Franklin County, Washington

Community Wildfire Protection Plan

Approved by the

Franklin County Commissioners

2014

Acknowledgements

This Community Wildfire Protection Plan represents the efforts and cooperation of a number of organizations and agencies working together to improve preparedness for wildfire events while reducing factors of risk.

F.C.F.P.D.s #1, #2, #4, & #5

Pasco Fire Department

Franklin County Weed Board

To obtain copies of this plan contact:

Franklin County Emergency Management
502 Boeing St.
Pasco, WA 99301
509-545-3546

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Foreword

The process of developing a Community Wildfire Protection Plan (CWPP) can help a community clarify and refine its priorities for the protection of life, property, and critical infrastructure in the wildland–urban interface on both public and private land. It also can lead community members through valuable discussions regarding management options and implications for the surrounding land base. Local fire service organizations help define issues that may place the county, communities, and/or individual homes at risk. Through the collaboration process, the CWPP steering committee discusses potential solutions, funding opportunities, and regulatory concerns and documents their resulting recommendations in the CWPP. The CWPP planning process also incorporates an element for public outreach. Public involvement in the development of the document not only facilitates public input and recommendations, but also provides an educational opportunity through interaction of local wildfire specialists and an interested public.

The idea for community-based forest planning and prioritization is neither novel nor new. However, the incentive for communities to engage in comprehensive forest planning and prioritization was given new and unprecedented impetus with the enactment of the Healthy Forests Restoration Act (HFRA) in 2003. This landmark legislation includes the first meaningful statutory incentives for the US Forest Service (USFS) and the Bureau of Land Management (BLM) to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuel reduction projects. In order for a community to take full advantage of this new opportunity, it must first prepare a Community Wildfire Protection Plan (CWPP).

A countywide CWPP steering committee generally makes project recommendations based on the issue causing the wildfire risk, rather than focusing on individual landowners or organizations. Thus, projects are mapped and evaluated without regard for property boundaries, ownership, or current management. Once the CWPP is approved by the Franklin County Commissioners, the steering committee will begin further refining proposed project boundaries, feasibility, and public outreach as well as seeking funding opportunities.

*The **Franklin County Community Wildfire Protection Plan** expands on the wildfire chapter of the Franklin County Hazard Mitigation Plan updated in 2011. This project was funded by the Franklin County Emergency Management, Franklin County Fire Protection Districts, City of Connell Fire Department, City of Pasco Fire Department, and the Bureau of Land Management.*

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Chapter 1

Overview of this Plan and its Development

In 2011, the Bureau of Land Management contracted with Northwest Management Inc. to conduct an in-depth risk assessment for the hazards of wildland fire. Wildfire events occur almost annually in Franklin County; thus, programs and projects that mitigate the impacts of this hazard is a benefit to the local residents, property, infrastructure, and the economy. In May of 2013, the Bureau of Land Management met with the newly formed planning committee to introduce their plans in developing a wildland fire risk assessment and the opportunity to meld that plan into a Community Wildfire Protection Plan.

This Community Wildfire Protection Plan for Franklin County, Washington, is the result of analyses, professional collaboration, and assessments of wildfire risks and other factors focused on reducing wildfire threats to people, structures, infrastructure, and unique ecosystems in Franklin County. Agencies and organizations that participated in the planning process included:

- City of Connell Fire Department
- City of Pasco Fire Department
- Franklin County Fire District #1
- Franklin County Fire District #2
- Franklin County Fire District #3
- Franklin County Fire District #4
- Franklin County Fire District #5
- Franklin County Department of Emergency Management
- Franklin County Noxious Weed Board
- Washington Department of Fish and Wildlife
- Washington Department of Natural Resources
- U.S. Bureau of Reclamation
- Bureau of Land Management
- U.S. Fish and Wildlife Service

Northwest Management, Inc. of Moscow, Idaho was selected to assist the planning committee by facilitating meetings, leading the assessments, and authoring the document. The project lead from Northwest Management, Inc. was Brad Tucker.

Goals and Guiding Principles

Planning Philosophy and Goals

The goals of the planning process include integration with the National Fire Plan, the Healthy Forests Restoration Act, and the Disaster Mitigation Act. The plan utilizes the best and most appropriate science from all partners as well as local and regional knowledge about wildfire risks and fire behavior while meeting the needs of local citizens and recognizing the significance wildfire can have to the regional economy.

Mission Statement

To make Franklin County residents, communities, state agencies, local and federal governments, and businesses less vulnerable to the negative effects of wildland fires through the effective administration of wildfire hazard mitigation grant programs, hazard risk assessments, wise and efficient fuels treatments, and a coordinated approach to mitigation policy through federal, state, regional, and local planning efforts. To also provide a plan that will not diminish the Private Property Rights of land/asset owners within Franklin County.

Vision Statement

Our combined focus will be the protection of people, structures, infrastructure, livestock, state and federally listed species, and unique ecosystems that contribute to our way of life and the growth and sustainability of the local and regional economy through education, training, support, and planning.

Goals

1. To protect people, structures, assets, critical infrastructure, state and federally listed species, and unique ecosystems that contribute to our way of life and the sustainability of the local and regional economy.
2. Identify and map Wildland Urban Interface (WUI) boundaries.
3. Provide a plan that balances private property rights of landowners in Franklin County with personal safety and responsibility
4. Educate citizens about the unique challenges of wildfire preparedness and reclamation in the County through the introduction of the Firewise program and encourage homeowners to manage their property accordingly.
5. Develop regulatory measures such as building codes and road standards specifically targeted to reduce the wildland fire potential and reduce the potential for loss of life and property.
6. Determine areas at risk of wildfire and establish/prioritize mitigation projects, without regard to ownership, and recommend both conventional and alternative treatment methods to protect people, homes, infrastructure, state and federal listed species, and natural resources throughout Franklin County.
7. Improve county and local fire agency eligibility for funding assistance (National Fire Plan, Healthy Forest Restoration Act, FEMA, and other sources) to reduce wildfire

hazards, prepare residents for wildfire situations, and enhance fire agency response capabilities.

8. Improve emergency response times through enhanced radio communications and greater road signage throughout the County.
9. Improve the ability of the County Fire Districts to provide fire protection for the residents of Franklin County through improved resources, recruitment and retention of volunteers, and training.

United States Government Accountability Office (GAO)

Since 1984, wildland fires have burned an average of 850 homes each year in the United States and, because more people are moving into fire-prone areas bordering wildlands, the number of homes at risk is likely to grow. The primary responsibility for ensuring that preventative steps are taken to protect homes lies with homeowners. Although losses from fires made up only 2 percent of all insured catastrophic losses from 1983 to 2002, fires can result in billions of dollars in damages.

GAO was asked to assess, among other issues, (1) measures that can help protect structures from wildland fires, (2) factors affecting use of protective measures, and (3) the role technology plays in improving firefighting agencies' ability to communicate during wildland fires.

The two most effective measures for protecting structures from wildland fires are: (1) creating and maintaining a buffer, called defensible space, from 30 to 100 feet wide around a structure, where flammable vegetation and other objects are reduced; and (2) using fire-resistant roofs and vents. In addition to roofs and vents, other technologies – such as fire-resistant windows and building materials, surface treatments, sprinklers, and geographic information systems mapping – can help in protecting structures and communities, but they play a secondary role.

Although protective measures are available, many property owners have not adopted them because of the time or expense involved, competing concerns such as aesthetics or privacy, misperceptions about wildland fire risks, and lack of awareness of their shared responsibility for fire protection. Federal, state, and local governments, as well as other organizations, are attempting to increase property owners' use of protective measures through education, direct monetary assistance, and laws requiring such measures. In addition, some insurance companies have begun to direct property owners in high risk areas to take protective steps[1].

State and Federal CWPP Guidelines

This Community Wildfire Protection Plan includes compatibility with FEMA requirements for a Hazard Mitigation Plan, while also adhering to the guidelines proposed in the National Fire Plan, and the Healthy Forests Restoration Act (2003). This Community Wildfire Protection Plan has been prepared in compliance with:

[1] United States Government Accountability Office. Technology Assessment – Protecting Structures and Improving Communications during Wildland Fires. Report to Congressional Requesters. GAO-05-380. April 2005.

- The National Fire Plan: A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan (December 2006).
- Healthy Forests Restoration Act (2003).
- National Cohesive Wildland Fire Management Strategy (March 2011). The Cohesive Strategy is a collaborative process with active involvement of all levels of government and non-governmental organizations, as well as the public, to seek national, all-lands solutions to wildland fire management issues.
- The Federal Emergency Management Agency's Region 10 guidelines for a Local Hazard Mitigation Plan as defined in 44 CFR parts 201 and 206, and as related to a fire mitigation plan chapter of a Multi-Hazard Mitigation Plan.
- National Association of State Foresters – guidance on identification and prioritizing of treatments between communities (2003).

The objective of combining these complementary guidelines is to facilitate an integrated Community Wildfire Protection Plan, identify pre-hazard mitigation activities, and prioritize activities and efforts to achieve the protection of people, structures, the environment, and significant infrastructure in Franklin County while facilitating new opportunities for pre-disaster mitigation funding and cooperation.

Additional information detailing the state and federal guidelines used in the development of the Franklin County Community Wildfire Protection Plan is included in Appendix 5.

Integration with other Local Planning Documents

During development of this Community Wildfire Protection Plan, several planning and management documents were reviewed in order to avoid conflicting goals and objectives. Existing programs and policies were reviewed in order to identify those that may weaken or enhance the mitigation objectives outlined in this document. The following sections identify and briefly describe some of the existing Franklin County planning documents and ordinances considered during development of this plan.

Franklin County Hazard Mitigation Plan

As a requirement to receive certain types of federal non-emergency disaster assistance, including funding for hazard mitigation projects, Franklin County and the cities and towns of Pasco, Connell, Mesa, and Kahlotus are required to develop and maintain an up-to-date local hazard mitigation plan. The jointly developed Franklin County Hazard Mitigation Plan was approved on December 27th, 2011. The Federal government requires that hazard mitigation plans be updated every five years.

Franklin County Comprehensive Plan

The Countywide Comprehensive Plan is the guiding document that establishes the vision for growth and development in the County. The goals and policies of the plan create the framework for designating properties into comprehensive plan map designations and their correlating zoning districts.

This Community Wildfire Protection Plan will "dove-tail" with the County's Comprehensive Plan during its development and implementation to ensure that the goals and objectives of each are integrated. This planning effort is intended to be compatible with the goals and objectives of the County's Comprehensive Plan.

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Chapter 2

Documenting the Planning Process

Documentation of the planning process, including public involvement, is necessary to meet FEMA's DMA 2000 requirements (44CFR§201.4(c)(1) and §201.6(c)(1)). This section includes a description of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how all of the involved agencies participated.

Description of the Planning Process

The Franklin County Community Wildfire Protection Plan was developed through a collaborative process involving all of the organizations and agencies detailed in Chapter 1 of this document. The planning process included five distinct phases which were in some cases sequential (step 1 then step 2) and in some cases intermixed (step 4 completed throughout the process):

1. **Collection of Data** about the extent and periodicity of the wildfire hazard in and around Franklin County.
2. **Field Observations and Estimations** about risks, location of structures and infrastructure relative to risk areas, access, and potential treatments.
3. **Mapping** of data relevant to pre-wildfire mitigation and treatments, structures, resource values, infrastructure, risk assessments, and related data.
4. **Facilitation of Public Involvement** from the formation of the planning committee to news releases, public meetings, public review of draft documents, and acknowledgement of the final plan by the signatory representatives.
5. **Analysis and Drafting of the Report** to integrate the results of the planning process, provide ample review and integration of committee and public input, and signing of the final document.

The Planning Team

Northwest Management facilitated the Community Wildfire Protection Plan meetings. Stakeholders involved in the meetings included representatives from local communities, fire districts, municipal fire departments, federal and state agencies, and local organizations with an interest in the county's fire safety.

The planning philosophy employed in this project included the open and free sharing of information with interested parties. Information from federal, state, and local agencies was integrated into the database of knowledge used in this project. Meetings with the committee were held throughout the planning process to facilitate a sharing of information between participants. When the public meetings were held, many of the committee members were in attendance and shared their support and experiences and their interpretations of the results.

Multi-Jurisdictional Participation

44 CFR §201.6(a)(3) calls for multi-jurisdictional planning in the development of Hazard Mitigation Plans which impact multiple jurisdictions. In addition to the participation of federal agencies and other organizations, the following local jurisdictions were actively involved in the development of this Community Wildfire Protection Plan:

- City of Pasco
- City of Connell
- Franklin Co. Emergency Management
- Franklin County Weed Board
- Franklin County F.D. #1
- Franklin County F.D. #2
- Franklin County F.D. #3
- Franklin County F.D. #4
- Franklin County F.D. #5
- Washington Department of Fish and Wildlife
- Washington Department of Natural Resources
- Bureau of Land Management
- Bureau of Reclamation
- U.S. Fish and Wildlife Service

These jurisdictions were represented on the planning committee and in public meetings either directly or through their servicing fire department or district. They participated in the development of hazard profiles, risk assessments, and mitigation measures. The planning committee meetings were the primary venue for authenticating the planning record. However, additional input was gathered from each jurisdiction in the following ways:

- Planning committee leadership visits to local group meetings where planning updates were provided and information was exchanged.
- One-on-one visits between the planning committee leadership and representatives of the participating jurisdictions (e.g. meetings with county councilors, city councilors and mayor, fire district commissioners, and community leaders).
- Written correspondence between the planning committee leadership and each jurisdiction updating the participating representatives on the planning process, making requests for information, and facilitating feedback.

Like other areas of Washington and the United States, Franklin County's human resources have many demands placed on them in terms of time and availability. In Franklin County, elected officials (county and town councilors and mayor) do not serve in a full-time capacity; some of them have other employment and serve the community through a convention of public service. Recognizing this and other time constraints, many of the jurisdictions decided to identify a representative to cooperate on the planning committee and then report back to the remainder of their organization on the process and serve as a conduit between the planning committee and the jurisdiction.

Planning Committee Meetings

The following people participated in planning committee meetings, volunteered time, or responded to elements of the Franklin County Community Wildfire Protection Plan's preparation.

NAME	ORGANIZATION
Bob Gear	Pasco Fire Department
Dave Hare	Pasco Fire Department
Marvin Leonard	Kennewick Fire
Chris Schulte	Connell Fire Department
Eric Mauseth	Franklin County F.P.D. #1
Les Litzenberger	Franklin County F.P.D. #3
Mike Harris	Franklin County F.P.D. #3
Tom Hughes	Franklin County F.P.D. #3
Bryan Thornhill	Franklin County Emergency Management
Jacque Cook	Franklin County Emergency Management
Sean Davis	Franklin County Emergency Management
Todd Harris	Franklin County Weed Board
Vic Reeve	Franklin County Weed Board
Joe Weeks	Washington Department of Natural Resources
Chuck Wytko	Washington Department of Natural Resources
Joe Blazek	Washington Department of Natural Resources
Greg Bjornstrom	Washington Department of Fish & Wildlife
Phillip Buser	Washington Department of Fish & Wildlife
Thomas Skinner	U.S. Fish & Wildlife Service
Brandon Lewis	U.S. Fish & Wildlife Service
Jacob Gear	U.S. Fish & Wildlife Service
Richard Parrish	Bureau of Land Management
Michael Solheim	Bureau of Land Management
Dennis Strange	Bureau of Land Management
Jonathan Brooks	U.S. Bureau of Reclamation
Michael S. Lesky	U.S. Bureau of Reclamation
Brad Tucker	Northwest Management, Inc.
Vaiden Bloch	Northwest Management, Inc.
Tera King	Northwest Management, Inc.

Committee Meeting Minutes

Committee meetings were scheduled and held from May, 2013 through January, 2014. These meetings served to facilitate the sharing of information and to lay the groundwork for the Franklin County Community Wildfire Protection Plan. Northwest Management, Inc. as well as other planning committee leadership attended the meetings to provide the group with regular

updates on the progress of the document and gather any additional information needed to complete the Plan.

Planning committee meeting minutes are included in Appendix 2.

Public Involvement

Public involvement was made a priority from the inception of the project. There were a number of ways that public involvement was sought and facilitated. The idea is to allow members of the public to provide information and seek an active role in protecting their own homes and businesses, and in some cases it may lead to the public becoming more aware of the process without becoming directly involved in the planning.

News Releases

Under the auspices of the planning committee, periodic press releases were submitted to the various print and online news outlets that serve Franklin County residents. Informative flyers were also distributed around town and to local offices within the communities by the committee members.

Print Media	Other Media
Tri-City Herald	Local Fire Districts
Franklin County Graphic	KEPR news station
	KNDU news station
	KONA radio station

Figure 2.1. Sample Press Release, April, 2013.

Franklin County Press Release

April 23, 2013

Franklin County Plans to Assess Wildfire Risk

Working in conjunction with Franklin County, the Bureau of Land Management (BLM) has launched the process of developing a county-level wildland fire risk assessment. Local agencies and organizations in Franklin County have initiated a planning committee to complete the risk assessment as the first step in the ultimate development of a Franklin County Wildfire Protection Plan as part of the National Fire Plan and Healthy Forests Restoration Act. The Franklin County Wildland Fire Risk Assessment will include risk analyses with predictive models indicating where fires are likely to ignite and how they may impact local communities and the environment. The first meeting is scheduled for May 2nd, 2013 and will be the first of several monthly meetings.

Northwest Management, Inc. has been retained by the Bureau of Land Management to facilitate meetings, conduct field inspections and interviews, develop vulnerability assessments, and collaborate with the committee to delineate mitigation projects. The planning committee includes representatives from local fire districts, Franklin County, Washington Department of Natural Resources, Bureau of Land Management, and others.

The intention of the project is to conduct an assessment of wildland fire risk in Franklin County and the local communities, then make mitigation recommendations that will not only help prevent wildfire ignitions from occurring, but will also guide decision-makers towards creating a more fire-resistant Franklin County and provide for public wildfire education. Some of the goals of this project are to improve awareness of wildland fire issues locally, identify high fire risk areas and develop strategies to reduce this risk, and improve accessibility of funding assistance to achieve these goals.

The planning committee will be conducting public meetings to discuss preliminary findings and to seek public involvement in the planning process in the fall of 2013. A notice of the dates and locations of these meetings will be posted in local news outlets. For more information on the Franklin County Wildland Fire Risk Assessment or if you're interested in participating on the planning committee, please contact Brad Tucker, Northwest Management, Inc., at 208-883-4488 ext 123 or Richard Parrish, Bureau of Land Management, at 509-536-1226.

Public Meetings

Public meetings were scheduled in strategic locations during the wildfire risk assessment phase of the planning process to share information on the Plan, obtain input on the details of the wildfire risk assessments, and discuss potential mitigation treatments. Attendees at the public meetings were asked to give their impressions of the accuracy of the information generated and provide their opinions of potential treatments.

The schedule of public meetings in Franklin County included 2 locations; the first was held in Pasco, WA and the second in Connell, WA. The first public meeting was attended by a number of individuals on the committee and one from the general public. The second public meeting was attended by a number of individuals on the committee and one from the general public. The public meeting announcement sent to the local newspapers, two television stations, county departments, fire district representatives, and distributed by committee members, is included below in Figure 2.2.

Figure 2.2. Public Meeting Flyer.

Franklin County Community Wildfire Protection Plan

Public Meeting Announcement

NORTHWEST MANAGEMENT, INC.

Franklin Co. Fire Station #3 7809 Road 36, Pasco, **Nov. 20th at 6:00 pm**

Connell Fire Station 605 S Columbia, Connell, **Nov. 21st at 6:00 pm**

These public meetings will address the Community Wildfire Protection Plan being developed for Franklin County. Public input is being sought to better understand the vulnerability of County residents, businesses, and resources to wildfire. The purpose of this plan is to promote awareness of the countywide wildland fire hazard and propose workable solutions to reduce the wildfire risk.

The planning committee is working on:

- Mapping the Wildland Urban Interface in Franklin County.
- Improving public awareness and educating the public about wildfire risk.
- Evaluating strategies for landowners to lessen wildfire potential.
- Addressing areas of inadequate fire protection.
- Recommending risk mitigation projects.

These meetings are open to the public and will include slideshow presentation by wildfire specialists and local personnel working to develop these plans.

Learn about the assessments of wildfire risk and the wildland urban interface of Franklin County. Discuss ***YOUR*** priorities for how our community can best mitigate these risks.

Figure 2.3. Local News Article.

Franklin County residents can review preliminary wildfire protection proposal

By Tyler Richardson, Tri-City Herald November 19, 2013

Franklin County residents will get the chance this week to review a preliminary plan to keep people safe in case a major wildfire breaks out.

Northwest Management, a natural resource consulting firm based in Moscow, Idaho, was hired to identify areas in Franklin County most susceptible to wildfires, plan how to fight them, educate residents about the dangers of wildfires and help fire districts work together.

The firm will present its findings to residents in Pasco and Connell. The Pasco meeting is scheduled for today at fire station 36 at 7809 Road 36. The Connell meeting is Thursday at the fire station at 605 S. Columbia Ave. Both start at 6 p.m.

"It's mostly a chance for folks to become familiar with the plan," said Brad Tucker, a wildlife biologist with Northwest Management. "People can ask questions of committee members and voice any concerns they might have."

The plan costs around $25,000, with the county putting up $6,400 and the Bureau of Land Management covering the rest, Tucker said. Officials hope to present a first draft to a committee, which will review the plan, in about three weeks.

The committee comprises federal, local fire and county officials, Tucker said.

Northwest Management used fire behavioral models, conducted field assessments and spoke with fire officials to develop the plan.

