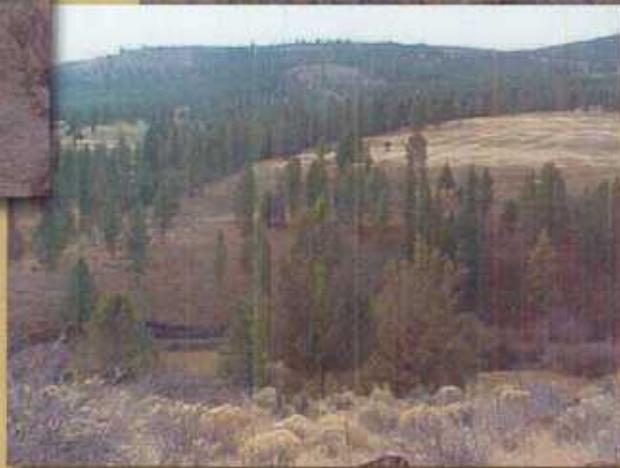
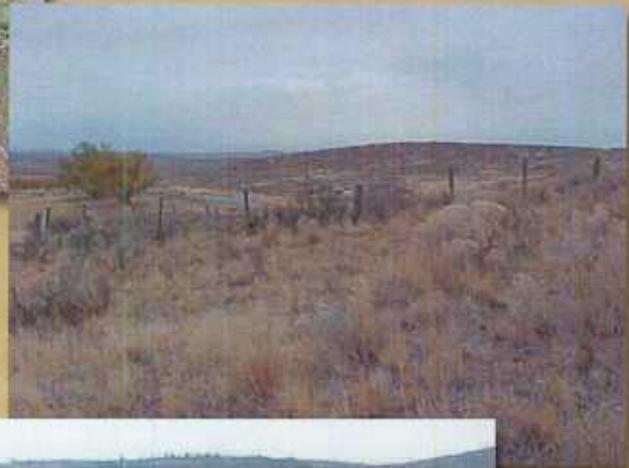


WILDLAND-URBAN INTERFACE COMMUNITIES-AT-RISK PROGRAM

**Final Mitigation Recommendations
BLM Vale District
Vale-Ontario Assessment Area**



**Order No.: NAD010208
Contract No.: GS-10F-0085J
April 2002**



**FINAL
WILDLAND-URBAN INTERFACE, COMMUNITIES-AT-RISK
MITIGATION RECOMMENDATIONS**

**VALE DISTRICT
VALE-ONTARIO ASSESSMENT AREA**

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**Order Number: NAD010208
Contract No.: GS-10F-0085J
Date Prepared: April 2002**

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ACRONYM LIST

amsl	above mean sea level
ATV	all-terrain vehicle
BLM	Bureau of Land Management
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
GPS	Global Positioning System
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NWCG	National Wildfire Coordination Group
RFD	Rural Fire Department
UTM	Universal Transverse Mercator
WRCC	Western Regional Climate Center

FIGURES

Figure 1	Vale-Ontario Fuel Hazard Assessment Results (Topography)
Figure 2	Vale-Ontario Fuel Hazard Assessment Results (Fuels)
Figure 3	Vale-Ontario Structure Risk Assessment Results

APPENDIX: Maps

Map 1	Vale-Ontario Assessment Area and Fuel Survey Points
Map 2	Highest Risk Areas for Fuels and Fire Suppression
Map 3	Proposed Mitigation Projects in the Vale-Ontario Assessment Area

1.0 EXECUTIVE SUMMARY

During the 2000 fire season, more than 6.8 million acres of public and private lands were burned by wildfire, resulting in loss of property, damage to resources, and disruption of community services. Many of these fires occurred in wildland-urban interface areas and exceeded fire suppression capabilities. To reduce the risk of fire in the wildland-urban interface, the President of the United States directed the Secretaries of the Departments of Agriculture and the Interior to increase federal investments in projects to reduce the risk of wildfire in the wildland-urban interface. The Bureau of Land Management (BLM), Vale District is currently in the process of forming partnerships with local governments to plan fuels reduction treatments and other mitigation measures targeted at the wildland-urban interface in the vicinity of public lands. These partnerships are indicative of a shared responsibility to reduce wildland fire risks to communities.

The wildland-urban interface occurs where manmade structures meet or intermix with wildland vegetation. In certain situations, specific actions such as fuels reduction around communities, forest and rangeland restoration, infrastructure improvements, and public education and outreach may reduce the risk of catastrophic fire in the wildland-urban interface. To this end, the Vale District BLM implemented the Communities-at-Risk Wildland-Urban Interface Program. The program seeks to reduce the hazard of wildland fires to communities through public outreach, the reduction or prevention of fuel build-up, and increasing the fire protection capabilities of communities. The communities of Vale, Oregon Slope, Ontario Heights (Vale-Ontario) were selected to assess the hazard of wildland fire and to identify specific actions that may reduce the risk of loss and disruption of services from wildland fire. The community of Adrian was added shortly before the assessment began because it is a high-risk community located at the boundary of the assessment area and Adrian provides assistance to the Vale-Ontario area during fires.

Dynamac Corporation (Dynamac) was contracted to support the BLM in their assessment of wildfire risk to the Vale-Ontario community in the wildland-urban interface. Dynamac scientists conducted fuel surveys by categorizing the vegetation, slope, and aspect of the land in the assessment area. The risk of wildland fire to homes, structures, and cultural resources on private land was also evaluated according to building materials, the presence of defensible space, road access, and the response time of the local fire department. Dynamac assessed the adequacy of the community's service infrastructure (including roads, water supplies, and fire fighting equipment) by systematic observation, and by interviewing community officials and fire prevention personnel. A community meeting was held to disseminate information about the

Communities-at-Risk, Wildland-Urban Interface Program on Tuesday, November 6, 2001, at the Vale High School. The meeting provided residents the opportunity to identify resources that are of value to the community and to have residents identify actions that have the potential to reduce the risk of wildland fire in their community. The information gathered from the fuel surveys, structural surveys, interviews, infrastructure assessments, community profile and the community meeting was integrated into two draft reports: the Hazard Assessment Report and this Mitigation Recommendations report for the Vale District, Vale-Ontario assessment area. These draft reports were presented for comment and later amended and finalized by Dynamac Corporation following a second community open house meeting on March 18, 2002.

This Mitigation Recommendations report provides a list of all the public concerns and comments that Dynamac obtained from the community during the community meeting, and through interviews with the local officials and citizens. The public comments represent actions suggested by the community that if implemented, greatly reduce the threat of wildland fire to an urban interface area. From the list of public comments, Dynamac evaluates those that are consistent with the scope of the Communities-at-Risk Program and presents them as proposed mitigation recommendations. The proposed mitigation recommendations for the Vale-Ontario assessment area fall under three main objectives:

- Develop community education and outreach programs throughout the assessment area to encourage firewise practices;
- Establish a fuels reduction program to decrease fire risk to residential areas and the watershed; and
- Provide assistance to the rural fire departments (RFDs) in the assessment area in obtaining funding for additional equipment.

2.0 GOALS AND OBJECTIVES

The goals of the Vale-Ontario assessment are to evaluate the hazards of wildland fire within the assessment area and identify specific mitigation recommendations to reduce those hazards through interviews with the community. The objectives are to decrease the chance of wildfire spreading from public lands onto private lands and from private lands onto public lands.

3.0 BACKGROUND

Wildland fire is an integral component of many forest and rangeland ecosystems. In the conterminous United States before European settlement, an estimated 145 million acres were annually scorched by wildfire. In comparison, only about 14 million acres are currently burned annually due to increased agriculture, urbanization, habitat fragmentation, and fire suppression programs. This change from the historical fire regime to the present day has caused a shift in the native vegetation composition and structure of fire-prone ecosystems such as some forests and rangelands resulting in a dangerously high accumulation of fuels. As a result, when wildland fires do occur, they may burn larger and hotter than those in the past and pose an increased risk to human welfare and the ecological integrity of those areas.

The hazard of wildland fires is compounded by the increasing occurrence of human structures and activities in fire-prone ecosystems. The wildland-urban interface occurs where human structures meet or intermix with wildland vegetation. In certain situations, specific actions such as fuels reduction around communities, forest and rangeland restoration, infrastructure improvements, and public outreach may reduce the risk of losses to catastrophic fire in the wildland-urban interface. The Vale District BLM implemented the Communities-at Risk, Wildland-Urban Interface Program to determine what these specific actions may be, and where they are needed. The program seeks to reduce the hazard of wildland fires to communities through public education and outreach, the reduction or prevention of fuel build-up, and increasing the fire protection capabilities of communities. The Vale-Ontario communities were selected to assess the threat of wildland fire and to identify specific actions that may reduce the risk of loss.

