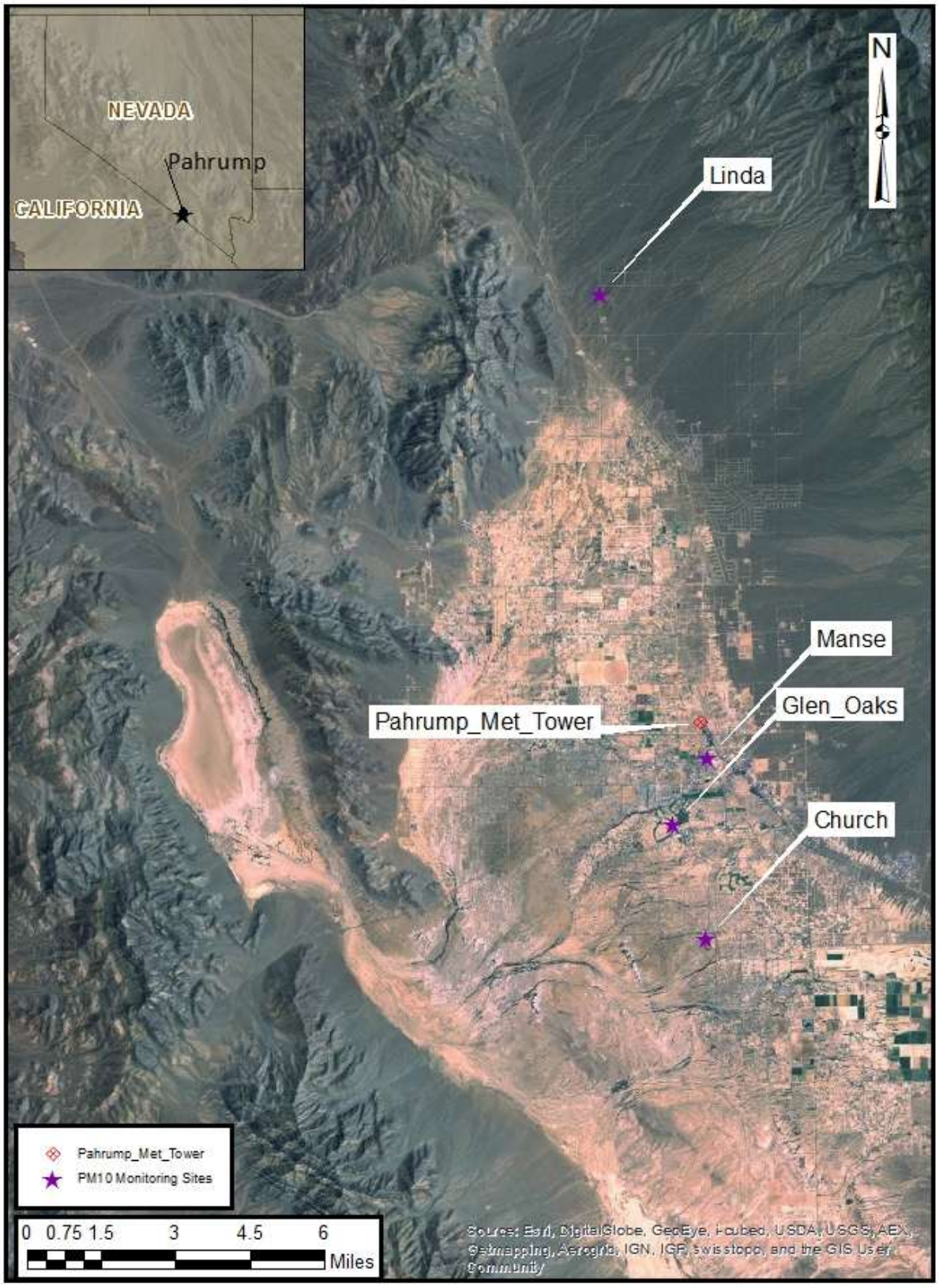


**Figure 1-2 Locations of Pahrump Valley $PM_{10}$ Monitors**

## 1.4 REGULATORY MEASURES

In order to ensure that Pahrump Valley meets federal $PM_{10}$ NAAQS, the town of Pahrump has developed and implemented a variety of dust control strategies and best management practices, including the Pahrump Regional Planning District Master Plan (Master Plan; Appendix A), which provides goals, objectives, and policies to guide land-use planning, recommendations for amending the existing zoning code, and an ordinance developing dust control regulations. The Master Plan also establishes the framework for an Air Quality Plan, an Adequate Public Facilities Ordinance, a Zoning Ordinance, a Streets and Highways Plan, and a Staffing and Implementation Plan. In addition, the Town of Pahrump has developed a land-use plan which intends to guide the district's overall growth in a manner that will help maximize resources while planning for orderly growth and development. This land-use plan includes mechanisms in the zoning ordinance to protect public health, safety, and welfare. Finally, the Master Plan also includes an Air Quality Element, which outlines a series of policies and implementation actions specifically intended to reduce $PM_{10}$ emissions in Pahrump Valley.

Based on the Master Plan, the Town of Pahrump passed a Dust Ordinance (Appendix B) that regulates, controls, and prohibits the excessive emission of air pollution. The town also developed a Dust Management Handbook (Appendix C), which includes general information, best management practices, and enforcement procedures regarding dust control. The Dust Management Handbook is designed to guide land-use applicants in the development of a dust control plan for projects that will disturb an aggregate of 0.5 acres or greater.

To assist the Town of Pahrump with their dust control efforts, the NDEP has adopted Nevada Administrative Code (NAC) 445B.22037, which regulates fugitive dust and surface disturbances. Individual land owners are also cooperating to control fugitive dust emissions from private property.

Also, a Memorandum of Understanding (MOU) was developed between the NDEP, the Nye County Board of Commissioners, the Pahrump Town Board, and the U.S. EPA (Appendix D). The goal of the MOU was to describe the duties and responsibilities of these agencies in a cooperative effort to bring about an expeditious resolution to the $PM_{10}$ air pollution problem in Pahrump Valley. The MOU was the first step in accelerating a plan designed to attain and maintain the NAAQS for $PM_{10}$.

## 1.5 HISTORICAL PERSPECTIVE OF $PM_{10}$ IN THE PAHRUMP VALLEY

Citizen complaints of airborne dust in the late 1990s led to the installation of a $PM_{10}$ ambient air monitor[3] in 2003 in the downtown area of Pahrump. From January 2003 through November

[3] $PM_{10}$ is airborne particulate matter that has an aerodynamic size less than or equal to 10 micrometers. By comparison, a human hair is approximately 70 micrometers in diameter.

2004, eight $PM_{10}$ exceedances of the NAAQS 24-hour ambient air standard were recorded at the single monitoring station. Although these data were very useful in identifying air quality exceedances at one location in Pahrump Valley, the lack of additional ambient air monitors limited the capability of the monitoring network.

Given the potentially localized nature of $PM_{10}$ impacts, the need for more detailed data on particulate matter air quality in the valley necessitated the installation of three additional monitors. The current network of four monitoring locations allows the Nevada Bureau of Air Quality Planning (BAQP) to evaluate air quality on regional and local scales[4], to determine the effectiveness of general and specific mitigation efforts, and to identify any locations within Pahrump Valley that pose health risks due to chronic $PM_{10}$ exposure.

Table 1-1 lists the dates between 2007 and 2013 that the 24-hour $PM_{10}$ concentrations in Pahrump Valley exceeded 150 $\mu g/m^3$. All of the 24-hour $PM_{10}$ NAAQS exceedances that occurred have been flagged as part of this or a previous request for exclusion under the U.S. EPA Exceptional Events Rule, as all of the exceedances were associated with strong winds.

[4]Neighborhood scale denotes that the data derived from this monitor are used to determine local air quality. By contrast, the remaining monitors are designed to assess $PM_{10}$ transport into the Pahrump Valley or assess natural background air quality in the Pahrump Valley.

**Table 1-1 Historical Summary of Pahrump Valley FEM BAM $PM_{10}$ 24-Hour High Concentrations Exceeding 150 µg/$m^3$ between January 2007 and December 2013 with Primary Causal Event**

| Event Date | Station | FEM $PM_{10}$ (µg/$m^3$) | Cause |
|---|---|---|---|
| January 5, 2007 | Manse School | **354** | High Winds |
| | Willow Creek | **174** | High Winds |
| March 27, 2007 | Manse School | **171** | High Winds |
| May 2, 2007 | Manse School | **172** | High Winds |
| June 5, 2007 | Manse School | **326** | High Winds |
| | Willow Creek | **232** | High Winds |
| November 23, 2007 | Manse School | **166** | High Winds |
| | Linda Street | **171** | High Winds |
| February 13, 2008 | Manse School | **223** | High Winds |
| May 21, 2008 | Manse School | **217** | High Winds |
| June 4, 2008 | Manse School | **224** | High Winds |
| March 29, 2009 | Manse School | **283** | High Winds |
| April 3, 2009 | Manse School | **189** | High Winds |
| September 30, 2009 | Manse School | **208** | High Winds |
| October 27, 2009 | Manse School | **250** | High Winds |
| October 28, 2009 | Manse School | **164** | High Winds |
| October 26, 2011 | Manse School | **193** | High Winds |
| March 6, 2012 | Manse School | **167** | High Winds |
| April 15, 2013 | Manse School | **219** | High Winds |
| | Catholic Church | **197** | High Winds |
| | Glen Oaks | **181** | High Winds |
| | Linda Street | **166** | High Winds |

Bold entries indicate exceedance of $PM_{10}$ NAAQS

## 2.0 HIGH WIND EXCEPTIONAL EVENT ANALYSIS

### 2.1 CONCEPTUAL MODEL

Pahrump Valley is approximately 50 air miles from Las Vegas, Nevada, and although the two basins differ in elevation by 200 to 500 feet, they share similar climate conditions. The months with the highest precipitation in Las Vegas Valley are December, January, and February. The least precipitation falls in spring and fall (April, May, June, September, and October). In contrast, the months with the highest average wind speeds are April, May, and June. The most high wind events occur in March and April. The lowest average wind speeds occur in December and January. Therefore, the months with the highest wind speeds correspond to those with the least precipitation. These are also the months when the most $PM_{10}$ exceedances occur at Pahrump Valley monitoring stations. The highest winds tend to occur along fronts with little or no associated precipitation that could serve to wet the soil surface enough to inhibit entrainment.

Annual precipitation in Pahrump Valley and the surrounding areas has been approximately two to four inches below normal for the past three years (2011-2013; Figures 2-1 through 2-3), exacerbating the inherent aridity of native soils. The absence of moisture/precipitation increases the amount of potential fugitive dust that may be generated from the native desert surfaces within and surrounding Pahrump. High winds also pick up dust from disturbed vacant land and associated unpaved roads. The airborne dust can become a health hazard at high concentrations. In addition, the dust contributes to local visibility impairments and regional haze.

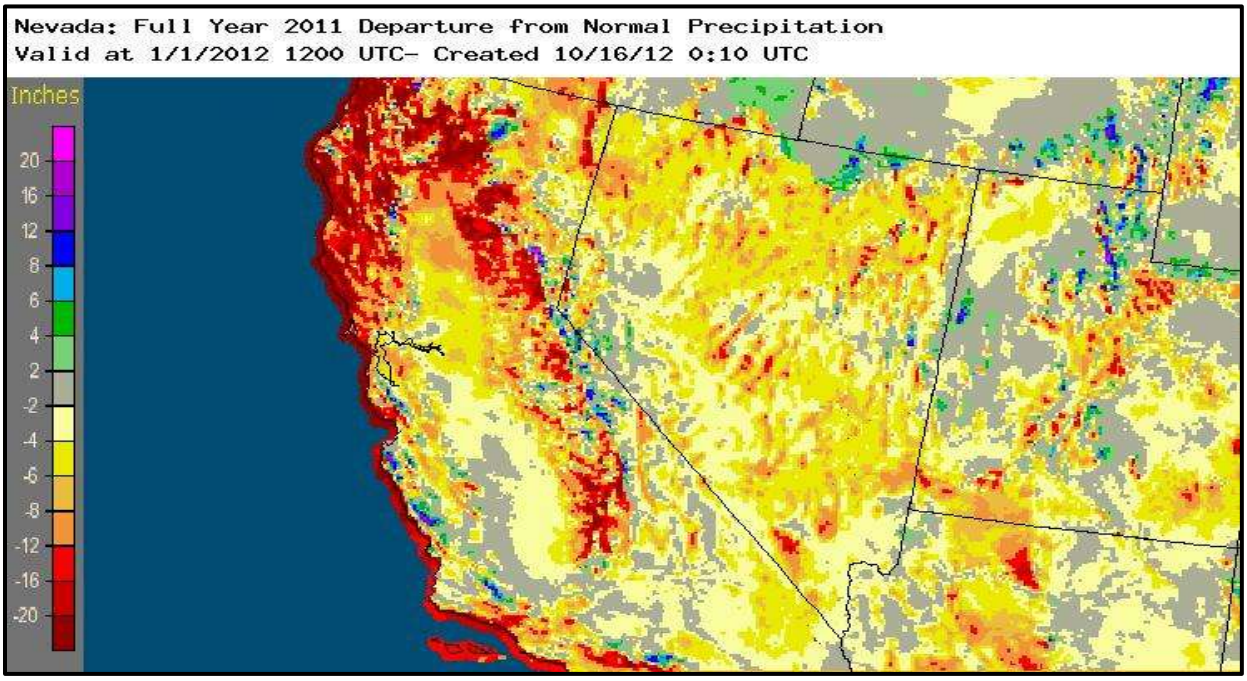


**Figure 2-1 Full Year 2011 Departure from Normal Precipitation** (NWS, 2014)

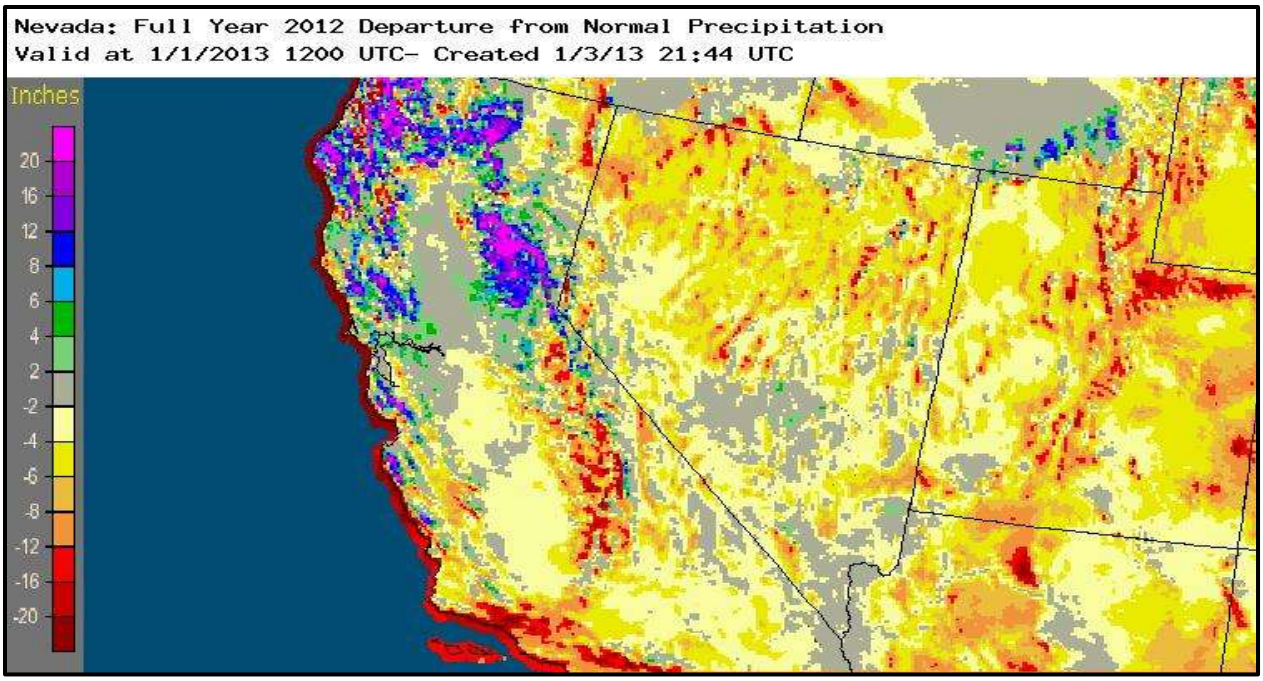


**Figure 2-2 Full Year 2012 Departure from Normal Precipitation** (NWS, 2014)

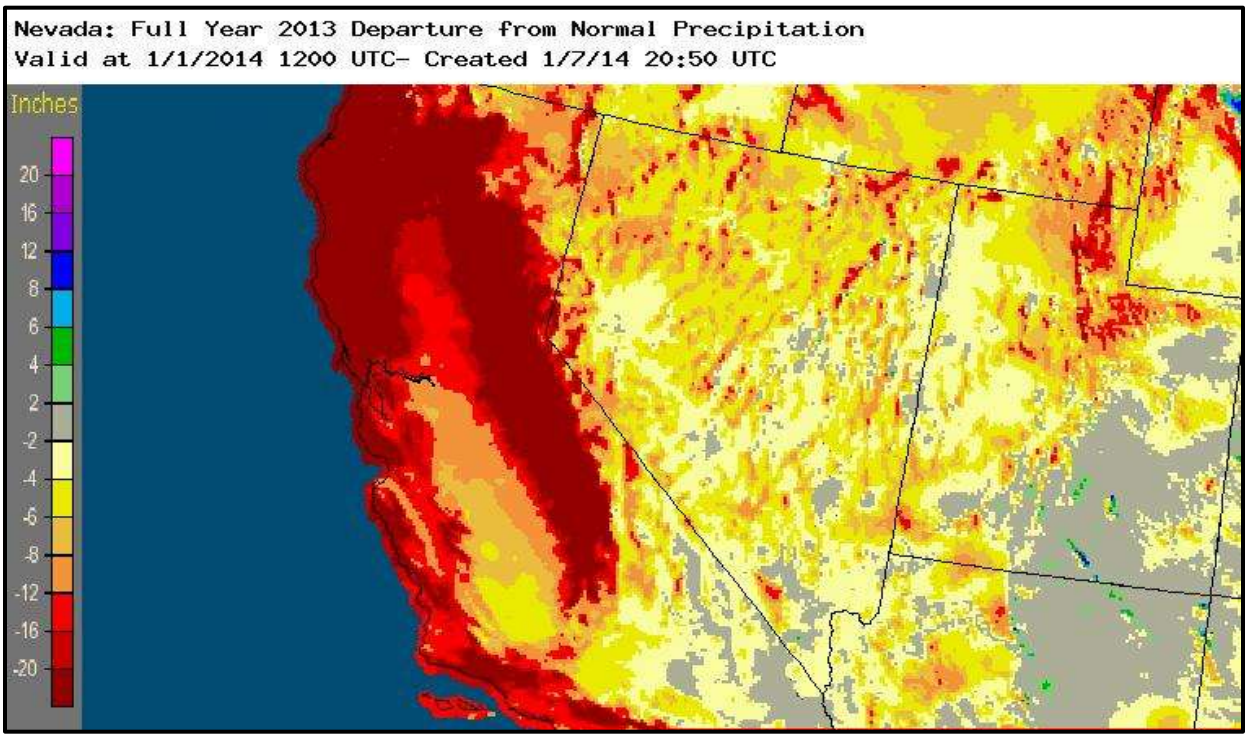


**Figure 2-3 Full Year 2013 Departure from Normal Precipitation** (NWS, 2014)

The population of Nye County increased from 32,485 in 2000 to 43,946 in 2010. The town of Pahrump has also experienced growth, increasing from 7,424 in 1990 to more than 25,000 in

2000; an increase of 336 percent. In 2012, the population of Pahrump was approximately 36,593.

Partially in response to this population increase, large parcels of land have been cleared of vegetation, subdivided, and prepared for housing construction. Dirt and gravel roads were constructed as a part of this preparation; however, many of the planned housing developments have not yet been completed, resulting in parcels of land that are disturbed but still vacant. In addition, abandoned and unirrigated farmland is common throughout Pahrump Valley. Much of this land has restabilized within the past 10 years and, as of 2011, only five percent of the land within Pahrump Township was still classified as disturbed and vacant (NDEP, 2013).

A regional aerial image showing the Pahrump Valley $PM_{10}$ monitoring stations relative to nearby relevant geographic and geologic features is shown in Figure 2-4. Much of the land cleared for development in Pahrump Valley occurs within Holocene to late Pleistocene geologic units mapped as "fine-grained" or "basin-fill" (which is described as fine-grained) (Figure 2-5; dePolo, et al., 1999; dePolo and Ramelli, 2002; dePolo, et al., 2003; Lundstrom, et al., 2002; Ramelli, et al., 2003; and Workman, et al., 2008). These units are generally described as loose, friable, and lacking soil development or particle cementation, both of which could serve to inhibit entrainment from high winds, even when not disturbed.

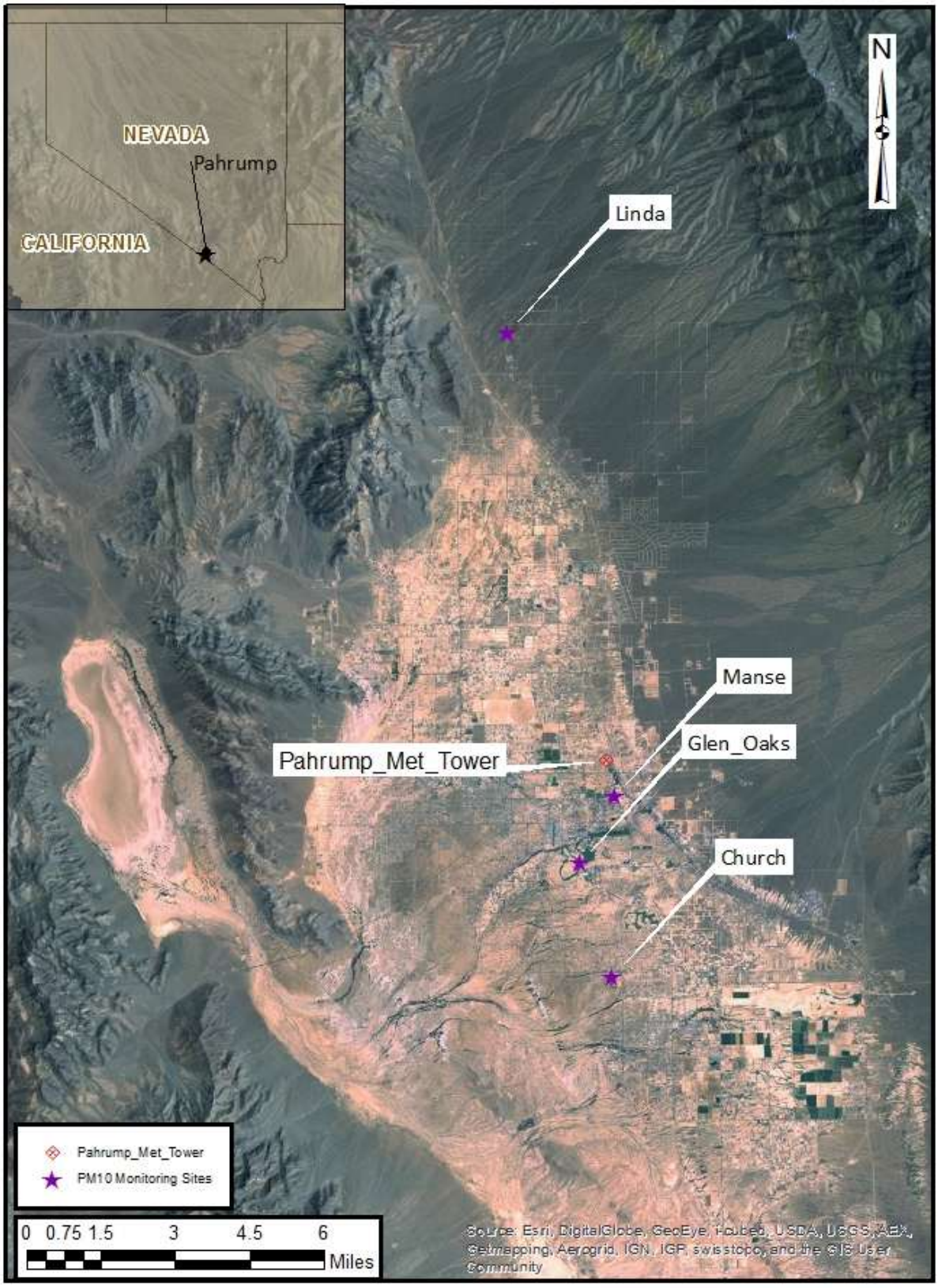


**Figure 2-4 Pahrump Valley $PM_{10}$ Monitors**

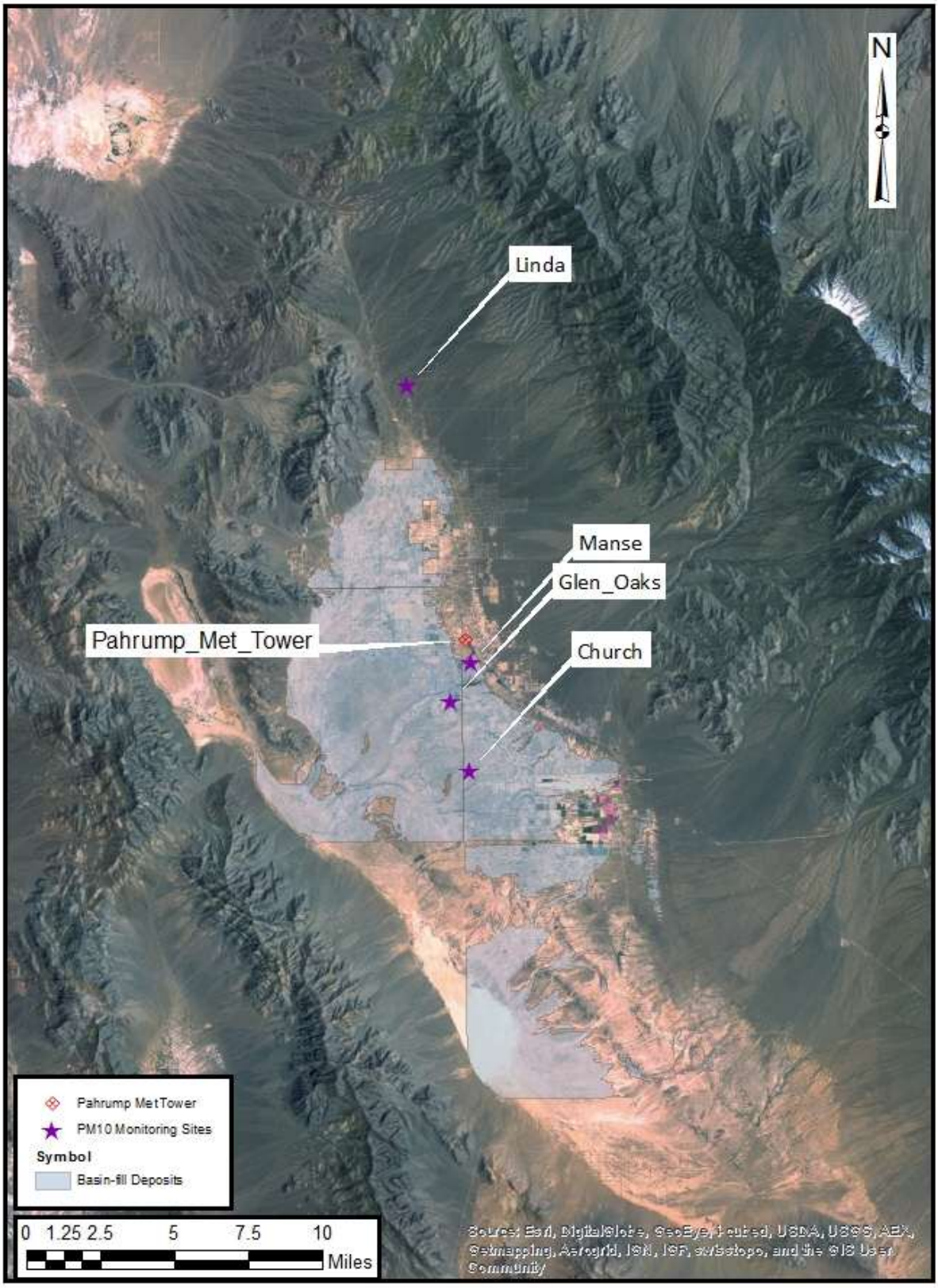


**Figure 2-5 Fine-grained Basin-fill Deposits in Pahrump Valley**

High $PM_{10}$ concentrations in Pahrump Valley are commonly associated with strong wind events when the wind is coming from either the south-southeast (for moderate wind events with wind speeds up to approximately 10 mph) or the north-northwest (for stronger wind events with wind speeds exceeding 10 mph) (NDEP, 2013; Figure 2-6). Hourly $PM_{10}$ concentrations from 2005 to 2011 were disaggregated into wind speed classes (corresponding to the quartiles of the aggregate distribution). Each pollution rose shows the distribution of the recorded $PM_{10}$ concentrations for each wind direction (in 30 degree increments). The mean is the mean $PM_{10}$ concentration for that particular wind speed class. Wind speed was not filtered for "calms" in this analysis; the "calm" percentage is always zero percent. A regional aerial image showing the relevant geographic and geologic features is shown in Figure 2-7, with polygons showing the expected source paths of $PM_{10}$ particles during high wind events.

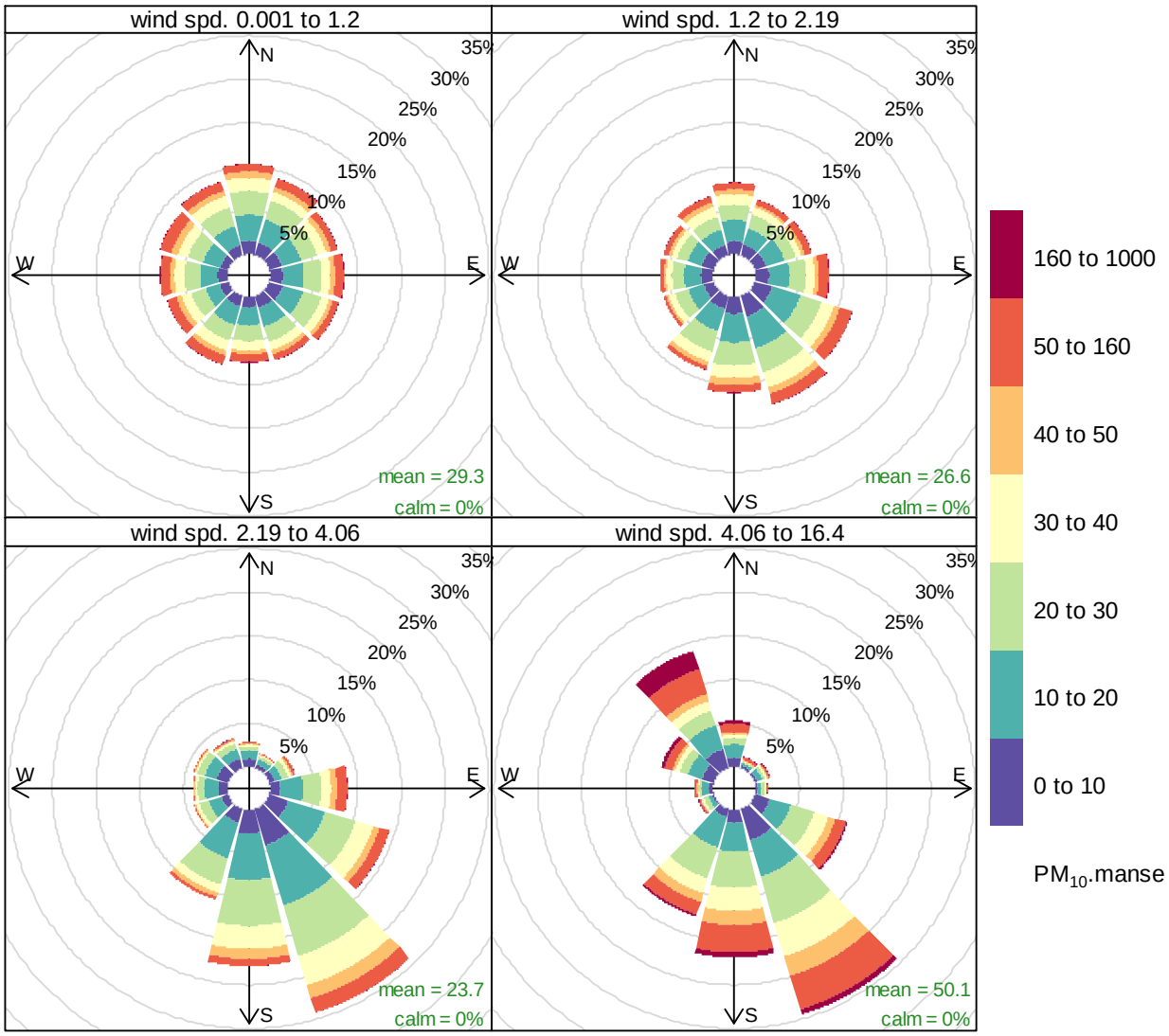


**Figure 2-6 Pollution Rose for the Manse $PM_{10}$ Monitoring Station in Pahrump Valley using $PM_{10}$ Concentrations from 2005 through 2011, Showing Frequency of Counts by Wind Direction** (NDEP, 2013)

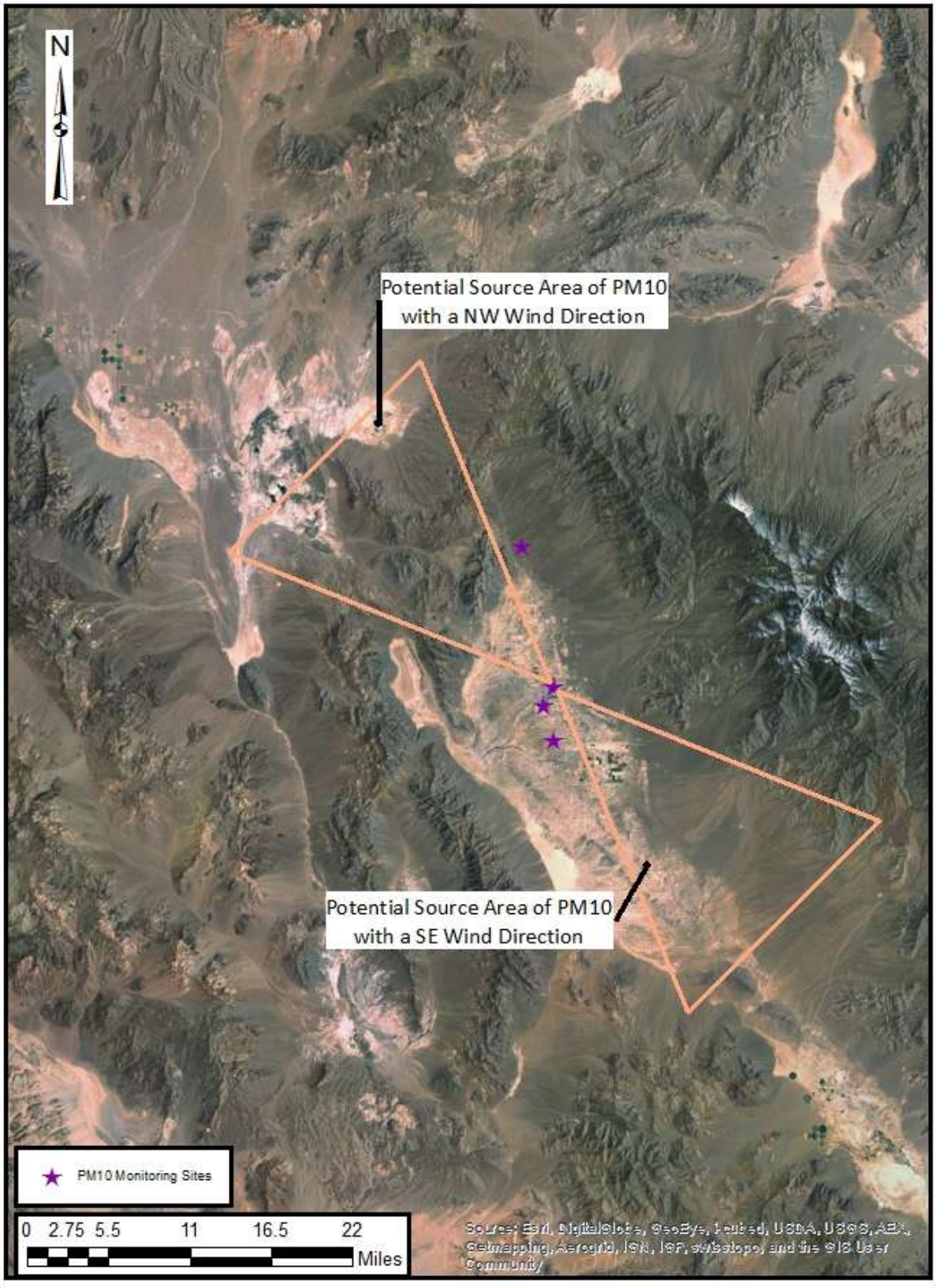


**Figure 2-7 Expected Source Paths of $PM_{10}$ Particles During High Wind Events in Pahrump Valley**

Description of October 26, 2011 Event

On October 26, 2011, a strong wind event developed causing very high north-northwest winds throughout Pahrump Valley. The average hourly wind speed at the Pahrump Meteorological Station during the exceedance was 24 mph. During this period, the peak sustained[5] hourly wind speed was 27 mph and the maximum wind gust was 40 mph. The winds at the Pahrump Meteorological Station appear to have been strong enough to entrain sufficient dust to cause the monitored $PM_{10}$ concentrations to increase.

The $PM_{10}$ NAAQS were exceeded at the Manse air monitoring station on October 26, 2011 due to high winds. The BAM $PM_{10}$ FEM sampler measured $PM_{10}$ high concentrations for several consecutive hours in the morning and afternoon, causing a high 24-hour (midnight to midnight) average concentration of 193 $\mu g/m^3$. Table 2-1 summarizes the hourly and 24-hour average $PM_{10}$ concentrations at the Manse station from 0000 on October 25, 2011 through 1200 on October 27, 2011. Figure 2-8 shows this data graphically for the same time period. As compared to October 25, 2011, the hourly $PM_{10}$ concentrations at the Manse site on October 26, 2011 were elevated beginning in the morning, and first exceeded 150 $\mu g/m^3$ during the 0000 PST hour. The average hourly concentration exceeded 150 $\mu g/m^3$ from 0600 through 1300, and peaked at 896 $\mu g/m^3$.

Table 2-2 shows the daily 24-hour averaged $PM_{10}$ concentrations from daily FEM (BAM) measurements within Pahrump Valley and Las Vegas from October 20 through November 1, 2011. Figure 2-9 shows the time series of the FEM BAM daily 24-hour average $PM_{10}$ concentrations for Pahrump Valley and Las Vegas Valley for the same period, illustrating the concentration peaks at all locations.

[5] For the NDEP Pahrump Valley Meteorological tower, peak sustained winds are based on one-hour averages. Maximum wind gusts are the highest value measured in each hour.

**Table 2-1 Hourly BAM Measurements at the Pahrump Valley Air Monitoring Stations from 0000 PST October 25 to 1200 PST October 27, 2011**

| Date | Hour (PST) | Manse School Monitor | | Church Monitor | | Linda Monitor | | Glen Oaks Monitor | |
|---|---|---|---|---|---|---|---|---|---|
| | | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) |
| **10/25/11** | 0000 | 18 | 35.0 | 19 | 29.1 | 25 | 37.0 | N/A | N/A |
| | 0100 | 16 | | 20 | | 25 | | N/A | |
| | 0200 | 24 | | 20 | | 26 | | N/A | |
| | 0300 | 13 | | 17 | | 28 | | N/A | |
| | 0400 | 35 | | 20 | | 20 | | N/A | |
| | 0500 | 18 | | 68 | | 26 | | N/A | |
| | 0600 | 48 | | 71 | | 25 | | N/A | |
| | 0700 | 49 | | 37 | | 21 | | N/A | |
| | 0800 | 67 | | 16 | | 23 | | N/A | |
| | 0900 | 43 | | 9 | | 32 | | N/A | |
| | 1000 | 37 | | 9 | | 27 | | N/A | |
| | 1100 | 18 | | 11 | | 23 | | N/A | |
| | 1200 | 22 | | 12 | | 28 | | N/A | |
| | 1300 | 26 | | 16 | | 69 | | N/A | |
| | 1400 | 18 | | 14 | | 47 | | N/A | |
| | 1500 | 41 | | 19 | | 29 | | N/A | |
| | 1600 | 24 | | 14 | | 40 | | N/A | |
| | 1700 | 68 | | 32 | | 48 | | N/A | |
| | 1800 | 28 | | 33 | | 28 | | N/A | |
| | 1900 | 39 | | 56 | | 31 | | N/A | |
| | 2000 | 40 | | 57 | | 125 | | N/A | |
| | 2100 | 47 | | 62 | | 47 | | N/A | |
| | 2200 | 39 | | 38 | | 60 | | N/A | |
| | 2300 | 63 | | 29 | | 37 | | N/A | |

| Date | Hour (PST) | Manse School Monitor | | Church Monitor | | Linda Monitor | | Glen Oaks Monitor | |
|---|---|---|---|---|---|---|---|---|---|
| | | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) |
| **10/26/11** | 0000 | 174 | **193.4** | 54 | **37.8** | 29 | **30.2** | N/A | **N/A** |
| | 0100 | 237 | | 49 | | 34 | | N/A | |
| | 0200 | 17 | | 24 | | 20 | | N/A | |
| | 0300 | 19 | | 21 | | 20 | | N/A | |
| | 0400 | 25 | | 16 | | 19 | | N/A | |
| | 0500 | 91 | | 29 | | 40 | | N/A | |
| | 0600 | **896** | | 85 | | 55 | | N/A | |
| | 0700 | **646** | | 52 | | 95 | | N/A | |
| | 0800 | **656** | | 124 | | 34 | | N/A | |
| | 0900 | **712** | | 90 | | 21 | | N/A | |
| | 1000 | **383** | | 82 | | 62 | | N/A | |
| | 1100 | **129** | | 14 | | 25 | | N/A | |
| | 1200 | **233** | | 28 | | 46 | | N/A | |
| | 1300 | **251** | | 38 | | 71 | | N/A | |
| | 1400 | 68 | | 25 | | 20 | | N/A | |
| | 1500 | 25 | | 16 | | 12 | | N/A | |
| | 1600 | 9 | | 18 | | 21 | | N/A | |
| | 1700 | 7 | | 37 | | 15 | | N/A | |
| | 1800 | 8 | | 14 | | 21 | | N/A | |
| | 1900 | 11 | | 13 | | 11 | | N/A | |
| | 2000 | 11 | | 28 | | 12 | | N/A | |
| | 2100 | 15 | | 15 | | 12 | | N/A | |
| | 2200 | 3 | | 25 | | 12 | | N/A | |
| | 2300 | 16 | | 12 | | 20 | | N/A | |

| Date | Hour (PST) | Manse School Monitor | | Church Monitor | | Linda Monitor | | Glen Oaks Monitor | |
|---|---|---|---|---|---|---|---|---|---|
| | | **BAM Hourly $PM_{10}$ ($\mu g/m^3$)** | **24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight)** | **BAM Hourly $PM_{10}$ ($\mu g/m^3$)** | **24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight)** | **BAM Hourly $PM_{10}$ ($\mu g/m^3$)** | **24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight)** | **BAM Hourly $PM_{10}$ ($\mu g/m^3$)** | **24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight)** |
| **10/27/11** | 0000 | 7 | 20.0 | 22 | 19.2 | 17 | 19.1 | N/A | N/A |
| | 0100 | 7 | | 30 | | 14 | | N/A | |
| | 0200 | 15 | | 17 | | 21 | | N/A | |
| | 0300 | 11 | | N/A | | 19 | | N/A | |
| | 0400 | 11 | | N/A | | 14 | | N/A | |
| | 0500 | 20 | | 16 | | 56 | | N/A | |
| | 0600 | 48 | | 31 | | 13 | | N/A | |
| | 0700 | 53 | | 23 | | 10 | | N/A | |
| | 0800 | 23 | | 17 | | 7 | | N/A | |
| | 0900 | 15 | | 2 | | 9 | | N/A | |
| | 1000 | 19 | | 4 | | 11 | | N/A | |
| | 1100 | 10 | | 7 | | 11 | | N/A | |
| | 1200 | 10 | | 6 | | 20 | | N/A | |

N/A: The data from the Glen Oaks monitoring station was invalid for this time period due to a failed leak test on November 3, 2011.
Bold entries represent exceedances of $PM_{10}$ NAAQS.

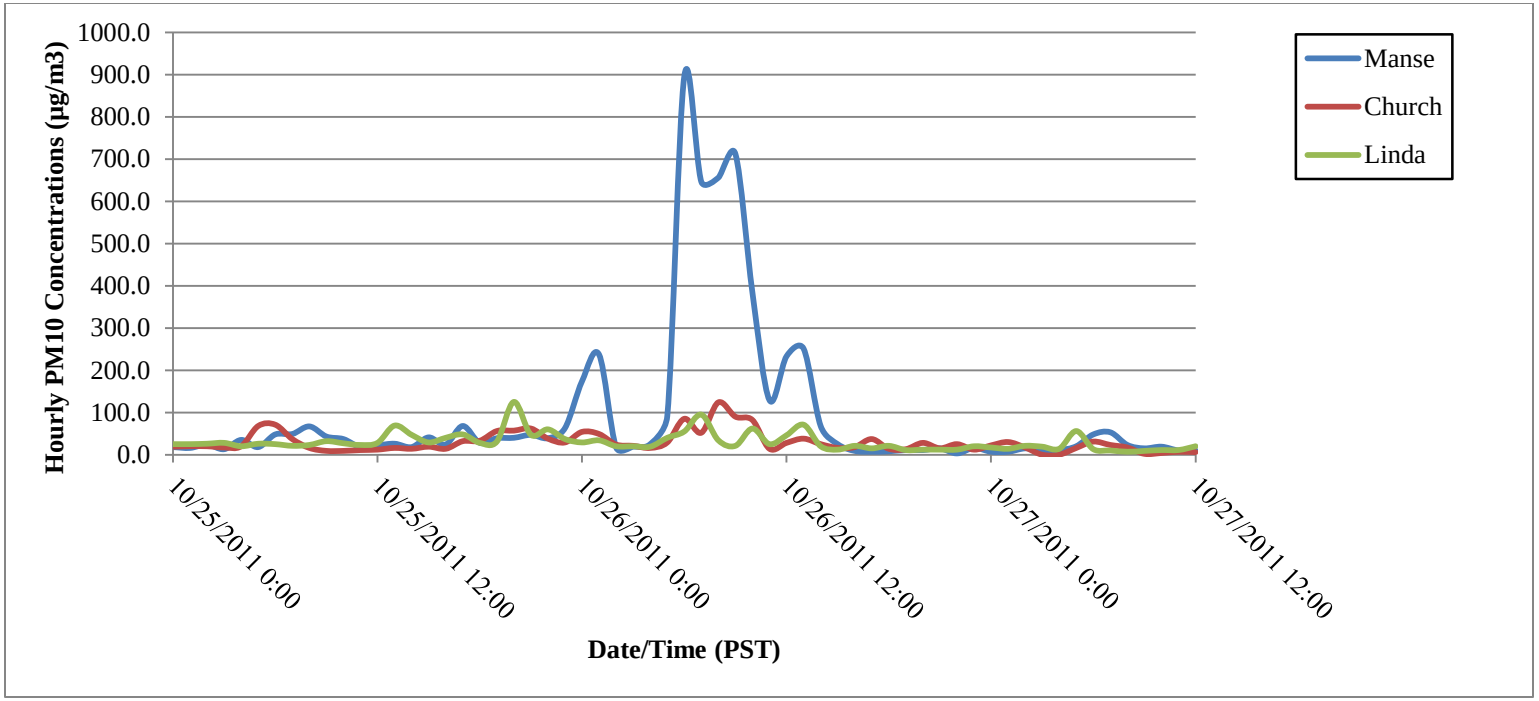


**Figure 2-8 Time Series of Pahrump Valley Hourly BAM FEM $PM_{10}$ ($\mu g/m^3$) from 0000 PST October 25 to 1200 PST October 27, 2011**

**Table 2-2 24-Hour BAM FEM $PM_{10}$ Measurements (µg/$m^3$) for Pahrump and Clark County Monitoring Stations for the Weeks Before and After October 26, 2011**.

| Station/Date | 10/20 | 10/21 | 10/22 | 10/23 | 10/24 | 10/25 | 10/26 | 10/27 | 10/28 | 10/29 | 10/30 | 10/31 | 11/1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pahrump Stations** | | | | | | | | | | | | | |
| Manse School | 20.2 | 20.4 | 29.8 | 18.1 | 21.8 | 35.0 | **193** | 20.0 | 19.8 | 18.5 | 17.3 | 21.0 | 109.2 |
| Catholic Church | 17.0 | 24.2 | 22.1 | 15.5 | 16.3 | 29.1 | 37.9 | 19.3 | 17.7 | 19.5 | 19.6 | 16.4 | 43.5 |
| Glen Oaks | | | | | | | | | | | | | |
| Linda Street | 15.5 | 21.1 | 21.8 | 19.0 | 26.2 | 37.1 | 30.3 | 19.2 | 13.0 | 15.1 | 13.5 | 16.5 | 30.8 |
| **Clark County Las Vegas Stations** | | | | | | | | | | | | | |
| New Forest Drive | 22.6 | 26.7 | 19.8 | 12.6 | 23.6 | 19.0 | 20.0 | 12.3 | 17.0 | 15.8 | 12.5 | 22.4 | 33.4 |
| Pavilion Center Drive | 11.9 | 15.8 | - - - | 8.9 | 17.3 | 17.7 | 10.2 | 8.9 | 10.3 | 10.7 | 7.9 | 13.8 | 15.4 |
| West Azure Avenue | 21.1 | 22.7 | 19.4 | 15.0 | 27.7 | 25.5 | 37.5 | 14.7 | 18.2 | 24.8 | 14.7 | 23.3 | 28.4 |
| Sunrise Avenue | 41.7 | 43.3 | 38.0 | 30.0 | 37.8 | 26.2 | 22.4 | 18.1 | 30.9 | 38.2 | 35.6 | 39.8 | 46.9 |
| East Tonopah | 31.9 | 37.8 | 30.1 | 24.0 | 29.5 | 27.4 | 20.6 | 20.5 | 24.4 | 31.6 | 27.5 | 33.0 | 36.3 |
| **Other Clark County Stations** | | | | | | | | | | | | | |
| Henderson | 22.0 | 20.7 | 18.3 | 15.0 | 21.2 | 18.1 | 15.4 | 11.3 | 16.4 | 18.6 | 18.0 | 21.1 | 23.9 |
| Boulder City | 14.1 | 15.8 | 20.5 | 9.7 | 12.3 | 13.4 | 16.7 | 9.0 | 8.3 | 10.5 | 9.9 | 12.7 | 17.9 |
| Jean | 8.5 | 11.5 | 12.0 | 8.6 | 10.4 | 14.8 | 12.7 | 9.1 | 8.1 | 10.4 | 10.7 | 7.4 | 19.5 |

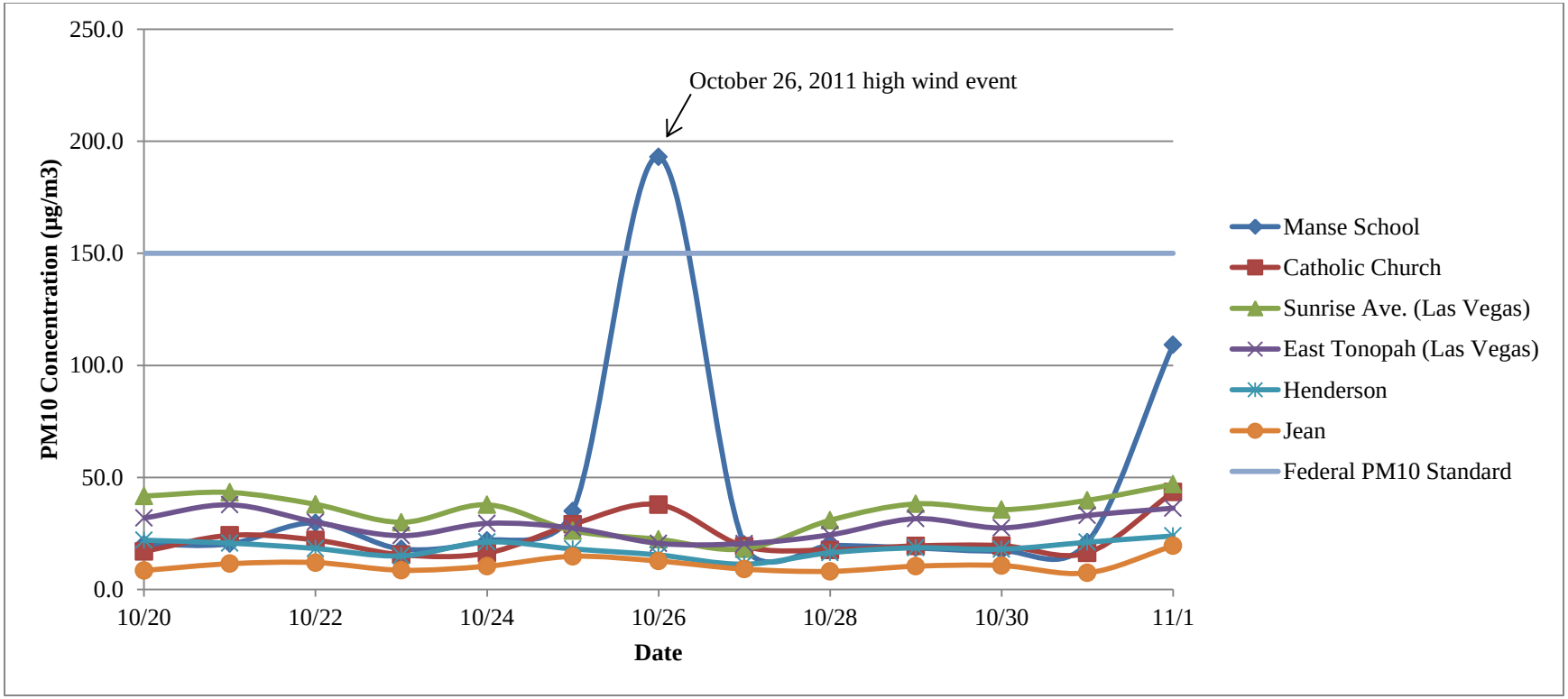


**Figure 2-9 BAM Daily 24-Hour $PM_{10}$ Concentrations (µg/$m^3$) Measured in Pahrump Valley and Las Vegas Valley between October 20 and November 1, 2011**

Description of March 6, 2012 Event

On March 6, 2012 a very strong cold front resulted in a strong wind event for much of the Mojave Desert and southern Great Basin, including Pahrump Valley. The average hourly wind speed at the Pahrump Meteorological Station during the exceedance was 23 mph. During this period, the peak sustained hourly wind speed was 30 mph with a maximum wind gust of 56 mph. Wind directions were variable during this event, initially coming from the south, then becoming southwest to westerly, and finally coming from the northwest. This is consistent with the passage of a low pressure system moving from west to east across the region. The timing of the highest $PM_{10}$ concentrations corresponds to the south to southwest winds.

The $PM_{10}$ NAAQS were exceeded at the Manse air monitoring station on March 6, 2012 due to high winds. The BAM $PM_{10}$ FEM sampler measured $PM_{10}$ high concentrations for several consecutive hours in the morning and afternoon, causing a high 24-hour (midnight to midnight) average concentration (167 $\mu g/m^3$). While the $PM_{10}$ concentrations at the other stations in Pahrump Valley did not exceed the NAAQS on this date, they were elevated during the same period. Table 2-3 summarizes the hourly and 24-hour average $PM_{10}$ concentrations at the Manse station from 0000 on March 5, 2012 through 1200 on March 7, 2012. Figure 2-10 shows this data graphically for the same time period. On March 6, 2012 (as compared to March 5, 2012) the hourly $PM_{10}$ concentration at the Manse monitor began to increase in mid-morning and first exceeded 150 $\mu g/m^3$ during the 1100 hour. The concentration remained higher than 150 $\mu g/m^3$ through the 1700 hour, decreased for two hours, and then increased again from the 2100 hour through the 2300 hour. The peak $PM_{10}$ concentration on March 6, 2012 was 659 $\mu g/m^3$.

Data from $PM_{10}$ monitoring stations in nearby Clark County also show elevated $PM_{10}$ concentrations on March 6, 2012. Table 2-4 shows the daily 24-hour averaged $PM_{10}$ concentrations from daily FEM (BAM) measurements within Pahrump Valley and Las Vegas from February 29 through March 12, 2012. Figure 2-11 shows the time series of the FEM BAM daily 24-hour average $PM_{10}$ concentrations for Pahrump Valley and Las Vegas Valley for the same period, illustrating the concentration peaks at all locations.

**Table 2-3 Hourly BAM Measurements at the Pahrump Valley Air Monitoring Stations from 0000 PST March 5 to 1200 PST March 7, 2012**

| Date | Hour (PST) | Manse School Monitor | | Church Monitor | | Linda Monitor | | Glen Oaks Monitor | |
|---|---|---|---|---|---|---|---|---|---|
| | | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) |
| **03/05/12** | 0000 | 27 | 16.6 | 11 | 28 | 9 | 12.1 | 16 | 10.6 |
| | 0100 | 17 | | 11 | | 15 | | 22 | |
| | 0200 | 11 | | 11 | | 7 | | 11 | |
| | 0300 | 10 | | 9 | | 8 | | 11 | |
| | 0400 | 44 | | 7 | | 11 | | 11 | |
| | 0500 | 21 | | 18 | | 10 | | 15 | |
| | 0600 | 32 | | 11 | | 10 | | 17 | |
| | 0700 | 43 | | 10 | | 18 | | 16 | |
| | 0800 | 29 | | 7 | | 9 | | 22 | |
| | 0900 | 19 | | 7 | | 10 | | 5 | |
| | 1000 | 9 | | 23 | | 4 | | 5 | |
| | 1100 | 7 | | 2 | | 2 | | 5 | |
| | 1200 | 17 | | 0 | | 7 | | 5 | |
| | 1300 | 11 | | -2 | | 7 | | 7 | |
| | 1400 | 19 | | -1 | | 16 | | 5 | |
| | 1500 | 5 | | 0 | | 12 | | 2 | |
| | 1600 | 6 | | 0 | | 13 | | 2 | |
| | 1700 | 19 | | 28 | | 22 | | 25 | |
| | 1800 | 9 | | 2 | | 14 | | 20 | |
| | 1900 | 11 | | 0 | | 27 | | 8 | |
| | 2000 | 15 | | -3 | | 13 | | 7 | |
| | 2100 | 6 | | 2 | | 13 | | 7 | |
| | 2200 | 7 | | 8 | | 19 | | 7 | |
| | 2300 | 6 | | 7 | | 15 | | 5 | |

| Date | Hour (PST) | Manse School Monitor | | Church Monitor | | Linda Monitor | | Glen Oaks Monitor | |
|---|---|---|---|---|---|---|---|---|---|
| | | **BAM Hourly $PM_{10}$ ($\mu g/m^3$)** | **24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight)** | **BAM Hourly $PM_{10}$ ($\mu g/m^3$)** | **24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight)** | **BAM Hourly $PM_{10}$ ($\mu g/m^3$)** | **24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight)** | **BAM Hourly $PM_{10}$ ($\mu g/m^3$)** | **24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight)** |
| **03/06/12** | 0000 | 7 | **167.0** | 9 | **74.3** | 16 | **74.3** | 5 | **129.2** |
| | 0100 | 19 | | 11 | | 16 | | 24 | |
| | 0200 | 21 | | 12 | | 16 | | 46 | |
| | 0300 | 18 | | 13 | | 20 | | 11 | |
| | 0400 | 27 | | 13 | | 13 | | 21 | |
| | 0500 | 26 | | 13 | | 15 | | 20 | |
| | 0600 | 41 | | 26 | | 18 | | 143 | |
| | 0700 | 22 | | 18 | | 20 | | 80 | |
| | 0800 | 49 | | 31 | | 31 | | 113 | |
| | 0900 | **139** | | N/A | | 60 | | 80 | |
| | 1000 | **N/A** | | 62 | | 143 | | N/A | |
| | 1100 | **197** | | 111 | | 160 | | 99 | |
| | 1200 | **420** | | 138 | | N/A | | 714 | |
| | 1300 | **N/A** | | 423 | | 248 | | N/A | |
| | 1400 | **659** | | 227 | | 360 | | 689 | |
| | 1500 | **98** | | 61 | | 68 | | 66 | |
| | 1600 | **556** | | 260 | | 232 | | 331 | |
| | 1700 | **315** | | 98 | | 78 | | 123 | |
| | 1800 | **52** | | 44 | | 33 | | 34 | |
| | 1900 | **16** | | 19 | | 17 | | 14 | |
| | 2000 | **9** | | 25 | | 17 | | 14 | |
| | 2100 | **243** | | 33 | | 14 | | 88 | |
| | 2200 | **481** | | 38 | | 59 | | 95 | |
| | 2300 | **260** | | 26 | | 57 | | 34 | |

| Date | Hour (PST) | Manse School Monitor | | Church Monitor | | Linda Monitor | | Glen Oaks Monitor | |
|---|---|---|---|---|---|---|---|---|---|
| | | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) |
| **03/07/12** | 0000 | 121 | 73.8 | 17 | 11.5 | 24 | 16.2 | 20 | 16.1 |
| | 0100 | 71 | | 11 | | 17 | | 10 | |
| | 0200 | 53 | | 15 | | 10 | | 9 | |
| | 0300 | 33 | | 11 | | 11 | | 8 | |
| | 0400 | 33 | | 8 | | 10 | | 9 | |
| | 0500 | 4 | | 5 | | 10 | | 6 | |
| | 0600 | 30 | | 4 | | 13 | | 2 | |
| | 0700 | 16 | | 4 | | 11 | | 2 | |
| | 0800 | 161 | | 3 | | 10 | | 5 | |
| | 0900 | 537 | | 4 | | 16 | | 19 | |
| | 1000 | **176** | | 6 | | 8 | | 13 | |
| | 1100 | **168** | | 5 | | 10 | | 27 | |
| | 1200 | **57** | | 5 | | 12 | | 36 | |

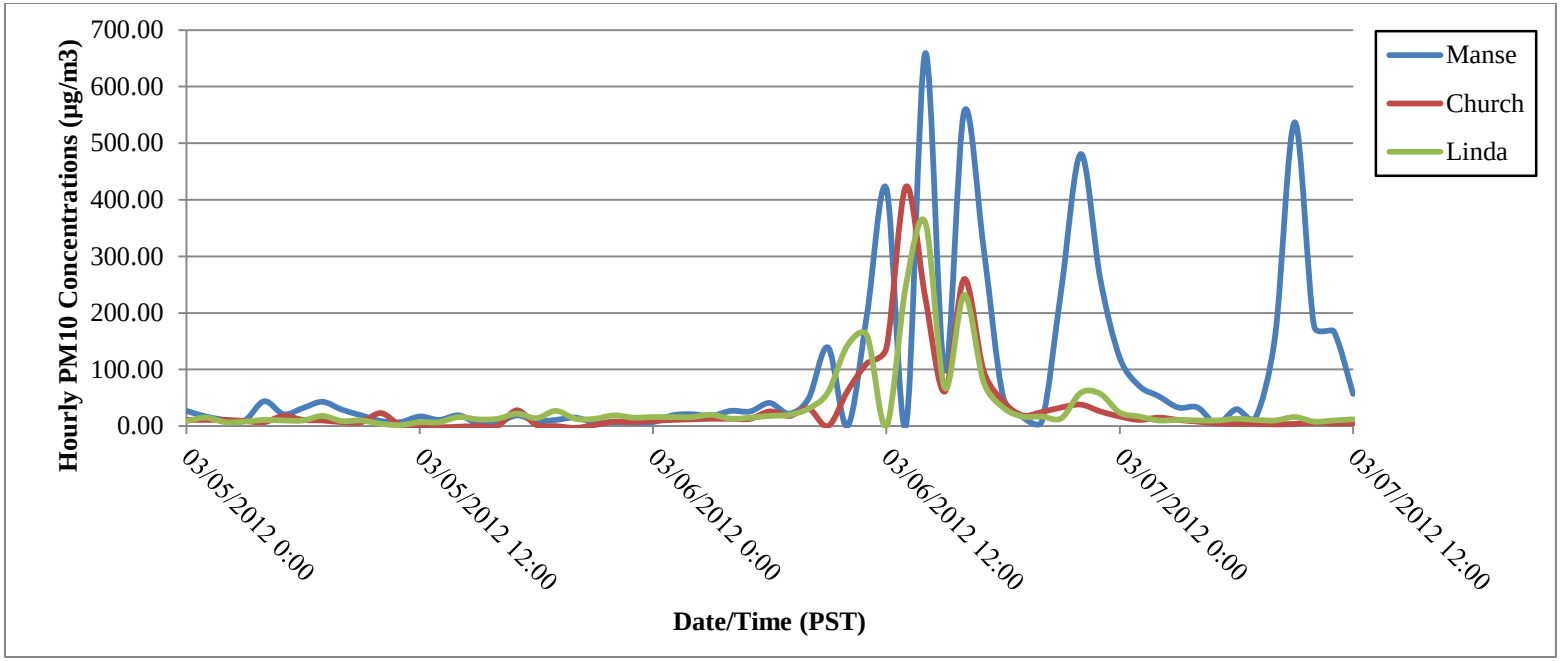


**Figure 2-10 Time Series of Pahrump Valley Hourly BAM FEM $PM_{10}$ ($\mu g/m^3$) from 0000 PST March 5 to 1200 PST March 7, 2012**

**Table 2-4 24-Hour BAM FEM $PM_{10}$ Measurements (µg/$m^3$) for Pahrump and Clark County Monitoring Stations for the Weeks Before and After March 6, 2012.**

| Station/Date | 2/29 | 3/1 | 3/2 | 3/3 | 3/4 | 3/5 | 3/6 | 3/7 | 3/8 | 3/9 | 3/10 | 3/11 | 3/12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pahrump Stations** | | | | | | | | | | | | | |
| Manse School | 17.8 | 37.2 | 46.5 | 15.1 | 14.6 | 16.7 | **167** | 73.9 | 24.5 | 22.5 | 16.8 | 27.3 | 18.2 |
| Catholic Church | 18.7 | 19.8 | 13.7 | 10.4 | 9.0 | 10.7 | 129 | 16.1 | 20.1 | 23.5 | 13.8 | 20.2 | 28.2 |
| Glen Oaks | 10.9 | 12.7 | 11.0 | 10.7 | 11.3 | 7.0 | 74.4 | 11.6 | 18.9 | 13.4 | 12.0 | 18.8 | 11.6 |
| Linda Street | 16.4 | 19.1 | 9.3 | 8.3 | 11.7 | 12.1 | 74.4 | 16.3 | 23.1 | 15.8 | 13.8 | 28.1 | 17.8 |
| **Clark County Las Vegas Stations** | | | | | | | | | | | | | |
| New Forest Drive | 13.0 | 25.8 | 28.4 | 9.8 | 11.2 | 25.1 | 139.8 | 15.3 | 18.6 | 22.3 | 23.1 | 22.6 | 13.0 |
| Pavilion Center Drive | 10.7 | 16.4 | 5.1 | 5.7 | 6.7 | 12.2 | 67.2 | 8.9 | 13.4 | 15.0 | 14.5 | 21.0 | 9.1 |
| West Azure Avenue | 14.6 | 32.3 | 19.4 | 14.0 | 13.6 | 20.4 | 88.5 | 25.1 | 24.8 | 26.7 | 22.2 | 24.3 | 19.0 |
| Sunrise Avenue | 15.9 | 24.4 | 14.5 | 15.6 | 29.2 | 33.9 | - - - | 24.3 | 19.0 | 29.4 | 33.3 | 31.6 | 18.6 |
| East Tonopah | 15.8 | 19.8 | 13.3 | 16.7 | 21.8 | 27.1 | - - - | 19.9 | 24.5 | 31.3 | 27.3 | 30.4 | 22.4 |
| **Other Clark County Stations** | | | | | | | | | | | | | |
| Henderson | 14.3 | 20.0 | 12.3 | 9.7 | 13.6 | 21.1 | 125.6 | 13.0 | 21.2 | 20.2 | 19.5 | 22.4 | 17.9 |
| Boulder City | 13.7 | 17.1 | 6.0 | 4.9 | 7.9 | 12.8 | 129.7 | 13.6 | 10.7 | - - - | - - - | - - - | - - - |
| Jean | 9.6 | 16.4 | 8.4 | 7.1 | 7.8 | 8.3 | 114.5 | 12.7 | 16.6 | 11.9 | 10.6 | 16.5 | 12.7 |

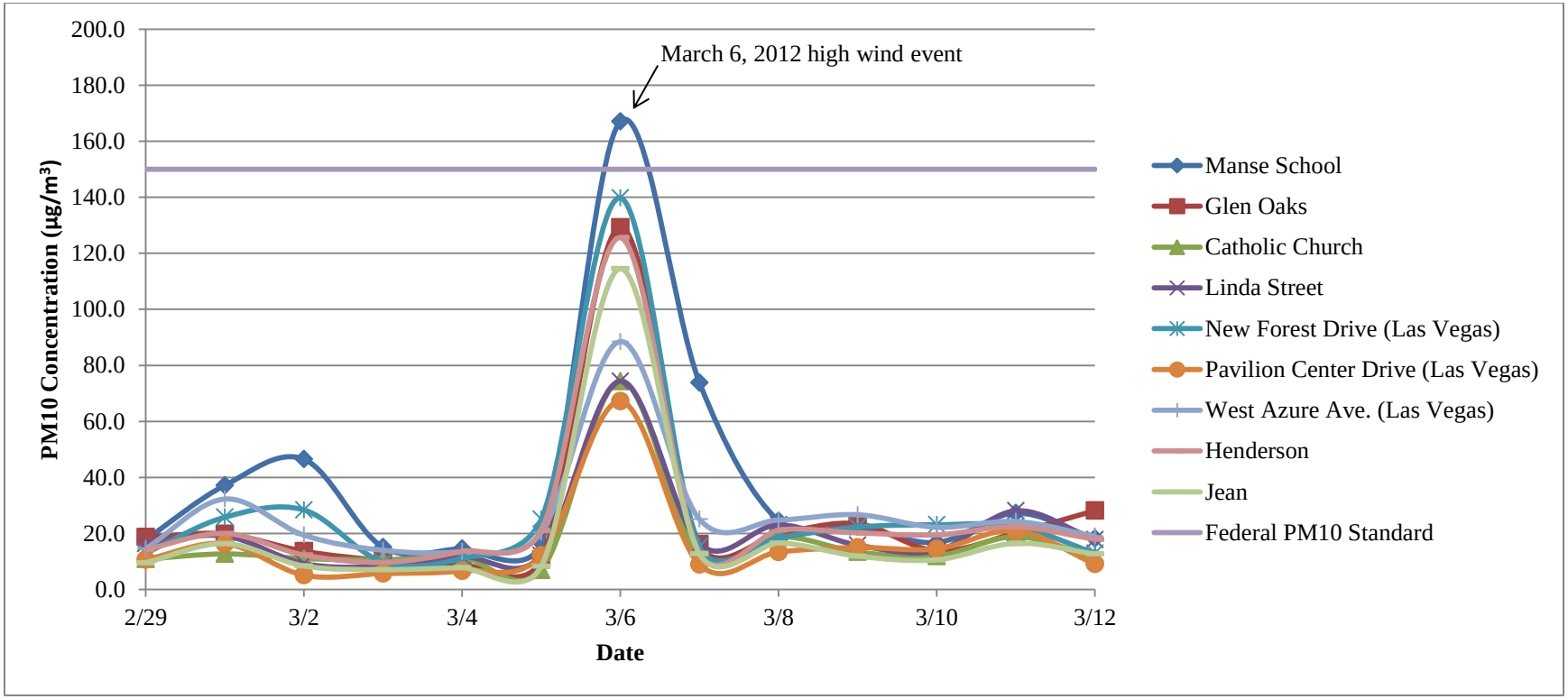


**Figure 2-11 BAM Daily 24-Hour $PM_{10}$ Concentrations (µg/$m^3$) Measured in Pahrump Valley and Las Vegas Valley between February 29 and March 12, 2012.**

Description of April 15, 2013 Event

On April 15, 2013 a strong wind event developed causing high south to southeast winds throughout Pahrump Valley. The average hourly wind speed at the Pahrump Meteorological Station during the exceedance was 14 mph. During this period, the peak sustained hourly wind speed was 26 mph with a maximum wind gust of 41 mph. The winds at the Pahrump Meteorological Station appear to have been strong enough to entrain sufficient dust to cause the monitored $PM_{10}$ concentrations to increase.