"We really identify areas within the county that are more at risk for wildfires and come up with projects to mitigate the risk," Tucker said. "The idea is to try and get everybody on the same page with what they have resource-wise."

Benton County has had a wildfire protection plan for a number of years and Franklin County just now found the funds to partner with BLM to develop a plan, said Les Litzenberger, chief of Franklin Fire District 3.

The plan should keep everyone safer should a wildfire start, Litzenberger said.

"This is a scientific-based analysis of the issues, the fuel types, the fire history and the threats to the people in Franklin County," he said. "It's definitely more scientific than me just standing up there. This gives us a document that proves I know what I am talking about."

-- Tyler Richardson: 582-1556; trichardson@tricityherald.com; Twitter: @Ty_richardson

Documented Review Process

Review and comment on this plan has been provided through a number of avenues for the committee members as well as members of the general public.

During regularly scheduled committee meetings in the summer and fall of 2013, the committee met to discuss findings, review mapping and analysis, and provide written comments on draft sections of the document. During the public meetings, attendees observed map analyses and photographic collections, discussed general findings from the community assessments, and made recommendations on potential project areas.

The first draft of the document was prepared after the public meetings and presented to the committee in December for a full committee review. The committee was given two weeks to provide comments to the plan.

Public Comment Period

A public comment period was conducted from February 7th – 28th, 2014 to allow members of the general public an opportunity to view the full draft plan and submit comments and any other input to the committee for consideration. A press release was submitted to the local media outlets announcing the comment period, the location of Plan for review, and instructions on how to submit comments. Hardcopy drafts were printed and made available at Pasco library, Mid-Columbia library (Kahlotus), Basin City library, Connell library, West Pasco library, and Merrill's Corner library (Eltopia). Each hardcopy was accompanied by a letter of instruction for submitting comments to the planning committee. The press release used to announce the public review period is shown in Figure 2.4. A list of comments that were not incorporated into the plan can be found in Appendix 2. Each public comment is followed by a brief explanation, given by the committee, as to why that comment was not incorporated into the document.

Continued Public Involvement

Franklin County is dedicated to involving the public directly in review and updates of the Community Wildfire Protection Plan. The Franklin County Commissioners, working through the planning committee, are responsible for review and update of the Plan as recommended in chapter 6 of this document.

The public will have the opportunity to provide feedback annually on the anniversary of the adoption of this plan, at an open meeting of the planning committee. Copies of the Plan will be catalogued and kept at all of the appropriate agencies in the county. The Plan also includes the address and phone number of Franklin County Emergency Management, who is responsible for keeping track of public comments on the Plan.

A public meeting will also be held as part of each annual evaluation or when deemed necessary by the planning committee. The meetings will provide the public a forum for which they can express its concerns, opinions, or ideas about the Plan. The County Department of Emergency Management will be responsible for using county resources to publicize the annual public

meetings and maintain public involvement through the webpage and various print and online media outlets.

Figure 2.4. Press Release #3 – Public Comment Period.

Franklin County

Media Release

From: Sean Davis, Franklin County Emergency Management
Date: January 27, 2014
RE: Franklin County Community Wildfire Protection Plan

Franklin County Community Wildfire Protection Plan Available for Public Review

The Franklin County Community Wildfire Protection Plan has been completed in draft form and is available to the public for review and comment at the locations listed below. Electronic copies may be viewed in pdf format at www.franklinem.org and www.fcfd3.org. The public review phase of the planning process will be open from February 3rd, 2014 thru February 28th, 2014.

Pasco Library
1320 W Hopkins St.
Pasco, Washington 99301

West Pasco Library
7525 Wrigley Drive
Pasco, Washington 99301

Basin City Library
50-A N. Canal Blvd.
Basin City, Washington 99343

Mid-Columbia Library
225 E Weston St.
Kahlotus, WA 99335

Connell Library
118 N. Columbia
Connell, Washington 99326

Merrill's Corner
5240 Eltopia West
Eltopia, Washington 99330

The purpose of the Franklin County Community Wildfire Protection Plan (CWPP) is to reduce the impact of wildfire on Franklin County residents, landowners, businesses, communities, local governments, and state and federal agencies while maintaining appropriate emergency response capabilities and sustainable natural resource management policies. The CWPP identifies high risk areas as well as recommend specific projects that may help prevent wildland fires from occurring altogether or, at the least, lessen their impact on residents and property. The CWPP is being developed by a committee of city and county elected officials and departments, local and state emergency response representatives, land managers, highway district representatives, and others.

The Franklin County CWPP includes a risk analysis at the community level with predictive models for where disasters are likely to occur. This Plan will enable Franklin County and its communities to be eligible for grant dollars to implement the projects and mitigation actions identified by the committee. Although not regulatory, the CWPP will provide valuable information as we plan for the future.

Comments on the CWPP must be submitted to the attention of Brad Tucker, Northwest Management, Inc. at tucker@nmi2.com or mailed to Northwest Management, Inc., PO Box 9748, Moscow, Idaho 83843 by close of business on February 28th, 2014. For more information on the Franklin County CWPP update process, contact Brad Tucker at 208-883-4488 ext. 123.

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Chapter 3

Franklin County Characteristics

Franklin County was created in 1883 and named after Benjamin Franklin. Pasco is the County seat and the Courthouse has been listed as a Washington State National Historic Building.

Franklin County is located in the south central part of the State of Washington. It is bounded on the west and separated from Benton County by the Columbia River. On the south and east the Snake River and its tributary, the Palouse River, separate it from Walla Walla County. On the north, Grant and Adams Counties bound it. The area is arid to semiarid, receiving an average rainfall of about six to seven inches per year[2] .

With an area of 1,242 square miles, Franklin County is the fastest growing county (in terms of percentage of population change) of Washington's 39 counties. The estimated 2012 population is 85,845 providing a population density of 69.1 persons per square mile.

Description

Three major rivers dominate the geography of Franklin County: the Columbia, Snake and Palouse. The cities of Pasco, Connell, Mesa and Kahlotus are located within Franklin County. The rivers provide a sharp contrast to the warm, dry surrounding landscape, the majority of which is either under irrigation or dry-land cultivation. The rivers give the region its most enduring character, providing abundant water for both irrigation and energy, a major transportation intersection (water, rail, air, and road), and a major recreational resource[3].

Elevations range from about 345 feet above sea level at the lower points to over 1,600 feet in the higher points. The terrain is generally basin and valley bottomland interspersed with upland plateaus[3].

Geography and Climate

Franklin County is part of what is referred to as the Columbia Basin Province. The County contains many canyon and cliff features such as Palouse Canyon and Devils Canyon, as well as unique rock formations. Some of the most interesting geographical features are the sand dunes located north of Interstate 82 and the Juniper Dunes area northeast of Pasco off the Pasco-Kahlotus Highway[2].

The County lies at the south end of the Channeled Scablands. The geology of Franklin County was formed by alternate volcanism and flooding. Three of the five geological formations, which characterize the entire Columbia River Basalt Group, occur in Franklin County[2].

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[2] Franklin County Comprehensive Plan. 2008. http://www.co.franklin.wa.us/planning/documents/2008ComprehensivePlan-Entirepdfwebsite_000.pdf. Accessed August, 2013.

[3] Franklin County Economic Plan. 2009. http://www.co.franklin.wa.us/planning/documents/EconomicPlan-complete2009update.pdf. Accessed August, 2013.

The climate of the region is described as mild and dry. Throughout the year the region averages 280 days of sunshine. During the summer the maximum temperatures exceed 90°F on about half of the days in July and August. The average night temperature in July and August is 59°F. In the winter, the daily maximum temperatures average 40.5°F in January and 48.8°F in February. The daily minimums average 24.5°F in January and 30.1°F in February. The average yearly temperature is 55°F. The growing season in the region varies from 152 to 194 frost-free days. The northerly latitude of our area means long hours of daylight and an abundance of sunshine during the growing season[3].

Population and Demographics

The 2010 Census established the Franklin County population at 78,163, which is up from 49,347 in 2000. Table 3.1 shows historical changes in population in Franklin County.

Table 3.1. Historical and Current Population by Community.

1960	1970	1980	1990	2000	2010
23,342	25,816	35,025	37,473	49,347	78,163

Since 1890, Franklin County has had some significant jumps in population including a 960% increase in 1910 and another large increase in 1950 of 115%. Since the 1960's, the county's population has grown, by 36% on average[4].

Of the county's residents, about 76% (59,781) live in Pasco. Connell has 4,209 residents, Kahlotus has 193 residents, Mesa has 489 residents, West Pasco has 3,739 residents, and Basin City had 968 residents (2000 census data)[5]. The majority of the remaining residents (8,752) are concentrated in unincorporated parts of Franklin.

The 2010 Census reported that ethnicity in Franklin County is comprised of 91.3%, 1.3% American Indian, 2.6% African American, 2.1% Asian, and 2.3% people reporting two or more races. 50.9% of residents report a Hispanic or Latino heritage. Residents that identify their origin as Spanish, Hispanic, or Latino may be of any race, thus should not be added to percentages for racial categories. Approximately 52.2% of residents are male. There are 25,120 occupied housing units (67.2% homeownership rate) in Franklin County.[5] In 2007-2011, there were an estimated 3.36 persons per household in Franklin County with a median household income of $50,731[6].

Land Ownership

The majority of ownership within Franklin County is private. Federal ownerships account for 7% of the land base with the Bureau of Land Management contributing the largest federal

[4] Wikipedia website. http://en.wikipedia.org/wiki/Franklin_County,_Washington. Accessed August, 2013.

[5] US Census Bureau. State & County QuickFacts. Available online at http://quickfacts.census.gov/qfd/states/53/53017.html. Accessed August,2013.

[6] U.S. Census Bureau, State & County QuickFacts. http://quickfacts.census.gov/qfd/states/53/53021.html. Accessed August, 2013.

portion with over 23,000 acres and the U.S. Fish & Wildlife Service closely behind with over 22,500 acres. Approximately 4% of Franklin County is State-owned land.

Table 3.2. Land Ownership Categories in Franklin County

Entity	Acres	Percent of Total Area
Private	709,673	88%
State	29,927	4%
BLM	23,834	3%
FWS	22,509	3%
Federal	11,342	1%
Water	5,780	1%
State Parks	2,326	<1%
State Fish & WL	2,025	<1%
NIPF	1,377	<1%
Undetermined	676	<1%
Total	**809,467**	**100%**

The data used to develop this table was provided by the 2010 BLM database. Local government property (i.e. County) is likely included in the Private ownership category. There may be more accurate information, but this table shows general trends, which is sufficient for the purpose of this plan.

The predominant land use in Franklin County is agriculture in the form of dryland grain crops (including some in CRP) and irrigated agriculture. Irrigated agriculture activities are located primarily in the western half of the County. Dryland wheat and other grain crops are primarily located in the eastern half of the County.

Development Trends

Because Franklin County is one of the fastest growing counties in Washington, agricultural lands are frequently converted to housing developments. This is especially true around the perimeter of Pasco (project areas 1 & 2) where numerous developments have sprung up in recent years. Many of the towns and cities in Franklin County have witnessed some level of expansion. Because much of the County is agriculture, the space is limited for major expansion. However, as the demand increases for potential building sites, land may become more valuable as residential property than agriculture.

Natural Resources

Franklin County is a diverse ecosystem with a complex array of vegetation, wildlife, and fisheries that have developed with, and adapted to fire as a natural/man-induced disturbance process. Nearly a century of wildland fire suppression coupled with past land-use practices (primarily agriculture and grazing) has altered plant community succession and has resulted in

dramatic shifts in the fire regimes and species composition. As a result, some areas of Franklin County have become more susceptible to large-scale, high-intensity fires posing a threat to life, property, and natural resources including wildlife and plant populations. High-intensity, stand-replacing fires have the potential to seriously damage soils, native vegetation, and fish and wildlife populations. In addition, an increase in the number of large, high-intensity fires throughout the nation's forest and rangelands has resulted in significant safety risks to firefighters and higher costs for fire suppression.

Fish and Wildlife

There are many species of wildlife that inhabit the shrub / steppe region of central Washington. Some of the species present even rely on this type of ecosystem to survive. Sage grouse (*Centrocercus urophasianus*), Ferruginous hawk (*Buteo regalis*), and Burrowing owl (*Athene cunicularia*) once heavily populated this region of Washington; however due to habitat loss (among other reasons); these populations have been drastically reduced in numbers and in some instances genetically isolated from other populations. There has been a significant effort by federal, state, and private landowners in recent years to increase the availability of preferred habitat through the Conservation Reserve Program and incorporating higher grazing standards throughout the region.[7]

Vegetation

The Columbia Basin supports a complex landscape composed of native shrubsteppe vegetation, scablands, and agriculture or rangeland. Areas that have not been converted to agriculture typically exhibit scattered sagebrush or bitterbrush with a bunchgrass understory. The understory usually consists of bluebunch wheatgrass (*Psuedoroegneria spicata*), Idaho fescue (*Festuca idahoensis*)or various needlegrass (*Achnatherum sp.*) species. Areas in Franklin County that have shallow rocky soils are considered scablands. These shallow soils support specialized vegetation dominated by stiff sagebrush (*Artemisia rigida*), bushy buckwheats (*Eriogonum sp.*), and short bunchgrasses (e.g. *Poa secunda*). Land largely converted to agricultural use or rangeland are often dominated by exotic plants or native vegetation tolerant of persistent land use.[8]

Table 3.3. Vegetative Cover Types in Franklin County.

Land Cover	Acres	Percent of Total Area
Agriculture	422,560	52%
Shrubland	281,002	35%
Developed	39,937	5%
Exotic Grassland	35,282	4%
Water	15,845	2%
Riparian	6,723	1%

[7] Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 174 pp.

[8] A Riparian Vegetation Classification of the Columbia Basin, Washington. http://www1.dnr.wa.gov/nhp/refdesk/pubs/columbiarip.pdf Accessed May, 2013

Table 3.3. Vegetative Cover Types in Franklin County.		
Land Cover	**Acres**	**Percent of Total Area**
Grassland	6,446	1%
Mixed Conifer	1,326	<1%
Barren	257	<1%
Sparsely Vegetated	89	<1%
Total	**809,467**	**100**

Vegetation in Franklin County is a mix of shrubland, grassland, agricultural, and some riparian ecosystems. An evaluation of satellite imagery of the region provides some insight to the composition of the vegetation of the area. Agriculture and shrubland account for nearly 90% of the cover in Franklin County. It should be noted that the exotic grasses contribute to 4% of the total cover in the County.

Hydrology

The Washington Department of Ecology, Water Resources Program is charged with the development of the Washington State Water Plan. Included in the State Water Plan are the statewide water policy plan and component basin and water body plans, which cover specific geographic areas of the state (WDOE 2005). The Washington Department of Ecology has prepared general lithologies of the major ground water flow systems in Washington.

The State may assign or designate beneficial uses for particular Washington water bodies to support. These beneficial uses are identified in section WAC 173-201A-200 of the Washington Surface Water Quality Standards (WQS). These uses include:

- ***Aquatic Life Uses:*** char; salmonid and trout spawning, rearing, and migration; nonanadromous interior redband trout, and indigenous warm water species
- ***Recreational Uses:*** primary (swimming) and secondary (boating) contact recreation
- ***Water Supply Uses:*** domestic, agricultural, and industrial; and stock watering

While there may be competing beneficial uses in streams, federal law requires protection of the most sensitive of these beneficial uses.

A correlation to mass wasting due to the removal of vegetation caused by high intensity wildland fire has been documented. Burned vegetation can result in changes in soil moisture and loss of rooting strength that can result in slope instability, especially on slopes greater than 30%. The greatest watershed impacts from increased sediment will be in the lower gradient, depositional stream reaches.

Of critical importance to Franklin County will be the maintenance of the domestic watershed supplies in the Alkali-Squilchuck (WRIA 40), Esquatzel Coulee (WRIA 36), Lower Snake (WRIA 33), Lower Yakima (WRIA 37), and Rock-Glade (WRIA 31)[9].

[9] Washington Department of Ecology, Water Resources Program website. http://www.ecy.wa.gov/watershed/index.html. Accessed August, 2013.

Air Quality

The primary means by which the protection and enhancement of air quality is accomplished is through implementation of National Ambient Air Quality Standards (NAAQS). These standards address six pollutants known to harm human health including ozone, carbon monoxide, particulate matter, sulfur dioxide, lead, and nitrogen oxides.[10]

The Clean Air Act, passed in 1963 and amended in 1977, is the primary legal authority of the U.S. Environmental Protection Agency. The Clean Air Act provides the principal framework for national, state, and local efforts to protect air quality. Under the Clean Air Act, the Organization for Air Quality Protection Standards (OAQPS) is responsible for setting the NAAQS standards for pollutants which are considered harmful to people and the environment. OAQPS is also responsible for ensuring these air quality standards are met, or attained (in cooperation with state, Tribal, and local governments) through national standards and strategies to control pollutant emissions from automobiles, factories, and other sources.[11]

Smoke emissions from fires potentially affect an area and the airsheds that surround it. Climatic conditions affecting air quality in Washington are governed by a combination of factors. Large-scale influences include latitude, altitude, prevailing hemispheric wind patterns, and mountain barriers. At a smaller scale, topography and vegetation cover also affect air movement patterns. Locally adverse conditions can result from occasional wildland fires in the summer and fall, and prescribed fire and agricultural burning in the spring and fall.

Due principally to local wind patterns, air quality in Franklin County is generally good to excellent, rarely falling below Washington Department of Ecology pollution standards.

Washington Department of Ecology

The Washington Department of Ecology Air Quality Program protects public health and the environment from pollutants caused by vehicles, outdoor and indoor burning, and industry. The DOE oversees permitting for non-forested (i.e. agriculture and rangeland) burning. Franklin County falls under the jurisdiction of the Eastern Regional Office (ERO). The ERO can be reached at: 509-329-3400.

Washington State Smoke Management Plan

The Department of Natural Resources (DNR), Department of Ecology (DOE), U.S. Forest Service (USDA), National Park Service (NPS), Bureau of Land Management (BLM), U.S Fish and Wildlife Service (USDI), participating Indian nations, military installations (DOD), and small and large forest landowners have worked together to deal with the effect of outdoor burning on air.

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[10] USDA-Forest Service (United States Department of Agriculture, Forest Service). 2000. Incorporating Air Quality Effects of Wildland Fire Management into Forest Plan Revisions – A Desk Guide. April 2000. – Draft.

[11] Louks, B. 2001. Air Quality PM 10 Air Quality Monitoring Point Source Emissions; Point site locations of DEQ/EPA Air monitoring locations with Monitoring type and Pollutant. Idaho Department of Environmental Quality. Feb. 2001. As GIS Data set. Boise, Idaho.

Protection of public health and preservation of the natural attractions of the state are high priorities and can be accomplished along with a limited, but necessary, outdoor burning program. Public health, public safety, and forest health can all be served through the application of the provisions of Washington State law and this plan, and with the willingness of those who do outdoor burning on forest lands to further reduce the negative effects of their burning.

The Washington State Smoke Management Plan pertains to DNR-regulated silvicultural outdoor burning only and does not include agricultural outdoor burning or outdoor burning that occurs on improved property. Although the portion of total outdoor burning covered by this plan is less than 10 percent of the total air pollution in Washington, it remains a significant and visible source.

The purpose of the Washington State Smoke Management Plan is to coordinate and facilitate the statewide regulation of prescribed outdoor burning on lands protected by the DNR and on unimproved, federally-managed forest lands and participating tribal lands. The plan is designed to meet the requirements of the Washington Clean Air Act.

The plan provides regulatory direction, operating procedures, and advisory information regarding the management of smoke and fuels on the forest lands of Washington State. It applies to all persons, landowners, companies, state and federal land management agencies, and others who do outdoor burning in Washington State on lands where the DNR provides fire protection, or where such burning occurs on federally-managed, unimproved forest lands and tribal lands of participating Indian nations in the state.

The plan does not apply to agricultural outdoor burning and open burning as defined by Washington Administrative Code (WAC) 173-425-030 (1) and (2), nor to burning done "by rule" under WAC 332-24 or on non-forested wildlands (e.g., rangelands).

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Chapter 4

Risk and Preparedness Assessments

Wildland Fire Characteristics

An informed discussion of fire mitigation is not complete until basic concepts that govern fire behavior are understood. In the broadest sense, wildland fire behavior describes how fires burn; the manner in which fuels ignite, how flames develop and how fire spreads across the landscape. The three major physical components that determine fire behavior are the fuels supporting the fire, the topography in which the fire is burning, and the weather and atmospheric conditions during a fire event. At the landscape level, both topography and weather are beyond our control. We are powerless to control winds, temperature, relative humidity, atmospheric instability, slope, aspect, elevation, and landforms. It is beyond our control to alter these conditions, and thus impossible to alter fire behavior through their manipulation. When we attempt to alter how fires burn, we are left with manipulating the third component of the fire environment; fuels which support the fire. By altering fuel loading and fuel continuity across the landscape, we have the best opportunity to control or affect how fires burn.

A brief description of each of the fire environment elements follows in order to illustrate their effect on fire behavior.

Weather

Weather conditions contribute significantly to determining fire behavior. Wind, moisture, temperature, and relative humidity ultimately determine the rates at which fuels dry and vegetation cures, and whether fuel conditions become dry enough to sustain an ignition[12]. Once conditions are capable of sustaining a fire, atmospheric stability and wind speed and direction can have a significant effect on fire behavior. Winds fan fires with oxygen, increasing the rate at which fire spreads across the landscape. Weather is the most unpredictable component governing fire behavior, constantly changing in time and across the landscape.