The Vale District intends to use the mitigation measures identified in this document as a guide and prioritization tool in implementing the Communities-at-Risk program. The District is committed to working with any partners (private, local government, state, and federal) in order to accomplish mutual goals and objectives identified in the recommendations. The recommendations that the District chooses to implement will go through the NEPA process and will be accomplished as funding, policy and regulations permit.

4.0 EXISTING SITUATION

4.1 Vale-Ontario Assessment Area

The Vale-Ontario assessment area is located in the sagebrush-grassland area of eastern Oregon. The assessment area includes the towns of Vale, Ontario, Nyssa and Adrian Oregon and occupies portions or complete sections of the following townships: T15S R45E; T15S R46E; T15S R47E; T16S R43E; T16S R44E; T16S R45E; T16S R46E; T17S R43E; T17S R44E; T17S R45E; T17S R46E; T17S R47E; T18S R42E; T18S R43E; T18S R44E; T18S R45E; T18S R46E; T18S R47E; T19S R42E; T19S R43E; T19S R44E; T19S R45E; T19S R46E; T19S R47E; T20S R43E; T20S R44E; T20S R45E; T20S R46E; T21S R45E; and T21S R46E. The assessment area is in the Snake River Resource Area (Soil Survey for Malheur County, Oregon, Northeastern Part, September 1980) and includes the lowland areas along the Snake, Malheur, and Owyhee Rivers and Willow Creek where development and farming occur.

Ontario is located on the Idaho-Oregon border on the Snake River. Oregon Slope and Ontario Heights are large residential and farming communities located northwest of the city of Ontario. Adrian is a small town located 20 miles south of Ontario. Vale is located 16 miles west of Ontario and is in the center of the assessment area. Vale is known historically for its location on the Oregon Trail, where pioneers could wash the dust off in the hot springs near the town. Today, Vale is the county seat for Malheur County and contains many historic buildings and murals. One of the oldest buildings in Malheur County is the Rinehart Stone House that was built in 1872, and it served as a way station on the Oregon Trail. The building is listed in the National Register of Historic Places.

Land use in the assessment area is mainly residential, ranches and farms. In addition, the assessment area includes historic buildings, several roadside informational signs, the Vale District BLM office, industrial/processing facilities and an outdoor art gallery consisting of 23 murals depicting life and settlement activities in this area. Open water bodies in the assessment area include the Snake, Malheur, and Owyhee Rivers, Willow, and Bully Creeks and Bully Reservoir. Numerous canals and irrigation ditches are present throughout the assessment area providing water for agriculture.

Farming is the primary industry in the area followed by cattle and sheep ranching. Agriculture and row crop farming produces beets, potatoes, grain, corn, onions, alfalfa, and grass for hay, with most of the crops irrigated. The rangeland is important for wildlife habitat, recreation and

livestock grazing. In particular, large tracts of low elevation shrub land are used for big game winter range. Deer, elk, pronghorn, chukar, migrating waterfowl and game birds, such as ring-necked pheasant and California quail, provide good hunting opportunities in this area.

The climate of the Vale-Ontario area is characterized by hot, dry summers with average daily high temperatures reaching 93 degrees Fahrenheit (°F) in July, and an average daily summertime low of 56°F. Winter months are typically cold, with average monthly temperatures from December through February between 20° to 40 °F. Precipitation is typically low with an average annual precipitation of 9.47 inches. Most precipitation arrives between November and February as snowfall and between March and June as rain (WRCC, 2001).

Hot, dry summer winds generally moving west to east increase the risk of wildland fires to these communities, as was the case with the ‘Jackson’ fire during the summer of 2000 that caused significant damage in the Ontario Heights area. Structural fires in the assessment area were handled by the RFDs of Vale, Ontario, Nyssa, and Adrian, with assistance from the Payette and Weiser Fire Departments in Idaho. The majority of the RFDs were not equipped to respond to wildfires nor did they have adequate wildland fire fighting training and capabilities.

The cities of Vale and Ontario are fairly well-protected due to volunteer fire departments situated within the town, and because of significant amounts of row crops and rangelands surrounding the towns, which form a ‘buffer zone’ of defensible space around the town. In addition, the Malheur River borders the south side of Vale and acts as a firebreak for the city.

The dominant vegetation in the assessment area is big sagebrush and cheatgrass. Public lands are predominantly managed by BLM, which totals approximately 180,000 acres within the assessment area. Other public lands include Bureau of Reclamations land on Bully Creek Reservoir and Malheur River, and land managed by the State of Oregon (state prison). There are roughly 200,000 acres of public land in the 15-mile radius of the assessment area. Many of the towns and communities are adjacent to or east of the public lands.

Significant interface areas exist within the assessment area, specifically around Vale and west of the Oregon Slope and Ontario Heights areas. These areas have subscription fire department services, which report that approximately 50% of people within their boundaries do not subscribe to the service. In addition, parts of these areas that subscribe to fire department services, are located the farthest away from fire stations, and are typically adjacent to dense fuel areas such as gullies and rangeland. The upper slopes in these areas also receive lightning strikes on a regular

basis. While many of these homes are surrounded by farmland, this farmland is adjacent to rangeland, and no buffer exists between the two areas. **Map 2** indicates defined high-risk interface areas for close-proximity fuels, minimal fire suppression, or areas with poor access.

The Oregon Department of Fish and Wildlife indicated homes near “Canyon 2” and “Canyon 3” as well as homes between Nyssa and Ontario, west of Highway 201 along the desert fringe as having the highest fire risk in the area. The ‘Dead Ox Flat’ was also indicated as a specific area within Ontario Heights that is at high risk.

Some fire hazard mitigation actions have been undertaken by the BLM in the Vale-Ontario area. These include seeding with crested wheatgrass and other bunchgrasses, and education through radio and newspaper media during fire season, which warns and reminds residents of fire risks. In addition, the highway department currently sprays weeds along some roadways. The BLM also sponsors educational programs in schools, bringing Smokey the Bear into several classrooms every year in cooperation with local fire departments, and the Vale Fourth of July parade.

4.2 Summary of the Hazard Assessment Survey

The Hazard Assessment Report for the Vale-Ontario assessment area presents and summarizes data for fuel and terrain conditions. Six fuel variables were classified as to low hazard (Class A), moderate hazard (Class B), or high hazard (Class C) at 35 fuels survey points located throughout the assessment area. The fuel survey data can be summarized as follows:

- **Slope:**
 - Class A - 46% of the points had flat land (less than 10% slope).
 - Class B - 31% had moderate slopes (10-30% slope).
 - Class C - 23% had steep slopes (greater than 30% slope).
- **Aspect:**
 - Class A - 40% of the points had north facing slope (NW, N, NE).
 - Class B - 23% had east facing or level slope.
 - Class C - 37% had south or west facing slope (SE, S, SW, W).
- **Elevation:**
 - Class C - All of the points were below 3,500 feet amsl.

- **Fuel Type:**

- Class A - 86% of the points had small light fuels (grass, weeds, small shrubs).

- Class B - 11% had medium fuels (brush, medium shrubs, small trees).

- Class C - 3% had heavy fuels (woodland, large brush, ornamentals).

- **Fuel Density:**

- Class A - 0% of the points had non-continuous fuel beds (<30 % cover).

- Class B - 14% had broken moderate fuels (31% to 60% cover).

- Class C - 86% had continuous fuel beds (>60% cover and conducive to crown or surface high intensity fires).

- **Fuel Bed Depth:**

- Class A - 54% of the points had low fuel bed depths (average <1 foot).

- Class B - 46% had moderate fuel bed depths (1 to 3 feet).

- Class C - 0% had high fuel bed depths (average >3 feet)

Map 1 shows the locations of all fuel survey points. Data from the fuels hazard assessment are also graphically depicted in **Figures 1 and 2**. The charts depict the percentage of assessment points, based on a total of 35 points surveyed, which received a high, moderate, or low hazard ranking.

Data from the fuels hazard assessment are also graphically depicted on **Figures 1 and 2**. In general, the data collected for the topographic features slope and aspect are mixed between the hazard classes.