The $PM_{10}$ NAAQS were exceeded at the Manse, Church, Glen Oaks, and Linda monitoring stations on April 15, 2013 due to high winds. The BAM $PM_{10}$ FEM samplers measured high $PM_{10}$ concentrations for the entire day, causing high 24-hour average concentrations at each site (219 $\mu g/m^3$ (Manse); 197 $\mu g/m^3$ (Church); 181 $\mu g/m^3$ (Glen Oaks); and 166 $\mu g/m^3$ (Linda)). Table 2-5 summarizes the hourly and 24-hour average $PM_{10}$ concentrations for all Pahrump Valley monitoring sites from 0000 on April 14, 2013 through 1200 on April 16, 2013. Figure 2-12 shows this data graphically for all FEM stations in Pahrump Valley. On April 15, 2013, the hourly $PM_{10}$ concentrations at all of the Pahrump Valley monitoring sites exceeded the $PM_{10}$ NAAQS for the entire 24-hour period. The peak concentrations were 447 $\mu g/m^3$ (Manse), 489 $\mu g/m^3$ (Church), 430 $\mu g/m^3$ (Glen Oaks), and 329 $\mu g/m^3$ (Linda).

Data from $PM_{10}$ monitoring stations in nearby Clark County also show elevated $PM_{10}$ concentrations on April 15, 2013. Table 2-6 shows the daily 24-hour averaged $PM_{10}$ concentrations from daily FEM (BAM) measurements within Pahrump Valley and Las Vegas from April 9 through April 21, 2013. Figure 2-13 shows the time series of the FEM BAM daily 24-hour average $PM_{10}$ concentrations for Pahrump Valley and Las Vegas Valley for the same period, illustrating the concentration peaks at all locations.

**Table 2-5 Hourly BAM Measurements at the Pahrump Valley Air Monitoring Stations from 0000 PST April 14 to 1200 PST April 16, 2013**

| Date | Hour (PST) | Manse School Monitor | | Church Monitor | | Linda Monitor | | Glen Oaks Monitor | |
|---|---|---|---|---|---|---|---|---|---|
| | | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) |
| **04/14/13** | 0000 | 26 | 86.7 | 28 | 89.4 | 48 | 69.7 | 31 | 81.8 |
| | 0100 | 37 | | 25 | | 33 | | 23 | |
| | 0200 | 28 | | 22 | | 33 | | 24 | |
| | 0300 | 25 | | 23 | | 28 | | 19 | |
| | 0400 | 28 | | 28 | | 29 | | 18 | |
| | 0500 | 17 | | 35 | | 36 | | 29 | |
| | 0600 | 46 | | 31 | | 27 | | 35 | |
| | 0700 | 37 | | 46 | | 24 | | 32 | |
| | 0800 | 36 | | 35 | | 28 | | 26 | |
| | 0900 | 30 | | 28 | | 32 | | 34 | |
| | 1000 | 33 | | 28 | | 27 | | 28 | |
| | 1100 | 38 | | 30 | | 32 | | 27 | |
| | 1200 | 33 | | 23 | | 28 | | 21 | |
| | 1300 | 33 | | 32 | | 28 | | 22 | |
| | 1400 | 31 | | 34 | | 30 | | 32 | |
| | 1500 | 23 | | 17 | | 30 | | 23 | |
| | 1600 | 29 | | 21 | | 28 | | 24 | |
| | 1700 | 21 | | 17 | | 28 | | 19 | |
| | 1800 | 79 | | 154 | | 24 | | 136 | |
| | 1900 | 261 | | 264 | | 222 | | 246 | |
| | 2000 | 226 | | 286 | | 185 | | 250 | |
| | 2100 | 270 | | 305 | | 188 | | 285 | |
| | 2200 | 336 | | 335 | | 229 | | 302 | |
| | 2300 | 359 | | 289 | | 276 | | 279 | |

| Date | Hour (PST) | Manse School Monitor | | Church Monitor | | Linda Monitor | | Glen Oaks Monitor | |
|---|---|---|---|---|---|---|---|---|---|
| | | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) |
| **04/15/13** | 0000 | **402** | **219.0** | **489** | **197.2** | **303** | **166.1** | **430** | **181.3** |
| | 0100 | **447** | | **411** | | **255** | | **382** | |
| | 0200 | **381** | | **392** | | **329** | | **349** | |
| | 0300 | **392** | | **427** | | **300** | | **387** | |
| | 0400 | **336** | | **255** | | **297** | | **268** | |
| | 0500 | **209** | | **184** | | **263** | | **170** | |
| | 0600 | **200** | | **185** | | **189** | | **185** | |
| | 0700 | **133** | | **121** | | **146** | | **120** | |
| | 0800 | **140** | | **115** | | **110** | | **112** | |
| | 0900 | **111** | | **63** | | **109** | | **76** | |
| | 1000 | **60** | | **51** | | **78** | | **44** | |
| | 1100 | **60** | | **52** | | **57** | | **52** | |
| | 1200 | **57** | | **57** | | **58** | | **47** | |
| | 1300 | **116** | | **86** | | **59** | | **114** | |
| | 1400 | **324** | | **85** | | **107** | | **66** | |
| | 1500 | **142** | | **154** | | **138** | | **134** | |
| | 1600 | **418** | | **435** | | **167** | | **410** | |
| | 1700 | **314** | | **178** | | **197** | | **194** | |
| | 1800 | **215** | | **212** | | **156** | | **188** | |
| | 1900 | **338** | | **236** | | **184** | | **187** | |
| | 2000 | **108** | | **192** | | **94** | | **114** | |
| | 2100 | **136** | | **157** | | **131** | | **135** | |
| | 2200 | **142** | | **128** | | **147** | | **135** | |
| | 2300 | **77** | | **70** | | **113** | | **53** | |

| Date | Hour (PST) | Manse School Monitor | | Church Monitor | | Linda Monitor | | Glen Oaks Monitor | |
|---|---|---|---|---|---|---|---|---|---|
| | | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) | BAM Hourly $PM_{10}$ ($\mu g/m^3$) | 24-Hour $PM_{10}$ ($\mu g/m^3$) (midnight to midnight) |
| **04/16/13** | 0000 | 46 | 22.7 | 48 | 12.4 | 44 | 11.7 | 29 | 23.0 |
| | 0100 | 23 | | 27 | | 21 | | 14 | |
| | 0200 | 11 | | 9 | | 7 | | 10 | |
| | 0300 | 6 | | 9 | | 9 | | 19 | |
| | 0400 | 7 | | 7 | | 7 | | 14 | |
| | 0500 | 10 | | 9 | | 8 | | 21 | |
| | 0600 | 9 | | 9 | | 11 | | 8 | |
| | 0700 | 10 | | 5 | | 7 | | 15 | |
| | 0800 | 10 | | 19 | | 6 | | 19 | |
| | 0900 | 13 | | 8 | | 5 | | 2 | |
| | 1000 | 37 | | 9 | | 2 | | 17 | |
| | 1100 | 40 | | 10 | | 2 | | 14 | |
| | 1200 | 28 | | 7 | | 2 | | 14 | |

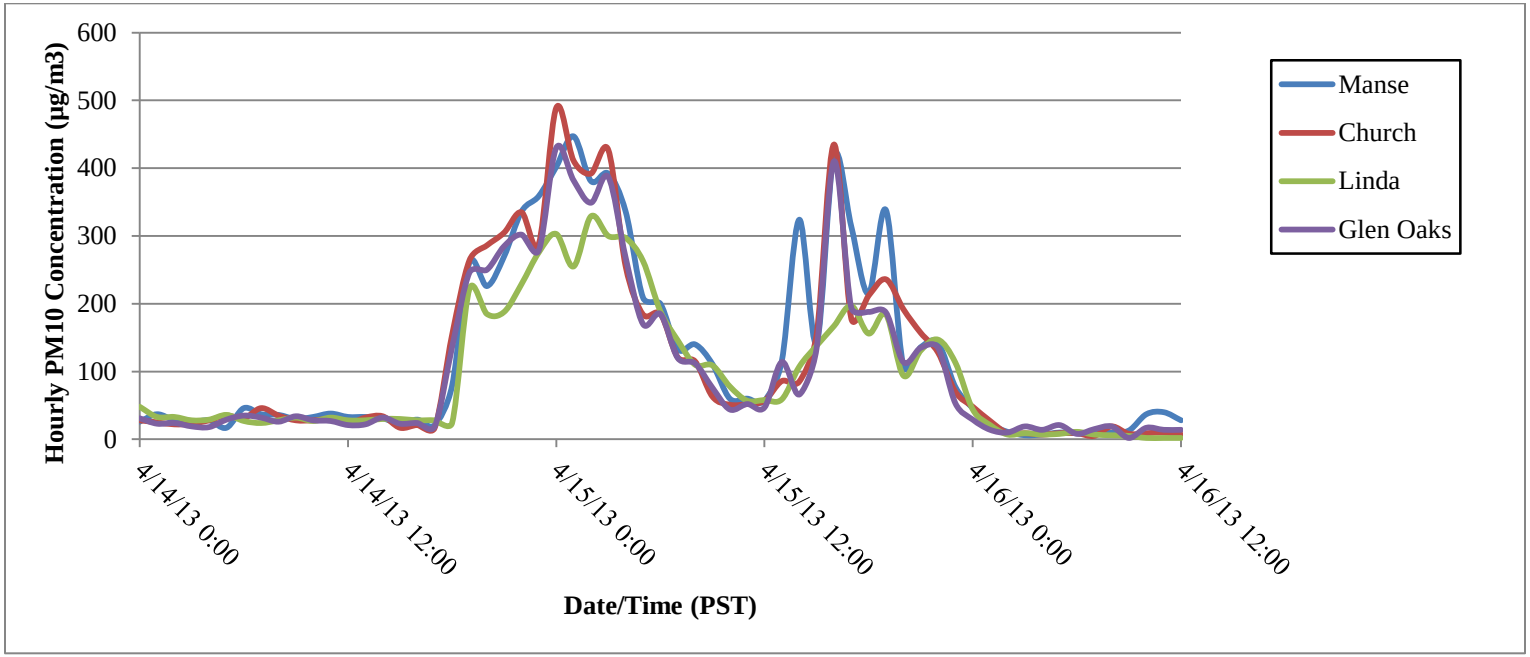


**Figure 2-12 Time Series of Pahrump Valley Hourly BAM FEM $PM_{10}$ (µg/$m^3$) from 0000 PST April 14 to 1200 PST April 16, 2013**

**Table 2-6 24-Hour BAM FEM $PM_{10}$ Measurements (µg/$m^3$) for Pahrump and Clark County Monitoring Stations for the Weeks Before and After April 15, 2013.**

| Station/Date | 4/9 | 4/10 | 4/11 | 4/12 | 4/13 | 4/14 | 4/15 | 4/16 | 4/17 | 4/18 | 4/19 | 4/20 | 4/21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pahrump Stations** | | | | | | | | | | | | | |
| Manse School | 24.3 | 15.4 | 19.0 | 12.3 | 35.6 | 86.8 | **219** | 22.8 | 32.6 | 12.2 | 11.6 | 21.4 | 21.5 |
| Catholic Church | 35.2 | 12.2 | 16.2 | 12.3 | 30.7 | 81.9 | **181** | 23.0 | 22.0 | 9.0 | 7.6 | 19.0 | 18.0 |
| Glen Oaks | 22.3 | 9.7 | 16.1 | 9.7 | 29.3 | 89.4 | **197** | 12.5 | 11.7 | 7.8 | 10.2 | 15.9 | 19.1 |
| Linda Street | 12.2 | 7.1 | 14.3 | 8.4 | 27.7 | 69.7 | **166** | 11.8 | 7.4 | 6.2 | 6.3 | 13.4 | 16.2 |
| **Clark County Las Vegas Stations** | | | | | | | | | | | | | |
| New Forest Drive | 21.6 | 15.4 | 18.6 | 16.0 | 22.7 | 75.2 | **165** | 24.8 | 10.6 | 12.5 | 13.9 | 16.2 | 17.3 |
| Pavilion Center Drive | 11.8 | 9.7 | 12.7 | 11.8 | 22.9 | 51.4 | **213** | 21.2 | 9.8 | 8.1 | 14.3 | 17.0 | 17.5 |
| West Azure Avenue | 18.8 | 17.6 | 24.1 | 18.1 | 27.9 | 73.6 | **227** | 31.3 | 11.2 | 13.6 | 20.8 | - - - - | - - - - |
| Sunrise Avenue | 25.6 | 15.2 | 27.9 | 24.4 | 42.9 | 92.3 | **268** | 37.5 | 11.3 | 13.3 | 20.2 | 22.7 | 26.5 |
| East Tonopah | 26.9 | 25.8 | 25.9 | 21.4 | 33.4 | 85.4 | **238** | 28.0 | 12.1 | 29.5 | 21.1 | 29.4 | 21.3 |
| **Other Clark County Stations** | | | | | | | | | | | | | |
| Henderson | 10.7 | 17.3 | 19.6 | 28.8 | 42.7 | 88.7 | **197** | 37.2 | 7.3 | 14.3 | 13.6 | 19.6 | 15.7 |
| Boulder City | 11.6 | 8.6 | 9.1 | 7.0 | 22.1 | 93.0 | **246** | 28.2 | 5.9 | 7.0 | 8.8 | 12.4 | 20.9 |
| Jean | 10.8 | 8.3 | 11.5 | 8.3 | 24.3 | 98.3 | **166** | 24.8 | 6.1 | 7.7 | 7.0 | 12.9 | 16.1 |

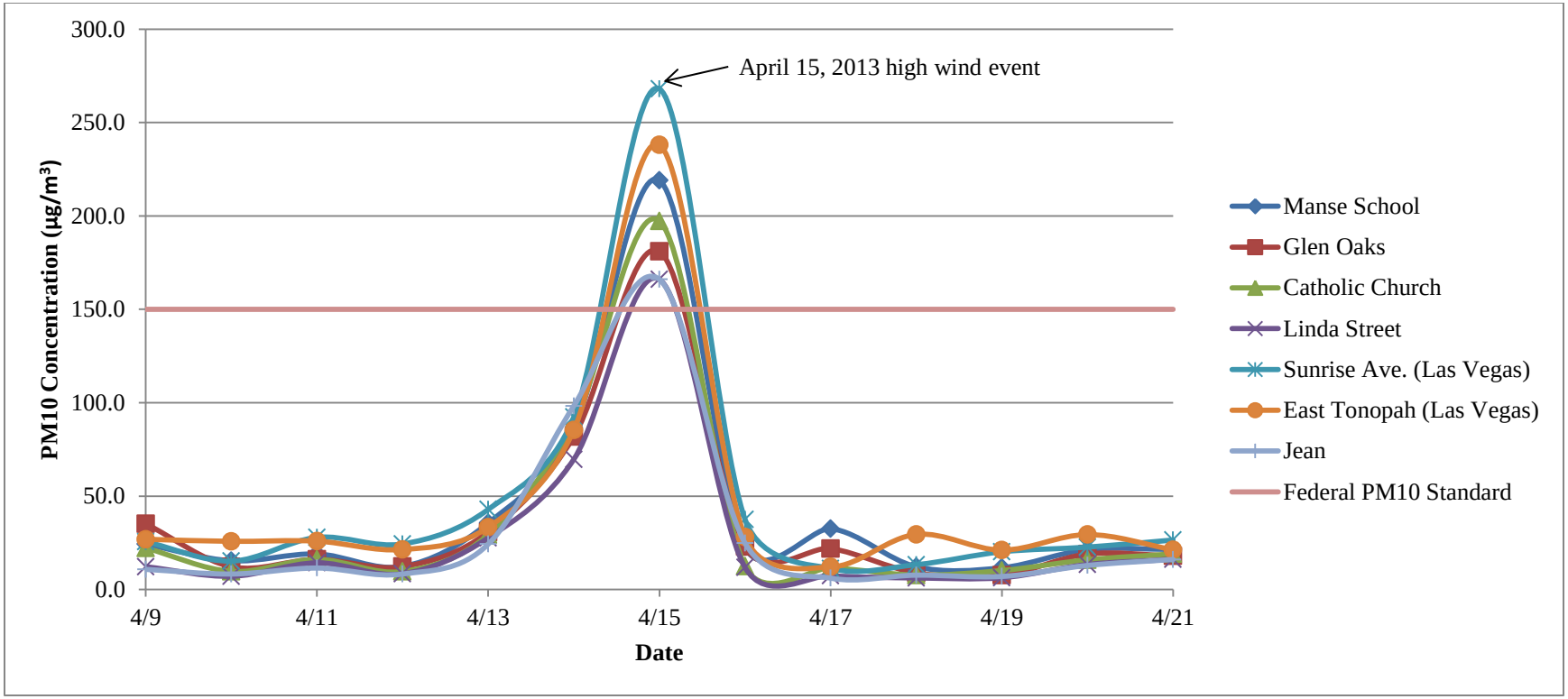


**Figure 2-13 BAM Daily 24-Hour $PM_{10}$ Concentrations (µg/$m^3$) Measured in Pahrump Valley and Las Vegas Valley between April 9 and April 21, 2013**

## 2.2 TECHNICAL CRITERIA FOR A HIGH WIND DUST EXCEPTIONAL EVENT DEMONSTRATION

The technical criteria outlined in the Exceptional Event Rule for high wind and windblown dust exceptional event demonstrations are addressed in the order set forth in Table 2-7. The following sections describe how the technical criteria are met for the October 26, 2011, March 6, 2012, and April 15, 2013 natural events.

**Table 2-7 Technical Criteria for High Wind $PM_{10}$ Exceptional Event Demonstration**

| Technical Criteria | Document Section |
|---|---|
| Not reasonably controllable or preventable | 2.2.1 |
| Historical Fluctuations | 2.2.2 |
| Clear causal relationship between the measurement and the event | 2.2.3 |
| Affects air quality | 2.2.4 |
| Caused by human activity unlikely to recur at a particular location OR a natural event | 2.2.5 |
| No exceedance or violation but for the event | 2.2.6 |

### 2.2.1 Not Reasonably Controllable or Preventable

This demonstration identifies the sources responsible for the events and describes how they were not reasonably controllable or preventable.

#### 2.2.1.1 Analysis of wind speed

A wind speed of 25 mph is commonly used as a threshold for the entrainment of $PM_{10}$ dust from undisturbed natural lands, or when Best Available Control Methods (BACM) on anthropogenic $PM_{10}$ sources are likely to be overwhelmed. This threshold is appropriate for the purpose of this analysis. The peak sustained wind speed equaled or exceeded 25 mph during the events of October 26, 2011, March 6, 2012 and April 15, 2013, concurrent with the highest hourly $PM_{10}$ concentrations (Tables 2-8, 2-9, and 2-10). On October 26, 2011, the event occurred from 0600-1300, with $PM_{10}$ concentrations peaking at 0600. On March 6, 2012, the event occurred from 0900-2300, with $PM_{10}$ concentrations peaking at 1400. On April 15, the event occurred from 0000-2300, with $PM_{10}$ concentrations peaking between 0000 and 0200.

Wind roses showing wind speed and direction are shown in Figures 2-14 through 2-16. Wind speed and direction data are from the NDEPs Pahrump Meteorological Tower (Figure 1-2).

**Table 2-8 2011 Exceedance of the $PM_{10}$ Standard (150 µg/$m^3$)**

| 2011 Date | Exceedance Interval (hours - PST) | PM-10 Concentration (µg/m3) | Avg Hourly Wind Speed (mph) during exceedance interval | Wind Direction (degrees) during exceedance interval | Peak Sustained Wind Speed (mph) during exceedance interval | Time of Peak Sustained Wind (PST) | Average of Max Wind Gusts (mph) during exceedance interval | Maximum Wind Gust (mph) | Time of Max Gust (PST) |
|---|---|---|---|---|---|---|---|---|---|
| 26-Oct | 0600-1300 | **193** | **24** | **NW (318-330)** | **27** | **0900** | **37** | **40** | **0900** |

**Table 2-9 2012 Exceedance of the $PM_{10}$ Standard (150 µg/$m^3$)**

| 2012 Date | Exceedance Interval (hours - PST) | PM-10 Concentration (µg/m3) | Avg Hourly Wind Speed (mph) during exceedance interval | Wind Direction (degrees) during exceedance interval | Peak Sustained Wind Speed (mph) during exceedance interval | Time of Peak Sustained Wind (PST) | Average of Max Wind Gusts (mph) during exceedance interval | Maximum Wind Gust (mph) | Time of Max Gust (PST) |
|---|---|---|---|---|---|---|---|---|---|
| 06-Mar | 0900-2300 intermittent | **167** | **23** | **SE (169); SW (185-223); NW (272-325)** | **30** | **0900** | **38** | **56** | **1400** |

**Table 2-10 2013 Exceedances of the $PM_{10}$ Standard (150 µg/$m^3$)**

| 2012 Date | Exceedance Interval (hours - PST) | PM-10 Concentration (µg/m3) | Avg Hourly Wind Speed (mph) during exceedance interval | Wind Direction (degrees) during exceedance interval | Peak Sustained Wind Speed (mph) during exceedance interval | Time of Peak Sustained Wind (PST) | Average of Max Wind Gusts (mph) during exceedance interval | Maximum Wind Gust (mph) | Time of Max Gust (PST) |
|---|---|---|---|---|---|---|---|---|---|
| 15-Apr | 0000-2300 | **197 (**Church) | **14** | **SE (118-157); S (158-190)** | **26** | **1900** | **23** | **41** | **1900** |
| | | **219** (Manse) | | | | | | | |
| | | **181** (Glen Oaks) | | | | | | | |
| | | **166** (Linda) | | | | | | | |

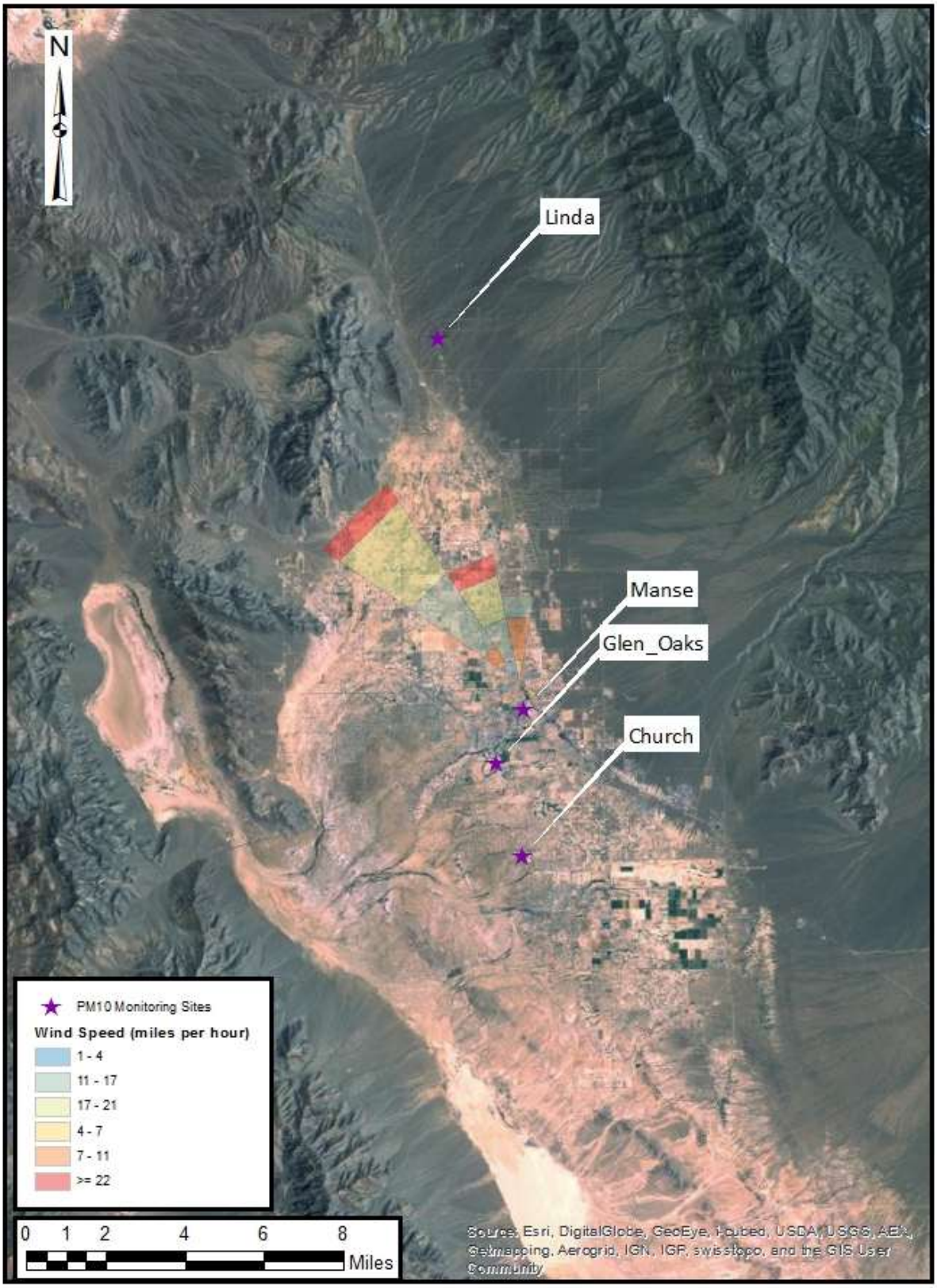


**Figure 2-14 Wind Rose for the Pahrump Meteorological Station on October 26, 2011**.

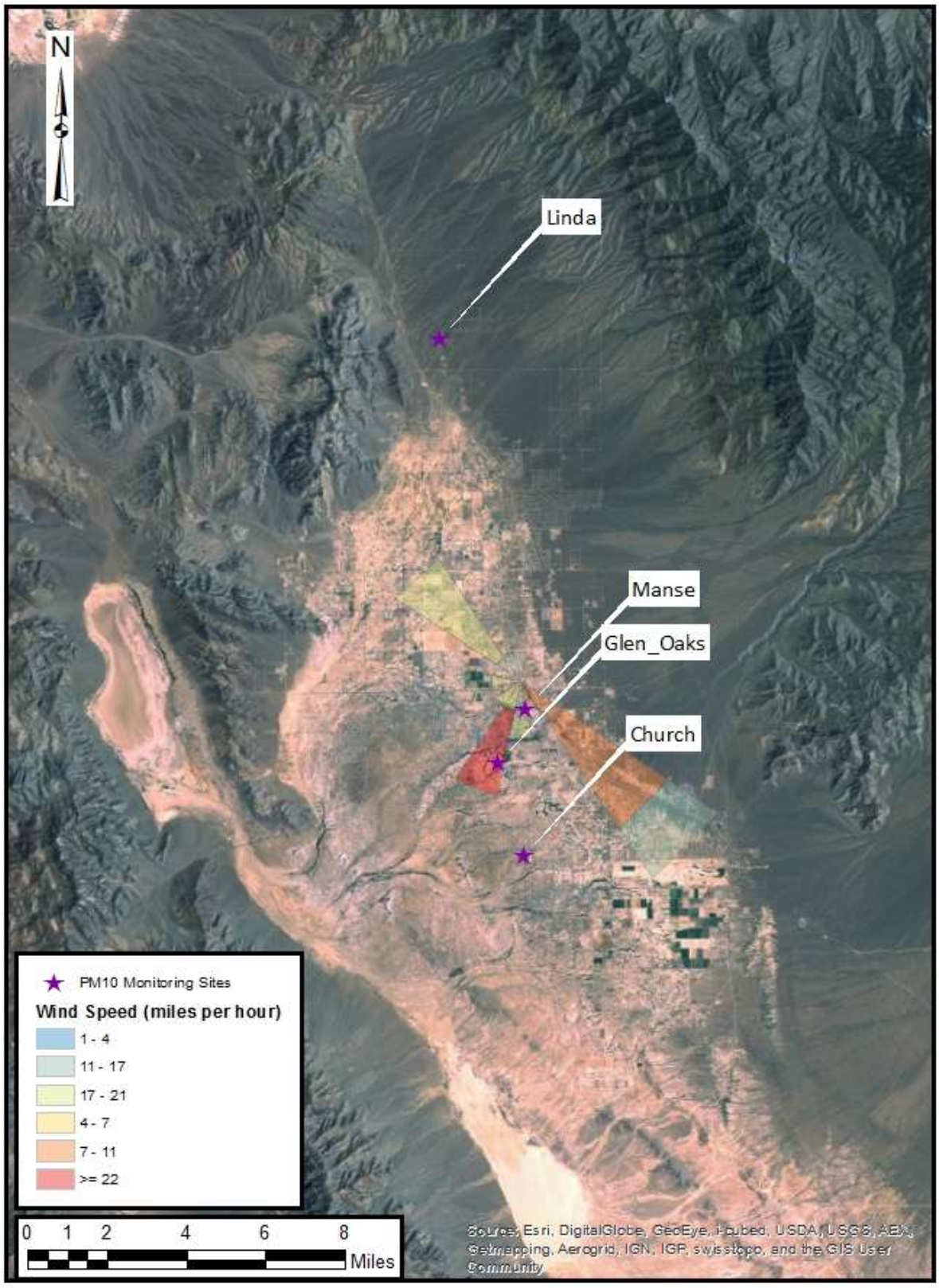


**Figure 2-15 Wind Rose for the Pahrump Meteorological Station on March 6, 2012**.

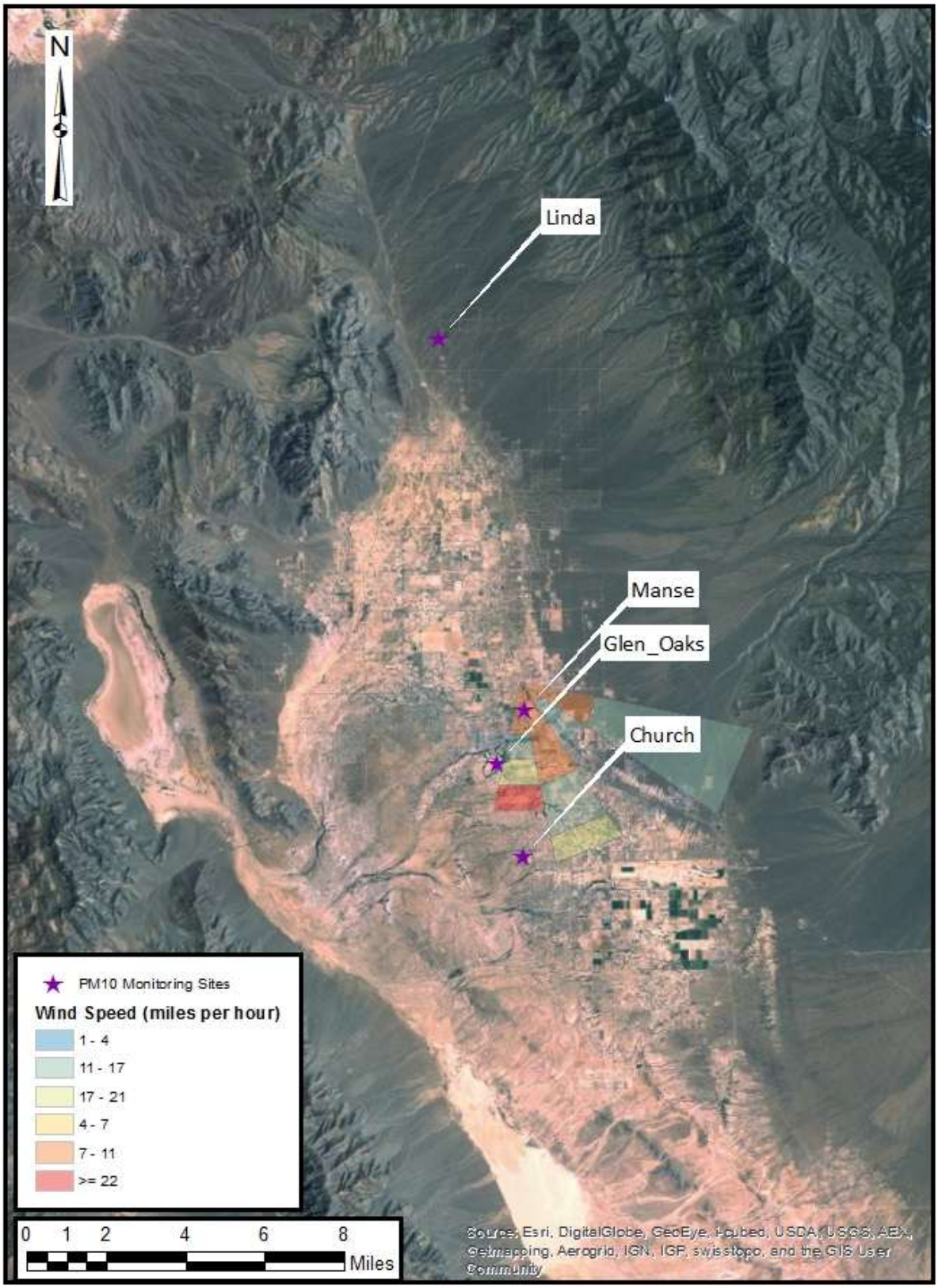


**Figure 2-16 Wind Rose for the Pahrump Meteorological Station on April 15, 2013**.

2.2.1.2 Sources

Pahrump Valley is bounded to the east and north by the Spring Mountains, to the northwest by the Last Chance Range, and to the west and southwest by the Nopah and Resting Springs Ranges. Mesquite Valley is to the south-southeast over a low pass. Sources of windblown dust are local and, potentially, from outside (northwest) of Pahrump Valley. Locally, the primary $PM_{10}$ source is a combination of natural and anthropogenic sources. Native surficial geologic units in the area are distal fan deposits, which are fine-grained and loose, lacking cementation and soil development. These surfaces provide an excellent source of airborne $PM_{10}$ particles. When disturbed by anthropogenic processes and left vacant, these surfaces are a source of $PM_{10}$ particles until they restabilize through time. In addition to these local dust sources, similar geologic deposits comprise Amargosa Valley, approximately 20 to 25 miles to the northwest. These deposits may represent another potential dust source for Pahrump Valley under certain meteorological conditions.

2.2.1.3 Controls analysis

This requirement is met by demonstrating that despite having reasonable and appropriate measures in place (Section 1.4), the October 26, 2011, March 6, 2012, and April 15, 2013 wind events resulted in NAAQS exceedances. To the BAQP's knowledge, there were no other unusual $PM_{10}$-producing activities occurring in Pahrump Valley during these events, and anthropogenic emissions were approximately constant before, during, and after the event.

NDEP conducted an Emissions Inventory for the Pahrump Township in 2004. This inventory included all potential $PM_{10}$ sources within Pahrump Valley, and identified fugitive dust from disturbed vacant land as the primary source. In response to the 2004 Emissions Inventory, the Pahrump Regional Planning District developed a Clean Air Action Plan (CAAP) to address $PM_{10}$ concentrations in the valley. Since the implementation of the CAAP, the amount of disturbed vacant land in the Pahrump Township has decreased by approximately 18,000 acres (approximately 22 percent) (NDEP, 2013).

Wind speeds on the three exceedance dates were high enough to entrain dust from natural areas including undisturbed desert areas upwind of the monitor(s). Dust from these sources was not reasonably controllable or preventable during these events, due to the cost of applying controls over such a large land area and potential detrimental effects that such controls could have on natural ecosystems. $PM_{10}$ was emitted from some BACM-controlled sources (primarily agricultural land) as BACM controls were locally overwhelmed by the high winds. According to the EPA, BACM measures on undisturbed native surfaces can be overwhelmed when sustained wind speeds reach 25 mph. On disturbed native desert surfaces, this threshold may be lower (EPA, 2013).

The BAQP is not aware of any evidence of unusual particulate emissions on October 26, 2011, March 6, 2012, or April 15, 2013, other than those related to the strong winds. No Notices of Violation were issued in the Pahrump Valley for fugitive dust on these days. The control methods outlined in the CAAP were generally effective throughout the valley, but were apparently overwhelmed by the strong winds on these days, causing windblown dust and sand to be entrained in the atmosphere.

### 2.2.2 Historical fluctuations

While high wind natural events recur, sometimes frequently, and may qualify for exclusion under the exceptional events rule, information on the historical fluctuations of the particulate concentrations and the winds can give insight as to the frequency of such events that can be expected in a given area. This also helps to demonstrate that the event affected air quality. Figures 2-17 through 2-20 show time series graphs of the 24-hour $PM_{10}$ concentrations at each of the four Pahrump Valley monitoring sites for the five-year period from 2009 through 2013. During this period, the Pahrump Valley monitoring sites had fourteen exceedances of the federal standard (150 $\mu g/m^3$). For the annual 2009 through 2013 Pahrump Valley dataset, these exceedances are represented within the $98.8^{th}$ percentile. These concentrations are in excess of normal historical fluctuations, and exceedances of the federal standard do not recur frequently. Since 2000, all of the 24-hour $PM_{10}$ NAAQS exceedances in Pahrump Valley have been associated with strong wind events.

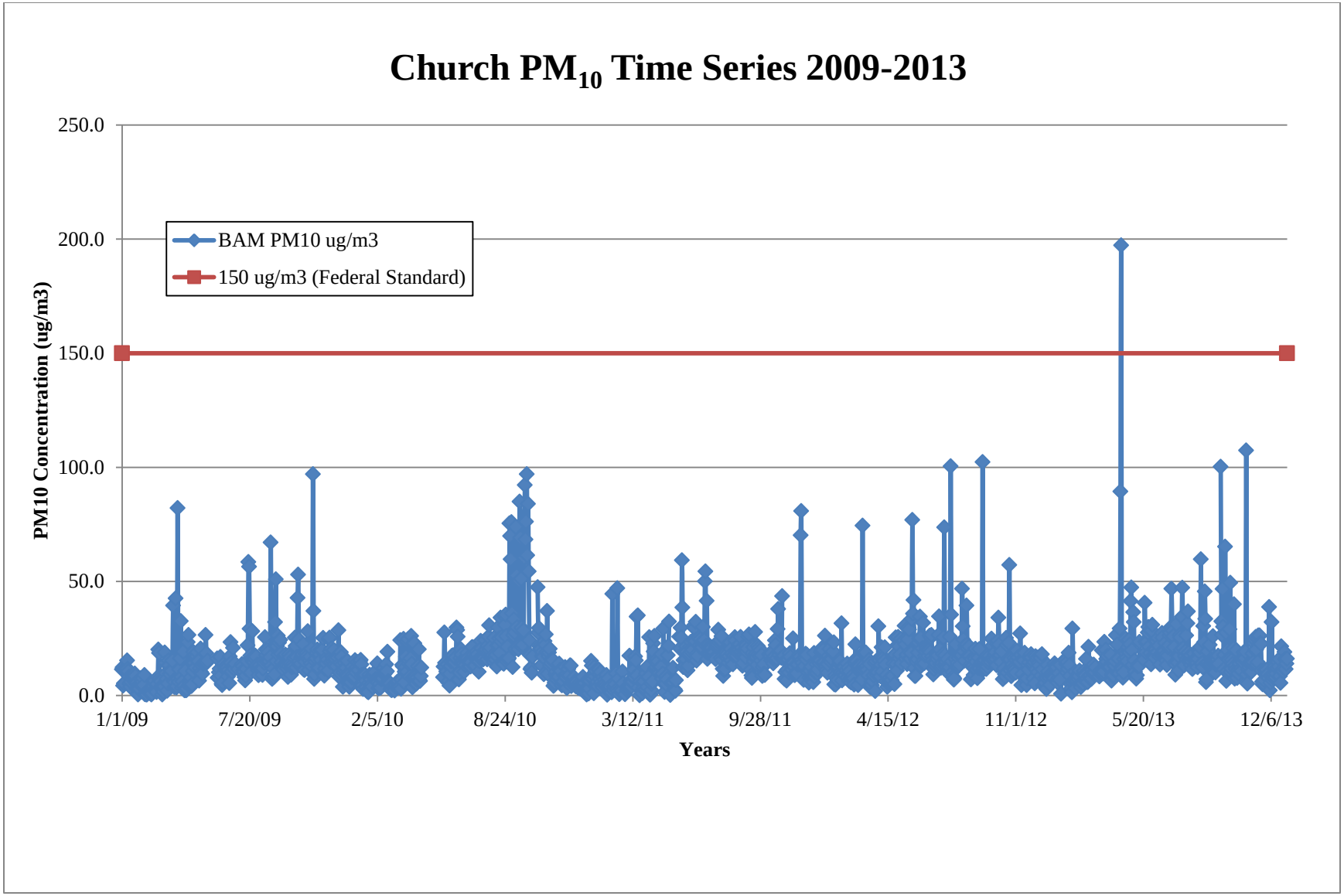


**Figure 2-17 Time Series of Church Monitoring Site 24-hour Averaged BAM $PM_{10}$ ($\mu g/m^3$), 2009-2013**

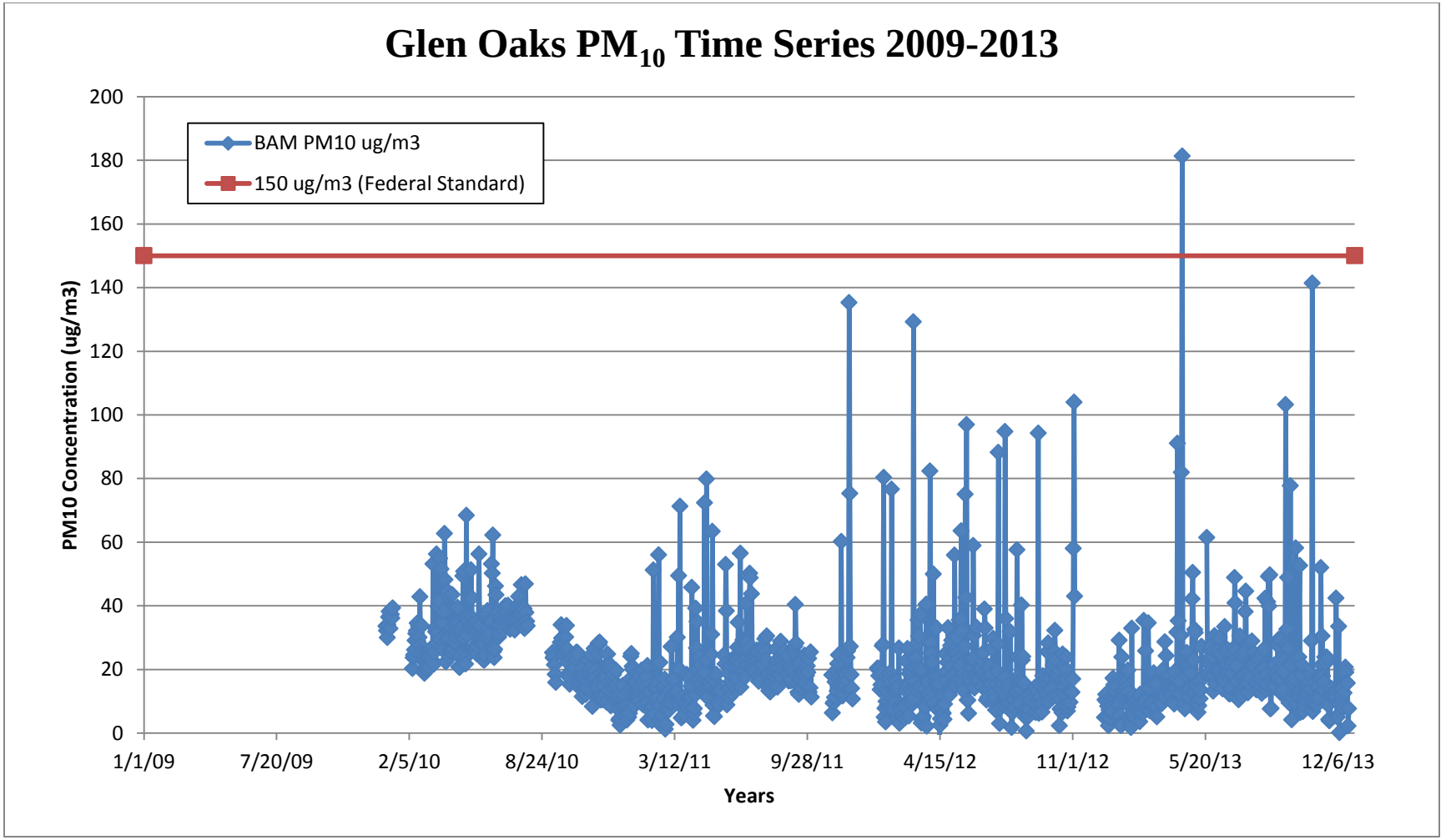


**Figure 2-18 Time Series of Glen Oaks Monitoring Site School 24-hour Averaged BAM $PM_{10}$ (µg/m3), 2009-2013**

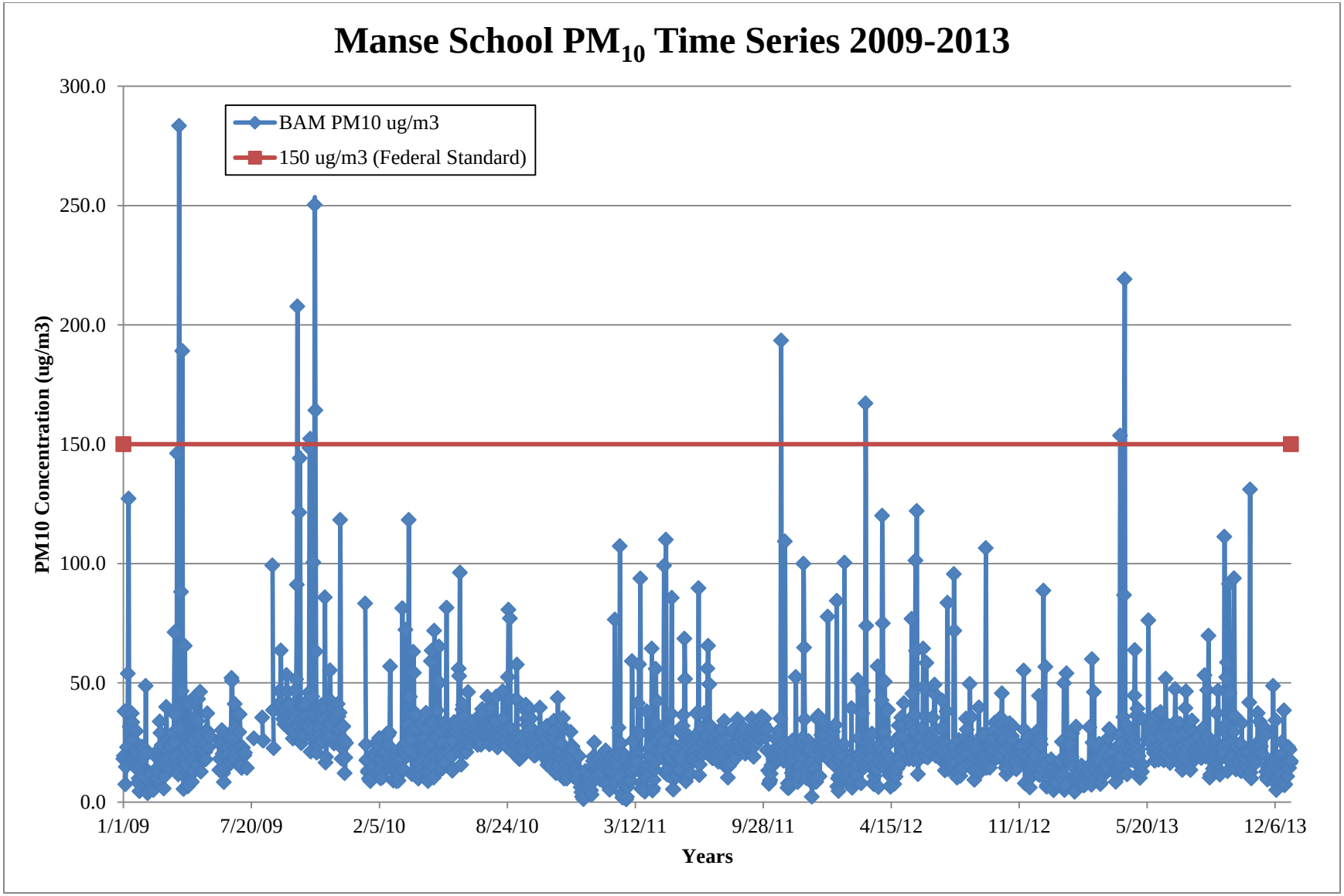


**Figure 2-19 Time Series of Manse Monitoring Site 24-hour Averaged BAM $PM_{10}$ ($\mu g/m^3$), 2009-2013**

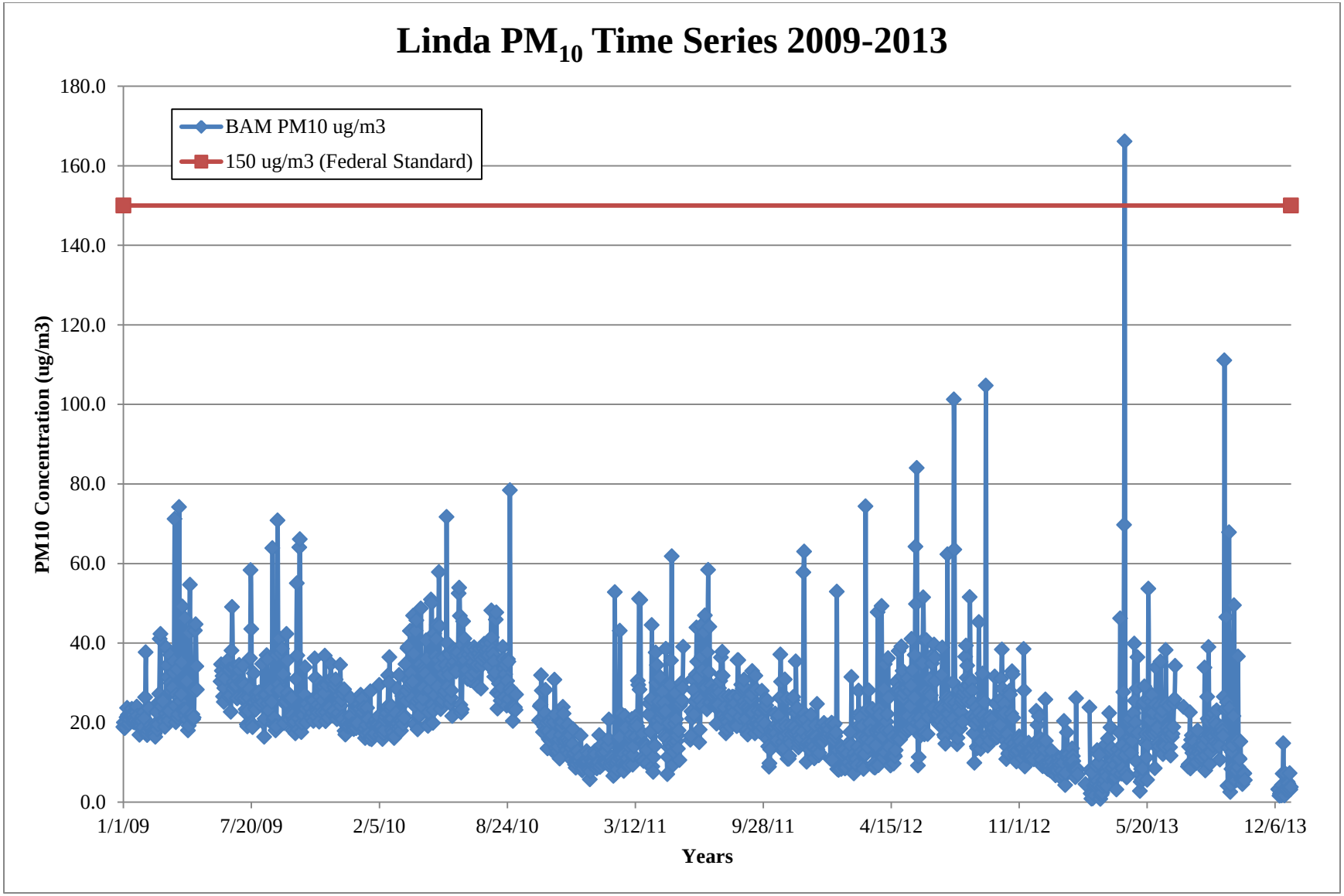


**Figure 2-20 Time Series of Linda Monitoring Site 24-hour Averaged BAM $PM_{10}$ ($\mu g/m^3$), 2009-2013**

Wind events above the 25 mph threshold tend to result in high $PM_{10}$ concentrations. Between 2003 and 2013, one or more of the Pahrump Valley monitoring stations exceeded the $PM_{10}$ NAAQS 41 times, resulting in an average of approximately 3.7 exceedances per year. In general, the actual number of exceedances per year within this time period has decreased, suggesting that other factors may influence exceedance events, and that the BACM controls on windblown dust in the Pahrump Valley are effective on all but very windy days. All of the $PM_{10}$ 24-hour NAAQS exceedances in the Pahrump Valley between 2011 and 2013 are attributable to natural high-wind events, which may recur and still be considered for exclusion under the exceptional event rule.

### 2.2.3 Clear Causal Relationship

This demonstration shows a clear causal relationship between the elevated $PM_{10}$ concentrations measured at the Pahrump air monitoring stations and high wind events. In each case there is a clear causal connection between the onset of strong winds and elevated $PM_{10}$ concentrations. The times of high wind onset coincide with the increases in the hourly $PM_{10}$ concentrations at each of the exceeding monitoring stations.

A climatological summary of high winds from the Pahrump Met Tower is presented in Table 2-11. These illustrate that the wind speeds observed during these events occur relatively infrequently. For example, sustained winds exceeding 40 mph at the Pahrump Met Station have never occurred, while winds exceeding 30 mph only occur in 0.2 percent of the measurements, on average, over eight years of data analyzed. While strong winds do occur in this area frequently, the winds observed on the exceedance days were stronger than normal historical fluctuations.

**Table 2-11 Annual Sustained Wind Speeds Reaching Thresholds of 30 and 40 mph at Two Stations Influenced by Pahrump Valley Winds**

| Station Location | Date | Peak Sustained Wind Speed(mph) | Percentage of Days with Sustained Wind Speed | |
|---|---|---|---|---|
| | | | ≥30 mph | ≥40 mph |
| Pahrump Met Tower | 10/26/2011 | 27 | 0.21% | 0% |
| | 03/06/2012 | 30 | | |
| | 04/15/2013 | 26 | | |

2.2.3.1 Spatial relationship between the high wind and elevated PM concentrations

This section contains details of the natural high-wind events on October 26, 2011, March 6, 2012, and April 15, 2013, including a description of meteorological conditions that led to the high wind events.

Surface meteorology in Pahrump Valley is generally characterized by regional prevailing winds from the southwest with monthly average wind speeds ranging between four and nine mph. As shown in Table 2-12, the "normal" average monthly three-year average wind speed for the reporting period is approximately six mph. In addition to prevailing winds, some wind generated by local topography and temperature also affects the valley. During the day, as the air mass is heated, wind directions are generally upslope and in an easterly direction. At night the wind direction is reversed and cool air from the higher elevations (i.e. the Spring Mountains) drains to the lower valley. The winds driven by local topography are not as strong as those associated with weather fronts in the spring and fall.

**Table 2-12 Supplemental Data**

| Date | Location | During Exceedance Interval | | | | | Normal Conditions | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Monitor Site | | MET Site | | | Monitor Site | MET Site | | |
| | | $PM_{10}$ 24-Hr Average ($\mu g/m^3$) | Number of Hours | Wind Direction (blowing from) | Average Hourly Wind Speed (mph) | Average Maximum Wind Gust (mph) | $PM_{10}$ 24-Hr Average ($\mu g/m^3$) over 12 months | Monthly Wind Direction (blowing from) | 3-Yr Average Wind Speed 2011-2013 (mph) | Monthly Maximum Wind Gust (mph) |
| 10/26/2011 | Manse | 193 | 8 | NW | 24 | 37 | 23 (2011) | N | 6 | 40 |
| | | | | | | | | | | |
| 03/06/2012 | Manse | 167 | 9 | SE/SW/ NW | 23 | 38 | 24 (2012) | S/SE | 6 | 56 |
| | | | | | | | | | | |
| 04/15/2013 | Church | 197 | 24 | SE/S | 14 | 23 | 17 (2013) | SE/NW | 6 | 44 |
| | Manse | 219 | | | | | 23 (2013) | | | |
| | Glen Oaks | 181 | | | | | 19 (2013) | | | |
| | Linda | 166 | | | | | 14 (2013) | | | |

National Weather Service advisories and warnings for high winds were issued for all of the exceedance days. A Wind Advisory is issued by the NWS when sustained winds of 25 to 39 mph and/or gusts to 57 mph are expected. A High Wind Warning is issued when sustained winds greater than or equal to 40 mph for at least one hour, or wind gusts of at least 58 mph are expected. High wind event documentation from the NWS for each exceedance day is presented in Appendix E.

2.2.3.2 Temporal relationship between the high wind and elevated PM concentrations

Figures 2-21 and 2-22 show the hourly $PM_{10}$ data from the Manse School air monitoring station, along with the wind speeds from the Pahrump meteorological station for the October 26, 2011 and March 6, 2012 events. Figure 2-23 shows the hourly $PM_{10}$ data from all four Pahrump Valley monitoring stations with the local meteorological conditions on April 15, 2013. The peak hourly $PM_{10}$ concentrations occurred in the morning and afternoon, coincident with the peak wind speeds and gusts. This establishes a clear temporal relationship between the high winds and the elevated $PM_{10}$ concentrations in Pahrump Valley during the October 26, 2011, March 6, 2012, and April 15, 2013 events.