Topography

Fires burning in similar fuel types, will burn differently under varying topographic conditions. Topography alters heat transfer and localized weather conditions, which in turn influences vegetative growth and resulting fuels. Changes in slope and aspect can have significant influences on how fires burn. Generally speaking, north slopes tend to be cooler, wetter, more productive sites. This can lead to heavy fuel accumulations, with high fuel moistures, later curing of fuels, and lower rates of spread. In contrast, south and west slopes tend to receive more direct sun, and thus have the highest temperatures, lowest soil and fuel moistures, and lightest fuels. The combination of light fuels and dry sites leads to fires that typically display the highest

[12]NOAA website http://www.nws.noaa.gov/om/wfire.shtml. Accessed on July 30, 2012.

rates of spread. These slopes also tend to be on the windward side of mountains. Thus, these slopes tend to be "available to burn" a greater portion of the year.

Slope also plays a significant role in fire spread, by allowing preheating of fuels upslope of the burning fire. As slope increases, rate of spread and flame lengths tend to increase. Therefore, we can expect the fastest rates of spread on steep, warm south and west slopes with fuels that are exposed to the wind.[13]

Fuels

Fuel is any material that can ignite and burn. Fuels describe any organic material, dead or alive, found in the fire environment. Grasses, brush, branches, logs, logging slash, forest floor litter, conifer needles, and buildings are all examples. The physical properties and characteristics of fuels govern how fires burn. Fuel loading, size and shape, moisture content, and continuity and arrangement all have an effect on fire behavior. Generally speaking, the smaller and finer the fuels, the faster the potential rate of fire spread. Small fuels such as grass, needle litter and other fuels less than a quarter inch in diameter are most responsible for fire spread. In fact, "fine" fuels, with high surface to volume ratios, are considered the primary carriers of surface fire. This is apparent to anyone who has ever witnessed the speed at which grass fires burn. As fuel size increases, the rate of spread tends to decrease due to a decrease in the surface to volume ratio. Fires in large fuels generally burn at a slower rate, but release much more energy and burn with much greater intensity. This increased energy release, or intensity, makes these fires more difficult to control. Thus, it is much easier to control a fire burning in grass than to control a fire burning in timber.[14]

The study of fire behavior recognizes the dramatic and often-unexpected effect small changes in any single component have on how fires burn. It is impossible to speak in specific terms when predicting how a fire will burn under any given set of conditions. However, through countless observations and repeated research, some of the principles that govern fire behavior have been identified and are recognized.

Wildfire Hazards

In the 1930s, wildfires consumed an average of 40 to 50 million acres per year in the contiguous United States, according to US Forest Service estimates. By the 1970s, the average acreage burned had been reduced to about 5 million acres per year. Over this time period, fire suppression efforts were dramatically increased and firefighting tactics and equipment became more sophisticated and effective. For the 11 western states, the average acreage burned per year since 1970 has remained relatively constant at about 3.5 million acres per year.

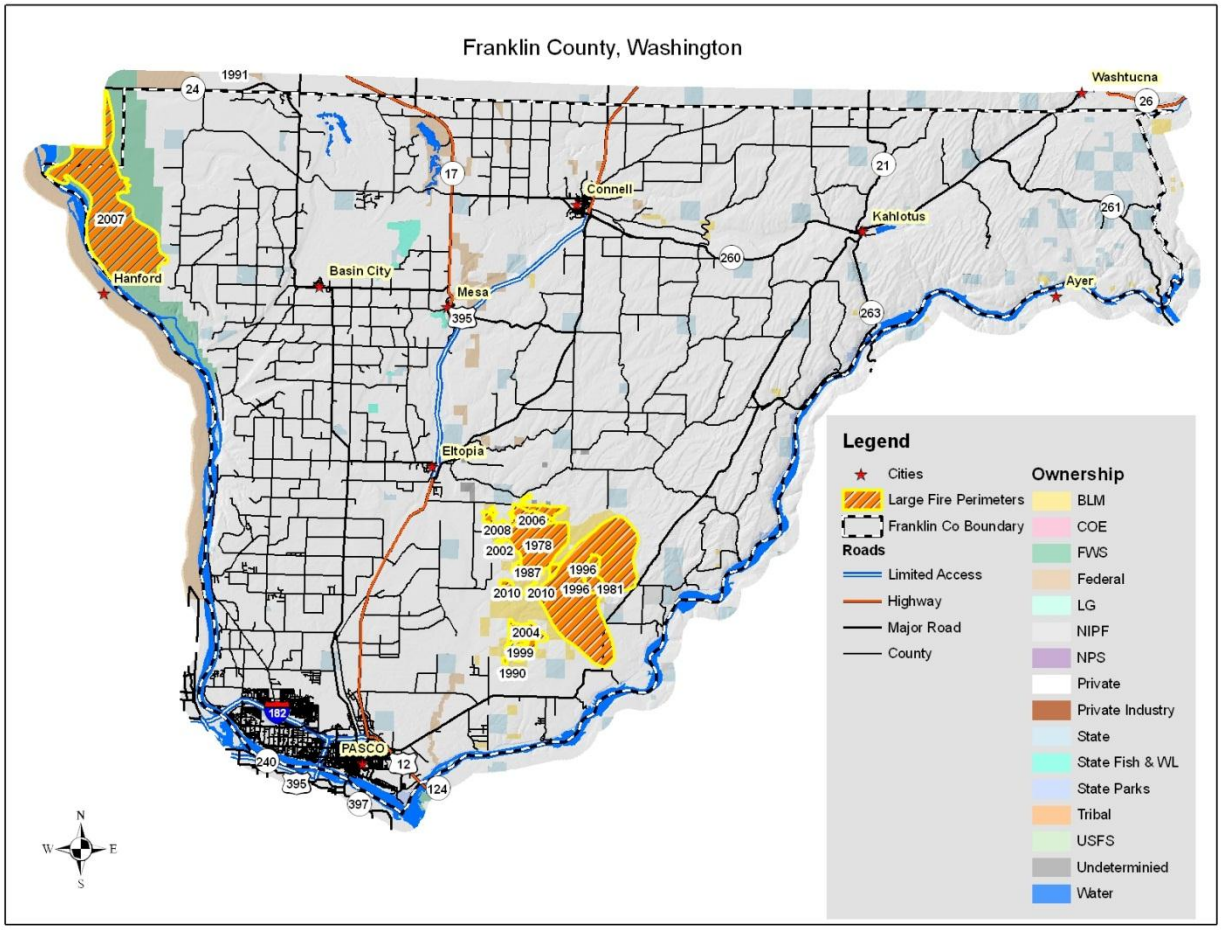
The severity of a fire season can usually be determined in the spring by how much precipitation is received, which in turn determines how much fine fuel growth there is and how long it takes

[13] Auburn University website https://fp.auburn.edu/fire/topos_effect.htm. Accessed on July 30,2012.

[14] Gorte, R. 2009. Congressional Research Service, Wildfire Fuels and Fuel Reduction.

this growth to dry. These factors, combined with annual wind events can drastically increase the chance a fire start will grow and resist suppression activities. Furthermore, recreational activities are typically occurring throughout the months of July, August, and September. Occasionally, these types of human activities cause an ignition that could spread into populated areas and timberlands.

Figure 4.1. Ignition History in Franklin County.



It should be noted that this map is not entirely accurate as many Franklin County Fire Protection Districts do not report fires because of limited record keeping resources.

Fire History

Fire was once an integral function within the majority of ecosystems in Washington. The seasonal cycling of fire across most landscapes was as regular as the July, August and September lightning storms plying across eastern Washington. Depending on the plant community composition, structural configuration, and buildup of plant biomass, fire resulted from ignitions with varying intensities and extent across the landscape. Shorter return intervals between fire events often resulted in less dramatic changes in plant composition.[15] These fires burned from 1

[15] Johnson, C.G. 1998. Vegetation Response after Wildfires in National Forests of Northeastern Oregon. 128 pp.

to 47 years apart, with most at 5- to 20-year intervals.[16] With infrequent return intervals, plant communities tended to burn more severely and be replaced by vegetation different in composition, structure, and age.[17] Native plant communities in this region developed under the influence of fire, and adaptations to fire are evident at the species, community, and ecosystem levels.

Fire history data for Franklin County is largely unknown. Local knowledge suggests that Native Americans did frequently burn which played an important role in shaping the vegetation throughout County. The Bureau of Land Management is helping to fund future research targeted at identifying the fire history in central Washington through fire scars and charcoal deposits. Although this data is not available for the development of this document, it should be available for the five year update of this plan.

Figure 4.2. News Article About Recent Fire Activity18.

Acres of wheat burned in fire near Burbank

Published: August 9, 2013

Tri-City Herald

Around 35 acres of standing wheat was burned in a Friday evening farmland fire near Burbank, officials said.

The fire at State Route 124 and Walkley Road was reported at 6:13 p.m., said Walla Walla Fire 5 spokeswoman Maria Kennedy. No one was injured in the fire and no buildings were damaged.

Firefighters were called in from the city of Pasco, Franklin Fire 3, Walla Walla Fire 3 and Walla Walla Fire 5, Kennedy said.

The fire took about an hour and 20 minutes to get under control, Kennedy said. The cause is still under investigation, but firefighters say it could have started from a combine on the farm.

Kennedy warns residents to be careful with dry weather this weekend.

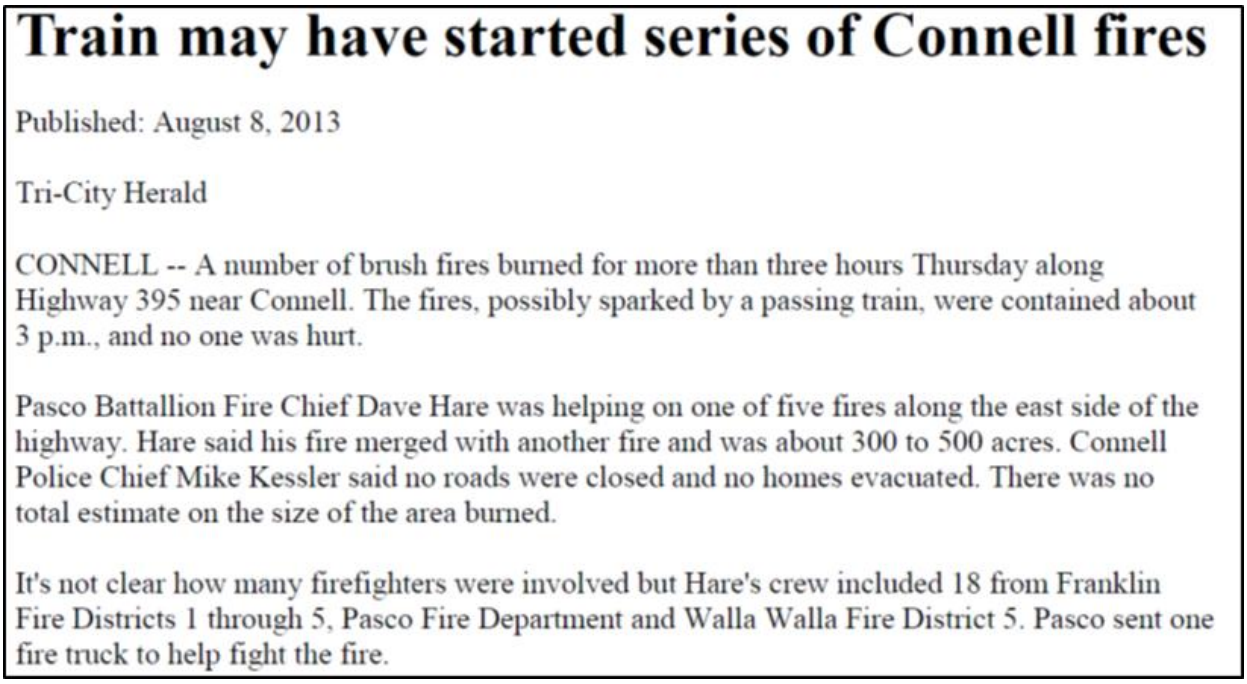
[16] Barrett, J.W. 1979. Silviculture of ponderosa pine in the Pacific Northwest: the state of our knowledge. USDA Forest Service, General Technical Report PNW-97. Pacific Northwest Forest and Range Experiment Station, Portland, OR. 106 p.

[17] Johnson, C.G.; Clausnitzer, R.R.; Mehringer, P.J.; Oliver, C.D. 1994. Biotic and Abiotic Processes of Eastside Ecosytems: the Effects of Management on Plant and Community Ecology, and on Stand and Landscape Vegetation Dynamics. Gen. Tech. Report PNW-GTR-322. USDA-Forest Service. PNW Research Station. Portland, Oregon. 722pp.

[18] Tri City Herald Newspaper Online. http://www.tri-cityherald.com/2013/08/09/2513865/acres-of-wheat-burned-in-fire.html

Accessed September, 2013.

Figure 4.3. News Article About Recent Fire Activity[19].



Train may have started series of Connell fires

Published: August 8, 2013

Tri-City Herald

CONNELL -- A number of brush fires burned for more than three hours Thursday along Highway 395 near Connell. The fires, possibly sparked by a passing train, were contained about 3 p.m., and no one was hurt.

Pasco Battallion Fire Chief Dave Hare was helping on one of five fires along the east side of the highway. Hare said his fire merged with another fire and was about 300 to 500 acres. Connell Police Chief Mike Kessler said no roads were closed and no homes evacuated. There was no total estimate on the size of the area burned.

It's not clear how many firefighters were involved but Hare's crew included 18 from Franklin Fire Districts 1 through 5, Pasco Fire Department and Walla Walla Fire District 5. Pasco sent one fire truck to help fight the fire.

Wildfire Ignition Profile

Detailed records of wildfire ignitions and extents from the Washington Department of Natural Resources (DNR) and Bureau of Land Management (BLM) have been analyzed. In interpreting these data, it is important to keep in mind that the information represents only the lands protected by the agency specified and may not include all fires in areas covered only by local fire departments or other agencies.

The DNR and BLM (1994-2013) database of wildfire ignitions used in this analysis includes ignition and extent data within their jurisdictions. During this period, the agencies recorded an average of 1.5 wildfire ignitions per year resulting in an average total burn area of 1,815 acres per year. According to this dataset, the vast majority of fires occurring in Franklin County are human caused; however, naturally ignited and fires with unknown causes do occur.

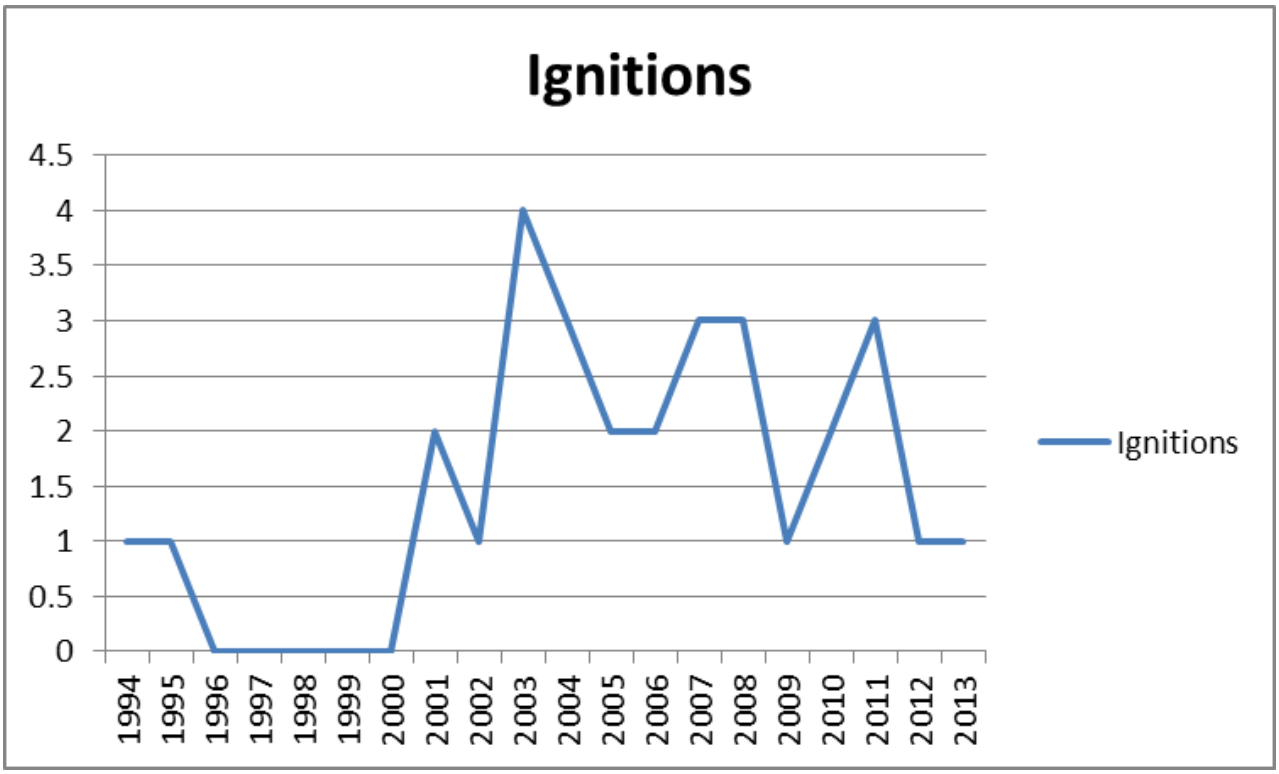
The highest number of ignitions in Franklin County was witnessed in 2003 with 4 separate ignitions. However, the greatest number of acres burned in a single year occurred in 2007 with over 18,000 acres being burned.

[19] Tri City Herald Newspaper Online. http://www.tri-cityherald.com/2013/08/08/2512308/train-may-have-started-series.html Accessed September, 2013.

Table 4.1. Summary of Cause from State and BLM databases 1994-2013.				
General Cause	**Number of Ignitions**	**Percent of Total Ignitions**	**Acres Burned**	**Percent of Total Acres**
Human-Caused	20	67%	15,453	42%
Natural Ignition	3	10%	18,092	50%
Unknown	7	23%	2,763	8%
Total	**30**	**100%**	**36,308**	**100%**

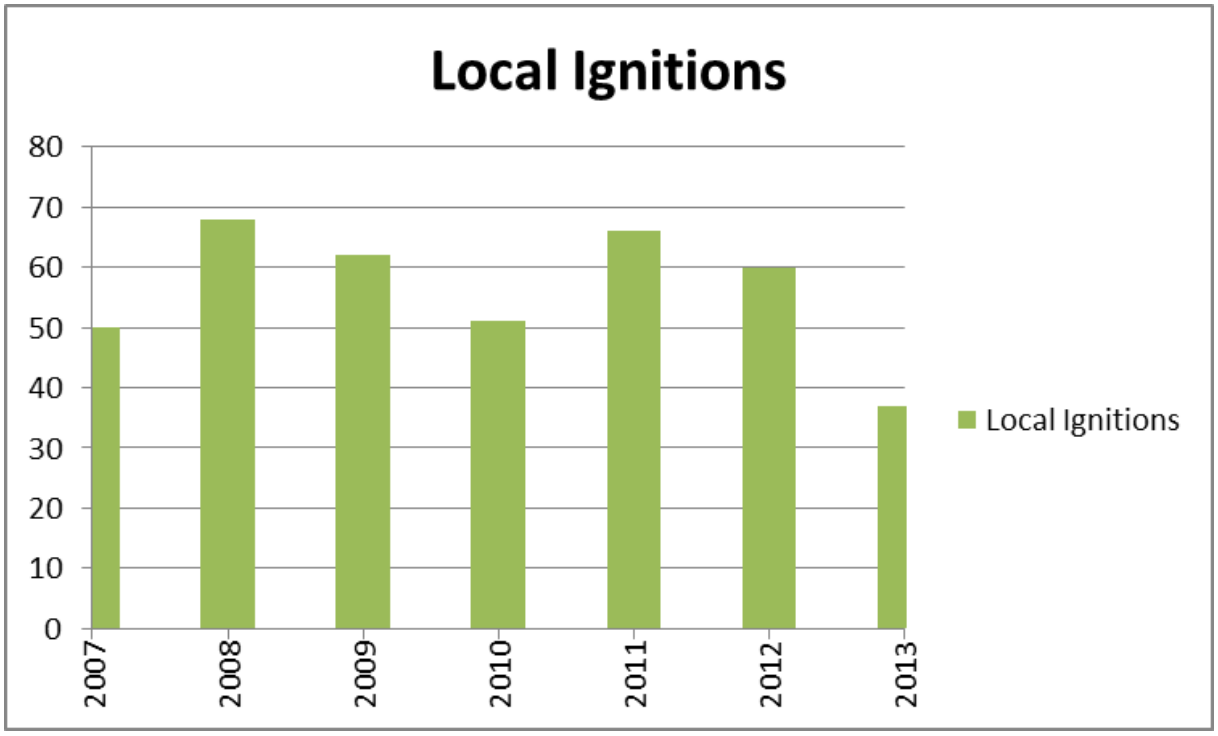
Based on the agencies' combined datasets specific to Franklin County, there is an upward trend in both the number of ignitions/year and acres burned per year since 1994. There are however, occasional spikes in the total acres burned in any given year and appear to generally be located in the more remote parts of the County. The average number of ignitions since 1994 that were reported by State or Federal agencies was approximately 1.5 starts annually. Over 18,000 acres are burned annually on average in Franklin County. Over the previous twenty years, only 50% of the total acres burned (36,308) have been the result of natural causes.