It is important to note that overall hazard as related to fuels may be underestimated in many parts of the assessment area, specifically those areas dominated by cheatgrass and other annual grasses. While considered small, light fuels (Class A), cheatgrass and other annual grasses are naturally more prone to burning than native plant species such as bunchgrasses and sagebrush. Although wildfires are sometimes rapidly suppressed in these fuels, their very dense, fine-textured nature increases both the chance of ignition and the rate of spread of wildfires. During years when the production of annual grasses is high, resistance to control is extreme, and it can be very dangerous to try and suppress wildfires in this fuel type. Native perennial grasses do not mature until late August and September, whereas cheatgrass matures in June. The dominance of cheatgrass thus not only changes the type of fire that occurs, but also extends the fire season by almost two months. The presence of continuous stands of flammable cheatgrass and other annual grasses such as medusahead rye at many sites around the Vale-Ontario community probably makes for a higher hazard than the fuel survey indicates.

4.3 Summary of the Structure Assessment (Form 2)

A second component of the Hazard Assessment Report was to characterize structures and in the assessment area for structure density, building materials, proximity to fuels, presence of a survivable space, and roads and accessibility. These variables were classified as low hazard (Class A), moderate hazard (Class B), or high hazard (Class C) on 299 sections in the assessment area. However, only 131 sections were found to contain structures. For the data below, percentage of structure density and response times are based on all 299 sections surveyed. The percentage for the rest of the rating elements is based on only the 131 sections that contained structures such as homes or buildings. Results of the structure survey can be summarized as follows:

- **Structure Density:**

- Class A - 4% of the sections had at least one structure per 5 acres.

- Class B - 0% had one structure per 5-10 acres.

- Class C - 96% had less than one structure per 10 acres.

- **Proximity to Structures:**

- Class A - 22% of the sections had flammable fuels an average of more than 100 feet from the structure(s).

- Class B - 43% had flammable fuels an average of 40 to 100 feet from the structure(s).

- Class C - 35% had flammable fuels an average of less than 40 feet from the structure(s).

- **Building Materials:**

- Class A - 84% of the sections had a majority of homes built with fire resistant roofs and/or siding.

- Class B - 12% had 10 to 50% of homes built with fire resistant roofs and/or siding.

- Class C - 4% had less than 10% of homes with fire resistant roofs and/or siding.

- **Defensible Space:**

- Class A - 59% of the sections had a majority of homes with improved defensible space around the property.

- Class B - 34% had 10 to 50% of homes with improved defensible space.

- Class C - 7% had less than 10% of homes with improved defensible space.

- **Roads:**

Class A - 28% of the sections had wide looped roads that are maintained, paved or solid, surface with shoulders.

Class B - 67% had roads are maintained, narrow two lane roads with no shoulders.

Class C - 5% had narrow and/or single-lane, minimally maintained roads with no shoulders

- **Response Time:**

Class A - 100% of response times were 20 minutes or less.

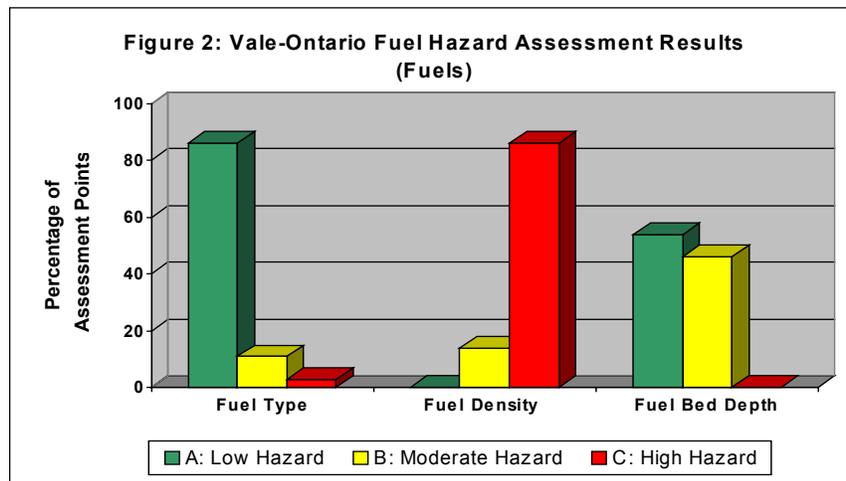
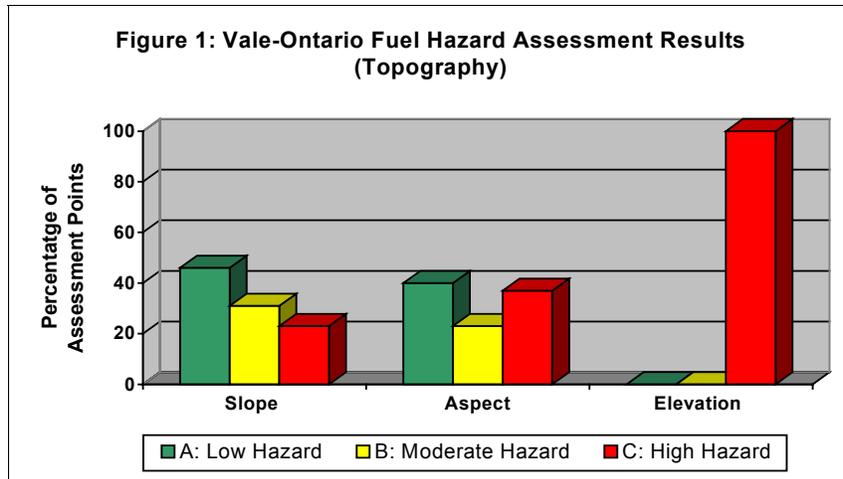
- **Access:**

Class A - 29% of the sections had structure access with multiple entrances, exits and turnarounds that are all well equipped for trucks.

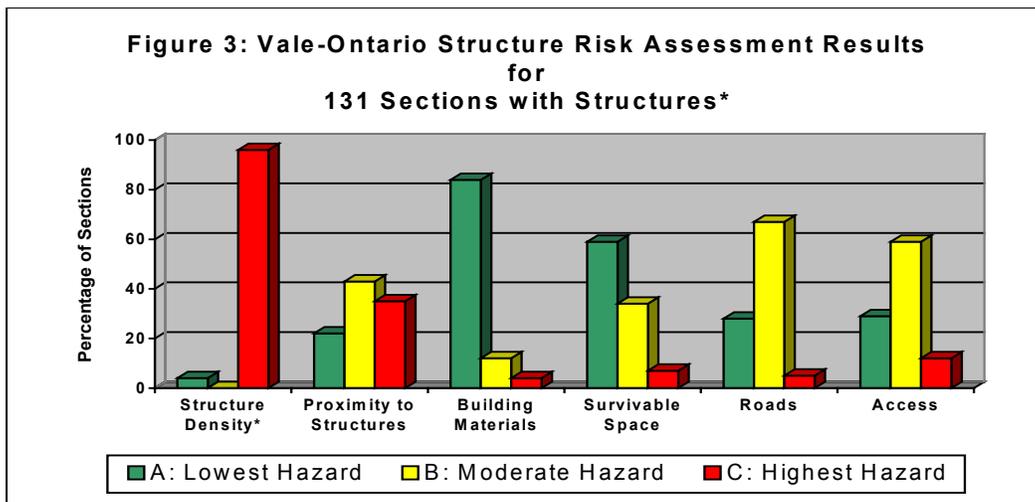
Class B - 59% had limited access routes, with moderate grades, and two ways in and out.

Class C - 12% had narrow dead end roads or one-way in and out access with steep grades.

The percentages of sections that received a hazard ranking of high, moderate, or low for the risk assessment to structures in the assessment area are graphically depicted in **Figure 3**. It should be noted that, with the exception of structure density and response times, these percentages are based on the 131 sections *with* structures in the assessment area and not on all 299 sections surveyed (168 of which had no structures.) Response times are not depicted because *all* sections within the assessment area had a response time of less than 20 minutes (100% rated low risk.)



*Percentages for Figures 1 and 2 are based on 35 assessment points surveyed.



*Structure Density is a percentage of all 299 sections in the Assessment Area rather than only the 131 in which there were structures.

In general, an assessment of the structures indicates that the density of the homes and structures are spread out, making it more difficult for the rural fire departments to respond during wildland fires. Flammable fuels are also, on the average, located close to structures, with 78% of sections with structures having fuels less than 100 feet away from the structures. Generally, roofs are constructed of fire-resistant materials such as metal or composite shingles. In addition, homes generally had improved defensible space around them such as maintained lawns or parking areas. Hazard ranking for roads, response times, and access to structures were mostly rated as low to medium for fire departments to respond to structures within the assessment area.

5.0 PUBLIC CONCERNS AND COMMENTS

The focus of the community assessment is to determine local needs in terms of ability to combat, guard against, prevent or reduce the risk of wildland fire to the community. During interviews with community officials, the community meeting, and discussions with residents, the public identified numerous concerns and made many comments on Dynamac's and BLM's work in the area. These concerns and comments, if incorporated into mitigation measures, may reduce the threat of wildland fire to interface areas and improve fire-fighting capability in the Vale-Ontario assessment area. This section of the Mitigation Recommendations report provides a list of all the concerns and comments that were obtained through community outreach activities.