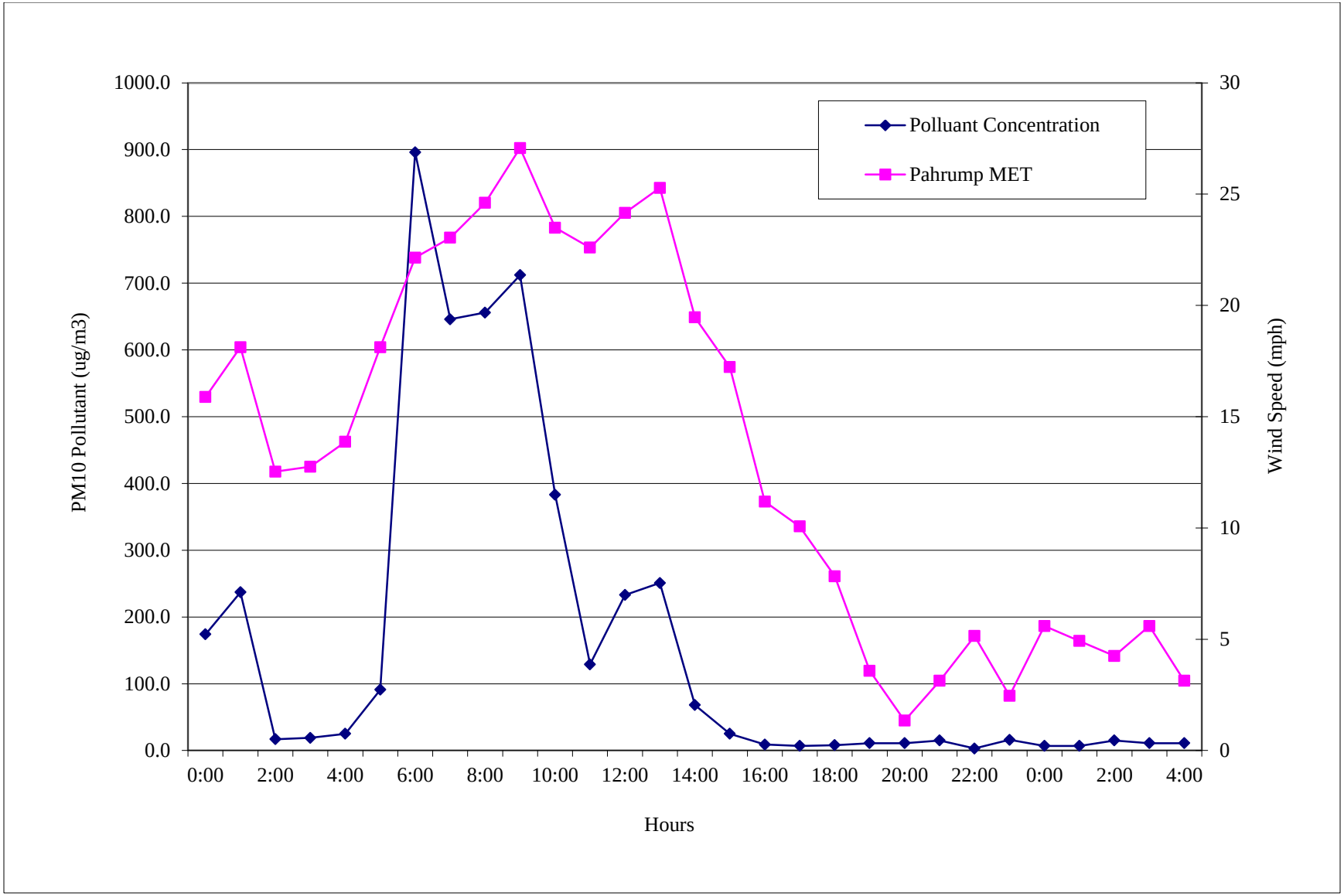


**Figure 2-21 Manse $PM_{10}$ Concentration Compared to Wind Speed from 0000 October 26 through 0400 October 27, 2011**

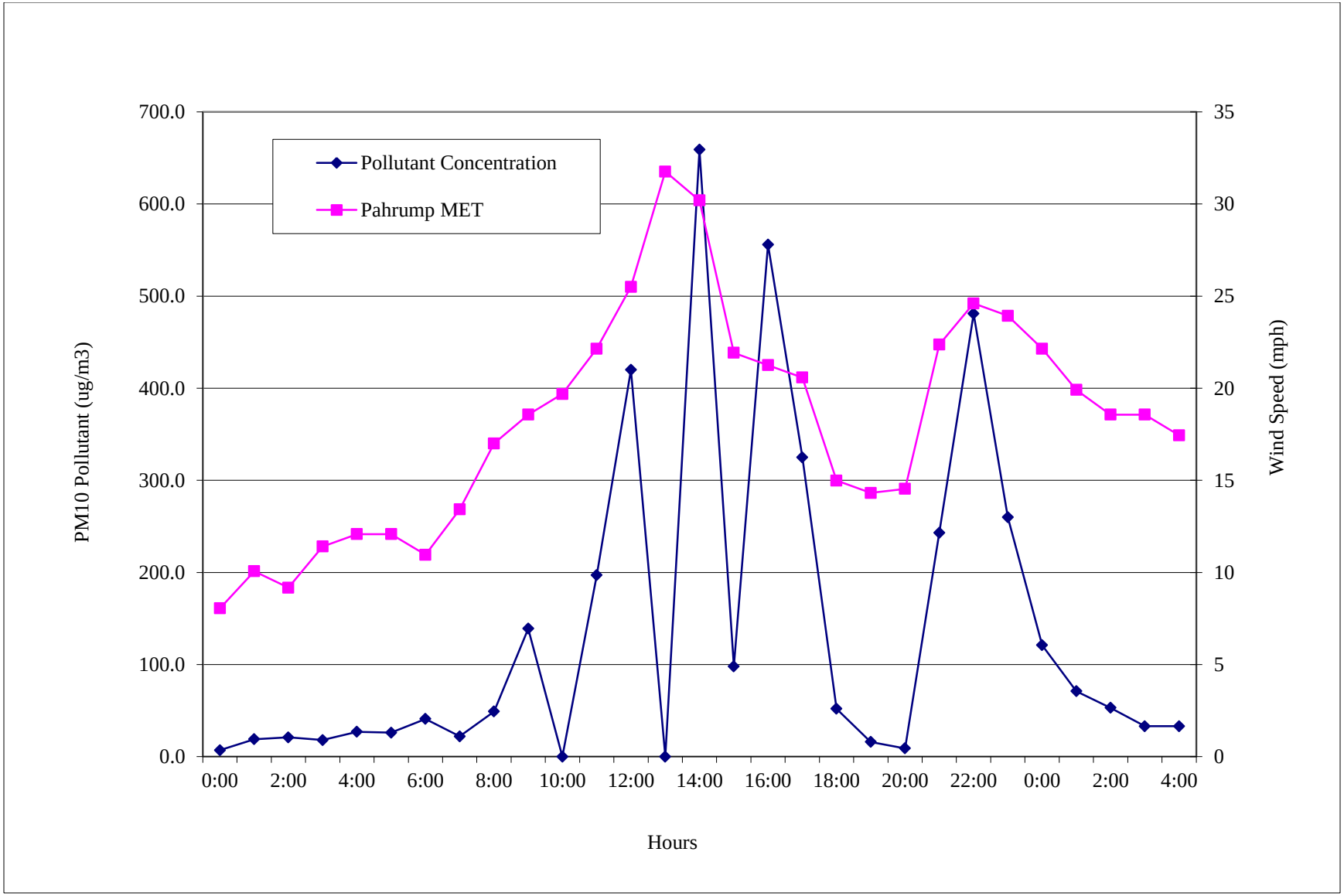


**Figure 2-22 Manse $PM_{10}$ Concentration Compared to Wind Speed from 0000 March 6 through 0400 March 7, 2012**

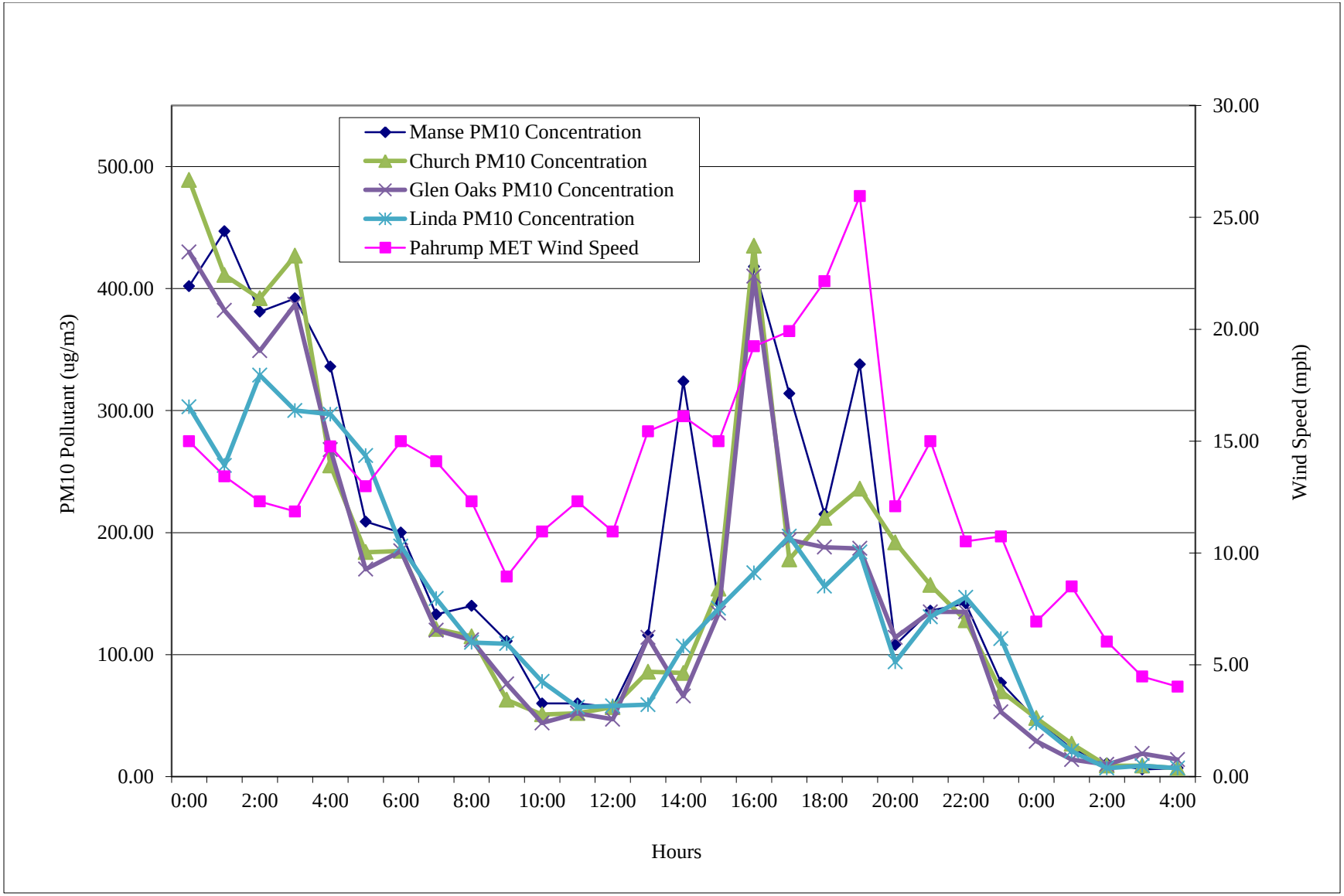


**Figure 2-23 Pahrump Valley $PM_{10}$ Concentrations Compared to Wind Speed from 0000 April 15 through 0400 April 16, 2013**

2.2.3.3 Comparison of event-affected day(s) to specific non-event days

The FEM $PM_{10}$ concentrations at the Manse School on the exceedance days were generally two to three (and up to 10) times higher than those measured on the sampling days before and after the event (Tables 2-1 through 2-3, Figures 2-8 through 2-10). This demonstrates that the natural high wind event affected $PM_{10}$ air quality by creating higher than normal $PM_{10}$ concentrations in Pahrump Valley.

### 2.2.4 Affects Air Quality

This criterion is supported by historical concentration data (Section 2.1), and is demonstrated as part of the clear causal relationship (Section 2.2.3.3). The NDEP has provided evidence for the clear causal relationship which serves also to demonstrate that the event affected air quality.

### 2.2.5 Was a Natural Event

A high wind dust event can be considered a natural event, even when a portion of the wind-driven emissions are anthropogenic, as long as those emissions have a clear causal relationship to the event, and were determined to be not reasonably controllable or preventable. This demonstration has shown that the event was not reasonably controllable or preventable, in spite of the various control programs implemented as part of the CAAP. It has also established a clear causal temporal relationship between the exceedances and the high wind events. This event can be treated as a natural event under the exceptional event rule.

### 2.2.6 The "But For" Test

To qualify as an exceptional event, it is necessary to demonstrate that there would have been no exceedance "but for" the event. To meet this "but for" requirement, it must first be shown that no unusual anthropogenic activities occurred in the affected area that could have resulted in the exceedances, aside from the high wind event. To the BAQP's knowledge, activities that generate anthropogenic $PM_{10}$ were approximately constant in Pahrump Valley immediately preceding, during and after the events.

Based on the data and analysis provided in this report, the BAQP concludes that there would not have been exceedances of the $PM_{10}$ NAAQS in Pahrump Valley without high winds. The causal connection of the measured $PM_{10}$ and the strong winds in the valley indicate that "but for" the high wind event, the NAAQS exceedances would not have occurred.

### 2.2.7 Conclusion

There is a clear causal relationship between the high $PM_{10}$ concentrations in Pahrump Valley on October 26, 2011, March 6, 2012, and April 15, 2013, and the high wind events on those dates. Sources of windblown dust included both natural, undisturbed areas, and BACM-controlled anthropogenic sources. The timing of this event is verified with the high wind observations in

conjunction with the hourly BAM $PM_{10}$ measurements from the available monitors. There is a strong correlation between the high winds and the high hourly $PM_{10}$ concentrations. The BAQP therefore concludes that the $PM_{10}$ exceedances would not have occurred without the high winds to entrain surface dust. Based on the evidence of a high wind natural event set forth in this report, the BAQP requests that the EPA support the request for exclusion of the $PM_{10}$ exceedances at the Manse monitoring station on October 26, 2011 and March 6, 2012, and at all four Pahrump Valley monitoring stations on April 15, 2013.

# 3.0 PROCEDURAL REQUIREMENTS

## 3.1 FLAGGING OF DATA

The NDEP has submitted the $PM_{10}$ data from the relevant Pahrump Valley monitors to the U.S. EPA AQS database and has placed the appropriate flags on the data indicating that the data was affected by exceptional events due to high winds (Flag RJ, requesting exclusion due to high winds). To exclude the midnight to midnight 24-hour average, each hour of the Manse School BAM data was flagged individually. Since only one flag can be submitted for each station exceedance, this is the most appropriate for $PM_{10}$ on this day. Such flagging ensures that the air quality data is properly represented in the overall air quality planning process.

## 3.2 PUBLIC NOTIFICATION

The Nevada Division of Environmental Protection has prepared this documentation to demonstrate that these exceedances were due to high wind natural events, in accordance with the U.S. EPA Exceptional Event Rule. The documentation in support of this demonstration and request for the treatment of the data associated with these exceedances as exceptional events has been posted on the NDEP website http://ndep.nv.gov/admin/public.htm#air_qp requesting review and comment by the public for a minimum of 30 days. Public comments should be directed to:

Daren Winkelman, Ambient Air Monitoring Supervisor
Nevada Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701
Email: dwinkelman@ndep.nv.gov

## 4.0 REFERENCES


dePolo, C. M., A. R. Ramelli, and J. W. Bell. 1999. Preliminary Geologic Map of the Pahrump Quadrangle, Nye County, Nevada. Open File Report 99-14. Nevada Bureau of Mines and Geology. Reno, Nevada.

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# APPENDIX A

# Pahrump Regional Planning District Master Plan

# Pahrump
# Regional Planning District

PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE

## Master Plan Update

November 19, 2003

**"Heart of the New Old West"**

# Pahrump Regional Planning District
# Master Plan Update

November 19, 2003

Prepared For:

Nye County, Nevada

Prepared By:

Tri-Core Engineering
Consensus Planning
Enviroscientists
Ninyo & Moore
Kummer, Kaempfer, Bonner & Renshaw

**NYE COUNTY RESOLUTION NO. 2003-40**
A Resolution Adopting the Pahrump Regional Planning District Final Master Plan Update Dated November 19, 2003

WHEREAS, pursuant to Nevada Revised Statutes (NRS) 278.220, upon receipt of a certified copy of the master plan, or of any part thereof, as adopted by the planning commission, the governing body may adopt such parts thereof as may practicably be applied to the development of the city, county or region for a reasonable period of time next ensuing; and

WHEREAS, on November 19, 2003, and after conducting a Public Hearing on the issue, the Pahrump Regional Planning Commission adopted—via Resolution Number 2003-02—the Pahrump Regional Planning District Master Plan Update dated November 19, 2003, and a certified copy was provided to the Nye County Board of County Commissioners (BOARD); and

WHEREAS, after conducting a Public Hearing as required pursuant to NRS 278.220.3, the BOARD finds adoption of the subject Master Plan Update to be in the best interest of the community of Pahrump, and the County of Nye..

NOW THEREFORE, IT IS HEREBY RESOLVED by the BOARD that the Pahrump Regional Planning District Final Master Plan Update dated November 19, 2003 is hereby adopted effective immediately.

ADOPTED this 15th day of December, 2003

NYE COUNTY BOARD OF COUNTY COMMISSIONERS:

Henry Neth, Chairman

ATTEST:

Sandra "Sam" L. Merlino, Nye County Clerk
And Ex-Officio Clerk of the Board

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PAHRUMP REGIONAL PLANNING COMMISSION RESOLUTION NO. 2003-02

A RESOLUTION ADOPTING AND CERTIFYING THE 2003 PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE

WHEREAS, the Pahrump Regional Planning Commission (Commission), in accordance with Nevada Revised Statutes (NRS) 278.150 to 278.210, inclusive, and with the assistance of the Community and Tri-Core Engineering, Inc., has, since January, 2003, worked towards updating its existing Master Plan dated April 21, 1999; and

WHEREAS, the Commission, after holding a Public Hearing on the date of November 19, 2003 and hearing public comment on the Master Plan Update, elected to adopt the said Master Plan Update in accordance with the above stated Nevada Revised Statutes; and

WHEREAS, the vote upon the adoption of the Master Plan Update was carried by the affirmative votes of not less than two thirds of the total membership of the Commission as follows:

Ayes: R. Ewing, H. Kulkin, C. Masterson, P. E. Elefante, S. Bass, C. Jubinsky

Nays: None

Abstains: None

Absent: G. Warner

NOW, THEREFORE, IT IS HEREBY RESOLVED, that the attached copy of the Master Plan Update, which includes the following sections and exhibits:

1. Executive Summary,
2. Community Profile,
3. Land Use Plan,
4. Housing Plan,
5. Economic Plan,
6. Air Quality Plan,
7. Community Design Plan,
8. Community Facilities Plan,
9. Transportation Plan,
10. Public Services and Facilities Plan,
11. Geotechnical Plan,
12. Water Resources Plan,
13. Solid Waste Plan,
14. Flood Control and Drainage Plan,

15. Historic Properties Plan,
16. Public Buildings Plan,
17. Recreational Plan,
18. Safety Plan,
19. Seismic Safety Plan,
20. Transit Plan,
21. Implementation Plan;

and the Existing Land Use Map, Land Use Map, Land Use Table, Vacant and Disturbed Lands Map, Street Classification Map, Bike and Trails Map, Existing Water System Map and Existing Sewer System Map, is hereby adopted and certified as the Master Plan Update dated November 1, 2003, and that each of the attached materials contains the identifying signatures of the Chairperson and Secretary/Clerk of the Commission.

IT IS FURTHER RESOLVED that the Nye County Planning Director present the Pahrump Regional Planning District Master Plan Update to the Nye County Board of County Commissioners for its consideration in accordance with NRS 278.220.

DATED this 19th day of November 2003.

PAHRUMP REGIONAL PLANNING COMMISSION:

Paula Elefante, Chairperson

ATTEST:

Sheldon A. Bass, Secretary/Clerk

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# Acknowledgments

*The assistance and cooperation of the following Volunteer Citizen Steering Committee members is gratefully acknowledged*:

Bill King
Cary-Ann Jubinsky
Donna Lee Laduke
Edwin Hanson
Frank F. Fink
Jim Petell
Kenneth Grubb
Mary Paskvan
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Patricia Zemany
Richard A. Russo
Robert Howard
Robert L. Parker
Sharon A. Wehrly
Timothy Hafen
Vernon Van Winkle
Walt Kuver

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Bob Beckett
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Brent Steed
Cheryl Beeman
Dan Harris
Dave Fanning
Dominick Sandoval
Dr. William E. Roberts
John Olholft
Peggy Warner
Robert Philpot
Ron Williams

Samson Yao
Scott Lewis
Tim Hafen
Tony DeMeo
Topper Petras

*Guidance and leadership has been provided by the following Ex-Officio Members:*

*Nye County Board of County Commissioners:*
Henry Neth, Chair
Midge Carver
Patricia Cox
Joni Eastley
Candice Trummell

*Pahrump Regional Planning Commission:*
Paula Elefante, Chair
Sheldon Bass, PhD.
Carrick "Bat" Masterson
Harley Kulkin
Pamela Livingston
Garry Warner

*Pahrump Town Board:*
Peggy Warner, Acting Town Manager
Charlotte LeVar
Paula Glidden
Jeanna Howard
Rick Ewing
Richard Billman

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Pahrump Library District
Pahrump Chamber of Commerce
Pahrump Valley Times
Nye County School District
Town of Pahrump Advisory Boards
Citizen's Aware of Virtually Everything
Pahrump Valley Citizen Action Team
6th Grade Social Studies Classes at Rosemary Clarke Middle School

# Table of Contents

## Table of Contents

**Section**

## List of Figures

# 1 Executive Summary

## 1. EXECUTIVE SUMMARY

### A. INTRODUCTION

Pahrump is an unincorporated town located in the southern portion of Nye County near the California border. Only 63 miles from Las Vegas, Pahrump is a bedroom community of sorts with thousands of residents who commute to Las Vegas each day. The rate of population growth has been a staggering 300% over the last 10 years, according to US Census data. This growth and the possibility of a Nuclear Waste Repository at Yucca Mountain, located only 75 miles from Pahrump, are placing pressure on Nye County and the Town of Pahrump to provide adequate services as the community grows while protecting the health, safety, and general welfare of residents.

Planning in the Pahrump Regional Planning District is only beginning to catch up with the population growth. With two zone categories, Highway Frontage and Open Use, regulating land use has become its priority. Incompatible land uses are common, resulting in a diminished sense of health, safety and welfare by the general public. Therefore, the Master Plan Update provides goals, objectives and policies to guide land use planning and recommendations for amending the existing zoning code. Also, this Master Plan establishes the framework for the Adequate Public Facilities Ordinance, Zoning Ordinance, Streets and Highways Plan, and Staffing and Implementation Plan.

With a population topping 30,000, the Town of Pahrump continues to grow. Master-planned communities are increasing, the schools are ever more crowded and according to community input , the roads are in need of improvements including paving. Still, at its core, Pahrump is a small town and is poised to make important decisions that analyze the past and move towards its future.

The Town of Pahrump operates with a Town Board and Town Manager overseeing functions including parks, recreation, fairgrounds, social services, fire, and emergency services. Nye County and its Board of County Commissioners oversee other aspects of the community including planning and zoning, the sheriff department, streets and highways, and building and development.

## B. PUBLIC OUTREACH PROCESS

The planning process for the Pahrump Regional Planning District's Master Plan Update centered around a public involvement directive conceived by both the client, Nye County, and the consultant team, Tri-Core Planning Team (TCPT). Pahrump had no shortage of interested individuals willing to participate in the Master Plan Update planning process. The public involvement process consisted of Steering Committee and Technical Team meetings, task groups, public open houses, stakeholder meetings, youth meetings, monthly newsletters, a telephone survey and an array of public notices, mailings, and flyers. The public involvement component is both an extensive and an imperative process to gain buy-in and expertise from the residents of the Pahrump community. The public involvement process is described in the Master Plan Update Background Document. The Background Document is a companion document to the Master Plan Update and will not be adopted by Nye County or the Pahrump Regional Planning Commission.

## C. DRAFT GOALS AND OBJECTIVES

Draft goals and objectives form the basis of action for the Land Use Map, as well as the Master Plan Update itself. The goals and objectives were written using the input gathered from a telephone survey, Citizen Steering Committee meetings, Technical Team meetings, Open Houses, Youth Meetings and Stakeholder meetings.

Within each element of the Master Plan Update, several goals are identified, with specific objectives, policies and implementation actions that follow. These goals and objectives were based on public input. That input, and the revisions that followed, are described in detail in the Master Plan Update Background Document.

## D. PLAN ORGANIZATION

*Master Plan Update Purpose*

The Nye County Board of County Commissioners and The Pahrump Regional Planning Commission (RPC) is charged with the adoption of a Master Plan. Nevada Revised Statute 278.150 defines the Master Plan as *a comprehensive, long-range general plan for the physical development of the city, county or region*. The Master Plan serves to guide growth and development within the District over the next 20 years. The Plan is a living document, which is revised, updated and reviewed every five years and may change as the community's needs change.

*Master Plan Sections*

The Master Plan Update is divided into 21 sections, including an implementation section. Each section addresses a major planning element. The sections include:

- Executive Summary
- Community Profile– primarily addresses demographics, historic context and physical conditions
- Land Use Plan-- is an inventory and classification of the use of the land and provides an analysis for the most desirable use for private and publicly owned lands.

- Housing Plan– addresses existing housing inventory, housing organizations, housing needs, senior issues, and procedures to improve housing standards.

- Economic Plan– addresses Pahrump's economic strengths and challenges, tourism, workforce training, education, etc.

- Air Quality Plan– addresses causes and effects of fugitive dust and emissions, standards for environmental protection and compliance with State and National standards.

- Community Design Plan– addresses historic properties, agricultural properties, billboards, image, beautification, etc.

- Community Facilities Plan– addresses parks and recreation, senior needs, police, fire and EMS response, etc.

- Transportation Plan– addresses existing and planned transportation facilities, street treatments, regional cooperation, street designations, extension policies, etc.

- Public Services and Facilities Plan – addresses water and sewer issues, capital improvement projects, extension policies, etc.

- Geotechnical Plan – addresses soil studies, soil quality and characteristics and building and construction recommendations.

- Water Resources– addresses quantity and quality of available water, long-term water resource planning.

- Solid Waste (from 1999 Pahrump Regional Planning District Master Plan, with updates)

- Flood Control and Drainage (from 1999 Pahrump Regional Planning District Master Plan)

- Historical Properties Plan (from 1999 Pahrump Regional Planning District Master Plan)

- Public Buildings (from 1999 Pahrump Regional Planning District Master Plan)

- Safety Plan (from 1999 Pahrump Regional Planning District Master Plan)

- Seismic Plan (from 1999 Pahrump Regional Planning District Master Plan)

- Transit Plan (from 1999 Pahrump Regional Planning District Master Plan, with updates)

- Implementation Plan

- Appendices

*Plan Framework*

Each section contains existing conditions, goals, objectives, policies, and implementation actions. The policies correspond to the goals and objectives, and the implementation actions are designed to carry out these policies within a set

timeframe. There is a timeframe provided for each implementation action, with the acknowledgment that flexibility may be needed to respond to budgetary constraints, and unforeseen circumstances. Goals, objectives and policies are defined as follows:

A **goal** is a concise statement describing a condition to be achieved. It does not suggest specific actions, but identifies a desired outcome or condition.

An **objective** is an achievable step toward the goal. Progress towards an objective can be measured and is generally time dependent.

A **policy** is a specific statement, derived from goals and objectives, to guide decision-making.

The implementation actions suggest an agency to carry out the action step and a timeframe for accomplishing the action step. Many times the Pahrump Regional Planning Commission is charged with implementing a policy, and in other instances, the Board of County Commissioners is recommended to carry out a specific implementation action. In section 21, entitled Implementation, a matrix is provided that suggests a potential 20-year time frame and action steps to be carried out, as well as a suggestion for revising and/or reviewing the entire plan after 5 and 10 years.

Many of the implementation steps speak to the need for the creation of a zoning ordinance. Many policies are carried out through the creation of land use ordinances, and zoning is one of the most fundamental and far-reaching outcomes of any land use plan. It is important to note that the land use plan and the master plan itself does not establish zoning. Instead, the Board of County Commission must take a separate regulatory action, with notification to local residents, that an amended zoning ordinance will be created. It is anticipated that this process will begin in January of 2004.

*What is the Master Plan Update?*

This Master Plan Update provides a written framework for the future of the community. It is a broad goals-oriented document that is intended to guide growth and development in a cohesive and efficient manner in order to maximize the social, economic, and natural resources of the community in a holistic way. To make sure that the Plan is a relevant guide for the community, it should be reviewed for compatibility with the community's goals every 5 years. This review process should be initiated by the Pahrump Regional Planning Commission with the help of the Nye County Planning Department.

The Master Plan Update contains various elements, such as land use, housing, public facilities, and other issue based topics. Future development applications will be measured against the adopted Master Plan to see if they are generally consistent with the overall intent and policies of the Plan. The Master Plan Update reflects the land uses for the community, along with policies about all the Master Plan elements, to guide development actions towards the preferred outcome for the community as a whole.

*How Can the Master Plan Be Amended?*

Since the Master Plan is a community-wide statement of intent for the future, piecemeal amendments that contradict the overall framework of the plan are discouraged. The Master Plan should also be allowed to remain in place without amendment until the zoning ordinance takes effect, which will allow the Master Plan to chart a course for the future, and to gain more comprehensive insight into what types of amendments might be needed to alter the future course over time. According to NRS 278.210, the Land Use Plan of the Master Plan cannot be amended more than four times per calendar year.

Amendment applications shall be filed with the Nye County Planning Department along with application fees and a written justification for the amendment. Written justification for Master Plan amendments should address the following issues:

1. State why the amendment would be more advantageous to the community as a whole if it was made (i.e., amendments that only serve an individual parcel of land are discouraged).

2. State why the change to the Master Plan should be made due to: changed conditions; an error in the original plan; an undue hardship or other special circumstance; or other compelling reason to justify the change, and explain the justification in detail.

3. State how the new language should read, and note other places in the Master Plan that may need to be amended or cross-referenced differently as a result of the amendment.

Master Plan amendments must be advertised and heard at a public hearing of the Regional Planning Commission for an initial recommendation, with final action at a public hearing of the Nye County Board of County Commissioners. Notification of any proposed changes to the Master Plan must also be provided to the Pahrump Town Board prior to the hearing of the Regional Planning Commission.

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# 2 Community Profile

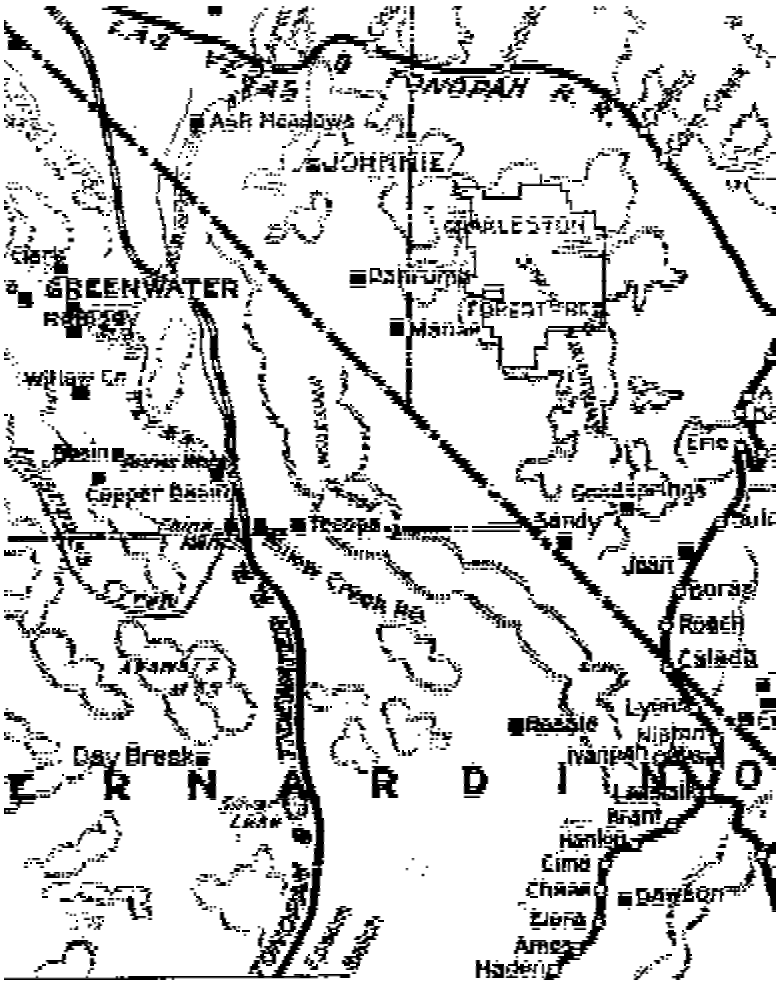
## 2. COMMUNITY PROFILE

### A. INTRODUCTION

This section provides an overview of the Town of Pahrump's existing conditions, focusing on socio-economic information, vicinity, geography, and history. The community context provides a basis for making decisions regarding the Town's future. Subsequent sections in this Master Plan and the Background Document contain greater detail on certain community conditions, and references are provided where applicable.

### B. A BRIEF HISTORY OF PAHRUMP

Pahrump got its name from the Southern Paiutes who inhabited the Pahrump Valley centuries ago. The term "Pah" means water and "Rimpi" means stone or rock. It is believed that natural artesian springs once flowed generously, thus giving Pahrump its name. A century ago, settlers arrived and began farming the valley, with its fertile lands and abundance of water. According to Harry Ford in an article published in the Pahrump Valley Magazine in 2002, even the Anasazi Indians were in the Pahrump Valley due to the availability of water.




*From Cason Map Co., Denver, CO 1906, found in Pahrump: A Valley Waiting to Become a City*

The Old Spanish Trail crossed the Pahrump Valley between 1830 and 1848, to connect the trade route linking Santa Fe, New Mexico and Los Angeles, California. The trail facilitated trade between the states, allowing wool, spices, and the exchange of ideas to spread west across the United States. Most of the trail in the Pahrump Valley is on land

managed by the Bureau of Land Management. On Dec. 4, 2002, President George W. Bush signed S-1946 - *The Old Spanish Trail Recognition Act*, into law. The bill officially designated the trail as a National Historic Trail, placing it among only 20 trails that have received national recognition by Congress since 1968. Historic Trails are often tourist destinations and could result in increased visitors to Pahrump.

In the book, *Pahrump: A Valley Waiting to Become a City* by Robert McCracken, Pahrump's modern history begins around 1917, with the arrival of the Pahrump Valley Company, owners of the Pahrump Ranch. It was the tradition of farming that helped to develop Pahrump into the bustling community it is today. With artesian springs and agriculture in the fertile valley, the Town of Pahrump must have been an oasis in the hot, dry, Nevada desert.

Dating back to the late 1930's cotton was king of Pahrump. With the Hafen and Harris families arriving to pursue a farming career, cotton became the backbone of local industry. Pahrump even had its own cotton gin, located on State Highway 160 where the Pahrump Nugget stands today. However, little evidence of Pahrump's history still remains. The old store near the Pahrump Ranch, the Lois Kellogg grain mill near Manse Ranch and the Little Red School House, moved to Pahrump from Ash Meadows in 1945, are the few remnants of days past.

Pahrump is the largest town in Nye County, which is the largest county in Nevada, and the third largest county in the nation. The Nye County seat is located in Tonopah, 165 miles north of Pahrump.

The elevation of Pahrump ranges from 2,500 to 2,750 above sea level, and the town sits at the base of Mount Charleston. Views from Pahrump expand into the horizon, where mountains surround the community, which is a magnificent sight for residents and visitors alike.

With change on the horizon, the residents of Pahrump have an opportunity to shape their future by learning about its past and its current conditions and by actively participating in the planning process to shape its future.

## C. VICINITY

The Town of Pahrump is located in the southwest corner of Nye County and is 63 miles west of Las Vegas and 54 miles east of Death Valley. Pahrump is about 26 miles long and 10 miles wide, with an area of approximately 369.5 square miles. Pahrump is located only 75 miles from the Nevada Test Site, and Yucca Mountain, a potential nuclear waste repository. Carson City, Nevada's state capital is located 391 miles to the northeast.

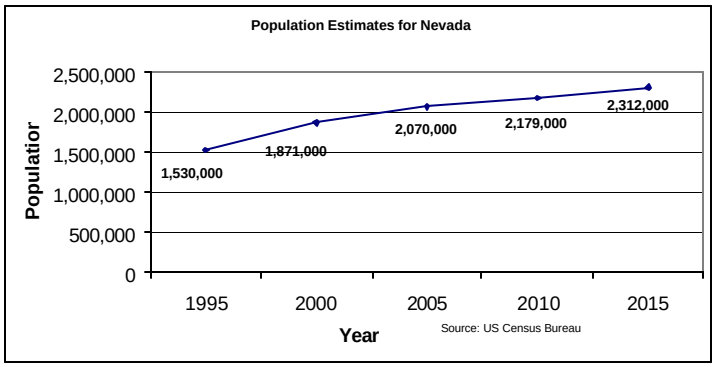
## D. DEMOGRAPHIC CHARACTERISTICS

### *1. Population*

Over the course of the last 12 years the State of Nevada has experienced explosive population growth. In 1990, the US Census Bureau listed Nevada as having a population of 1,201,833 persons. The State's population increased by 796,434 persons per the results of the 2000 Census for a growth rate of 66.3%, making Nevada the fastest growing state in the Nation. The 2000 Census recorded

Nevada's population as 1,998,257. In fact, Nevada's growth rate during this time period was significantly higher than the next closest state, which was Arizona, that recorded a growth rate of 40%. In 2001, the State of Nevada Demographer estimated that Nevada's population grew to 2,132,498, for a growth rate of 7% in a year's time. The Table 2a below compares Nevada with its regional neighbors in terms of population.

**Graph 2a: Nevada Population Estimates**




Nevada is currently the 35th most populace state in the union, which is up four places from the 1990 Census, when the State was ranked 39th. As growth continues, the Nevada State Demographer estimates that the population will approach 3 million by 2022—which is 700,000 more people than there are today.

*Area Population Growth*

The US Census Bureau and the State Demographer tracks population statistics for the State of Nevada, as well as the Pahrump area, which is tracked as a Community Designated Place (CDP). A CDP is an unincorporated community where census data is presented by concentration of population, housing, and commercial structures that is identifiable by name, but is not within an incorporated place. Nye County's population topped 30,000 in 1998. Between 1990 and 2001, Nye County experienced an 89% growth rate. Similarly, the Pahrump CDP has experienced a great deal of growth. In 1990, the population in Pahrump was 7,424, and in 2000, that population rose to more than 25,000 people, representing an increase of 336%.

Both Nye County and Pahrump Town Staff have used alternative population tracking estimates that indicate a current population closer to 32,000 than 25,000. The census remains the official population estimate used for all government purposes (grants, funding formulas, representation by elected officials, shares of federal funds, etc.) so the number of

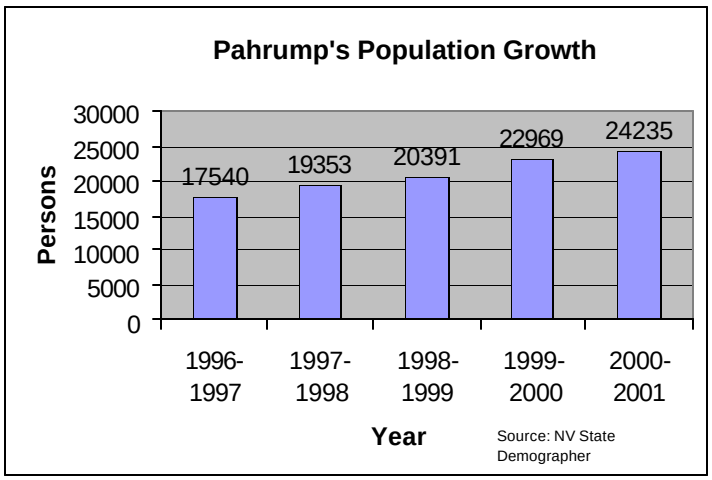
**Table 2a: Regional Population Growth**

| State | 2000 Population (Census Data) | Growth Rate (1990 to 2000) |
|---|---|---|
| Nevada | 1,998,257 | 66.3% |
| Arizona | 5,130,632 | 40% |
| Colorado | 4,301,261 | 30.6% |
| Utah | 2,233,169 | 29.6% |
| Oregon | 3,421,399 | 20.4% |
| California | 33,871,648 | 13.8% |

*Source: US Census Bureau*

25,000 will be used, even though the figure may be low.

**Graph 2b: Pahrump's Population Growth**




The Graph 2a shows a steady incline in population growth for Nevada. Population projections are not calculated on a local level, instead , the Nevada State Demographer tracks population projections by county. However extrapolating from the data, estimations can be made about the growth of Pahrump, which represents 78% of Nye County's population. By the year 2022, the population of Pahrump can be expected to reach 41,000.

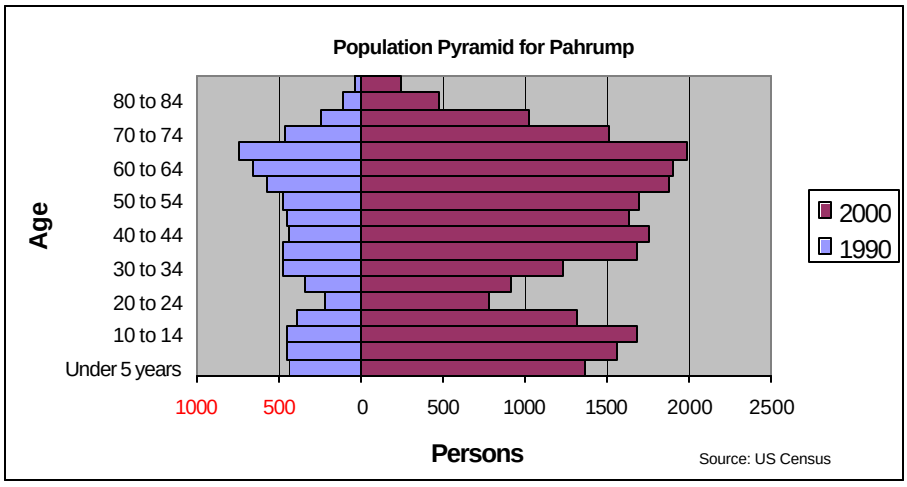
Pahrump is certainly the fastest growing community in Nye County. While communities like Gabbs, Amargosa, Beatty, and Tonopah have actually seen slight population decline over the past few years, Pahrump is the only community in Nye County to consistently see significant gains. While natural increases can account for some of Pahrump's growth, in-migration from other counties in Nevada as well as other parts of the United States have contributed to Pahrump's growth.

***2. Gender, Age, and Race***

Males account for 50.6% of the total population, while females account for 49.4%. The numeric breakdown is 12,461 males to 12,170 females. The percentage of males to females in Pahrump largely reflects that of Nevada as a whole, whose breakdown is 50.9% males to 49.1% females.

The median age for Pahrump is 45 years. This median age is higher than the State of Nevada, which the 2000 US Census recorded as 35 years. As stated earlier, much of Pahrump's population growth has been attributed to in-migration, particularly from retirees (snowbirds) seeking a reprieve from the harsh winters in other parts of the United States, or those seeking a more rural environment than the cities they

**Graph 2c: Pahrump's Population Pyramid**



lived in previously. The chart below provides an overview of age groups in Pahrump, including the change between 1990 and 2000. This chart analyzes the types of services needed for different age groups. Pahrump, for example, has a large number of people over 45, that 10-20 years from now, will be a large group of senior residents in need of special services.

The pyramid below indicates that Pahrump's population contains a significant amount of people in the older age groups (55 and up). People age 62 and over acount for 21.3% of the population. The community also contains a large amount of people in the younger age groups.

***3. Education***

After Clark County School District, Nye County School District experienced the second highest rate of growth in the State. Many other school districts grew incrementally or lost student population.

Pahrump has one high school, one middle school and four elementary schools. There are two privately operated Christian Schools in Pahrump, as well as more than 230 home-schooled children.

The Community College of Southern Nevada (CCSN) has a campus in the Town of Pahrump offering residents an opportunity for post secondary education. The facility is 32,000 sq. ft. and offers courses to fulfill general education requirements for two-year degree and three-year certificate programs offered at the main campus in Tonopah. The facility boasts computer-based classrooms, science labs and video conferencing facilities.

**Table 2b: Change in Enrollment**

| School District | % Change in enrollment from 1998-1999 to1999-2000 School Year |
|---|---|
| Nye County | 3.4% |
| Washoe County | 3.2% |
| Elko County | -2.7% |
| Clark County | 6.6% |
| Lyon County | 3.0% |
| Esmeralda County | -7.9% |
| Lincoln County | -3.3% |
| Churchill County | .5% |
| Eureka County | -3.1% |
| Humboldt County | -5.9% |
| Carson City | .1% |
| Lander County | -9.9% |

*Source: CBER/UNLV*

The University of Nevada at Reno has a Cooperative Extension Center in Pahrump, offering residents an opportunity to learn about land, including topics on gardening, farming, and nutrition. The closest major university is University of Nevada at Las Vegas, which is located 63 miles away. In terms of educational attainment, 15.8% of the Pahrump's population in over the age of 18 have some sort of post secondary degree, with the Bachelor's Degree being the most common type of degree attained. The US Census indicates that 3.2% of the population have a graduate degree or higher. Forty-one percent of the population have completed high school or have a high school equivalency.

## E. PAHRUMP'S RELATIONSHIP TO LAS VEGAS, NEVADA

Las Vegas, Nevada is located 63 miles southeast of Pahrump in Clark County. The two communities share similar histories, both having had an abundance of water and natural springs in a desert environment, and both have ties to the Paiute Indians. However, it was the Pahrump Valley that became the prime agricultural producing community in Southern Nevada. Meanwhile, Las Vegas became a commercial center, thriving off gaming, entertainment and retail. Today, both communities continue to grow at a rapid rate.

In terms of employment opportunities in Pahrump, mid and high-level paying jobs are limited resulting in a "bedroom" community. A March 6th, 2003 article in the Las Vegas Review Journal indicated that the number of commuters from nearby counties into Las Vegas doubled from 1990 to 2000, citing the bulk of the commuters from Mohave County in Arizona and Nye County, Nevada. In fact, the increase of commuters from Nye County was 295% over 10 years. Nevada Department of Transportation figures that the number of vehicles traveling from Pahrump to Las Vegas has doubled. Recent data shows 22,000 vehicles traveling State Highway 160 per day.

# 3 Land Use Plan

## 3. LAND USE PLAN

### A. INTRODUCTION

One of the most important aspects of planning and long-range decision-making is land use. Land Use patterns drive economic vitality, housing, infrastructure, transportation and quality of life. This section is intended to help guide the District's overall growth in a manner that will help maximize resources and plan for orderly growth and development.

### B. EXISTING LAND COVER AND USES

The Pahrump Regional Planning District has a mix of land uses ranging from agricultural to heavy industrial and residential to sexually-oriented businesses, including brothels. Most of the heavy industrial and commercial land uses are located along the major roadways, State Highways 160 and 372. The residential areas are scattered throughout the valley with a higher density of housing near major roadways. Also, an increasing number of residential units are being developed at the south end of town, which is closer to Las Vegas.

**3a: Pahrump Regional Planning District Existing Land Use Table**

| Land Use | Percentage |
|---|---|
| Residential | 27.43% |
| Residential Mobile Home | .36% |
| Manufactured Home | .55% |
| Residential High Density | .10% |
| Commercial General | 1.12% |
| Commercial Office | .08% |
| Commercial Casino | .08% |
| Sexually Oriented Businesses | .07% |
| Salvage Yard | .30% |
| Industrial | .91% |
| Airport | .13% |
| Municipal | .59% |
| Municipal Sewer | .02% |
| Park/Golf Course | .73% |
| Vacant Land | 67.34% |
| Agricultural | .21% |
| TOTAL | 100% |

*Source: Tri-Core Planning Team*

*Generalized Land Use*

The Existing Land Use Map provides an overview of land use patterns identified through a windshield survey conducted throughout the Pahrump Regional Planning District. It is important to note that the Existing Land Use Map is generalized land use and does not reflect parcel level land use. The predominant land use has been noted; site specific exceptions within generalized land use areas are not shown on the Existing Land Use Map.

## C. LAND USE CONSIDERATIONS

Through discussions with Nye County and Town of Pahrump officials, as well as the public leaders, the following considerations relating to land use have emerged:

### *1. Land Use Conflicts*

Land use conflicts are common in Pahrump, primarily because zoning and zone code enforcement has been an incremental process as Nye County strives to catch up with the pace of population growth. One of the most common land use conflicts is industrial uses adjacent to residential areas. This conflict poses a health and safety threat. These conflicts can be remain through grandfathering the use and become legal, non-confomring uses. Landscape buffers or other physical buffers can be mandated to protect the residential properties.

*Vacant land and residential development.*

### *2. CC&Rs*

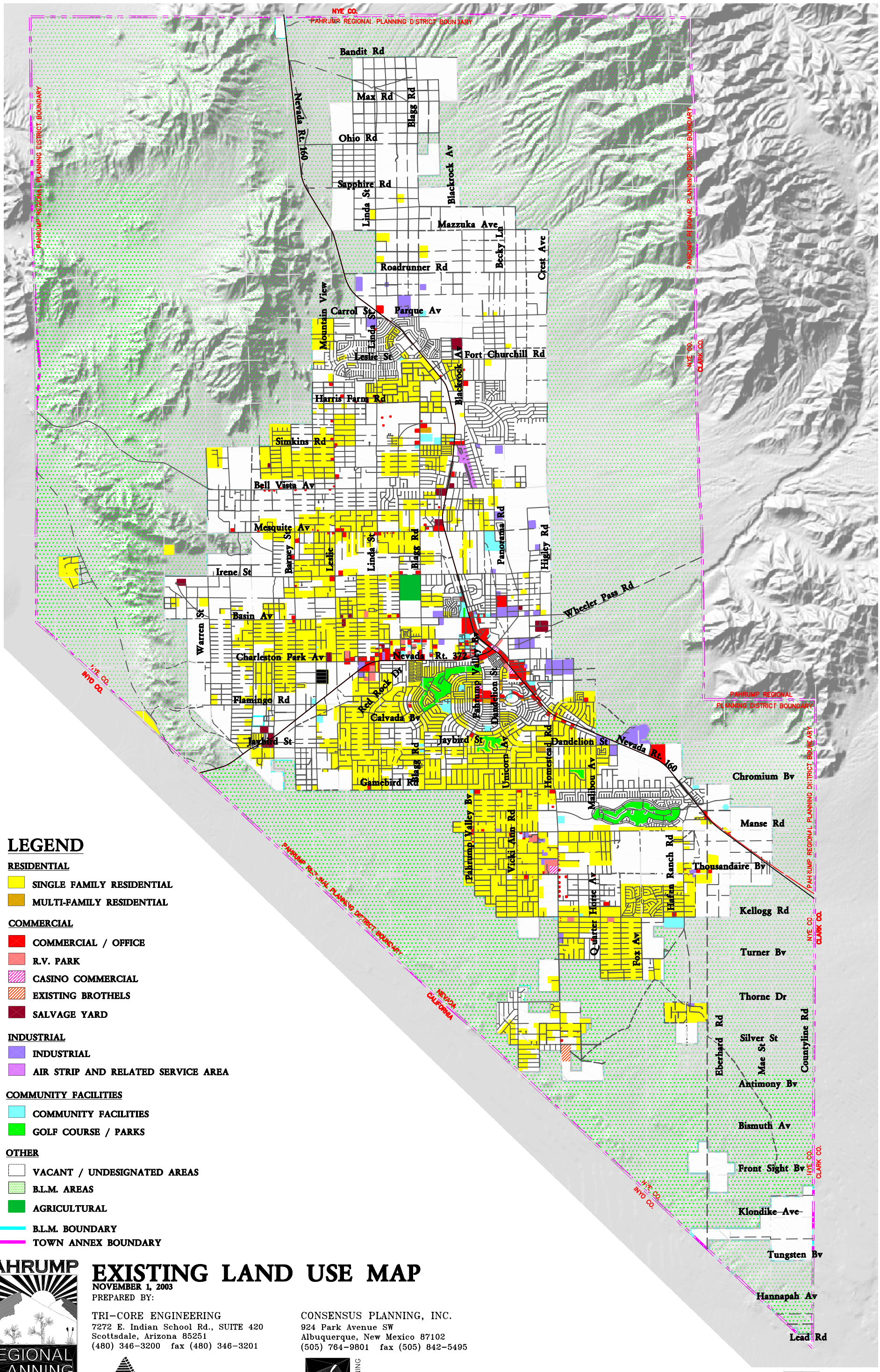
Covenants, Codes and Restrictions (CC&Rs) were recorded with the County Clerk and placed on lands sold by private companies. Unfortunately, many of these CC&Rs refer to land use preferences that date back to the 1970s. Given the growth and development patterns of the area, some of the CC&Rs are in conflict with current development patterns. The Land Use Map establishes land use categories that are mostly consistent with those listed in existing CC&Rs, however, when good planning sense, protection of public health and safety, and consideration of current growth patterns precludes following the CC&Rs, other land use designations have been created.

### *3. Land Use Mix*

The Land Use Mix is a term given to the overall distribution of land uses in a community. The Land Use Mix should provide a healthy distribution of residential, commercial, industrial and recreational/open space uses. In Pahrump, the existing land use mix favors residential land uses. To improve the fiscal health of the community, commercial, industrial and business park related land uses are needed to provide for increased opportunities for employment. The Land Use Map dedicates more land for mixed use, commercial, industrial and business park development to enhance the Land Use Mix in the future.

### *4. Vacant Lots/Antiquated Platting*

There are more than 28,000 undevelopable lots that were created in the 1970s. These lots have development challenges




# LEGEND

**RESIDENTIAL**

- SINGLE FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL

**COMMERCIAL**

- COMMERCIAL / OFFICE
- R.V. PARK
- CASINO COMMERCIAL
- EXISTING BROTHELS
- SALVAGE YARD

**INDUSTRIAL**

- INDUSTRIAL
- AIR STRIP AND RELATED SERVICE AREA

**COMMUNITY FACILITIES**

- COMMUNITY FACILITIES
- GOLF COURSE / PARKS

**OTHER**

- VACANT / UNDESIGNATED AREAS
- B.L.M. AREAS
- AGRICULTURAL
- B.L.M. BOUNDARY
- TOWN ANNEX BOUNDARY

PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE

# EXISTING LAND USE MAP

NOVEMBER 1, 2003

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0 5,000' 8,750' 15,000' NORTH

# PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE
## NYE COUNTY, NEVADA

because they are less than one acre in size and are not located near planned utility extensions. The Nevada Revised Statutes require that a lot be a minimum of one acre for on site septic systems, unless the lot is connected to a municipal water system. These lots provide a planning challenge to growth patterns, as well as contribute to air quality problems because the lots have been graded. A process for lot consolidation is contained in the Land Division Ordinance under the heading Map of Reversion (Reversionary Map) Procedure. Further promotion of land assemblage through the Map of Reversion process will allow for developing and master planning large parcels of land. Provision of utilities is a second mechanism for developing these lands.

*Vacant and disturbed lands*

***5. Public Lands***

Nye County is comprised of more than 98% public lands managed by various federal agencies. However, the Pahrump Valley is comprised of the highest percentage of privately owned land in Nye County. The Bureau of Land Management is the main agency controlling lands adjacent to the Pahrump Regional Planning District Boundary, and has lands, which fall within the Pahrump Regional Planning District boundary. On occasion, these lands are designated for disposal. The land use map identifies the lands that are slated for disposal to purchase the land at fair market value. Nye County can acquire lands for recreation and public purpose before the land is purchased by a private entity.

***6. Water***

There is increasing concern about the availability of water in the Pahrump Valley. Water availability is a consideration for land use decisions, especially in an area that is continuing to cultivate agricultural lands and is experiencing rapid growth that requires new wells and septic systems. Additionally, water availability is a major consideration for industrial and business park entities looking to relocate. Acknowledging that water is a limited resource and a resource to be understood and studied is an integral step towards making sound land use decisions.

## D. LAND USE MAP

The draft land use map includes land use designations to guide the future growth, development, and amendments to the zoning ordinance. The land use map incorporates public opinion and sound planning decisions. Bureau of Land Management (BLM) lands are included in land use designations to help guide the future use of these parcels. Land use categories and descriptions of allowable uses include:

**BLM Disposal Lands**

**Recreational or Residential Reserve (40 acre minimum):** Land for recreational or residential development. This is a holding zone for future growth and develop-

ment that will require site design and review by the County before any lands are developed for master-planned residential development or for recreational purposes.

The purpose of the 40 acre minimum is to insure that the land is not parceled up and sold as one acre lots, which would perpetuate a well and septic problem. Rather, the 40 acre parcels can be planned and developed in a contiguous manner, and when water and sewer is provided, can be subdivided into smaller lots.

` **Business Park/Light Industrial Reserve (40 acre minimum):** Land for business park/light industrial development with a minimum of 40 acres per site. These areas will also need master planning before they can be divided into larger or smaller parcels.

**Community Development Reserve (40 acre minimum):** This land is a holding zone for permanent and temporary development or use permits. Nye County and BLM must review permit requirements for compliance with the goals and policies of this Master Plan and the BLM Resource Management Plan to ensure any use, temporary or permanent, will not jeopardize or negatively impact the historic, archaeological, habitat, cultural and air quality aspects of the Pahrump Valley.

**Heavy Industrial Reserve (40 acre minimum):** Land for industrial park development with a minimum of 40 acres per site and can only be subdivided with master plan approval.

**Municipal Reserve:** Land for Nye County or the Town of Pahrump for placing public facilities, including public infrastructure.

**Wildlife Habitat Reserve:** Land for wildlife, its habitat and sensitive resources, including open space and some low-impact recreational uses such as trails.

*The following land use categories pertain to privately owned lands within the Pahrump Regional Planning District*.

**Residential**

**Rural Residential:** Single family residential on lots with five acre minimum lot size.

**Low Density Residential:** Single family residential on lots with one acre minimum lot size.

**Medium Density Residential:** Single or multifamily residential on lots less than one acre, but greater than 6000 square feet.

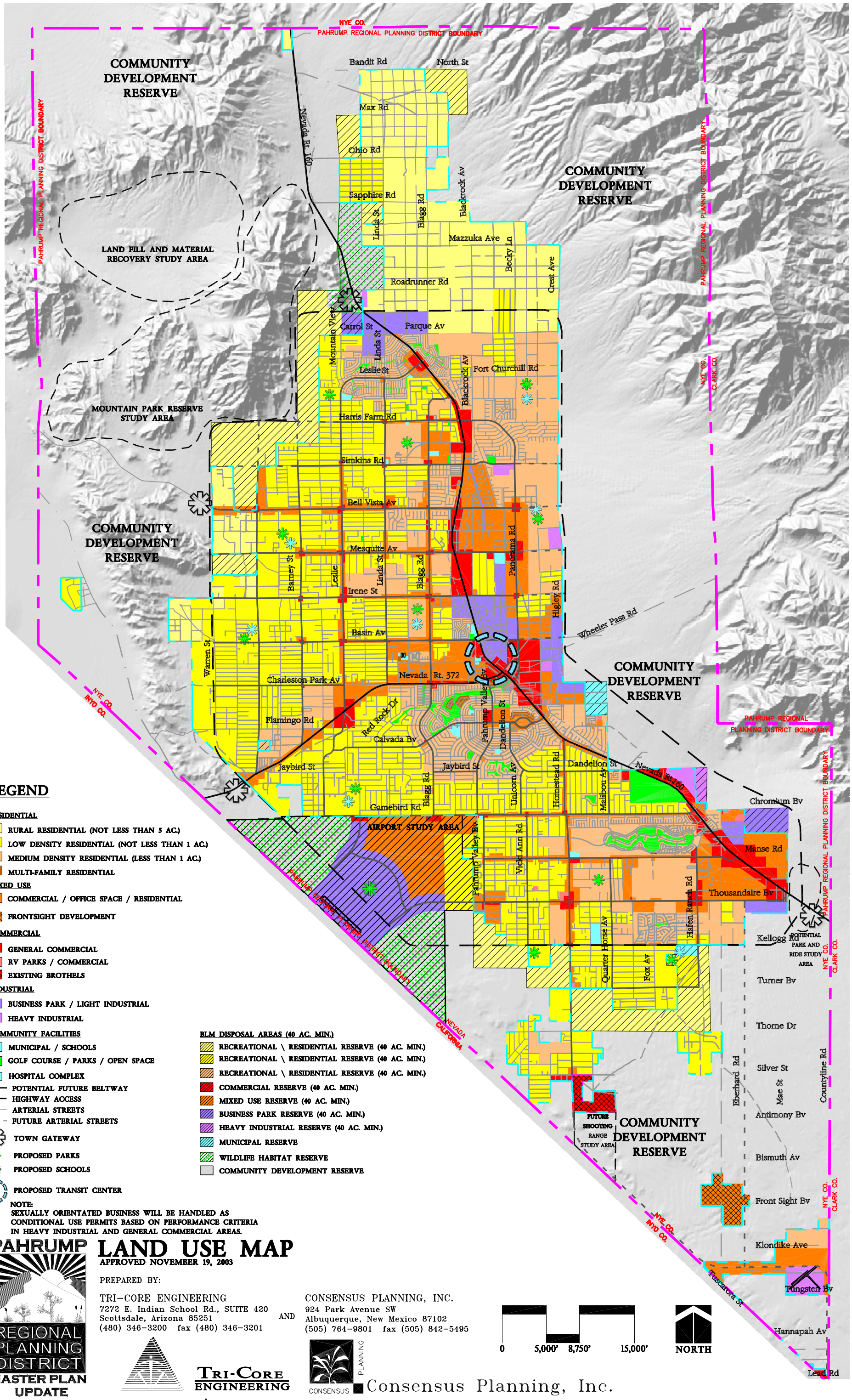
**Multifamily Residential:** This area is characterized by high density residential uses.

*Agricultural uses are allowed in all residential areas, subject to animal/livestock uses only on lots 1 (one) acre in size or greater, with appropriate permits.*

*Schools, churches, public facilities and infrastructure facilities shall be located in any residential designated area upon site plan review and approval.*

**Mixed Use**

**Commercial/Office/Residential:** A mix of uses are allowed to provide a more dense, urban core, with pedestrian amenities, trails, sidewalks and places for residents to live, work and play. Commercial uses are at neighborhood scale, prohibiting “big box” buildings greater than 80,000 square feet. Residential develop-




## LEGEND

**RESIDENTIAL**
- RURAL RESIDENTIAL (NOT LESS THAN 5 AC.)
- LOW DENSITY RESIDENTIAL (NOT LESS THAN 1 AC.)
- MEDIUM DENSITY RESIDENTIAL (LESS THAN 1 AC.)
- MULTI-FAMILY RESIDENTIAL

**MIXED USE**
- COMMERCIAL / OFFICE SPACE / RESIDENTIAL
- FRONTSIGHT DEVELOPMENT

**COMMERCIAL**
- GENERAL COMMERCIAL
- RV PARKS / COMMERCIAL
- EXISTING BROTHELS

**INDUSTRIAL**
- BUSINESS PARK / LIGHT INDUSTRIAL
- HEAVY INDUSTRIAL

**COMMUNITY FACILITIES**
- MUNICIPAL / SCHOOLS
- GOLF COURSE / PARKS / OPEN SPACE
- H HOSPITAL COMPLEX
- POTENTIAL FUTURE BELTWAY
- HIGHWAY ACCESS
- ARTERIAL STREETS
- FUTURE ARTERIAL STREETS
- TOWN GATEWAY
- PROPOSED PARKS
- PROPOSED SCHOOLS
- PROPOSED TRANSIT CENTER

**BLM DISPOSAL AREAS (40 AC. MIN.)**
- RECREATIONAL \ RESIDENTIAL RESERVE (40 AC. MIN.)
- RECREATIONAL \ RESIDENTIAL RESERVE (40 AC. MIN.)
- RECREATIONAL \ RESIDENTIAL RESERVE (40 AC. MIN.)
- COMMERCIAL RESERVE (40 AC. MIN.)
- MIXED USE RESERVE (40 AC. MIN.)
- BUSINESS PARK RESERVE (40 AC. MIN.)
- HEAVY INDUSTRIAL RESERVE (40 AC. MIN.)
- MUNICIPAL RESERVE
- WILDLIFE HABITAT RESERVE
- COMMUNITY DEVELOPMENT RESERVE

NOTE:
SEXUALLY ORIENTATED BUSINESS WILL BE HANDLED AS CONDITIONAL USE PERMITS BASED ON PERFORMANCE CRITERIA IN HEAVY INDUSTRIAL AND GENERAL COMMERCIAL AREAS.

PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE

# LAND USE MAP

APPROVED NOVEMBER 19, 2003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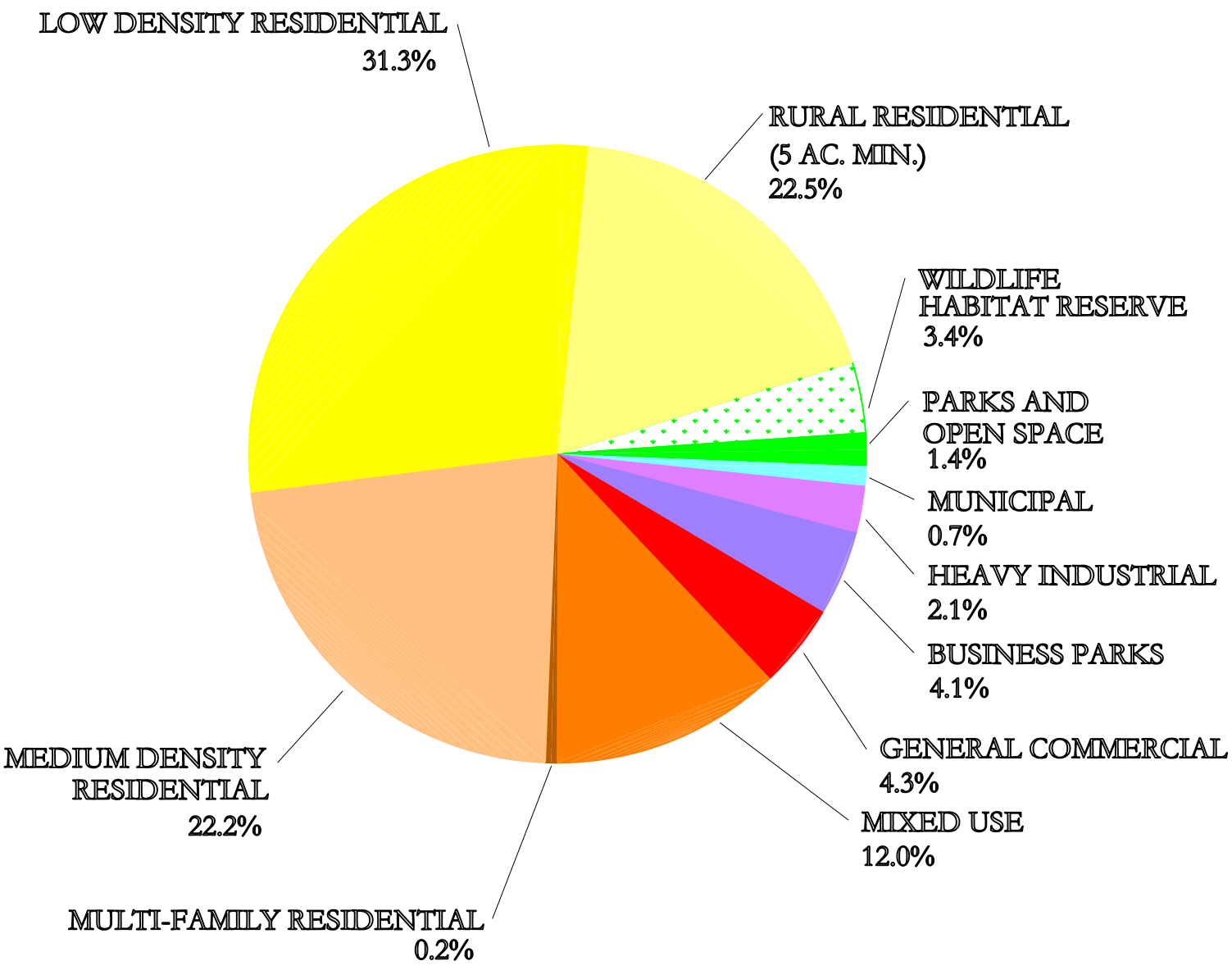
Consensus Planning, Inc.

# PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE
## NYE COUNTY, NEVADA




# LAND USE GRAPH

APPROVED NOVEMBER 19, 2003

ment of single or multi-family housing is allowed.