Figure 4.4. Summary of Franklin County Ignitions



Ignitions reported by local fire districts have been summarized in Figure 4.5. Total acres, location, and cause were not provided, but it is assumed that a majority of these fires were kept to less than one acre in size. Local fire districts respond to approximately 56 ignitions annually. When combined with the statistics in Figure 4.4, it only takes less than 3% of ignitions to burn large amounts of acreages within Franklin County.

Figure 4.5. Summary of Fires Reported by Local Fire Protection Districts.



The data reviewed above provides a general picture regarding the level of wildland-urban interface fire risk within Franklin County. There are several reasons why the fire risk may be even higher than suggested above, especially in developing wildland urban interface areas.

1) Large fires may occur infrequently, but statistically they will occur. One large fire could significantly change the statistics. In other words, 40 years of historical data may be too short to capture large, infrequent wildland fire events.

2) The level of fire hazard depends profoundly on weather patterns. A several year drought period would substantially increase the probability of large wildland fires in Franklin County. For smaller vegetation areas, with grass, brush and small trees, a much shorter drought period of a few months or less would substantially increase the fire hazard.

3) The level of fire hazard in wildland urban interface areas is likely significantly higher than for wildland areas as a whole due to the greater risk to life and property. The probability of fires starting in interface areas is much higher than in wildland areas because of the higher population density and increased activities. Many fires in the wildland urban interface are not recorded in agency datasets because the local fire department responded and successfully suppressed the ignition without mutual aid assistance from the state or federal agencies.

Wildfire Extent Profile

Across the west, wildfires have been increasing in extent and cost of control. Data summaries for 2003 through 2012 are provided and demonstrate the variability of the frequency and extent of wildfires nationally.

Table 4.2. Statistical Highlights

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of Fires	85,943	77,534	66,753	96,385	85,705	78,979	78,792	71,971	74,126	67,315
10-year Average ending with indicated year	101,575	100,466	89,859	87,788	80,125	79,918	78,549	76,521	80,465	74,912
Acres Burned (million acres)	4.9	6.8	8.7	9.9	9.3	5.3	5.9	3.4	8.7	9.2
10-year Average ending with indicated year (million acres)	4.7	4.9	6.1	6.5	7.0	6.9	6.9	6.5	7.0	7.3
Structures Burned	5,781	1,095	--	--	--	--	--	--	--	--
Estimated Cost of Fire Suppression (Federal agencies only)	$1.3 billion	$1.0 billion	$1.0 billion	$1.93 billion	$1.84 billion	$1.85 billion	$1.24 billion	$1.13 billion	$1.73 billion	$1.9 billion

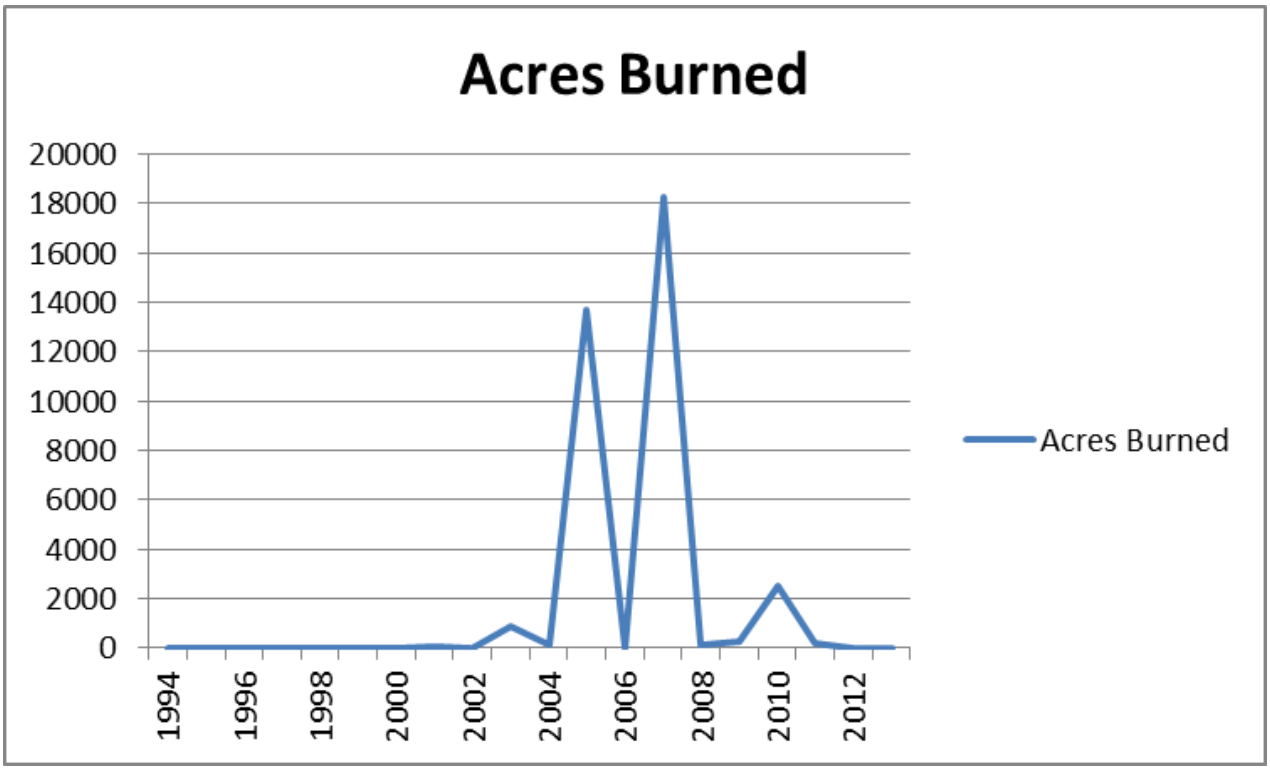
The National Interagency Fire Center maintains records of fire costs, extent, and related data for the entire nation. Tables 4.2 and 4.3 summarize some of the relevant wildland fire data for the nation and some trends that are likely to continue into the future unless targeted fire mitigation efforts are implemented and maintained. According to these data, the total number of fires is trending downward while the total number of acres burned is trending upward. Since 1980 there has been a significant increase in the number of acres burned.[20]

[20] National Interagency Fire Center. 2008. Available online at http://www.nifc.gov/.

Table 4.3. Total Fires and Acres 1980 - 2011 Nationally.					
Year	**Fires**	**Acres**	**Year**	**Fires**	**Acres**
2011	74,126	8,711,367	**1995**	130,019	2,315,730
2010	71,971	3,422,724	**1994**	114,049	4,724,014
2009	78,792	5,921,786	**1993**	97,031	2,310,420
2008	68,594	4,723,810	**1992**	103,830	2,457,665
2007	85,822	9,321,326	**1991**	116,953	2,237,714
2006	96,385	9,873,745	**1990**	122,763	5,452,874
2005	66,753	8,689,389	**1989**	121,714	3,261,732
2004	77,534	6,790,692	**1988**	154,573	7,398,889
2003	85,943	4,918,088	**1987**	143,877	4,152,575
2002	88,458	6,937,584	**1986**	139,980	3,308,133
2001	84,079	3,555,138	**1985**	133,840	4,434,748
2000	122,827	8,422,237	**1984**	118,636	2,266,134
1999	93,702	5,661,976	**1983**	161,649	5,080,553
1998	81,043	2,329,709	**1982**	174,755	2,382,036
1997	89,517	3,672,616	**1981**	249,370	4,814,206
1996	115,025	6,701,390	**1980**	234,892	5,260,825

These statistics are based on end-of-year reports compiled by all wildland fire agencies after each fire season. The agencies include: Bureau of Land Management, Bureau of Indian Affairs, National Park Service, US Fish and Wildlife Service, Forest Service, and all state agencies.

Figure 4.6. Summary of Franklin County Acres Burned.



The fire suppression agencies in Franklin County respond to numerous wildland fires each year, but few of those fires grow to a significant size. According to national statistics, only 2% of all wildland fires escape initial attack. However, that 2% accounts for the majority of fire suppression expenditures and threatens lives, properties, and natural resources. These large fires are characterized by a size and complexity that require special management organizations

drawing suppression resources from across the nation. These fires create unique challenges to local communities by their quick development and the scale of their footprint.

Franklin County has experienced high impact wildland fires that have burned structures or infrastructure within their wildland urban interface. Based on field assessments by experts, the fuels for potentially catastrophic fires are present and given an extremely dry summer, it is not unimaginable that significant fires will continue to occur. It is important that regional planners as well as local residents understand that threat in order to more effectively prepare for potential wildfire events.

Wildfire Hazard Assessment

Franklin County was analyzed using a variety of models managed on a Geographic Information System (GIS) system. Physical features of the region including roads, streams, soils, elevation, and remotely sensed images were represented by data layers. Field visits were conducted by specialists from Northwest Management, Inc. and others. Discussions with area residents and local fire suppression professionals augmented field visits and provided insights into forest health issues and treatment options. This information was analyzed and combined to develop an objective assessment of wildland fire risk in the region.

Historic Fire Regime

Historical variability in fire regime is a conservative indicator of ecosystem sustainability, and thus, understanding the natural role of fire in ecosystems is necessary for proper fire management. Fire is one of the dominant processes in terrestrial systems that constrain vegetation patterns, habitats, and ultimately, species composition. Land managers need to understand historical fire regimes, the fire return interval (frequency) and fire severity prior to settlement by Euro-Americans, to be able to define ecologically appropriate goals and objectives for an area. Moreover, managers need spatially explicit knowledge of how historical fire regimes vary across the landscape.

“Natural” fires in Franklin County would have been disproportionately caused by Native Americans. Aboriginal peoples intentionally set fires throughout the region for the purposes of controlling tree and shrub expansion and for the cultivation of select plants. When we describe “natural” in the Range of Natural Variability we are including indigenous peoples as natural disturbance agents and contributors to perceptions of what is “natural”.

A primary goal in ecological restoration is often to return an ecosystem to a previously existing condition that no longer is present at the site given the assumption that the site’s current condition is somehow degraded or less desirable than the previous condition and needs improvement

Land managers in Franklin County must determine if the past, Native American-influenced condition of the County was necessarily healthier, had a higher level of integrity, and was more sustainable than the current condition. In other words, is “restoration” an appropriate course of action? After a prolonged absence, if fire is reintroduced to these ecosystems the result could be

damaging. Fuel loads throughout most of the County today are quite high and most of the County is inhabited by people, homes, and infrastructure. The ecosystem was adapted to fire in the past, but is no longer adapted today, especially in light of the human component.

In the absence of intensive Native American burning, a condition has developed where fire could/should not be reintroduced without some significant alteration of the current ecosystem structure. This would also require a significant assessment of social acceptance and financial contribution.

Many ecological assessments are enhanced by the characterization of the historical range of variability which helps managers understand: (1) how the driving ecosystem processes vary from site to site; (2) how these processes affected ecosystems in the past; and (3) how these processes might affect the ecosystems of today and the future. Historical fire regimes are a critical component for characterizing the historical range of variability in fire-adapted ecosystems. Furthermore, understanding ecosystem departures provides the necessary context for managing sustainable ecosystems. Land managers need to understand how ecosystem processes and functions have changed prior to developing strategies to maintain or restore sustainable systems. In addition, the concept of departure is a key factor for assessing risks to ecosystem components. For example, the departure from historical fire regimes may serve as a useful proxy for the potential of severe fire effects from an ecological perspective.

Table 4.4. Historic Fire Regimes in Franklin County.

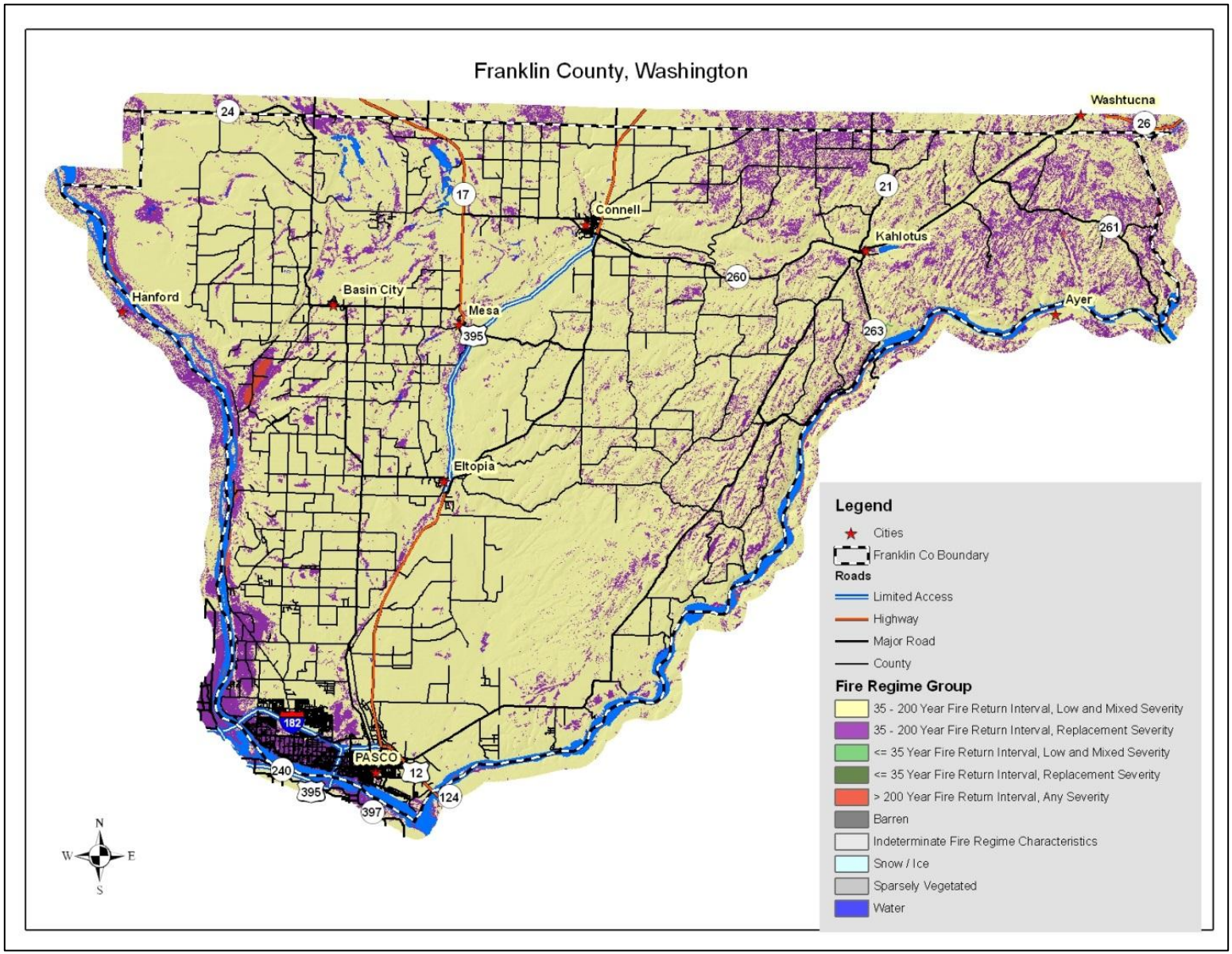
Historic Fire Regime	Description	Acres	Percent of Total
Fire Regime Group I	<= 35 Year Fire Return Interval, Low and Mixed Severity	30	<1%
Fire Regime Group II	<= 35 Year Fire Return Interval, Replacement Severity	0	0%
Fire Regime Group III	35 - 200 Year Fire Return Interval, Low and Mixed Severity	687,378	85%
Fire Regime Group IV	35 - 200 Year Fire Return Interval, Replacement Severity	103,654	13%
Fire Regime Group V	> 200 Year Fire Return Interval, Any Severity	2,228	<1%
Water	Water	15,829	2%
Barren	Barren	252	<1%
Sparsely Vegetated	Sparsely Vegetated	91	<1%
Indeterminate Fire Regime Characteristics	Indeterminate Fire Regime Characteristics	5	<1%
	Total	**809,467**	**100%**

This model only uses the historic vegetation types to determine the historic fire regime. Native Americans reportedly burned throughout the county on a regular basis. The vegetation types were much different pre Euro-American settlement than they are today and believed to be a more grassland-dominated landscape. The Historic Fire Regime model suggests that fires in Franklin

County historically burned with mixed severity fires on a longer return interval. The dry climate of this region likely contributed to sparse vegetation which would not have frequently carried fire.[21] The longer time between fires may allow fuels to build-up, which can burn very intensely when conditions are dry. For this reason, it may be reasonable to assume that a majority of the areas in the County that have been categorized as having a 35 to 200 year historical return interval with mixed severity fires, could likely be stand replacing fires with the current accumulation of fuels.

[21] Guyette, R.A.; Stambaugh, M.C.; Marschall J. M. 2010. Quantitative Analysis of Fire History at National Parks in the Great Plains. Final Report for: USGS – NRPP (06-3255-0205Guyette). Missouri Tree-Ring Laboratory, Department of Forestry, University of Missouri-Columbia. 138pp.

Figure 4.7. Historic Fire Regime for Franklin County.



Vegetation Condition Class

A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning.[22, 23] Coarse scale definitions for historic fire regimes have been developed by Hardy et al[24] and Schmidt et al[25] and interpreted for fire and fuels management by Hann and Bunnell.

A vegetation condition class (VCC) is a classification of the amount of departure from the historic regime. [26] The three classes are based on low (VCC 1), moderate (VCC 2), and high (VCC 3) departure from the central tendency of the natural (historical) regime.[27,28] The central tendency is a composite estimate of vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated natural disturbances. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside.

An analysis of Vegetation Condition Classes in Franklin County shows that the majority of land in the county that has not been converted to agriculture (52%) is considered highly departed (38%) from its historic fire regime and associated vegetation and fuel characteristics. Approximately 2% has a low departure and less than 1% is considered moderately departed.

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[22] Agee, J. K. Fire Ecology of the Pacific Northwest forests. Oregon: Island Press. 1993.

[23] Brown. J. K. "Fire regimes and their relevance to ecosystem management." *Proceedings of Society of American Foresters National Convention*. Society of American Foresters. Washington, D.C. 1995. Pp 171-178.

[24] Hardy, C. C., et al. *"Spatial data for national fire planning and fuel management."* International Journal of Wildland Fire. 2001. Pp 353-372.

[25] Schmidt, K. M., et al. *"Development of coarse scale spatial data for wildland fire and fuel management."* General Technical Report, RMRS-GTR-87. U.S. Department of Agriculture, Forest Service. Rocky Mountain Research Station. Fort Collins, Colorado. 2002.

[26] Hann, W. J. and D. L. Bunnell. "Fire and land management planning and implementation across multiple scales." International Journal of Wildland Fire. 2001. Pp 389-403.

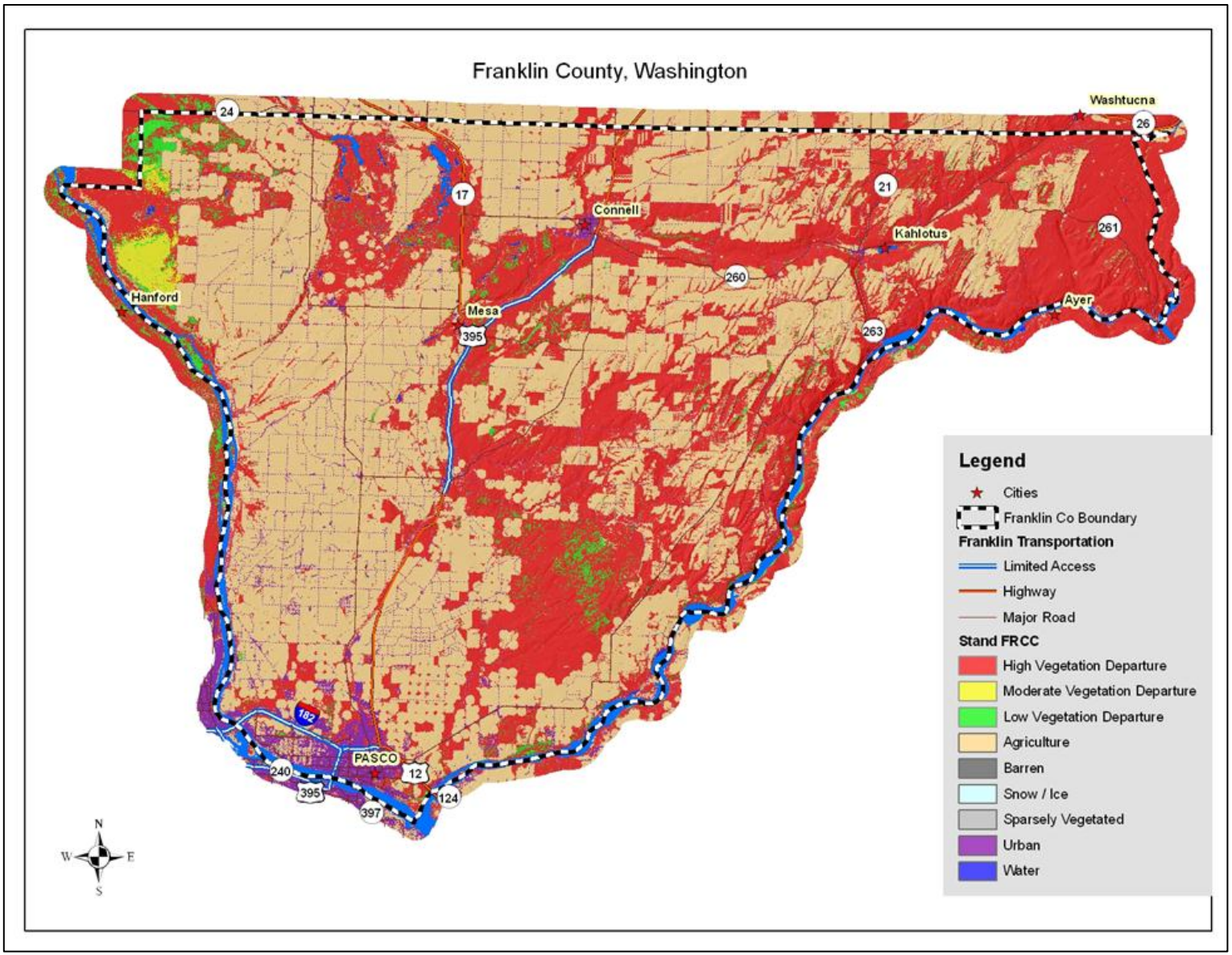
[27] Hardy, C. C., et al. *"Spatial data for national fire planning and fuel management."* International Journal of Wildland Fire. 2001. Pp 353-372.