Comments were evaluated to determine if they met the intent of the Communities-At-Risk Program. Comments that did not meet the intent of the program, or comments that did not meet current policies established by federal agencies, were not analyzed for use as a final proposed recommendation (Section 5.1). However, these comments represent established community concerns, and therefore can and should be addressed through local citizen groups, if the community feels these issues warrant further action in reducing the risk of wildland fires.

Section 5.2 of this report lists the concerns and comments that Dynamac evaluated as those that are consistent with the scope of the Communities-at-Risk Program. These comments have been developed into proposed mitigation recommendations, and are listed in Section 8.0, Proposed Mitigation Recommendations and Priority.

5.1 List of Public Concerns and Comments Not Analyzed

Not all concerns and comments fall within the scope of the Communities-At-Risk Program set forth by Congress through the National Fire Plan. The funding that Congress has provided for this program is primarily for fuels reduction, community education and rural assistance. The following public concerns and comments have not been analyzed further for proposal as mitigation recommendations because they are not within the original intent of the Communities-At-Risk Program, are outside the current policies established by federal agencies, or because they have already been resolved.

- 1. Adopt firewise ordinances.** The adoption of firewise ordinances and practices countywide in residential and commercial building and landscaping was suggested as a desired condition. Jon Beal, the Malheur County Planner, indicated he would like to see a countywide fire protection accessibility assessment done prior to the review of county firewise ordinances. He would like to do this in conjunction with the local fire departments. Mr. Beal indicated that approximately 15 to 20% of homes in Malheur County have inadequate access. In particular danger are conditional-use homeowners who do not have farmland around them, which is ordinarily a source of defensible space. Besides accessibility, however, building codes should be updated to provide for and require firesafe materials, particularly in interface areas.
- 2. Improve Emergency Operations Plan (EOP).** As shown by numerous communication difficulties during the 2000 ‘Jackson’ fire, the EOP needs significant updating. Of primary concern is communication and coordination between BLM, the fire departments, and the Emergency Operations Center (EOC). Not all of the fire departments know the frequency of the EOC, and the BLM should provide updates on the fire to the EOC readily.
- 3. Develop an EOP specifically for response to wildland fires.** This need also became apparent during the ‘Jackson’ fire. No emergency plan exists specifically for the threat of wildland fire. One such plan should be developed.
- 4. Outlaw fireworks.**
- 5. Require 4,000-gallon water tank installation** with any new home over 3,200 square feet in the Oregon Slope area. This requirement already exists in Idaho, and the Weiser Rural Fire

Department, which covers portions of Oregon Slope, felt this would be a good mitigation action for the area.

- 6. A new fire station for the City of Vale.**
- 7. The addition of two full time firefighters for the Ontario Fire Department and the addition of a second fire station (sub-station).**
- 8. Fire fighting equipment for the Weiser Rural Fire Department.**
- 9. Rotation of crops and increased irrigation water.**
- 10. Wildfire Training.** Wildland fire training for Vale Volunteer Fire Department and the Adrian Volunteer Fire Department.
- 11. Mutual indemnification and certification training course.** Ranchers and farmers typically respond to fires on their land using tractors and discing methods to suppress fires. However, they cannot fight wildland fires located on public lands. A request by the ranchers and farmers has been made to obtain training to assist in fighting wildland fires on public lands and accepting mutual indemnification so they could not sue federal agencies in the event of injury or loss during a fire on public land.
- 12. Cattle Grazing.** Allowing cattle to graze on allotments where a fire has occurred was suggested. Currently, a federal law prohibits cattle from grazing on land that has been burned in the past two years. This is a good mandate for certain types of lands that have sustained a fire, but in the event of a fire where native grasses have been completely burned, cheatgrass can move in quickly and prevent recovery of native grasses. If cattle were allowed to graze sooner, cattle might keep the cheatgrass growth down, and allow for the native plants to recover. In addition, general use of cattle as a fuel-reducing agent has proven to be a fire hazard mitigation technique.

The first seven aforementioned comments have not been developed into proposed mitigation recommendations because they are not within the original intent of the Communities-at-Risk Program. These are functions that should be implemented on a county or city level. However, the comments are listed because they are critical issues for the community and can be pursued through other funding vehicles, grants or community efforts.

Fire fighting equipment for the Weiser Rural Fire Department was not carried forward because Weiser is located in Idaho. Funding for Weiser should be obtained through the Idaho Department of Lands. Alternatively, Weiser could attempt to partner with nearby Payette, Idaho, to obtain funding through BLM. Payette underwent a fire hazard assessment through the Communities-at-Risk Program sponsored by BLM's Lower Snake River District in summer 2001.

Crop rotation and increased irrigation water is a local issue that could best be handled through the proposed County Fire Council which has been carried forward as a mitigation recommendation. The introduction of crops such as sugar beets or alfalfa that are green at the height of fire season every year, and ceasing to grow wheat in high-risk areas, would be an alternative that should be evaluated further by a County Fire Council.

Wildland fire training is lacking in almost all fire departments associated with the Vale-Ontario assessment area. Particularly, the Vale Volunteer Fire Department and the Adrian Volunteer Fire Department require assistance in training their volunteers. This issue, however, was not carried forward since it can be addressed through a recent grant obtained through the Snake River Valley Fire Protection Association. An instructor certified by the National Fire Protection Association (NFPA) or National Wildfire Coordination Group (NWCG) could conduct wildland fire training locally during the winter (when fire season is slow). Basic wildland fire training courses meeting NWCG standards are recommended. These include S-130, S-190, and the Standards for Survival classes.

Mutual indemnification and training was not developed into a mitigation recommendation because providing for mutual indemnification would require changes in agency policy for fighting fires on public lands. Entering into areas where a policy has been lawfully established to protect the public is beyond the original intent of the Communities-at-Risk Program. Training farmers and ranchers to fight wildland fires or operate equipment was also not analyzed further because it is an issue that can be addressed easily through volunteering through the RFDs. An organization, such as a RFD, that has established a cooperative agreement with state or federal agency is allowed to fight fires on public land. Residents who volunteer to serve as members of that organization can fight fires on public land under the auspices of that organization. There are also avenues to certify privately owned equipment, according to agency policy, by the BLM so that it can be used to defend against wildfire on public lands.

Allowing cattle to graze on allotments that have sustained a burn before a two-year grazing moratorium has passed was not analyzed further because it also requires changes in agency policy. The two-year period is generally accepted as the average time needed for an allotment to rejuvenate itself after a fire. There are many variables that need to be taken into consideration such as the need to promote perennials and reduce cheatgrass, or to limit noxious weeds. Because public land has multiple uses, these factors must be balanced with grazing needs. The BLM can authorize an allotment be grazed after only one year, but it requires a review and approval process which still may be turned down within the federal agency because of policy or management decisions. The formation of a County Fire Council has been advocated as a forum to discuss fire issues in the community (see Section 8.1.1).

5.2 Public Concerns and Comments Analyzed Further

The following list includes the public concerns and comments suggested by the Vale-Ontario community that are consistent with the intent of the Communities-At-Risk Program. Because these comments do fall within the intent of the program, they have been analyzed further and developed into mitigation recommendations presented in Section 8.0.

1. Recreational User Education

- a. Post signs identifying BLM land, fire hazards associated with the land, and a number to call in the event of a fire.
- b. Air public announcements to address off-road use and dispersed camping during periods of high fire danger by showing videos of fires. A message from the Governor may also command increased attention.

2. Enforce fire bans. Malheur County and BLM should work cooperatively to increase enforcement during periods of high fire danger.

3. Formation of a County Fire Council. Composed of residents, representatives of special interest groups and government agencies, and RFDs, living and working in high-risk areas, this Council could meet quarterly to discuss problems, solutions and progress regarding wildland fire issues, and would open a clear and consistent line of communication between the public and government agencies. This open communication between the community, state, and federal agencies would help to resolve some of the issues raised that involve policy decisions.