*Schools, churches, public facilities and infrastructure facilities shall be located in any mixed use designated area upon site plan review and approval.*

**Commercial**

**General Commercial:** Activities involving the sale of goods and services, including liquor sales, automobile sales and repair, movie theaters, large-scale retailers, hotels, restaurants, gas stations, malls, sexually oriented businesses, big box retail and casinos. Note that sexually oriented businesses shall be permitted in all General Commercial land use areas based on criteria established through the zoning ordinance. The zoning ordinance will mandate the location and permitting procedure for locating sexually oriented businesses through a criteria-based conditional use permit process. Sexually oriented businesses are not brothels, but adult businesses.

**RV/Commercial:** This area is characterized by RV lots as commercial uses, not residential.

**Industrial**

**Business Park/Light Industrial:** Area dedicated to business development, serving companies with compatible and complementary services. This will be a planned development, with landscaped,attractive areas, that can accomodate neighborhood-scale commercial uses allowed, including restaurants and small-scale retail, such as bakeries or copy shops in addition to light industrial uses.

**Heavy Industrial:** Industrial uses including manufacturing, constructions, production, wholesale trade, storage yards and transportation. When a conditional use permit has been granted, a sexually oriented business can also locate in this land use category provided it meets permitting requirements set forth by the zoning ordinance.

**Community Facilities**

**Municipal:** Municipal includes civic buildings, public utility facilities, schools, and emergency facilities.

**Park/Golf Course:** Area defined as public space for recreational purposes.

**Hospital Complex:** Area includes hospital and medical related facilities, including doctor's offices, pharmacies, and other complementary uses.

*Zoning*

Existing zoning in the Pahrump Regional Planning District consists of two distinct zones, Open Use and Highway Frontage. With such few zone categories, many activities are found within each zone. The Pahrump Regional Planning Commission shall pursue an amendment to the zone code to include several different land use categories, as well as levels of use and densities for each category. The different land uses should also include development standards to prevent the proliferation of inadequately designed or substandard buildings or developments. The public health, safety and welfare can be protected through the use of a modern zoning ordinance.

*Activity Centers*

Activity centers are those concentrated areas that generate a great deal of pedestrian and vehicular traffic either by large employers or by being areas of interest. There are three main activity centers in the Pahrump Regional Planning District. These centers are described as follows:

- The junction of State Highway 160 and State Road 372,
- The junction of Highway 160 and Basin, and
- The Duck Pond.

These activity centers represent commercial, institutional and recreational land uses. According to residents, Highway 160 and Basin is a preferred location for the development of a Town Center.

## E. LAND USE GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

**Goal 1: Future Land Use designations should attempt to accommodate existing land uses that preceded the Master Plan Update when possible.**

Objective A: Consider existing CC&R's when specifying allowable land uses and restrictions, but follow good planning principles, for public health and safety, where conflicts occur.

Objective B: Allow legal, but nonconforming uses to continue with a grandfather policy setting forth specific guidelines through the future zoning ordinance.

Objective C: Use clear definitions for lots and single family residential uses in the new zoning ordinance consistent with Nevada Revised Statutes.

Objective D: Consider the financial impact of new ordinances and regulations on low-income residents, and plan for strategies to enhance affordable housing opportunities.

***Purpose***

The purpose of these policies is to create a land use map that is consistent with the desires of the residents, makes good planning sense and avoids causing undue hardship on property owners.

*Policy 1: It is the Policy of the Pahrump Regional Planning Commission to designate land uses thoughout the community, which consider existing land uses and CC&R deed resitrictions.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to grandfather existing legal non-conforming uses in the land use map and subsequent zoning ordinance.*

*Policy 3: It is the policy of the Pahrump Regional Planning Commission to include a hardship clause in the zoning ordinance that can be handled as a variance under certain conditions.*

*Policy 4: It is the policyof the Pahrump Regional Planning District to identify illegal land uses and cause them to be removed or remedied through zoning and enforcement.*

***Implementation Action***

Adopt Land Use Map: The Pahrump Regional Planning Commission shall adopt a Land Use Map, which will guide land use planning and the establishment of zoning.

Amend Zoning Ordinance: The Board of County Commissioners shall amend the current zoning ordinance to include a provision for grandfathering existing legal non-conforming uses, and to include a hardship clause to allow for a variance under certain conditions.

**Goal 2: Master planned communities and new subdivisions shall integrate design guidelines and a documented approach to infrastructure development for site plan approval.**

Objective A: Master Planned Communities and new subdivisions are developed using design guidelines.

Objective B: Clear, detailed infrasturcture plans and site plans are required for all master planned communities and new subdivisions.

***Purpose***

The purpose of this policy is to ensure that services will keep pace with new development.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to require that new subdivisions and master planned communities provide necessary infrastructure, including: paved street improvements, sidewalk or trail improvements if adjacent to existing sidewalks or trails, drainage improvements to prevent off-site flooding from the property; and if lots are smaller than 1 acre in size, a community water and wastewater system must be provided.*

***Implementation Action***

Amend the Division of Land and Planned Unit Development Odrinance to include policies and procedures for site plan and development requirements for Master Planned Communities and new subdivisions.

**Goal 3: Create a comprehensive zoning ordinance that designates what uses are allowed in each zoning category.**

Objective A: Protect the health, safety and welfare of Pahrump residents by removing or mediating existing illegal uses and/or nuisances.

Objective B: Establish guidelines for home occupations and legal non-conforming commercial uses in otherwise residential areas.

Objective C: Include building and structure height restrictions in the zoning ordinance and develop standards for setbacks, access, parking, signage, landscaping, street improvements and other design elements for new construction.

Objective D: Integrate on-premise and off-premise sign regulations within the zoning ordinance.

***Purpose***

The purpose of this policy is to propose to create a comprehensive zoning ordinance regulating land development as the means for enforcing incompatible land uses and for requiring site development plans for major projects, including projects classified as commercial, business park, mixed -use, master-planned and industrial.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission and the Board of County Commissioners to amend the existing zoning ordinance to include various zone categories which set guidelines for site development, including but not limited to density, building height and set back, landscaping, site planning requirements, location of sexually-oriented businesses,the control of public nuisances, and concepts for parking requirements including shared parking, landscaping in parking areas and paving.*

***Implementation Actions***

Amend Zoning Ordinance: By the end of 2004, the Pahrump Regional Planning Commission shall adopt amendments to the zoning ordinance to expand existing zone categories and include development requirements.

**Goal 4: Open Space and parks should be provided within the Pahrump Regional Planning District, especially within new master-planned communities.**

Objective A: Initiate a program to identify strategies for the acquisition of open space throughout the community.

Objective B: Require open space or parks within all master planned subdivisions and encourage Planned Unit Developments to maximize the amount of open space, through cluster-style development.

Objective C: Prepare an open space master plan for the planning district to identify new public open space and the means to acquire, develop and maintain them.

Objective D: Consider the use of BLM disposal lands for recreation and public purposes.

***Purpose***

The purpose of these policies is to establish a framework for the acquisition of open space for public purpose and recreation.

*Policy 1: It is the policy of the Pahrump Regional Planning District to encourage the preservation of the open space quality of agricultural lands through the voluntary use of private land donations and by allowing agricultural and farming activities to continue in all areas .*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to prioritize a list of Open Space criteria to assist in the thoughtful acquisition of public lands for recreational purposes.*

***Implementation Actions***

Open Space Criteria: Prioritizing the lands most beneficial to the community for use as recreation is necessary for acquiring public lands. Criteria shall be established for acquiring disposable lands based on several factors, including:

1. Proximity to proposed and existing trails, nature preserves, and other park lands.

2. Environmental sensitivity, species habitat, and other vulnerable species located on land, whereby Open Space designation for recreation might provide an educational and outreach opportunity.

3. Size of parcel, circulation conditions and proximity to developed lands to mitigate incompatible land uses.

**Goal 5: Develop mechanisms in the zoning ordiance to protect public health, safety and welfare.**

Objective A: Develop a set of nuisance ordinances that define incompatible land uses that impact quality of life or endanger the public health, safety, and welfare.

Objective B: Allow adult entertainment businesses or sexually-oriented businesses in the Pahrump Regional Planning District only within Heavy Industrial Land Use and General Commercial areas. Locate these uses away from major highways, public schools, and churches.

Objective C: New subdivisions and master planned communities must provide necessary infrastructure, including: paved street improvements, sidewalk or trail improvements if adjacent to existing sidewalks or trails, drainage improvements to prevent off-site flooding from the property; and if lots are smaller than 1 acre in size, a community water and wastewater system must be provided.

Objective D: All commercial development shall improve the right-of-way adjacent to the subject property. Site plan development shall include landscape, signage, parking, and street improvments.

***Purpose***

The purpose of this policy is to protect public health, safety and walfare through zoning.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to establish clear definitions for nuisance properties pursuant to Nevada Revised Statutes.*

*Policy 2: It is the policyof the Pahrump Regional Planning Commission to create development requirements for all master-planned communities, commercial development and projects over ten (10) parcels in size.*

*Policy 3: It is the policy of the Pahrump Regional Planning Commission to create a Conditional Use Permitting processes for sexually-oriented businesses.*

***Implementation Actions***

Amend Zoning Ordinance: The Pahrump Regional Planning Commission and the Board of County Commissioners shall amend the zoning ordinance to include definitions of nusiance properties and methods for mitigation following NRS. The zoning ordinance shall provide a process for acquiring a Conditional Use Permit for the establishment of sexually-oriented businesses. Design guidelines and development requirements shall be included in the Zoning Ordinance for all new master planned communities and commercial development.

**Goal 6: Community growth and development should maintain the limited, natural resources as an asset to the quality of life of residents.**

Objective A: Encourage the use of low water, native and drought tolerant plant species for landscaping within public right-of-ways, medians, gateways, commercial buildings, residential properties, business parks, industrial parks, and new master-planned communities.

Objective B: Work cooperatively with the State to resolve issues of water supply, water rights, water allocation and protection of water quality in the Pahrump Valley.

Objective C: Coordinate the Nye County's planning efforts with other water resource planning activities in the region.

***Purpose***

The purpose of these policies is to put in place mechanisms for conserving water .

*Policy 1: It is the policy of the Pahrump Regional Planning District to recognize the need for a Water Conservation Ordinance that stipulates water saving tools for landscaping within public and private rights-of-way, medians, residential, commercial, business park, and industrial park properties, as well as community gateways, parks and golf courses.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to work with local, state and county entities to gain a greater understanding about water supply, water quality, water rights and water availability within the Pahrump Regional Planning District.*

***Implementation Actions***

Water Conservation Ordinance: The Pahrump Regional Planning Commission shall adopt a water conservation ordinance. A Water Conservation Ordinance may stipulate landscaping requirements, hours for irrigation, monitoring requirements, retro-fitting hotels and households for low-flow toilets and showers, and penalties for wasting water.

Water Awareness Taskforce: By 2007, the Pahrump Regional Planning District, together with Nye County public schools, the Cooperative Extension Program, the Southern Nevada Community College, the Pahrump Chamber of Commerce and other stakeholders shall form a Task Force to begin drafting a Water Conservation Ordinance and draft a Public Awareness Plan.

**Goal 7: Land Use decision-making should be a succinct, participatory and community-based process.**

Objective A: Require notification of property owners within a 1000 foot radius of a proposed amendment to the Land Use Map.

Objective B: Neighborhood plans should be prepared in accordance with the Master Plan.

***Purpose***

The purpose of this policy is to recognize that the northern, southern and central portions of the Pahrump Valley are growing in different ways, have different histories and different issues, and planning for these areas should also follow different processes.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to allow for the creation of neighborhood plans for distinct areas of the Pahrump Valley.*

***Implementation Action***

The Pahrump Regional Planning Commission shall consider dividing the community into three planning sub-areas and pursuing neighborhood-level planning.

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# 4 Housing Plan

## 4. HOUSING PLAN

### A. INTRODUCTION

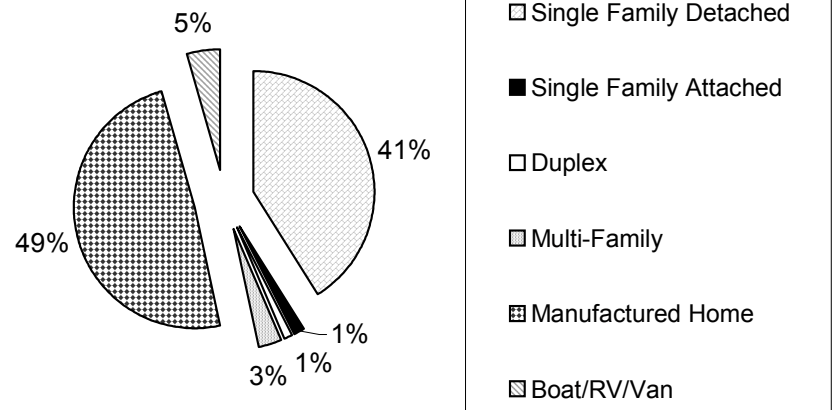
One of the fundamental obligations of any jurisdiction is to ensure that its residents have access to decent, safe and sanitary housing. Housing types should include housing for low-income residents, youth and seniors without discrimination. This Section is intended to address all the housing issues present in the Pahrump Regional Planning District. It includes an overview of existing conditions as they relate to the area and contains recommendations designed to address the housing issues.

### B. PAHRUMP HOUSING INVENTORY

#### *1. Housing Type*

The 2000 U.S. Census indicates that there are a total of 11,651 housing units in the Pahrump Community Designated Place. This figure includes both occupied and vacant structures. The term "housing units" includes all types of housing ranging from single family detached units to manufactured homes. The term also includes recreational vehicles that are structures used as residences, which are not meant for permanent housing. Manufactured housing represents the most common type of dwelling unit found in Pahrump, accounting for 49% of all homes in the community. This figure is relatively high compared to other communities throughout the southwest region. The second most common housing type in Pahrump is single family detached homes, which accounts for 41% of the housing units. Multi-family homes (typically apartments and fourplex townhomes) represent 3% of all dwelling units. The following chart breaks down existing housing in Pahrump by type.

**Housing Types in Pahrump, 2000 US Census**




Source: US Census Bureau

Reviewing the data on housing types illustrates that multi-family housing is limited in the Pahrump Valley. The Pahrump Resident Survey indicated that a desire for medium and high density housing is low (33%), however, the desire for affordable housing units is high (48%). Those individuals currently renting homes, scored the need for affordable housing as very high (78%).

***2. Housing Characteristics***

In 1990, there were 3,509 housing units in Pahrump. The total number of units has increased by 8,142 units over the 10-year period. According to the Census, there were 11,696 housing units in Pahrump in 2000.

*Affordable Housing Inventory*

There is one multi-family housing unit that provides affordable housing for Pahrump residents of all age brackets. There are two other multi-family residences in Pahrump that offer affordable rental units for low-income seniors.

*Analysis of Demographic Characteristics*

The analysis of demographic characteristics as they relate to housing pertains to income and poverty rates, as well as the percent of housing costs an individual pays related to income, typically mor ethan 35% of income. In Pahrump, the average selling price of a site built home is $144,566. According to the 2000 Census, there are 524 families and more than 2,600 individuals living in poverty in Pahrump. Poverty thresholds for 2000 indicate that a family of two with one child under the age of 18, earns around $14,200 per year. At this rate, more than 53% of the population earning $14,200 is paying more than 35% of their income towards housing expenses. As mentioned previously, housing that exceeds more than 35% of a person's income is considered unaffordable.

In Pahrump, there are approximately 225 families currently utilizing rental assistance and this program is overseen by the Nye County Social Services Department.

AffordableHousing Units

*Determination of Affordable Housing Needs*

The availability of a mix of housing, including affordable housing options, is a priority given the diversity of residents living in the planning district and realizing that there is a high percentage of individuals spending more than 35% of their income on housing expenses.

*Impediments to Developing Affordable Housing*

Developing affordable housing in Pahrump requires collaboration with the Town of Pahrump, the Pahrump Regional Planning Commission

(RPC), the Nye County Board of County Commissioners (BOCC) and local developers.

An impediment to developing affordable housing is funding. The State of Nevada and other non-profit development organizations offer incentives and have lending programs in place for developers interested in developing affordable housing. Public and private entities must coordinate to maximize opportunities for developing affordable housing. The Public/Private Housing Policy recommends that the County and RPC foster a leadership role in the establishment of partnerships with third party housing providers. Leadership may include facilitating/hosting meetings to discuss housing issues in the District, sponsoring third party organizations in applying for grants and loans, applying for county grants for housing purposes and distributing them to qualified third party housing organizations, and the local government.

*Analysis of Characteristics of Land Appropriate for Affordable Housing*

Affordable housing can be developed in areas designated on the land use map as low-density residential, medium density residential and mixed-use. Medium density and mixed use land use areas allow for multi-family housing development on smaller lots than the low density residential. Development of affordable housing units should occur in areas near transportation corridors, retail and service centers and schools.

*Constructing Affordable Housing: Needs and Methods*

Constructing affordable housing is a process best carried out by local builders and developers, in collaboration with federal, state and local public and private interests. There are several non-profit development organizations operating in Pahrump, which may be of assistance. The Master Plan Update Background Document list several potential collaborators. The greatest opportunity for affordable housing lies in the potential for new construction, which includes a set number of units for affordable housing.

*Maintaining and Developing Affordable Housing*

The goals, objectives, policies and implementation steps provide a framework for developing and maintaining all forms of housing in Pahrump, including affordable housing. Review of and monitoring of affordable housing projects should occur on an annual basis, to assure that demands are current with demographic data.

## C. HOUSING GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

**Goal 1: Residential land uses should reflect a diversity of housing types for single-family and multi-family housing development, while providing a range of compatible choices for low, medium and higher income residents.**

Objective A: Establish incentives for the development of diverse housing types in the Pahrump Valley.

Objective B: Set a specific housing density (dwelling units per acre) for each residential area in Pahrump through the zoning ordinance.

Objective C: Provide for affordable and senior housing opportunities.

Objective D: Phase out the use of RVs as permanent residential dwellings on residential lots through the zoning ordinance, but allow legally non-conforming grandfathered units to remain in accordance with the zoning requirements, in accordance with NRS 278.021 and Nye County Code, Ordinance 257 Section 17.04.170.2.

Objective E: Monitor and enforce current zoning and NRS statutes to abate substandard housing.

***Purpose***

The purpose of this policy is to provide incentives to developers who build the types of homes and products that are needed in Pahrump. Identified housing types needed include:

- Multi-family housing,
- Senior housing,
- Group housing, and
- Affordable housing.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission and the Board of County Commissioners to incorporate incentives into the Division of Land and Planned Unit Development Ordinance for developers who build housing products including senior housing, affordable housing, group housing, and multi-family housing in Pahrump*.

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to create design guidelines for residential areas, which may require eves, porches, cement foundations and other features to ensure high quality housing options in the community.*

***Implementation Action***

Housing Incentive Program: By 2005, the Pahrump Regional Planning Commission shall work with Nye County Planning and Zoning to include incentives in the Land Division Ordinance. The Land Division Ordinance shall be amended to offer incentives to developers who provide low-income, affordable housing that may include density bonuses, accelerated review processes, and reduced development fees.

**Goal 2: Residential housing should include mixed densities, allowing for pedestrian-friendly, walkable environments.**

Objective A: Establish mixed-use areas where medium and high-density housing locates near neighborhood commercial and office uses to minimize the need for vehicular transportation and to encourage walkable environments.

***Purpose***

The purpose of this policy is to minimize traffic and trip generation and allow for non-motorized transportation, residential land uses shall include varying densities to be established in a zoning ordinance.

*Policy 2: It is the policy of the Pahrump Regional Planning District that lower density land uses shall locate at the periphery of the planning district boundary, while medium and high-density housing shall be located near transportation corridors and established urban areas.*

***Implementation Action:***

Zone Code Update: The Pahrump Regional Planning Commission shall direct an update of the zone code for the area under its jurisdiction to establish zone categories that set densities, lot sizes, building height and building type requirements to create a diversity of safe and adequately built housing choices.

**Goal 3: Housing advocacy groups, Nye Couty and the Pahrump Regional Planning Commission should participate in dialogues about housing issues in the Pahrump Valley.**

Objective A: The ratio of site built, multi-family and single family attached affordable housing increases through the collaborated efforts of public/private partnerships.

***Purpose***

The purpose of this policy is to foster Nye County and Pahrump Regional Planning Commission's leadership in the establishment of partnerships with third party housing providers. Leadership includes facilitating/hosting meetings to discuss housing issues in the Pahrump Regional Planning District, sponsoring third party organizations in applying for grants and loans, applying for county grants for housing purposes and distributing them to qualified third party housing organizations, and the Town of Pahrump.

One of many horse properties in Pahrump

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to take the leadership role in the establishment of public-private partnerships with third party housing organizations in order to facilitate the provision of housing in Pahrump.*

***Implementation Action:***

Housing Summit Meeting: On an annual basis, Nye County (in conjunction with the Pahrump Regional Planning Commission and the Town of Pahrump wherever possible) will hold a housing summit with different housing organizations,

lenders, realtors, seniors, and contractors in the Town and County. The purpose of the meeting is to identify housing issues, share information, discuss successes and failures of past projects and identify potential funding sources and programs to facilitate development of housing in Pahrump.

**Goal 4: Rural housing options are provided to Pahrump residents.**

Objective A: Large-lot residential housing options continue to exist in the Pahrump Valley, especially at the periphery of the community, facilitating the keeping of animals.

***Purpose***

The purpose of this policy is to maintain the ability to keep domestic livestock as part of the rural character of Pahrump.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission that domestic livestock is allowed on private property one acre in size or greater, and within the low-density, rural and reserve land use categories.*

***Implementation Action***

Zone Code Update: The Pahrump Regional Planning District Zone Code shall be updated to allow rural residential and low-density residential land use categories to continue to provide for the care and maintenance of domestic livestock.

**Goal 5: Senior housing is available to Pahrump Residents.**

Objective A: The number of senior housing options increases throughout the Pahrump Valley.

***Purpose***

The purpose of the policy is to promote the continuance of “senior” friendly services where proper care and housing facilities are available.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to provide incentives to attract the highest quality housing options and integrate senior housing with medical care, transportation, services, and overall quality of life.*

***Implementation Actions***

Senior Housing Initiative: On an ongoing basis, the Pahrump Regional Planning Commission and Nye County shall recruit developers of senior communities, including retirement centers, assisted living facilities, nursing homes, and independent living communities to Pahrump by promoting and providing incentives. Incentives may be given to developers who provide these facilities. Senior housing shall be encouraged in areas convenient to medical services and shopping.

Agency Coordination: On an ongoing basis, the Pahrump Regional Planning Commission, and Nye County shall communicate with the Town of Pahrump Social Services Department, Nevada Rural Housing Authority, Rural Nevada Development Corporation, the Pahrump Senior Center, and other organizations dealing with the aging of the population in order to stay informed about trends in

senior housing and to identify specific needs of the senior population in Pahrump.

**Goal 6: Abandonded and substandard structures are abated.**

Objective A: Abandonded and substandard structures are surveyed and catalogued.

Objective B: Abandoned and substandard structures are mitigated through the use of NRS 279A and NRS 279B.

Objective C: A program is established to for the rehabilitation of abandonded and substandard structures in accordance with NRS 279B.

***Purpose***

Abandoned and substandard housing is a concern for many Pahrump residents. The purpose of these policies is to mitigate the threat that blighted structures pose to the health and safety of the Pahrump community.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to recognize the threat of deteriorated, substandard and unsanitary residential properties, which have been abandoned by their owners.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to continue to enforce NRS 461A within the planning district to protect the health, safety and welfare of the community though the inspection and enforcement of mobile homes and mobile home parks.*

***Implementation Actions***

Rehabilitation of Abandonded Residential Property Program: The Pahrump Regional Planning Commission shall host a workshop to identify collaborators and agencies to oversee a potential program for rehabilitating adandoned structures.

Substandard Mobile Home Abatement Initiative: The Pahrump Regional Planning Commission shall enforce NRS Chapter 461A for the protection of public health, safety and welfare.

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# 5 Economic Plan

## 5. ECONOMIC PLAN

### A. INTRODUCTION

The purpose of this section is to provide a framework for the Pahrump Regional Planning District to address economic development concerns of the community and its citizens in the future. Economic development is a common thread that runs throughout many of the sections of this Master Plan. Recommendations are given for providing industrial and business park areas for Pahrump and Nye County to attract new business development that may be associated with Yucca Mountain, or other technical fields.

Historically, the town has been largely dependent on income generated from the Nevada Test Site and from farming. Today, tourism and gambling are Pahrump's two main industries. For example, in 2003, casinos employed the largest number of people.

Pahrump residents have expressed a need for job training, diversified employment opportunities for all ages, and higher wages. This section of the Master Plan Update will assist the Pahrump Regional Planning District to make informed decisions to foster business and economic advancement.

Decisions about allocation and expenditure of public monies are not included in this section. Instead, the Adequate Public Facilities Ordinance recommends schedules for execution of various components of the Master Plan.

### B. ECONOMIC DATA

#### *1. Economic Indicators*

***Southern Nevada Economic Condition***

Like the area's population, the economy of Southern Nevada has experienced rapid growth rates during the last several years. Not surprisingly, the economy of Southern Nevada is driven by Clark County and the City of Las Vegas, which spills over into adjacent counties and areas like Nye County and Pahrump. Typically, a Dominant Market Area (DMA) is defined as the area within 100 miles in each direction of the chief economic engine. In the case of Pahrump, the town is clearly in the Las Vegas Metro Area's DMA, meaning that Las Vegas has served as a primary provider of employment, goods, and services for the Pahrump Valley. Economic leakage has had an impact on sales taxes within Pahrump since historicall, most people travelled to Las Vegas for goods and services, particularly for big ticket items such as appliances. This is changing, however, as Pahrump is opening up to more national retail chains, thus plugging a portion of the Valley's economic leakage.

***Labor Force***

According to the State of Nevada, the total labor force for Pahrump (people above the age of 16 who are capable of employment) equals 16,860 as of the 4th quarter 2002. The 2000 US Census reported that 9,695 persons made up the labor force in the Pahrump CDP. Although the 4th quarter 2002 figures are two years older than those of the 2000 US Census, it is still a reasonable estimation that the Pahrump labor force represents 58% of the total labor force for Nye County.

***Employment by Industry***

According to the 2000 US Census, the labor force for the Pahrump CDP is broken down into the following industries:

**Table 5a: Industry and Employment Data**

| Industry Sector | Number of Persons Employed | Percent of Labor Force (%) |
|---|---|---|
| Agriculture, Forestry, Fishing, Hunting, Mining | 266 | 3.0 |
| Construction | 1,330 | 14.8 |
| Manufacturing | 329 | 3.7 |
| Wholesale Trade | 117 | 1.3 |
| Retail Trade | 1,010 | 11.2 |
| Transportation, Warehousing, and Utilities | 493 | 5.5 |
| Information Technology | 287 | 3.2 |
| Finance, Insurance, Real Estate, Property Management | 617 | 6.9 |
| Professional, Scientific, Management, Administrative | 617 | 6.9 |
| Educational, Health, Social Services | 1,121 | 12.5 |
| Arts, Entertainment, Recreation, Accommodation, and Food Service | 1,654 | 18.4 |
| Other Services | 443 | 4.9 |
| Public Administration | 711 | 7.9 |

*Source: US Census Bureau 2000*

The largest industries employing Pahrump residents include:

- Arts/Entertainment/Recreation/ Accommodation/Food service industry;
- Construction industry;
- Educational/Health/Social Services industry; and
- Transportation/Warehousing/Utilities industry.

***Major Employers In Nye County***

Many Pahrump residents commute into Las Vegas for their full time employment but as the population of Pahrump has grown, more areas of local employment opportunities have emerged. Table 5b. identifies the top employers in Nye County that employ Pahrump residents (as of March 2002).

**Table 5b: Major Regional Employers**

| Employer | Location | Type of Establishment | Employees |
|---|---|---|---|
| 1. Nye County School District | Tonopah | Education | 800 – 900 |
| 2. Nye County | Tonopah | Government | 400 – 500 |
| 3. Pahrump Nugget Hotel | Pahrump | Hotel | 200 – 299 |
| 4. Saddle West Casino | Pahrump | Hotel and Casino | 200 – 299 |
| 5. Wal-Mart | Pahrump | Retail | 200 - 250 |
| 6. Terrible Town | Pahrump | Casino and RV Resort | 100 – 200 |
| 7. Lakeside Casino | Pahrump | Casino | 100 – 200 |
| 8. Pahrump Labor Service | Pahrump | Temporary Labor | 100 – 200 |
| 9. Smith's Grocery | Pahrump | Grocery | 100 – 200 |
| 10. Valley Electric | Pahrump | Utility | 50 – 100 |
| 11. Evergreen at Pahrump | Pahrump | Rehabilitation Facility | 50 – 100 |
| 12. Lucky Stores | Pahrump | Grocery | 50 – 100 |
| 13. Floyd's Ace Hardware | Pahrump | Retail | 50 - 100 |

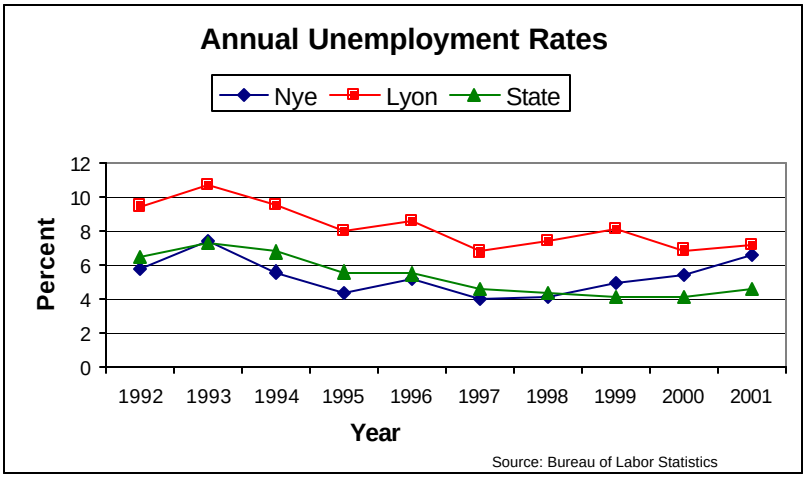
*Source: State of Nevada*

The table indicates that the majority of the employers in Pahrump (which are actually located in Pahrump) are part of the hospitality industry. Other major employers in Pahrump represent the retail sector. The top industries for Nye County based on 2002 average employment include Professional and Business Services with 23%; Government with 21%; and Leisure and Hospitality at 18%, according to the Nevada Department of Employment, Training and Rehabilitation.

***Unemployment Rate***

As of the 4th quarter 2001, Nye County's unemployment rate was 6.6%, which was higher than the 5.4% recorded the previous year. The upward movement of the unemployment rate was typical of other counties in Nevada, the State of Nevada, and the nation as a whole due to the national recession. The following chart illustrates Nye County's unemployment rate for the past 10 years and also compares it to the State's rate as well as that of Lyon County, NV.

**Graph 5a: Unemployment Rate Comparison**




***Income and Poverty Status***

In 1990, the median houshold income was $22,267. Ten years later, the median household income was $34,860. This figure is slightly lower than that of Nye County as a whole, which has a median household income of $36,024. Collectively, the State of Nevada's median income was recorded by the 2000 US Census as $44,581. The table below provides a breakdown of income levels for the Pahrump CDP.

The table indicates that 34.4% of the population make less than $24,000, while 13.6% make more than $75,000. Of the 10,199 households identified in Pahrump, 65% of income is derived from salary and wages. For a great deal of Pahrump residents, however, salary and wage income is supplemented by social security and retirement income. According to the 2000 US Census, 76% receive social security and/or retirement. Those receiving public assistance represent 3.5% of the population.

In terms of poverty rate, the 2000 US Census recorded that there were 2,641 individuals living below the poverty level in Pahrump, representing 10.7% of the population. The 2000 Census also recorded that of people living below the poverty level, 14.8% are persons below 18 years of age. Persons over age 65 below the poverty level represent 7% of all individuals identified as living below the poverty line. The table below shows the poverty rate for Pahrump, Nye County, and the State of Nevada.

**Table 5c: Income Levels as Percent of Pahrump's Population**

| Income Levels | Households | Percent of Population(%) |
|---|---|---|
| Less than $10,000 | 954 | 9.4 |
| $10,000 to $14,999 | 894 | 8.8 |
| $15,000 to $24,000 | 1,656 | 16.2 |
| $25,000 to $34,999 | 1,613 | 15.8 |
| $35,000 to $49,999 | 2,025 | 19.9 |
| $50,000 to $74,999 | 1,674 | 16.4 |
| $75,000 to $99,999 | 782 | 7.7 |
| $100,000 to $149,000 | 492 | 4.8 |
| $150,000 to $199,000 | 62 | .6 |
| $200,000 or More | 47 | .5 |
| MEDIAN INCOME | $34,860 | (X) |

*Source: US Census Bureau 2000*

## C. ECONOMIC PLAN GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

### Goal 1: Diversify the local economy by attracting, promoting, and supporting new stable and sustainable industries and businesses.

Objective A. Identify business park and light industrial areas for research and development , offices, light manufacturing, distributing, and warehousing activities located at major transportation corridors, water and sewer infrastructure.

Objective B: Identify industrial park areas for heavy manufacturing and construction support activities.

Objective C: Require the developers to install appropriate utility infrastructure for commercial, business park, industrial park, master-planned communities, and mixed use developments.

Objective D: Encourage workforce training programs in Pahrump that develop occupational and technical skills needed by employers and establish a small business development program.

Objective E: Work with the Pahrump Chamber of Commerce and Economic Development Advisory Board on recruiting new retail businesses and growing existing businesses.

***Purpose***

The purpose of this policy is to assist the Pahrump Regional Planning Commission in pursuing economic diversification by providing support to existing businesses and attracting new industries that build upon Pahrump's strengths. Opportunities to accomplish this policy include:

- Attracting industries complementary to existing businesses, especially Nevada Test Site and Yucca Mountain Nuclear Repository;
- Marketing Pahrump as a regional distribution center at the axis of two major highways, and located near Las Vegas, Yucca Mountain, and the California border; and
- Promoting Pahrump's recreational opportunities, burgeoning senior facilities, rural atmosphere, and tourism opportunities.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to work with the Economic Development Authority of Esmeralda/Nye County, the Rural Nevada Development Center, the Nevada Commission on Economic Development, the Economic Development Advisory Board and the Pahrump Chamber of Commerce to achieve economic development goals by assisting in marketing Pahrump's strengths; identifying and attracting complementary businesses and industries; and identifying other areas for economic diversification.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to seek funding through Community Development Block Grants and other funding sources for necessary construction and improvement of infrastructure and services for industrial development.*

***Implementation Actions:***

Economic Diversification Initiative: On an on-going basis, the Pahrump Regional Planning Commission shall coordinate with the Nevada Commission on Economic Development, Nye County and the Pahrump Chamber of Commerce to support economic development projects.

Infrastructure Development: By the year 2005, the Pahrump Regional Planning Commission and Nye County shall apply for funding to study the feasibility of municipal water/sewer systems in employment areas, to develop plans to improve roads, and to encourage development of broadband technology and telecommunication networks.

**Goal 2: Plan for the orderly expansion of employment, retail and commercial facilities in targeted areas throughout the Pahrump Valley.**

Objective A: Continue to promote and support tourism in the Pahrump Valley.

Objective B: Provide commercial land uses around major transportation corridors and medium and high-density residential areas.

Objective C: Locate medical park facilities near the proposed Hospital site to facilitate access and share compatible resources.

Objective D: Designate large parcels of land for business parks, industrial parks, and medical park facilities, thus diversifying the economic-base and increasing the potential for employment.

***Purpose***

Analysis of existing land uses noted a lack of industrial and business park development. The purpose of these policies is to provide industrial land uses to bolster employment opportunities; to boost tax revenues and attract and sustain complementary businesses.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to allocate land uses for industrial and business park development, recognizing the importance of employment and economic growth.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to support the location of industrial and business parks at major arterials, community gateways and transportation hubs at the north and south ends of Pahrump.*

***Implementation Action:***

Zone Code Amendment: The Pahrump Regional Planning Commission shall amend the zone code to allow for specific categories for industrial and business parks. These categories will put in place design criteria that encourage noise and sight buffers, landscaping requirements, height restrictions, and support an overall environmentally friendly business area.

**Goal 3: Develop a skilled and trained workforce to market to potential new industries.**

Objective A: Provide a workforce training program with the collaboration of the Southern Nevada Community Collage and Nye County Schools.

***Purpose***

The purpose of this policy is to develop a trained and educated workforce, which will be a strong attraction for businesses and industries seeking to expand and relocate to the Pahrump Valley.

*Commercial Development along Highway 160*

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to support a variety of initiatives that will increase opportunities for workforce training. These initiatives include a feasibility study for the location of technical and vocational institutes within the Pahrump Valley, and working with the Community College of Southern Nevada, University of Nevada Cooperative Extension, Nye County Public Schools and the High Desert Youth Foundation to foster and expand workforce training programs. Public/private education initiatives between the Pahrump Regional Planning Commission and existing businesses shall identify careers and specialized skills needed as technological advances evolve and new skills are needed.*

***Implementation Actions:***

Education Access Initiative: On an ongoing basis, the Pahrump Regional Planning Commission shall seek funding for increasing access to institutions of higher education, as well as a feasibility study for locating a major technical, vocation institute, or campus expansion of the University of Nevada to Pahrump.

Workforce Training Initiatives: On an ongoing basis the Pahrump Regional Planning Commission shall assist Nye County and the State in establishing workforce training programs at Nye County Schools, and the Southern Nevada Community College, and shall assist and coordinate with appropriate private sector companies in applying for in-plant training funds.

**Goal 4: Pahrump will have a variety of transportation options for residents, and commerical interests alike.**

Objective A: Nye County and the Pahrump Regional Planning Commission continue to participate in discussions with the Town of Pahrump in its pursuit of a regional airport.

***Purpose***

The purpose of this policy is to support the development of a general aviation airport as a tool for economic development.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to continue support and planning for a general aviation airport to serve future needs, even if the location changes after further study.*

***Implementation Action***

Informational Outreach Campaign: The Pahrump Regional Planning Commission shall encourage an informational outreach campaign to educate the public about the benefits of general aviation in Pahrump, the types of planes, and uses associated with the airport, the economically beneficial impacts of complementary businesses, and noise abatement mitigation measures.

# 8. AIR QUALITY

## A. INTRODUCTION

Air quality is an important issue in the Pahrump Valley (Nye County is located within a portion of Hydrographic Area #162). The Pahrump Valley land use patterns, landforms and atmospheric conditions all contribute to make air pollution a health and environmental hazard. The pollutant that is of most concern is particulate matter less than ten microns in diameter ($PM_{10}$). Unless immediate measures are taken to limit and reduce this pollutant, which contribute to the health and environmental hazards, the Pahrump Valley will be declared nonattainment for $PM_{10}$.

## B. IMPACTS OF POOR AIR QUALITY

The overall impact of poor air quality includes an unhealthy environment for the residents, as well as diminished economic development possibilities. In an effort to proactively address the air quality problem in the Pahrump Valley, Nye County has entered into a Memorandum of Understanding (MOU) with the Nevada Division of Environmental Protection (NDEP) and the U.S. Environmental Protection Agency (EPA). This MOU requires that Nye County, and the NDEP implement specific measures by 2006 to reduce the $PM_{10}$ emissions in the Pahrump Valley. Under this MOU, Nye County, and the NDEP will develop a Clean Air Action Plan (CAAP) for the Pahrump Valley, which will outline all the air quality control measures to be implemented by Nye County and the NDEP. In addition, monitoring of the air quality will continue to be conducted by NDEP to demonstrate improvement in the air quality.

The Air Quality Element of the Master Plan outlines a series of policies and implementation actions that can be taken to reduce $PM_{10}$ emissions in the Pahrump Valley. These policies and implementation actions are part of the air quality control measures developed by Nye County, with the NDEP for incorporation into the CAAP. The air quality control measures in the CAAP are designed to bring the Pahrump Valley into compliance with the federal air quality standard, including the projected growth outlined in the Master Plan.

## C. AIR QUALITY STANDARDS

The Pahrump Valley currently exceeds the federal and state air quality standards for $PM_{10}$. Between January 2001 and December 2002 there were 21 violations of the 24-hour standard of 150 micrograms per cubic metric of air. The levels of the violations ranged from 154 to 528 micrograms per cubic metric of air. The following table depicts the source of the $PM_{10}$ emissions in 2001 and their percent contribution based on an inventory completed by NDEP.

## Table 6a Type of Source Percent Contribution of Total Emissions

| Type of Source | Percent Contribution of Total Emissions |
|---|---|
| MOBILE SOURCES | |
| Vehicle Exhaust Emissions - On Road | 0.0 |
| Vehicle Exhaust Emissions – Nonroad | 0.0 |
| Fugitive Dust - Paved Roads | 1.5 |
| Fugitive Dust - Unpaved Roads | 58.9 |
| VACANT OR DISTURBED LAND | |
| Fugitive Dust - Disturbed Vacant Lands | 28.3 |
| Fugitive Dust - Native Desert Lands | 9.7 |
| Fugitive Dust - Stabilized Lands | 1.5 |
| CONSTRUCTION ACTIVITIES | |
| Fugitive Dust - Construction | 0.1 |
| Fugitive Dust - Highways | 0.0 |
| FIRES | |
| Residential MSW Burning | 0.1 |
| Agriculture | 0.0 |
| STATIONARY SOURCES | |
| Permitted Sources | 0.0 |

The Air Quality Policies and Implementation Actions section of the Master Plan outlines a series of policies and implementation actions that can be implemented to reduce $PM_{10}$ to levels in conformance with the federal standard by 2009. The reductions in $PM_{10}$ emissions will be achieved through land disturbance controls, street dust control, and paving programs. Although there will be continued growth in the Pahrump Valley, the concerted efforts of the general public and state and local government in implementing the policies and implementation actions contained in the Air Quality Policies and Implementation Actions section will help ensure that Nye County's valuable air resources are protected.

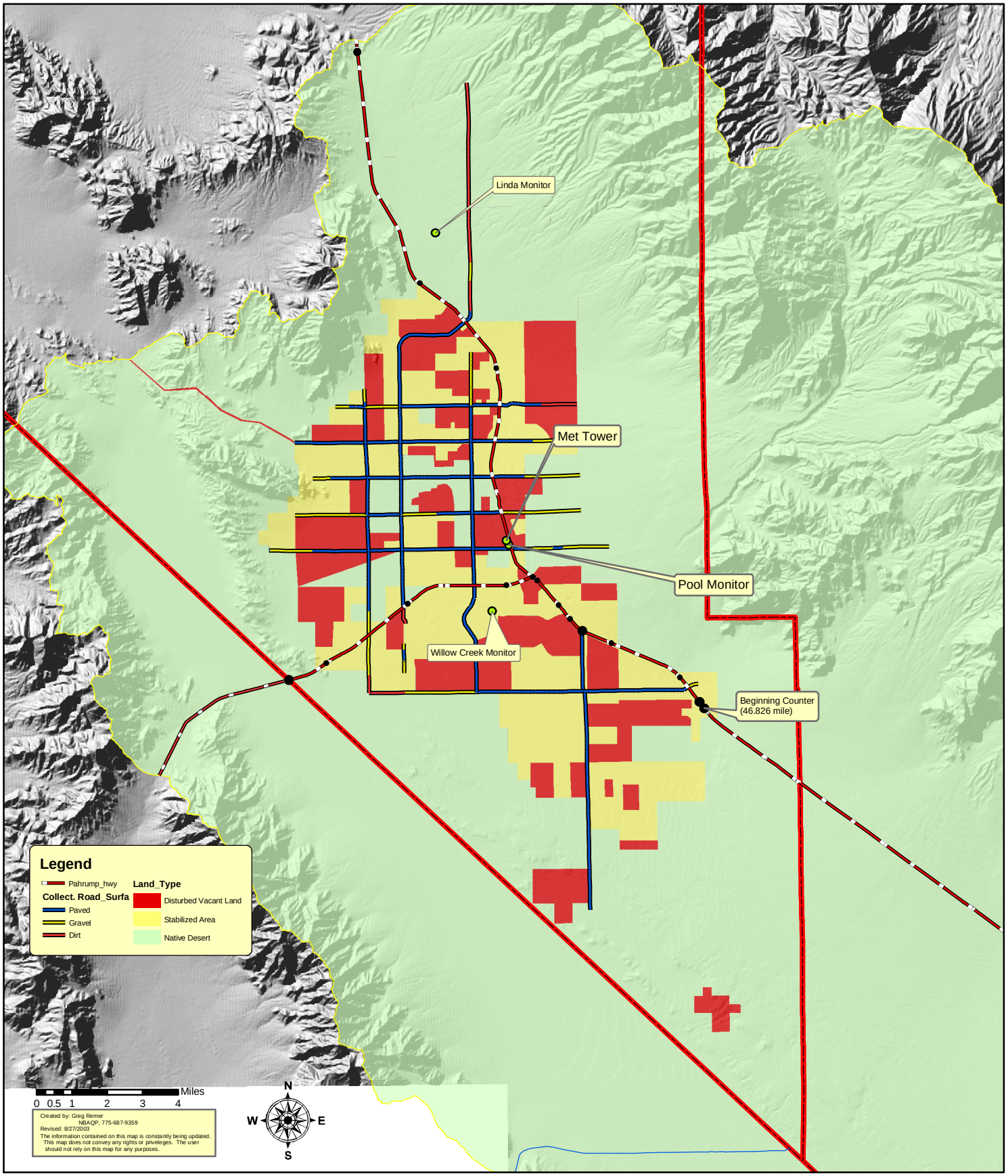
Photograph 1. Dirt Road

Photograph 2. Disturbed Land

Photograph 3. Dust generated from vacant lands

Photograph 4. Dust generated from construction site

# Nye County Fugitive Areas
# 2001 Baseline Inventory



The two major anthropogenic contributors to the $PM_{10}$ emissions are unpaved roads (Photograph 1) and disturbed vacant lands (Photograph 2). $PM_{10}$ emissions are also contributed from the native desert lands. $PM_{10}$ emissions from paved roads and stabilized lands are also minor contributors. This information has been used in the development of the goals and objectives, as well as the policies and implementation actions for the Air Quality Element. The map on the previous page identifies the location of the vacant land related to other lands within the Town of Pahrump and the Pahrump Valley. Photograph 3 shows the typical fugitive dust generated from vacant lands during high wind events. Photograph 4 shows the typical fugitive dust generated during construction activities.

## D. AIR QUALITY GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

The overarching air quality goal for the Pahrump Valley is to attain the federal air quality standard for $PM_{10}$ by 2009 and to maintain the standard thereafter. The NDEP established meteorology and air quality sampling stations that allow tracking of the air quality trends in the Pahrump Valley and alert Nye County of the need to implement additional air pollution controls.

**Goal 1: Improve air quality to levels necessary to protect public health and improve visual clarity.**

Objective A: Nye County should establish a program to pave unpaved roads by prioritizing paving of roads with either the greater use, or the greatest density of commercial, residential or industrial development.

Objective B: Prohibit the practice of parking in unpaved areas.

Objective C: Nye County should establish a process to close redundant or limited use roads.

***Purpose***

The purpose of these policies is to minimize the generation of fugitive dust. Due to fiscal and time constraints, roads that are most heavily traveled and nearest to commercial and residential facilities, as well as business and industrial parks, should be prioritized for paving.

*Policy 1: It is the policy of Nye County to establish a program to pave unpaved roads in the Pahrump Regional Planning District by prioritizing paving of roads with either the greater use, or the greatest density of commercial, residential or industrial development.*

*Policy 2: It is the policy of Nye County to require asphalt paving in all new master planned communities, industrial parks and business parks in the Pahrump Regional Planning District.*

***Implementation Actions:***

Nye County, together with the Town of Pahrump shall establish criteria for prioritizing the paving of unpaved roads in the Pahrump Regional Planning District.

Nye County shall incorporate into the land development permit process requirements to control parking in areas that are unpaved in the Pahrump Regional Planning District.

Nye County shall incorporate into the development code a requirement that all new subdivisions, master planned communities, industrial parks and business parks have paved access and paved parking areas in the Pahrump Regional Planning District.

**Goal 2: Mitigate fugitive dust and stabilize the land.**

Objective A: Nye County should develop a land clearing ordinance to prohibit uncontrolled clearing of land.

Objective B: Stabilize areas of disturbed vacant land and unpaved roads, by landscaping, paving or use of chemical dust suppressants or covers to reduce amounts of airborne particulates.

***Purpose***

The purpose of this policy is to stablilize the land. With a predominance of privately and county owned vacant and disturbed parcels, especially parcels that are disturbed and undeveloped, methods can be employed to mitigate fugitive dust and stabilize the land. In addition, there are a number of roads within Pahrump Valley that provide redundant access or are not necessary and could be closed to reduce fugitive dust.

*Policy 1: It is the policy of Nye County to coordinate with the NDEP to undertake a program to identify owners of disturbed vacant land in the Pahrump Regional Planning District in an effort to stabilize areas of disturbed vacant land and unpaved roads, through landscaping, paving or use of chemical dust suppressants or covers to reduce amounts of airborne particulates.*

***Implementation Action:***

Nye County shall identify lands that generate dust and the location of the parcels and the owner of record for the parcel to NDEP for their enforcement of the NDEP fugitive dust control requirements.

Nye County shall identify unpaved roads that provide redundant access or are not necessary to provide access and implement measures to limit use of those unpaved roads in the Pahrump Regional Planning District.

**Goal 3: Land development and construction activities are managed to limit the generation of fugutuve dust.**

Objective A: Construction activities should be managed to minimize the generation of fugitive dust.

Objective B: Development of vacant parcels within the urban core should be encouraged.

***Purpose***

The purpose of these policies is to mitigate the effects of fugitive dust and greatly enhance air quality in the Pahrump Valley. Disturbing lands during the development and building process is the major contributor to an increase of particulate matter in the air.

*Policy 1: It is the policy of Nye County to recognize the negative effects of construction activities on air quality and*

*manage construction activities to mitigate the generation of fugitive dust in the Pahrump Regional Planning District.*

*Policy 2: It is the policy of Nye County to encourage the development of vacant parcels within the established urban core in the Pahrump Regional Planning District.*

***Implementation Actions:***

Nye County shall require paved access to all land divisions or new developments other than individual single family residential units, in the Pahrump Regional Planning District.

Nye County shall incorporate into the land development permit process requirements for the control of fugitive dust in the Pahrump Regional Planning District.

Nye County shall develop a land clearing ordinance to prohibit uncontrolled clearing of large tracts of land in the Pahrump Regional Planning District.

Nye County shall implement an ordinance to prohibit the practice of business and commercial parking in unpaved areas in the Pahurmp Regional Planning District

**Goal 4: Minimize the effects of open burning and refuse burning.**

Objective A: Nye County should limit open burning and restrict refuse burning.

***Purpose***

The purpose of this policy is to protect the health of Pahrump residents. Although open burning and the burning of refuse is a very minor component of the emission inventory and controls would not appreciably affect attainment of the federal air quality standard, these emissions are a serious health issue. Open burning and refuse burning practices add to the amount of fugitive dust, especially during unstable weather conditions.

*Policy 1: It is the policy of Nye County to collaborate with the Townof Pahrump to adopt an ordinance that limits open burning and restricts or eliminates refuse burning, especially during times of seasonal weather that may exacerbate poor air quality.*

***Implementation Action:***

Nye County shall develop measures to limit open burning and restrict or eliminate the burning of refuse in the Pahrump Regional Planning District.

**Goal 5: Enhance public educational efforts concerning air quality issues, sources and solutions.**

Objective A: Nye County should develop educational outreach programs to teach air quality issues, sources, and solutions by collaborating with the NDEP and Nye County Schools.

***Purpose***

The purpose of this policy is to educate people about the causes of poor air quality and ways to improve air quality in the Pahrump Valley.

*Policy 1: It is the policy of Nye County to support the development of educational outreach programs to teach air quality issues, sources, and solutions by collaborating with the NDEP and Nye County Schools.*

***Implementation Actions***

Nye County shall coordinate with the NDEP on the dissemination of air quality educational information.

Nye County shall coordinate with the Nye County Schools on the development of school curriculum focusing on air quality.

**Goal 6: Manage stationary sources in the Town of Pahrump to meet the federal $PM_{10}$ air quality standard.**

Objective A: Nye County should require documentation of compliance with the NDEP air quality stationary source permit regulations as part of the issuance of land use development permits.

Objective B: Nye County should encourage the NDEP to establish and maintain meteorological and air quality sampling stations within the Town of Pahrump and report semi-annually on air quality trends.

***Purpose***

The porpose of this policy is to enforce documenting compliance and non-compliance.The Pahrump Valley is in danger of becoming a non-attainment area, as designated by the EPA. To prevent the area from reaching this status and subsequently having to comply with strict development and documentation standards, all goals, objectives, policies, and implementation actions in this Air Quality Element should be addressed.

*Policy 1: It is the policy of Nye County to document compliance with the federal $PM_{10}$ standard in the Pahrump Regional Planning District.*

*Policy 2: It is the policy of Nye County to encourage the NDEP to establish and maintain meteorological and air quality sampling stations within the Town of Pahrump and report semi-annually on air quality trends.*

***Implementation Action***

Nye County shall coordinate with the NDEP on the bi-annual presentation of air quality information and air quality trend for the Pahrump Valley.

Nye County shall coordinate with the NDEP on the installation and maintenance of meteorological and air quality sampling stations within the Town of Pahrump.

# 7 Community Design Plan

## 7. COMMUNITY DESIGN PLAN

### A. INTRODUCTION

The purpose of the Community Design Plan is to describe, accentuate and maintain the unique character that makes the Pahrump Regional Planning District a special place for residents, visitors and new business opportunities. Support for community character elements such as rural lifestyle, views and vistas, and architectural character will assist the Pahrump Regional Planning Commission in marketing and economic development efforts.

### B.COMPONENTS OF COMMUNITY DESIGN

#### *1. Billboards and Signage*

Most recently, community members have been active in efforts aimed at improving the image of Pahrump; beginning with billboards and signs located at the main entries into the Pahrump.

*Billboards along major roadways*

#### *2. Community Gateways*

Community Gateways are entry points into a community. Gateways welcome visitors, residents and passersby to the community. In the Pahrump Regional Planning District, there are four main vehicular gateways into Pahrump. The vehicular gateways are at north and south State Highway 160, State Road 372 on the west side, and Bell Vista at Warren Street. Gateways highlight certain aspects of a community, vary in size and design, as well as draw attention to the unique qualities of a community. Common gateway elements include informational kiosks, amenities such as landscaping and monumentation, public art, banners, flagpoles, recognizable logos or architectural elements. Designing and building gateways can enhance the sense of arrival to the community and improve the overall expansion of a community's character.

*Northern gateway*

#### *3. Zoning Compliance and Enforcement*

Zoning enforcement ensures compliance with the zoning ordinance. Zoning enforcement is important to maintain the health, safety and welfare of residents. Public nuisances, incompatible land uses, and substandard developments can detract from the community character. To protect public health, safety and wellfare, nuisance abatement through zoning compliance and enforcement is encouraged.

***4. Streetscaping***

Streetscaping is the term used to describe the practice of designing roadways to enhance the experience of pedestrians, bicyclists, and motorists through the use of landscaping, color, texture, massing and shading elements. It can also be used to reflect the desired image for the community. Streetscape design typically includes landscaping with shade trees, sidewalks and paths, planters, pedestrian oriented lighting, signage, benches, informational kiosks, trash receptacles, and planted medians. Many times public art becomes an interesting component of streetscape design. Employing these design features creates a more human, walkable community, in contrast to a stark and purely automobile-oriented corridor. It also helps to make pedestrians feel more secure and safe, while creating an edge to the street, and makes local businesses more inviting to visit.

*Lack of streetscape design*

## C. COMMUNITY DESIGN GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

**Goal 1: Practice good urban design to create an attractive, vibrant community.**

Objective A: Enhance the sense of community pride by creating a town center for mixed-use development, thereby generating commercial, residential, recreational and civic activities.

***Purpose***

The purpose this policy is to create good urban design. Urban Design is the practice of creating a "sense of place" in a community by designing the public realm. Good urban design promotes friendly, safe and diverse communities.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to promote the merits of streetscape design, design standards, public art, gateways etc., as components of community design.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to promote the creation a town center.*

***Implementation Action***

Infill Development: Vacant and disturbed lands should be priortized for development, especially when these lands are located within commercial, mixed use and medium density residential land use categories.

Design Charrette Process: The Pahrump Regional Planning Commission, in conjunction with the Town of Pahrump, and local stakeholders shall create a design charrette (workshop) to layout the configuration, land use, circulation and architectural design for a Pahrump Town Center generally located between the intersection of Highway 160 and Basin Avenue and Highway 160 and Highway 372.

Community Design Initiative: Develop standards for streetscape design, public art, gateways and other components of community design for use in design processes for gateways, roads and public places, including parks and recreational areas.

**Goal 2: Protect the views and vistas of the Pahrump Valley, particularly at vehicular gateways to the community.**

Objective A: Mitigate the cumulative visual effects of billboards and off-premise signs through zoning and design standards for community gateways and highway corridors, consistent with state laws.

***Purpose***

Billboards and other off-premise signs can create negative impacts to the views and vistas of a any community. Pahrump, being a rural community surround by numerous mountain ranges, has views and vistas unique to any other community in Nevada. Nevada Revised Statute 278.0215 provides for the removal of non-conforming signs at the time of development or redevelopment of a property.

*Benches and lighting for parks, open space and along roadways*

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to consider the the removal of off-premise, non-conforming outdoor advertising structures as a condition of approval for new development.*

***Implementation Action:***

Amend the Off-Premise, Non-conforming Sign Ordinance: The Pahrump Regional Planning Commission and the Nye County Board of County Commissioners shall consider amending the Off-premise, Non-conforming sign ordinance to require the removal of non-conforming off-premise signs at time of development or redevelopment of a property where these signs are located.

**Goal 3: The Pahrump Valley maintains its rural character, while providing for semi-urban development in appropriate areas of the community.**

Objective A: Maintain the rural lifestyle in Pahrump through the right to own domestic livestock on lots one acre or greater.

Objective B: Protect the scenic views of the Pahrump Valley through by requiring shielded source lighting.

***Purpose***

Preserving rural character is a priority for residents of Pahrump. Trails, open space, the ability to keep animals, a minimum amount of street lights and the absence of curb and gutter on access roads, the ability to see the stars in the night sky and native landscaping are qualities of the community character that contribute to the Town's rural atmosphere.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to consider the rural character of the community when making land use decisions by*

*allowing for the keeping of domestic farm animals on lots 1 acre or larger in size, and by maintaining the rural qualities of residential access roads and the dark night sky.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to require landscaping on all commercial, business park and industrial park developments, as well as along public rights-of-way to enhance and beautify the curb appeal. Landscaping requirements for drought tolerant and xeric plant materials is preferable given the climate and limited water supply.*

***Implementation Action***

Lighting Requirements: The Pahrump Regional Planning Commission shall consider lighting requirments for commercial and industrial properties. The intended outcome should be to require shielding and orientation of light fixtures, but not to restrict lighting in business districts such that commercial viability and safety are compromised.

Planned Unit Development Ordinance Amendment: The Pahrump Regional Planning Commission shall amend the Division of Land and Planned Unit Development Ordinance to include exterior lighting standards to protect the night sky. Additional amendments to the Division of Land and Planned Unit Development ordinance shall include a provision for the installation of drought tolerant landscaping on roadways and at gateways/entries by requiring a landscape plan approval for any Planned Unit Development.

Zone Code Amendment: The Pahrump Regional Planning Commission shall amend the zone code to specify the types and quantities of animals compatible with each residential zoning designation and necessary lot size.

**Goal 4: Pahrump will continue to be an aesthetically beautify place to live, work and play for all residents.**

Objective A: Create community gateways using streetscape improvments, public art, signage, landscaping and other techniques to welcome individuals to Pahrump.

***Purpose***

The purpose of the policy is to enhance community gateways and right -of-ways using landscaping, streetscape design and other beautification techniques.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to take a leadership role in the beautification of its community through streetscape design, gateway enhancement, and design schemes for creating a town center.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to collaborate with the Nevada Department of Transportation to provide streetscaping at the community gateways and to review applications for off-premise signs and billboards along State Highway 160 and 372.*

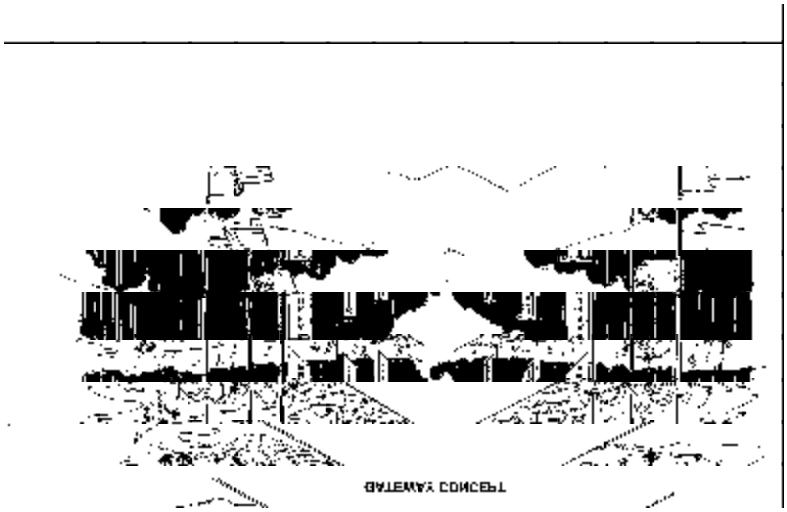
***Implementation Action***

Corridor Planning: The Pahrump Regional Planning Commission, together with the Nevada Department of Transportation, shall consider the concept of corridor planning for SR 160 and SR 372 to reflect context sensitive design principles, streetscape design, and aesthetic im-

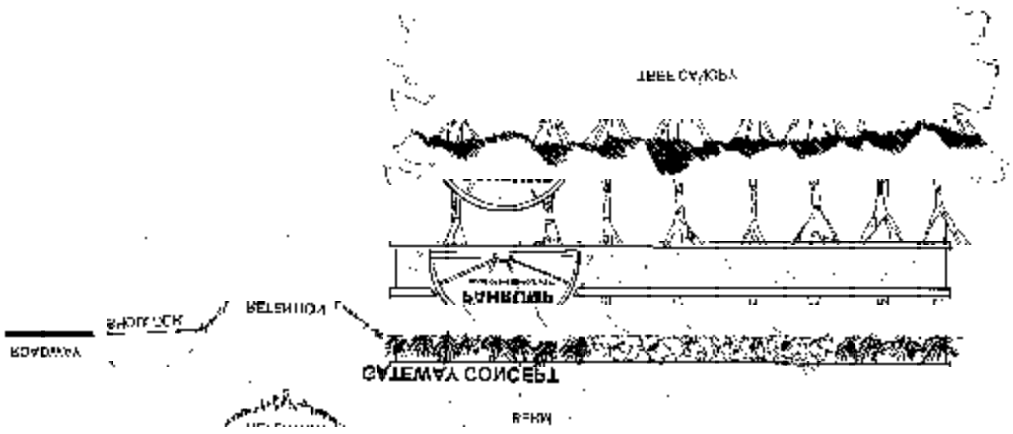
provements to enhance the economic, environmental, social and visual impacts of roadway design and maintenance.

Gateway Designation: Formally designate community gateways and promote the use of beautification techniques. Designate a gateway for beautification, and involve all interested individuals in the design, implementation and on-going maintenance of the gateway.

**Sketch 7a. Gateway Concept 1**



**Sketch 7b. Gateway Concept 2**



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8

# Community Facilities Plan

## 8. COMMUNITY FACILITIES PLAN

### A. INTRODUCTION

This section of the Master Plan Update addresses Community Facilities Plan, which includes the wide range of services and facilities that provide benefits for the local population through recreation, education, and health and safety services. These facilities include parks, open spaces, sanitary services and services such as the sheriff and fire departments. The level and quality of services provided are important aspects of providing and maintaining a quality of life for local residents. These facilities can be publicly owned or privately owned and/or maintained. In Pahrump there are many opportunities for expanding and improving these facilities. This section is intended to address issues related to these facilities and services. It includes an overview of existing conditions and issues and contains recommendations designed to address the community facility needs.

### B. EXISTING COMMUNITY FACILITIES AND SERVICES

#### *1. Parks*

The Town of Pahrump owns and maintains several parks and other associated recreation facilities. Funding for these facilities comes from a ½ of 1% room tax and funds from Nye County. Petrack Park is considered the main regional park for Pahrump and the largest park in the town. This park includes lighted outdoor ballfields, a permanent concession stand and three-year-old playground equipment. Simkins Park and Honeysuckle Sports Complex also received new playground equipment at the same time as Petrack Park. Honeysuckle Sports Complex hosts American Legion and Senior Little League play, and a skate park is currently being built at the complex. In addition, Pahrump owns and maintains the McCulloch Arena, which contains the town's rodeo grounds, a public swimming pool, and a community center (discussed further below). Table 8a on the following page summarizes each park's size, location, and facilities available.

*Mercy Air*

*Senior housing*

*Town ballfield and swimming pool*

**Table 8a: Local Public Parks and Recreation Facilities**

| Park/Facility | Location | Size | Facilities |
|---|---|---|---|
| Blosser Park | 2300 North David | 5 Acres | Backstop, open play fields |
| Honeysuckle Sports Complex | 1600 Honeysuckle Street | 20+ Acres | 4 ball fields with lights (used for little league, softball, and soccer), playground equipment, picnic tables, bathrooms, skate park, and barbeque facilities. |
| Petrack Park, Pahrump Community Pool, McCullic Arena, and Community Center | 150 N. SR 160 | 34.27 Acres (also includes PVFRS, shop, library annex, and Town Office) | 2 softball fields with lights, concession stands, playground equipment, bathrooms, two tennis courts, basketball court, auditorium, and meeting rooms. |
| Sean St. Park | 5321 N. Sean Street | 4.1 Acres | Undeveloped |
| Simkins Park | Simkins and Point Drive | 8.7 Acres | Playground equipment, bathrooms, grass area-practice field for soccer. |
| South Park | 3650 Kellogg Road | 80 Acres (Includes Fire Station #3) | 70 Acres for future regional park, undeveloped. |
| Tecopa Park | 5741 N. Tecopa Street | 4.4 Acres | Undeveloped. |

*Source: Town of Pahrump*

The community needs additional park and recreational facilities in the future. Approximate general locations for future parks have been noted by green asterisks on the land use map *(Please see Section 6, Land Use).* Specific locations are not proposed at this time, but Nye County and the Town of Pahrump should look for opportunities for future park development to occur in these general locations. The proposed locations were chosen based on proximity to other parks, to housing developments and to schools.