[28] Schmidt, K. M., et al. *"Development of coarse scale spatial data for wildland fire and fuel management."* General Technical Report, RMRS-GTR-87. U.S. Department of Agriculture, Forest Service. Rocky Mountain Research Station. Fort Collins, Colorado. 2002.

Table 4.5. Vegetation Condition Class in Franklin County.			
Vegetation Condition Class	**Description**	**Acres**	**Percent of Total**
Vegetation Condition Class I	Low Vegetation Departure	17,107	2%
Vegetation Condition Class II	Moderate Vegetation Departure	6,614	<1%
Vegetation Condition Class III	High Vegetation Departure	307,001	38%
Agriculture	Agriculture	422,650	52%
Water	Water	15,829	2%
Urban	Urban	39,924	5%
Barren	Barren	252	<1%
Sparsely Vegetated	Sparsely Vegetated	91	<1%
	Total	809,467	100%

The current Vegetation Condition Class model shows that much of Franklin County is considered to be highly departed. A majority of the County is dominated by various shrub species with a grass understory consisting of bluebunch wheatgrass, Idaho fescue, and many other grass species. The current structure and density of the shrublands in many areas makes it susceptible to health issues from competition, insects, and disease. The current fire severity model suggests that a higher severity fire than historical norms would be expected in these areas.

Figure 4.8. Vegetation Condition Class Map for Franklin County.



Franklin County's Wildland Urban Interface

The wildland urban interface (WUI) has gained attention through efforts targeted at wildfire mitigation; however, this analysis technique is also useful when considering other hazards because the concept looks at where people and structures are concentrated in any particular region.

A key component in meeting the underlying need for protection of people and structures is the protection and treatment of hazards in the wildland urban interface. The wildland-urban interface refers to areas where wildland vegetation meets urban developments or where forest fuels meet urban fuels such as houses. The WUI encompasses not only the interface (areas immediately adjacent to urban development), but also the surrounding vegetation and topography. Reducing the hazard in the wildland-urban interface requires the efforts of federal, state, and local agencies and private individuals.[29] "The role of [most] federal agencies in the wildland-urban interface includes wildland firefighting, hazard fuels reduction, cooperative prevention and education, and technical experience. Structural fire protection [during a wildfire] in the wildland-urban interface is [largely] the responsibility of Tribal, state, and local governments".[30] The role of the federal agencies in Franklin County is and will be much more limited. Property owners share a responsibility to protect their residences and businesses and minimize danger by creating defensible areas around them and taking other measures to minimize the risks to their structures.[31] With treatment, a wildland urban interface can provide firefighters a defensible area from which to suppress wildland fires or defend communities against other hazard risks. In addition, a wildland urban interface that is properly treated will be less likely to sustain a crown fire that enters or originates within it. [32]

By reducing hazardous fuel loads, ladder fuels, and tree densities, and creating new and reinforcing existing defensible space, landowners can protect the wildland-urban interface, the biological resources of the management area, and adjacent property owners by:

- Minimizing the potential of high-severity ground or crown fires entering or leaving the area;
- Reducing the potential for firebrands (embers carried by the wind in front of the wildfire) impacting the WUI. Research indicates that flying sparks and embers (firebrands) from a

[29] Norton, P. Bear Valley National Wildlife Refuge Fire Hazard Reduction Project: Final Environmental Assessment. Fish and Wildlife Services, Bear Valley Wildlife Refuge. June 20, 2002.

[30] USFS. 2001. United States Department of Agriculture, Forest Service. Wildland Urban Interface. Web page. Date accessed: 25 September 2001. Accessed at: http://www.fs.fed.us/r3/sfe/fire/urbanint.html

[31] USFS. 2001. United States Department of Agriculture, Forest Service. Wildland Urban Interface. Web page. Date accessed: 25 September 2001. Accessed at: http://www.fs.fed.us/r3/sfe/fire/urbanint.html

[32] Norton, P. Bear Valley National Wildlife Refuge Fire Hazard Reduction Project: Final Environmental Assessment. Fish and Wildlife Services, Bear Valley Wildlife Refuge. June 20, 2002.

crown fire can ignite additional wildfires as far as 1¼ miles away during periods of extreme fire weather and fire behavior;[33]

- Improving defensible space in the immediate areas for suppression efforts in the event of wildland fire.

Three wildland-urban interface conditions have been identified (Federal Register 66(3), January 4, 2001) for use in wildfire control efforts. These include the Interface Condition, Intermix Condition, and Occluded Condition. Descriptions of each are as follows:

- **Interface Condition** – a situation where structures abut wildland fuels. There is a clear line of demarcation between the structures and the wildland fuels along roads or back fences. The development density for an interface condition is usually 3+ structures per acre;
- **Intermix Condition** – a situation where structures are scattered throughout a wildland area. There is no clear line of demarcation; the wildland fuels are continuous outside of and within the developed area. The development density in the intermix ranges from structures very close together to one structure per 40 acres; and
- **Occluded Condition** – a situation, normally within a city, where structures abut an island of wildland fuels (park or open space). There is a clear line of demarcation between the structures and the wildland fuels along roads and fences. The development density for an occluded condition is usually similar to that found in the interface condition and the occluded area is usually less than 1,000 acres in size.

In addition to these classifications detailed in the Federal Register, Franklin County has included two additional classifications to augment these categories:

- **Low Density Rural Areas** – a situation where the scattered small clusters of structures (ranches, farms, resorts, or summer cabins) are exposed to wildland fuels. There may be miles between these clusters.
- **High Density Urban Areas** – those areas generally identified by the population density consistent with the location of incorporated cities, however, the boundary is not necessarily set by the location of city boundaries or urban growth boundaries; it is set by very high population densities (more than 7-10 structures per acre).

In summary, the designation of areas by the Franklin County planning committee includes:

- Interface Condition: WUI
- Intermix Condition: WUI
- Occluded Condition: WUI
- Low Density Rural Areas: WUI

[33] McCoy, L. K., et all. Cerro Grand Fire Behavior Narrative. 2001.

- High Density Urban Areas: WUI

Franklin County's WUI is mostly based on population density. Relative population density across the county was estimated using a GIS-based kernel density population model that uses object locations to produce, through statistical analysis, concentric rings or areas of consistent density. To graphically identify relative population density across the county, structure locations are used as an estimate of population density. Aerial photography was used to identify structure locations in 2013 using 2009 and 2011 NAIP imagery and Franklin County's cadastral data. The resulting output identified the extent and level of population density throughout the county.

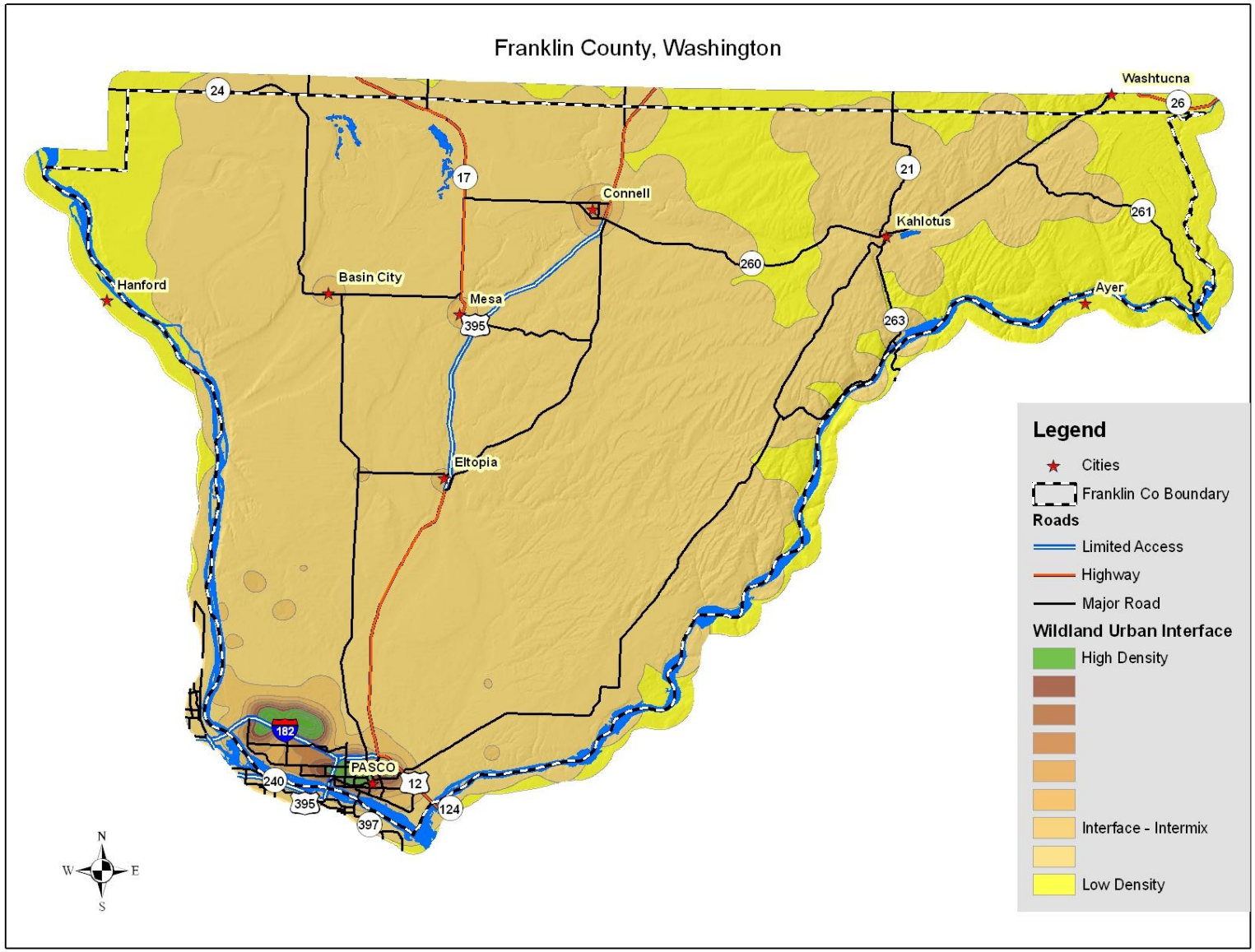
In addition, the Franklin County planning committee determined that the entire County should be classified under WUI designation due to the rapid rates of spread that commonly occur within the County.

By evaluating structure density in this way, WUI areas can be identified on maps by using mathematical formulae and population density indexes. The resulting population density indexes create concentric circles showing high density areas, interface, and intermix condition WUI, as well as low density WUI (as defined above). This portion of the analysis allows us to "see" where the highest concentrations of structures are located in reference to relatively high risk landscapes, limiting infrastructure, and other points of concern.

The WUI, as defined here, is unbiased and consistent and most importantly – it addresses all of the county, not just federally identified communities at risk. It is a planning tool showing where homes and businesses are located and the density of those structures leading to identified WUI categories. It can be determined again in the future, using the same criteria, to show how the WUI has changed in response to increasing population densities. It uses a repeatable and reliable analysis process that is unbiased.

The Healthy Forests Restoration Act makes a clear designation that the location of the WUI is at the determination of the county or reservation when a formal and adopted Community Wildfire Protection Plan is in place. It further states that the federal agencies are obligated to use this WUI designation for all Healthy Forests Restoration Act purposes. The Franklin County Community Wildfire Protection Plan steering committee evaluated a variety of different approaches to determining the WUI for the county and selected this approach and has adopted it for these purposes. In addition to a formal WUI map for use with the federal agencies, it is hoped that it will serve as a planning tool for the county, state and federal agencies, and local fire districts.

Figure 4.9. Wildland Urban Interface in Franklin County, Washington.



Potential WUI Treatments

The definition and mapping of the WUI is the creation of a planning tool to identify where structures, people, and infrastructure are located in reference to each other. This analysis tool does not include a component of fuels risk. There are a number of reasons to map and analyze these two components separately (population density vs. fire risk analysis). Primary among these reasons is the fact that population growth often occurs independent from changes in fire risk, fuel loading, and infrastructure development. Thus, making the definition of the WUI dependent on all of them would eliminate populated places with a perceived low level of fire risk today, which may in a year become an area at high risk due to forest health issues or other concerns.

By examining these two tools separately, the planner is able to evaluate these layers of information to see where the combination of population density overlays areas of high current relative fire risk and then take mitigative actions to reduce the fuels, improve readiness, directly address factors of structural ignitability, improve initial attack success, mitigate resistance to control factors, or (more often) a combination of many approaches.

It should not be assumed that just because an area is identified as being within the WUI, that it will therefore receive treatments because of this identification alone. Nor should it be implicit that all WUI treatments will be the application of the same prescription. Instead, each location targeted for treatments must be evaluated on its own merits: factors of structural ignitability, access, resistance to control, population density, resources and capabilities of firefighting personnel, and other site specific factors.

It should also not be assumed that WUI designation on national or state forest lands automatically equates to a treatment area. The Forest Service, Bureau of Land Management, and Washington Department of Natural Resources are still obligated to manage lands under their control according to the standards and guides listed in their respective forest plans (or other management plans). The adopted forest plan has legal precedence over the WUI designation until such a time as the forest plan is revised to reflect updated priorities.

Most treatments may begin with a home evaluation, and the implicit factors of structural ignitability (roofing, siding, deck materials) and vegetation within the treatment area of the structure. However, treatments in the low population areas of rural lands (mapped as yellow) may look closely at access (two ways in and out) and communications through means other than land-based telephones. On the other hand, a subdivision with densely packed homes (mapped as brown – interface areas) surrounded by forests and dense underbrush, may receive more time and effort implementing fuels treatments beyond the immediate home site to reduce the probability of a crown fire entering the subdivision.

Relative Threat Level Mapping

Franklin County recognizes that certain regions of the County have unique risk factors that increase their vulnerability to wildland fire. In an effort to demonstrate these risk factors, the

planning committee developed a threat level model analyzing various risk factors on a scale relative to Franklin County specifically.

Risk Categories

Based on analysis of the various modeling tools, existing historical information, and local knowledge, a preliminary assessment of potentially high wildfire risk areas was completed. This assessment prioritized areas that may be at higher risk due to non-native or high fire risk vegetation, fire history profile, high risk fuel models, and/or limited suppression capabilities. This assessment also considered areas that had a high population or other valuable assets requiring protection from the impacts of wildland fires.

Non-native or High Fire Risk Vegetation

Fuel type, or vegetation, plays an important role in determining wildland fire danger. All fuel types can and will burn under the right conditions; however, some fuel types pose more danger than others due to the intensity at which they burn, the horizontal and vertical continuity of burnable material, and firefighters' ability to modify the fuel complex in front of an approaching wildfire. While rangeland or grass fires often spread rapidly, they burn quickly and at a lower intensity than forest fires. Additionally, local farmers and firefighters can often construct fuel breaks with dozers and other equipment relatively quickly. These tactics are not as effective in forested areas or on steep terrain.

Vegetation types that lead to increased wildfire intensity or severity were given a higher threat level rating.

High Risk Fire Behavior

Due to heavy fuel loads, much of the County could experience extreme wildfire behavior characteristics that result in very intense, stand replacing fires. The agriculture/grassland areas will likely experience lower intensity fires with rapid rates of spread, particularly under the influence of wind.

One of the factors contributing to potentially dangerous fire behavior is the preheating of fuels on steep slopes ahead of the actual flame front. Typically, fires spread very rapidly uphill, particularly in grass fuel types. Hot gases rise in front of the fire along the slope face preheating the upslope vegetation and moving a grass fire up to four times faster with flames twice as long as a fire on level ground. This preheating of fuels, or radiant heat, is capable of igniting combustible materials from distances of 100 feet or more.[34]

Areas with a high potential for extreme fire behavior based on Fire Behavior Analysis Tool modeling and local knowledge were given a higher threat level rating. Based on local knowledge, the grass fuel model was given a higher intensity level than it normally would receive due to the vast amounts of available fuel. Although grass fires can generally be controlled relatively easily, fires burning in this fuel type can spread rapidly. Extreme rates of

[34] "Wildfires and Schools". 2008. National Clearinghouse for Educational Facilities. National Institute of Building Sciences. Available online at http://www.ncef.org/pubs/wildfires.pdf.

spread coupled with the remote nature of much of the County, can cause significant control issues for local fire districts.

Suppression Capabilities

Fire protection in each district in Franklin County is essentially the responsibility of the local fire district. The County has five active fire districts and two municipalities with resources available for fire suppression. However, each district is limited to the resources at hand until help from other districts or state or federal agencies can arrive.

Some parts of the County fall under Washington DNR or BLM fire protection responsibility. The Washington DNR and BLM have cooperative agreements with Franklin County Fire Districts to provide initial attack on their respective districts. The response times for the DNR and BLM can be several hours or longer due to the logistical challenge of mobilizing both crews and equipment from their respective duty stations.

Population Centers and Developing Areas

Due to the increased human activity within and surrounding Franklin County communities, these areas are inherently at a higher risk of ignitions.

The perimeter and outskirts of population centers and known developing areas were given a high threat level rating.

High Protection Value

There are several areas in Franklin County that constitute protection due to their high conservation value such as tribal and other culturally or historically significant sites, recreational areas, and critical infrastructure. Watersheds were included in this risk category due to the limited supply of this natural resource within the County. Communication towers and State Parks are other examples of "High Protection Value" assets that were ranked with a high threat level.

Field Assessments

Based on the preliminary review of the risk categories, high risk areas were identified and mapped. Field assessment of these areas were conducted in October and included visits to U.S. Fish & Wildlife property, Smith Canyon, Juniper Dunes, subdivisions north of Pasco, and agriculture/canyon area in the northeast corner of the County as well as tours of several of the communities in combination with interviews with local residents in identified high risk areas. Fire control and mitigation specialists conducted thorough field assessment to evaluate the accuracy of the models and other data, assess the extent of risk and hazardous fuels, and develop specific hazardous fuels treatment project plans. Additionally, experts from the local fire districts, the Bureau of Land Management, and Franklin County were consulted in order to address specific areas of concern and document local wildfire suppression operational tactics.

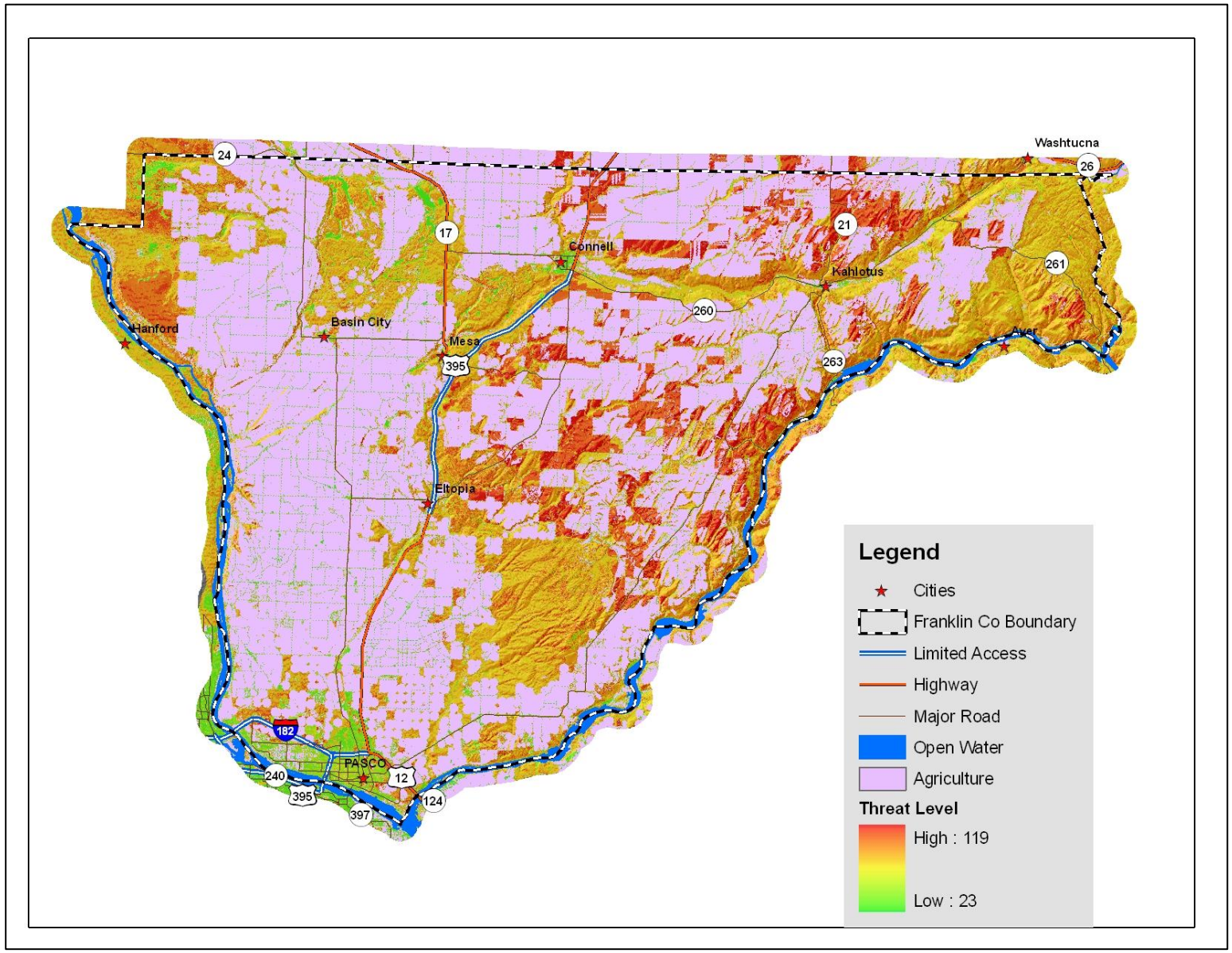
Determination of Relative Threat Level

Following the field assessments, the planning committee began development of the Relative Threat Level model. Risk categories included in the final analysis were slope, aspect, precipitation, fuel models, rate of spread, fire intensity, and population density. The various categories, or layers, were ranked by the committee based on their significance pertaining to causal factors of high wildland fire risk conditions or protection significance. The ranked layers were then analyzed in a geographical information system to produce a cumulative effects map based on the ranking. Following is a brief explanation of the various categories used in the analysis and the general ranking scheme used for each.