4. **Develop a fire-safe community.** Advocated by Randy Simpson, the Ontario Fire Chief, the existence of such a community would serve as an example for the entire county. New developments could follow this as an example, and existing residents could also use this community as a model for their own improvements. One such community already exists in Burns, Oregon.
5. **General public education.**
 - a. Many residents do not understand why they are not allowed to fight fire on public land. Educational efforts could be initiated to inform residents as to when they can and cannot help the BLM and the reasoning behind both.
 - b. Many residents are also not aware of the various things that can be done to protect a home. Educational materials could be mailed, put in newspapers, or provided through the BLM and local fire departments.
6. **Pre-defined discing.** Once high-risk areas are identified, disc lines could be established and disked periodically as a preventative measure. One suggestion was to disc along the drift fences.
7. **Fuel breaks** could be established in the Oregon Slope area (See **Map 3**). In addition, planting herbaceous firebreaks, or greenstrips, along the interface area was suggested.
8. **Controlled Burns** were suggested in order to eliminate excess fuels in the Ontario Heights area and weeds along the roadside.
9. **Assess allotments individually.** Some allotments have invading cheatgrass and some do not. Those that have significant amounts of cheatgrass pose a higher fire risk and could be grazed more heavily until perennial grasses rehabilitate the area.
10. **Fire Department Needs:** It should be noted that if RFDs were equipped with adequate water tankers, fire insurance rates for many homeowners would be reduced.
 - a. Educational materials regarding wildland fires should be distributed to all fire departments. Educational programs are often initiated, but do not focus on wildland fires. If materials are provided to the fire departments regarding wildland fire, this information could easily be folded into pre-existing educational efforts. It is also important to note that more than one fire department indicated they did not feel their community saw wildland fire as a risk. In addition, approximately 50% of the residents in the Oregon

Slope and Vale area elect to subscribe to the services of their local fire departments, which makes the need for residential education even greater.

- b. The Vale Volunteer Fire Department needs a better water tanker, a BLM heavy brush truck and a portable floating pump.
- c. The Adrian Rural Fire Department needs to replace or update a 1978 tender.
- d. The Ontario Fire Department indicated the addition of a 2,000-gallon pumper tender and, a BLM heavy brush truck would enable it to combat wildland fire more effectively.

6.0 NEED FOR ACTION

Wildland fires in the Vale-Ontario assessment area are common and result from many origins, both natural and human-induced. At risk are dwellings and other structures on private land near the wildland interface, and cultural and historic resources, including several buildings in Vale that are listed on the National Register of Historic Places. In addition, the close proximity of this area to Idaho attracts many recreational visitors from out-of-state, as well as local residents, making protection of the hunting areas worthwhile. Loss of crops and cattle directly by fire or indirectly through conversion of perennial grassland to annuals could have a significant impact on the economy within the assessment area.

To reduce the risks of wildfire in the assessment area, both general and specific actions are needed. In general, the residents and their local, state, and federal agencies must support activities that promote safety for dwellings and structures at risk. These agencies should coordinate efforts to achieve fuels management programs aimed at decreasing the spread of wildland fires from public lands to private lands and vice versa.

Current fire education programs in schools do not focus on wildland fire. This is a reflection of the fact that most RFDs have traditionally been structural firefighting entities, and are only now beginning to understand the special challenges presented by wildland fire, and to seriously learn the methods by which they can combat wildland fire. If children are educated about wildland fire's natural role in the ecosystem, and firewise measures around the home at an early age, this knowledge will be carried into adulthood, eventually having a significant impact on the public's knowledge base and willingness to participate in preventative measures.

Rehabilitation projects such as perennial seeding after a fire have occurred in the assessment area; however, no ongoing fuels reduction projects are in place. In interface areas where

structures, rangeland, crops or other areas of economic, cultural or historical importance exist, fuel treatment projects should be an ongoing focus.

Communications during the Jackson fire in 2000 arguably exemplified the greatest challenge facing Malheur County's ability to combat wildland fire. Communication systems are in place in the county, as is an EOC, but chains-of-command and reporting requirements are not. Similarly, communication and coordination between BLM, the EOC, and RFDs are not well-established.

Also due to the Jackson fire, many residents within this assessment area have an awareness of the great fire hazard surrounding them, and want to see precautionary measures defined and undertaken.

Malheur County has not adopted any firewise laws or ordinances. Jon Beal, the County Planner, explained this is a known problem, but no plans are currently in place to bring this to resolution.

7.0 METHODOLOGY

The assessment activities that are used to determine the proposed mitigation recommendations for the Vale-Ontario assessment area are based on information acquired from a survey of the hazard of wildland fire through field surveys, information obtained from the community meetings, and interviews with public officials. The majority of information presented in this report was gathered between November 4 and November 10, 2001. A companion report, the Final Hazard Assessment Report has been completed for the area and is available at the BLM Vale District office.

Dynamac characterized land and fuels at 35 points on public land within a 15-mile radius of Vale-Ontario, concentrating on the urban-wildland interface. As not all sections of public land were accessible, Dynamac endeavored to choose fuel survey points that were representative of surrounding sections in areas identified as having high potential for fire, areas where fires have occurred in the past, or based on types of vegetation. The rating elements included slope, aspect, elevation, fuel type, fuel density, and fuel bed depth, and were assigned to hazard rating of low, medium, or high (See Hazard Assessment Report, Table 3, and Appendix B).

At each survey point, the field crew recorded the location in UTM coordinates using a Trimble® hand-held global positioning system (GPS) unit; photographed the surrounding area in the four cardinal directions; and completed wildland fuels fire hazard assessment forms (Form 1, Hazard

Assessment Field Form) which rated characteristics of the land features and fuel sources that increased or lessened a community's risk to wildland-urban interface fire.

Dynamac staff also collected information on the flammability and defensibility of structures on private land from 299 sections located within one mile of public lands, within the assessment area. The structural hazard assessment rated the structures based on the resistance of building materials to fire, and the distance of flammable fuels to the structures located within a section. The rating elements included structure density, proximity of flammable fuels to the structures, building materials, defensible space, and types of roads, response times, and accessibility. Each element was assigned a hazard rating of low, medium, or high hazard category (See Hazard Assessment Report, Table 4, and Appendix C).

A community meeting was held on November 6, 2001, at the Vale High School Library from 6:00 to 9:00 p.m. The community was invited to attend through newspaper articles in the *Malheur Enterprise* and *Argus Observer*, announcements posted in public places such as the post office, the county seat, and on telephone poles. Flyer-invitations and surveys were mailed to area residents. While over 1,700 mailer invitations were sent out prior to the meeting, only 10 residents attended. Dynamac and BLM personnel attended the community meeting to hand out firewise brochures, obtain information from the community on hazardous fire situations and desired conditions, and to be an informational resource to those attending the meeting. A forum-like discussion was held for the full three-hour duration of the meeting. The ten residents that attended provided a significant amount of information regarding problems and ideas for solutions (See Hazard Assessment Report, Appendix D, for a meeting summary.) Residents attending the meeting were also asked to fill out a survey form regarding their perceptions and concerns about wildland fire in their communities. Self-addressed survey forms were also included with the mailed invitation to the meeting; in this way, Dynamac received several surveys from concerned residents that could not attend the meeting. (See Hazard Assessment Report, Appendix D.)

The Dynamac Community Relations Specialist conducted interviews with numerous local public officials and residents. Individuals or groups interviewed included the Malheur County Cattleman's Association, the Malheur County Sheriff and Fire Chief, the Vale Mayor and Vale City Coordinator, several rural fire department representatives, and the Malheur County Planner. (See Hazard Assessment Report, Appendix E).

A second community meeting was held on March 18, 2002, to present the draft results of the Vale-Ontario Hazard Assessment Report and Mitigation Recommendations. Over 6,000 flyers

were mailed advertising the meeting and 26 area residents attended. Comments obtained from the meeting and comments submitted by public agencies were reviewed and amended into this final report.

8.0 PROPOSED PROJECTS AND PRIORITY

The following specific action items and projects were identified and extrapolated from the list of public concerns and comments set forth by the community to reduce the hazard of wildfire in the Vale-Ontario assessment area. Each of these actions falls under the scope and intent of the Communities-At-Risk Program:

- Develop community education and outreach programs throughout the assessment area to encourage firewise practices;
- Establish a fuels reduction regimen to decrease fire risk to residential areas and the watershed; and
- Provide assistance to the rural fire departments in the assessment area in obtaining funding for additional equipment.

8.1 Community Education, Training and Outreach Recommendations

Numerous specific issues were identified by the Vale-Ontario community during interviews and the community meeting. The proposed mitigation recommendations for education and community outreach programs are separated into three sections. The first is aimed at general recommendations for the community, the second involves increasing residents' awareness of firewise landscaping and building practices, while the third provides farmers and ranchers with mitigation and fire-prevention strategies.

8.1.1 Community Education and Outreach

To reduce the risk of wildland fire spreading to residential and urban areas, residents have proposed mitigation recommendations that involve recreational user education, including forming a County Fire Council, developing a fire-safe community, and enforcing fire bans.