***2. Fairground***

The Town of Pahrump is currently developing a plan for the Pahrump/Nye County Fairgrounds on 427 acres of land near Dandelion Street and State Route 160. Funding is still being secured for the Fairground's project and it is currently in the first stages of development. Eventually, the facilities are expected to include ball fields, exhibit halls, and a rodeo arena. When complete, the Fairgrounds will be a major recreation facility for Nye County and Pahrump.

***3. Private Recreation Facilities***

Several private facilities offer educational and recreational services to Pahrump. These include an outdoor amphitheater that runs programs from mid-March through October, and 4 golf courses. All of the golf courses are privately owned and maintained but open to the public.

***4. Aging Services***

The Pahrump Senior Center provides for a wide range of senior service needs, including meals, hospice, transportation and meals.

A new senior center is planned that will increase the size of the facilities from 4,600 square feet to 19,000 square feet. Complete funding for the facility has not yet been secured.

Access to medical care for seniors is important to their well-being and quality of life. Although there are several clinics in Pahrump, seniors must travel to hospitals in Las Vegas or other urban areas for emergencies and more complex medical care. Future construction of the Pahrump hospital will greatly enhance the quality of life for seniors.

Three facilities in Pahrump offer nursing home and assisted living services. These facilities are further described in the Master Plan Background Document.

***5. Education***

Currently, the Nye County School District has jurisdiction over public schools in the Pahrump Valley. There is one high school, one middle school and, four elementary schools in Pahrump. A new facility on the high school grounds for freshmen, called the Ninth Grade Academy, is expected to open soon and has a capacity of between 300 and 350 students. The schools are summarized in Table 5b, including enrollment figures and estimated capacity for each school.

*Rosemary Clarke Middle School*

**Table 8b: Public Schools in Pahrump**

| School | Location | Enrollment | Estimated Capacity |
|---|---|---|---|
| Pahrump Valley High School | 501 E Calvada Blvd | 958 | 900-1000 |
| Rosemary Clark Middle School | 4201 N Blagg Rd | 993 | 1200 |
| Hafen Elementary School | 7120 Hafen Ranch Rd | 454 | 650 |
| Johnson Elementary School | 900 Jack Rabbit St | 493 | 450-500 |
| Manse Elementary School | 1020 E Wilson Rd | 442 | 450 |
| Mount Charleston Elementary School | 1521 Idaho St | 511 | 450 |

*Source: Nye County School District*

There are two post secondary educational institutions located in Pahrump. The Community College of Southern Nevada (CCSN) opened their Pahrump Valley Center (PVC) in 2001, which is adjacent to the Pahrump Valley High School. Among the programs offered at the PVC are two-year degree programs, workforce training and professional development programs, and preparation for transfer into four-year institutions. The Southern Nye County Extension office of the University of Nevada operates several non-degree programs in Pahrump. These include natural resources, agriculture, horticulture, community development, and youth programs.

***6. Library***

The Pahrump Community Library is a relatively new facility, only two years old. It is located at 701 East Street and is the only library in Pahrump.

Circulation and library use has been increasing and the most recent circulation numbers are 119,019 with an attendance of almost 94,953 per year.

***7. Fire and Rescue***

The Pahrump Valley Fire and Rescue Department provides fire protection, rescue and ambulance services to the Pahrump Valley and responds to approximately 5000 calls per year. The primary service area for the Department includes 400 square miles and has an average response time of six to seven minutes. There is an additional 200 square miles of service, outside of the primary area, that Pahrump Valley Fire and Rescue covers through mutual aid agreements.

There are currently four fire stations in the Pahrump Valley, and of these only one is staffed full time. Station #1 is the main station where all emergency calls come through, all ambulances are based and the only station staffed 24 hours a day. Each station and its location is summarized in Table 5c.

**Table 8c: Pahrump Valley Fire and Rescue Stations**

| Fire and Rescue Station | Location |
|---|---|
| Station #1 (Main Station) | 300 N. Highway 160 |
| Station #2 | 3030 West Bell Vista |
| Station #3 | 3650 East Kellog |
| Station #5 | 461 East Harris Farm Road |

*Source: Town of Pahrump*

There are approximately 30 full time fire fighters and support staff and approximately 30 volunteers. The Department operates over 20 vehicles that range from fire fighting and rescue vehicles, ambulances, support vehicles, and an antique fire engine used for special events.

There are approximately 700 fire hydrants in the Pahrump Valley. According to Pahrump Valley Fire and Rescue, this covers only 2-3% of their service area.

Currently the Department's facilities and equipment fall short of state and national standards, including National Fire Protection Association (NFPA) and Occupational Safety and Health Administration (OSHA) standards. This shortfall poses a risk to firefighter safety as well as community safety and well-being.

The Mercy Air helicopter, based at the Pahrump Medical Center, provides air ambulance services for the Pahrump Valley and the surrounding region.

A telephone survey of Pahrump residents indicated that 72% of residents would be willing to pay more in taxes in order to receive better fire protection. Since fire insurance ratings affect the cost of home insurance, and since fire protection is a basic public safety issue, it is not surprising that local residents want better protection and services.

***8. Sheriff***

The Nye County Sheriff's Department provides public safety services to the Pahrump Valley and has one sheriff's station in Pahrump. Types of enforcement activities include serving papers, serving convictions, civil matters, and warrant services. The operating budget for Pahrump Valley is approximately $10.1 million, which comes from Nye County. Additional funding comes from US Department of Justice (COP) grants.

The sheriff's department staff in Pahrump consists of 76 employees. Among the staff, the jail has nine officers and three civilians. There are an additional 54 officers serving the Pahrump Valley and dispatch has 10 employees. There are currently 14 full time, open positions in the sheriff's office for Pahrump. Average response time is approximately eight to eight and one half minutes and two to three officers are on active duty at any one time.

According to FBI standards for rural communities the sheriff's office is short of staff. The FBI suggests there be 2.4 officers and 3.3 support staff per 1000 population. Pahrump is currently at .7 officers per 1000 residents and Nye County is at .29 support staff per 1000 population. Since sheriff protection is a basic public safety need, Nye County should prepare an analysis of the current and projected shortfalls and develop a plan for future expansion of the Sheriff's Department in order to meet the federally-suggested staffing levels.

***9. Medical Facilities***

There are currently no hospital facilities in the Pahrump Valley. Pahrump residents commonly travel to Reno and Las Vegas for medical treatment not offered in Pahrump. There are, however, three medical clinics and other medical offices and services in Pahrump. These facilities include a range of physician's offices, dental clinics, and chiropractic clinics. A future hospital is scheduled, and when built, it will dramatically improve the quality of life and provide additional emergency medical services for residents.

## C. COMMUNITY FACILITIES GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

**Goal 1: Increase the availability of parks and recreational opportunities to enhance the quality of life for Pahrump residents.**

Objective A: Acquire lands for the creation of parks and recreational facilities both small scale (neighborhood parks) and large scale (community-wide recreational facilities greater than 40 acres in size) to fulfill future recreational needs of the community.

Objective B: Provide quality park and recreational facilities that include design requirements that provide for efficient long-term maintenance.

Objective C: Require Master-Planned Communities to design and build parks and recreational facilities as an integral part of their development.

Objective D: Develop recreational facilities for people of all ages to direct the community toward overall physical and mental wellness.

***Purpose***

The purpose of these policies is to help facilitate the expansion of parks and recreation facilities to meet these needs and provide appropriate, high quality parks and recreation facilities.

*Policy 1: It is the Policy of the Pahrump Regional Planning Commission to partner with Nye County in providing developers with density bonuses in exchange for dedication of land and development of neighborhood parks and open space in major subdivisions.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to collaborate with the Town of Pahrump to develop a Parks and Recreation Facilities Master Plan, which provides more detailed park and recreation facility planning. The Master Plan shall address the following issues; Development Standards for all park classifications; Comprehensive strategy for park acquisition; Planning, programming, management, funding, and financing for all parks and recreation facilities in the Pahrump Valley.*

***Implementation Action***

Park Development Density Bonus: The Pahrump Regional Planning Commission should work with Nye County Planning and Zoning to revise the Land Division ordinances to provide density bonuses, or other incentives in major subdivisions in exchange for neighborhood parks and open space.

**Goal 2: Provide public services, public facilities and infrastructure to adequately meet the needs of the Pahrump Valley through the year 2023.**

Objective A: Study the feasibility of impact fees or user fees to help recover the costs of new public facilities as the community grows.

***Purpose***

The purpose of this policy is to begin the process of studying the feasibility and pro-

cess for imposing impact fees in accordance with NRS 278B.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission and Nye County Board of County Commissioners to begin the process for studying the feasibility and use of impact fees in the Pahrump Regional Planning District.*

***Implementation Action:***

Impact Fees Study Group: The Pahrump Regional Planning Commission and the Nye County Board of County Commissioners shall establish an impact fees task group charged with reviewing NRS and the Nevada Administrative Code to learn about Impact Fees. This group shall research how other communities have implemented impact fees, the process for calculating impact fees and the usefulness of these fees and make a determination and recommendation about applying such fees in the Pahrump Regional Planning District.

**Goal 3: Ensure high quality educational services and facilities in the community through County and School district collaboration.**

Objective A: Work with Nye County School District to identify sites for new schools based upon their projected needs.

Objective B: Work with Nye County School District to improve School District utilization of library facilities.

***Purpose***

The purpose of this policy is to promote planning for educational facilities keeps up with population growth.

*Policy 1: The Pahrump Regional Planning Commission shall work with the Nye County School District to identify sites for the development of new schools so as to meet the future needs of the Pahrump Valley. Any land dedicated for future schools sites by individuals may be eligible for development bonuses.*

***Implementation Action***

School Facilities Plan: The Pahrump Regional Planning Commission shall coordinate with Nye County Public Schools to develop criteria for location of new schools and future expansions of existing schools by analyzing development and growth patterns.

**Goal 4: Provide an adequate level of law enforcement services and public safety to residents, visitors and businesses.**

Objective A: Provide the citizen's of Pahrump with an adequately equipped and a responsive Fire / Rescue Department in the most cost effective and efficient manner feasible.

Objective F: Prepare a long-term plan for increasing the Sheriff 's Department staffing levels to meet the federally recommended levels.

***Purpose***

The purpose of this policy is to improve these public safety services through identification of needs and sources of funding.

*Policy 1: The Pahrump Regional Planning Commission, the Town of Pahrump and Nye County shall explore mutual aid*

*agreements with other jurisdictions to ensure adequate fire/rescue coverage in the Pahrump Valley. Funding through grants and subsidies shall be explored and leveraged to contribute to the overall community safety in the area.*

*Policy 2: The Pahrump Regional Planning Commission and Nye County shall conduct a study to determine infrastructure needs that would improve fire/rescue and sheriff response times and improve their ability to operate.*

*Policy 3: The Pahrump Regional Planning Commission, Town Board and Nye County shall conduct a study to identify facilities, equipment and staff needed to ensure the Pahrump Valley Fire and Rescue Department meets the minimum standards recommended by OSHA, NFPA and other state and federal standards.*

***Implementation Action***

Sheriff and Fire/Rescue Initiative: On an on-going basis the Pahrump Regional Planning Commission, in partnership with Nye County, will identify new funding sources and determine necessary budgetary appropriations to ensure that the Sheriff and Fire/Rescue facilities, equipment, and staffing will be upgraded as necessary to meet and maintain state and national established standards for these services.

**Goal 5: The Pahrump Regional Planning Commission will continue to endorse the provision of hospital and medical facilities and senior services.**

Objective G: Encourage the construction of appropriate health care facilities and professionals for all the citizens of Pahrump.

Objective J: Ensure that appropriate senior services are provided that enhance quality of life and increase independence for the senior citizens. *(See Housing Section for additional goals and objectives related to Senior Services).*

***Purpose***

The purpose of the policy is to ensure medical services and facilities are developed in Pahrump.

*Policy 1: It is the Policy of the Pahrump Regional Planning District to partner with Nye County and private service providers to continue to encourage the development of hospital facilities in Pahrump that will meet the current and future needs of all citizens.*

***Implementation Action***

The Pahrump Regional Planning Commisison, together with Nye County will continue to participate in discussion regarding the public health and hospital facilities in Pahrump.

# 9 Transportation Plan

## 9. TRANSPORTATION PLAN

### A. INTRODUCTION

Nye County's vision for future traffic circulation systems will provide a network of transportation options that provide for safe and adequate traffic flow, while embracing the policies of the Land Use Element. Circulation system improvements will be implemented to improve mobility for all persons in the community, and incorporate design elements, which enhance the image of the community. Alternative modes of transportation such as biking and walking will be encouraged. The County will encourage innovative neighborhood designs that provide an integrated pedestrian and bicycle network that connects schools, residences, and employment areas through out the community.

The Transportation Element of the Pahrump Regional Planning District Master Plan Update identifies and establishes the policies governing the system of roadways, sidewalks, bike paths, and other components for the circulation system of the area. These elements collectively provide for the movement of persons and goods throughout Pahrump. The purpose of the Circulation Element is to establish an official Nye County policy that:

- Identifies the network of facilities required to serve anticipated vehicular and non-vehicular travel demand in Pahrump.
- Identifies the linkage between alternative modes of transportation and the development of the circulation system to establish feasible multi-modal and public transportation strategies.
- Identifies desired courses of actions or strategies, which provide the means to implement Pahrump's circulation system.

The Pahrump Valley continues to experience growing transportation demands as indicated by records obtained from the Department of Motor Vehicles and the Nevada Department of Transportation. There were 46,288 active vehicle registrations in Nye County as of January 2003, representing an increase of approximately 69% since 1993. Average Annual Daily Traffic (AADT) on State Highway 160 just south of State Road 372 has increased by approximately 55% since 1993 while AADT on State Road 372 just west of State Highway 160 has increased by approximately 89% since 1993. Understanding the existing transportation conditions and anticipating the future transportation needs of the community is vital in order to effectively accommodate the increasing transportation demands of Pahrump. This section identifies existing transportation conditions and outlines the goals, objectives and actions to be taken in developing a comprehensive transportation plan for Pahrump.

## B. PAHRUMP STREET AND HIGHWAY NETWORK

The existing transportation network in Pahrump centers around the primary north/south and east/west mobility corridors of State Highway 160 and State Road 372, respectively. These roadways and all intersections with these roadways are under the authority of the Nevada Department of Transportation. While significant sections of SR 160 and SR 372 are two-lane roadways with minimal shoulders, the Highways provide up to four travel lanes with full auxiliary turning lanes within the central business district of Pahrump. State Highway 160 provides direct access to Interstate-95 north of Pahrump and connectivity with Las Vegas to the southeast. State Road 372 provides a direct route into California.

There are two signalized intersections in Pahrump including the intersection of State Highway 160/State Road 372 and the intersection of State Highway 160/ Basin Road. Each of these signalized intersections provide a full complement of control technology including Opticom Priority Control System for emergency vehicles, pedestrian crosswalk signal heads, video detection systems and illuminated signage.

Aside from State Roads 160 and 372, the vast majority of existing roadways in Pahrump provide two travel lanes with stop sign-controlled intersections and minimal shoulders. Direct access has not been restricted to a significant degree on any of the roadways. The streets map on the following page illustrates existing roadways in Pahrump maintained by the State of Nevada and Nye County as well as non-County maintained roads.

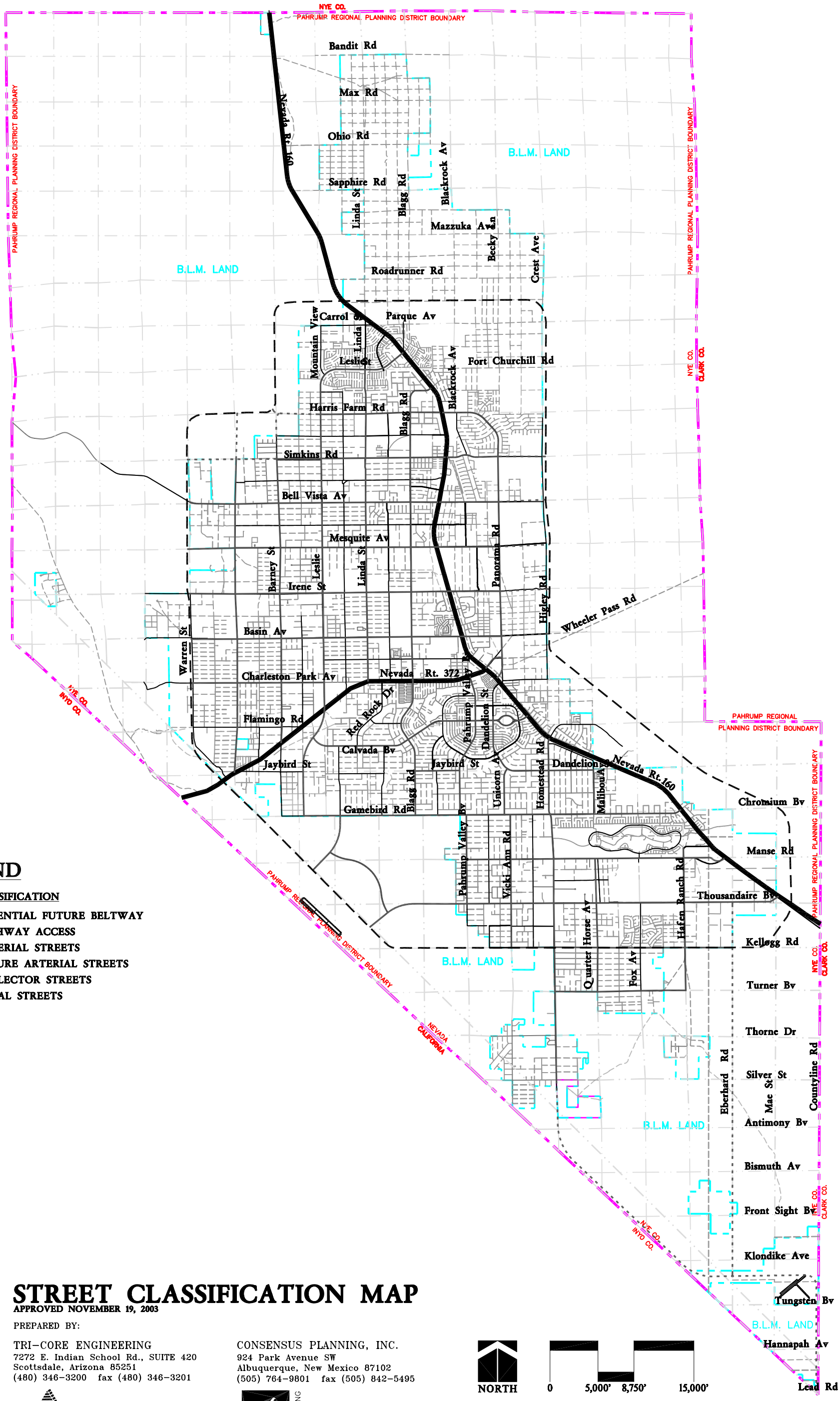
## C. EXISTING TRANSPORTATION PLAN

The *Nye County Street and Highway Plan* was completed in 1993 by Lumos & Associates, Inc. and included a recommended transportation plan for Pahrump as well as general roadway classification and cross-section standards applicable County-wide. The 1993 *Nye County Street and Highway Plan* includes the following definitions for a roadway classification system:

- *Urban Arterials:* Urban arterial routes serve the major activity centers of an urban area and consist mainly of the highest traffic volume corridors. These routes carry the most trips with an origin or destination within the urban area, including primary destination points for residential and commercial traffic.

- *Urban Collector:* The main purpose of streets within this system is to collect traffic from local streets in residential areas or central business districts and convey it to the arterial system. Collector streets usually go through residential areas and facilitate traffic circulation within residential, commercial and industrial areas.

- *Rural Collector:* The rural collector routes generally serve travel of primarily intra-county rather than statewide importance. These routes serve traffic generators of intra-county importance such as shipping points, county parks, and important mining and agricultural areas. Additionally, they link towns with routes of higher classification and primary destination points for residential and commercial traffic.




# STREET CLASSIFICATION MAP

**APPROVED NOVEMBER 19, 2003**

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PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE

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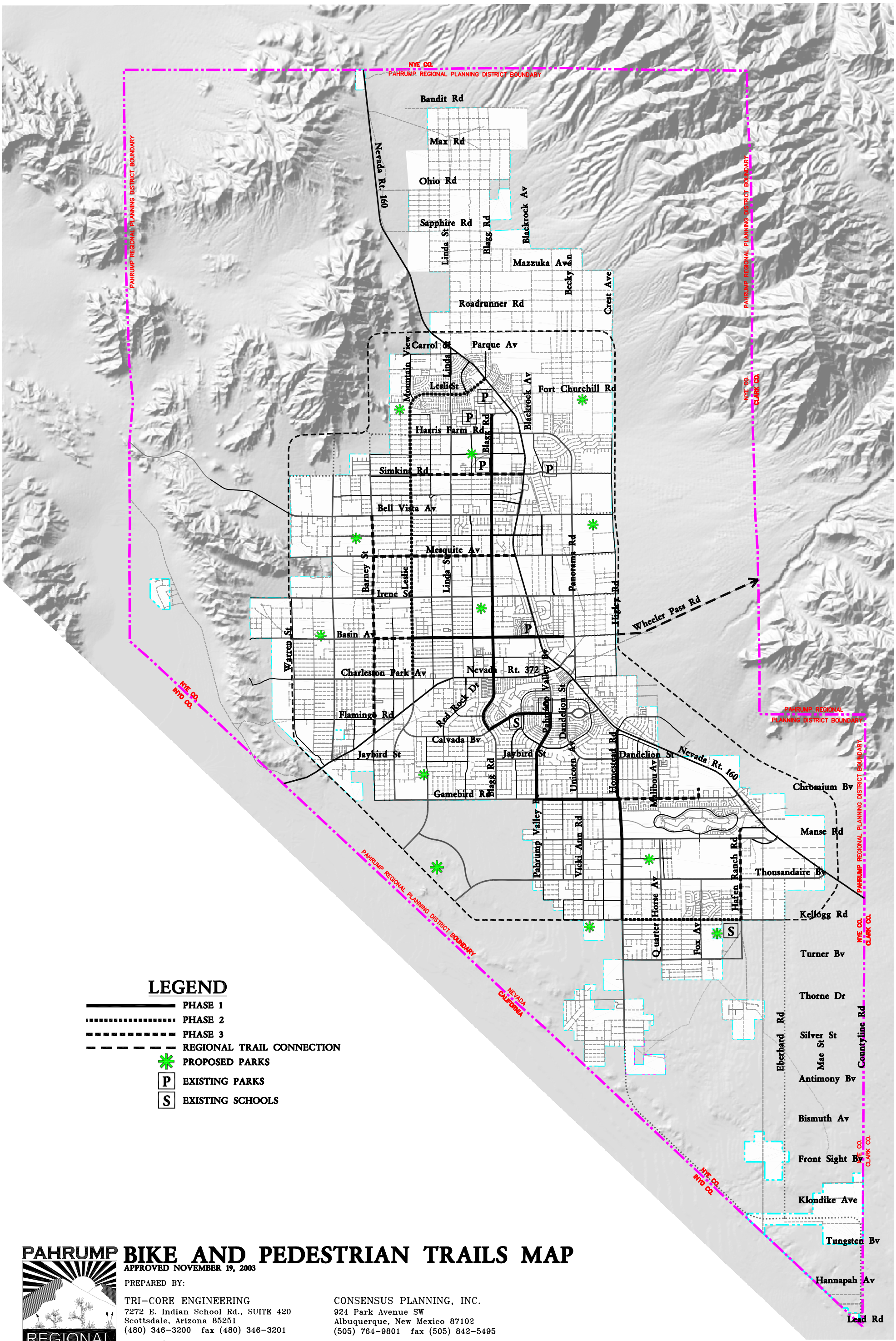
## PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE
## NYE COUNTY, NEVADA




## LEGEND

- PHASE 1
- PHASE 2
- PHASE 3
- REGIONAL TRAIL CONNECTION
- PROPOSED PARKS
- P EXISTING PARKS
- S EXISTING SCHOOLS

# PAHRUMP BIKE AND PEDESTRIAN TRAILS MAP

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PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE

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NORTH

0 5,000' 8,750' 15,000'

# PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE
## NYE COUNTY, NEVADA

- *Urban Local:* The primary purpose of these streets is to provide access to abutting land and connection to the collector streets. Through traffic is deliberately discouraged on these streets.

- *Rural Local:* The rural local road system primarily provides access to land adjacent to the collector network.

The *Pahrump Regional Planning District Division of Land and Planned Unit Development Ordinance* defers to the *Nye County Street and Highway Plan* and the aforementioned roadway classification system for new development within the Pahrump Valley.

## D. NON-MOTORIZED CIRCULATION

Non-motorized circulation, including bicycling, walking and equestrian modes can provide efficient and enjoyable means of transportation and recreation for people of all ages. Pahrump has numerous opportunities to establish bikeways, pedestrian and equestrian facilities along streets, utility easements, drainage corridors, and scenic off-road areas.

## E. AIR TRANSPORTATION

Nye County commissioned an airport site selection study for the Pahrump Valley, which was completed by Aries Consultants Ltd. in March 1987. The study was part of a County-wide Airports Master Plan study and included the analysis of two Airport sites: Site A which is the existing airstrip north of the center of town, and Site B south of Gamebird Road and West of Pahrump Valley Boulevard. The report indicated that the Pahrump Town Board voted to recommend the selection of Site B as the Airport site. Site B is located on land under the jurisdiction of the Bureau of Land Management.

Since the time of the approval of Site B, the BLM has requested moving the site to a different location in order to protect two plant species (Honey Mesquite and Pahrump Valley Buckwheat) and a bird species that lives in them. The Pahrump Town Board agreed to move the site and a new site, called Site C, was chosen. The location of Site C was finalized in 2000 and is in the same general area as Site B. SIte C is shown on the Land Use Map and designated an Airport Study Area.

The Pahrump Town Board has received a grant from the Federal Aviation Administration (FAA) to prepare an Airport Master Plan for Site C. Nye County discontinued its pursuit of constructing an airport in Pahrump and the Town Board has taken on the project.

## F. TRANSPORTATION GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

**Goal 1: Promote a transportation system of arterial, collector and, local streets capable of accommodating the anticipated travel demands of the Pahrump Regional Planning District in a safe, efficient manner.**

Objective A: Develop a hierarchy of roads that recognizes the importance of the use and function of each roadway classification.

Objective B: Design roadway standards for arterial, collector, and local streets that reflect anticipated travel volumes based upon development densities and the unique rural and urban character of the Pahrump Valley.

Objective C: Acquire right-of-way to expand the roadway network by widening highly traveled and centrally located roads.

Objective D: Develop a network of arterial streets that provide a high level of mobility for local and through traffic with restricted access to adjacent properties.

Objective E: Specify appropriate guidelines regarding driveway access points, street intersection spacing and corner clearance to maintain efficient and safe traffic flow in the Streets and Highways Master Plan.

Objective F: Establish a series of collector roadways that distribute traffic to and from neighborhoods to arterial streets without encouraging through traffic.

Objective G: Ensure that local streets in Low and Very Low Density Residential areas (1 acre minimum lot size or greater) enhance the rural character of Pahrump through the development of a rural road standard.

***Purpose***

The purpose of the following policy is to meet the growing transportation demands of the Pahrump Valley. Maintenance and expansion of a transportation network that includes arterial, collector and local streets will be necessary.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to develop a Transportation Master Plan in collaboration with Nye County, Las Vegas and Clark County.*

***Implementation Action:***

Traffic Study and Transportation Master Plan: The following sequential steps should be taken in developing a traffic study and Transportation Master Plan for Pahrump:

- Conduct traffic volume counts throughout Pahrump including 24-hour counts on critical existing and proposed arterials and peak-hour turning movement counts at critical intersections.
- Calculate full-buildout trip generation based upon projected land uses and densities.
- Identify existing traffic distribution patterns and anticipate future circulation needs.
- Perform Level of Service calculations for all critical intersections with existing and future traffic volumes. Provide recommendations for infrastructure improvements required to maintain acceptable Levels of Service.

- Develop a complete hierarchical roadway classification system based upon existing traffic volumes, anticipated future trip generation and current roadway classifications for Nye County. The classification system will include detailed access limitations contingent upon Average Daily Traffic volumes.
- Develop roadway construction standards including typical cross-sections based upon the completed hierarchical roadway classification system. All roadway standards will be in conformance with the America Association of State Highway and Transportation Officials (AASHTO) and will be based upon functional classifications as well as estimated future traffic volumes. Where appropriate, the typical cross-sections will include accommodations for non-motorized modes of transportation such as bike lanes, sidewalks and roadside equestrian trails.
- Develop a Capital Improvement Program (CIP) structure that can accommodate the findings and recommendations of the Traffic Study as well as the findings and recommendations of the Lumos and Associates update to the Nye County Street and Highway Plan.
- Assist in the pursuit of a comprehensive feasibility study for a general aviation airport.

**Goal 2: Continue the study of merits and drawbacks of air-service for the Pahrump Regional Planning District among neighborhoods and stakeholder groups.**

Objective A: Complete the Federal Aviation Administration study for a general Aviation Airport at the previously selected site in Southwest Pahrump.

Objective B: Develop air service compatible with the surrounding land uses in accordance with the recommendations and guidelines of the Federal Aviation Administration study.

Objective C: Provide for the vital economic and transportation-related future of Pahrump by either expansion of the existing private airport or creation of a new airport.

***Purpose***

The purpose of the following policy is to ensure communication and informed decision making among the various stakeholders in the development of air-service in the Pahrump Valley.

*Policy 1: It is the policy of the Pahrump Regional Planning District to participate in discussions with the Federal Aviation Administration, Nye County, the Pahrump Town Board, the Bureau of Land Management, neighborhood groups, and other stakeholders regarding land use mapping and zoning in areas around the proposed airport site.*

***Implementation Actions:***

Airport Task Force: In coordination with the Airport Planning Director create a task force that includes the Pahrump Regional Planning District, the Federal Aviation

Administration, Nye County, the Bureau of Land Management, neighborhood groups and any other stakeholders. The Task Force will continually meet, communicate issues and make recommendations on relevant actions to air-service development for the Pahrump Valley.

**Goal 3: Provide non-motorized modes of transportation through the use of bicycle and pedestrian pathways, and equestrian trails.**

Objective A: Facilitate the use of alternative, non-vehicular modes of transportation by establishing specific and conceptual bicycle corridors throughout Pahrump.

Objective B: Promote the development of equestrian trails as a safe and convenient mode of transportation and recreation.

Objective C: Establish specific and conceptual trail corridors throughout Pahrump.

Objective D: Connect specific and conceptual trail corridors to community facilities, existing trail networks, appropriate federal land, and clusters of horse properties.

***Purpose***

The purpose of these policies is to provide Pahrump residents with non-motorized modes of transportation through the use of bicycle and pedestrian pathways and through equestrian trails. Such transportation options will provide opportunities for recreation, fitness and alternative, non-vehicular modes of transportation.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission that bicycling shall be encouraged to provide a safe and healthy alternative to automobile transportation in Pahrump.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission that the following types of bicycle facilities shall be identified in the Streets and Highways Plan.*

- *Bike Path - A bike path is a special pathway designated for the use of bicycles (and pedestrians) where cross flows by motorists are minimized. Bike paths are usually buffered from vehicular roadways by the use of a landscape strip or physical buffer. Bike paths may be totally separated from roadways, and utilize drainage easements, utility corridors, linear parks or other easements for the path. Some areas may have paved paths while others may consist of natural material or other surfaces.*
- *Bike Lane - A bike lane is a paved lane on the shoulder of a roadway that is marked for bicycle use only. Bike lanes may be found on arterial and collector streets, and are marked to alert both bicyclists and motorists that each is sharing the roadway. Bicycle lanes may be established on arterial roadways with sufficient pavement width to allow for the safety of the bicyclist.*
- *Bike Route - A bike route is a roadway identified as a bicycle facility by signs only. Bike routes may be identified on local streets, and collector*

*streets where traffic volumes are modest.*

*Policy 3: It is the policy of the Pahrump Regional Planning Commission that when determining location of bike paths, lanes and routes as well as equestrian trails on selected streets the following factors shall be considered in the most appropriate location for bikeways.*

- *Street Classification*
- *Pavement width*
- *Number of traffic lanes*
- *Average daily traffic volumes*
- *Posted speed limits*
- *On-street parking*

*Policy 4: It is the policy of the Pahrump Regional Planning Commission that all new arterial and collector streets shall have improved sidewalks within the public right-of-way on both sides of the street when the street is built to ultimate specifications.*

*Policy 5: It is the policy of the Pahrump Regional Planning Commission that, where appropriate, off-road trails shall accommodate horseback riding.*

***Implementation Actions:***

Non-motorized Transportation Guidelines: The Pahrump Regional Planning Commission shall prepare minimum design guidelines for non-motorized transportation infrastructure and trails.

Trail Corridor Identification: The Pahrump Regional Planning Commission shall identify and designate a comprehensive network of trail corridors based on connectivity of community facilities, existing trails and the locations of horse properties.

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# 10. PUBLIC SERVICES AND FACILITIES PLAN

## A. INTRODUCTION

Nye County, in order to adequately provide for the health, welfare, education, and safety of the citizens of Pahrump, now and in the future, must develop a comprehensive approach to providing sewage, drainage, utilities, right-of-way easements and facilities. Nye County will work towards ensuring those necessary community facilities and services will be available as growth occurs. Management and delivery of services and facilities should be progressive, creative, and cost-effective.

The Public Services and Facilities Plan identifies and establishes the County's goals, objectives, and policies relative to the provision of utilities and public infrastructure in Pahrump. Nye County is keenly aware of the benefits of master planning and the effects it has on preservation of the environment, resident lifestyles, economic well-being of residents, and economic development within Pahrump. The master plan is intended to be used as a tool to provide services to existing residents and businesses as well as new development within Pahrump. Master plans of these facilities do not exist but are necessary to quantify existing system capacities, develop a plan for future expansion, and to prepare a strategy to connect the existing facilities into one municipal system.

The purpose of this section is to establish an official policy which:

- Provides for a coordinated system of infrastructure and public services to adequately serve Pahrump.
- Identifies standards for infrastructure and public services relative to population, land use intensity, and locational criteria.
- Identifies desired courses of action or strategies, which provide the means to implement the community's infrastructure and public services policies.

Expansion of infrastructure and public services should be coordinated between Nye County, the Town of Pahrump and private service providers to provide maximum benefit to all end users. The potential to utilize creative financing techniques in the provision of utility facilities and public services for economic development purposes should be evaluated. Adequate levels of public safety should be maintained commensurate with growth.

## B. WATER DISTRIBUTION

### *1. Municipal Water System*

Currently there is no municipal water system or master plan for Pahrump. It is recommended that a master plan be developed based on a municipal water system. Existing

subdivisions either construct/operate their own system or the subdivision consists of large lots capable of drilling individual wells. There are over 9,255 wells in Pahrump Valley. The master plan area currently has four existing utility service areas serving existing/future developments. The four service areas are:

- Desert Utilities Inc. (Desert Trails)
- Pahrump Utility Company (Hafen Ranch)
- Mountain Falls Subdivision Area (Mountain Falls)
- Public Utilities Inc. (Calvada)

It should be noted that even though these private water companies have a service area associated with each of them, centralized water service is not provided throughout the service areas. Each service area has associated production wells, storage facilities, and distribution mains. The remaining areas are served by either individual domestic wells or the land is vacant.

A Water System Master Plan for Southern Nye County and Pahrump would provide Nye County a guide for the expansion of and connection of the numerous existing water systems in Pahrump. Pahrump would benefit from a water system capable of supplying and distributing potable water of high quality and fire protection to all points of demand at acceptable pressures. Such a system is dependent upon a strong network of trunk water mains complemented by properly sized and strategically located supply and storage facilities. This type of system requires the planning and design that a master plan provides.

A Water System Master Plan based on the most reliable information presently available is necessary to ensure that adequate facilities are provided during the anticipated growth of Pahrump and to allow flexibility for future improvements. Without proper planning, haphazard and piecemeal construction can result in either undersized or oversized facilities. Either condition is very costly to a community since a water main that is too large is not fully utilized, while a main that is too small will eventually have to be paralleled. A Master Plan will minimize these problems and will establish continuity in the development of an ultimate system by serving as a guide for future expansions and additions.

Such a plan would present a water supply and distribution system for build-out of the Pahrump Regional Planning District. The plan would recommend a combination of supply, storage, and distribution system improvements that will adequately serve the planning area both near-term and projected ultimate conditions. It is anticipated that new developments in areas that are designated Very Low Density or Rural Residential will never be a part of a centralized water system and will be serviced by individual domestic wells.

## C. WASTEWATER AND SEWER SYSTEM

### *1. Existing Conditions*

Currently there is no sewer master plan for Pahrump. Existing subdivisions either construct/operate their own system or the subdivision consists of large lots capable of supporting an individual septic system. The master plan area currently has four existing utility service areas serving existing/future developments. The four service providers are:

- Desert Utilities Inc. (Desert Trails)
- Pahrump Utility Company (Hafen Ranch)
- Mountain View Subdivision Area (Mountain Falls)
- Utilities Inc. (Calvada)

Each service provider has associated sewer collection and treatment facilities. Treatment facilities range from a septic type system to a sewage treatment plant using the treated effluent for irrigation of a golf course.

The Nye County Water Resources Plan (WRP) estimates that as many as 20,000 additional individual septic systems might be installed in Pahrump over the next 50 years. The potential for groundwater contamination caused by the large number of individual septic systems is greatly increased. In addition, in areas that contain collapsible soils there is further risk of ground water contamination. Groundwater is the sole source of potable water for Pahrump and contamination of that source is detrimental to the preservation of the environment, resident lifestyles, and the public safety of all residents.

#### *2. Expansion of Sewer Facilities*

In order to serve new development in the Town of Pahrump, expansion and extension of sewer facilities will be required. In addition, it may be advantageous to create a single municipal sewer system to ensure continuity in sewer design and operation, and for providing sewer service to the smaller lot areas of the entire town. In order to plan for the expansion and extension, it is recommended that a Wastewater Master Plan be developed. The Wastewater Master Plan would provide Nye County a guide for utilizing existing treatment facilities, development of new treatment facilities, and will ultimately reduce the number of individual septic systems that may be constructed in the Town of Pahrump. This plan would be flexible enough to absorb some changes in planning and development patterns. Periodic review with updates showing the relationship of construction of facilities to future planning would be required. Without proper planning and management of the sewer system, contamination of groundwater and the environment is a distinct possibility and needs to be addressed.

### D. FLOOD CONTROL

#### *1. Existing Conditions*

Currently there is no flood control plan for the Pahrump. Pahrump Valley has a typical low-altitude desert climate with hot summers and arid conditions. Precipitation maps from the USDA Natural Resources Conservation Service indicate that the study area receives an average precipitation of 4.5 inches per year. Droughts of more than 100 days are common and are expected in the valley. According to the Nevada Floodplain Management Program, flood hazards in Nevada are typically underestimated due to the arid climate, few perennial streams, and low precipitation. Unlike some areas of Nevada, the Town of Pahrump has experienced several flash floods over the years.

Existing Flood Control Studies include a Section 205 Study by the Army Corp of Engineers for Pahrump Valley requested by Nye County Department of Public Works in June 1993. This study was commissioned to determine if there is any Federal interest to build a flood control project in Pahrump Valley. This study

looked at seven dry washes that contribute to the flooding problem. Of the seven, only Wheeler Wash was significant enough to warrant further investigation. Wheeler Wash has a tributary area of 90.6 square miles and a 100-year discharge of 9200 cubic feet per second. This basin is similar in size and discharge rates to a basin in the Las Vegas Valley which in the past, received Federal monies for improvement. This study concluded that due to the large undeveloped portions of Pahrump, there was not enough benefit to warrant expenditure of Federal monies. However, the study did indicate if further development in Pahrump were to occur, the Army Corps of Engineers could re-evaluate the project and its justifications. The Army Corps of Engineers is currently revising the study and should be completed by the end of 2003. Information from this Flood Control Study will be incorporated into the Flood Control Master Plan.

***2. Area Drainage***

It is recommended that Nye County develop an Area Drainage Master Plan for the entire Valley in conjunction with the Flood Control Master Plan that will be produced in conjunction with the Pahrump Regional Master Plan Update. The Area Drainage Master plan will make suggestions to reduce flood hazard potential, minimize flood damage, and to protect public safety. Elements of the plan will include:

- Hydrological analysis of the Town of Pahrump to identify watershed areas and quantity of runoff, flows and volumes, and areas subject to flood hazards.
- Incorporation of the Section 205 Flood Control Study prepared by the Army Corps of Engineers study for Wheeler Wash.
- Computer modeling of the hydrology of the Town of Pahrump to determine runoff quantities.

## E. PUBLIC SERVICES AND FACILITIES GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

**Goal 1: Provide water master planning to ensure potable water supplies/facilities are provided to all residential and non-residential structures in the community.**

Objective A: Identify sites for future municipal water treatment plants.

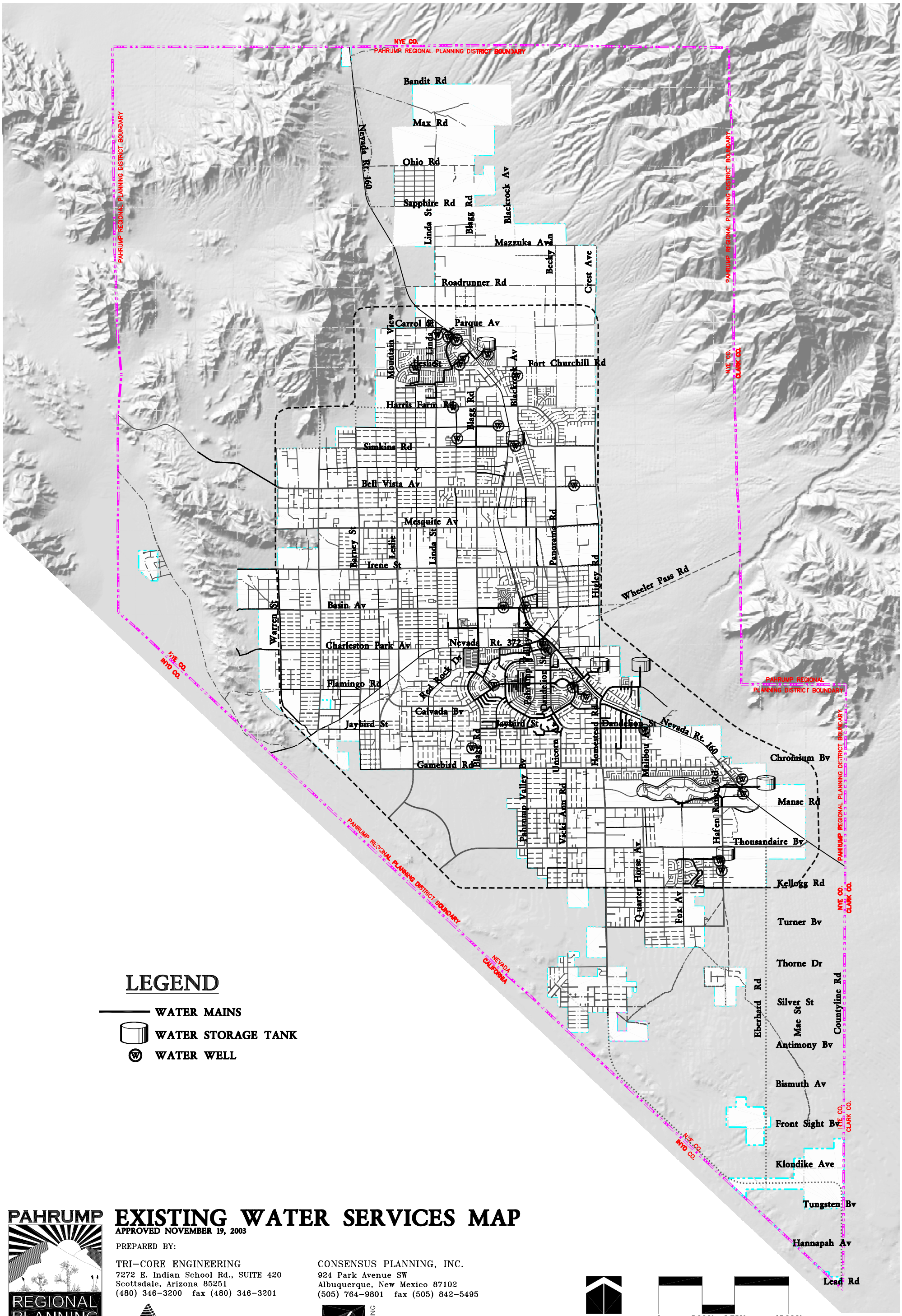
Objective B: Examine the possibility of connecting the existing private water systems to make one municipal system.

Objective C: Utilize computer software for modeling of the water system hydraulics (Cybernet or other program) to analyze existing facilities and map future facilities.

Objective D: Create GIS mapping of the existing and proposed facilities.

***Purpose***

The purpose of the following policies is to meet the projected water demand for Pahrump. This includes providing the community with high quality potable water, assuring adequate distribution and flow of water for fire protection, and in developing programs to conserve water.




## LEGEND

- WATER MAINS
- WATER STORAGE TANK
- WATER WELL

PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE

# EXISTING WATER SERVICES MAP

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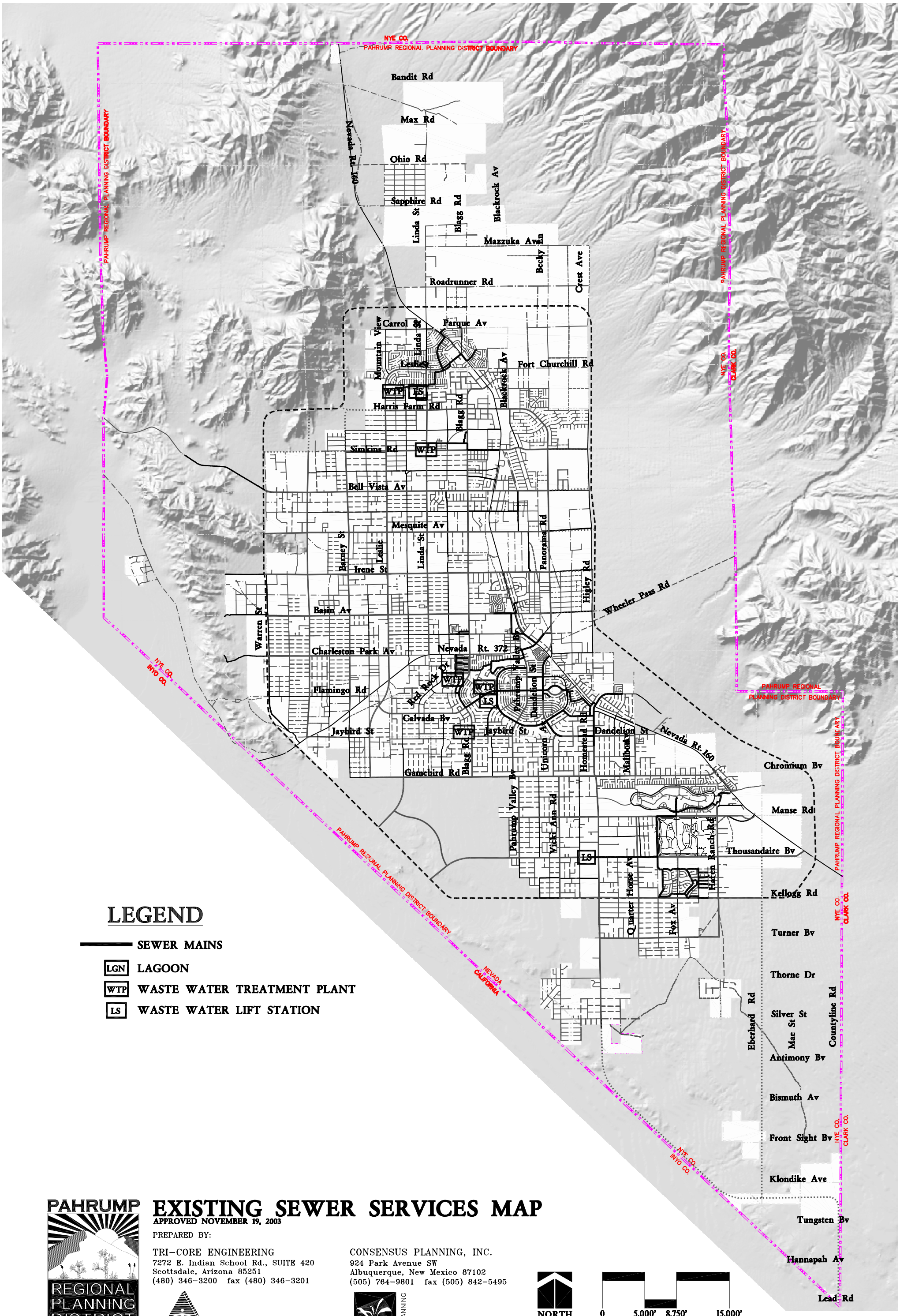
# PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE
# NYE COUNTY, NEVADA




# LEGEND

- SEWER MAINS
- LGN LAGOON
- WTP WASTE WATER TREATMENT PLANT
- LS WASTE WATER LIFT STATION

PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE

# EXISTING SEWER SERVICES MAP

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# PAHRUMP REGIONAL PLANNING DISTRICT MASTER PLAN UPDATE
## NYE COUNTY, NEVADA

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to coordinate planning efforts with the private water providers to identify priority areas in Pahrump for potable water facility expansion and upgrading.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to require that new developments provide adequate potable water infrastructure facilities and, that could eventually connect with a main potable water distribution system.*

*Policy 3: It is the policy of the Pahrump Regional Planning Commission that private water providers shall coordinate with the Pahrump Fire Department to ensure that water distribution facilities are adequately sized to accommodate fire flow requirements.*

*Policy 4: It is the policy of the Pahrump Regional Planning Commission to cooperate with the State and the private water providers in water conservation efforts.*

*Policy 5: It is the policy of the Pahrump Regional Planning Commission to cooperate with the private water providers to develop standards for the sensitive integration of potable water facilities, such as pump stations and well sites within Pahrump. Such standards may include buffering from adjacent development, screening of facilities, provision of access for maintenance and integration with desert landscaping.*

*Policy 6: It is the policy of the Pahrump Regional Planning Commission that new master planned areas and non-residential lands be connected to a community water system.*

***Implementation Action:***

Water Distribution Master Plan: The Pahrump Regional Planning Commission shall take the necessary steps to develop a Water Distribution Master Plan. The necessary steps are outlined below.

- Develop a Water Distribution Master Plan, which will include a water model, inventory of existing facilities, and an estimate of future needs. This plan will allow Nye County to assess implications of one municipal water system and to project future costs of system upgrades.
- Utilize GIS to develop mapping and an inventory of the existing facilities.
- Pursue the creation of a Water Conservation and Public Awareness Program as suggested by the Nye County Water Resources Plan.
- Discuss creation of a single municipal water system for Pahrump.
- Discuss creation of a Utility Extension Policy to ensure developments are required to connect to the municipal water system.

**Goal 2: Provide adequate sewer collection services to residential and non-residential structures in the community and to protect groundwater and environmental quality**.

Objective A: Determine and prioritize where sanitary sewer services should be extended to accommodate existing and proposed developments.

Objective B: Identify sites for future municipal sewer treatment plants.

Objective C: Explore alternate collection systems to provide cost effective service to 1-acre lots located in the Low Density Land Use Designation.

Objective D: Examine reclaiming treatment plant effluent for irrigation purposes.

Objective E: Reduce the number of individual septic systems.

Objective F: Nye County shall utilize a variety of policies to ensure that adequate sewage collection and treatment facilities are provided to all residential and non-residential structures in the community.

Objective G: Nye County shall develop regulations to address problems with septic tanks in areas of hydro-collapsible and expansive soils.

***Purpose***

The purpose of the following policies is to provide adequate sewer collection and wastewater services to Pahrump, and when feasible, use effluent for irrigation as a means of conserving water resources.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to review sewer hookup fees for residential units in order to establish and maintain a reasonable fee for sewer system hookup.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission that, whenever feasible, effluent shall be used for irrigation of parks, open space, golf courses, and landscaping in the public right-of-way.*

***Implementation Action:***

Wastewater Plan: The Pahrump Regional Planning Commission shall take the necessary steps to develop a Wastewater Plan. The necessary steps are outlined below.

- Develop a Wastewater Master Plan, which will include a sewer model, inventory of existing facilities, and an estimate of future needs. This plan will allow Nye County to assess implications of one municipal sewer system and to project future costs of system upgrades.
- Utilize GIS to develop mapping and an inventory of the existing facilities.
- Create a Public Awareness Program for groundwater contamination by individual septic systems.
- Discuss creation of a single municipal sewer system for the Town of Pahrump.
- Discuss creation of a Utility Extension Policy to ensure developments are required to connect to the municipal sewer system.

**Goal 3: Provide flood control planning to minimize flooding, protect existing and future structures, and protect property values.**

Objective A: Develop a Flood Control Master Plan that includes identification, delineation, and analysis of watersheds, time of concentration, rainfall intensity, runoff quantities, flood control methodolo-

gies to limit property damage, and strategies to delineate flood hazard areas.

Objective B: Explore methods to finance flood control projects.

Objective C: Discuss possibility of using storm water runoff as a resource.

Objective D: Utilize information in the Flood Control Plan to develop strategies on obtaining federal monies for flood hazard mitigation.

Objective E: Address drainage through a drainage ordinance, which would require total on-site retention of stormwater in new developments. On-site retention should require, that on-site runoff does not combine with peak runoff occurring during a storm event that would increase the threat of flooding. The overall effect of the drainage ordinance would be to cause runoff from development to be intercepted and retained on-site, thereby reducing stormwater runoff off-site and the need for costly municipal improvements.

***Purpose***

The following policies are intended to provide watercourse and stormwater flood control facilities to Pahrump. These steps are necessary to protect structures and property values from the impacts of flooding.

*Policy 1:It is the policy of the Pahrump Regional Planning Commission to identify the conceptual locations of watercourses and stormwater flood control facilities necessary to serve the District for the next 20 years.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to ensure that the development of watercourses and stormwater facilities be limited to flood control, recreational uses such as golf courses, playfields and other similar types of uses which are compatible with periodic inundation by stormwater.*

***Implementation Action:***

Flood Control Plan: The Pahrump Regional Planning Commission shall take the necessary steps to develop a Flood Control Plan. The necessary steps are outlined below.

- Utilize information developed in the Flood Control Plan to develop a plan that identifies future storm water improvements, ponding areas, diversion channels, etc.
- Coordinate with the Army Corps of Engineers and other Federal and State Agencies to identify and request funding for design and construction of recommended improvements identified in the plan.

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# 11. GEOTECHNICAL PLAN

## A. INTRODUCTION

The County, as well as various consultants, have performed a Phase I geotechnical evaluation to assess the presence and extent of moisture-sensitive (expansive and settlement-prone) soils and reported failed leach field, or individual sewage disposal system (ISDS), issues in Pahrump, Nevada. The Phase I evaluation also included formulation of recommendations regarding a subsurface exploration program, which will be performed as part of a future Phase II evaluation. Phase I and Phase II studies, which will provide geotechnical recommendations and guidelines for incorporation into the Adequate Public Facilities Plan, are intended to reduce the potential for adverse geotechnically related effects on planned future development. This report provides findings and preliminary conclusions and recommendations of the Phase I study.

## B. GEOTECHNICAL GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

The Background Document covers a significant number of issues related to the geotechnical studies completed in Pahrump. Please refer to that document for more detailed information.

**Goal 1: Recognize the importance of maintaining safe and healthy environments within areas of the Valley exhibiting moisture sensitive soils.**

Objective A: Impose requirements for geotechnical studies and/or percolation tests before issuance of building permits, within areas of the Valley prone to moisture sensitive soils.

Objective B: Prohibit the construction of ISDS units in areas of the Valley prone to moisture sensitive soils, unless adequate depths and size of leach field, the amount of sufficient drain gravel, and adequate placement of percolation pipes is determined by a geotechnical study before the time of construction.

***Purpose:***
The purpose of this policy is to protect the health, safety and welfare of Pahrump residents.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to minimize the number of ISDS systems in areas with mositure sensitive soils.*

***Implementation Action:***
Development Review: Applications for building permits for new construction within areas of moisture sensitive soils will require development review and approval prior to construction. A development review process shall be outlined in the Zoning Ordinance.

**Goal 2: Enhance the quality of new construction in Pahrump Valley by reducing the potential for soil-related damage to man-made improvements.**

Objective A: Improve and strengthen public agency requirements regarding; 1) design geotechnical evaluations for new construction and, 2) quality assurance/quality control observation and testing performed during site grading operations.

Objective B: Provide specific recommendations regarding design geotechnical evaluations to be performed during site development.

Objective C: Provide specific recommendations regarding geotechnical services provided during site grading.

Objective D: Educate homeowners, developers, contractors, and other stakeholders regarding expansive, settlement-prone, and corrosive soils, and geologic hazards in Pahrump Valley.

***Purpose***
The purpose is to reduce possible adverse structural affects associated with soil-related damage.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to become educated about soils in the Pahrump Valley.*

***Implementation Actions:***
Adequate Public Facilities Plan and Zoning Ordinance: Provide specific geotechnical recommendations regarding design and construction of future ISDSs int he Zoning Ordiance and Adequate Public Facilities Plan. These recommendations will address percolation testing methodology, data required for ISDS permitting, and other engineering-related issues.

# 12. WATER RESOURCES PLAN

## A. INTRODUCTION

This water resource section of the Master Plan Update focuses on the major water issue to be faced in the Pahrump Valley: the quantity and quality of water available for growth. Water will be the critical factor in the future development of the Valley and considerable effort is required during the master planning process to accurately describe and quantify what water supplies are actually present in the Pahrump Basin.

The two reference documents for this water resource plan are:

- Nye County Water Resources Plan, dated February 2002, written by Tom Buqo, Consulting Hydrogeologist

- Southern Nye County Ground-Water Evaluation Proposal, dated July 2003, from the Nye County Department of Natural Resources and Federal Facilities

## B. EXISTING WATER SUPPLY CONDITIONS

Information from the Pahrump Basin portion of the overall Nye County Water Resource Plan (WRP) gives a baseline of existing Pahrump groundwater supply conditions upon the master plan update has been based on the following:

### *1. Water Quantity and Use Figures*

The only significant source of groundwater in the Pahrump Valley is the valley-fill aquifer, basically the top several hundred feet of the valley floor and alluvial fan:

- The perennial yield figure for this valley-fill aquifer is presently 19,000 acre feet of water (an “acre foot” is 325,851 gallons)
- The U.S. Geological Survey has set the perennial yield as the amount of water that can safely be pumped without affecting the aquifer level. It is based on estimations of the absorption and underground flow of precipitation in the Spring Mountains - the only source of water for recharging the aquifer.
- The current population of approximately 30,000 people is using about 23,000 acre feet of water per year
- Basin water rights issued by the State currently total about 69,000 acre feet
- The WRP projects a Pahrump population of 150,000 people by year 2050
- These 150,000 people will use 80,000 acre feet of water per year (at a per capita rate of 486 gallons per day averaged over all domestic, municipal, and industrial uses).

These usage figures show that the Pahrump Valley is in an aquifer overdraft situation that may only worsen as the Valley's population continues to grow.

***2. Effects of Over-Drafting the Aquifer***

The WRP documents and projects a steady drop in the level of the aquifer water table of from one to three feet a year for the next 20 years. Over time, the declining water level will eventually cause:

- Domestic well pumps to be lowered
- Wells to be re-drilled deeper
- Damage from ground settling and cracking ("subsidence and fissuring")
- Degradation in water quality from higher concentrations of mineral deposits
- Death of native mesquite trees whose roots can no longer reach water
- Loss of the trees as a habitat for several species of birds and animals

***3. What are the Alternatives?***

To meet the projected water demand in Pahrump, the WRP concludes that one or a combination of the following alternatives will have to be implemented:

- Managed overdraft of the valley-fill aquifer with wells added on the alluvial fan supplying recharge wells on the valley floor in areas prone to subsidence
- Development of the deep carbonate aquifer that underlies the basin to redistribute existing withdrawals or to supply injection wells in subsidence areas
- Importation of water into the valley from other basins
- Implement conservation measures to reduce per capita water use

***4. Potential Sources of Imported Water***

Nye County has applications pending with the State Water Engineer to appropriate 34,000 acre feet of groundwater from basins North of Highway 95 (on several sites South of Yucca Mountain and the Test Site). Tentative plans call for sharing this water with the Amargosa Valley such that Pahrump would receive about 25,000 acre feet of that 34,000 acre feet distribution. The applications have been protested by Federal agencies and it will likely be several years before they are resolved.

Conceptually, water could also be imported from the Colorado River system and conveyed to Pahrump by pipeline or aqueduct. There are significant issues to overcome in obtaining a share of this contentious South West resource.

The financial obstacles to either alternative are daunting. Casual estimates in the WRP are $100 million to move water from North of Highway 95 and as much as $500 million to access Colorado River water.

***5. What is the Water Rights issue?***

A State-issued water "right" gives the owner guaranteed use of an acre foot of water per year (afy) from the specified basin for a specified purpose. The present value of a water right in the Pahrump Valley is $2000-2500 per afy on the valley floor and $3500-4000 per afy on the alluvial fan.

In the early 1900's, when the State first issued water rights for the Pahrump Basin to encourage it's settlement, it overissued the quantity of water rights compared

to the actual water in the basin. Thus we have 69,000 water rights owned for the use of the safe perennial basin yield of 19,000 acre feet of water.

Simplistically, If all of these outstanding water rights were actually exercised and used, the valley-fill aquifer would steadily be drained down and most domestic wells would eventually be disabled.
The "water rights issue", then, is one of the fundamental ownership rights of the water rights holders versus the negative impact on the community when these rights are exercised "for beneficial use".

***6. Potential Water Quality Issues***
At the present level of the water table, the overall quality of the groundwater in Pahrump is considered to be quite good.

The valley-fill aquifer, however, is most vulnerable to contamination from the ever increasing number of Individual Sewage Disposal Systems (ISDS). The WRP projects an additional 25,000 septic systems will be added to the present 8,000+ ISDS as build-out of the valley occurs. In a number of areas, septic tank density per square mile already greatly exceeds State guidelines.

A lesser threat of contamination comes from the downward migration of agriculture fertilizers and pesticides in irrigated areas. This threat is diminishing over time as agricultural land uses decline.

***7. Recommendations of the WRP***
To address the issues of water demands and development constraints, the WRP made the following recommendations for the Pahrump basin in Feb 2002 (quoted here):

- "Water wells should be selected for long-term monitoring and water levels should be monitored on at least a biannual basis at these wells."
- "A basin-wide water quality survey should be conducted to identify problem areas and monitoring requirements. Water wells should be identified for sampling and chemical analysis and funding from state and federal agencies should be sought to pay for the costs of sample collection, packaging, shipping, and analysis."
- "Local utilities should be encouraged to adopt conservation practices similar to those already being employed by Central Nevada Utilities." (now Utilities Inc.)
- "Coordinate more detailed planning with the Nevada Division of Water Resources."
- "Continue the dialog with the National Park Service and Fish and Wildlife Service concerning the likely impacts of increased water use in the basin."
- "Discussions should be held with the Division of Water Resources concerning the perennial yield of the basin."
- "Conduct a cost and feasibility study to determine if the water supplies in Pahrump can be supplemented with water withdrawn from adjacent basins north of Highway 95 or from the Colorado River."

Subsequent to the submittal of the WRP to the Nye County Commissioners, the second reference document, the Southern Nye County Ground Water Evaluation Proposal, was prepared. It proposes a comprehensive set of investigative actions to implement a number of the WRP recommendations.

The essence of this proposal and of the WRP recommendations can be found in the specific goals, objectives, policies, and implementation actions now documented in this water resource plan.

***8. Administrative Strategies for Water Resource Management***

The WRP concludes with an extremely important chapter that discusses ways of organizing administratively to address and manage the many complex regional water resource issues to our advantage. WRP Chapter 7 compares options under the NRS for forming one of several types of water management agencies:

- General Improvement District(s)
- Water Planning Commission
- Regional Water Authority
- Water Conservancy District

Selection of the most effective organization for the Pahrump Valley is critical since much of Nye County's success at water resource management (particularly water importation) will depend on the ability of this organization to negotiate with a number of federal agencies and other counties in Nevada and California. Several options for taking legal action are also discussed in this chapter of the WRP.

## C. WATER QUANTITY GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

The following goals and objectives that follow address planning measures related to determining the quantity of water available for future development and contingency planning in case water supplies fall short of demand:

**Goal 1: Conduct a comprehensive, scientific evaluation of the quantity of ground water in the Pahrump Basin to better define the water usage, aquifer recharge situation, and the effects of over-drafting the basin.**

Objective A: Thoroughly characterize the water yielding capacity of the shallow, valley-fill aquifer where most of the existing 10,000 domestic wells draw from.

Objective B: Investigate and measure water consumption in the valley to determine realistic per capita gallons per day usage figures for domestic, municipal, and industrial uses.

Objective C: Utilize existing deep wells and conduct a deep aquifer drilling program to evaluate the potential for water supply wells down to 1000 feet.

Objective D: Review existing geophysical survey data and determine if a very deep test boring program is warranted to explore for usable aquifers between 3000 and 5000 feet.

***Purpose***

The purpose of these policies is to understand the water quality and ascertain water availability.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to base the understanding of future groundwater capacity on sound, scientific investigations.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to utilize the Nye County Natural Resources and Federal Facilities Department (NRFF) to coordinate and manage these investigations.*

***Implementation Actions:***
Shallow Aquifer Characterization: Under the July 2003 Groundwater Evaluation Proposal, the NRFF, it's consultants, State agencies, and U.S. Geological Survey scientists will:

- Expand well monitoring and metering to measure the water table level in every Map Section of land within the Pahrump Valley.
- Evaluate the use of recharge basins and injection wells to sustain water table levels.
- Conduct pump-down testing and permeability measurements and update the regional water flow model.
- Establish a land subsidence and fissuring measurement program.
- Expand the quantity of meteorological monitoring stations in the Southwest Spring Mountains to collect higher-elevation recharge precipitation data.
- Investigate how better estimates of the perennial and safe recharge yields can be made.