- Environmental Factors – slope, aspect and precipitation all can have an enormous impact on the intensity of a wildfire. Therefore, areas with steep slopes, dry aspects, or lesser amounts of precipitation, relative to Franklin County, were given higher threat rankings.
- Vegetation Cover Types – certain vegetation types are known to carry and produce more intense fires than other fuel types. For Franklin County, shrub and grass fuel models were given the higher rankings followed by short grass / agriculture, and forest types (shrub understory) fuel models.
- Fire Behavior – areas identified by fire behavior modeling as having high rate of spread potential or high fire intensity were given a higher threat level ranking.
- Populated Areas – these areas were ranked higher due to the presence of human populations, structures, and infrastructure requiring protection from fire.

Each data layer was developed, ranked, and converted to a raster format using ArcGIS 9.3. The data layers were then analyzed in ArcGIS using the Spatial Analyst extension to calculate the cumulative effects of the various threats. This process sums the ranked overlaid values geographically to produce the final map layer. The ranked values were then color coded to show areas of highest threat (red) to lowest threat (green) relative to Franklin County.

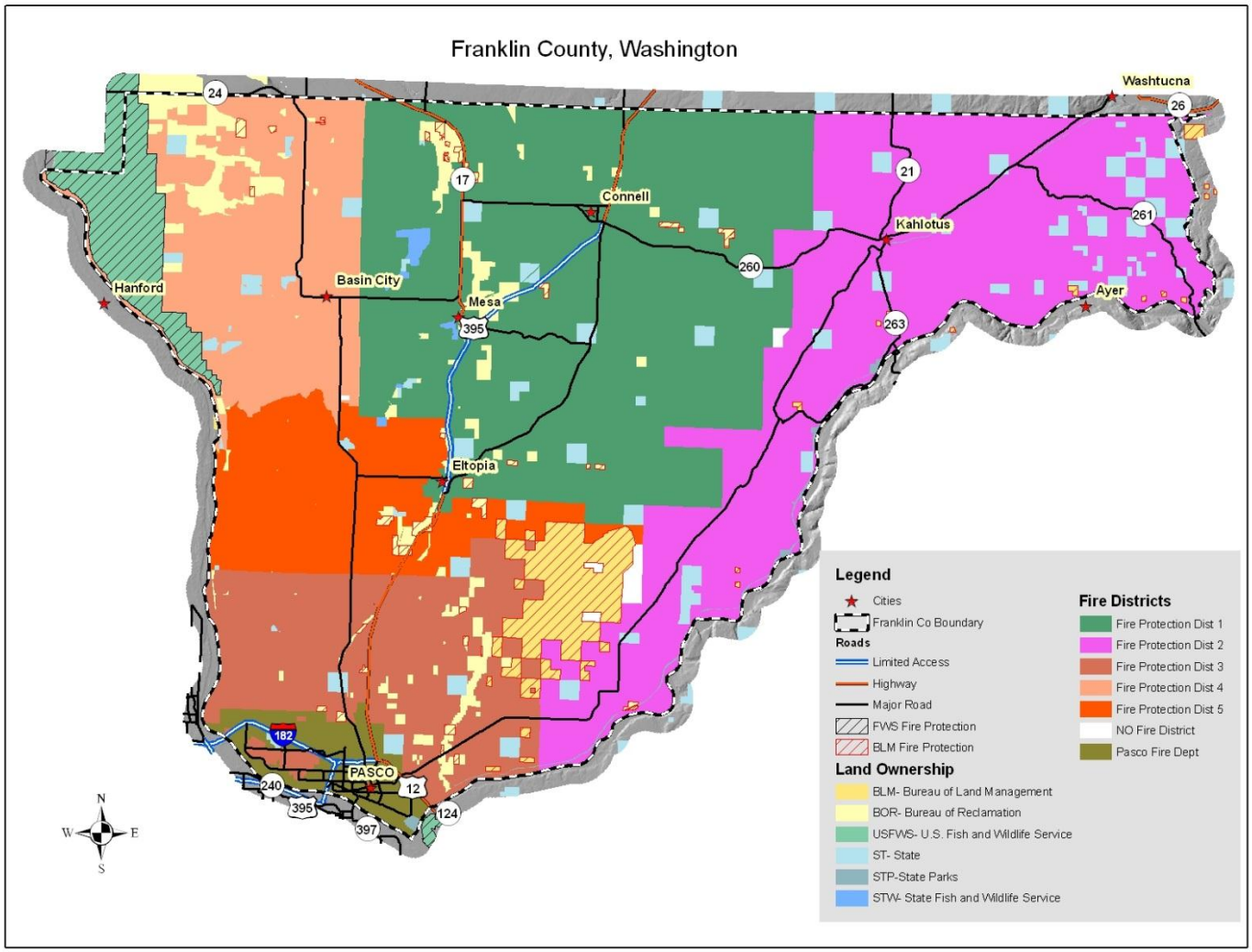
Figure 4.10. Franklin County Relative Threat Level Map.



Overview of Fire Protection System

A majority of the County has a local fire protection district that covers both structural and wildland fire response. The Washington DNR is responsible for wildland fire protection outside of fire district jurisdictions. Due to the lack of DNR resources in Franklin County, the DNR maintains an agreement with Franklin County to provide initial attack for the first 12 hours of the operational period.

Figure 4.11. Wildfire Protection Responsibility Map.



****NOTE: Washington DNR does not respond to structure fires.****

Local Fire Department and District Summaries

The firefighting resources and capabilities information provided in this section is a summary of information provided by the fire chiefs or representatives of the wildland firefighting agencies listed. Each organization completed a survey with written responses. Their answers to a variety of questions are summarized here. These synopses indicate their perceptions and information summaries.

Appendix 4 contains contact information and a complete available resource list for each of the following fire service organizations.

City of Pasco Fire Department

District Summary: The City of Pasco Fire Department is primarily an urban/suburban fire agency that provides primary fire, EMS, hazardous materials, and technical rescue services to the residents of the City of Pasco. The fire department operates out of three stations utilizing 52 career firefighters divided into three 24 hour shifts and covers an area of approximately 32 square miles.

Issues of Concern: As mentioned earlier, the PFD is primarily an urban/suburban fire department that deals with urban issues (structural fires, etc.). The areas of concern are:

Residential Growth: The City of Pasco has seen significant residential growth over the last 10 years. The population has doubled to approximately 66,000 residents. Single and multi-family residential structures account for most of the growth. As a result, our exposure to the WUI zones within the city and on the edge of the city boundaries has increased significantly.

Communications: The City of Pasco is located in the extreme southern portion of Franklin County and has direct line of sight with the highest repeaters in the area. We have the capability to utilize/share other frequencies with Benton County agencies. The rest of Franklin County does not share these benefits largely due to budgetary and geography related issues.

Policy development and dispatcher training continue to be a major issue of concern. The Franklin County Communications Center (FCCC) reports to the Franklin County Sheriff and is primarily designed around the needs of local law enforcement. Training and policies for fire/EMS dispatching is minimal.

The current dispatching configuration within the Tri-County area utilizes three separate and distinctive centers, CAD (Computer Aided Dispatch) and PSAP's (Public Safety Answering Points). Often, communications between communications centers is done via phone. The CAD systems are not interlinked and therefore requests for resources are often unfilled or filled incorrectly. None of the CAD systems have been upgraded within the last 10 years and are no longer able to be supported by the vendor(s).

Burn Permit Regulations: Outdoor burning permissions within the City of Pasco UGA (urban growth area) are determined based upon the Benton County burning regulations. The

City of Pasco does not allow any outdoor burning (other than blown tumbleweeds) within the UGA. The Code Enforcement Officer for the City of Pasco is charged with enforcing burning regulations.

Other: The PFD is heavily reliant on the neighboring fire districts for sustained wildfire operations. Most of our wildland fire exposure, to date, has been residential or commercial lots. A wildland fire and increased populations within could potentially overwhelm initial responders. The need to have better access to equipment such as tenders, Type 3 engines, etc. that can be successfully utilized in both the rural and suburban area is apparent and should be addressed.

Franklin County and the City of Pasco should adopt a regulation requiring "defensible space" for all existing and new construction within the WUI. This process will require a two-fold approach. First, public education through a collaborative partnership with the media, fire departments, and emergency management, and second development and adoption of county ordinances requiring the improvement and maintenance of defensible spaces.

Last, the county fire agencies should explore the development of a "MIST" (minimum incident support team – Type 4) in which qualified command/overhead positions are filled at a wildfire incident within Franklin County. There are times when agencies are responding together for fires when command and control are not clearly established or known. This issue creates confusion on fire scenes and is a major safety concern for responders.

Cooperative Agreements: The City of Pasco Fire Department is a co-signer and participant in the Franklin County Mutual Aid agreement as well as the Tri-County Master Mutual Aid agreement which includes Franklin, Benton and Walla Walla counties. The City of Pasco also has a cooperative agreement with the USFWS.

District Needs/Wish List: The members of the City of Pasco Fire Department are well-versed, trained and experienced in structural firefighting techniques and skills. They are not as comfortable or qualified to manage a large wildland fire scenario. Conversely, the fire districts are more comfortable and experienced dealing with wildland fires than with structural fires. Collaborative opportunities should be explored to provide the needed experience and training to the firefighting community of Franklin County.

An integrated and focused public education program dedicated to wildland fire prevention and protection needs to be developed and implemented throughout the county. This program should include consistent and enforceable burning regulations, information on defensible spaces, and outreach programs through the use of all facets of media, including social media.

Encourage County-wide support of Emergency Management Department for activation of the Emergency Operations Center in the event of a large wildfire incident within Franklin County.

City of Connell Fire Department

District Summary: The City of Connell Fire Department has served the folks in historic Connell, Washington for around 73 years. The Fire Department is now classified as a 'Combination' department. In February of 2011, the City of Connell hired a full time Fire Chief. There have been numerous volunteer chiefs in years past. The Fire Department has 20 volunteers that are all very devoted contributors. There is a long standing tradition of volunteer fire fighters that have served. The majority of the volunteers have been on board for over 10 years but there is also a half a dozen that have only served since the spring of 2011. It is an exciting time to be a part of this new developing program. The department has only one station, but it has just completed a significant remodel. The 'new' station houses two apparatus (E2011 - 1998 Freightliner Pumper and L2021 - 2009 Rosenbauer Aerial), a newly renovated training room, and the three older bay areas.

The volunteers that serve the City of Connell Fire Department are also members of the volunteer program of Franklin County Fire District 1 (FCFD1). FCFD1 responds to an average of 85 to 100 natural cover fires annually. FCFD1 response originates from the county vehicles that are stationed just down the street from the City of Connell Fire Station. The county and city programs are tightly interwoven. The leadership and members are common to both departments. The spirit of teamwork and progress is contagious. With the arrival of the new chief, the City of Connell Fire Department has solidified the cooperative spirit with FCFD1 and the neighboring Fire Districts to the east, west and south as well as a number of much larger municipalities in the Tri-Cities (Kennewick Pasco, Richland), the US Fish and Wildlife Service, and numerous fire districts in Benton County.

In May of 2011, the new chief assembled an interagency cadre and launched, for the first time, a NWCG approved Wildland Fire School. This Wildland Fire School presented S-110 (Introduction to Wildland Fire), S-190 (Introduction to Wildland Fire Behavior), S-134 (LCES), I-100 (Introduction to Incident Command System), L-180 (Human Factors in the Wildland Fire Services), and S-130 (Firefighter Training) for more than 30 volunteers, 20 of which were from the City of Connell Fire Department.

The department has received some structural training over the years, but with the current momentum, new organization, and positive direction gained from the recent Wildland Fire training the City of Connell Fire Department is excited about gearing up our structural protection program with some sorely needed equipment upgrades and additional training for all personnel.

Issues of Concern:

Residential Growth: The City of Connell is well poised for continued growth. Water systems and infrastructure are in place that will provide for numerous opportunities for the city

to continue to develop and expand. The schools have all been recently remodeled or constructed and are ready for decades of K-12 educational opportunities.

Communications: The emergency response communications network is managed out of the County Seat of Pasco. There is currently a restructuring effort in place that is being designed to provide coverage for years to come. Franklin County infrastructure for communications is current and has excellent technicians maintaining the system. The topography of the area promotes effective communications and very few areas exist without adequate coverage.

Burn Permit Regulations: There is only limited burning allowed within the city limits of Connell. Burning is limited to windblown tumbleweeds only. Burning is often restricted during hot and dry conditions.

Other: The City of Connell Fire Department is a 'Combination' department. The budget is effective but the department is challenged to replace apparatus and some of the higher priced equipment within the confines of the current budget.

Cooperative Agreements: City of Connell is a signatory member of the Franklin County Master Mutual Aid Agreement. It has also provided requested information to the U.S. Fish and Wildlife Services to participate in a Cooperative Agreement with the Mid-Columbia River National Wildlife Refuge Complex, based out of the city of Burbank.

District Needs/Wish List: Continued cooperation with the Fire District and municipal fire department partners. Replace the aging apparatus and some of the higher priced equipment. Continue to seek community and volunteer support to maintain and improve the effectiveness of the Fire Department.

Franklin County Fire Protection District #2

No information was available at the time this document was developed.

Franklin County Fire Protection District #3

District Summary: Franklin County Fire Protection District #3 currently provides fire and BLS ambulance service to approximately 6000 residents in 150 square miles in the southern portion of Franklin County in Washington State. The nearest city is the City of Pasco. The district is made up of a mix of suburban residential and irrigated and dry land agriculture with some agricultural-based industrial facilities. Franklin County F.P.D. #3 is a combination district staffed with five career employees and approximately 50 volunteer responders.

Issues of Concern:

Residential Growth: Residential growth in the WUI areas, particularly the Martindale and Haugen/Kepps Road areas, continues to be of high concern. Any fire that starts in these areas has high potential of affecting properties within these developments.

Communications: Franklin County F.P.D. #3 is situated fairly well in the southern portion of the County having direct line of sight to one of the highest repeater sites in the area

plus being able to utilize other frequencies with Benton County agencies. However, the rest of the County does not share these benefits with budget and geography issues hampering Countywide use of a single frequency for dispatching.

Assistance with training and policy development on utilization of geographic and tactical frequencies would be beneficial for all agencies especially as we are moving more towards working together on incidents.

Burn Permit Regulations: The County takes precious little responsibility for burn permitting, leaving it to the State Department of Ecology. Lack of a full time Fire Marshall and short staffing in the Code Enforcement officer portion of the Building Department hampers investigation and enforcement of burn regulation infractions. Public education with regard to fire safety and burning conditions can prove beneficial but they need to be ongoing and well organized. Franklin County F.P.D. #3 has a public education program which we are very proud of, but without outside funding, we are unable to extend this beyond the borders of District #3. Currently, the majority of our public education is rightfully directed towards school-aged children. With additional funding and some type of assistance, it is hoped that we would be able to extend this to other parts of the community.

Other: Like all districts, Franklin County F.P.D. #3 is dependent upon volunteers for the bulk of firefighting duties. We are fortunate to be situated near and surrounded by a major population center in the City of Pasco from where many of our volunteers are recruited and reside.

This is not the case for the rest of the County which has a much more limited and predominately agriculture based population. Education and incentives may assist with keeping these volunteers involved particularly since the call volume is not very high.

There are times when we are brought together for fires when we do not know who is in charge or where to find them for assignments and accountability. This creates considerable discomfort at minimum and definite safety concerns for responders who are used to more closely run incidents.

Cooperative Agreements: Franklin County F.P.D. #3 is a signer and participant in the Franklin County Mutual Aid Agreement as well as the Tri-County Mutual Aid Agreement which includes Franklin, Benton, and Walla Walla Counties. Franklin County F.P.D. #3 also has a cooperative agreement with the US Fish and Wildlife Service and is working toward an agreement with the BLM.

District Needs/Wish List: While the mutual aid and cooperative agreements are beneficial, training together and knowledge of each other's district and operations would be of great benefit for the times we work together on fires. In the last few years we have had better communication with quarterly meetings. This needs to continue and perhaps include tours of each other's district for some institutional knowledge of the threats we each have.

Of course we all want to replace engines and water tenders on a more frequent basis but that hopefully will be easier to do with our needs better defined by this document.

On the short term basis, help with expansion of our public education program and participation by other departments spreading the word to their constituents should help with minimizing the effects of accidental fires. Intentional starts are a completely different issue and help from the law enforcement agencies are needed for that.

Regarding some of the residential concerns, help with getting permissions to do fuels mitigation efforts near these properties reducing the threat of these fires progressing onto their property.

Franklin County Fire Protection District #4

No information was available at the time this document was developed.

Franklin County Fire Protection District #5

No information was available at the time this document was developed.

U.S. Fish & Wildlife Service

District Summary: The mission of the National Wildlife Refuge System is to preserve a national network of lands and waters for the conservation and management of fish, wildlife and plant resources of the United States for the benefit of present and future generations.

The Mid-Columbia River NWRC lies in the heart of the Columbia Basin with must Refuge lands in close proximity to the Columbia River (hence the name). The Complex is comprised of 8 Refuges and 1 National Monument covering over 265,000 acres: Columbia NWR, Hanford Reach National Monument/Saddle Mountain NWR, McNary NWR, Umatilla NWR, Cold Springs NWR, McKay NWR, Conboy NWR and Toppenish NWR.

The Mid-Columbia River NWRC shares common ecological elements between the different refuges. Vegetation, wildlife and wildland fuels are generally very similar between the refuges with the exception of Conboy NWR.

The Mid-Columbia River NWRC fire program serves the 8 refuges (Columbia NWR, Toppenish NWR, Cold Springs NWR, McKay NWR, Umatilla NWR, McNary NWR, Hanford NWR and Conboy NWR). The Mid-Columbia River NWRC consists of one Type 4 Engine (8oo gallons), one Type 5 Engine (500 gallons), one Type 6 Engine (300 gallons), and one Type 3 Fire Boat. The staffing consists of a Fire Management Officer (FMO), an Assistant Fire Management Officer (AFMO), 2 Fire Operations Specialist (FOS), 3 Engine Captains and a seasonal staff of 9. One FOS and Type 5 Engine is stationed at Columbia NWR in Othello, WA, along with 3 seasonal firefighters. The rest of the staff (FMO, AFMO, FOS and 6 seasonals) is stationed at McNary NWR. The complex responds to an average of 70 fires a year and burns approximately 1000 – 2000 acres a year in both mechanical and prescribed fire treatment.

Cooperative Agreements: The Mid - Columbia River NWRC has cooperative agreements with Franklin County Fire Districts 3 and 4 and City of Pasco Fire Department. Pending and

proposed Memorandums of Understanding's with Franklin County Fire Districts 1 and 5, Franklin County Emergency Services and City of Connell are in the works. The Mid-Columbia River NWRC also has cooperative agreements with: Adams County District 5; Benton County Districts 1, 2, 3, 4, and 6; Cities of College Place, Kennewick and Richland; Grant County Districts 4, 8, 10 and 11; the Hanford Fire Department; and Walla Walla County Districts 5 and 6.

Washington Department of Natural Resources

District Summary: The Washington Department of Natural Resources (DNR) is the largest on-call fire department in the State with 1,200 permanent and temporary employees that fight fire on more than 12 million acres of private and state-owned forest lands. The DNR's fire protection and safety equipment requirements help local fire districts respond to wildfires. The DNR also works with the National Weather Service to provide the fire weather forecasts and fire precaution levels that firefighters, landowners, and forest industry rely on.

The Washington DNR does not have resources directly assigned to Franklin County. The DNR's Northwest Region has 8-10 Type 5 and 6 initial attack engines staffed and available during the fire season in addition to air resources. These resources as well as others statewide are available to Franklin County as they are available.

Cooperative Agreements in Franklin County: Unknown.