Recreational Use Of Public Lands: Recreational use of public lands, especially during periods when the risk of wildfires is high, has concerned many residents in the community. Private landowners are particularly concerned if they live or own land adjacent to public lands where all-

terrain vehicles (ATVs), camping, and hunting could potentially start fires through sparks from vehicles or campfires. Some residents have resorted to posting hand-made signs along roads requesting recreational visitors to be cautious. Official signs could be posted identifying BLM land, fire hazards associated with the land, and a number to call in the event of a fire. In Idaho, signs are posted along the roadway indicating #FIRE as a number to call, and this could be carried over into Oregon. In addition, BLM and Malheur County need to increase enforcement during fire season, when a fire ban is in place.

Many recreational visitors are not from the local area and do not know the risks associated with highly flammable vegetation such as the ability of a car driving or parking on dry grass to spark a fire. The use of public announcements in cities such as Ontario and Boise to advise the public of the fire hazards is needed. A message from the Governor could also have a significant impact on increasing public awareness.

County Fire Council and Fire-Safe Community: The formation of a County Fire Council composed of residents, representatives of special interest groups and government agencies, and RFDs living and working in high-risk areas would open a clear and consistent line of communication between the public and the BLM. The purpose of this Council would be to discuss problems, solutions, and progress regarding wildland fire issues, and it would provide a forum for discussion of sensitive issues such as grazing and emergency operations. In this way, the public would have an open dialogue with public agencies, enabling it to receive feedback and explanation for any concerns that are brought before the Council. It was even suggested by a BLM representative that this Council ‘grade’ BLM’s decisions, thus providing BLM necessary feedback on its own policy decisions.

The development of a Fire-Safe Community could be one of the first goals of the County Fire Council. Advocated by Randy Simpson, the Ontario Fire Chief, the existence of such a community would serve as an example for the entire county. New housing and housing developments could follow this as an example, and existing residents could also use this community as a model for their own improvements. One such community already exists in Burns, Oregon. Communities interested in creating a Fire-Safe Community would need to organize and request advice and assistance from BLM.

8.1.2 Outreach Programs for Residents

The RFDs would be more successful at defending homes in the interface zone if the homeowners were better educated about the risk of wildfires and were encouraged to implement firewise practices. The BLM can assist with this proposed mitigation action by providing literature, organizational oversight, and by forming partnerships with local officials and volunteer organizations. The following paragraphs describe suggestions for outreach programs in Vale-Ontario assessment area.

An annual “Firewise Clean-Up Day” is one tool that could be used to encourage residents to create defensible space around their residences. In conjunction with the Firewise Clean-Up Day, specific demonstration projects should be organized to educate residents about firewise landscaping practices, such as planting less flammable vegetation, landscape design workshops, and use of firewise building materials. The clean-up day would occur in conjunction with public demonstrations, education programs in schools, and speakers on wildfire and firewise practices. Community-wide firewise-education programs should include these issues: 1) educate the public of the dangers of wildfire in the area; 2) urge residents to take responsibility in reducing the risk of wildfire and to create defensible space around their residence; and, 3) increase awareness of the natural role of fire in rangeland ecosystems, and the benefits of occasionally managing natural wildland fires to achieve ecological benefits, while maintaining firefighter and public safety as the top priority. The public education and outreach program could be co-sponsored by the BLM and the RFDs through a partnership agreement.

Targeted outreach should be conducted in Areas of Concern, identified as such on **Map 3**. During the interview process, various residents identified these areas as high fire hazards. These areas have been identified due to one or several of the following features: proximity to wildland or dense fuels, distance from a fire fighting entity, water availability and access. While a Firewise Clean-Up Day would serve the entire community well, door-to-door assessments such as the accessibility assessment suggested by Jon Beal, Malheur County Planner, would be particularly effective in these areas if combined with educational outreach. (See Section 5.1, List of Public Concerns and Comments Not Analyzed, Number 1: Adopt Firewise Ordinances.) In addition, these areas, upon further investigation, may prove to be good locations for pre-defined discing routes, mentioned below in section 8.2.

At schools, educational outreach programs should be conducted by the RFDs in conjunction with an educational outreach coordinator. These programs can raise awareness of fire safety and reduce the number of careless fires in the county. Furthermore, school children pass along their knowledge of firewise practices to parents. However, the RFDs usually have volunteer firefighters who cannot take the time from work to conduct outreach activities.

A full-time educational coordinator who can visit schools more frequently, provide up-to-date educational materials to schools and parents, and assist with outreach efforts as needed would be an effective means of reaching school-age children to educate them regarding firewise practices.

8.1.3 Outreach Programs for Farmers and Ranchers

Many of the concerns voiced at the community meeting centered on liability issues that arise when farmers and ranchers combat wildland fires on public lands that threaten private agricultural or grazing lands. Establishing pre-defined discing routes and periodic maintenance of these routes on public land would be a preventative measure in high hazard areas, which would reduce future fire hazards.

Farmers and ranchers requested that BLM allowing preventative measures to be implemented on public lands through discing and creation of brown strips or green strips (botanical breaks) in defined areas of concern. Green strips would be the preferred method, since the invasion of noxious weeds can become a potential problem with brown stripping. This would require a BLM specialist to evaluate areas for consideration by performing cultural and botanical surveys, in accordance with the National Environmental Policy Act (NEPA), and pre-define areas on public lands where discing could be performed. Discing along the drift fences or creating botanical strips, where more flame resistant vegetation is planted, would reduce the risk of wildland fires spreading onto private lands from public lands or vice versa.

8.1.4 Project Necessity

Citizen knowledge about and involvement with wildfire mitigation in and around communities is a necessary element for success in reducing the hazards posed by wildfire. Public education and outreach is an effective means of engaging the public in the process of reducing risks to a community. Such education and outreach has been shown to motivate homeowners to take measures around their individual properties, thereby contributing to the overall reduction of

wildfire hazards in a community. Furthermore, the above-described community education, training and outreach program in schools, in the community, and for those landowners who may become first responders in the event of a wildland fire, will help identify problems and solutions for both federal and private landowners, and offer opportunities for partnerships and agreements. Implementation of the program, and appropriate action by federal agencies as well as homeowners, will reduce fire risk to structures in the Vale-Ontario assessment area.

8.1.5 Project Timing

Many recommendations have no time requirements: sign postings, the establishment of a County Fire Council, defining pre-set disc lines and several specific educational outreach and training activities are limited only by the manpower and finances that will be required to accomplish them. The annual “Firewise Clean-Up Day”, radio news announcements and public demonstrations would be most effective in the spring, to remind people to prepare their properties for the coming fire season.

8.2 Fuels Reduction Recommendations

Purpose of Fuels Reduction: The hazard to the community from wildfire on public lands in the Vale-Ontario assessment area is high. The large areas of public lands adjacent to the communities put residents at risk due to the surrounding grasslands, which can carry a fire rapidly over large areas, as was the case with the Jackson fire in the Ontario Heights community. Fuels reduction has been shown to be effective around communities to reduce the risk of fire in the wildland-urban interface. A good assessment of the specific hazards and threats to a community will help identify problems and solutions for both federal and private landowners, and offer opportunities for partnerships and agreements. Treatments will aid in reducing the wildfire threat and risk of loss to existing homes in the vicinity of the most hazardous fuels.

Types of Fuels Reduction and Treatment: Numerous types of fuels reduction and treatment actions were discussed at the community meeting, listed as desired conditions and carried forward as mitigation recommendations. Mitigation measures appropriate to reduce wildland fires include commercial and non-commercial mechanical fuel removal and maintenance of treated areas. The two general issues, reducing fuel loads and management of public lands, are listed as two specific actions as follows:

- Fuel breaks in the Oregon Slope area; and
- Controlled burns in Ontario Heights and along weedy roadsides.

Map 3 shows the locations of the proposed high-priority areas for fuels reduction. BLM, in addition to the specific actions herein provided by Dynamac, should take these areas under consideration and develop a more comprehensive mitigation proposal defining specific actions that will be taken to reduce fire hazards in these areas.

Fuel breaks are recommended in the Oregon Slope area. Planting herbaceous firebreaks, or greenstrips, along the interface area would reduce the spread of wildland fires into the community. Controlled burns are recommended in the Ontario Heights area to eliminate excess fuels. Controlled burns are also recommended to remove weeds along the roadside.

Project Necessity: Fuel reduction and treatment will reduce the danger of fires escalating to uncontrollable levels. This treatment will help to protect structures and agricultural/rangelands by lowering the risk fires pose, and by making fires that occur easier to suppress.