Deep Aquifer Drilling Program: To explore for sources of water beneath the valley-fill aquifer, the Groundwater Evaluation Plan also proposes to:

- Complete the geological mapping of surface and subsurface formations to 1000 feet.
- Survey existing deep wells in the Valley and collect data from any new deep wells as they are drilled.
- Construct at least four new 1000 deep test borings and monitoring wells in strategic locations.
- Determine if a very-deep drilling program beyond 1000 feet is warranted.

**Goal 2: Water rights will be quantified, investigated, and protected.**

Objective A: Investigate and present data summarizing the overissue of water rights for the Pahrump Valley.

***Purpose***
The purpose of these policies is to determine water allocation and water availability in the Pahrump Valley.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to objectively summarize the overissued water rights situation and propose potential solutions based on the scientific studies made available to them.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to protect existing domestic wells and the wells of private water utility companies from being disabled if all existing water rights are exercised.*

*Policy 3: It is the policy of the Pahrump Regional Planning Commission to also protect the ownership interests in these presently unused water rights.*

***Implementation Action:***
Public Education: The Pahrump Regional Planning Commission shall work with the State Water Engineers Office and local citizens to publish a "Pahrump Basin Water Rights Status Report" that explains the issues in detail and discusses the impact of potential solutions.

Responsibility for Solutions: If it is determined that legislative action is required to implement an equitable solution to the water rights issue, the Pahrump Regional Planning Commission will coordinate the preparation of Legislative Bill Drafts in a timely manner.

**Goal 3: Understand the alternatives to groundwater, such as importing water, in the Pahrump Valley.**

Objective A: Study and maintain a database of information pertaining to the costs of importing water to facilitate a knowledge exchange with regional experts on water use.

***Purpose***
The purpose of these policies is to study the costs of importing water and to maintain a repository of information for public use.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to construct and maintain a comparative database of all proposals for importing water into the Pahrump Basin such that the database is recognized and used as the source for accurate information on water importation.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to use the technical expertise and project estimation skills of the Nye County Natural Resources and Federal Facilities Department in creating and maintaining this database.*

***Implementation Action:***
Database Content: The intent of the database is to encourage a common content between proposals so that they may be evaluated in a consistent manner. The content would include:

- Long-term capacity of the source.
- Implementation plan for the transfer.
- Required approvals, agreements, and legal obstacles.
- Cost and financing options.
- Construction schedule

Great care must be taken to ensure that importation proposals accepted into the database be credible, realistic to achieve, and accurately estimated as to cost, schedule, and long-term viability.

## D. WATER QUALITY GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

**Goal 1: Protect the quality of Pahrump Basin groundwater.**

Objective A: Manage the potential sources of ground water contamination with a basin-wide Wellhead Protection Plan for public water supply systems.

Objective B: Monitor the quality of private domestic water supplies through a test sampling program.

Objective C: Review and improve all design codes, construction pro-

cesses, and inspection procedures to ensure that the increasing numbers of new ISDS do not add contamination risk.

Objective D: Generate an ISDS Maintenance Ordinance that requires regular inspection and repair of existing septic systems to keep them in proper working order.

Objective E: Prepare a "Groundwater Contamination Response Plan" to educate the community as to what measures will be forced by the State Health Department when a neighborhood becomes contaminated.

***Purpose***

The purpose of these policies is to protect groundwater from contamination through monitoring and public education.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission to monitor at least 100 private wells in areas of high septic system densities or in locations near agricultural land.*

*Policy 2: it is the policy of the Pahrump Regional Planning Commission to adopt proactive ISDS regulation policies.*

*Policy 3: It is the policy of the Pahrump Regional Planning Commission to provide materials and workshops on the proper use and maintenance of septic systems and to emphasize the expensive consequences of ISDS failure.*

***Implementation Actions:***

The test sampling program will also include data from several monitoring wells constructed specifically for this study. All samples collected from monitored or private wells will be analyzed for common mineral constituents and characteristics. Samples from certain strategic locations will received an extended analysis for contaminants of concern from a drinking water perspective.

New ISDS Installations: All open issues on multiple-input tanks, soils testing, inspection procedures, and enforcement responsibilities need to be resolved. Clear guidelines and regulations then need to be published to guarantee the proper installation, use and maintenance of new ISDS systems.

Existing ISDS Installations: Recent focus on the occasional lack of rigor in previous ISDS installations suggests that it might be prudent for the Pahrump Regional Planning Commission to mandate a general inspection and evaluation of existing systems - particularly in the areas of highest septic system density.

Education Materials: The Pahrump Regional Planning Commission should use and propagate the excellent materials from the University of Nevada Extension workshop on how septic systems function, why they fail, and how they should be used and maintained. First-time septic system owners in particular need to understand the need for managing the "health" of their ISDS.

Consequences of Failure: ISDS owners in general should be given descriptions and typical cost estimates for the work

involved in replacing a failed leach field or resetting the septic tank of their individual system.

**Goal 2: Protecting water resources in the Pahrump Valley will become a proactive pursuit for residents and elected officials alike.**

Objective A: Form a water management agency within the Pahrump Regional Planning District.

***Purpose***
The purpose of this policy is to mitigate a future water crisis through planning and administrative involvement.

*Policy 1: It is the policy of the Pahrump Regional Planning Commission and the Nye County Board of Commissioners to avert a future water crisis through the formation of a water management agency with the charter and authority to address and resolve regional water planning issues.*

***Implementation Action:***
The effort to investigate how to best to organize administratively and involve input and counsel from many places:

- Citizen groups
- Domestic well owners
- Water right owners
- Water planning consultants
- Utility system owner/operators
- Community Advisory Boards
- Southern Nye County Conservation District
- NV Division of Water Resources
- NV Division of Environmental Protection
- NV Bureau of Health Protection Services
- Several federal land stakeholders in Nye County
- Builders and Developers

Considerable information on the workings of regional management agencies in other areas can be found in the Nevada State Water Plan of March 1999. A target date in early-2006 is suggested for plan approval by Nye County in case State Legislature action is required.

13

# Solid Waste Plan

## 13. SOLID WASTE PLAN

(This Plan is from the 1999 Pahrump Regional Planning District Master Plan, and has been updated with current information)

The Pahrump Valley Landfill is located east of Highway 160 at 1631 East Mesquite Avenue and serves the current landfill needs of the Pahrump Valley. The landfill is a Class-I facility that takes in around 178 tons per day of solid waste from residential, commercial, and approved industrial sites (when approved) to serve a total population of approximately 40,000. A significant portion of the solid waste is from construction and demolition waste. The landfill is operated by Nye County and the Town of Pahrump franchises collection of solid waste to a private vendor who charges $25 for three months of service. In addition, there is currently a fee of $30 per parcel that supports the landfill. The operating budget for the landfill, not including capital improvements, is about $1,000,000 per year. Currently planned recycling, waste diversion, and use of alternate cover are expected to extend the life of the landfill to 2010.

On July 2, 2002, the Nye County Board of County Commissioners directed staff to idenitfy a suitable location to site a regional landfill with adeaqute capacity to serve the southern communities for 50 to 75 years. The Public Works Department has tentatively identified a site located north of Lathrop Wells near the Nevada Test Site. A Recreation and Public Public Purpose Act (R&PP) application has been filed with the Bureau of Land Management for the Lathrop Wells site. Cost analyses recently completed for this proopsed site indicate that transportation and transfer facility costs may be prohibitive, and so the Public Works Department is continuing to evaluate altnernate sites, including a site north of the Town of Pahrump, referred to as the Last Chance Basin site.

Beyond 2010 it is not clear what landfill will serve the Pahrump Valley. The County has filed a claim with the Bureau of Land Management for a 1,280-acre site at Johnnie. This site could provide capacity for 75 years. The Lathrop Wells site is 45 miles from Pahrump and would include a transfer station. The County should ensure that adequate and timely planning for future solid waste handling be completed so new facilities are ready by 2007 when they are needed. On September 16, 2003, the Nye County Commissioners approved an update to the SWMP that identifies the County's intent to construct and operate a regional landfill, and identifes various measures intended to reduce illegal dumping, and other solid waste management initiatives. The SWMPU Update has been submitted to the Nevada Division of Ennvironmental Protection in accordance with NRS 444.658.

***Solid Waste Policy***

As the life of the current landfill nears its end, and increasing volumes of solid waste need to be disposed of, a new landfill site should be a priority for Pahrump. Recycling opportunities should be explored to reduce the amount of waste produced, extending the life of the current, and any future, landfill.

*Policy 1 : It is the Policy of the Pahrump Regional Planning Commission to explore public and private partnership opportunities to study the feasibility of implementing a recycling program.*

*Policy 2: It is the Policy of the Pahrump Regional Planning Commission and the County to identify a new location for a landfill to serve Pahrump with enough lead time to allow the facility to be open to receive solid waste when needed.*

# 14. FLOOD CONTROL AND DRAINAGE PLAN

(This Plan is from the 1999 Pahrump Regional Planning District Master Plan)

## A. EXISTING CONDITIONS

The special flood hazard areas of Pahrump are subject to periodic inundation that results in loss of property, creates health and safety hazards, disrupts commerce and governmental services, causes extraordinary public expenditures for flood protection and relief, and impairs the County and District's tax base — all of which adversely affect the public health, safety, and general welfare. In order to avoid, minimize, and/or mitigate damage or destruction due to flooding, the Nye County Board of Commissioners adopted Nye County Ordinance No. 149. This Ordinance, known as the Nye County Flood Damage Prevention Ordinance was put into effect February 1, 1993. The following goals, objectives and policies are related to flood control and drainage.

## B. GOALS, OBJECTIVES AND POLICIES FOR FLOOD CONTROL AND DRAINAGE

**Goal 1: To promote the public health, safety, and general welfare by minimizing public and private losses due to floods.**

**Goal 2: Protect human life and health.**

Objective A: Ensure that potential buyers are notified that property is in an area of special flood hazard.

Objective B: Develop a public awareness program to inform those who occupy the areas of special flood hazard of the County's Flood Damage Prevention Ordinances.

*Policy 1B: Restrict, prohibit or mitigate uses that are dangerous to health, safety, and property due to water or erosion hazards, or that result in damaging increases in erosion or flood heights or velocities.*

*Policy 2B: Require that uses vulnerable to floods, including facilities with such uses, be protected against flood damage at the time of initial construction.*

*Policy 2C: Control the alteration of natural flood plains, stream channels, and natural protective barriers, which help accommodate or channel flood waters.*

*Policy 2D: Control filling, grading, dredging, and other development that may increase flood damage.*

*Policy 2E: Prevent or regulate the construction of flood barriers that will unnaturally divert flood hazards into other areas.*

**Goal 3: Maximize expenditures of public money for a comprehensive flood control program.**

**Goal 4: Minimize the need for rescue and relief efforts associated with flooding.**

**Goal 5: Minimize damage to public facilities and utilities.**

**Goal 6: To develop a District-wide master drainage and flood control system relying primarily on the existing and future road network.**

Objective A: To explore all avenues for funding and developing a master drainage and flood control plan for the District.

Objective B: To encourage Nye County to develop a District-wide benchmark system to establish elevation and alignment control for road construction projects and other drainage-related matters.

## 15. HISTORICAL PROPERTIES PRESERVATION PLAN

(This Plan is from the 1999 Pahrump Regional Planning District Master Plan)

This topic involves *"an inventory of significant historical, archeological and architectural properties as defined by a city, county or region, and a statement of methods to encourage the preservation of those properties."*

Nye County has conducted a review of the properties listed within the County on the National Register of Historic Buildings. The RPC may inventory other significant historical, archeological and architectural properties as defined by the Region, and develop methods to encourage the preservation of those properties.

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## 16. PUBLIC BUILDINGS PLAN

(This Plan is from the 1999 Pahrump Regional Planning District Master Plan)

This topic involves a map and text *"showing locations and arrangement of civic centers and all other public buildings, including the architecture thereof and the landscape treatment of the grounds thereof."* The Pahrump Regional Planning Commission will develop a Master Plan element describing the architecture and landscape treatment of the grounds of public buildings in conjunction with adopting developmentstandards for commercial buildings.

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# 17. RECREATIONAL PLAN

(From the 1999 Pahrump Regional Plannign District Master Plan)

## A. EXISTING PUBLIC FACILITIES

At the present time the Town of Pahrump controls and maintains all public parks and recreational facilities within the Town boundaries. The Community Facilities Plan lists the current public recreational facilities in the Pahrump Regional Planning District.

***Regional Recreational Opportunities***

Death Valley National Monument is located approximately 50 miles to the northwest; the Ash Meadows Wildlife Refuge is located approximately 20 miles to the west; and the Spring Mountains National Recreation Area is located adjacent to the District to the east and offers many opportunities such as camping, hiking, skiing, historical sites and seasonal hunting.

The Red Rock National Recreational Area; Cathedral Canyon; China Ranch; the historic Amargosa Opera House and the Tecopa Hot Springs are located within the surrounding area.

***Needed Recreational Opportunities***

Community imput indicates that there is a lack of organized recreational activities for the youth of the District. There is currently no joint effort with the School District who many feel has the necessary facilities for organized youth recreational opportunities such as summer youth programs.

## B. GOALS, OBJECTIVES AND POLICIES FOR RECREATION

**Goal 1: Work with the Town, the School District, and other public and private entities, to provide quality recreational opportunities to all community residents of all age groups.**

Objective A: Pursue and preserve additional park and open space sites for community recreational facilities.

*Policy 1A: Work with the BLM to ensure adequate lands are set aside for the future recreation needs of the District.*

*Policy 2A: Annually review Treasurer tax properties to procure additional park sites.*

*Policy 3A: Encourage the contribution of private lands for public recreation use.*

Objective B: Determine, through workshops, surveys and other means, the recreational needs of the various community groups.

Objective C: Investigate all sources of funding for the development of additional recreational facilities.

## 18. SAFETY PLAN

(This Plan is from the 1999 Pahrump Regional Planning District Master Plan)

Pursuant to NRS 278.160 this topic is required for any county whose population is 400,000 or more. It includes maps and text *"identifying potential types of natural and manmade hazards including hazards from floods, landslides or fires, or resulting from the manufacture, storage, transfer or use of bulk quantities of hazardous materials. The Plan may set forth policies for avoiding or minimizing the risks from such hazards."* This topic will be addressed through the adoption of zoning regulations.

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## 19. SEISMIC SAFETY PLAN

(This Plan is from the 1999 Pahrump Regional Planning District Master Plan)

Pursuant to NRS 278.160, this topic *"consists of an identification and appraisal of seismic hazards such as susceptibility to surface ruptures from faulting, to ground shaking or to ground failures."* The RPC may develop a seismic safety element after implementation of the Master Plan.

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# 20. TRANSIT PLAN

(This Plan is from the 1999 Pahrump Regional Planning District Master Plan and has been updated with current information)

## A. INTRODUCTION

Pursuant to NRS 278.160, this topic would consist of text and maps "showing a proposed system of transit lines, including rapid transit, streetcar, motorcoach and trolley coach lines and related facilities."

## B. TRANSIT GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION

**Goal 1: Future transportation planning acknowledges the regional relationship of Pahrump to Las Vegas and Clark County and strives to coordinate transit alternatives with neighboring communities.**

Objective A: Establish a Park-and-Ride system for residents employed in Clark County.

Objective B: Create a regional transportation plan, which addresses multi-modal mass transit for the Pahrump-Las Vegas corridor.

***Purpose***

The purpose of the following policies is to address regional transportation issues through cooperation and coordination with outside jurisdictions. The development of the transportation system associated with the Pahrump-Las Vegas corridor has many important implications for the Pahrump Valley.

*Policy 1: It is the policy of the Pahrump Regional Planning Commssion to seek partnership with Nye County, Las Vegas, and Clark County to address regional transportation issues.*

*Policy 2: It is the policy of the Pahrump Regional Planning Commission to seek partnership with Nye County, Las Vegas, and Clark County in establishing Park-and-Ride opportunities for Pahrump Valley residents commuting to Clark County.*

***Implementation Action:***

Regional Transportation Plan: The Pahrump Valley Planning Commission shall work with Nye County, Las Vegas, and Clark County to create a regional transportation plan that addresses the feasibility of and recommends options for mass transit opportunities for the Pahrump-Las Vegas corridor.

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# Implementation Plan

## 21. IMPLEMENTATION

### A. INTRODUCTION

The implementation section is one of the most important sections of the Master Plan since it defines how the goals, objectives, and policies will be accomplished and in what time frame. Implementation actions are also included within the various elements of the plan, but are listed here for easy review. The implementation section is intended to achieve the following:

- Determine action steps to carry out the strategies and recommendations of the Master Plan;
- Set up short and long term time frames for accomplishing the policies;
- Delegate responsibilities for implementing the Master Plan (most will fall within the purview of the Pahrump Regional Planning Commission, but potential partnerships are identified); and
- Provide framework to revisit and update the Master Plan on a regular basis, as needed.

### B. PLAN UPDATES

The intent of the Master Plan Update is to provide the community with the necessary framework needed to face its future through a comprehensive methodology that links various community elements together in one cohesive document. In order to assure that the Master Plan accurately addresses growth patterns, it is recommended that the Master Plan should be updated at least every 5 years. Goals, objectives and policies should not be updated without a community-based planning process to assure that all voices and perspectives are heard. Changes to the Master Plan should be made in the original document, but could also be made as an addendum or separate report. According to NRS 278.190, the Pahrump Regional Planning Commission should make annual recommendations to the governing body for the implementation of the Master Plan.

### C. PLAN REVIEW

There are several items to review and update in a Master Plan. This section identifies those areas that should be reviewed every five years, and revised if it is determined to be necessary. According to NRS 278. 210, Section 4, the Master Plan can be revised no more than four times per calendar year.

***Amending the Master Plan Update***

Amendments to the Master Plan can be applied for after the two year period is completed. Amendment applications shall be filed with the Nye County Planning Department along with application fees and a written justification for the amendment. Written justification for Master Plan amendments should address the following issues:

1. State why the amendment would be more advantageous to the community as a whole if it was made (i.e., amendments that only serve an individual parcel of land are discouraged).

2. State why the change to the Master Plan should be made due to: changed conditions; an error in the original plan; an undue hardship or other special circumstance; or other compelling reason to justify the change, and explain the justification in detail.

3. State how the new language should read, and note other places in the Master Plan that may need to be amended or cross-referenced differently as a result of the amendment.

Master Plan amendments must be advertised and heard at a public hearing of the Regional Planning Commission for an initial recommendation, with final action at a public hearing of the Nye County Board of County Commissioners. Notification of any proposed changes to the Master Plan must also be provided to the Town Board prior to the hearing of the Regional Planning Commission.

***Changes to Demographics/Existing Conditions***

One of the areas where change is constant is Section 2. Community Profile containing community demographics. Census data is updated every 10 years and estimates are prepared annually. The next census will be for 2010. The Pahrump Regional Planning District may want to consult with the Nevada State Demographer for updated demographic information. Data that should be reviewed and revised includes:

1. Population data
2. Unemployment data
3. Large employer data
4. Housing data

***Goals, Objectives, and Policies Review***

The goals, objectives and policies should be reviewed to determine effectiveness. Perhaps some are too strong, or some may need to be redirected depending on changed conditions. All changes should be done through a public input process.

The preferred land use scenario should be reviewed as well. The preferred land use plan can be amended through a public process, especially if zoning and zone changes become inconsistent with the land use map. The Land Use Map should be followed closely, however, there are instances where it may need revision over time.

***Implementation Assessment***

Assessing the status of the implementation strategies and actions is an important area to review on a regular basis.

Documentation should be kept of actions that have been accomplished and actions that have not been implemented. Particular attention should be paid to those implementation actions whose time frames are close to being due per the implementation action tables.

***Tracking Changes***

A database of Master Plan amendments should be started by Nye County beginning with the first amendment. This database should be kept current and up to date at all times. Copies of the database can be printed and distributed so the reader will have all changes noted in between printing runs of the overall document.

## D. IMPLEMENTATION ACTION TABLES

The following tables provide an overview of each policy, time frame and specific tasks associated with implementing the policy. In many cases the implementation is dependent on the Pahrump Regional Planning Commission partnering and collaborating with other entities. Implementation is ultimately dependent on funding and time constraints and staff availability.

| Land Use Polices | Timeframe | Specific Tasks |
|---|---|---|
| Land Use Map | 2004 | • Adopt the Land Use Map |
| Adequate Facilities and Permitting | 2004 | • Amend Division of Land and Planned Unit Development Ordinance to include development requirements to provide necessary infrastructure for new master-planned communities and subdivisions |
| Acquisition of Public Lands and Open Space | 2005; On-going | • Identify farmlands for conservation initiatives<br>• Establish criteria for prioritizing BLM disposal areas for recreation and open space |
| Zoning | 2004; On-going | • Amend the zone code to include various zone categories, site development standards, height and setback requirements, densities, landscaping and parking requirements<br>• Work with the State Legislature to revise statutory and Administrative Code discrepancies<br>• Amend the zone code to include a hardship and grandfather clause |
| Water Awareness | 2005; On-going | • Create and adopt a water conservation ordinance<br>• Create water awareness program by educational materials about water conservation |
| Neighborhood Planning | 2005; On-going | • Divide the area into planning areas for neighborhood-level planning |

| Housing Policies | Time Frame | Specific Tasks |
|---|---|---|
| Housing Incentives | 2005 | • Work with Nye County Planning and Zoning to include incentives in building review and revise Land Division Ordinance accordingly |
| Residential Housing Placement | 2005; On-going | • Update the zone code to locate high density, intense land uses along transit corridors, while low density should develop at the periphery of the community |
| Public/Private Housing | 2005; Annually | • Hold annual housing summit with stakeholder groups to report on housing issues, opportunities, successes and failures |
| Rural Housing | 2005; On-going | • Update the zone code to allow the keeping of domestic livestock in rural residential and low-density residential land use areas |
| Senior Housing | On-going; 2006 | • Recruit developers of senior housing development<br>• Coordinate with State agencies focusing on social services and housing to stay informed about trends in senior housing and funding opportunities<br>• Collaborate with the Pahrump Senior Center encourage expanded services |

| Economic Policies | Timeframe | Specific Tasks |
|---|---|---|
| Economic Diversification and Expansion | On-going; By 2005 | • Coordinate with EDEN, RNDC, NCED, the Economic Development Advisory Board and the Pahrump Chamber of Commerce to promote economic development<br>• Apply for Community Development funds to improve wireless communication infrastructure for business and industrial park areas |
| Industrial and Business Park Support | 2005; On-going | • Amend the zone code to designate land uses for business and industrial park development<br>• Require noise and light buffers, appropriate landscaping and site design to support an environmentally-friendly and attractive business area |
| Workforce Training | On-going | • Seek funding for increased access to higher education and to provide distance education classes<br>• Assist existing businesses to identify careers and specialized skills for development of new training programs |
| Transportation | On-going; 2006 | • Prepare a detailed financial plan for airport development<br>• Develop a public outreach campaign to educate the public about the airport; types of planes, hours of activity, benefits and constraints, as well as location and noise impacts |

| Air Quality Policies | Timeframe | Specific Tasks |
|---|---|---|
| Land Development | On-going | • Encourage changes to the state parcel map law to require paved access and paved parking in non-attainment areas<br>• Develop a land clearing ordinance<br>• Implement the Land Use Map<br>• Implement ordinance to prevent business and commercial parking on unpaved areas |
| Land Stabilization | 2005; On-going | • Identify owners of disturbed vacant lands<br>• Enforce fugitive dust control requirements |
| Open Burning | 2004 | • Adopt an ordinance to restrict open burning and limits refuse burning |
| Educational Outreach | By 2006; On-going | • Collaborate with State of Nevada and Nye County Schools to disseminate air quality information |
| Paving | By 2006 | • Establish criteria for prioritizing the paving of roads<br>• Pave the prioritized, unpaved roads |
| Documentation | On-going | • Present air quality data to NDEP<br>• Maintain meteorological and air quality sampling stations |

| Community Design Policies | Timeframe | Specific Tasks |
|---|---|---|
| Urban Design | On-going; 2005 | • Promote infill development of vacant and disturbed lands<br>• Sponsor a design charrette to create a Town Center for the area |
| Visual Character | 2005 | • Amend Sign Ordinance to include measures for removal of non-conforming signs at the time of development or redevelopment |
| Rural Community Character | On-going; 2006 | • Collaborate with State of Nevada and Nye County Schools to disseminate air quality information<br>• Support the development of educational outreach programs |
| Beautification | 2008 | • Collaborate with NDOT to conduct corridor plans for major roadways in Pahrump<br>• Designate gateways and begin process for community-based design, implementation and maintenance of the gateways. |

| Community Facilities Policies | Timeframe | Specific Tasks |
|---|---|---|
| Park Development/ Expansion | 2006; 2008 | • Amend the Land Division Ordinance to provide density bonuses or other incentives to developers for including neighborhood parks and open space<br>• Encourage the development of a parks and facilities master plan |
| Impact Fees | 2004-6 | • Study the feasibility of impact fees<br>• If appropriate, adopt an ordinance mandating impact fees for all new development |
| Public Education | On-going | • Work with Nye County School District to develop criteria for locating schools and identify existing schools in need of expansion |
| Public Safety | On-going | • Identify funding source for enhanced sheriff and fire/emergency services to improve the quality of life and public services for all residents |
| Hospital Development | On-going | • Encourage the development of hospital facilities and locating complementary services adjacent to the proposed hospital site |

| Transportation Policies | Timeframe | Specific Tasks |
|---|---|---|
| Street and Highway Network | 2005; 2007 | • Conduct a traffic study addressing traffic volume, and future needs<br>• Create a Transportation Master Plan addressing a hierarchical roadway classification system<br>• Develop a Capital Improvement Program (CIP) to accommodate recommendations from the Master Plan. |
| Regional Transportation | 2004 | • Create a Regional Transportation Plan that addresses mass transit opportunities for the Pahrump-Las Vegas corridor |
| Air Service | On-going | • Form a task force of stakeholders to make recommendations on actions regarding air service development |
| Non-motorized Transportation | 2006 | • Create minimum design guidelines for non-motorized transportation infrastructure and trails<br>• Identify and designate a comprehensive network of trail corridors |

| Public Services and Facilities Policies | Timeframe | Specific Tasks |
|---|---|---|
| Water | 2006; On-going | • Create a Water Distribution Master Plan<br>• Utilize GIS to develop mapping and inventory of existing facilities<br>• Explore the creation of a single municipal water system<br>• Explore a Utility Extension Policy that requires developments to connect to the municipal water system<br>• Explore a Water Conservation and Public Awareness Program as suggested by the Nye County WRP |
| Sewer/ Wastewater | 2006; On-going | • Create a Wastewater Master Plan<br>• Utilize GIS to develop mapping and inventory of existing facilities<br>• Explore the creation of a single municipal sewer system<br>• Explore a Utility Extension Policy that requires developments to connect to the municipal sewer system<br>• Explore a Public Awareness Program for groundwater contamination by individual septic systems |
| Flood Control | 2006 | • Create a Flood Control Plan<br>• Use the Flood Control Plan to identify storm water improvements, ponding areas, diversion channels, etc.<br>• Coordinate with the Army Corps of Engineers and other agencies to identify and request funding for recommended improvements |

| Geotechnical Policies | Timeframe | Specific Tasks |
|---|---|---|
| Development Review | 2004 | • Implement a development review process for construction located in areas with moisture sensitive soils |
| Adequate Public Facilities | 2004-2005 | • Adopt an Adequate Public Facilities Ordinance requiring design and development review, as well as soil studies for construction in areas with moisture sensitive soils |

| Water Resources Policies | Timeframe | Specific Tasks |
|---|---|---|
| Scientific Evaluation | By 2006; On-going | • Characterize the shallow aquifer<br>• Explore sources of water beneath the valley-fill aquifer |
| Water Rights | 2007 | • Quantify water rights<br>• Protect water rights of residents |
| Water Importing | 2008 | • Understand the alternatives to groundwater, ie. Water importing |
| Water Quality | 2006;on-going | • Monitor water quality of domestic wells<br>• Develop an ISDS maintenance ordinance<br>• Prepare “Groundwater Contamination Response Plan”<br>• Prepare education materials for first time septic owners<br>• Test all new ISDS systems, and impose clear guidelines and regulations for installation |

| Solid Waste Policies | Timeframe | Specific Tasks |
|---|---|---|
| Solid Waste Policy | By 2006; 2007 | • Study feasibility o implementing a recycling program<br>• Identify new location for landfill |

| Flood Control and Drainage | Timeframe | Specific Tasks |
|---|---|---|
| Various Policies from 1999 Master Plan | By 2006 | • Develop a public awareness program to inform owners of flood control hazards in their area.<br>• Explore funding opportunities for a Master Drainage and Flood Control Plan<br>• Establish benchmarks for flood control of road construction projects |

| Recreation Plan | Timeframe | Specific Tasks |
|---|---|---|
| Various policies from 1999 Master Plan | By 2007 | • Pursue and preserve additional park and open space for community recreational facilities<br>• Investigate sources of funding for development of recreational facilities |

| Transit Plan | Timeframe | Specific Tasks |
|---|---|---|
| Regional Transportation Policy | By 2005 | • Create a regional transportation plan in collaboration with Nye County, Las Vegas and Clark County for mass-transit and other commuting options |

# APPENDIX B

# Town of Pahrump Dust Ordinance

BILL NO. 2006-12

NYE COUNTY ORDINANCE NO. 317

**SUMMARY: An ordinance amending Nye County Code Chapter 15.28, the Pahrump Regional Planning District Dust Control Regulations, making changes to Sections 15.28.020, to properly detail the statutory foundation for the Chapter; making changes to 15.28.040 in order to recognize and integrate this Chapter with Bill No. 2006-14; and other matters properly relating thereto.**

**TITLE:** **AN ORDINANCE AMENDING NYE COUNTY CODE CHAPTER 15.28, ~~THE PAHRUMP REGIONAL PLANNING~~ DISTRICT DUST CONTROL REGULATIONS; REVISING SECTION 15.28.020 TO PROPERLY DETAIL THE AUTHORITY OF THE CHAPTER; REVISING SECTION 15.28.040 IN ORDER TO RECOGNIZE, RECONCILE AND INTEGRATE NYE COUNTY BILL NO. 2006-14 WITH THIS CHAPTER; PROVIDING FOR THE SEVERABILITY, REPEAL, CONSTITUTIONALITY AND EFFECTIVE DATE HEREOF; AND OTHER MATTERS PROPERLY RELATING THERETO.**

WHEREAS, pursuant to NRS 278.250, the Nye County Board of County Commissioners ("Board") may divide the County into zoning districts and, thereafter, regulate and restrict the erection, construction, reconstruction, alteration, repair or use of buildings, structures or land by zoning regulations adopted in accordance with the master plan, for the purpose of preserving the quality of air resources within such district; and

WHEREAS, the Board recognizes that within the District, unless proper precautions are taken, the erection, construction, reconstruction, alteration, repair or use of buildings, structures or land creates dust that impairs the quality of the air in the District; and

WHEREAS, in accord with the authority of NRS 278.250, the Board has established the Pahrump Regional Planning District and has adopted the Pahrump

Regional Planning District Dust Control Regulations (Nye County Code Chapter 15.28) ("Dust Control Regulations"); and

WHEREAS, the Board recognizes that its prime duty is to protect the health, safety and general welfare of the residents of the County; and

WHEREAS, the Board has determined that in order to fulfill its prime duty within the Pahrump Regional Planning District, an ordinance regulating, controlling and prohibiting excessive emission of air pollution must be adopted; and

WHEREAS, pursuant to NRS 244.361, the Board is enacting an ordinance deeming violations of the Dust Control Regulations to be a public nuisance and providing for the regulation, control and prohibition of such violations,

NOW, THEREFORE, the Board of County Commissioners of Nye County, State of Nevada, does ordain that **NYE COUNTY CODE CHAPTER 15.28 IS AMENDED AS FOLLOWS:**

**NYE COUNTY CODE CHAPTER 15.28 IS AMENDED AS FOLLOWS:**

## 15.28 DUST CONTROL REGULATIONS WITHIN THE PAHRUMP ~~REGIONAL PLANNING DISTRICT~~

## ARTICLE I: GENERAL PROVISIONS

### 15.28.010 Short Title

This Chapter shall be known, and may be cited as: The Dust Control Regulations of the Pahrump Regional Planning District.

### 15.28.020 Authority and Purpose

A. This Chapter is adopted pursuant to Nevada Revised Statutes (NRS) 244.361(Board may by ordinance, regulate, control and prohibit, as a public nuisance, the excessive emission of air pollution within the boundaries of the County); and NRS 278.250 (the Board may divide the County into zoning districts and, thereafter, regulate and restrict the erection, construction, reconstruction, alteration, repair or use of buildings, structures or land by zoning regulations adopted in accordance with the master plan, for the purpose of preserving the quality of air and water resources within such district).

B. The purpose of this Chapter is to fulfill the Board's prime duty to protect the health, safety and general welfare of the residents of the County, by assuring that the public nuisance of excessive emission of air pollution is avoided, by:

1. Controlling PM10 emissions at existing and active surface disturbance sites to achieve compliance with federal air quality standards; and

2. Improving air quality in order to protect the health, safety and general welfare of the inhabitants of the Pahrump Regional Planning District.

**15.28.030 Jurisdiction**

The provisions of this Chapter shall apply to the Pahrump Regional Planning District of Nye County, Nevada.

**15.28.040 Definition of Violation and Enforcement**

A. The following shall be and are violations of this Chapter:

1. Violation of a provision of this Chapter;
2. Violation of any provision, term or condition of any Plan created pursuant to this Chapter.
3. Failure to pay any fee, fine or penalty.
4. Failure to comply with any duly made Order requiring corrective action.
5. Falsification of any material statement, representation or certification in any application, notice or report.

B. Enforcement of this Chapter shall be effected pursuant to the provisions of Nye ~~County Bill No. 2006-14, as hereafter adopted and amended.~~

**15.28.050 Severability, Repeal and Constitutionality**

A. SEVERABILITY. If any provision of this ordinance or amendments thereto, or the application thereof to any person, thing or circumstance is held to be invalid, such invalidity shall not affect the validity or provisions or applications of the ordinance or amendments thereto which can be given effect without the invalid provisions or applications, and to this end the provisions of this ordinance and amendments thereto are declared to be severable.

B. REPEAL. This ordinance supersedes and repeals any and all parts of the Nye County Code and Nye County ordinances or parts of ordinances in conflict herewith.

C. CONSTITUTIONALITY. If any section, clause or phrases of this ordinance shall be declared unconstitutional by a court of competent jurisdiction, the remaining provisions of this ordinance shall continue in full force and effect.

## ARTICLE II: DEFINITIONS

**15.28.060 Generally**

The words and terms used in this Chapter shall be defined as follows. All words used in the singular shall include the plural and the plural the singular. Each gender shall include the others; any tense shall include the other tenses. The word "shall" is mandatory and

the words "may" and "should" are permissive.

**15.28.070 Definitions**

**Agricultural Operations.** The growing of crops for profit or the growing of crops for the purpose of providing life support to a considerable number of people, animals or fowl.

**Best Practical Methods.** Fugitive Dust Control Measures include, but are not limited to, phased clearing of the land; the use of dust palliative; the use of water; the use of snow fencing (a fencing material that inhibits the wind); the use of windbreaks; revegetation (excluding noxious weeds); the use of ground cover (e.g. gravel, decorative stone); physical barriers and signs to prohibit access to the disturbed areas by motorized vehicles; controls on single lot development approved as a part of a land division subject to these regulations; or cessation of operations when wind conditions exceed the operator's ability to control fugitive dust. The term Best Practical Methods is synonymous with the term Best Management Practices.

**Burn Barrel.** A container made of metal or other fire resistance substance used to hold vegetative material while burning.

**Commercial and Residential Construction.** Construction of structures intended to be utilized solely as personal dwellings, including but not limited to single family homes, duplexes, fourplexes, apartments, condominiums, town houses; construction of institutional structures, schools, libraries, churches, hospitals, parks, office structures; shopping malls; residential streets within a subdivision; improvements to existing curbed paved roads; parking lots, parking lot structures; and construction of underground utilities for sanitary sewer, water, electricity, natural gas and communication.

**Construction Activity.** Any component of the following including, but not limited to: commercial and residential construction, flood control construction, and highway construction, including land clearing, maintenance, and land cleanup using machinery; soil and rock excavation or removal; soil or rock hauling; soil or rock crushing or screening; filling, compacting, stockpiling and grading; explosive blasting; demolition; implosion; handling of building materials capable of entrainment in air (e.g., sand, cement powder); dismantling or demolition of buildings; mechanized trenching; initial landscaping; operation of motorized machinery; driving vehicles on a construction site; or establishing and/or using staging areas, parking areas, material storage areas, or access routes to or from a construction site.

**Control Measure.** A technique, practice, or procedure used to prevent or minimize the generation, emission, entrainment, suspension, and/or airborne transport of fugitive dust.

**Disturbed Area.** A portion of the earth's surface (or material placed thereupon) which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed native condition, thereby increasing the potential for the emission of fugitive

dust. Any area that fails the Drop Ball Test or Rock Test as defined in 15.28.140 is a Disturbed Area.

**Dust Control Handbook.** A guide used to select the appropriate Best Practical Methods appropriate for each construction activity that will be used to control fugitive dust and itemized in a Dust Control Plan.

**Dust Control Plan.** A plan to formalize the Best Practical Methods (all the selected Control Measures) for a project-specific fugitive dust control program.

**Dust Palliative.** Hygroscopic material, non-toxic chemical stabilizer or other material which is not prohibited for ground surface application by the federal Environmental Protection Agency (EPA) or the Nevada Department of Environmental Protection (NDEP) or any applicable law or regulation, used as a treatment material for reducing fugitive dust emissions. Water, solutions of water and chemical surfactants, and foam are not Dust Palliatives for the purpose of these Regulations.

**Dust Suppressant.** Water, hygroscopic material, solution of water and chemical surfactants, foam, non-toxic chemical stabilizer or any other dust palliative which is not prohibited for ground surface application by the federal Environmental Protection Agency (EPA) or the Nevada Department of Environmental Protection (NDEP) or any applicable law or regulation, used as a treatment material for reducing fugitive dust emissions.

**Emergency.** A situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including Acts of God, that requires immediate corrective action to restore normal operations.

**Fugitive Dust.** Emissions of solid, airborne particulate matter which could not reasonably pass through a stack, chimney, vent or a functionally equivalent opening. Fugitive dust is entrained in the air and is caused from human and/or natural activities, such as but not limited to, movement of soil, vehicles, equipment, blasting, and wind.

**Garbage.** Putrescible animal and vegetable wastes resulting from the handling, storage, sale, preparation, cooking and serving of food.

**Opacity.** A measure of air visibility, or the degree to which an effluent plume or any emission of air contaminants reduces the transmission of light and obscures the view of an object in the background. Percent opacity refers to the degree in which the visible emission obscures the transmission of light from the view of background objects.

**Open Areas and Vacant Lots.** An undeveloped tract of land, which contains no approved or permitted buildings or structures.

**Open Burning.** Any fire from which the products of combustion are emitted into the atmosphere without passing through a stack, chimney, or duct.

**Particulate Matter.** Any material except uncombined water that exists in a finely divided form as a liquid or solid at reference conditions. $PM_{10}$ is any particulate matter in the atmosphere with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

**Refuse.** Refuse means any:

A. Garbage.
B. Sludge from a:
   1. Plant that treats waste water.
   2. Plant that treats the water supply.
   3. Facility for controlling air pollution.
C. Other discarded material, except yard waste, including solid, semi-solid, liquid or contained gaseous material, resulting from industrial or commercial operations or community activities.

**Roads.** All publicly dedicated rights-of way within the Pahrump Regional Planning District.

**Rubbish.** Nonputrescible solid waste, consisting of both combustible and noncombustible wastes such as paper, cardboard, abandoned automobiles, tin cans, wood, glass, crockery and similar materials.

**Unpaved Parking and Storage Areas.** Those parcels, or portions of parcels that include (but are not limited to) parking lots, automotive impound and/or dismantling yards, material and equipment handling and/or storage yards, salvage and/or wrecking yards, outside storage and/or display, and similar uses.

**Visible Emission Evaluator.** Individual currently certified in accordance with US EPA, 40 CFR Part 60, Appendix A, Method 9, to conduct visible emission evaluations.

## ARTICLE III: CONTROL MEASURE REQUIREMENTS

### 15.28.080 Fugitive Dust

A. Any person engaged in activities involving the handling, transportation or storage of any material; dismantling or demolition of buildings; grubbing; grading; clearing of land; public or private construction; the operation of machines and equipment; the grading of roads; trenching operations; the operation and use of unpaved parking facilities; and the organization and supervision of public outdoor events shall take all reasonable precautions to prevent fugitive dust from becoming airborne from such activities at all times. Reasonable precautions may include, but are not limited to, sprinkling, compacting, enclosure, chemical or asphalt sealing, cleaning up, sweeping, soil amendments, addition of non-emissible covers or such other measures as Nye County may specify. All control measures selected must be maintained to ensure the visible emissions do not exceed the 20% opacity limit as described in

Section 15.28.150.A.

B. Use and operation of livestock arenas, horse arenas, corrals, agricultural operations and feed lots, and raceways and rodeo grounds for animals or motor vehicles should take all reasonable precautions to abate fugitive dust from becoming airborne from such activities. Reasonable precautions may include, but are not limited to, sprinkling, compacting, enclosure, chemical, or asphalt sealing, cleaning up, sweeping, soil amendments, addition of non-emissible covers or such other measures.

C. This Ordinance shall not apply to emergency activities conducted by any Fire Department, utility, or government agency which are necessary to protect the health, safety and welfare of the public.

**15.28.090 Construction Activities**

A. A person engaged in Construction Activity shall employ Best Practical Methods to prevent the generation of fugitive dust and submit a Dust Control Plan.

B. Except when engaged in agricultural operations, no person may initiate a construction activity that results in Disturbed Areas unless Best Practical Methods ~~are taken to prevent generation of fugitive dust during both the active development~~ phases and thereafter if the property is to remain unoccupied, unused, vacant, or undeveloped.

C. For any project involving an aggregate one-half acre or more of Disturbed Area, a Dust Control Plan must be submitted to the Nye County Air Quality Program Administrator along with the zone review, building permit application, conditional use permit application, zoning change application, or site development plan. The Dust Control Plan shall specify the use of Best Practical Methods to control the generation of fugitive dust from each construction activity. The owner/operator will:

1. File a complete Dust Control Plan with the Nye County Air Quality Program Administrator before initiating Construction Activities;

2. Implement the Best Practical Methods as outlined in the Dust Control Plan;

3. Maintain a written record of self inspection made each day when soil disturbing work is conducted;

4. Retain records of site self inspections for a minimum of one (1) year or for six (6) months beyond the project duration, whichever is longer. Self inspection records include daily inspections for crusted or damp soil, track-out conditions and cleanup measures, daily water usage, dust palliative application records, etc. For Control Measures involving chemical or organic soil stabilization, records shall indicate the type of product applied, vendor name, label instructions for

approved usage, and the method, frequency, concentration, and quantity of application;

5. Install a sign on said property prior to commencing a construction activity that is visible to the public and conforming to County policy on Dust Control Permit Design and Posting of Signage as described in 15.28.160, Posting of Informational Signs on Construction Sites; and

6. When construction is complete, or a site or part thereof becomes inactive for a period of thirty (30) days or longer, long-term stabilization shall be implemented within ten (10) days following the cessation of active operations.

D. The following construction type activities do not require a Dust Control Plan:

1. Landscaping by an individual at his/her place of residence;

2. Emergency maintenance activities conducted by government agencies on publicly maintained roads, road shoulders, rights-of-way and on public flood control facilities; and

3. Dust Palliative application projects conducted solely for the purpose of ~~compliance with Open Areas and Vacant Lots subsection of this ordinance,~~ wherein no grade elevation changes, no soil or rock is imported or exported, or no cut and fill operations occur. Importing of gravel or rock for use as a dust palliative is allowed under this subsection.

E. Any material which is tracked onto a paved roadway must be removed as quickly as safely possible. At a minimum all track-out must be cleaned up by the end of the workday or evening shift, as applicable. Exceptions to this provision may be made by the Nye County Air Quality Program Administrator for the construction, maintenance, and/or repair of paved roadways and for the application of traction materials for wintertime driving conditions.

F. To minimize fugitive dust generated during the loading of haul trucks, the drop heights from front loaders shall not exceed 12 inches.

**15.28.100 Unpaved Parking and Storage Areas**

A. No new Unpaved Parking and Storage Areas, excluding single family residential, shall be constructed within the Pahrump Regional Planning District except for the following:

1. Storage and handling of landscape, aggregate, and similar bulk materials requires implementation of control measures as described in 15.28.100.B below, and all access, parking, and loading areas used by on-road vehicles must be paved or chip sealed.

2. Storage and handling of non-rubber-tired vehicles or equipment requires implementation of control measures as described in 15.28.100.B. below, and all access, parking, and loading areas used by rubber-tired vehicles must be paved or chip sealed.

3. Rural public trailheads, campgrounds, and similar facilities on Bureau of Land Management administered lands are subject only to stabilization per 15.28.100.B.4-5 below prior to use.

4. Intermittent use for a period of 35 days or less during the calendar year requires implementation of control measures as described in 15.28.100.B.4-5 below while utilized for vehicle parking.

B. All existing Unpaved Parking and Storage Areas greater than or equal to 5,000 square feet shall implement the following Control Measures by December 31st, 2005:

1. Pave; or

2. Gravel to a minimum depth of 2" of gravel shall be applied; or

3. ~~Chip seal; or~~

4. Apply dust palliative to unpaved areas in conformance with the stabilization requirements in 15.28.140; or

5. Apply dust palliative to vehicle travel lanes within the parking lot in conformance with the stabilization requirements in 15.28.140.

Any person subject to the requirements of this Regulation shall compile and retain records for one year that provide evidence of Control Measure application, by indicating type of treatment or Control Measure, extent of coverage, and date applied. That person shall also make those records available to the Nye County Air Quality Program Administrator or authorized representative upon request.

C. Waivers or variances of the requirement to reduce fugitive dust for unpaved areas greater than or equal to 5,000 square feet are not permitted.

**15.28.110 Open Areas and Vacant Lots**

A. The owner of any Open Areas, Vacant Lots, or contiguous parcels with Disturbed Areas in aggregate of more than one acre is required to control the release of fugitive dust from the parcel or contiguous parcels by implementing one or more of the following Best Practical Methods to the extent necessary to pass the stabilization tests described in 15.28.140:

1. Physical barriers and signs to prohibit access to the disturbed areas by motorized vehicles;

2. The use of ground covers (e.g. gravel, decorative stone);

3. The use of dust palliative (chemicals that bind soil together and retain moisture);

4. The use of snow fencing (a fencing material that inhibits the wind);

5. The use of windbreaks;

6. The application of water in an amount and frequency adequate for the soil to develop a crust; or

7. Revegetation.

In the event that the disturbed areas are primarily the result of recurrent unauthorized use of the property by motorized vehicles, the application of water is not a suitable Control Measure without the erection and maintenance of physical barriers. The use of or parking on Open Areas and Vacant Lots for private purposes by the owner of such Open Areas and Vacant Lots shall not be considered vehicle use under this subsection.

B. Except for those portions of parcels zoned Residential Estate or Residential Homestead and engaged in agricultural operations or occupied by livestock, each property owner shall implement Best Practical Methods within one year of the effective date of this ordinance.

C. Mechanized Weed Abatement and/or Trash Removal: If machinery is used to clear weeds and/or trash from Open Areas and Vacant Lots larger than one acre, then the following Control Measures shall be applied. Advisory Notice: In order to conserve water to the greatest extent practicable, the use of reclaimed water is highly encouraged.

1. Pre-wet surface soils before mechanized weed abatement and/or trash removal occurs; and,

2. Maintain soil moisture while mechanized weed abatement and/or trash removal is occurring; and,

3. Apply water, or apply a suitable dust palliative, in compliance with the stabilization standard set forth in 15.28.140.A., apply gravel in compliance with the stabilization standard set forth in 15.28.140.B, or pave after mechanized weed abatement and/or trash removal occurs.

**15.28.120 Track-out onto Paved Roadways**

A. Any material which is tracked onto a pavedoadway must be removed as quickly as safely possible. If the responsible party does not remediate the track-out, the Nye County Road Department will take action and remediate the track-out. The remediation cost incurred by the Nye County Road Department will be recovered in accordance with Nye County Code 12.08.010. Exceptions to this provision may be made by the Air Quality Program Administrator for the application of traction materials for wintertime driving conditions.

**15.28.130 Burning**

A. Except as provided in 15.28.130.C below, no person shall kindle or maintain any open burning for the purpose of weed abatement, disposal of yard waste, conservation, disease control, game or range management, personnel training, elimination of hazards, agricultural purposes and management, recreational, educational or ceremonial purposes or authorize any such fire to be kindled or maintained on any public or private land without first having obtained a permit from the Town of Pahrump Fire Chief.

B. The burning of rubbish is prohibited within the Pahrump Regional Planning District. The use of Burn Barrels for the purpose of burning refuse or rubbish is prohibited ~~within the Pahrump Regional Planning District.~~

C. Outdoor fires may be used for heating, cooking, or branding in an appropriate fireplace or appliance at any time without permission.

**15.28.140 Stabilization Standards**

A. Drop Ball Method. The drop ball test method described in Subsection 15.28.140.A.1. through 15.28.140.A.4. shall be used to determine whether an Open Area or a Vacant Lot has a stabilized surface. Should a disturbed Open Area or Vacant Lot contain more than one type of disturbance, soil, or other characteristics which are visibly distinguishable, each representative surface must be tested separately for stability in an area that represents a random portion of the overall disturbed conditions of the site, utilizing the test method in 15.28.140.A.1. through 15.28.140.A.4. Depending upon test method results, include or eliminate each representative surface from the total size assessment of the Disturbed Surface Area(s).

1. Soil Crust Determination (The Drop Ball Test): Drop a steel ball with a diameter of 15.9 millimeters (0.625 inches) and a mass ranging from 16-17 grams from a distance of 30 centimeters (one foot) directly above the soil surface. If blowsand is present, clear the blowsand from the surfaces on which the soil crust test method is conducted. Blowsand is defined as thin deposits of loose uncombined grains covering less than 50% of an Open Area or Vacant Lot which have not originated from the representative Open Area or Vacant Lot surface being tested.

2. A sufficient crust is defined under the following conditions: once a ball has been dropped according to Subsection 15.28.140.A.1 of this Regulation, the ball does not sink into the surface, so that it is partially or fully surrounded by loose grains and, upon removal of the ball, the surface upon which it fell has not been pulverized, so that loose grains are visible.

3. Randomly select each representative Disturbed Surfaces for the drop ball test by using a blind "over the shoulder" toss of a throwable object (for example, a metal weight with survey tape attached). Using the point of fall as the lower left hand corner, measure a 1-foot square area. Drop the ball three times within the 1-foot by 1-foot square survey area, using a consistent pattern across the survey area. The survey area shall be considered to have passed the Soil Crust Determination Test if at least two of the three times the ball was dropped, the results met the criteria in Subsection 15.28.140.A.2 of this chapter. Select at least two other survey areas that represent a random portion of the overall disturbed conditions of the site, and repeat this procedure. If the results meet the criteria of Subsection 15.28.140.A.2 of this chapter for all of the survey areas tested, then the site shall be considered to have passed the Soil Crust Determination Test and shall be considered sufficiently crusted.

4. At any given site, the existence of a sufficient crust covering one portion of the site may not represent the existence or protectiveness of a crust on another portion of the site. Repeat the soil crust test as often as necessary on each portion of the overall conditions of the site using the random selection method set forth in Subsection 15.28.140.A.3 of this Regulation for an accurate assessment.

B. Rock Test Method: The Rock Test Method examines the wind-resistance effects of rocks and other non-erodible elements on disturbed surfaces. Non-erodible elements are objects larger than 1 centimeter (cm) in diameter that remain firmly in place even on windy days. Typically, non-erodible elements include rocks, stones, glass fragments, and hardpacked clumps of soil lying on or embedded in the surface. Vegetation does not count as a non-erodible element in this method. The purpose of this test method is to estimate the percent cover of non-erodible elements on a given surface to see whether such elements take up enough space to offer protection against windblown dust. For simplification, the following test method refers to all non-erodible elements as "rocks."

1. Randomly select a 1 meter by 1 meter survey area within an area that represents the general rock distribution on the surface (a 1 meter by 1 meter area is slightly greater than a 3 foot by 3 foot area). Use a blind "over the shoulder" toss of a throwable object (for example, a metal weight with survey tape attached) to select the survey surface and using the point of fall as the lower left hand corner, measure a 1 meter by 1 meter survey area. Mark-off the survey area by tracing a straight, visible line in the dirt along the edge of a measuring tape or by placing short ropes, yard sticks, or other straight objects in a square around the survey area.

2. Without moving any of the rocks or other elements, examine the survey area. Since rocks greater than 3/8 inch (1 cm) in diameter are of interest, measure the diameter of some of the smaller rocks to a get a sense of which rocks need to be considered.

3. Mentally group the rocks greater than 3/8 inch (1 cm) diameter lying in the survey area into small, medium, and large size categories. If the rocks are all approximately the same size, simply select a rock of average size and typical shape. Without removing any of the rocks from the ground, count the number of rocks in the survey area in each group and write down the resulting number.

4. Without removing rocks, select one or two average-size rocks in each group and measure the length and width. Use either metric units or standard units. Using a calculator, multiply the length times the width of the rocks to get the average dimensions of the rocks in each group. Write down the results for each rock group.

5. For each rock group, multiply the average dimensions (length times width) by the number of rocks counted in the group. Add the results from each rock group to get the total rock area within the survey area.

6. Divide the total rock area, calculated in Subsection 15.28.140.B.5 of this Regulation, by two (to get frontal area). Divide the resulting number by the size of the survey area (make sure the units of measurement match), and multiply by 100 for percent rock cover. For example, the total rock area is 1,400 square centimeters, divide 1,400 by 2 to get 700. Divide 700 by 10,000 (the survey area is 1 meter by 1 meter, which is 100 centimeters by 100 centimeters or 10,000 centimeters) and multiply by 100. The result is 7% rock cover. If rock measurements are made in inches, convert the survey area from meters to inches (1 inch = 2.54 centimeters).

7. Select and mark-off two additional survey areas and repeat the procedures described in 15.28.140.B.1 through 15.28.140.B.6 of this chapter. Make sure the additional survey areas also represent the general rock distribution on the site. Average the percent cover results from all three survey areas to estimate the average percent of rock cover.

8. If the average rock cover is greater than or equal to 20%, the surface is stable.

**15.28.150 Visual Determination of Opacity from Sources of Emissions.**

A. This method is applicable for the determination of the opacity of emissions from sources of visible emissions. The opacity standard established in this Ordinance for the Pahrump Regional Planning District is 20%.

B. Opacity shall be determined by a visual observation made by a currently certified evaluator in accordance with US EPA, 40 CFR Part 60, Appendix A, Method 9. A copy of the observer's certification must accompany the Visible Emission Evaluation (VEE).

C. Procedures: A certified opacity observer shall use the procedures set forth in Subsection 1 and Subsection 2.

1. The Time Averaged Opacity Method: This procedure is used for continuous fugitive dust emission sources such as earthmoving, grading, and trenching that produce emissions continuously. The certified observer should do the following:

a. Position: Stand at a position at least twenty (20) feet from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. The observer may follow the fugitive dust plume generated by mobile earth moving equipment, as long as the sun remains oriented in the 140° sector to the back. As much as possible, do not include more than one plume in the line of sight at one time.

b. Field Records: Record the name of the site, fugitive dust source type (e.g., earthmoving, grading, trenching), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the fugitive dust source, and color of the plume and type of background on the visible emission observation when opacity readings are initiated and completed.

c. Observations: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. Make opacity observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated). The initial observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume, but instead observe the plume momentarily at 15-second intervals. For fugitive dust from earthmoving equipment, make opacity observations at a point just beyond where material is not being deposited out of the plume (normally three (3) feet above the mechanical equipment generating the plume).

d. Recording Observations: Record the opacity observations to the nearest 5% every fifteen (15) seconds on a VEE record sheet. Each momentary observation recorded represents the average opacity of emission for a fifteen (15) second period. If a multiple plume exists at the time of an observation, do not record an opacity reading. Mark an "x" for that reading. If the equipment generating the plume travels outside of the field of observation, resulting in the inability to maintain the orientation of the sun within the 140° sector or if the equipment ceases operating, mark an "x" for the fifteen (15) second interval reading. Readings identified, as "x" shall be considered interrupted readings.

e. Data Reduction For Time-Averaged Method: For each set of twelve (12) or twenty four (24) consecutive readings, calculate the appropriate average opacity. Sets shall consist of consecutive observations, however, readings immediately preceding and following interrupted readings shall be deemed consecutive and in no case shall two sets overlap, resulting in multiple violations.

2. Intermittent Emissions Method: This procedure is for evaluating intermittent fugitive dust emissions. Intermittent fugitive dust sources include activities that produce emissions intermittently such as screening, dumping, and ~~stockpiling where predominant emissions are produced intermittently.~~

a. Position: Stand at a position at least twenty (20) feet from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. The observer may follow the fugitive dust plume generated by mobile earth moving equipment, as long as the sun remains oriented in the 140° sector to the back. As much as possible, do not include more than one plume in the line of sight at one time.

b. Field Records: Record the name of the site, fugitive dust source type (e.g., earthmoving, grading, trenching), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the fugitive dust source, and color of the plume and type of background on the visible emission observation when opacity readings are initiated and completed.

c. Observations: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. Make opacity observations at a point just beyond where material is no longer

being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated). Make two observations per plume at the same point, beginning with the initial reading at zero (0) seconds and the second reading at five (5) seconds. The initial observation should begin immediately after a plume has been created above the surface involved.

d. Recording Observations: Record the opacity observations to the nearest 5% on a VEE record sheet. Each momentary observation recorded represents the average opacity of emissions for a five (5) second period.

e. Repeat Subsection 2c. and 2d.above until you have recorded a total of 12 consecutive opacity readings. The 12 consecutive readings must be taken within the same period of observation but must not exceed 1 hour. Observations immediately preceding and following interrupted observations can be considered consecutive.

f. Average the 12 opacity readings together. If the average opacity reading equals 20% or lower, the source is in compliance with the opacity standard.

**15.28.160 Posting of Informational Signs on Construction Sites**

A. The Dust Control Plan sign shall conform to the following requirements:

1. The signboard shall be constructed with materials capable of withstanding the harsh environment (e.g., strong winds, intense sunlight) of Nye County. The sign board must be visible from the road and not obstructed by other signs or materials. Nye County recommends the following materials at a minimum:

   a. ¾" A/C laminated plywood board a minimum of 2 feet by 2 feet in dimension;

   b. 4"x 4" posts with the base of the sign four feet above ground level;

   c. Posts should be attached to the plywood board with a minimum of two (2) carriage bolts on each post; and

   d. The front surface of the signboard should be painted in the contrasting colors of a white background with black lettering, or

   e. A minimum of 0.118" DiBond® Composite Material (aluminum sheets over a thermoplastic core) a minimum of 2 feet by 2 feet in dimension;

   f. 1 7/8" galvanized steel center post with the base of the sign four feet above ground level;

g. The sign should be attached to the post with a single fastener to allow for heat expansion; and

h. The front surface of the signboard should have a white background with contrasting black lettering.

2. The sign board shall contain the following information:

a. Project name;

b. Owner/Operator name;

c. Telephone Number of person responsible for dust control;

d. Nye County Air Quality Program Administrator telephone number;

e. Building, site preparation, or conditional use permit number;

f. Dust Control Plan Number; and

g. Project Acreage.

3. The signboard shall be designed to the following alpha and numeric text dimensions (sign boards written in longhand are unacceptable).

| | |
|---|---|
| PROJECT NAME: | **(Project Name)** |
| OPERATOR: | **(Your Name)** |
| OPERATOR TELEPHONE NUMBER: | **(Your Number)** |
| NYE COUNTY— AIR QUALITY PROGRAM ADMINISTRATOR TELEPHONE NUMBER: | **(Pahrump Phone Number)** |
| BUILDING/OTHER PERMIT NUMBERS: | **(Permit Number)** |
| DUST CONTROL PLAN NUMBER | **(Plan Number)** |
| PROJECT ACREAGE: | **(Acreage)** |

C. Projects that can be completed in two (2) weeks or less may request a variance to the requirements of this section.

D. Construction activities that are limited to roads and/or rights-of-way where the activity continually moves forward may use a sign that is mobile or apply for variance if the project is less than two (2) weeks in duration.

Effective Date. This Ordinance shall be in full force and effect from and after passage, approval, and publication as required by law, to wit, from and after the _____.

Proposed on the_____.

Proposed by_____.

Adopted on the_____.

Vote: Ayes:

Nays: Commissioners:

Absent: Commissioners:

BY: _____
Gary Hollis, Chairman
Nye County Board of
County Commissioners

ATTEST: _____
Sandra "Sam" Merlino
Clerk and Ex-Officio
Clerk of the Board

# APPENDIX C

# Town of Pahrump Dust Management Handbook

# Nye County

# DUST MANAGEMENT HANDBOOK

FOR

# THE PAHRUMP REGIONAL PLANNING DISTRICT

May 2007

# TABLE OF CONTENTS

## LIST OF FIGURES



## ATTACHMENTS

# ACRONYMS AND DEFINITIONS

Additional definitions are included in Section 15.28.070 of the Nye County Code.

**Best Management Practices (BMP)** – The suite of the most appropriate control measures for preventing or minimizing the generation of Fugitive Dust. **For the purpose of this Handbook, the definition of Best Management Practices is synonymous with Best Practical Methods, as defined in Subsection 15.28.070 of the Nye County Code.**

**Bulk material** – Any material, including but not limited to, earth, rock, silt, sediment, sand, gravel, soil, fill, aggregate less than 2 inches in length or diameter, dirt, mud, demolition debris, cotton, trash, cinders, pumice, saw dust, feeds, grains, fertilizers, and dry concrete, which is capable of producing Fugitive Dust at an industrial, institutional, governmental, construction, and/or demolition site.

**Control measure** – A technique, practice, or procedure used to prevent or minimize the generation, emission, entrainment, suspension, and/or airborne transport of Fugitive Dust. An action or practice employed to comply with a Control Requirement.

**Control requirement** – A summary statement of the code requirements pertaining to a particular activity or action.

**Dust Control Plan (DCP)** – A plan to formalize a project-specific Fugitive Dust control program.

**Dust Palliative** – Hygroscopic material, non-toxic chemical stabilizer or other material which is not prohibited for ground surface application by the federal U.S. Environmental Protection Agency (EPA) or the Nevada Division of Environmental Protection (NDEP) or any applicable law or regulation, used as a treatment material for reducing Fugitive Dust emissions. Water, solutions of water and chemical surfactants, and foam are not Dust Palliatives for the purpose of these regulations.

**Dust Suppressant** – Water or any hygroscopic material, solution of water and chemical surfactants, foam, non-toxic chemical stabilizer or any other Dust Palliative which is not prohibited for ground surface application by the federal U.S. Environmental Protection Agency (EPA) or the Nevada Division of Environmental Protection (NDEP) or any applicable law or regulation, used as a treatment material for reducing Fugitive Dust emissions.

**U.S. EPA** – United States Environmental Protection Agency

**Freeboard** – The distance measured from the upper limit of the side of the storage area of a truck to the fill line.

**Fugitive Dust** – Particulate matter, which is not collected by a capture system, and that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Fugitive Dust is entrained in the air and is caused from human and/or natural activities, such as but not limited to, movement of soils, vehicles, equipment, blasting, and wind.

**NDEP** – Nevada Division of Environmental Protection

**Notice of Alleged Violation (NOAV)** – A notice of an alleged violation of the Nye County Dust Control Code.

**Owner/Operator – The owner or operator (contractor, developer, etc.) that is directly involved in a soil disturbing activity.**

**Particulate Emission Potential (PEP)** – The characteristic ability of specific soil types to emit dust.

**Silhouette area** – The area of a shadow produced if a light was shone directly from the opposite side of an object.

**Stable,** and/or **Stabilized** – Soils are considered stable or stabilized when they are in compliance with the standard set forth per Nye County Code 15.28.140.

**Staging area** – Any portion of a construction project used for storing materials, parking vehicles, and equipment; may be a separate area from the main construction project area.

**Surfactant** – A compound or element that reduces the surface tension of a liquid. The term is used in this document to describe wetting and spray additives designed to promote the economical application of water to hydrophobic soils. Surfactants prevent drifting, decrease run-off, increase the penetrating and wetting properties, and promote more even, consistent spray patterns.

**Tackifier** – A substance used with water to hold together mulches and other Dust Palliatives, which binds small particles together without forming a hard crust.

**Track-out** – Soils on paved roadways deposited from vehicles that have passed from a construction site or from an unpaved access route or area onto the paved surface.

**Type II Material** – Base Aggregate as defined in Section 704 of the Uniform Standards Specifications for Public Works' Construction Off-Site Improvements, Nye County Area, Nevada.

**Wheel shaker** – A device capable of spreading the tread on tires and shaking the wheels and axles of vehicles for the purpose of releasing mud, soils, and rock from the tires and undercarriage to prevent tracking those materials onto paved surfaces.

**Wheel washer** – A station or device, either temporary or permanent, that utilizes a bath or spray of water for the purpose of cleaning mud, soils, and rock from the tires and undercarriage of vehicles to prevent tracking those materials onto paved surfaces.

**Wobbler** – Type of sprinkler head designed to minimize evaporation of water by enhancing the horizontal spray pattern.

## INTRODUCTION

The Nye County Air Quality Program Administrator (AQPA) regulates construction activities that disturb soil in the Pahrump Regional Planning District, Nye County, Nevada. A Dust Control Plan (Plan) is required for most soil-disturbing projects where the total disturbance on one or contiguous parcels by the same operator equals or exceeds 0.5 acre.

A Dust Control Plan must be submitted to and deemed complete by the AQPA before soil is disturbed. All plans, forms, fees, and documentation required for submittal to Nye County shall be submitted to the AQPA. The Nye County Air Quality Program Administrator Offices are located at 250 N. Highway 160, Suite 1, Pahrump, Nevada 89060-4039. The AQPA must be notified after the completion of a project.

Each Zoning Review application for construction activities, as well as projects involving the construction of unpaved parking and storage areas, open areas and vacant lots that propose a disturbance of 0.5 acre or greater must have a Dust Control Plan outlining control measures to prevent Fugitive Dust. Control measures are based upon soil type and project activities. Soil types are classified based upon particulate emission potential (PEP). A map of the Pahrump Valley soil PEP is provided as Figure 1 in this Handbook.

Fugitive Dust emission violations are strictly enforced. Owner/operators and contractors are responsible for controlling dust on their projects 24 hours a day, 7 days a week; there are no exceptions. Violators may be required to pay penalties or possibly suspend operations until the Fugitive Dust is mitigated on the construction sites.