****NOTE: Washington DNR does not respond to structure fires.****

Bureau of Land Management

Spokane District Mission Statement: The mission of the Spokane District is to share our unique capability and interest in sustaining the full diversity of natural and cultural landscapes across Washington State and invite their discovery and use. This includes protecting the natural resources, such as water for fish and wildlife; preserving environmental and cultural values on the lands they manage; providing for multiple uses including some commercial activities; and enhancing opportunities for safe and enjoyable outdoor recreation. The Spokane District also assesses energy and mineral resources and works to ensure that their development is in the best interest of the public. Another major responsibility is to ensure consideration of Tribal interests and administration the Department of Interior's trust responsibilities for American Indian Reservation communities.

District Summary: Up through the 1970's, BLM's policy was to divest ownership of all federal public (BLM) lands in the state of Washington. But in 1980, at the height of the Sage Brush Rebellion (a social movement to give control over federal lands to the states and local authorities), Washington voted to have the public lands remain under federal ownership and management. In the 1980 general election, the state put a measure on the ballot asking voters if the state constitution should "be amended to provide that the state no longer disclaim all rights to unappropriated federal public lands." Approximately 60% of the people and the majority in every county voted no, signaling to BLM that there was strong support for continued federal management of the public lands in the state.

In response to this vote, the Director of BLM approved a proposal by the District to begin a process of consolidating the scattered BLM lands around the state. Today the Spokane District BLM manages nearly 24,000 acres in Franklin County for multiple uses, providing wildfire protection, suppression, support, and training for the BLM managed lands and other federal/state/county agencies.

The Spokane District Fire Management Program currently consists of two type six wildland engines (300 gallons) with two full time Engine Captains, four engine crew members, one ten person hand crew, one Fuels Technician, Seasonal Dispatcher, Assistant Fire Management Officer (AFMO), and a Fire Management Officer (FMO). The hand crew and one engine is stationed in Spokane at the District office and the other in Wenatchee at the field office. There are approximately 16 other specialist (staff) from across the district that assist the Fire Management Program in wildland and/or prescribed fire efforts. With the District's scattered ownership pattern, the engines are usually on scene after initial attack forces have arrived. Our engines and personnel are available for off District and out of state fire assignments that aide in support, training, and experience.

Fire Protection Issues

The following sections provide a brief overview of the many difficult issues currently challenging Franklin County in providing wildland fire safety to citizens. These issues were discussed at length both during the committee process and at the public meetings.

Address Signage

The ability to quickly locate a physical address is critical in providing services in any type of emergency response. Accurate road address and address signage is fundamental to ensuring the safety and security of Franklin County residents. Currently, there are numerous areas throughout the county lacking road signs, address markers, or both. Signage throughout the County needs to be updated in order to assure visibility and quick location by emergency responders.

Coordination with State and Federal Agencies

Efforts are being created to improve communication between local fire departments and the federal agencies through agreements and sharing communication plans. This presents a problem when there is confusion on who has initial attack responsibilities on federal lands and what restrictions are imposed by the jurisdictional agency responsible for fire protection.

Urban and Suburban Growth

One challenge Franklin County faces is the large number of houses in the urban/rural fringe. Since the 1970s, a segment of Washington's growing population has expanded further into traditional rural or resource lands. The “interface” between urban and suburban areas and the resource lands created by this expansion has produced a significant increase in threats to life and property from fires and has pushed existing fire protection systems beyond original or current design or capability. Franklin County has a low number of Firewise Communities; therefore, there are many property owners within the interface that are not aware of the problems and threats they face. Furthermore, human activities increase the incidence of fire ignition and potential damage.

Rural Fire Protection

People moving from mainland urban areas to the more rural parts of Franklin County, frequently have high expectations for structural fire protection services. Often, new residents do not realize that the services provided are not the same as in an urban area. The diversity and amount of equipment and the number of personnel can be substantially limited in rural areas. Fire protection may rely more on the landowner’s personal initiative to take measures to protect his or her property. Furthermore, subdivisions on steep slopes and the greater number of homes exceeding 3,000 square feet are also factors challenging fire service organizations. In the future, public education and awareness may play a greater role in rural or interface areas. Great improvements in fire protection techniques are being made to adapt to large, rapidly spreading fires that threaten large numbers of homes in interface areas.

Debris Burning

Local burning of yard debris is highly regulated in Franklin County. Permit burns in Franklin County are based on the DNR cycle, while burn bans are a locally-based decision determined by fuel moistures (see Fire District Summaries for more information on burning). Some people still burn outside of the designated time frame, and escaped debris fires impose a very high fire risk to neighboring properties and residents. It is likely that regulating this type of burning will always be a challenge for local authorities and fire departments; however, improved public education regarding the County's burning regulations and permit system as well as potential risk factors would be beneficial.

Pre-planning in High Risk Areas

Although conducting home, community, and road defensible space projects is a very effective way to reduce the fire risk to communities in Franklin County, recommended projects cannot all occur immediately and many will take several years to complete. Thus, developing pre-planning guidelines specifying which and how local fire agencies and departments will respond to specific areas is very beneficial. These response plans should include assessments of the structures, topography, fuels, available evacuation routes, available resources, response times, communications, water resource availability, and any other factors specific to an area. All of these plans should be available to the local fire departments as well as dispatch personnel.

Conservation Reserve Program Fields

Since the introduction of the CRP by the federal government, many formerly crop producing fields have been allowed to return to native grasses. CRP fields are creating a new fire concern all over the west. As thick grasses are allowed to grow naturally year after year, dense mats of dead plant material begin to buildup. Due to the availability of a continuous fuel bed, fires in CRP fields tend to burn very intensely with large flame lengths that often jump roads or other barriers, particularly under the influence of wind. Many landowners and fire personnel are researching allowable management techniques to deal with this increasing problem.

Currently, large blocks of land as well as scattered parcels in Franklin County are enrolled in the CRP program. Hundreds of acres of continuous higher fuel concentrations as well as limited access to these areas have significantly increased the potential wildfire risk in these areas. Many CRP landowners are willing to conduct hazardous fuel reduction treatments to lessen the fire risk; however, they are often limited by the regulations of the CRP program.

Due to the difficulties involved with conducting fuel reduction projects on CRP land as well as the enormity of the task in Franklin County, the Community Wildfire Protection Plan steering committee has recommended disking fuel breaks adjacent to CRP land wherever possible. The goal is to lower the intensity of a wind-driven CRP fire before it threatens homes and other resources.

Volunteer Firefighter Recruitment

The rural fire departments in Franklin County are predominantly dependent on volunteer firefighters. Each district spends a considerable amount of time and resources training and equipping each volunteer, with the hope that they will continue to volunteer their services to the department for at least several years. One problem that all volunteer-based departments encounter is the diminishing number of new recruits. As populations continue to rise and more and more people build homes in high fire risk areas, the number of capable volunteers has gone down. In particular, many departments have difficulty maintaining volunteers available during regular work day hours (8am to 5pm).

One of the goals of this CWPP is to assist local fire departments and districts with the recruitment of new volunteers and retention of trained firefighters. This is a very difficult task, particularly in small, rural communities that have a limited pool; however, providing departments with funding for training, safety equipment, advertising, and possibly incentive programs will help draw more local citizens into the fire organizations.

Communication

There are several communication issues being addressed in Franklin County. Many of the emergency responders have identified areas of poor reception for both radios and cell phones. The lack of communication between responders as well as with central dispatch significantly impairs responders' ability to effectively and efficiently do their job as well as lessens their safety. The conversion to a narrow band communication system exacerbated these issues and require numerous additional repeaters to be installed.

On a smaller scale, many subdivisions or unincorporated population centers have identified the need to improve emergency communication between residents. In an emergency situation, there is no existing way of notifying each resident in an area of the potential danger, the need for evacuation, etc. Many groups of homeowners have begun to establish phone trees and contact lists in order to communicate information at the individual scale; however, this is not being done in all of the high wildfire risk areas within the County.

Communication is a central issue for the planning committee; thus, numerous recommendations targeting the improvement of communications infrastructure, equipment, and pre-planning have been made.

Water Resources

Nearly every fire district involved in this planning process indicated the need to develop additional water resources in several rural areas. Developing water supply resources such as cisterns, dry hydrants, drafting sites, and/or dipping locations ahead of an incident is considered a force multiplier and can be critical for successful suppression of fires. Pre-developed water

resources can be strategically located to cut refilling turnaround times in half or more, which saves valuable time for both structural and wildland fire suppression efforts.

Invasive Species

Fire behavior and fire regimes have been altered due to the proliferation of cheatgrass (*Bromus tectorum*) and other invasive species. Cheatgrass has a very fine structure, tends to accumulate litter, and dries completely in early summer, thus becoming a highly flammable, often continuous fuel.[35]

Public Wildfire Awareness

As the potential fire risk in the wildland urban interface continues to increase, it is clear that fire service organizations cannot be solely responsible for protection of lives, structures, infrastructure, ecosystems, and all of the intrinsic values that go along with living in rural areas. Public awareness of the wildland fire risks as well as homeowner accountability for the risk on their own property is paramount to protection of all the resources in the wildland urban interface.

The continued development of mechanisms and partnerships to increase public awareness regarding wildfire risks and promoting "do it yourself" mitigation actions is a primary goal of the planning committee as well as many of the individual organizations participating on the committee.

Current Wildfire Mitigation Activities

Many of the county's fire departments and agencies are actively working on public education and homeowner responsibility by visiting neighborhoods and schools to explain fire hazards to citizens. Often, they hand deliver informative brochures and encourage homeowners to have their driveways clearly marked with their addresses to ensure more rapid and accurate response to calls and better access.

Firewise

"Over the past century, America's population has nearly tripled, with much of the growth flowing into traditionally natural areas. These natural, unprotected settings are attracting more residents every year. This trend has created an extremely complex landscape that has come to be known as the wildland urban interface: a set of conditions under which a wildland fire reaches beyond trees, brush, and other natural fuels to ignite homes and their immediate surroundings. Consequently, in nearly all areas of the country, the wildland urban interface can provide conditions favorable for the spread of wildfires and ongoing threats to homes and people. Many individuals move into these landscapes with urban expectations. They may not recognize wildfire hazards or might assume that the fire department will be able to save their home if a

[35] USDA online database. http://www.fs.fed.us/database/feis/plants/graminoid/brotec/all.html#REFERENCES Accessed December, 2013.

wildfire ignites. However, when an extreme wildfire spreads, it can simultaneously expose dozens — sometimes hundreds — of homes to potential ignition. In cases such as this, firefighters do not have the resources to defend every home. Homeowners who take proactive steps to reduce their homes' vulnerability have a far greater chance of having their homes withstand a wildfire. The nation's federal and state land management agencies and local fire departments have joined together to empower homeowners with the knowledge and tools to protect their homes through the National Firewise Communities Program. Firewise Communities is designed to encourage local solutions for wildfire safety by involving firefighters, homeowners, community leaders, planners, developers, and others in efforts to design, build, and maintain homes and properties that are safely compatible with the natural environment. The best Firewise approach involves a series of practical steps that help individuals and community groups work together to protect themselves and their properties from the hazard of wildfire. Using at least one element of a Firewise program and adding other elements over time will reduce a homeowner's and a community's vulnerability to fire in the wildland/urban interface. Wildland fires are a natural process. Making your home compatible with nature can help save your home and, ultimately, your entire community during a wildfire."[36]

Fire Adapted Communities (FAC)

"Fire Adapted Communities are neighborhoods located in wildfire-prone areas that can survive wildfire with little or no assistance from firefighters. During a wildfire, FACs reduce the potential for loss of human life and injury, minimize damage to homes and infrastructure and reduce firefighting costs. This program offers information, promotional materials and articles that can be customized for your area. This program also offers videos and a display system that is available for use at community events, meetings, etc."[37]

[36] http://www.firewise.org/Information/Who-is-this-or/Homeowners/~/media/Firewise/Files/Pdfs/Booklets%20and%20Brochures/BrochureCommunitiesCompatibleNature.pdf. Accessed June, 2012.

[37] Living with Fire website available at: http://www.livingwithfire.info/fire-adapted-communities. Accessed May, 2014.

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Chapter 5

Landscape Risk Assessments

The following description was taken out of the 2008 Franklin County Growth Management Comprehensive Plan.

Franklin County is located in the south central part of the State of Washington. It is bounded on the west and separated from Benton County by the Columbia River. On the south and east the Snake River and its tributary, the Palouse River, separate it from Walla Walla County. On the north Grant and Adams Counties bound it. The area is arid to semiarid, receiving an average rainfall of about six to seven inches per year.

The area averages about 10.3 days of snowfall and 7.5 days of rainfall annually. The median monthly temperature ranges from a low of 30.6 degrees Fahrenheit in January to a July high of 75.7 degrees Fahrenheit. High wind velocities, with peak gusts as high as 70 mph or higher, can be expected at any time of the year.

Franklin County is part of what is referred to as the Columbia Basin Province. The County contains many canyon and cliff features such as Palouse Canyon, Juniper Dunes wilderness, and Devils Canyon as well as unique rock formations.

The County lies at the south end of the Channel Scablands. The geology of Franklin County was formed by alternate volcanism and flooding. Three of the five geological formations, which characterize the entire Columbia River Basalt Group, occur in Franklin County.

Franklin County can be characterized as a level to steep loessial upland steppe zone. Elevations range from about 345 feet above sea level at the southernmost part of the County to over 1,600 feet in the northeastern part.

Even though rainfall amounts are small, the moisture that does fall escapes evaporation during winter months and seeps deeply into the soil. This provides water to sustain vigorous growth in the spring. The upland loams are dominated by bluebunch wheatgrass, Idaho fescue, and Sandberg's bluegrass (*Poa Secunda*). The sand soils support Indian ricegrass (*Achnatherum hymenoides*) and sand dropseed (*Sporobolus cryptandrus*).

The remainder of the area is classified as “shrubsteppe” and is characterized by various sagebrush species. Dominance over much of the region is by nonnative cheatgrass. Because of the turbulent floods that inundated the area, the soils tend to be thin and stony.

The varied terrain and major river environments that cut through the steppe region of Franklin County create many unique habitats for wildlife. Areas such as Scooteney Lake, Eagle Lake, the Lower Palouse, and the Snake River and Snake River Island are some of those. The Washington Environment Atlas lists over 35 important species of birds and five species of mammals, which range over the area. These include sage grouse, scaled quail, peregrine falcon, and coyote, among others.

The Columbia and Snake Rivers are an important ecosystem for Franklin County. The Columbia River between McNary Pool and Priest Rapids Dam is the only remaining free flowing segment in Washington, and the last spawning grounds of the fall Chinook salmon (*Oncorhynchus tshawytscha*). About 80 percent of the Great Basin Canada goose (*Branta canadensis*) population nest and live most of the year in the Columbia River region, which also provide wintering grounds for the rare giant Canada goose (*Branta canadensis maxima*).

Cover vegetation and wildland fuels exhibited across the county have been influenced by massive geologic events during the Pleistocene era that scoured and shifted the earth's surface leaving areas of deep rich soil interspersed with rocky canyons and deep valleys. In addition to the geological transformation of the land, wildland fuels vary within a localized area based on slope, aspect, elevation, management practices, and past disturbances. Geological events and other factors have created distinct landscapes that exhibit different fuel characteristics and wildfire concerns.

In order to facilitate a mutual understanding of wildfire risks specific to commonly known areas in the county, the landscape-level wildfire risk assessments in the following sections are based on four predominant landscape types that exhibit distinct terrain and wildland fuels. The three landscapes identified for the assessments are: agricultural lands, shrub steppe lands, and riparian areas. These landscapes, although intermixed in some areas, exhibit specific fire behavior, fuel types, suppression challenges, and mitigation recommendations that make them unique from a planning perspective.

Overall Fuels Assessment

The gentle terrain that dominates Franklin County facilitates extensive farming and ranching operations. Agricultural fields occasionally serve to fuel a fire after curing; burning in much the same manner as short to tall grassy fuels. Fires in grass and rangeland fuel types tend to burn at relatively moderate intensity with moderate flame lengths, rapid rates of spread, and short-range spotting. Common suppression techniques and resources are generally quite effective in this fuel type. Homes and other improvements can be easily protected from direct flame contact and radiant heat through adoption of precautionary measures around structures.

Rangelands with a significant shrub component will have much higher fuel loads with greater spotting potential than grass and agricultural fuels. Although fires in agricultural and rangeland fuels may not present the same control problems as those associated with large, high intensity fires in timber, they can cause significant damage if precautionary measures have not been taken prior to a fire event. Wind driven fires in these fuel types spread rapidly and can be difficult to control. During extreme drought and when pushed by high winds, fires in agricultural and rangeland fuels can exhibit extreme rates of spread, which complicates suppression efforts.

Riparian areas in arid environments often have a higher amount of fuel loading due to the relatively abundant water supply. Vegetation tends to be more abundant and robust in these areas. Fuel loading often compounds year after year as new growth replaces old growth.

Deciduous trees and shrubs are common along waterways and contribute to on the ground fuel loads as they lose their leaves every year. Riparian areas experience a higher amount of recreation use due to various outdoor opportunities (fishing, camping, swimming, etc.). The increased activity may lead to unusually high amounts of ignitions.

Overall Mitigation Activities

There are many specific actions that will help improve safety in a particular area; however, there are also many potential mitigation activities that apply to all residents and all fuel types. General mitigation activities that apply to all of Franklin County are discussed below while area-specific mitigation activities are discussed within the individual landscape assessments.

The safest, easiest, and most economical way to mitigate unwanted fires is to stop them before they start. Generally, prevention actions attempt to prevent human-caused fires. Campaigns designed to reduce the number and sources of ignitions can take many forms. Traditional "Smokey Bear" type campaigns that spread the message passively through signage can be quite effective. Signs that remind people of the dangers of careless use of fireworks, burning when windy, and leaving unattended campfires have been effective. Fire danger warning signs posted along access routes remind residents and visitors of the current conditions. It's impossible to say just how effective such efforts actually are; however, the low costs associated with posting of a few signs is inconsequential compared to the potential cost of fighting a fire.

Burn Permits: Washington State Department of Natural Resources is the primary agency issuing burn permits in forested areas of the state. Washington Department of Ecology (DOE) is the primary agency issuing burn permits for improved property and agricultural lands. All DOE burn permits are subject to fire restrictions in place with WA DNR & local fire protection districts. Washington DNR has a general burning period referred to as "Rule Burn" wherein a written burn permit is not required in low to some moderate fire dangers.

The timeframes for the Rule Burn are from October 16th to June 30th. Washington DNR allows for Rule Burns to be ten foot (10') piles of forest, yard, and garden debris. From July 1st to October 15th if Rule Burns are allowed, they are limited to four foot (4') piles.

Defensible Space: Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Franklin County must be made aware that home defensibility starts with the homeowner. Once a fire has started and is moving toward a structure or other valued resources, the probability of that structure surviving is largely dependent on the structural and landscaping characteristics of the home. "Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Residents of Franklin County should be encouraged to work with local fire departments and fire management agencies within the county to complete individual home site evaluations. Home defensibility steps should be enacted based on the results of these evaluations. Beyond the

homes, forest management efforts must be considered to slow the approach of a fire that threatens a community.

Evacuation Plans: Development of community evacuation plans are necessary to assure an orderly evacuation in the event of a threatening wildland fire. Designation and posting of escape routes would reduce chaos and escape times for fleeing residents. Community safety zones should also be established in the event of compromised evacuations. Efforts should be made to educate homeowners through existing homeowners associations or creation of such organizations to act as conduits for this information.

Accessibility: Also of vital importance is the accessibility of the homes to emergency apparatus. If a home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by homeowner actions prior to the event. In many cases, homes' survivability can be greatly enhanced by following a few simple guidelines to increase accessibility such as widening or pruning driveways and creating a turnaround area for large vehicles.

Fuels Reduction: Recreational facilities such as campgrounds and boat launches along Columbia and Snake Rivers should be kept clean and maintained. In order to mitigate the risk of an escaped campfire, escape-proof fire rings and barbeque pits should be installed and maintained. Surface fuel accumulations in shrublands can be kept to a minimum by periodically conducting thinning or clearing, and possibly controlled burns. Other actions that would reduce the fire hazard would be creating a fire resistant buffer along roads and power line corridors and strictly enforcing fire-use regulations.

Emergency Response: Once a fire has started, how much and how large it burns is often dependent on the availability of suppression resources. In most cases, rural fire departments are the first to respond and have the best opportunity to halt the spread of a wildland fire. For many districts, the ability to reach these suppression objectives is largely dependent on the availability of functional resources and trained individuals. Increasing the capacity of departments through funding and equipment acquisition can improve response times and subsequently reduce the potential for resource loss.

Other Activities: Other specific mitigation activities are likely to include improvement of emergency water supplies, access routes, and management of vegetation along roads and power line right-of-ways. Furthermore, building codes should be revised to provide for more fire-conscious construction techniques such as using fire resistant siding, roofing, and decking in high risk areas.

Agricultural Landscape Risk Assessment

The agricultural landscape is widespread across Franklin County. Franklin County is the fifth highest wheat and apple producing county in the state. Other crops include cherries, barley, and hay as well as extensive areas of fallow land set aside in the CRP (Conservation Reserve

Program). Most of these crops are vulnerable to wildland fire at certain times of the year. The agriculture landscape is the predominant cover vegetation and fuel type throughout the county, particularly in the central portion. Interspersed throughout this landscape are stream channels and rocky scabland areas. Landownership in the agricultural landscape is predominantly private with many sections owned by the State of Washington and scattered federal holdings. The major populated centers within this landscape type include Eltopia, Mesa, and Connell. Other rural development found throughout the agricultural landscape includes individual farms, small subdivisions, railroad sidings and grain elevators. Development is widely distributed. New development occurs primarily near communities and along major roads. Occasionally farmland is subdivided between family members for new home sites or for development of new farming facilities. Most of the pressure for multi-housing subdivisions occurs in close proximity to existing towns. In nearly all developed areas, structures are in close proximity to vegetation that becomes a significant fire risk at certain times of the year.