Project Timing: BLM generally times projects in the following manner: Year One is the year identification and justification of projects occurs, and treatment objectives are determined. Field surveys are conducted. In Year Two, projects that require compliance with NEPA are planned, analyzed, and designed and in Year Three, NEPA projects begin implementation. All steps are contingent on available funding. In Year Four, post-treatment monitoring begins.

8.3 Rural Assistance for Fire Departments

Purpose of Improvements: Traditionally, local area fire departments have focused on structural fire fighting. Training, equipment and experience are therefore significantly limited to structural defense capabilities. Only recently have these departments begun to understand and train for wildland firefighting. Training can be provided through a grant obtained by the Snake River Valley Fire Protection Association, and experience will come with time, but equipment is still lacking. The efficiency and effectiveness of the rural fire departments in the Vale-Ontario assessment area would be enhanced and response times shortened by the addition of the following equipment:

- a. The Vale Volunteer Fire Department needs a BLM heavy, a water tender, and a portable floating pump. The current water tanker can go off-road, but it does not have necessary

all-terrain capabilities. A water tender with better off-road capabilities for fighting wildland fire. should be purchased. A floating pump is also needed so that additional water can be obtained on-site from almost any existing water supply.

- b. The Ontario Fire Department requested another 2,000-gallon tender pumper truck, because the community's current 2,000-gallon capacity truck does not provide enough water. A BLM heavy brush truck, was also requested in addition to the light duty truck and one small brush truck currently used for wildland firefighting.
- c. The Adrian Rural Fire Department needs to replace its 1978 water tender.
- d. All fire departments need educational materials specific to wildland fire issues.

It should be noted that the Adrian and Vale Fire Departments are subscription-based services and do not benefit from the tax-based income that the Ontario Fire Department receives.

All fire departments requested additional water transportation vehicles. In order for these vehicles to be effective against interface wildland fire, they also need to have quality off-road capabilities. An NFPA-certified water truck with a minimum 3,500-gallon capacity and 4-wheel drive is needed to access rugged terrain. These trucks would be used outside city limits where there is very limited water availability. The addition of this truck will improve insurance ratings of the fire departments and decrease costs for residents.

All of the fire departments also need educational materials regarding wildland fires. Educational programs have been initiated in the past, but the materials associated with these programs do not focus on wildland fires. If materials are provided to the fire departments regarding wildland fire, this information could easily be folded into pre-existing educational efforts. It is also important to note that more than one fire department indicated they did not feel their community saw wildland fire as a risk. Additionally, approximately 50% of the residents in the Oregon Slope and Vale area elect to not subscribe to the services of their local fire departments. The failure by some individuals to perceive that the community is at risk from wildfire indicates that firewise education is necessary.

Project Necessity: Approximately 45% of the land within the Vale-Ontario assessment area is public land. Public lands surround the communities, and two of the towns, Vale and Adrian, are within one mile of public lands. The ability to respond quickly to remote areas is critical for the rural fire departments when responding to wildland fires.

Project Timing: These recommendations do not fall under any timing requirements. Project timing is contingent on obtaining funding to implement the projects. The BLM could assist fire departments in obtaining grant money as soon as time and funding permit.

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Video: Firewise Landscaping, Part 1-Overview.

Video: Firewise Landscaping, Part 2-Design and Installation.

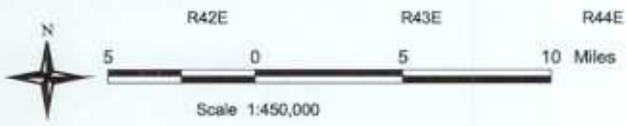
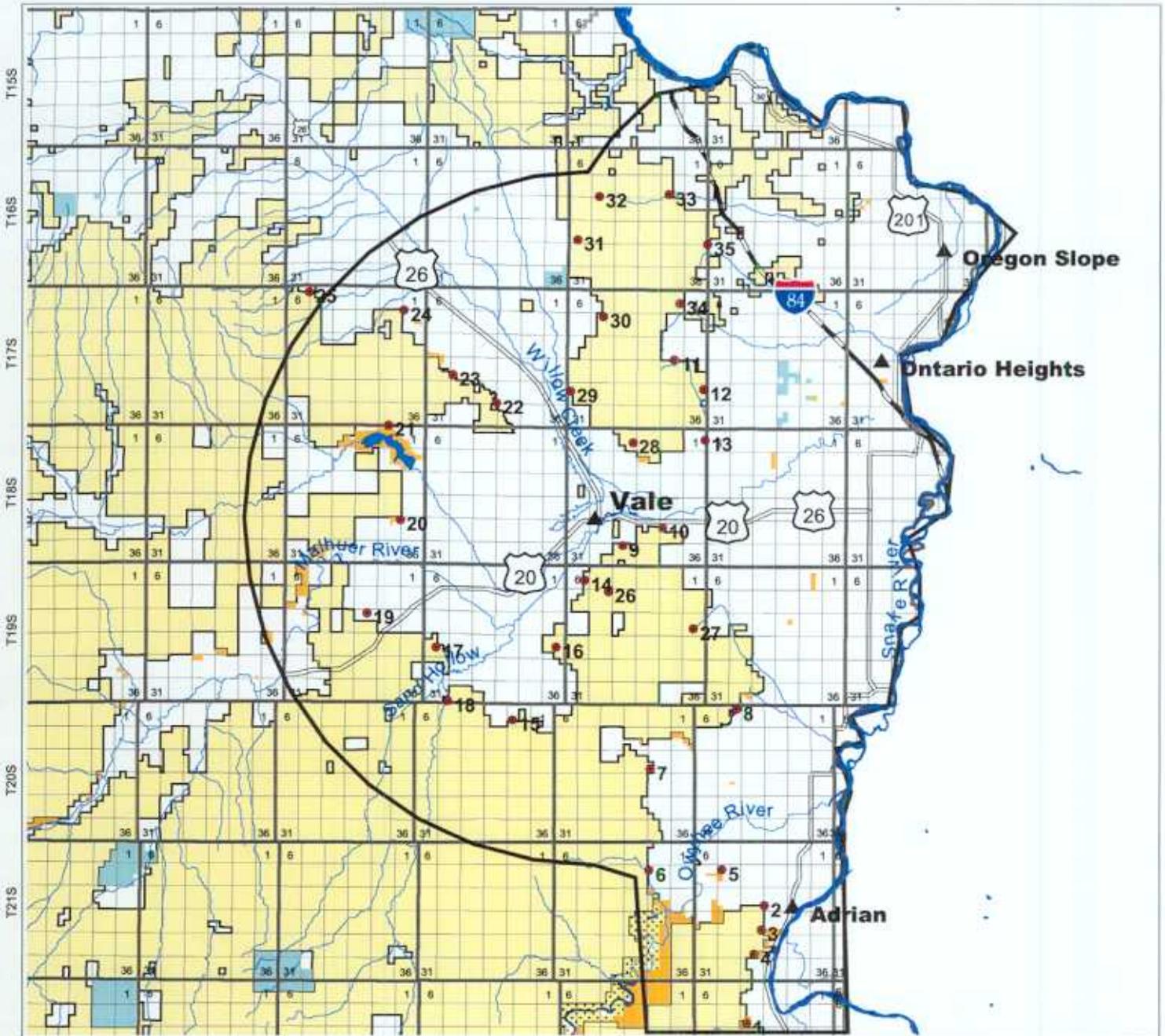
Video: Firewise Landscaping, Part 3-Maintenance.

Video: Wildfire Control--An Introduction for Rural and Volunteer Fire Departments.

Video: The Meeting: Fire Protection Planning in the Wildland/Urban Interface (1991).