This Dust Management Handbook (Handbook) provides a guideline for developing a Dust Control Plan. The Handbook has been divided into the following parts:

**GENERAL INFORMATION:**

a. Dust Control Plan Requirements (DCP)
b. General Construction Project Activities (GEN)

**BEST MANAGEMENT PRACTICES:**

a. Soil Particulate Emission Determination Charts and Maps
b. Best Management Practices (BMP) for Construction Activities

**ATTACHMENTS:**

a. Attachment 1 - Dust Control Plan Forms
b. Attachment 2 - Policy on Dust Palliative Use In The Pahrump Regional Planning District, Nye County, Nevada
c. Attachment 3 - Design and Posting of Dust Control Plan Signage
d. Attachment 4 - Dust Control Code

# DUST CONTROL PLAN SUMMARY

**DCP 01**

**REQUIREMENTS:**

- **Owners/operators and contractors are responsible for controlling dust on their projects 24 hours a day, 7 days a week; there are no exceptions. Violators may be required to pay penalties or possibly suspend operations until the Fugitive Dust is mitigated on the construction sites.**
- **Plan required for soil-disturbing projects with aggregate disturbances of 0.5 acres or greater.**
- **BMP *Control Requirements* must be addressed by *Control Measures.***
- **BMP Control Measures must be followed for every soil disturbing or construction activity.**

## CONTROL MEASURES

1. A Dust Control Plan is required for soil-disturbing or construction projects that disturb an aggregate of 0.5 acres or greater. A Dust Control Plan for projects with aggregate disturbances of 5 acres or more, which requires review by the Nevada Division of Environmental Protection, should be submitted for Nye County review prior to submittal to the Nevada Division of Environmental Protection.

2. Dust Control Plans may be submitted by the property owner or authorized designee.

3. Dust Control Plan requirements:

   a. Submit a complete form that includes project vicinity and assessor's parcel maps (see Attachment 1: Dust Control Plan Application Form DCP 01). Completed Dust Control Plans should be submitted to Nye County as indicated in the Introduction of this Dust Management Handbook.

   b. For soil disturbing or construction projects equal to or greater than 0.5 acre, a Dust Control Plan using the Best Management Practices in the Handbook must be submitted. Control Measures must be selected to meet all Control Requirements. Consider project conditions and logistics when identifying and selecting Best Management Practices and Control.

4. A Dust Control sign must be conspicuously posted on every construction site requiring a Dust Control Plan (see Code Section 15.28.160(A.1)).

## DUST CONTROL PLAN SUMMARY (continued) DCP 01

5. Copies of the Dust Control Plan and related maps must be supplied to all contractors and subcontractors. A complete copy must be kept at the construction site at all times.

6. Notify Nye County of any proposed modifications to the Dust Control Plan. Submit a Dust Control Plan Modification form DCP 05 or 08 (see Attachment 1: Dust Control Plan Forms).

7. Dust Control Plans are reviewed as a part of the Zoning Review or Site Development application process. Emergency measures are exempt from permitting requirements, but are not exempt from the application of dust mitigation measures or the use of Best Management Practices.

# DUST CONTROL PLAN SIGNAGE

DCP 02

**REQUIREMENTS:**

- **The Dust Control Plan sign must be placed in a conspicuous place on the project site prior to commencement of construction activities.**
- **The phone numbers posted on the Dust Control Plan sign must be for a person responsible for project dust control, and who can be reached during evening and weekend hours.**

## DUST CONTROL SIGNAGE

1. The Dust Control Plan sign must be placed on the project site and must be conspicuous to the public. The phone number posted on the Dust Control Plan sign must be for a person who can be reached during evening and weekend hours. That person must be able to implement Fugitive Dust Control Measures.

2. The owner/operator of any project requiring a Dust Control Plan must install a sign on the property prior to the commencement of construction. This sign must measure, at minimum, two (2) feet wide by two (2) feet high, conforming to the Nye County Code regarding the posting of informational signs on construction sites (see Code Section 15.28.160).

3. Projects less than two (2) weeks in duration may request a waiver of the requirement of posting a Dust Control Plan sign.

# DUST CONTROL PLAN MODIFICATIONS

**DCP 03**

**REQUIREMENTS:**

- **Modifications must be made on a Dust Control Plan Modification form and submitted to Nye County for review.**
- **If modification is in response to a Notice of Alleged Violation or Order, it must be noted on the modification form, and corrective action must take place as directed.**

## PLAN MODIFICATION

Modifications to a Dust Control Plan can be made with Nye County approval.

1. A Dust Control Plan Modification form must be submitted to Nye County (see Attachment 1: Dust Control Plan Forms)
2. If the parcel changes ownership or you wish to change the owner/operator during the lifetime of a Dust Control Plan, a MODIFICATION OF DUST CONTROL PLAN – TRANSFER OF PLAN AND/OR CHANGE OF PROPERTY OWNER (form DCP 08) must be submitted, and proof of ownership, or Owners Designee Form (DCP 04), whichever is appropriate, must be provided with the form.
3. The Dust Control Plan Modification application form must be signed by the owner/operator or written designee.
4. If the modification is in response to a Notice of Alleged Violation or Corrective Action Order issued by Nye County, it should be so noted on the modification form. The corrective action must take place as directed. All other Dust Control Plan requirements remain in effect while the modification is being processed.
5. If the selected control measures are inadequate to meet the requirements of Code Section 15.28.140(A), Soil Stabilization Standards of the Dust Control Code, additional or more stringent standards must be selected. A Dust Control Plan Modification form must be submitted.

# DUST CONTROL PLAN CLOSURE

**DCP 04**

**REQUIREMENTS:**

- **Within 20 working days of the completion of the project, the site must be stabilized and a Certificate of Project Completion form submitted to Nye County.**

## DUST CONTROL PLAN CLOSURE/RENEWAL

Dust Control Plans must be closed out to document completion of project activities.

1. Within 20 working days of the completion of the project, a Certificate of Project Completion (form DCP 07) must be submitted to the Nye County Air Quality Program Administrator (see Attachment 1: Dust Control Plan Forms).

2. A site visit will be conducted to determine if the parcel is properly stabilized. Upon verification of stabilization, the Dust Control Plan will be closed.

3. If the parcel has not been properly stabilized, the owner/operator will be notified of the deficiencies with a Corrective Action Order outlining corrective measures and timelines. Another Dust Control Plan Closure form must be submitted and a follow-up site visit will be conducted.

4. The Dust Control Plan is valid for one (1) year. If a project is not completed within a year, a plan renewal must be submitted.

5. Plan renewal may be accomplished by submitting an updated Dust Control Plan (DCP 01) and applicable fees.

# DUST CONTROL PLAN COMPLIANCE

**DCP 05**

**REQUIREMENTS:**

- **Comply with all control measures as required by Nye County Code.**
- **Comply with all control measures as directed in a Notice of Alleged Violation or Order.**
- **Comply with all control measures listed in Dust Control Plan.**
- **Employ control measures in all phases of construction activities.**

## CODE OVERVIEW

1. All owner/operators, contractors, or other persons involved in construction activities must employ the control measures as set forth in their Dust Control Plan as described in this Handbook.

2. The following circumstances constitute a violation of the Nye County Code:

   (a) Allowing Fugitive Dust emissions to exceed the standard as set forth in Section 15.20.080(A), (i.e. a visual emission of particulate matter whose opacity exceeds 20 percent using the Time Averaged Method).

   (b) Failure to submit a complete Dust Control Plan before engaging in activities that disturb or have the potential to disturb soils and/or cause or have the potential to cause Fugitive Dust to enter the air.

   (c) Failure to submit a complete Dust Control Plan for all areas subject to construction activities.

   (d) Conducting a construction activity as defined by Section 15.28.070 for which no specified control option is indicated in the Dust Control Plan.

   (e) Failure to perform any duty to allow or carry out an inspection, entry, or monitoring activity required by Nye County.

   (f) Failure to implement any item that is listed as a "Requirement" in the Best Management Practices section of the Handbook for an applicable construction activity.

(g) Failure to implement any Best Management Practice listed in the Dust Control Plan.

(h) Failure to maintain static (not actively worked) project soils with adequate surface crusting to prevent wind erosion as measured by test method "Soil Crust Determination (The Drop Ball Test)" Section 15.28.140(A) "Stabilization Standards", or alternative Control Measures approved in the Dust Control Plan.

(i) Failure to comply with any record keeping or miscellaneous requirements of this Section.

(j) Failure to comply with any other provision of this section.

(k) Failure to prepare a new plan or renew an existing plan.

## WARNING LETTER(S)

When a Code Compliance Officer observes an imminent violation of Chapter 15.28, a warning letter may be issued to the owner/operator and/or persons conducting the activity. The Warning Letter will identify the corrective actions that should be taken. If the corrective action is intended to be a permanent change to the methods for dust mitigation on site, a modification to the Dust Control Plan must be filed by the owner/operator to incorporate the Control Measures specified by the Warning Letter. The owner/operator may contact the Code Compliance Officer for more information.

## NOTICE OF ALLEGED VIOLATION

1. If a Notice of Alleged Violation (NOAV) is received for violation(s) of the Dust Control Code in Chapter 15.28, it will be accompanied by a form entitled "Option Letter." The following choices will be presented:

   (a) **Contest neither the "facts alleged" nor the "penalty assessed";**

   (b) **Contest the penalty assessed.** In this instance, the alleged facts are not contested, only the penalty is considered inappropriate. The documentation submitted should be focused on the factors regarding the penalty. The owner/operator may contact the Code Compliance Officer for more information; or

(c) **Contest the facts alleged and the penalty assessed in the NOAV.** This option may be selected if the alleged facts of the NOAV can be reasonably disputed and the penalty is considered inappropriate. Proper and complete documentation of Dust Control Measures should be submitted with the Option Letter. The owner/operator may contact the Code Compliance Officer for more information.

2. The NOAV also will identify the corrective action(s) and the date by which the corrective action(s) must be implemented. If the corrective action is intended to be a permanent change to the methods for dust mitigation on site, a modification to the Dust Control Plan must be filed by the owner/operator to incorporate the Control Measures specified by the NOAV.

3. If the owner/operator wishes to contest either the facts alleged and/or the penalty assessed in the NOAV, a meeting with the Compliance Review Committee must be scheduled. The owner/operator must contact the Code Compliance Officer and return the completed "Option Letter" within 14 calendar days of receiving the NOAV to schedule the Compliance Review Committee meeting.

4. The finding(s) and recommendation(s) of the Compliance Review Committee will be forwarded to the owner/operator in a Settlement Agreement.

5. If an "Order to Pay" is included, the owner/operator must pay the assessed penalties within 30 calendar days of receipt, or contact the AQPA within 7 calendar days to set up a payment plan. When a payment plan is established, the first payment will be due at the time the payment plan is established.

**APPEALING A NOTICE OF VIOLATION**

An owner/operator who is not satisfied with the CRC decision, may request an appeal hearing. The appeal will be heard *de novo*. Thus, any information and/or evidence previously submitted and considered must be brought to the Air Quality Appeal Hearings and Adjudications.

There is a 14 calendar day time limit in which to appeal the finding(s) and recommendation(s) of the Compliance Review Committee. A "Request for Hearing Before Nye County Hearing Officer" form (DCP 09) must be submitted to the AQPA. Appeal requests must be received within 14 calendar days of receipt of the Settlement Agreement. The Appeal Hearing process is described in Nye County Ordinance 316.

An owner/operator who is not satisfied with the Hearing Officer's decision, may request an appeal hearing before the Board of County Commissioners (BOCC). The appeal will be heard *de novo.* Thus, any information and/or evidence previously submitted and considered must be brought to the Nye County Board of Commissioners Meeting.

There is a 10 calendar day time limit from the date of service of the Order of Adjudication in which to appeal the decision of the Nye County Hearing Officer. An "Appeal to the Nye County Board of County Commissioners From Order of the Nye County Air Quality Hearing Officer" form must be submitted to the Clerk of the Board along with a $50.00 filing fee. The BOCC Appeal Hearing process is described in Nye County Ordinance 316.

**PENALTY STRUCTURE**

The penalty structure for calculation of fines is defined in the Nye County Pahrump Regional Planning District Penalty Policy and Guidance Document. Penalties are assessed for violation(s) of the Nye County Code 15.28, including but not limited to:

- violations of the Dust Control Plan;
- failure to maintain soils in a damp, crusted, or stabilized condition, or to clean track-out from paved roads;
- emissions of Fugitive Dust;
- non-compliance with a Corrective Action Order;
- failure to post signs;
- failure to prepare, modify, or renew a Dust Control Plan;
- failure to pay any fee, fine or penalty.

The maximum penalty amount may not exceed $10,000 per day per violation.

# DUST CONTROL PLAN FEES

**DCP 06**

**REQUIREMENTS:**

- **Pay fees as required for Dust Control Plan review.**
- **Pay fees as required for Dust Control Plan modification.**
- **Pay fees as required for Dust Control Plan renewal.**

## DUST CONTROL PLAN FEE STRUCTURE

Fees for Nye County technical review of Dust Control Plans required by this Handbook and final inspection at Dust Control Plan Closure shall be assessed as follows:

1. New or Renewed Dust Control Plan:

    a. Dust Control Plan applications having an aggregate disturbance of up to 1 acre - $50.

    b. Dust Control Plan applications having an aggregate disturbance of greater than 1 acre - $50/acre rounded up to the nearest full acre.

2. Dust Control Plan Modifications:

Substantive Dust Control Plan modifications (all modifications other than point of contact), regardless of reason for modification:

a. Projects having an aggregate disturbance of up to 1 acre - $50

b. Projects having an aggregate disturbance of greater than 1 acre - $50/acre rounded up to the nearest full acre.

# PHASING GEN 01

**REQUIREMENTS:**

- **Address all phases and stages of construction.**
- **Phases must have distinct physical boundaries.**
- **Include stage number, title, acreage, controls, and BMPs.**

## CONTROL MEASURES

1. The Dust Control Plan must address all phases and stages of the construction project. For projects with large cut and fill requirements, the land not active after the cut and fill must be stabilized using a palliative or other approved Control Measure and vehicle access must be prevented. Owner/operators should also limit the area disturbed at any one time, to the extent possible.

2. The construction project may consist of a single phase or be divided into as many phases as the owner/operator chooses. Each phase must have distinct physical boundaries to make it easily identifiable.

3. When project stages are identified, the following information must be provided for each project stage:

   a. Stage number and title;

   b. Amount of acreage included in stage;

   c. Control Requirements for activity; and

   d. Best Management Practice control measures to be implemented to meet Control Requirements.

## PHASING (continued)

GEN 01

4. Project planning for dust control is an effective method for reducing potential emissions on a construction site. Project planning may include the following procedures:

   a. Reducing the size of the staging area;

   b. Disturbing only a portion of the overall site at one time;

   c. Paving roadways as soon as possible;

   d. Constructing block walls as soon as possible;

   e. Planting perimeter vegetation with greater than 50 percent silhouette areas at the beginning of the project;

   f. Limiting the number of ingress and egress points;

   g. Paving parking lots as soon as possible;

   h. For large cut and fill projects, stabilizing the portion of the construction site not being actively worked on for the period of time it is vacant; or

   i. Confine import haul traffic to compacted or paved routes, where possible, to avoid picking up soil and rock in tire treads.

# RECORD KEEPING

**GEN 02**

**REQUIREMENTS:**

- **Record use of Dust Palliatives and Suppressants.**
- **Record track-out conditions and cleanup.**
- **Notify Nye County when project is complete.**
- **Record verification of compliance with all applicable Dust Control Measures.**
- **Notify Nye County of compliance with a Notice of Alleged Violation or Order.**
- **Retain project records.**

## CONTROL MEASURES

1. Document all use of Dust Palliatives on the Dust Palliative Information form DCP 06 (see Attachment 1: Dust Control Plan Forms).

2. Record track-out conditions daily and document cleanup measures taken.

3. Record other Dust Control Measures taken, including date, time, and amount of water applied for dust control purposes.

4. Notify Nye County of compliance with any Notice of Alleged Violation or Corrective Action Order issued.

5. Notify Nye County upon completion of project.

6. Retain all project records for one year or six months beyond project completion, whichever is greater.

# WEATHER MONITORING

**GEN 03**

**REQUIREMENTS:**

- **Monitor current weather conditions and weather predictions from the National Weather Service.**
- **Cease all construction activities if Fugitive Dust cannot be controlled.**

## CONTROL MEASURES

1. When winds occur that cause Fugitive Dust emissions, despite adhering to all Best Management Practices, all construction activities must cease immediately, except the operation of water trucks, which may continue to operate.

2. Water trucks should continue to operate under these circumstances unless wind conditions are such that continued operation of watering equipment cannot reduce Fugitive Dust emissions or visibility is limited to an extent that it is hazardous to continue operating equipment.

# BEST MANAGEMENT PRACTICES FOR DUST CONTROL

Best Management Practices (BMPs) are site-specific Dust Control Measures that are based on each project soil type, specific construction activities, phases and stages. These practices must be included in each Dust Control Plan and are established to meet the goal of reducing particulate emissions from construction sites. Additionally, some practices are designed for the purpose of reducing the amount of water needed for Dust Control.

## 1. Soil Type Categories

Soil types are classified into two categories (high (H) and low (L)) based on their Particulate Emission Potential (PEP). PEP is determined by soil silt content (measured by the soil percentage that will pass through a 200-mesh sieve).

Figure 1 is a map of the Nye County portion of the Pahrump Valley delineating the soil PEP categories.

## 2. Best Management Practices

The following subsections list the current BMPs developed and approved for use in Nye County for dust mitigation for construction activities. The BMPs are organized alphabetically by construction activity.

The control requirements of each construction activity category to be conducted on the construction project must be met through implementation of control measures. Within most construction activity categories, there are choices of control measure(s) to be selected from to meet the control requirements. Control requirements are stated for each construction activity. All control measures that will be used to meet the control requirements on the construction project must be identified in the Dust Control Plan for each construction activity.

Control measures are presented by soil type category where applicable. Some control measures apply to construction activities regardless of soil type. The control measures selected to meet control requirements must address the soil type for the area in which the construction project is permitted (see Figure 1).

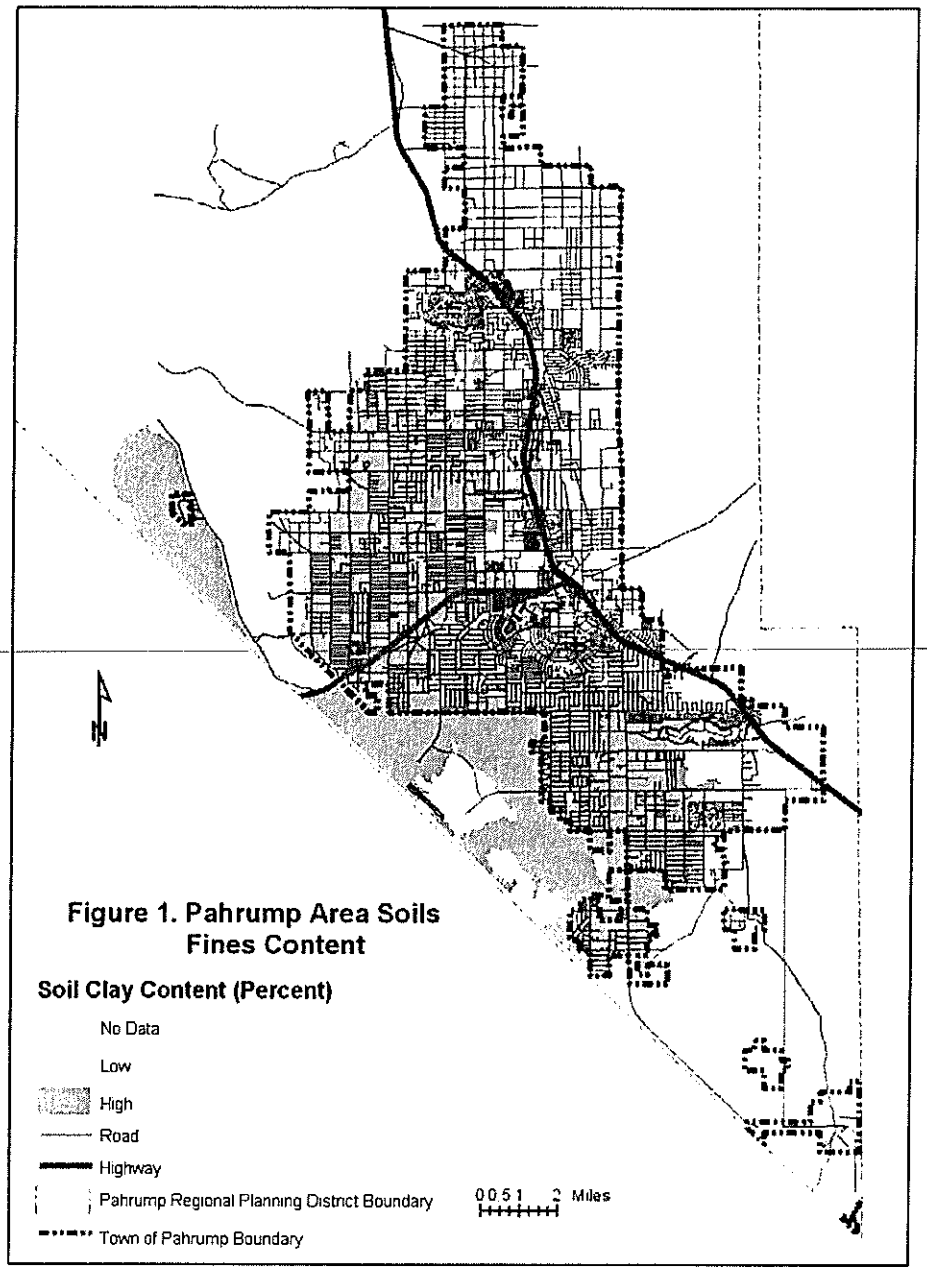
Control measures not currently listed in the Handbook may be proposed in a Dust Control Plan. Such unlisted control measures will be reviewed by Nye County and may require additional information regarding their effectiveness. Any control measure not listed in the Handbook must clearly meet the control requirements for an activity category.

Nye County will apply the following minimum criteria when evaluating any unlisted control measures that are proposed to meet the control requirements for a BMP:

1. The control measure technique is a new or alternative technology that is demonstrated to be equally or more effective in meeting the control requirement than the existing control measures; or
2. Site logistics do not practically allow for implementation of a listed control measure as written (e.g. road width or pre-existing barriers limit the size or width of a gravel pad); or
3. The owner/operator demonstrates that a listed control measure is technically infeasible due to site-specific or material-specific conditions, such that implementation of the control measure will not provide a benefit in reducing Fugitive Dust (e.g. pre-soaking screened, washed rock when handling).

Plan deviations from specific soil type BMPs in the form of a "downgrade" to the BMPs listed for a soil type with a lower PEP, or applying a control measure listed for all soil types in lieu of a specific soil type BMP, are not acceptable unless demonstrated to meet at least one of the above criteria.

# FIGURE 1: PAHRUMP VALLEY SOIL TYPES MAP



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## BACKFILLING — BMP 01

Definition: Filling area previously excavated or trenched.

**Requirement: Stabilize backfill material when not actively handling.**

01-1 Water backfill material to maintain moisture or to form a crust when not actively handling, or

01-2 Apply and maintain a Dust Palliative to backfill material to form a crust when not actively handling, or

01-3 Cover or enclose backfill material when not actively handling.

**Requirement: Stabilize backfill material during handling.**

01-4 Empty loader bucket slowly and minimize drop height from loader bucket, or

01-5 Dedicate water truck or large hose to backfilling equipment and apply water as needed.

**Requirement: Stabilize soils at completion of backfilling activity.**

01-6 Apply water and maintain disturbed soils in a stable condition until permanent stabilization is complete, or

01-7 Apply and maintain a Dust Palliative on disturbed soils to form a crust following backfilling activity.

## CLEARING AND GRUBBING

**BMP 02**

Definition: Clearing and grubbing for site preparation and vacant land cleanup.

**Requirement: Stabilize surface soils where support equipment and vehicles will operate.**

02-1 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate, or

02-2 Apply and maintain a Dust Palliative on surface soils where support equipment and vehicles will operate.

**Requirement: Stabilize soils during clearing and grubbing activities.**

02-3 **L:** Apply water during clearing and grubbing activities.

02-4 **H:** Apply water and surfactant or tackifier mixture during clearing and grubbing activities.

**Requirement: Stabilize disturbed soils immediately after clearing and grubbing activities.**

02-5 Water disturbed soils to form a crust immediately following clearing and grubbing activities, or

02-6 Apply and maintain a Dust Palliative on disturbed soils to form a crust immediately following clearing and grubbing activities.

Recommendations: Maintain live perennial vegetation and desert pavement where possible.

## CUT AND FILL — BMP 03

Definition: Cut and/or fill soils for site grade preparation.

**Requirement: Stabilize surface soils where support equipment and vehicles will operate.**

03-1 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate, or

03-2 Apply and maintain a Dust Palliative to surface soils where support equipment and vehicles will operate.

**Requirement: Pre-water soils.**

03-3 Dig a test hole to depth of cut or equipment penetration to determine if soils are moist at depth. Continue to pre-water if not moist to depth of cut, and

03-4 **L:** Pre-water with sprinklers or wobblers to allow time for moisture penetration, or

03-5 **L:** Pre-water with water trucks or water pulls to allow time for moisture penetration.

03-6 **H:** Pre-water with a water and surfactant or tackifier mixture using sprinklers or wobblers to allow time for moisture penetration, or

03-7 **H:** Pre-water with a water and surfactant mixture or tackifier using water trucks or water pulls to allow time for moisture penetration.

**Requirement: Stabilize soils during cut activities.**

03-8 Apply water to depth of cut prior to subsequent cuts using water truck or water pull, or

03-9 No cut activities, fill only.

**Requirement: Stabilize soils after cut and fill activities.**

03-10 Water disturbed soils to form a crust following fill and compaction, or

03-11 Apply and maintain a Dust Palliative on disturbed soils to form a crust following fill and compaction.

See also: BMP 05: DISTURBED LAND – Long-Term Stabilization if no activity will occur within 30 days.

## DISTURBED SOIL — BMP 04

Definition: Disturbed soil areas throughout project site including area between structures.

**Requirement: For each non-linear project of five acres or more to be permitted; install perimeter wind barrier three feet or more in height made of material with a porosity of 50 percent or less.**

**Requirement: Limit vehicle traffic and disturbance of soils where possible.**

04-1 Limit vehicle traffic and disturbance of soils with the use of fencing, barriers, barricades, and/or wind barriers.

**Requirement: Stabilize and maintain stability of all disturbed soils throughout construction site.**

**Note: The owner/operator must choose one or both of the following.**

04-2 Apply water to stabilize disturbed soils. Soils must be kept in a sufficiently damp, crusted or covered condition, and/or

04-3 Apply and maintain a Dust Palliative based on soil type and future plans.

**Requirement: Soil conditions, including preventive and corrective measures, must be recorded every day the construction project is active.**

04-4 Record soil conditions and dust control actions in daily project records.

Recommendations: If interior block walls are planned, install as early in the construction as possible.

See also: BMP 05: DISTURBED LAND – Long-Term Stabilization, if no continuing activity will occur within 30 days.

## DISTURBED LAND – Long-Term Stabilization

**BMP 05**

Definition: Large tracts of disturbed land that will not have continuing activity for more than 30 days.

**Requirement: Stabilize soils.**

05-1 Apply and maintain a Dust Palliative on disturbed soils for long-term stabilization, or

05-2 Stabilize disturbed soils with vegetation for long-term stabilization, or

05-3 Pave or apply surface rock for long-term stabilization, or

05-4 Use wind breaks in accordance with a site-specific plan, or

05-5 Apply water and maintain soils in a visible damp or crusted condition for temporary stabilization.

**Requirement: Prevent access to limit soil disturbance.**

05-6 Prevent access by fencing, ditches, vegetation, berms or other suitable barrier or means.

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Recommendations: Plant perimeter vegetation early. Use of native and drought-tolerant plants with greater than 50 percent silhouette area is encouraged.

See also: BMP 06: DUST PALLIATIVE – Selection and Use.

## DUST PALLIATIVE – Selection and Use

**BMP 06**

Definition: Selection and use of chemical and organic dust suppressing agents and other dust palliatives.

**Requirement: Follow the "Policy on Dust Palliatives Use In the Pahrump Regional Planning District, Nye County, Nevada" (Attachment 2).**

**Requirement: Record use of Suppressants and Dust Palliatives and retain records (Attachment 1, Form DCP 06).**

**Requirement: Follow applicable federal and state regulations.**

**Requirement: Select method of long-term stabilization taking into consideration future land use.**

06-1 For traffic area applications use Table 1: Traffic Area Application Requirements, Appropriate Use of Liquid Dust Palliatives and Application Rates, from the Policy on Dust Palliatives Use In the Pahrump Regional Planning District, Nye County, Nevada, or

06-2 For non-traffic area applications use Table 2: Non-Traffic Area Application Requirements, Appropriate Use of Liquid Dust Palliatives and Application Rates, from the Policy on Dust Palliatives Use In the Pahrump Regional Planning District, Nye County, Nevada.

## IMPORTING/EXPORTING SOILS, ROCK AND OTHER BULK MATERIAL

**BMP 07**

Definition: Importing or exporting of soils, aggregate, decorative rock, debris, Type II and other bulk material.

**Requirement: Limit visible dust opacity from vehicular operations.**

07-1 Apply water and limit vehicle speeds to 15 mph on the work site, or

07-2 Apply and maintain a Dust Suppressant on haul routes.

**Requirement: Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage.**

**Requirement: Maintain 12 inches of freeboard to minimize spillage.**

**Requirement: Stabilize materials during transport on site.**

07-3 Use tarps or other suitable enclosures on haul trucks, or

07-4 Stabilize materials with water.

**Requirement: Clean wheels and undercarriage of haul trucks prior to leaving construction site.**

Recommendations: Check State and local laws, regarding the hauling of bulk materials on public roadways.

See also: BMP 12: TRACK-OUT PREVENTION AND CLEANUP.

BMP 15: TRUCK LOADING.

## LANDSCAPING

**BMP 08**

Definition: Installation of sod, decorative rock, desert or other landscape materials.

**Requirement: Stabilize soils, materials and slopes during handling.**

08-1 **L:** Apply water prior to leveling or any other earth moving activity to keep the soils moist throughout the process.

08-2 **H:** Apply a water and surfactant or tackifier mixture prior to leveling or any other earth moving activity to keep the soils moist throughout the process.

**Requirement: Stabilize soils, materials and slopes at completion of activity.**

08-3 Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slope, or

08-4 Apply water and maintain sloping surfaces in a crusted condition, or

08-5 Maintain an effective cover over materials.

## PAVING/SUB-GRADE PREPARATION — BMP 09

Definition: Sub-grade preparation for paving streets, parking lots, etc.

**Requirement: Stabilize soils prior to activities.**

09-1 Pre-water sub-grade surface until adequate moisture content is reached and maintained.

**Requirement: Stabilize soils during activities.**

09-2 Maintain at least 70 percent of optimum moisture content for Type II material while aggregate is being applied.

**Requirement: Stabilize soils following activities.**

09-3 Place tack coat on Type II aggregate base immediately after it is applied, or

09-4 Apply water to Type II aggregate base immediately after it is applied.

**Requirement: Stabilize adjacent disturbed soils following paving activities.**

09-5 Stabilize adjacent disturbed soils following paving activities by crusting with water, or

09-6 Stabilize adjacent disturbed soils following paving activities by applying a Dust Palliative, or

09-7 Stabilize adjacent disturbed soils following paving activities with immediate landscaping activity or installation of vegetative or rock cover, or

09-8 Ensure that soils remain undisturbed adjacent to paving activities.

## STAGING AREAS

**BMP 10**

Definition: Staging areas, equipment storage and material storage areas.

**Requirement: Limit visible dust opacity from vehicular operations.**

10-1 Limit vehicle speeds to 15 mph in the staging area and on all unpaved access routes, or

10-2 Apply and maintain a Dust Suppressant on all vehicle traffic areas in the staging areas and unpaved access routes.

**Requirement: Stabilize staging area soils during use.**

10-3 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate, or

10-4 Apply and maintain a Dust Palliative to surface soils where support equipment and vehicles will be operated.

**Requirement: Stabilize staging area soils at project completion.**

10-5 Apply a Dust Palliative, or

10-6 Apply screened or washed Type II aggregate, or

10-7 Use wind breaks in accordance with a site-specific plan, or

10-8 Chip seal, or

10-9 A completed project will stabilize staging area with buildings, chip seal, pavement, and/or landscaping, or

10-10 Apply water to form an adequate crust, and prevent access.

Recommendations: Limit size of staging areas.

Limit ingress and egress points.

See also: BMP 12: TRACK-OUT PREVENTION AND CLEANUP

## STOCKPILING — BMP 11

Definition: Stockpiling of emissible or excavated material for future use or export.

**Requirement: To the extent possible, maintain stockpile to avoid steep sides or faces.**

11-1 Stockpiles will not be constructed over eight feet in height, or

11-2 Stockpiles constructed over eight feet high must have a road bladed to the top to allow water truck access or must have a sprinkler irrigation system installed, used and maintained.

**Requirement: Stabilize surface soils where support equipment and vehicles will operate.**

11-3 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate, or

11-4 Apply and maintain a Dust Palliative on surface soils where support equipment and vehicles will operate.

**Requirement: Stabilize stockpile materials during handling.**

11-5 Remove material from the downwind side of the stockpile, when safe to do so, and

**Note: Include 11-5 above, in addition to the appropriate control measure for the appropriate soil type, selected from the following.**

11-6 **L:** Apply water during stacking, loading and unloading operations.

11-7 **H:** Apply a water and surfactant or tackifier mixture during stacking, loading and unloading operations.

**Requirement: Stabilize stockpiles at completion of activity.**

11-8 Water stockpiles to form a crust immediately at the completion of activity, or

11-9 Apply and maintain a Dust Palliative to all surfaces of the stockpiles, or

11-10 Provide and maintain wind barriers on three sides of the pile. The length of the barrier at least must be equal to the length of the stockpile, and placed at a distance from the stockpile not more than twice the height of the stockpile. The barrier height must be at least equal to the stockpile height, and made of material with a porosity of 50 percent or less, or

11-11 Apply a cover or screen to stockpiles.

## TRACK-OUT PREVENTION AND CLEANUP — BMP 12

Definition: Prevention and cleanup of mud, silt and soils tracked out onto paved roads.

**Requirement: In soils that have a PEP classification of "High," pave construction roadways as early as possible.**

**Requirement: Use of soil to create a ramp for vehicle access over a curb is prohibited.**

**Requirement: Track-out conditions, including preventive and corrective measures, must be recorded daily for every day that the construction access is used by vehicles.**

12-1 Record soil conditions and dust control actions in daily project records.

**Requirement: Prevent dust emissions from track-out.**

12-2 Immediately clean track-out from paved surfaces to prevent fugitive emissions. Track-out must not extend a distance of 50 feet or more, or

12-3 Maintain dust control during working hours and clean track-out from paved surfaces at the end of the work shift/day. Track-out must not extend 50 feet or more and must be cleaned daily, at minimum.

**Requirement: Install and maintain track-out control devices in effective condition at all access points where paved and unpaved access or travel routes intersect.**

12-4 Install gravel pad(s) consisting of one to three inch rough diameter, clean, well-graded gravel or crushed rock. Minimum dimensions must be 30 feet wide by three inches deep, and, at minimum, 50' or the length of the longest haul truck, whichever is greater. Re-screen, wash or apply additional rock in gravel pad to maintain effectiveness, or

12-5 Install wheel shakers. Clean wheel shakers on a regular basis to maintain effectiveness, or

12-6 Install wheel washers. Maintain wheel washers on a regular basis to maintain effectiveness, or

12-7 Install wheel shakers in the event that track-out cannot be controlled with gravel pads, or

12-8 Install wheel washer in the event that track-out cannot be controlled with gravel pads and wheel shakers, or

12-9 Road vehicles will only operate on stabilized surfaces.

(Continued on next page)

**Requirement: All exiting traffic must be routed over selected track-out control device(s).**

12-10 Clearly establish and enforce traffic patterns to route traffic over selected track-out control device(s), and limit site access to routes with track-out control devices in place by installing effective barriers on unprotected routes.

## TRAFFIC – Unpaved Routes and Parking Areas

**BMP 13**

Definition: Construction related traffic on unpaved interior and/or access roads and unpaved employee/worker parking areas.

**Requirement: Limit visible dust opacity from vehicular operations.**

13-1 Limit vehicle speeds to 15 mph on all unpaved routes and parking areas, or

13-2 Apply and maintain a Dust Palliative on all vehicle travel areas.

**Requirement: Stabilize all haul routes.**

13-3 Apply water to haul routes and maintain in a stabilized condition, or

13-4 Apply a Dust Palliative to haul routes and maintain in a stabilized condition, or

13-5 Apply gravel to haul routes and maintain in a stabilized condition, or

13-6 Supplement a Dust Palliative or aggregate applications with watering, if necessary.

**Requirement: Stabilize all off-road and parking areas.**

13-7 Apply water to off-road traffic and parking areas and maintain in a stabilized condition, or

13-8 Apply gravel to off-road traffic and parking areas and maintain in a stabilized condition, or

13-9 Apply recycled asphalt (or other suitable material) to off-road traffic and parking areas and maintain in a stabilized condition, or

13-10 Apply and maintain a Dust Palliative (designed for vehicle traffic) to off-road traffic and parking areas and maintain in a stabilized condition.

Recommendations: Use of bumps or dips for speed control is encouraged.

Pave as soon as possible.

## TRENCHING

**BMP 14**

Definition: Trenching with track or wheel mounted excavator, shovel, backhoe, or trencher.

**Requirement: Stabilize surface soils where trenching equipment, support equipment, and vehicles will operate.**

14-1 Pre-water and maintain surface soils in a stabilized condition where trenching equipment, support equipment, and vehicles will operate, or

14-2 Apply and maintain a Dust Palliative to surface soils where trenching equipment, support equipment, and vehicles will operate.

**Requirement: Presoak soils prior to trenching activities.**

14-3 Pre-water surface, pre-trench to 18" depth, soak soils via pre-trench prior to deep trenching, and

14-4 **L:** Presoak soils with water using sprinklers or wobblers, or

14-5 **L:** Presoak soils with water using water trucks.

14-6 **H:** Presoak soils with a water and surfactant or tackifier mixture using water trucks, or

14-7 **H:** Presoak soils with a water and surfactant or tackifier mixture using sprinklers or wobblers.

**Requirement: Stabilize soils during trenching activities.**

14-8 **L:** Complete trenching with a dedicated water truck or large hose, maintaining water as needed to prevent dust, or

14-9 **L:** Use spray nozzles mounted on trenching machine.

14-10 **H:** Complete trenching with a dedicated water truck or large hose, maintaining a water and surfactant or tackifier mixture as needed to prevent dust.

**Requirement: Stabilize soils at the completion of trenching activities.**

14-11 Use water to form a crust on excavated soil windrow as it is formed, or

14-12 Use a Dust Palliative to form a crust on excavated soil windrow as it is formed.

Recommendations: Wash mud and soils from equipment at completion of trenching to prevent crusting and drying of soils on equipment.

See also: BMP 01: BACKFILLING, if applicable.

## TRUCK LOADING

**BMP 15**

Definition: Loading trucks with materials including construction and demolition debris, rock and soils.

**Requirement: Ensure all loads are covered prior to leaving the construction site and traveling on public roadways.**

**Requirement: Stabilize surface soils where loaders, support equipment and vehicles will operate.**

15-1 Pre-water and maintain surface soils in a stabilized condition where loaders, support equipment and vehicles will operate, or

15-2 Apply and maintain a Dust Palliative on surface soils where loaders, support equipment and vehicles will operate.

**Requirement: Stabilize material during loading.**

15-3 Empty loader bucket slowly and keep loader bucket close to the truck to minimize the drop height while dumping, and

**Note: The owner/operator must select 15-3 in addition to one of the following.**

15-4 **L:** Mix material with water prior to loading.

15-5 **H:** Mix material with a water and surfactant or tackifier mixture prior to loading, or

15-6 **H:** Spray material with a water and surfactant or tackifier mixture while loading.

# ATTACHMENT 1

## DUST CONTROL PLAN FORMS

1. Dust Control Plan (form DCP 01)
2. Dust Control Plan Checklist (form DCP 02)
3. Control Measure Identification (form DCP 03)
4. Owner's Designee (form DCP 04)
5. Dust Control Plan Modification (form DCP 05)
6. Dust Palliative Information (form DCP 06)
7. Certificate of Project Completion (form DCP 07)
8. Modification of Dust Control Plan – Transfer of Plan and/or Change of Property Owner (form DCP 08)
9. Request for Hearing Before Nye County Hearing Officer: Appeal of Notice of Alleged Violation (form DCP 09)
10. Record of Daily Dust Control for Construction Activities (form DCP 10)

# INSTRUCTION SHEET FOR A DUST CONTROL PLAN

1. Complete the Dust Control Plan form (DCP 01) and any additional forms required for completion and attachment. **As a minimum, the Dust Control Plan must include the forms and maps described on this page.**
2. Use the **Dust Control Plan Checklist** (DCP 02) to determine which Construction Best Management Practices (BMPs) are to be included in the Dust Control Plan. The checklist divides the construction project into seven (7) groups based on typical project stages: 1) Offsite Utility and Street Development, 2) Site Preparation and Earthwork, 3) Forms Construction and Slab Pouring, 4) Subgrade Preparation and Paving, 5) Building, 6) Landscaping, and 7) Activities for Every Stage. Mark the box next to all Project Activities that are applicable to your project.
3. Complete the **Control Measure Identification** form (DCP 03). Use the Project Activities Checklist (DCP 02) to itemize project stages and activities. Select and list BMP Control Measures to be used to fulfill each requirement for the Project Activity on the Control Measure Identification form. If available, select at least one Control Measure corresponding to the identified soil particulate emission potential (PEP). See Control Measures Identification Instruction page of this section for detailed instructions.
4. Provide a map showing the vicinity of the project, clearly identifying the closest major cross streets or other landmarks and the project location. Label this map "**Vicinity Map**". Required map size is 8 ½ x 11 inches. For projects less than 10 acres, where the required Assessor Parcel Maps listed below indicates known cross streets, this map is not required.
5. Provide an 8 ½ x 11 inch **Assessor Parcel Map** for the property(s) on which the project will be occurring. Outline or highlight the affected parcels. Assessor Parcel Maps may be obtained from the Nye County Assessor's Office. Projects that entail installation or construction of linear features such as roads, pipelines or other utilities that border or cross more than two Assessor's Parcel Maps are only required to provide an Assessor's Parcel Map(s) for those areas that show the material and equipment staging areas; but a detailed vicinity map adequately depicting the entire project area, including staging areas, must be provided.
6. Submit Dust Control Plan and fee to Nye County. Dust Control Plans will be accepted Monday through Friday, 8:00 a.m. to 4:30 p.m., at the address specified in the Introduction section of the Nye County Dust Management Handbook (page1). Applicable fees are described in DCP 06 (Dust Control Plan Fees) of the Nye County Dust Management Handbook.

***FOR Nye County USE ONLY***

| | | |
|---|---|---|
| PLAN NUMBER | ISSUE DATE | ISSUED BY |
| DATE PAID | $ AMOUNT | CHECK # |
| | | COMPANY NAME |
| RECEIVED BY | | $ BALANCE DUE |
| NYE COUNTY REVIEW: | | DATE: |

# DUST CONTROL PLAN

Construction activities include but are not limited to: cut and fill, site cleanup, staging areas, stockpiles, surface grading, trenching, landscaping and construction.

- A Dust Control Plan is required for all projects disturbing 0.5 acre or more. Attach a copy of the Dust Control Plan (DCP 01) including maps and required supplemental forms and documents.
- A copy of the submitted Dust Control Plan including all maps must be on-site prior to commencing construction activity.
- A Dust Control Plan Sign must be erected on-site prior to commencing construction activity.
- Owner/Operator is responsible for dust control 24 hours per day, 7 days per week until a Certificate of Project Completion is submitted by the Owner/Operator and reviewed by a Code Compliance Officer.

***Please print in ink or type. Blank spaces must be completed for the application to be processed. If not applicable, enter N/A.***

1. **Project Name:** _____

2. **Dust Control Plan Filing (check one):** ☐ New ☐ Renewal

3. **Owner/Operator:**

   ☐ Property Owner ☐ Developer ☐ Prime Contractor ☐ Other

   Name: _____

   Address: _____

   City: _____ State: _____ Zip: _____

   Telephone: _____ Fax: _____

   E-mail Address: _____

4. **Property Owner: (if applicant is NOT the Property Owner, Owner's Designee form DCP 04 is required, See Attachment 1: Dust Control Plan Forms)**

Name:_____

Address:_____

City:_____ State:_____ Zip:_____

Telephone:_____ Fax:_____

5. **Project Address or Location:**

Address:_____ City:_____

Nearest major cross-streets:_____

Township(s):_____ Range(s):_____ Section(s):_____

Assessor's Parcel number(s) (Attach map):_____

6. **Point of Contact for dust control matters and to whom a NOTICE OF ALLEGED VIOLATION should be sent if necessary:**

Name:_____

Company:_____

Address:_____

City:_____ State:_____ Zip:_____

Telephone:_____ Ext:_____ Fax:_____

Cell/Pager:_____ After Hours Phone:_____

7. **On-site Superintendent/Supervisor/Foreman contact:**

Name: _____ Company: _____

On-site phone: _____ Cell/Pager: _____

8. **Project Summary (check all that apply):**

Project Timeline:

☐ New Project ☐ Existing/Ongoing Project

Anticipated Start Date: _____ Completion Date: _____

Project Description:_____

_____

_____

Project Acreage: _____ acres (rounded to the nearest 0.1 acre)

(All land to be disturbed must be included in project acreage: project site, new or existing unpaved access roads, stockpile, and staging areas)

Water source: ☐ Hydrant with Jones Valve ☐ Fire hose ☐ Water trucks ☐ Well
☐ Stand tanks ☐ Ponds ☐ Other:_____

9. **Project Soil "Particulate Emission Potential":**

PEP is determined using generalized PEP determination map included in the Dust Management Handbook.

PEP for this project is determined to be:

☐ High ☐ Low

10. **Attach completed Dust Control Plan**

Attach a Dust Control Plan Checklist (Form # DCP 02), Control Measure Identification (as many copies of Form # DCP 03 as needed), and applicable maps.

11. **AQPA Notification of Project Completion:**

Nye County must be notified within 20 working days of the completion of the project (Certificate of Project Completion Form # DCP 07).

**The signatory on this Dust Control Plan shall constitute agreement by the Owner/Operator to be the person with authority to enforce compliance by all contractors and subcontractors with the Dust Management Handbook, Dust Control Measures, Dust Control Plan, any Plan supplements, and Section 15.28 of the Nye County Dust Control Code.**

The holder of the Plan agrees to allow inspection of the premises to which the Plan relates by any authorized officer of Nye County at any time during the holder's hours of operation without prior notice.

| | |
|---|---|
| OWNER/OPERATOR (AGENT) SIGNATURE | DATE |
| PRINTED NAME | TITLE AND COMPANY NAME |

Dust Control Plan completed by, if not completed by signatory (Please Print):

| | |
|---|---|
| Name | Phone Number, ext. |

# DUST CONTROL PLAN CHECKLIST

**Instructions:** In each Stage column, place a mark in the box in the Project Activity row for each activity that will occur in your project. Refer to the Best Management Practices (BMP) for dust control in the Nye County Dust Management Handbook for a complete list and descriptions.

If additional soil disturbing activities are to be included in a project stage, include them as "Other" and provide a description.

If a stage is not applicable to your project, mark the box in the "Stage Not Applicable" row.

If an activity is applicable to all stages of your project, for example BMP 04 Disturbed Soil, mark the box in the "Activities for Every Stage" column.

Project Name: _____

Submittee Name: _____

# DUST CONTROL PLAN CHECKLIST

| BMP | Project Activity | Activities for Every Stage | 1 Offsite Utility and Street Development | 2 Site Preparation and Earthwork | 3 Forms Construction and Slab Pouring | 4 Subgrade Preparation and Paving | 5 Building | 6 Landscaping |
|---|---|---|---|---|---|---|---|---|
| | Stage Not Applicable | | | | | | | |
| 01 | Backfilling | | | | | | | |
| 02 | Clearing & Grubbing | | | | | | | |
| 03 | Cut and/or Fill | | | | | | | |
| 04 | Disturbed Soil | | | | | | | |
| 05 | Disturbed Land - Long Term Stabilization | | | | | | | |
| 06 | Dust Suppressants - Selection and Use | | | | | | | |
| 07 | Importing/Exporting Materials | | | | | | | |
| 08 | Landscaping | | | | | | | |
| 09 | Paving/Subgrade Preparation | | | | | | | |
| 10 | Staging Areas | | | | | | | |
| 11 | Stockpiles | | | | | | | |
| 12 | Trackout Prevention and Cleanup | | | | | | | |
| 13 | Traffic - Unpaved Routes and Parking | | | | | | | |
| 14 | Trenching | | | | | | | |
| 15 | Truck Loading | | | | | | | |
| | Other (include description below) | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

# Control Measure Identification

## Instructions:

1. **Control Measures must be chosen for each Project Activity marked on the Project Activities Checklist (DCP 02). Make as many copies of DCP 03 as needed, to list them all.**
2. Control Requirements and Control Measures are listed in Best Management Practices section of the Dust Management Handbook.
3. On the "**Project Activity**:" line, enter the name of each Activity identified from the **Project Activities Checklist.** Then on the "**BMP #**:" line, enter the corresponding BMP #, these are found on pages 19 through 35, of the Nye County Dust Management Handbook.
4. Check the box that indicates what stage(s) of your project this **Project Activity's** Control Measures will apply to. If a Project Activity will have different Control Measures in different stages, repeat steps 2-5 as needed. Do not indicate the same stage on more than one entry for one type of Project Activity.
5. Select and list all BMP Control Measures to be used to fulfill each requirement for each Project Activity and enter the Control Measure number on the form. If a Requirement does not apply to the Project Activity, briefly explain the reason on a separate sheet to be referenced on and attached to form DCP 03.
6. If listed, you must select at least one Control Measure corresponding to the identified soil Particulate Emission Potential (PEP) for your site. These are abbreviated as "**L:**" for Low, and "**H:**" for High, on the BMP pages. If you select Contingency measures they must be denoted with a mark in the check box.
7. Recommendations are included for some Project Activities. If applied, these suggestions may reduce the amount of additives and water required to effectively prevent fugitive dust.

   An example is provided below.

Project Stages:

| | |
|---|---|
| ALL = Activities for Every Stage | (1) = Offsite Utility and Street Development |
| (2) = Site Preparation and Earthwork | (3) = Forms Construction and Slab Pouring |
| (4) = Subgrade Preparation and Paving | (5) = Building (6) = Landscaping |

**EXAMPLE:**

## Control Measure Identification

Project Activity: Backfilling BMP #: 01

Stage(s) (Check all that apply for this Project Activity):

ALL ☐ (1) ☒ (2) ☒ (3) ☐ (4) ☐ (5) ☐ (6) ☒

Control Measure # 01-1

Control Measure # 01-5

Control Measure # 01-6

Contingency Measure:

☒ Control Measure # 01-2

# Control Measure Identification

*(Make additional copies of this page as necessary)*

**STAGE IDENTIFICATION:**

ALL = Activities for Every Stage
**(1)** = Offsite Utilities and Street Development
**(2)** = Site Preparation and Earthwork
**(3)** = Forms Construction and Slab Pouring
**(4)** = Subgrade Preparation and Paving
**(5)** = Building
**(6)** = Landscaping

Project Activity:_____ BMP #:_____

Stage(s) (Check all that apply for this Project Activity):

ALL ☐ (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5) ☐ (6) ☐

Control Measure # _____
Control Measure # _____
Control Measure # _____
Control Measure # _____

Contingency Measure: ☐ Control Measure # _____

Project Activity:_____ BMP #:_____

Stage(s) (Check all that apply for this Project Activity):

ALL ☐ (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5) ☐ (6) ☐

Control Measure # _____
Control Measure # _____
Control Measure # _____
Control Measure # _____

Contingency Measure: ☐ Control Measure # _____

Project Activity:_____ BMP #:_____

Stage(s) (Check all that apply for this Project Activity):

ALL ☐ (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5) ☐ (6) ☐

Control Measure # _____
Control Measure # _____
Control Measure # _____
Control Measure # _____

Contingency Measure: ☐ Control Measure # _____

Project Activity:_____ BMP #:_____

Stage(s) (Check all that apply for this Project Activity):

ALL ☐ (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5) ☐ (6) ☐

Control Measure # _____
Control Measure # _____
Control Measure # _____
Control Measure # _____

Contingency Measure: ☐ Control Measure # _____

# OWNER'S DESIGNEE FOR DUST CONTROL PLAN FOR CONSTRUCTION ACTIVITIES (Must be notarized)

*An Excavation / Encroachment / Offsite permit for government owned land may be submitted in lieu of this form.*

**1. DESIGNEE INFORMATION:**

Designee:_____

Address:_____

City:_____ State:_____ ZIP:_____

Phone:_____ Ext:_____ Fax:_____

**2. PROPERTY OWNERS INFORMATION:**

☐ Property Owner ☐ Easement Holder ☐ Right of Way Holder

Name:_____

Address:_____

City:_____ State:_____ ZIP:_____

Phone:_____ Ext:_____ Fax:_____

**3. PROPERTY PHYSICAL INFORMATION:**

Project Address or, if none, description of location:_____

_____

Major Cross Streets:_____ Assessor Parcel Map #:_____

I hereby authorize the person listed as my designee to act on my behalf in all matters regarding the requirements of the Dust Control Plan. The Designee is responsible until such time the Plan is closed in accordance with Nye County Codes. The Designee is responsible for ensuring the contractor(s), subcontractor(s), and all other persons associated with the Project be certified and comply with the "Conditions of Plan". They have full authorization to modify and close the Dust Control Plan for Construction Activities for my property.

_____ _____

Signature Owner/Holder Printed Name

_____ _____

Title and Company Date

**State of** _____

**County of** _____

**Subscribed and sworn to before me on this**_____**day**

**of** _____ **20**____

**by** _____.

_____

**Notary Signature**

# APPLICATION FOR DUST CONTROL PLAN MODIFICATION

*Submit applicable fee per DCP 06 (Dust Control Plan Fees) of the Nye County Dust Management Handbook*

**1. GENERAL INFORMATION:** Plan Number:_____

Owner/Operator:_____

Project Name:_____

Project Address/Location:_____

**2. IS MODIFICATION REQUESTED AS A RESULT OF A NOTICE OF ALLEGED VIOLATION OR ORDER?**

☐ Yes ☐ No

**3. INFORMATION TO BE MODIFIED:**

☐ Control/Contingency Measures and/or Stages: *(check all stages to be modified)*

☐ Activities for Every Stage
☐ Site Preparation and Earthwork
☐ Subgrade Preparation and Paving
☐ Offsite Utility and Street Development
☐ Forms Construction and Slab Pouring
☐ Building
☐ Landscaping

Attach modified Dust Control Plan Checklist (DCP 02) and Control Measure Identification (DCP 03) forms for additional activities.

☐ Project Acreage:

~~Acreage to be added:~~_____ ~~Acreage to be removed:~~_____

Attach a revised map showing the originally permitted area and the area to be added/removed. Attach Owners Designee (DCP 04) form(s) for any additional parcel(s) to be added.

☐ Contact Information:

☐ Point of Contact ☐ On-site Contact

Attach current information.

☐ Other:

_____

_____

Attach modifications and/or current information.

**4. SUBMITTED BY:**

Signature:_____ Date:_____

Name:_____ Company Name/Title:_____

**5. REVIEWED BY:**

Nye County:_____ Date:_____

# DUST PALLIATIVE INFORMATION

**1. DUST CONTROL PLAN INFORMATION:** *(if applicable)*

Plan Number:_____

Owner/Operator:_____

Project Name:_____

**2. DUST PALLIATIVE INFORMATION:**

Project Address/Location:_____

Date of Application:_____ Acreage or Square Footage stabilized:_____

Product Name of Dust Palliative:_____

Type of Dust Palliative:_____

Dilution Rate:_____ Application Rate:_____

Method of Application (Topical/Blended):_____

☐ Traffic ☐ Non-Traffic Equipment Used:_____

**3. APPLICATOR INFORMATION:**

Company:_____

Address:_____

Contact Name:_____ Nevada Contractor's License #:_____

Phone Number:_____ FAX Number:_____

Is there a warrantee on services provided? ☐ Yes ☐ No

If yes, terms of warrantee:_____

If no, how long is the Dust Palliative expected to be effective:_____

Signature of Applicator:_____ Date:_____

**4. SUBMITTED BY:**

Signature:_____ Date:_____

Name:_____

Company Name/Title:_____

# CERTIFICATE OF PROJECT COMPLETION

***This form must be submitted within 20 working days of the completion of the project.***

## 1. DUST CONTROL PLAN INFORMATION:

Plan Number:_____

Owner/Operator:_____

Project Name:_____

Project Address/Location:_____

## 2. CLOSURE INFORMATION:

**Owner/Operator Statement**

I verify no further soil disturbing construction activities will occur at the above referenced location. All project soils designated in the Dust Control Plan have been permanently stabilized by the following method(s) (Check all that apply):

- ☐ Buildings
- ☐ Application of gravel cover
- ☐ <1/4 acre disturbed soil remains
- ☐ Other method (describe): _____
- ☐ Landscaping
- ☐ Application of dust palliative
- ☐ Paving

I further verify that this project has not created any emission units that require an Air Quality Operating Permit (issued by NDEP). (Decreased font size from 12 to 11)

Owner/Operator Signature:_____ Date:_____

Request return fax with inspection results? ☐ No ☐ Yes, Fax #:_____

*Nye County use only*

**Inspection Results**

An inspection by a Nye County Code Compliance Officer has been performed with the following results:

- ☐ Construction has ceased and the entire site has been adequately treated for long-term stabilization (PASS)
- ☐ Construction has ceased, but the site has not been adequately treated for long-term stabilization *in certain areas* (FAIL)
- ☐ Construction has ceased, but the site has not been adequately treated for long-term stabilization (FAIL)

Notes: _____

_____

Code Compliance Officer:_____ Date:_____

# MODIFICATION OF DUST CONTROL PLAN
# TRANSFER OF PLAN AND/OR CHANGE OF PROPERTY OWNER

***Please print in ink or type. Blank spaces must be completed for the application to be processed. If not applicable, enter N/A.***

1. **This application is for:** (mark all that apply)
   - ☐ **Transfer of Plan**
   - ☐ **Change of Property Ownership**

2. **Plan Number:** _____

   **Project Name:** _____

3. **Current Permit Holder:** _____

   **Current Property Owner:** _____

4. **New Owner/Operator (if applicable):**
   **(if new Owner/Operator is NOT the Property Owner, Owner's Designee form DCP 04 from property owner is required, See Attachment 1: Dust Control Plan Forms)**

   ☐ **Property Owner** ☐ **Developer** ☐ **Prime Contractor** ☐ **Other** _____

   Name: _____

   Address: _____

   City: _____ State: _____ Zip: _____

   Telephone: _____ Fax: _____

   E-mail Address: _____

5. **New Property Owner (if applicable):**
   **(if new Property Owner is NOT the Permittee, Owner's Designee form DCP 04 from new property owner is required, See Attachment 1: Dust Control Plan Forms)**

   Name: _____

   Address: _____

   City: _____ State: _____ Zip: _____

   Telephone: _____ Fax: _____

6. **Point of Contact for dust control matters and to whom a NOTICE OF ALLEGED VIOLATION should be sent if necessary (if changed from current Plan):**

   Name: _____

   Company: _____

   Address: _____

6. **Point of Contact (continued):**

City: _____ State: _____ Zip: _____

Telephone: _____ Ext: _____ Fax: _____

Cell/Pager: _____ After Hours Phone: _____

7. **On-site Superintendent/Supervisor/Foreman contact (if changed from current Plan):**

Name: _____ Company: _____

On-site phone: _____ Cell/Pager: _____

The signatory on this Dust Control Plan submittal shall constitute an agreement by the Owner/Operator to be the person with authority to enforce compliance by all contractors and subcontractors with the Dust Management Handbook, Dust Control Measures, Dust Control Plan, any Plan supplements and Section 15.28 of the Nye County Dust Control Code.

**The signatory further stipulates that by signing this application, he/she has read and understood the existing Dust Control Plan and associated documents, and agrees to abide by all conditions and requirements of that Plan.**

The holder of the Plan agrees to allow inspection of the premises to which the Plan relates by any authorized officer of Nye County at any time during the holder's hours of operation without prior notice.

_____ _____

**OWNER/OPERATOR (AGENT) SIGNATURE** **PRINTED NAME**

_____ _____

**DATE** **TITLE AND COMPANY NAME**

# REQUEST FOR HEARING BEFORE THE NYE COUNTY HEARING OFFICER

**1. GENERAL INFORMATION:** Plan Number:_____

Owner/Operator:_____

Project Name:_____

Project Address/Location:_____

NOAV #:_____ Date of Issue:_____

Nature of Alleged Violation:_____

_____

_____

**2. PURPOSE OF REQUESTED HEARING:**

☐ Contest the Penalty Assessed

☐ Contest the Facts Alleged and the Penalty Assessed

☐ Other: _____

Provide a Summary Explanation for Hearing Request (attach additional sheets as needed):

_____

_____

_____

_____

*Nye County use only*

**Date Request Received By Nye County:** _____

Nye County Representative Receiving Application:_____

☐ Hearing request received within time limits established in the Nye County Dust Management Handbook. Hearing Scheduled for: _____

☐ Hearing request denied for failure to submit form within time limits established in the Nye County Dust Management Handbook.

☐ Other: _____

Notes: _____

_____

_____

_____

# NYE COUNTY

## RECORD OF DAILY DUST CONTROL FOR CONSTRUCTION ACTIVITIES

Plan Number:_____

Other Plan/Permit Numbers:_____

Owner/Operator:_____

Project Name:_____

Record inspection results and corrective actions taken daily, at minimum.

| Date | Time | Visible Dust | Project Soils Crusted or Damp | Access Roads Crusted or Damp | Trackout Present/ Cleaned | Verification of Compliance With Dust Control Measures |
|---|---|---|---|---|---|---|
| | | | | | | |
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Construction Site Dust Control Records are required by the Nye County Dust Control Code (Section 15.28.090). Records must be retained and made available for inspection by Nye County.

**ATTACHMENT 2**

**POLICY ON DUST PALLIATIVE USE IN THE PAHRUMP REGIONAL PLANNING DISTRICT, NYE COUNTY, NEVADA**

# POLICY ON DUST PALLIATIVE USE IN THE PAHRUMP REGIONAL PLANNING DISTRICT, NYE COUNTY, NEVADA

Glossary of Terms and Definitions
Environmental / Regulatory Requirements
General Use Requirements
Application Guidelines - Traffic Area Applications
Application Guidelines - Non-Traffic Area Applications

# GLOSSARY OF TERMS AND DEFINITIONS[1]

**Application rate: Liquids** - For liquid suppressants, the volume of mixed solution (concentrate plus water) applied per unit area of land. Typical application rates range from 0.10 to 1.00 gallons of mixed solution per square yard (gallon/yd$^2$) of land.

**Application rate: Fibers and Mulches** - For fibers and mulches, the mass of solids in pounds applied per unit area of land. Typical application rates range from 500 pounds per acre to 6,000 pounds per acre.

**Brine** - Solution of salt in water. Strength of brine measured by percent solids by mass. For example: a 40 percent magnesium chloride brine has 40 percent solids by mass.

**Deliquescent salts** - Calcium chloride and magnesium chloride salts are deliquescent (readily drawing moisture from the atmosphere and melting). Calcium chloride is available as flake or brine. Magnesium chloride is available as brine. Brine solids contents are variable.

**Dilution ratio** - The ratio of the volume of concentrate to volume of water. Example; 1:4 means 1 volume of concentrate is to be mixed with 4 volumes of water, or 100 gallons of concentrate would be mixed with 400 gallons of water.

**Dust Palliative** - A hygroscopic material, non-toxic chemical stabilizer or other dust palliative which is not prohibited for ground surface application by the EPA or the Nevada Division of Environmental Protection (NDEP) or any applicable law or regulation, as a treatment material for reducing fugitive dust emissions. Water, solutions of water and chemical surfactants, and foam are not dust palliatives for the purpose of these Codes.

**Dust Suppressant** - Water, hygroscopic material, solution of water and chemical surfactants, foam, non-toxic chemical stabilizer or any other dust palliative which is not prohibited for ground surface application by the EPA or the Nevada Division of Environmental Protection (NDEP) or any applicable law or regulation, as a treatment material for reducing fugitive dust emissions.

**Fibers/mulches** - Blends of wood fiber or paper mulch with binder and or tackifier in water. Fibers and mulches are usually blended on-site. Formulation types and concentrations are often proprietary and depend on soil conditions and intended use.

**Hygroscopic** - Readily drawing moisture from the atmosphere but not melting. Dry sodium chloride is hygroscopic.

**Lignosulfonate** - By-product of sulfite paper-making process. Available as 10-25 percent volumetric residual solution, as a 50 percent volumetric residual solution, or as powdered solid to be mixed with water. May have high initial BOD (Biological Oxygen Demand).

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[1] Principal source: Bolander and Yamada, Dust Palliative Selection and Application Guide – US Department of Agriculture, November, 1999.

**Organic non-petroleum products** - Vegetable oils; typical sources include canola oil, cottonseed oil, linseed oil and soybean oil. Applied full-strength at 0.25-0.50 gallon/yd$^2$.

**Organic petroleum products** - Available as cutback asphalt, asphalt emulsions, modified asphalt emulsions and other emulsified oils. Application rates highly variable, depending on road surface conditions, product type and dilution.

**Synthetic polymers** - By-products of adhesive manufacturing process. Available as 40-50 percent volumetric residual concentrate (40-60 percent solids by mass) in water, then diluted for application.

**Tackifier** - A substance used with water to hold together mulches and other dust palliatives. A tackifier binds small particles together without forming a hard crust. Many dust palliatives can be used in a dilute form as a tackifier.

**Topical** - Liquid dust suppressant application technique using a hose, spray bay or spray cannon.

**Windrow** - Method of making a temporary road surface. A 4- to 6-inch thick layer of soil is scraped off the surface. The surface is treated with dust suppressant. The windrow is scraped back onto the surface and another treatment of dust suppressant is applied. A compaction step may be necessary.