Appendix: Maps

Map 1: Vale-Ontario Assessment Area and Fuel Survey Points



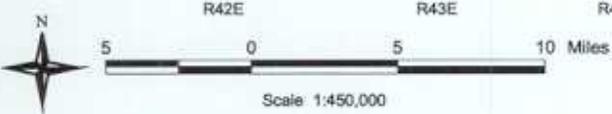
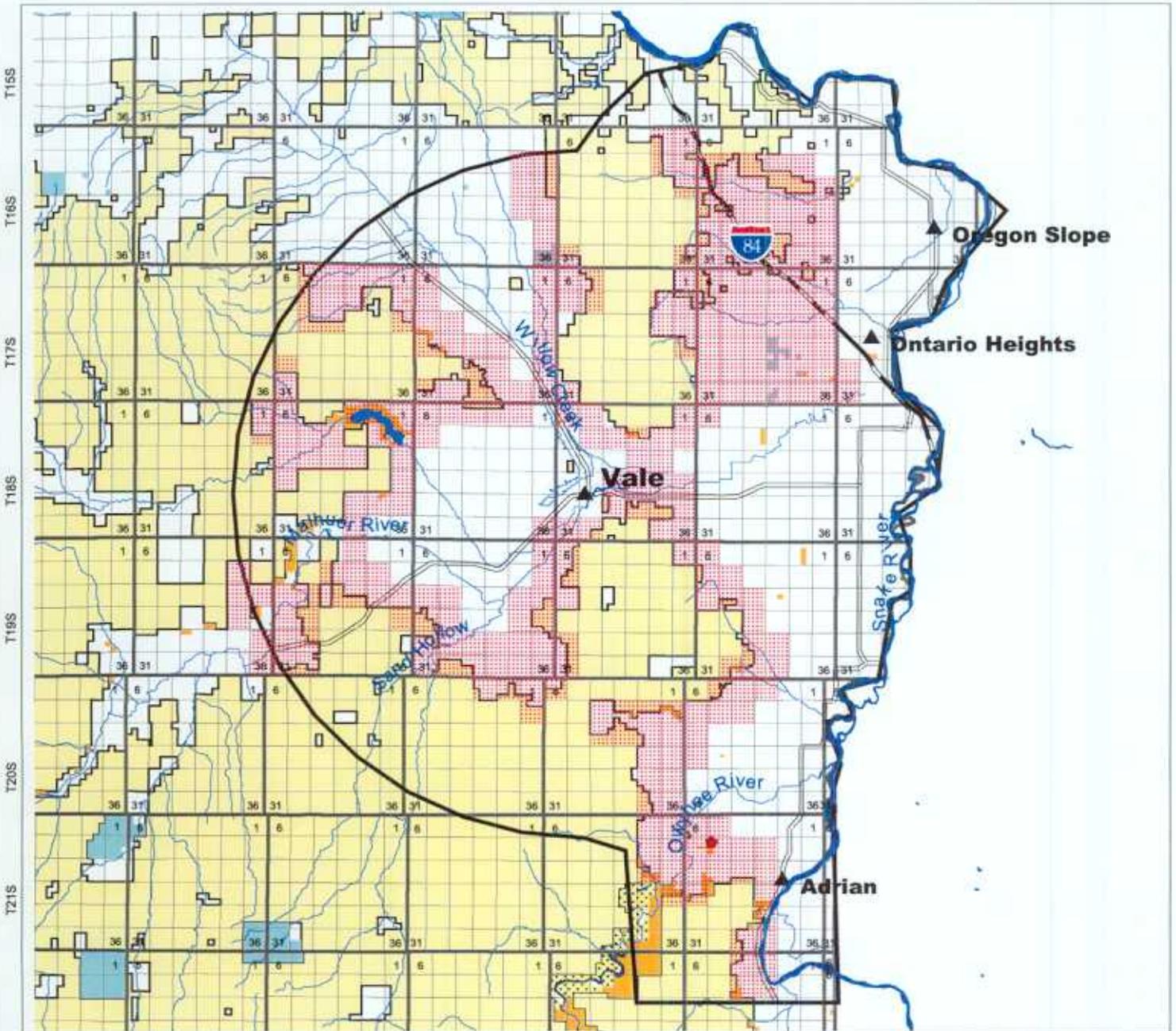
No warranty is made by the Bureau of Land management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification....



- Ownership:**
- BLM
 - U.S. Forest Service
 - Bureau of Indian Affairs
 - U.S. Fish & Wildlife
 - Bureau of Reclamation
 - FERC
 - Private
 - State of Oregon
 - Federal Aviation
 - Assessment Area
 - Assessment Communities
 - Interstates
 - Major Routes
 - Major streams
 - Actual Assessment Point

Map created by **DYNAMAC CORPORATION** April 2002
Environmental Services

Map 2: Highest Risk Areas for Fuel and Fire Suppression within the Vale-Ontario Assessment Area



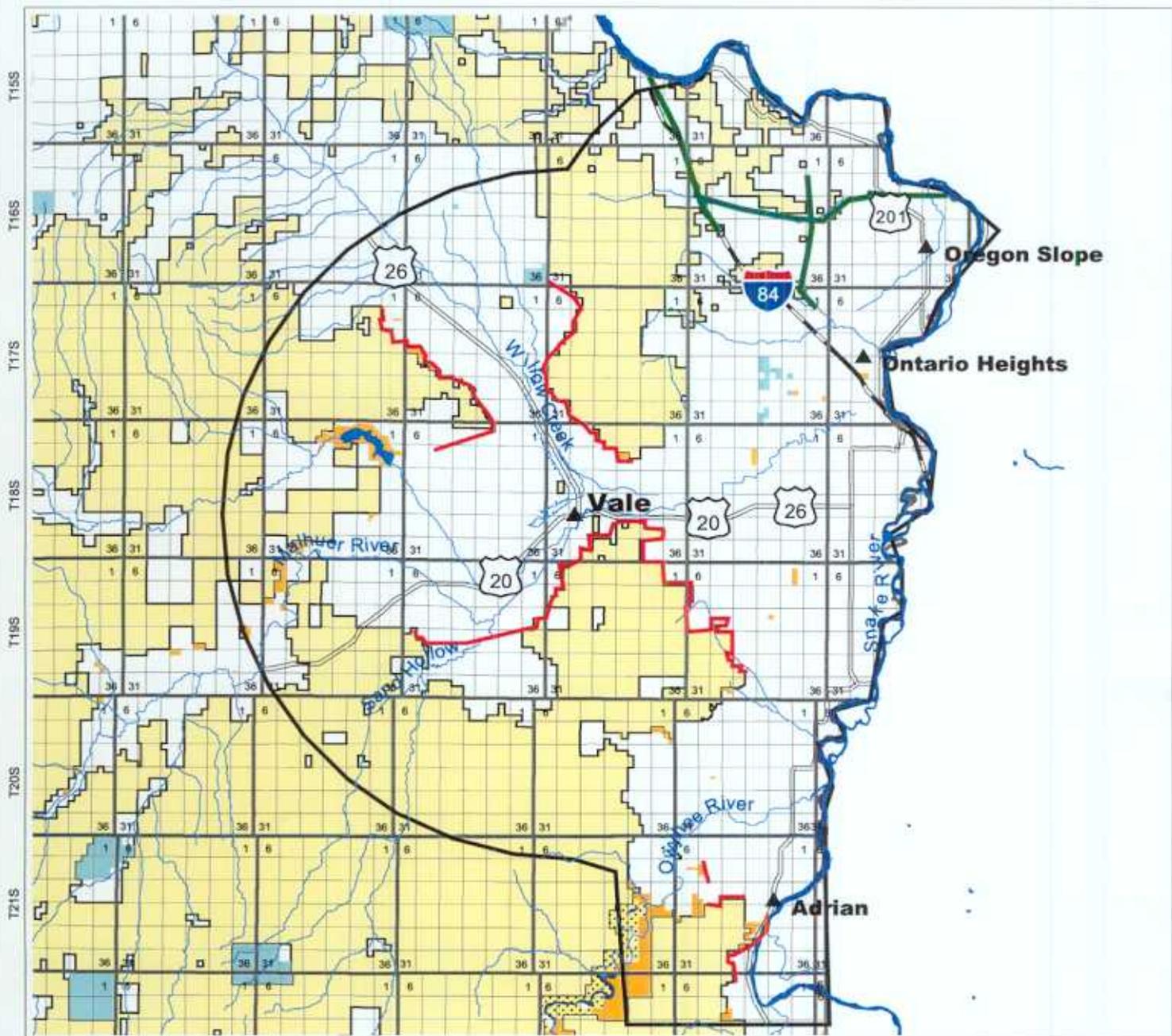
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 - Private
 - State of Oregon
 - Federal Aviation
 - Assessment Area
 - Assessment Communities
 - Interstates
 - Major Routes
 - Major streams

- Highest Risk Fuel Areas within the Assessment Area
- Highest Risk To Fire Suppression Areas (Low Structure Density) within the Assessment Area

Map 3: Proposed Mitigation Recommendations in the Vale-Ontario Assessment Area



- Ownership:**
- BLM
 - U.S. Forest Service
 - Bureau of Indian Affairs
 - U.S. Fish & Wildlife
 - Bureau of Reclamation
 - FERC
 - Private
 - State of Oregon
 - Federal Aviation
 - Assessment Area
 - Assessment Communities
 - Interstates
 - Major Routes
 - Major streams

- Mitigation:**
- Proposed Fire Breaks
 - Area of Concern

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.



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