# ENVIRONMENTAL AND REGULATORY REQUIREMENTS

## Policy Background

The objective of this Policy on Dust Palliative Use in the Pahrump Regional Planning District, Nye County, Nevada is to facilitate the implementation of fugitive dust controls in a manner that prevents human exposure to harmful constituents and protects soil and water resources while achieving Dust Control objectives. This policy was based on current state and federal regulations that are applicable to soil contamination, groundwater contamination, and surface water contamination. Some requirements are also incorporated based on information currently available in the scientific literature.

This policy provides guidance on the use of dust palliatives and suppressants. The document lists applicable state regulations to the use of dust palliatives. This policy includes guidelines and requirements for the use of dust palliative products based on conditions in the Pahrump Regional Planning District.

## Regulatory Basis For Guidance

- NAC 445A.2272 Contamination of soil: Establishment of action levels
- NAC 445A.22735 Contamination of groundwater: Establishment of action levels
- NAC 445A.2275 Contamination of surface water
- NRS 444.8565 "Hazardous Waste" defined
- NRS 444.861 "Used Oil" defined
- NRS 444.8632 Compliance with federal regulations adopted by reference
- NRS 444.8681 Mixing of used oil with hazardous waste or products
- NRS 444.8682 Requirements for managing and disposing of mixtures of used oil and hazardous waste or other products
- NRS 444.8683 Regulation of mixtures of used oil with wastes determined not to be hazardous

## COMPLIANCE

Application of dust palliatives may be subject to sample collection and testing for compliance with applicable regulations of the Nevada Administrative Code and the Nevada Revised Statues, and with the prohibited materials requirements and pH requirements set forth in this policy. Sample collection may be conducted by compliance staff of Nye County or the Nevada Division of Environmental Protection.

The requirements of this policy are applicable to Dust Control Plans submitted under the requirements of the Nye County Code 15.28.

### Prohibited Materials

The materials and compounds listed on the following pages are not permitted in any dust suppressant product at detectable levels:

**1) Banned Pesticides:**[2]

- aldrin
- chlordane
- DDT
- DDE
- DDD
- Methoxychlor
- Dieldrin/endrin
- Heptachlor
- Hexachlorobenzene
- Lindane ((γ-BHC)
- 4. 2,3,4,5-Bis(2-butylene)tetrahydro-2- furaldehyde (Repellent-11)
- bromoxynil butyrate
- cadmium compounds
- calcium arsenate
- carbon tetrachloride
- chloranil

[2] **References:** a) United States Environmental Protection Agency
Office of Pesticide Programs
http://www.epa.gov/oppfead1/international/piclist.htm
b) The Merck Index, eleventh edition, Merck and company, Rahway, N. J., 1989
c) Environmental Chemistry, Manahan, S. Lewis Publisher, 1994.
d) Hazardous Wastes, Watts, R. Wiley Intersciencee, 1997.
e) Hazardous Waste Management, La Grega, M. McGraw Hill, 1994.

- chlordecone (kepone)
- chlorinated camphene [Toxaphene]
- chloromethoxypropylmercuric acetate (CPMA)
- copper arsenate
- DBCP
- Di(phenylmercury)dodecenylsuccinate (PMDS)
- EPN
- ethyl hexyleneglycol (6-12)
- lead arsenate
- leptophos
- mevinphos
- mirex
- nitrofen (TOK)
- OMPA (octamethylpyrophosphoramide)
- phenylmercury acetate (PMA)
- phenylmercuric oleate (PMO)
- potassium 2,4,5-trichlorophenate (2,4,5-TCP)
- pyriminil (Vacor)
- safrole
- silvex
- sodium arsenite
- TDE
- Terpene polychlorinates (Strobane)
- thallium sulfate
- vinyl chloride

**2) Severely Restricted Pesticides**[3]

- arsenic trioxide
- carbofuran (granular only)
- daminozide/alar
- sodium arsenate
- tributyltin compounds

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[3] **References:** a) United States Environmental Protection Agency
Office of Pesticide Programs
http://www.epa.gov/oppfead1/international/piclist.htm
b) The Merck Index, eleventh edition, Merck and company, Rahway, N. J., 1989
c) Environmental Chemistry, Manahan, S. Lewis Publisher, 1994.
d) Hazardous Wastes, Watts, R. Wiley Intersciencee, 1997.
e) Hazardous Waste Management, La Grega, M. McGraw Hill, 1994.

3) **Dioxins**
4) **Asbestos**
5) **PCBs**

**pH Limits**

All dust suppressant products shall have a pH value of not less than four (pH = 4) or greater than nine (pH = 9) as applied.

## GENERAL USE REQUIREMENTS

**Open Bodies of Water and Drinking Water Well-Heads:**

Organic petroleum products, deliquescent/hygroscopic salts, and lignin-based palliatives may not be used within 20 yards of open bodies of water, including lakes, streams, and canals, or within 20 yards of a drinking water well-head. This buffer zone is intended to prevent leachate from these palliatives from reaching an open body of water or a ground water aquifer.

**Natural Washes and Flood Control Channels:**

Organic petroleum products, deliquescent/hygroscopic salts, and lignin-based palliatives may not be used within twenty 20 yards of any natural wash or flood control channel. This buffer zone is intended to prevent leachate from these palliatives from reaching a natural wash or flood channel, and subsequently being flushed into surface waters or drinking water supplies during a rain event.

**Surfactants:**

Surfactants may not contain phosphates. Surfactants by themselves are not allowed for use as a dust palliative because they do not form a durable soil surface. Non-phosphate surfactants may be combined with dust palliatives to assist penetration of dust palliatives into hydrophobic soils.

**Pesticide Application With Dust Palliatives:**

Any person who applies any pesticide material with a dust palliative is required to hold a valid pesticide applicators license issued by the State of Nevada.

**Dust Palliative Dilution and Tank Cleaning:**

Dust palliative applicators should be aware that use of water tainted with any of the above-listed prohibited or severely restricted chemicals, or with other compounds that would result in a violation of applicable codes and regulations for the dilution of dust

palliatives could result in a palliative mixture that would not comply with applicable environmental regulations or the pH requirements for dust palliatives set forth in this policy.

Only potable water supplies or reclaimed water, meaning wastewater that, as a result of appropriate treatment, is suitable for subsequent beneficial use, may be used as a diluent for dust suppressants. Application or transport tanks that have been used for other purposes, such as pesticide use, must be cleaned in accordance with applicable regulations before being used to transport, mix, or apply a dust palliative.

**Traffic Area Applications:**

1. Fiber mulch products are not allowed for use as a dust palliative in traffic areas. These products do not hold up well for traffic use.

2. Use of deliquescent/hygroscopic salts are limited to magnesium chloride and only allowed for short-term (less than one year) stabilization of unpaved roads. Treated unpaved roads must be periodically maintained with additional applications of water and magnesium chloride as needed to maintain effectiveness. Magnesium chloride is not effective, even with product reapplication, for periods of more than one year.

# TABLE 1
## TRAFFIC AREA APPLICATION REQUIREMENTS
### Appropriate Use of Liquid Dust Palliatives and Application Rates

(Traffic Area: Any land area upon which vehicular traffic is reasonably expected to occur due to location, topography or access)

**Dust palliative materials must conform to all applicable Environmental / Regulatory Policies and General Use Requirements**

| Product Type | Use/Treatment | Dilution Ratio Range | Dilution Ratio Typical | Application Rate gallon/yd2 | Notes |
|---|---|---|---|---|---|
| | | | | | |
| Synthetic polymers: polyvinyl acetate vinyl acrylic | Topical Road or parking lot<br>Topical Road shoulder<br>Windrow Road surfaces | 1:12-1:4<br>1:12-1:4<br>1:12-1:4 | 1:9<br>1:9<br>1:9 | 0.50<br>0.50<br>0.25/0.25/0.50 | 1,2,3,4 |
| Organic petroleum products: modified & unmodified asphalt emulsions | Topical Road or parking lot<br>Topical Road shoulder<br>Windrow Road surfaces | 1:8<br>1:10<br>1:8 | 1:4<br>1:7<br>1:4 | 0.50<br>0.25<br>0.40 | 1,2,3,4,5<br>1,2,3,4,5<br>1,2,3,4,5 |
| | | | | | |
| Magnesium chloride only. Other deliquescent/ hygroscopic salts, including calcium chloride and sodium chloride are not permitted | Topical Road or parking lot<br>Topical Road shoulder-not Allowed<br>Windrow Road surfaces | | | 0.50<br><br>0.25/0.25 | 1,2,3,4,6,8,9<br>1,2,3,4,6,8,9, 10<br>1,2,3,4,6,8,9 |
| Fibers/Mulches | **Not Allowed**<br>Unpaved Road and other Traffic Applications | Not Applicable | | Not Applicable | 12 |
| Lignin-Based Types (Lignosulfonate) | Topical Road or parking lot<br>Topical Road shoulder<br>Windrow Road surfaces | 1:1<br>1:7-1:4<br>1:1 | 1:1<br>1:4<br>1:1 | 0.50 to 1.00<br>0.15 to 0.20<br>0.25/0.25 to 50/0.50 | 1,2,3,4,5<br>1,2,3,4,5<br>1,2,3,4,5 |
| | | | | | |
| Organic non-petroleum products: animal fats, molasses/sugar beet, tall oil emulsions, vegetable oils | Topical Road or parking lot<br>Topical Road shoulder<br>Windrow Road surfaces | 1:10 -1:2<br>1:10 -1:2<br>1:2- 1:1 | 1:5<br>1:5<br>1:1 | 1.00<br>1.00<br>0.15/0.15 | 1,2,3,4,5<br>1,2,3,4,5<br>1,2,3,4,5 |
| | | | | | |
| Other | As approved by Code Compliance Officer | | | | |

Non-Traffic Area Applications:

1. Organic petroleum products, including modified and unmodified asphalt emulsions, are not permitted on non-traffic areas. These palliatives are subject to NAC 445A.2272(b) and may discolor the land surface and produce unpleasant odors.

2. Deliquescent/hygroscopic salts are not allowed for non-traffic stabilization. These salts require frequent re-watering to be effective in the Pahrump Valley, are not effective for periods of more than one year, and tend to leach chlorides when precipitation occurs.

3. Lignin-based palliatives are not allowed for non-traffic stabilization. Surface binding action of lignin-based palliatives may be reduced or completely destroyed when heavy rains occur. The decreased binding action of these products following heavy rains renders areas treated with lignin-based palliatives vulnerable to wind erosion after rain occurs. Leachate from lignin-based palliatives may also adversely impact the quality of storm water runoff.

# TABLE 2

## NON-TRAFFIC AREA APPLICATION REQUIREMENTS

### Appropriate Use of Liquid Dust Palliatives and Application Rates

(Non-Traffic Area: Any land area upon which no vehicular traffic is reasonably expected to occur due to site specific conditions; e.g., remoteness, fencing or other access controls)

**Dust palliative materials must conform to all applicable Environmental / Regulatory Requirements and General Use Requirements.**

| Product Type | Use/Treatment | Dilution Ratio Range Typical | Application Rate gallon/yd2 | Notes |
|---|---|---|---|---|
| | | | | |
| Synthetic polymers: Polyvinyl acetate Vinyl acrylic | Topical Vacant Land | 1:12-1:4 1:9 | 0.50 | 1,2,3,4 |
| Organic petroleum products: modified & unmodified Asphalt emulsions | **Not Allowed** Vacant Land | Not Applicable | Not Applicable | 10 |
| | | | | |
| Deliquescent/ Hygroscopic salts: Magnesium chloride brine, calcium chloride brine or flakes, sodium chloride | **Not Allowed** Vacant Land | Not Applicable | Not Applicable | 10 |
| | | | | |
| Lignin-Based Types (Lignosulfonate) | **Not Allowed** Vacant Land | Not Applicable | Not Applicable | 10 |
| | | | | |
| Fibers/Mulches | Topical Vacant Land | As prepared | 500-6000 | 1,2,3,4,11 |
| | | | | |
| Organic non-petroleum products: animal fats, molasses/sugar beet, tall oil emulsions, vegetable oils | Topical Vacant Land | 1:10-1:2 1:5 | 1.00 | 1,2,3,4,5 |
| | | | | |
| Other | As approved by Code Compliance Officer | | | |

**NOTES:** (See last column in preceding Application Guideline tables)

1. Topical application rates shown are to obtain ½ to 1 inch of penetration. Higher application rates should be used if greater penetration is needed. Windrow rate shown is to give sufficient penetration to form a 4-6 inch thick temporary travel surface.
2. The dilution ratio (concentrate: water) is variable, and shall be appropriate for the intended use, and local soil and weather conditions, as proposed by the Contractor and agreed upon by the Code Compliance Officer. Warranty conditions in Note 4 apply.
3. Application rate of mixed solution at the typical dilution ratio. Lifetime conditions in Note 4 apply. For windrow applications, the rates separated by slash marks indicate the first/second/third application. First application is after removal of windrow. Second application is after replacement of windrow. Third application, if needed, is after second application.
4. Application of diluted suppressant shall be sufficient to achieve a minimum warranted lifetime of one year from date of application.
5. These palliatives are subject to NAC 445A.2272(b) and may discolor the land surface and produce unpleasant odors.
6. Must be periodically maintained with additional applications of water and salt as needed to maintain effectiveness. Allowed only for short-term (< one year) stabilization of unpaved roads. May not be used on trafficked areas within 20 yards of a drinking water well-head, natural or artificial drainage channel or other surface water feature unless approved by the Code Compliance Officer.
7. Surfactants may be added to assist penetration of water and dust palliative into hydrophobic soils. Surfactants by themselves are not allowed for use as dust palliatives. Phosphates not allowed as surfactant constituents.
8. Brine strength may vary as supplied from manufacturer, but is typically in the range of 20-40 percent solids by mass. Maximum and minimum allowable strengths to be set by the Code Compliance Officer.
9. Sodium chloride (NaCl) not allowed for any application, because it is ineffective at ambient relative humidity below 76 percent. Relative humidity above 50 percent seldomly occurs in the Pahrump Valley.
10. Deliquescent/hygroscopic salts are not allowed for use on vacant lands or on road shoulders near surface waters or surface drainage because of adverse water quality impacts, including elevated chloride concentrations in storm water runoff and in groundwater.
11. Application rate in pounds per acre at the on-site blended strength.
12. Fiber mulches are not effective for traffic applications.

# ATTACHMENT 3

# DESIGN AND POSTING OF DUST CONTROL PLAN SIGNAGE

# POLICY ON DUST CONTROL PLAN DESIGN AND POSTING OF SIGNAGE

**Pursuant to Nye County Code 15.28.090, Nye County has developed this policy to address questions related to the posting of informational signs on construction sites in the Pahrump Regional Planning District, Nye County, Nevada. Because this policy is referenced in the code, non-compliance may result in a Notice of Alleged Violation.**

**The following text is excerpted from Subsection 15.28.090 for purposes of convenience:**

> The owner/operator will:
> Install a sign on said property prior to commencing construction activity that is visible to the public and conforming to County policy on Dust Control Plan Design and Posting of Signage as described in 15.28.160, Posting of Informational Signs on Construction Sites.

**In addition to the requirements listed pursuant to subsection 15.28.090, the Dust Control Plan sign shall conform to the following requirements listed pursuant to Subsection 15.28.160:**

1. **The signboard shall be constructed with materials capable of withstanding the harsh environment (e.g., strong winds, intense sunlight) of Nye County. Nye County recommends the following materials:**
   (a) ¾" A/C laminated plywood board 2 feet by 2 feet in dimension;
   (b) 4"x4" posts;
   (c) Posts should be attached to the plywood board with a minimum of two (2) carriage bolts on each post; and
   (d) The front surface of the signboard should be painted in the contrasting colors of a white background with black lettering, or
   (e) A minimum of 0.118" DiBond® Composite Material (aluminum sheets over a thermoplastic core) a minimum of 2 feet by 2 feet in dimension;
   (f) 1 7/8" galvanized steel center post with the base of the sign four feet above ground level;
   (g) The sign should be attached to the post with a single fastener to allow for heat expansion; and
   (h) The front surface of the signboard should have a white background with contrasting black lettering.
2. **The signboard shall contain the following information:**
   (a) Project name;
   (b) Owner/Operator name;

# ATTACHMENT 4

# DUST CONTROL CODE

(c) Telephone Number of person responsible for dust control;

(d) Nye County Air Quality Program Administrator telephone number;

(e) Building, site preparation, or conditional use permit number;

(f) Dust Control Plan Number; and

(g) Project Acreage.

3. **The signboard shall be designed to the following alpha and numeric text dimensions (signboards written in longhand are unacceptable).**

(a) Nye County provides the following example:

| | |
|---|---|
| PROJECT NAME: | **(Proj. Name)** |
| OWNER/OPERATOR: | **(Your Name)** |
| OPERATOR TELEPHONE NUMBER: | **(Your Number)** |
| NYE COUNTY— AIR QUALITY PROGRAM ADMINISTRATOR TELEPHONE NUMBER: | **(Pahrump Phone Number)** |
| BUILDING/OTHER PERMIT NUMBERS: | **(Permit Number)** |
| DUST CONTROL PLAN NUMBER: | **(Plan Number)** |
| PROJECT ACREAGE: | **(Acreage)** |

# NYE COUNTY
# PAHRUMP REGIONAL PLANNING DISTRICT

# ENFORCEMENT PROCEDURE

MAY 2007

## INTRODUCTION

Enforcement of dust control regulations and requirements is an important element in achieving compliance. Without adequate enforcement, the incentive to achieve compliance is greatly diminished. A consistent and even approach of enforcement is necessary to prevent economic disadvantages for those that operate in compliance. A summary of the process is shown schematically in a flow chart presented in the Appendix to this document.

All Code Compliance Officers are responsible for bringing issues of noncompliance to the attention of the Nye County Air Quality Program Administrator (AQPA). After a decision is made to pursue an enforcement action, the respective Code Compliance Officer (CCO) follows the enforcement procedure throughout the entire process.

## ENFORCEMENT PROCEDURES

The Code Compliance Officer has 14 calendar days to prepare a written inspection report once an inspection has been conducted. This period may be extended upon prior approval by the AQPA, if necessary.

When a violation is documented by the CCO through an inspection, the AQPA determines if an enforcement action will be pursued. The CCO will, when feasible, notify the owner/operator or representative (in the case of an inspection, when feasible, before he leaves the site) that an alleged violation has been documented and that the matter will be referred to the AQPA. Any questions by the owner/operator concerning the alleged violation or a possible action by Nye County must be referred to the AQPA.

If the violation is imminent, or very minimal, non-repetitive, self reported by the owner/operator, and the facility has quickly returned to compliance, a Warning Letter is issued to assist the owner/operator in returning to compliance. A follow-up inspection, a follow-up telephone call, or written correspondence from the owner/operator is used to document a return to compliance. A Warning Letter does not constitute a Code Violation and does not include monetary penalties.

If a violation is determined to be either; a first time violation that does not adversely impact human health and safety; or is administrative and does not involve the emission of fugitive dust, a Warning Notice of Alleged Violation will be issued. A Warning Notice of Alleged Violation (NOAV) qualifies as a Code Violation but does not have monetary penalties.

If a violation is determined to present a hazard to public health and safety, a Notice of Alleged Violation (NOAV) will be issued by the AQPA. The NOAV will include a list of alleged violations, the associated penalty and compliance deadline.

## ADMINISTRATIVE FINES OR PENALTIES

If an alleged violation is documented, a NOAV will be issued with a proposed penalty determined pursuant to Nye County Code 15.28 using the Penalty Policy Guidance Document.

# NOTICE OF ALLEGED VIOLATION PROCESS

Upon observation and documentation of a potential NOAV, an enforcement conference can be scheduled with the owner/operator and the CCO who documented the alleged violation. The enforcement conference should be scheduled within 14 calendar days of the CCO completely documenting an alleged violation. The enforcement conference is an informal discussion, usually without legal counsel, to review the circumstances surrounding the alleged violation and corrective actions that can be (or have been) implemented. The CCO will determine during the enforcement conference whether sufficient information exists to support a NOAV, or whether additional information is needed to determine the owner/operators compliance status.

If a recommendation will be made to issue a NOAV, penalties are discussed with the owner/operator. The maximum penalty allowed by code is $10,000 per day per violation. Preliminary discussions occur with the owner/operator using the Penalty Policy Guidance Document to develop a recommended penalty amount for the AQPA to include in the NOAV. Supplemental Environmental Projects can be considered in lieu of monetary penalties. Such projects must have substantively the same monetary value as the proposed penalty.

The NOAV is issued by the AQPA and is accompanied by an Option Letter through which the owner/operator can either accept or contest the NOAV. The owner/operator must return the completed Option Letter within 14 calendar days after receipt of the NOAV. The Option Letter allows the owner/operator to agree to the facts alleged and the identified penalty, or contest either the facts alleged and/or the penalty assessed.

When an owner/operator contests a NOAV, a meeting is scheduled with the Compliance Review Committee (CRC), which includes the Air Quality Program Administrator, the Public Works Director, and an ex officio representative of the Nevada Division of Environmental Protection (NDEP).

The CRC shall consider relevant matters, including but not limited to contests of Stop Orders and NOAVs. The CCO will provide testimony as necessary regarding the contested violations to be discussed with the CRC. The owner/operator may present information and/or evidence as may be appropriate to support his position. The CRC shall make its finding(s) and recommendation(s) following discussion and consensus.

The Penalty Policy Guidance Document is used to calculate the recommended penalty. When an agreement has been reached regarding a recommended penalty or settlement, a Settlement Agreement is prepared and then issued. The Settlement Agreement details the violation, recommended penalty, corrective actions and compliance deadlines. If the owner/operator agrees to the details of the violation, they should sign and return one copy of the Settlement Agreement to the AQPA. The agreement is sent to the Hearing Officer for review and Adjudication. If the owner/operator does not agree with the details of the violation, they should return a Request for Hearing Before Nye County Hearing Officer: Appeal of Notice of Alleged Violation form DCP 09. The NOAV is scheduled to be heard on the next duly-noticed Air Quality Appeal Hearings and Adjudications.
All proceedings, corrective actions, and recommended penalties are documented by the CRC in the meeting minutes and are placed in the owner/operator's file.

Upon receipt of a Settlement Agreement, an owner/operator must comply with any corrective actions schedule(s) included therein, but has up to 30 calendar days to respond to an "Order to Pay" with payment in full. An owner/operator may request a payment plan but must do so within seven (7) calendar days of receiving the Settlement Agreement. The owner/operator must remit the first payment at the time the payment plan is negotiated.

In the event a public health or safety issue is identified (via an inspection, or other means), a verbal Stop Order will be issued immediately by the CCO followed by a written Stop Order by the AQPA. Under the terms of a Stop Order, construction operations, with the exception of dust control measures, are prohibited. In most cases, the owner/operator corrects the violation within 24 hours of the inspection, or by the enforcement conference date depending on the circumstances. In those instances where equipment replacement is required, a compliance schedule is negotiated and documented in a Corrective Action Order. The CCO who documented the violation will perform a follow-up inspection or other appropriate method to verify completion of corrective actions required by an order. If the violation has not been corrected in accordance with the compliance schedule, the matter will be handled as a new documented violation. Additional NOAVs may also be considered if other violations are discovered.

## APPEALS

If the owner/operator disagrees with the recommended action by the CRC (issuance of a NOAV, associated facts or penalties, or other directive) the owner/operator has 14 calendar days from the date of receipt of the Settlement Agreement to request an appeal hearing. A *de novo* hearing is held before the Hearing Officer to determine if the action should be dismissed, modified, or allowed to stand. During the appeal hearing, penalties can be revised (either upward or downward), and previous negotiations to determine a penalty recommendation may be upheld, dismissed, or revised. Every decision by the Hearing Officer shall be memorialized in an Order of Adjudication.

## ADJUDICATION

All actions taken during the enforcement process by the AQPA, the CR C, or a Hearing Officer must be formally adjudicated during a publicly-noticed meeting by either: an independent Hearing Officer, or by the Board of County Commissioners. The adjudication proceeding must be noticed on the agenda in accordance with Nevada's open meeting law at either: a regularly scheduled Board of County Commissioners meeting, or at a Public Hearing scheduled in accordance with Nye County Ordinance No. 316 Section 6.A and Section 13.B. The classes of actions requiring adjudication are: (1) NOAVs that are not contested by the owner/operator; (2) NOAVs with Stipulation that are not contested by the owner/operator; (3) NOAVs for which the proposed penalties are being contested, and (4) NOAVs for which both the facts and penalties are contested, and (5) Dismissed NOAVs.

## STEPS TO DETERMINE AN ENFORCEMENT ACTION

The specific steps in pursuing an enforcement action are:

- If an enforcement action is to be pursued, the CCO will inform the owner/operator about the possible violation and, if requested by the owner/operator, schedule an informal meeting to discuss the alleged violation and proposed penalty. The CCO should contact the AQPA if any additional issues arise from the discussions before proceeding forward.
- Upon receiving information, or observing and documenting a possible violation, the CCO discusses the information with the AQPA. A Warning NOAV, NOAV or Stop Order will be issued only if the AQPA determines it to be warranted following review of the completed inspection report.
- If the owner/operator contests either the facts of the violation and/or the penalty, he/she may request that the case be presented before the CRC.
- The CRC reviews the evidence presented by the CCO and the cited party. A penalty is calculated using the Penalty Policy Guidance Document. A Settlement Agreement is prepared stating the CRC's findings and recommendations and issued to the owner/operator.
- The owner/operator has 14 calendar days to either accept the terms of the Settlement Agreement or request a hearing before an independent Hearing Officer.
- If the owner/operator accepts a Settlement Agreement that includes an "Order to Pay", payment in full must be remitted in 30 calendar days.
- Or, an owner/operator may request a payment plan within seven (7) calendar days of receiving the Settlement Agreement. The first payment must be remitted when the payment plan is established.
- If an enforcement action is appealed by an owner/operator, the Hearing Officer will hear the case *de novo*.
- The Hearing Officer will review the case and staff recommendations, and may either accept or dismiss the NOAV based on the facts alleged. Similarly, the Hearing Officer may accept, dismiss, or revise the penalty assessed.
- The owner/operator must remit payment within five (5) calendar days of their imposition by the Hearing Officer.
- The owner/operator has 10 calendar days from the date of service of the Order of Adjudication in which to appeal the decision of the Nye County Hearing Officer.
- If an Order of Adjudication is appealed by an owner/operator, the Board of County Commissioners will hear the case *de novo*.
- The Board of County Commissioners will review the case and staff recommendations, and may either accept or dismiss the NOAV based on the facts alleged. Similarly, the Board of County Commissioners may accept, dismiss, or revise the penalty assessed.

## ISSUING WARNING LETTERS, WARNING NOAVS, AND NOAVS

- The preparation of Warning Letters, Warning NOAVs, and NOAVs has been simplified by the use of form Letters.
- As directed by the AQPA, the CCO will register the enforcement document number in the log.

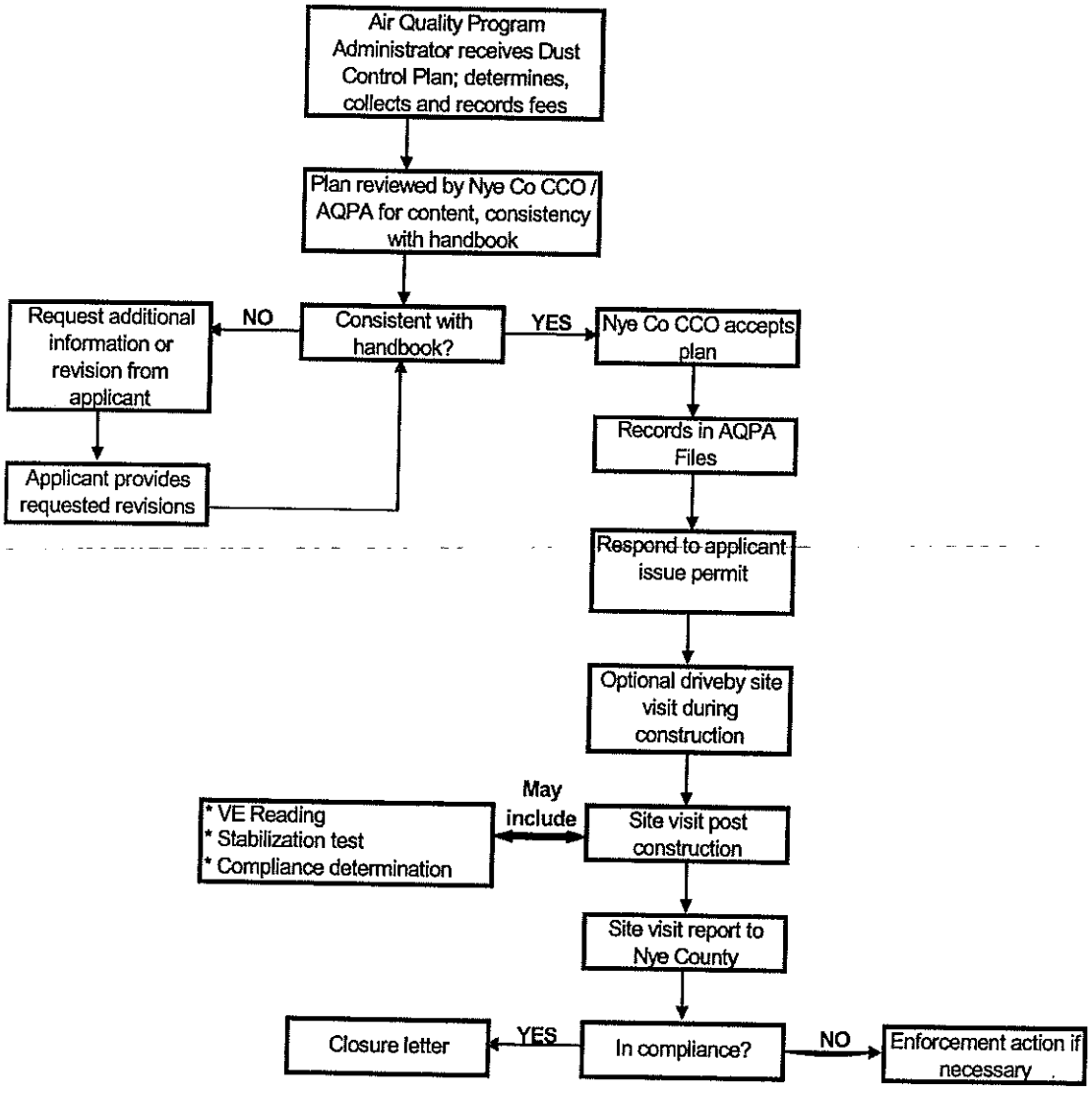
- When completed, the enforcement document is signed by the AQPA and the inspection report signed by the CCO should be included.
- If a Stop Order was also required it should be part of the document package.
- If a penalty was assessed, the penalty amount should be included in the document. An Option Letter should be enclosed in the package.
- Be sure to provide cc's to the appropriate parties.
- Once the NOAV and packet is signed, it is ready for copying, mailing via certified mail, distribution and filing.

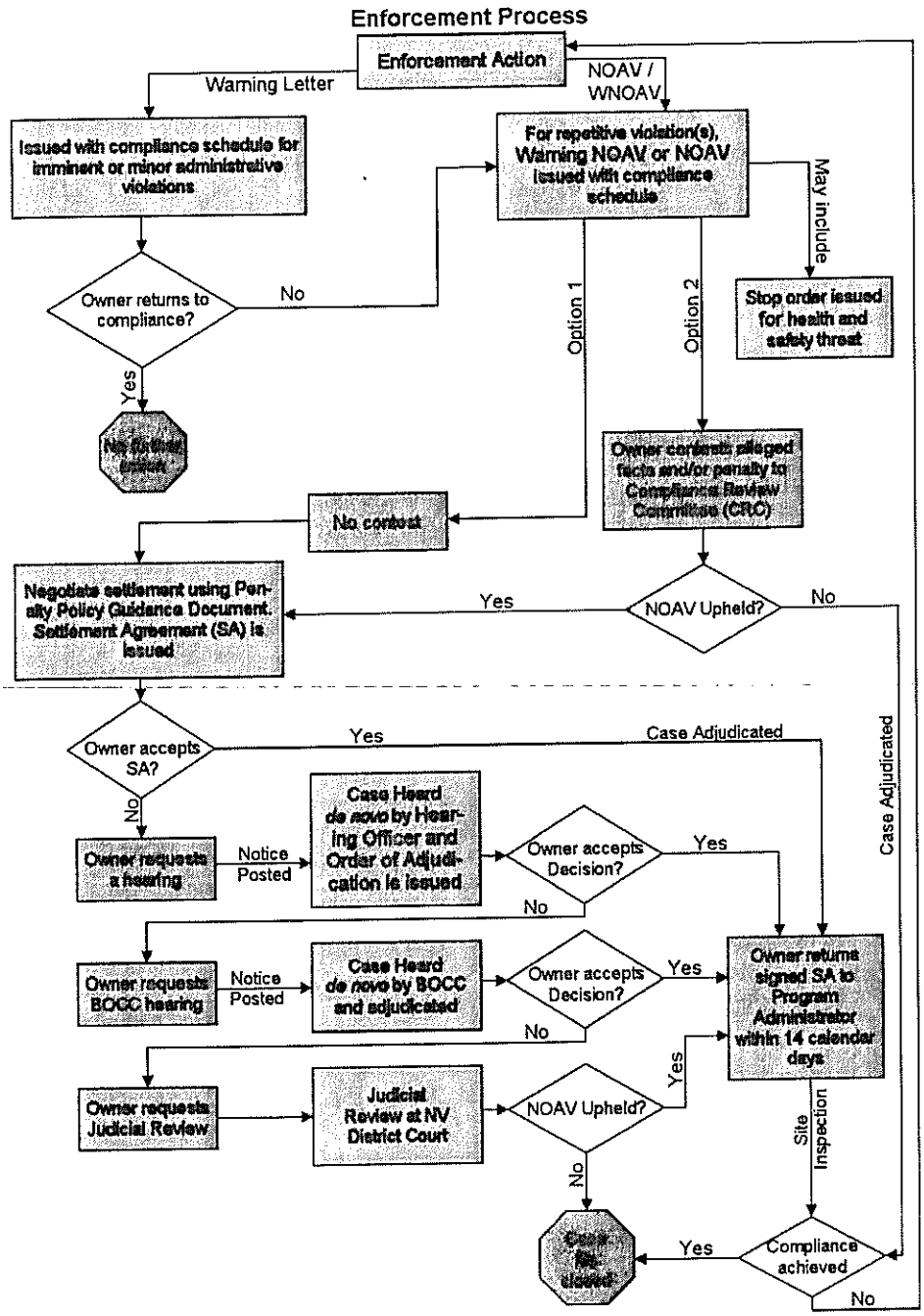
## ACCOUNTABILITY AND FOLLOW-UP

All NOAVs are sequentially numbered to provide accountability. The enforcement process from date of inspection and NOAV issue date through date of return to compliance is tracked and documented in a NOAV Tracking System. This system ensures enforcement time lines are met and proper documentation has been completed. NOAVs are filed in the NOAV file (by fiscal year) and each source file along with inspection reports, Compliance Review Committee meeting minutes, Settlement Agreements, Adjudicated Orders, and any other relevant correspondence.

## Appendix - Work Flow Diagram for Implementation and Enforcement of Nye County Dust Control Program

### Dust Control Plan Review and Implementation




Enforcement Process
Enforcement Action
Warning Letter
NOAV / WNOAV
Issued with compliance schedule for imminent or minor administrative violations
For repetitive violation(s), Warning NOAV or NOAV issued with compliance schedule
May include
Stop order issued for health and safety threat
Owner returns to compliance?
No
Yes
Option 1
Option 2
No contest
Owner contests alleged facts and/or penalty to Compliance Review Committee (CRC)
Negotiate settlement using Penalty Policy Guidance Document. Settlement Agreement (SA) is issued
NOAV Upheld?
Yes
No
Owner accepts SA?
Yes
Case Adjudicated
No
Owner requests a hearing
Notice Posted
Case Heard de novo by Hearing Officer and Order of Adjudication is issued
Owner accepts Decision?
Yes
No
Owner requests BOCC hearing
Notice Posted
Case Heard de novo by BOCC and adjudicated
Owner accepts Decision?
Yes
No
Owner returns signed SA to Program Administrator within 14 calendar days
Owner requests Judicial Review
Judicial Review at NV District Court
NOAV Upheld?
Yes
No
Site Inspection
Compliance achieved
Yes
No

# APPENDIX D

# Memorandum of Understanding

# Pahrump Valley Clean Air Action Plan

# Memorandum of Understanding

The purpose of this memorandum of understanding (MOU) is to formalize an understanding among the Nevada Division of Environmental Protection (NDEP), the Nye County Board of Commissioners (NCBOC), the Pahrump Town Board (PTB) and the U.S. Environmental Protection Agency (EPA). This MOU describes the duties and responsibilities of these agencies in a cooperative effort to bring about an expeditious resolution to the PM-10 air pollution problem in the Nye County portion of State hydrographic area #162 ("Pahrump Valley"). If this effort is successful, Pahrump Valley may avoid being redesignated as a nonattainment area for PM-10. This MOU is the first step in accelerating the development and implementation of a locally-initiated PM-10 control plan ("Pahrump Valley Clean Air Action Plan", or CAAP) designed to attain and maintain the national ambient air quality standard (NAAQS) for PM-10 in that area.

## General Provisions

1. EPA has authority under section 107(d) of the Clean Air Act ("Act") to redesignate Pahrump Valley to "nonattainment" based on monitored violations of the PM-10 NAAQS in that area over the past several years. After notice to the State of Nevada, EPA intends to propose such redesignation through publication of a notice in the *Federal Register*. However, EPA will defer final action on redesignation to allow NDEP and NCBOC the opportunity to prepare, adopt, and implement a Pahrump Valley CAAP that provides for

earlier implementation of control measures and attainment of the NAAQS than would otherwise be expected through the redesignation and nonattainment planning process under Title I of the Act. EPA's deferral on taking final action on the redesignation proposal and EPA's participation as a signatory to this MOU are not a guarantee that EPA will not ultimately exercise its statutory discretion to redesignate Pahrump Valley to nonattainment for PM-10, but they do reflect EPA's current intention to work together with the signatories to resolve the PM-10 air pollution problem in Pahrump Valley through the process set forth in this MOU rather than through the formal nonattainment planning process in Part D of Title I of the Act. The circumstances under which EPA will take final action on its proposal to redesignate Pahrump Valley to nonattainment for PM-10 include, but are not limited to, the following:

- NDEP and NCBOC fail to meet any of the requirements, milestones, or due dates set forth in this MOU, without prior written approval from EPA;
- EPA determines that the control measures submitted by NDEP are inadequate to achieve a net environmental benefit in addition to attainment and maintenance of the PM-10 NAAQS; or
- EPA's discretion to defer taking final action on the proposal to redesignate is constrained by judicial or Congressional action.

2. NDEP and NCBOC agree to meet the requirements, milestones and due dates listed below. NDEP and NCBOC understand that failure to meet the requirements, milestones and due dates without prior written approval from EPA is sufficient evidence that a net

environmental benefit and improvement in air quality is not occurring and will cause EPA to take final action on its proposal to redesignate the Pahrump Valley as "nonattainment," which will begin the planning process under Title I of the Act.

3. EPA will provide technical assistance to NDEP and NCBOC in the development of the CAAP and will take action on related State Implementation Plan (SIP) submittals in accordance with statutory deadlines for such submittals. This MOU anticipates one comprehensive planning cycle, culminating in local and State adoption of a Final CAAP in 2005 and EPA approval of the Final CAAP into the Nevada SIP, as well as on-going review by NDEP to ensure continued progress toward attainment and maintenance of the PM-10 NAAQS. The on-going review process may lead to proposals to revise, delete, or substitute individual control measures included in the Final CAAP. NDEP and NCBOC acknowledge that any revisions to, deletions of, or substitutions for, individual control measures previously approved by EPA into the Nevada SIP must be submitted to EPA consistent with EPA requirements for SIP revisions.

4. NDEP agrees to maintain air quality monitors, reporting and analysis of monitoring data.

5. NDEP will coordinate communication between NCBOC and EPA to facilitate continuing EPA review of local work. NCBOC will coordinate communication among the PTB, the Pahrump Regional Planning Commission (PRPC), and NDEP.

6. This MOU shall be effective upon signature by all four parties, may be amended by mutual consent, and may be terminated by any party after giving thirty days written notice to each of the other parties. This MOU shall expire on December 31, 2014, or on the

effective date of a final rule (or other final action) addressing EPA's proposed redesignation of the Pahrump Valley to nonattainment, whichever is sooner, unless the MOU is amended by the agencies or superseded by a new MOU.

## State and Local Government Responsibilities

NDEP will be the lead agency for all tasks under this MOU and will work with NCBOC to develop and implement a CAAP that includes the control measures necessary to demonstrate attainment and maintenance of the PM-10 standard. NDEP will develop the CAAP in coordination with NCBOC, EPA, stakeholders and the public. MOU tasks are described in detail in the following sections. Significant milestones are as follows:

| CAAP Milestones | | |
|---|---|---|
| 1 | February 28, 2003 | NDEP completed initial base year (2001) emissions inventory. |
| 2 | May 31, 2003 | NDEP completed refined base year (2001) emissions inventory. |
| 3 | October 31, 2003 | NDEP and NCBOC select potential control measures for further study. |
| 4 | November 30, 2003 | NDEP completes future year (2009) baseline and control case inventories and an initial draft attainment assessment. Draft assessment is sent to EPA for their review. |
| 5 | April 30, 2004 | NDEP, NCBOC and PTB select emission reduction strategy, including specific State and local control measures. |
| 6 | June 30, 2004 | NDEP submits list of proposed control measures to EPA that were agreed upon by NDEP, NCBOC, PTB; including description of the measure, emission reduction potential, cost effectiveness, and schedule for adoption and implementation. |
| 7 | August 31, 2004 | NDEP completes Draft CAAP and distributes the draft plan to NCBOC, PTB, EPA and public. |
| 8 | October 31, 2004 | NDEP presents Draft CAAP at meetings with NCBOC and PTB in the town of Pahrump. NCBOC and PTB complete public hearings and adopts control measures and ordinances. |
| 9 | December 31, 2004 | NDEP completes Final CAAP. |
| 10 | January 31, 2005 | The State Environmental Commission (SEC) holds public hearing on Final CAAP. SEC adopts regulations. NDEP submits Final CAAP to EPA as SIP revision. |
| 11 | December 31, 2006 | NDEP and NCBOC implement all adopted control measures from Final CAAP. |
| 12 | December 31, 2009 | PM-10 NAAQS attained. |
| 13 | December 31, 2014 | Maintenance period ends. |

In the event an issue arises that may impact performance or progress toward milestones, the signatory party responsible will notify all other signatories as soon as possible.

## Reporting

To facilitate self-evaluation and communication among EPA, NDEP, stakeholders, and the public, NDEP will assess and report progress towards the milestones, and implementation of control strategies during the NCBOC meetings every 6 months after signature of the MOU.

## Emissions Inventories

NDEP will be the lead agency in preparing emissions inventories for the CAAP. Nye County Staff will provide technical assistance in the development of emissions inventories, trend analysis and quantification and comparison of emission reduction strategies.

1. By February 28, 2003, NDEP prepared an initial base year (2001) emissions inventory. This inventory included:
   - MOBILE6 data and transportation information for 2001;
   - NONROAD model data adjusted for local equipment populations and usage rates;
   - Stationary source data based on NDEP database information and local survey; and
   - Area source data, based on local survey data, when possible.
2. By May 31, 2003, NDEP prepared a more refined base year (2001) emission inventory. The refined base year inventory was based on additional surveys performed by NDEP staff and input from the local community.
3. As noted below under "Emission Reduction Strategy", by October 31, 2003, NDEP and

NCBOC will select potential control measures for further study.

4. By November 30, 2003, NDEP will prepare future year (2009) baseline and control case inventories. The future-year (2009) baseline inventory will account for growth and for currently adopted regulations that would affect future PM-10 emissions in Pahrump Valley. The control case (2009) inventories will show the relative effectiveness of potential control measures selected for study by NDEP and NCBOC.

5. By August 31, 2004, and based upon selection of the emission reduction strategy, including the specific State and local control measures, NDEP will prepare a future year (2009) baseline and control case inventory for the Draft CAAP that reflects implementation of selected emission reduction strategy, including the specific State and local control measures that are to be adopted and implemented.

6. By December 31, 2004, NDEP will revise the inventories, as appropriate, based on comments received on the Draft CAAP, and will include the revised inventories in the Final CAAP.

7. By January 31, 2005, NDEP will submit the emissions inventories to EPA as an element of the Final CAAP.

## Emission Reduction Strategies

NDEP will be the lead agency in developing an emissions reduction strategy. Nye County Staff will provide technical and strategic assistance in the selection and implementation of this strategy.

1. By October 31, 2003, NDEP, in consultation with NCBOC, stakeholders, and other

participants, will develop an initial list of potential control measures, including, but not limited to, reasonably available control technology for existing stationary sources in the Pahrump Valley.

2. By April 30, 2004, NDEP, NCBOC and local stakeholders and participants will agree on an emission reduction strategy, including specific State and local control measures.

3. By June 30, 2004, NDEP will submit a list of control measures to EPA, including description of the measure, emission reduction potential, cost effectiveness, schedule for adoption and implementation, and reporting processes. All control measures will be specific, quantified, permanent, and enforceable.

4. As noted below under "Draft and Final CAAP", by August 31, 2004, NDEP will complete the Draft CAAP, which includes control measures, and distributes the draft plan to NCBOC, PTB, EPA and public.

5. By October 31, 2004, NCBOC will adopt ordinances, as applicable, to support selected local control measures. NCBOC will design and implement local measures through the Master Plan process.

6. By December 31, 2004, NDEP will revise the control measures as appropriate based on comments received on the Draft CAAP, and will include the revised measures in the final CAAP.

7. By January 31, 2005, State Environmental Commission (SEC) will adopt regulations, as applicable, to support selected State control measures.

8. By January 31, 2005, NDEP will submit all adopted control measures, as an element of

the Final CAAP, to EPA for approval into the Nevada SIP.

9. All CAAP control measures will be implemented as soon as practicable, but no later than December 31, 2006.

## Attainment Assessment

NDEP will be the lead agency in preparing the attainment assessment for the CAAP.

1. By November 30, 2003, NDEP will prepare an initial attainment assessment based on base year (2001), future year (2009) baseline, and control case inventories and submit the assessment to EPA for its review.
2. By August 31, 2004, for the Draft CAAP, NDEP will prepare a refined attainment assessment based on the selected emission control strategy, including the specific State and local control measures.
3. By December 31, 2004, NDEP will revise the attainment assessment, as appropriate, based on comments received on the Draft CAAP, and will include the revised assessment in the Final CAAP.
4. By January 31, 2005, NDEP will submit the attainment assessment to EPA as an element of the Final CAAP.

## Draft and Final CAAP

NDEP will be the lead agency in preparing a Draft CAAP that consolidates the above tasks (emissions inventories, control measures, attainment assessment, and maintenance element) into a single document setting forth the PM-10 control strategy for Pahrump Valley. NDEP will also be the lead agency in preparing a Final CAAP that reflects comments received on the Draft

CAAP and that documents public involvement, including responses to comments made on the Draft.

1. By August 31, 2004, NDEP will circulate the Draft CAAP for review by NCBOC, PRPC, PTB, EPA and the public.
2. October 31, 2004, NDEP will present the Draft CAAP at a meeting in the Town of Pahrump. NCBOC will complete public hearings, adopt the control measures, and enact the necessary ordinances to implement the local measures.
3. By December 31, 2004, NDEP will complete the Final CAAP and submit it to the State SEC.
4. By January 31, 2005, the SEC will hold a public hearing on the Final CAAP and will adopt the Final CAAP, as revised appropriately to reflect public comments, and will enact regulations to implement the State control measures. As soon as practicable thereafter, NDEP will submit the Final CAAP to EPA for approval into the Nevada SIP.

## Maintenance for Growth

NDEP will be the lead agency in evaluating the need for additional, or more stringent, control measures to ensure maintenance of the PM-10 NAAQS at least five years beyond December 31, 2009. Nye County Staff will provide technical and planning assistance in developing and implementing processes to address the impact of emissions growth beyond the attainment date.

1. By August 31, 2004, NDEP will prepare the element of the Draft CAAP that addresses emissions growth at least five years beyond December 31, 2009. The related analysis will employ one or more of the following or any other appropriate techniques necessary

to make such a demonstration:

- An annual review of growth to ensure emission reduction strategies and growth assumptions are adequate; or
- Identification and quantification of Federal, State, and/or local measures indicating sufficient reductions to offset growth estimates.

2. A continuing planning process will be conducted concurrent with the tracking and reporting process for the CAAP. This update and verification will be an ongoing process between the signatories, stakeholders and the public. Planning processes must consider and evaluate:

- All relevant actual new point sources;
- Impacts from potential new source growth; and
- Future transportation patterns and their impact on air quality in a manner that is consistent with the most current adopted local transportation plan and most current trend and projections of local motor vehicle emissions.

3. If the review of emissions growth in conjunction with the continuing planning process demonstrates that adopted emission reductions strategies are inadequate to address growth in emissions, additional measures will be added to the CAAP.

4. In the event that the continuing planning process identifies the need to add, delete, or substitute control measures from the CAAP that have been incorporated into the SIP, NDEP will facilitate SIP revisions to accommodate changes.

## Public Involvement

NCBOC will be the lead agency in implementing the tasks for public involvement. NCBOC will coordinate communication between NDEP and local agencies and will provide support for public education efforts.

1. Public involvement will occur in all stages of planning by the signatory parties. Outreach may include one or more of the following techniques: public meetings and presentations, stakeholder meetings, websites, print advertising and radio.
2. Public education programs will be used to raise awareness regarding issues, opportunities for involvement in the planning process, implementation of emission reduction strategies, and any other issues important to the area.
3. The Town of Pahrump will be included throughout the process.
4. Interested stakeholders will be involved in the planning process as early as possible. Planning meetings will be open to the public, with posted meeting times and locations. The Draft CAAP will be distributed to the public, and the drafting process will have sufficient opportunities for comment from all interested stakeholders.
5. Public comment on the proposed Final CAAP will follow the normal SIP revision process as implemented by the State.
6. NDEP will prepare semi-annual reports detailing, at a minimum, progress toward milestones, will be publicly presented and publicly available.

**Signatures:**

BY: Henry E. Neth 09/16/03
Henry Neth, Chairman Date
Nye County Board of
County Commissioners

ATTEST: Sandra L. Merlino 09/16/03
Sandra "Sam" Merlino Date
Clerk and Ex-Officio
Clerk of the Nye County Board of County
Commissioners

BY: _____
Joni Eastley, Vice-Chairman Date
Nye County Board of
County Commissioners

BY: Midge Carver 09/16/03
Midge Carver, Nye County Board Date
of County Commissioners

BY: Patricia Cox 09/16/03
Patricia Cox, Nye County Board Date
of County Commissioners

BY: Candice Trummell 09/16/03
Candice Trummell, Nye County Board Date
of County Commissioners

BY: Richard Ewing 9/25/03
Richard Ewing, Chairman Date
Town of Pahrump Board

BY: Charlotte LeVar 9/25/03
Charlotte LeVar, Clerk Date
Town of Pahrump Board

BY: Allen Biaggi 9/15/03
Allen Biaggi, Administrator Date
Nevada Division of Environmental Protection

BY: for Wayne Nastri 9/29/03
Wayne Nastri, Regional Administrator Date
U. S. Environmental Protection Agency, Region IX

# APPENDIX E

# National Weather Service High Wind Documentation

DEPARTMENT OF COMMUNITY DEVELOPMENT
AIR QUAILITY

# High Wind Advisory

## Attention Dust Control Permit Holders, Contractors and Stationary Sources

**The National Weather Service (NWS) is forecasting high winds for the area beginning today, October 25, 2011 and continuing through Thursday October 27, 2011. Winds will be from the south to southwest at 10-15mph gusting to 25-30mph, increasing and shifting to the northwest on Wednesday after a cold frontal passage at 25-35mph gusting to 45 mph, then decreasing late Thursday.**

**You are reminded that dust control is a 24 - 7 requirement.**

**The Nye County Planning Air Quality Branch directs each permittee to immediately inspect their site(s) and employ Best Management Practices to stabilize all disturbed soils to reduce blowing dust. Permittees with multiple sites should contact each site superintendent to ensure compliance with Nye County Code, Section 15.28.080.**

**The Nye County Air Quality Compliance Officer will inspect construction and stationary source sites during the wind event to ensure BMPs are effectively being applied. Any observed dust ordinance violations may receive a notice of violation.**

**Please direct questions about this wind advisory to George Bernath, the Nye County Air Quality Compliance Officer at (775) 751-4240 or my cell at 775-253-0157, and thank you for your cooperation.**

DEPARTMENT OF COMMUNITY DEVELOPMENT
AIR QUALITY

# High Wind Advisory

## Attention Dust Control Permit Holders, Contractors and Stationary Sources

**The National Weather Service (NWS) is forecasting high winds for the area beginning tomorrow morning March 6, 2012. Winds will be from the south to southwest at 25-30mph gusting to 40mph, then increasing later in the day to 35-40mph gusting to 55mph. Wednesday the winds will shift to the northwest and decrease to 25-30mph gusting to 40mph. They will gradually decrease during the day Wednesday into Thursday.**

**You are reminded that dust control is a 24 - 7 requirement.**

**The Nye County Planning Air Quality Branch directs each permittee to immediately inspect their site(s) and employ Best Management Practices to stabilize all disturbed soils to reduce blowing dust. Permittees with multiple sites should contact each site superintendent to ensure compliance with Nye County Code, Section 15.28.080.**

**The Nye County Air Quality Compliance Officer will inspect construction and stationary source sites during the wind event to ensure BMPs are effectively being applied. Any observed dust ordinance violations may receive a notice of violation.**

**Please direct questions about this wind advisory to George Bernath, the Nye County Air Quality Compliance Officer at (775) 751-4240 or my cell at 775-253-0157, and thank you for your cooperation.**

Storm Events Database

**Data Access**
- Search
- FTP Access
- Database Download
- Storm Data Publication

**Documentation**
- Storm Data FAQ
- Storm Data Preparation
- Tornado EF Scale

**External Resources**
- NOAA's SPC Reports
- NOAA's SPC WCM Page
- SHELDUS

# Storm Events Database

## Event Details

| | |
|---|---|
| Event | **High Wind** |
| Magnitude | **74 kts.** |
| State | **NEVADA** |
| County/Area | **WESTERN CLARK/SOUTHERN NYE** |
| WFO | **VEF** |
| Begin Date | **03/06/2012 12:21:00 PST-8** |
| End Date | **03/06/2012 15:24:00 PST-8** |
| Deaths Direct/Indirect | **0/0** (fatality details below, when available...) |
| Injuries Direct/Indirect | **0/0** |
| Property Damage | **1.00K** |
| Crop Damage | **0.00K** |
| Episode Narrative | **A very strong cold front brought high winds to much of the Mojave Desert and southern Great Basin. Isolated heavy snow also fell in the mountains.** |
| Event Narrative | **Zero visibility was reported throughout Pahrump. A tree brushed against a power line, starting a small brush fire.** |

## All events for this episode:

| Location | County/Zone | St. | Date | Time | T.Z. | Type | Mag | Dth | Inj | PrD | CrD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Totals:** | | | | | | | | 0 | 0 | 541.00K | 0.00K |
| WESTERN CLARK/SOUTHERN NYE (ZONE) | WESTERN CLARK/SOUTHERN NYE (ZONE) | NV | 03/06/2012 | 12:21 | PST-8 | High Wind | 74 kts. MG | 0 | 0 | 1.00K | 0.00K |
| LAKE MEAD/LAKE MOHAVE NATIONAL RECREATION AREA (ZONE) | LAKE MEAD/LAKE MOHAVE NATIONAL RECREATION AREA (ZONE) | NV | 03/06/2012 | 13:15 | PST-8 | High Wind | 50 kts. MG | 0 | 0 | 0.00K | 0.00K |
| SOUTHERN CLARK (ZONE) | SOUTHERN CLARK (ZONE) | NV | 03/06/2012 | 13:15 | PST-8 | High Wind | 52 kts. EG | 0 | 0 | 20.00K | 0.00K |
| SPRING MOUNTAINS (ZONE) | SPRING MOUNTAINS (ZONE) | NV | 03/06/2012 | 13:34 | PST-8 | High Wind | 61 kts. MG | 0 | 0 | 0.00K | 0.00K |
| ESMERALDA/CENTRAL NYE (ZONE) | ESMERALDA/CENTRAL NYE (ZONE) | NV | 03/06/2012 | 14:00 | PST-8 | High Wind | 68 kts. MG | 0 | 0 | 20.00K | 0.00K |
| LAS VEGAS VALLEY (ZONE) | LAS VEGAS VALLEY (ZONE) | NV | 03/06/2012 | 14:02 | PST-8 | High Wind | 58 kts. MG | 0 | 0 | 500.00K | 0.00K |
| SPRING MOUNTAINS (ZONE) | SPRING MOUNTAINS (ZONE) | NV | 03/06/2012 | 17:00 | PST-8 | Heavy Snow | | 0 | 0 | 0.00K | 0.00K |
| **Totals:** | | | | | | | | 0 | 0 | 541.00K | 0.00K |

DEPARTMENT OF COMMUNITY DEVELOPMENT
AIR QUAILITY

On 4/15/13 we exceeded @ all 4 PM10 sites in Pahrump. -LMK

# High Wind Advisory

## Attention Dust Control Permit Holders, Contractors and Stationary Sources

**The National Weather Service (NWS) is forecasting high winds for the area today 4/15/2013 through Wednesday 4/17/2013. Today they will be from the southwest at 20-25mph gusting to 40mph. Tomorrow, they will shift to the northwest but decrease slightly to 15-20mph gusting to 30mph and continue through Wednesday, when they will decrease.**

**You are reminded that dust control is a 24 - 7 requirement.**

**The Nye County Planning Air Quality Branch directs each permittee to immediately inspect their site(s) and employ Best Management Practices to stabilize all disturbed soils to reduce blowing dust. Permittees with multiple sites should contact each site superintendent to ensure compliance with Nye County Code, Section 15.28.080.**

**The Nye County Air Quality Compliance Officer will inspect construction and stationary source sites during the wind event to ensure BMPs are effectively being applied. Any observed dust ordinance violations may receive a notice of violation.**

**Please direct questions about this wind advisory to George Bernath, the Nye County Air Quality Compliance Officer at (775) 751-4240 or my cell at 775-253-0157, and thank you for your cooperation.**

## April 14-15, 2013 Wind and Blowing Dust Event

PRELIMINARY LOCAL STORM REPORT...SUMMARY
NATIONAL WEATHER SERVICE LAS VEGAS NV
1112 AM PDT THU APR 18 2013

| ..TIME... ..DATE... | ...EVENT... ....MAG.... ..REMARKS.. | ...CITY LOCATION... ..COUNTY LOCATION..ST.. | ...LAT.LON... ...SOURCE.... |
|---|---|---|---|
| 0555 PM 04/14/2013 | NON-TSTM WND GST M59.00 MPH | BICYCLE LAKE AIRFIELD SAN BERNARDINO CA | 35.28N 116.62W ASOS |
| 0628 PM 04/14/2013 | NON-TSTM WND GST M58.00 MPH | BARSTOW-DAGGETT AP SAN BERNARDINO CA | 34.85N 116.79W ASOS |
| | BARSTOW-DAGGETT AIRPORT MEASURED A 58 MPH WIND GUST ALONG WITH SUSTAINED WINDS OF 45 MPH. VISIBILITY WAS REDUCED TO 3/4 MILE IN BLOWING DUST. | | |
| 0800 PM 04/14/2013 | NON-TSTM WND DMG | BARSTOW SAN BERNARDINO CA | 34.88N 117.07W LAW ENFORCEMENT |
| | HIGH WINDS BLEW DOWN A TREE IN BARSTOW. REPORT FROM BARSTOW POLICE DEPARTMENT. | | |
| 0801 PM 04/14/2013 | NON-TSTM WND GST M66.00 MPH | BARSTOW-DAGGETT AP SAN BERNARDINO CA | 34.85N 116.79W ASOS |
| | BARSTOW-DAGGETT AIRPORT MEASURED SUSTAINED WINDS OF 52 MPH WITH A GUST OF 66 MPH. TIES FOR SECOND HIGHEST GUST SINCE ASOS WAS COMISSIONED IN AUGUST 2000. VISIBILITY WAS REDUCED TO 1/2 MILE IN BLOWING DUST. | | |
| 0900 PM 04/14/2013 | DUST STORM | 6 ESE DAGGETT (CLR11) SAN BERNARDINO CA | 34.83N 116.69W LAW ENFORCEMENT |
| | CALIFORNIA HIGHWAY PATROL REPORTED VERY LOW VISIBILITY DUE TO BLOWING DUST LIKELY CONTRIBUTED TO SEVERAL VEHICLE ACCIDENTS. ONE SEMI-TRUCK WAS KNOCKED OVER NEAR NEWBERRY SPRINGS. | | |
| 0920 PM 04/14/2013 | DUST STORM | 3 NNE BARSTOW-DAGGETT A SAN BERNARDINO CA | 34.90N 116.77W LAW ENFORCEMENT |
| | MINNEOLA ROAD WAS REPORTED CLOSED BY CALIFORNIA HIGHWAY PATROL DUE TO ZERO VISIBILITY IN BLOWING DUST. | | |
| 0942 PM 04/14/2013 | NON-TSTM WND GST M56.00 MPH | OAK CREEK RAWS INYO CA | 36.84N 118.26W MESONET |
| | OAK CREEK RAWS MEASURED A 56 MPH WIND GUST FROM THE WEST-NORTHWEST AT AN ELEVATION OF 4900 FEET. | | |
| 1038 PM 04/14/2013 | DUST STORM | 5 ESE DAGGETT (CLR11) SAN BERNARDINO CA | 34.83N 116.69W LAW ENFORCEMENT |
| | CALIFORNIA HIGHWAY PATROL HAS CLOSED I-40 FROM NATIONAL TRAILS HIGHWAY IN NEWBERRY SPRINGS TO THE DESERT OASIS REST AREA NEAR LUDLOW DUE TO LOW VISIBILITY FROM BLOWING DUST. SEVERAL VEHICLE ACCIDENTS HAVE TAKEN PLACE IN THIS AREA LIKELY DUE TO THE LOW VISIBILITY FROM BLOWING DUST. A FEW SEMIS HAVE GONE OFF THE ROAD AND FELL ON THEIR SIDE. | | |
| 0200 AM 04/15/2013 | NON-TSTM WND DMG | 3 ENE BARSTOW SAN BERNARDINO CA | 34.89N 117.02W TRAINED SPOTTER |

A 12 FOOT TALL HAM RADIO TOWER WAS BLOWN DOWN BY THE WIND.

| | | | | |
|---|---|---|---|---|
| 0400 AM | NON-TSTM WND DMG | FORT IRWIN | | 35.26N 116.68W |
| 04/15/2013 | | SAN BERNARDINO | CA | PUBLIC |

PUBLIC REPORT VIA FACEBOOK OF WIND DAMAGE ON FORT IRWIN. SEVERAL TREES WERE KNOCKED DOWN AND THERE WAS DAMAGE TO HOUSING AREAS. THE EVENT TIME IS AN ESTIMATE.

| | | | | |
|---|---|---|---|---|
| 0415 AM | NON-TSTM WND GST | BICYCLE LAKE AIRFIELD | | 35.28N 116.62W |
| 04/15/2013 | M70.00 MPH | SAN BERNARDINO | CA | AWOS |

BICYCLE LAKE AIRFIELD AWOS MEASURED A 70 MPH WIND GUST FROM THE WEST-SOUTHWEST.

| | | | | |
|---|---|---|---|---|
| 0742 AM | NON-TSTM WND GST | 5 NW INDEPENDENCE | | 36.84N 118.27W |
| 04/15/2013 | M60.00 MPH | INYO | CA | MESONET |

60 MPH GUST FROM THE WEST AT THE OAK CREEK RAWS.

| | | | | |
|---|---|---|---|---|
| 0454 PM | NON-TSTM WND GST | WSW OWENS VALLEY RAWS | | 37.39N 118.55W |
| 04/15/2013 | M59.00 MPH | INYO | CA | MESONET |

| | | | | |
|---|---|---|---|---|
| 0500 PM | NON-TSTM WND GST | 3 SE INDEPENDENCE | | 36.77N 118.16W |
| 04/15/2013 | M62.00 MPH | INYO | CA | MESONET |

| | | | | |
|---|---|---|---|---|
| 0545 PM | NON-TSTM WND GST | 2 SE YUCCA FLAT (NTS SR | | 36.94N 116.04W |
| 04/15/2013 | M60.00 MPH | NYE | NV | MESONET |

60 MPH GUST REPORTED AT THE DEACON UNDERGROUND DISPOSAL MESONET SITE.

| | | | | |
|---|---|---|---|---|
| 0555 PM | NON-TSTM WND GST | 4 ENE FORT IRWIN | | 35.28N 116.62W |
| 04/15/2013 | M63.00 MPH | SAN BERNARDINO | CA | ASOS |

| | | | | |
|---|---|---|---|---|
| 0856 PM | NON-TSTM WND GST | 3 NNW CENTENNIAL HILLS | | 36.32N 115.30W |
| 04/15/2013 | M58.00 MPH | CLARK | NV | MESONET |

A MESONET SITE MEASURED A 58 MPH WIND GUST IN THE FAR NORTHWEST PART OF THE LAS VEGAS VALLEY. SEVERAL SPOTTERS ESTIMATED WIND GUSTS OF 50 TO 60 MPH IN CENTENNIAL HILLS AND PROVIDENCE. ONE GRILL WAS BLOWN INTO A POOL.

| | | | | |
|---|---|---|---|---|
| 0934 PM | NON-TSTM WND GST | RED ROCK CANYON | | 36.14N 115.45W |
| 04/15/2013 | M61.00 MPH | CLARK | NV | MESONET |

RED ROCK CANYON RAWS REPORTED A GUST TO 61 MPH AS OF 929 PM PDT. THE STATION IS LOCATED AT THE 3756 FOOT LEVEL.

&&
THIS IS AN UPDATED LIST OF STORM REPORTS FROM SUNDAY AND MONDAY...SENT TO ADD IN LATE REPORTS.
$$

VEF STAFF


- Return to Previous Page
- Return to Main Menu



**Webmaster**
US Dept of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Las Vegas Weather Forecast Office
7851 S Dean Martin Dr
Las Vegas, NV 89139-6628

Tel: (702) 263-9744



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