Wildfire Potential

Wildfire potential in the agricultural landscape is moderate in the rural farmland and moderate to high in the shrubby draws and waterways, pastures, and scattered patches of scabland. Virtually all of the populated areas within the agricultural landscape face similar challenges related to wildfire control and opportunities for fuels mitigation efforts. Farming and ranching activities have the potential to increase the risk of a human-caused ignition. Large expanses of crops, CRP, rangeland or pasture provide areas of continuous fuels that may threaten homes and farmsteads. Under extreme weather conditions, escaped fires in these fuels could threaten individual homes or a town site; however, this type of fire is usually quickly controlled. Clearings and fuel breaks disrupt a slow moving wildfire enabling suppression before a fire can ignite heavier fuels. High winds increase the rate of fire spread and intensity of crop and rangeland fires. It is imperative that homeowners implement fire mitigation measures to protect their structures and families prior to a wildfire event in these areas.

Wildfire risk in the agricultural landscape is at its highest during late summer and fall when crops are cured and daily temperatures are at their highest. A wind-driven fire in agricultural fuels or dry native fuel complexes would produce a rapidly advancing, but variable intensity fire. Fires burning in some types of unharvested fields would be expected to burn more intensely with larger flame lengths due to the greater availability of fuels resulting from the higher productivity of the vegetation. Fields enrolled in the CRP or set aside for wildlife habitat can burn very intensely due to an increased amount of fuel build-up from previous years' growth. Fires in these types of fuels are harder to extinguish completely due to the dense duff layer, often leading to hold over fires that may reemerge at a later date causing additional fire starts.

The eastern half of Franklin County is a mosaic of dryland agriculture, CRP/SAFE (State Acres for Wildlife Enhancements) acres and shrub steppe. A majority of the farmers use a production practice called summer fallow to allow soil moisture to increase by leaving fields fallow for a full crop year. This allows the wheat producers to rotate half their cropland each year: one year

it's planted to wheat and then next year it lies fallow. The relative threat level in this agricultural area increases in July and August because of significant wildfire hazard. Relative humidity is usually lower during this time, afternoon winds tend to increase, and the standing grain is cured to the point where it readily ignites. The ripened wheat, hot daytime temperatures, and erratic winds can produce extreme fire behavior and long flame lengths which can easily spread to adjacent rangelands or CRP/SAFE fields. These fires tend to burn very quickly and intensely. Summer fallow fields act as a natural barrier during these wildfires so when the fire reaches these areas, it will burn itself out or the fire slows enough that it is easily controlled. Irrigated ag lands are located primarily in the western half of the County near the Columbia River and have been given a much lower threat level than the dryland agriculture.

Ingress-Egress

Interstate 182 and State Route 260 are the primary emergency access routes traveling east to west through the county. U.S. Highway 395, State Route 17, and Highway 12 are the primary access routes running north and south. County roads as well as rural ranch access roads are well distributed throughout most of the county often following section lines or circumnavigating the multitude of draws and canyons. In remote rural areas, county roads often change from a paved or maintained gravel surface to unimproved primitive roads making access possible only during certain times of the year. Limited access within remote areas and a lack of maintenance on existing travel routes, increases fire suppression response time and has a direct effect on fire spread leading to increased fire size and destructive potential.

There are a few bridges in the agricultural landscape of Franklin County. Bridge load rating signs are mostly in place for the existing bridges and do not impose a limitation to access for firefighting equipment.

Infrastructure

Urban residents throughout most of agricultural landscape area have municipal water systems, which includes a network of public fire hydrants. New development is required by the International Fire Code to have hydrant placement in their development plan. Subdivisions and development outside municipal boundaries typically rely on community water systems or multiple-home well systems.

Above ground, high voltage transmission lines cross the planning area in many directions in corridors cleared of most vegetation, which provides for a defensible space around the power line infrastructure and may provide a control point for fire suppression, if well maintained. Local public electrical utility lines are both above and below ground traveling through back yards and along roads and highways. Many of these lines are exposed to damage from falling trees and branches. Power and communications may be cut to some of these during a wildfire event.

Public utility lines travel both above and below ground along roads and cross-country to remote facilities. Many irrigation systems and wells rely on above ground power lines for electricity. These power poles pass through areas of dense wildland fuels that could be destroyed or compromised in the event of a wildfire. Cell phone service is well established in most parts of the county with only limited dead zones.

Fire Protection

The agricultural landscape type is present in all of the fire districts in Franklin County. The fire districts provide initial wildland fire protection. Mutual aid agreements between fire districts supplement wildland fire protection when needed. Only the Pasco Fire Department, Connell Fire Department, and Franklin County District #3 and District #5 have structure fire capabilities within the County. The DNR does not provide structural fire suppression, but does provide wildfire protection on non-forested land that threatens DNR-protected lands. The BLM provides wildfire protection on their ownership within Franklin County. BLM also does not provide structural fire suppression.

Potential Mitigation Activities

Mitigation measures needed in the agricultural landscape include maintaining a defensible space around structures and access routes that lie adjacent to annual crops and other wildland fuels. Around structures, this includes maintaining a green or plowed space, mowing weeds and other fuels away from outbuildings, pruning and/or thinning larger trees, using fire resistant construction materials, and locating propane tanks, fuel tanks, and firewood away from structures. Roads and driveways accessing rural residents may or may not have adequate road widths and turnouts for firefighting equipment depending on when the residences were constructed. Performing road inventories in high risk areas to document and map their access limitations will improve firefighting response time and identify areas in need of enhancement. Primitive or abandoned roads that provide key access to remote areas should also be maintained in such a way that enables access for emergency equipment so that response times can be minimized. Roads can be made more fire resistant by frequently mowing along the edges or spraying weeds to reduce the fuels. Aggressive initial attack on fires occurring along travel routes will help ensure that these ignitions do not spread to nearby home sites. Designing a plan to help firefighters control fires in CRP lands that lie adjacent to agricultural crops would significantly lessen a fire's potential of escaping to the higher value resource. Mitigation associated with this situation might include installing fuel breaks or plowing a fire resistant buffer zone around fields and along predesigned areas to tie into existing natural or manmade barriers or implementing a prescribed burning program during less risky times of the year.

Maintaining developed drafting sites, increasing access to water from irrigation facilities, and developing other water resources throughout the agricultural landscape will increase the effectiveness and efficiency of emergency response during a wildfire.

Shrub/Steppe Landscape Risk Assessment

The shrub/steppe is a dominant landscape in Franklin County, although much of it has been covered by irrigated farm fields. This unique geological feature was created by ice age floods that swept across eastern Washington and down the Columbia River Plateau periodically during the Pleistocene era. Typical vegetation found throughout this landscape is grass, mixed shrub and sagebrush with areas of wetlands, cultivated crops, and CRP fields. The shrub/steppe landscape prevails in the eastern portion of the county and along the major waterways of the Palouse and Snake Rivers. Landownership is predominantly private with large acreages owned by the U.S. Fish & Wildlife Service and the Bureau of Land Management. State ownership includes school sections 16 and 36, and the Sunnyside and Snake River Wildlife Area managed by the Washington Department of Fish and Wildlife. BLM ownership includes large continuous holdings of rangeland with an off-road vehicle park and wilderness area. Private landownership includes cattle ranches and in holdings of cultivated farmland and CRP fields. Major population centers within the shrub/steppe landscape include Connell, Kahlotus, and Mesa. New development occurs primarily near communities and along major roads. Most of the pressure for multi-housing subdivisions occurs in close proximity to the towns. Rural development is widely dispersed consisting primarily of isolated ranching headquarters, home sites, irrigation systems, and developed springs or wells. In nearly all developed areas, structures are in close proximity to vegetation that becomes a significant fire risk at certain times of the year.

Wildfire Potential

The shrub/steppe landscape has a moderate to high wildfire potential due to a characteristically high occurrence of shrubby fuels mixed with grass, sloping terrain and somewhat limited access. Large expanses of open rangeland or pasture provide a continuous fuel bed that could, if ignited, threaten structures and infrastructure under extreme weather conditions. Cattle grazing will often reduce fine, flashy fuels reducing a fire's rate of spread; however, high winds increase the rate of fire spread and intensity of rangeland fires. A wind-driven fire in dry, native fuel complexes on variable terrain produces a rapidly advancing, very intense fire with large flame lengths, which enables spotting ahead of the fire front.

Wildfire risk in the shrub/steppe landscape is at its highest during summer and fall when daily temperatures are high and relative humidity is low. Fires burning in some types of unharvested fields would be expected to burn more intensely with larger flame lengths due to the greater availability of fuels. Fields enrolled in conservation programs or managed for wildlife habitat can burn very intensely due to an increased amount of fuel build-up from previous years' growth. Fires in this fuel type are harder to extinguish completely due to the dense duff layer, which often leads to hold-over fires that may reemerge at a later date causing additional fire starts.

Ingress-Egress

Interstate 182 and State Route 260 are the primary emergency access routes traveling east to west through the county. U.S. Highway 395, State Route 17, and Highway 12 are the primary

access routes running north and south. County roads as well as rural ranch access roads are well distributed throughout most of the county often following section lines or circumnavigating the multitude of draws and canyons. In remote rural areas, county roads often change from a paved or maintained gravel surface to unimproved primitive roads making access possible only during certain times of the year. Limited access within remote areas and a lack of maintenance on existing travel routes, increases fire suppression response time and has a direct effect on fire spread leading to increased fire size and destructive potential.

There are a few bridges in the shrub/steppe landscape of Franklin County. Bridge load rating signs are mostly in place for the existing bridges and do not impose a limitation to access for firefighting equipment.

Infrastructure

Residents living in the populated centers and most subdivisions surrounding the towns have access to municipal water supply systems with public fire hydrants. Outside these areas, development relies on individual, co-op, or multiple-home well systems. Creeks, ponds, and developed drafting areas provide water sources for emergency fire suppression in the rural areas to a limited extent. Irrigation systems are capable of providing additional water supply for suppression equipment on a limited basis. Additional water resources distributed and documented throughout the agricultural landscape are needed to provide water for fire suppression.

Public utility lines travel both above and below ground along roads and cross-country to remote facilities. Many irrigation systems and wells rely on above ground power lines for electricity. These power poles pass through areas of dense wildland fuels that could be destroyed or compromised in the event of a wildfire. Cell phone service is well established in most parts of the county with only limited dead zones.

Fire Protection

The shrub/steppe landscape type is present within Franklin County Fire Districts #1and #2. The fire districts provide initial wildland fire protection. Mutual aid agreements between fire districts supplement wildland fire protection when needed. Only the Pasco Fire Department, Connell Fire Department, and Franklin County District #3 and District #5 have structure fire capabilities within the County. The DNR does not provide structural fire suppression, but does provide wildfire protection on non-forested land that threatens DNR-protected lands. The BLM provides wildfire protection on their ownership within Franklin County. BLM also does not provide structural fire suppression.

Potential Mitigation Activities

Mitigation measures needed in the shrub/steppe landscape include maintaining a defensible space around structures and access routes that lie adjacent to wildland fuels. Around structures this includes maintaining a green or plowed space, mowing weeds and other fuels away from

outbuildings, pruning and/or thinning larger trees, using fire resistant construction materials, and locating propane tanks and firewood away from structures. Roads and driveways accessing rural development need to be kept clear of encroaching fuels to allow escape and access by emergency equipment. Performing road inventories in high risk areas and documenting and mapping their access limitations will improve firefighting response time and identify areas in need of improvement. Primitive or abandoned roads that provide key access to remote areas should be maintained to allow access for emergency equipment so that emergency response times are minimized. Designing a plan to help firefighters control fires in conservation lands and wildlife habitat areas will significantly lessen a fire's potential of escaping to other areas. Mitigation associated with this situation might include managed grazing in designated fuel reduction areas, creating fuel breaks, and implementing a prescribed burning program during less risky times of the year.

Additional mitigation activities include installing more water storage sites, improving water access from irrigation facilities, and developing other water resources throughout the landscape. This will increase the effectiveness and efficiency of emergency response during a wildfire.

Riparian Areas Risk Assessment

The riparian landscape occurs in small to large drainages throughout the County. These areas produce high densities of shrubs and grass with scattered deciduous trees due to the relative abundance of water. Upslope from the waterway, vegetation generally resorts back to the typical shrub-steppe fuel type that dominates much of the County. Landownership in this area is mostly privately held parcels with several sections owned by the U.S. Fish & Wildlife Service and the State of Washington. These areas are generally low in population, except for the city of Pasco.

Wildfire Potential

The riparian area landscape has a moderate to high wildfire potential due to a characteristically high fuel load occurrence, terrain that can exhibit a chimney effect, high recreation use, and somewhat limited access. The steep walls contribute to rapid rates of spread by funneling fire up canyon. The high amount of fuel loading, coupled with the chimney effect, could create very intense fires.

Wildfire risk in the riparian area landscape is at its highest during summer and fall when daily temperatures are high and relative humidity is low. Fires burning in some types of riparian vegetation would be expected to burn more intensely with larger flame lengths due to the greater availability of fuels. Some riparian areas occur within narrow walls that would increase the intensity of a wildfire. These areas are not easily accessible which would compound the difficulties during fire suppression efforts. Most firefighters learn early that these areas are dangerous due to the unpredictability of fire behavior.

Ingress-Egress

Interstate 182 and State Route 260 are the primary emergency access routes traveling east to west through the county. U.S. Highway 395, State Route 17, and Highway 12 are the primary access routes running north and south. County roads as well as rural ranch access roads are well distributed throughout most of the county often following section lines or circumnavigating the multitude of draws and canyons. In remote rural areas, county roads often change from a paved or maintained gravel surface to unimproved primitive roads making access possible only during certain times of the year. Limited access within remote areas and a lack of maintenance on existing travel routes, increases fire suppression response time and has a direct effect on fire spread leading to increased fire size and destructive potential.

There are a few bridges in the riparian landscape of Franklin County. Bridge load rating signs are mostly in place for the existing bridges and do not impose a limitation to access for firefighting equipment.

Infrastructure

Unimproved campsites as well as interpretive signs are common in these areas providing recreational users with information and areas to camp. The interpretive signs can assist land managers with educating the public about the risk of wildfire and how to minimize the risk. Providing campers with fire rings keeps fires contained to specific sites and reduces the risk of an escape.

Creeks, ponds, and developed drafting areas provide water sources for emergency fire suppression in the rural areas to a limited extent. Irrigation systems are capable of providing additional water supply for suppression equipment on a limited basis. Additional water resources distributed and documented throughout the agricultural landscape are needed to provide water for fire suppression.

Public utility lines travel both above and below ground along roads and cross-country to remote facilities. Many irrigation systems and wells rely on above ground power lines for electricity. These power poles pass through areas of dense wildland fuels that could be destroyed or compromised in the event of a wildfire. Cell phone service is well established in most parts of the county with only limited dead zones.

Fire Protection

The riparian area landscape type is present in all of the Franklin County fire districts. The fire districts provide initial wildland fire protection. Mutual aid agreements between fire districts supplement wildland fire protection when needed. Only the Pasco Fire Department, Connell Fire Department and Franklin County District #3 and District #5 have structure fire capabilities within the County. The DNR does not provide structural fire suppression, but does provide wildfire protection on non-forested land that threatens DNR-protected lands. The BLM provides

wildfire protection on their ownership within Franklin County. BLM also does not provide structural fire suppression.

Potential Mitigation Activities

The high fuel loading and the narrow canyons are very conducive to rapidly spreading surface fires. During a wildfire event, recreationists would have very little time to evacuate. Therefore, it is very important to educate the public on the dangers of wildfires. The use of campfires, fireworks, and other potential ignition sources should be highly regulated during the fire season, especially in areas adjacent to structures and development. Using escape-proof fire rings and BBQ pits at recreational areas, limiting off-road vehicle use to designated trails, and restricting fireworks will help reduce the potential for an ignition.

Chapter 6

Mitigation Recommendations

Critical to implementation of this Community Wildfire Protection Plan are the identification and implementation of an integrated schedule of action items targeted at achieving a reduction in the number of human caused fires and the impact of wildland fires in Franklin County. This section of the plan identifies and prioritizes potential mitigation actions, including treatments that can be implemented in the county to pursue that goal. As there are many land management agencies and thousands of private landowners in Franklin County, it is reasonable to expect that differing schedules of adoption will be made and varying degrees of compliance will be observed across various ownerships.

The primary land management agencies in Franklin County, specifically the USDI Bureau of Land Management and US Fish and Wildlife Service, Bureau of Reclamation, and Washington Department of Natural Resources are participants in this planning process and have contributed to its development. Where available, their schedule of land treatments have been considered in this planning process to better facilitate a correlation between their identified planning efforts and the efforts of Franklin County.

Franklin County encourages the building of disaster resistance in normal day-to-day operations. By implementing plan activities through existing programs and resources; the cost of mitigation is often a small portion of the overall cost of a project's implementation.

All risk assessments were made based on the conditions existing during 2013. Therefore, the recommendations in this section have been made in light of those conditions. However, the components of risk and the preparedness of the county's resources are not static. It will be necessary to fine-tune this plan's recommendations regularly to adjust for changes in the components of risk, population density changes, infrastructure modifications, and other factors.

Maintenance and Monitoring

As part of the policy of Franklin County, the Community Wildfire Protection Plan will be reviewed at least annually at special meetings of the CWPP steering committee, open to the public and involving all municipalities/jurisdictions, where action items, priorities, budgets, and modifications can be made or confirmed. Amendments to the plan should be documented and attached to the formal plan. Re-evaluation of this plan should be made on the 5th anniversary of its acceptance, and every 5-year period following.

Prioritization of Mitigation Activities

The action items recommended in this chapter were prioritized through a group discussion and voting process. The action items in Tables 6.1 – 6.5 are ranked as "High", "Moderate", or "Low" priorities for Franklin County as a whole. The CWPP committee does not want to restrict

funding to only those projects that are high priority because what may be a high priority for a specific community may not be a high priority at the county level. Regardless, the project may be just what the community needs to mitigate disaster. The flexibility to fund a variety of diverse projects based on varying criteria is a necessity for a functional mitigation program at the county and community level.

Policy and Planning Efforts

Wildfire mitigation efforts must be supported by a set of policies and regulations at the county level that maintain a solid foundation for safety and consistency. The recommendations enumerated here serve that purpose. Because these items are regulatory in nature, they will not necessarily be accompanied by cost estimates. These recommendations are policy related and therefore are recommendations to the appropriate elected officials; debate and formulation of alternatives will serve to make these recommendations suitable and appropriate.

Table 6.1. Action Items in Safety and Policy.

Action Item	Goals Addressed (see page 4)	Responsible Organization	Timeline
6.1.a: Distribute Firewise-type educational brochures with occupancy permit.	**CWPP Goal #1, 2, 4, 6, 7, & 9** High	**Lead:** Planning Department **Support:** Franklin Conservation District	Ongoing
6.1.b: Standardize enforceable outdoor burning ordinance with Benton County.	**CWPP Goal #1, 5, & 9** Moderate	**Lead:** Franklin Co. Fire Marshal **Support:** Franklin County Fire Depts. & Districts	1 year
6.1.c: Fund the development of Fire Danger Rating System signs to be placed throughout the County that are consistent with Benton County.	**CWPP Goal #1, 5, & 9** Moderate	**Lead:** Franklin Co. Fire Marshal **Support:** Franklin County Fire Depts. & Districts	1 year
6.1.d: Plan with pre-triage in mind to speed up handing an incident to a new team.	**CWPP Goal #1, 2, 6, & 9** Moderate	**Lead:** Franklin Co. Emergency Management **Support:** Franklin County Fire Depts. & Districts	2 years
6.1.e: Adopt a County ordinance requiring all existing and new construction to create and maintain "defensible space" around homes.	**CWPP Goal #1, 2, 3, 5, 6, & 9** Moderate	**Lead:** Franklin Co. Commissioners **Support:** Franklin County Fire Depts. & Districts	3 years

Fire Prevention and Education Projects

The protection of people and structures will be tied together closely because the loss of life in the event of a wildland fire is generally linked to a person who could not, or did not, flee a structure threatened by a wildfire or to a firefighter combating that fire. Many of the recommendations in this section involve education and increasing wildfire awareness among Franklin County residents.

Residents and policy makers of Franklin County should recognize certain factors that exist today, the absence of which would lead to increased risk of wildland fires in Franklin County. The items listed below should be acknowledged and recognized for their contributions to the reduction of wildland fire risks:

Shrub/Steppe Management has a significant impact on the fuel composition and structure in Franklin County. The shrub/steppe management programs of the Bureau of Land Management, Bureau of Reclamation, and numerous private landowners in the region have led to a reduction of wildland fuels. Furthermore, shrub/steppe systems are dynamic and will never be completely free from risk. Treated areas will need repeated treatments to reduce the risk to acceptable levels in the long term. Recommended treatments include mechanical thinning of shrubs and/or light prescribed burning to reduce fuel loads. Monitoring invasive species in these areas will also be required.

Table 6.2. Action Items for Fire Prevention, Education, and Mitigation.

Action Item	Goals Addressed (see page 4)	Responsible Organization	Timeline
6.2.a: Implementation of youth and adult wildfire educational programs.	**CWPP Goal #1, 4, 6, & 9** High	**Lead:** Franklin Conservation District and WSU Extension **Support:** Franklin County Fire Districts and local schools	1year
6.2.b: Distribute educational information regarding construction in high risk wildfire areas.	**CWPP Goal #1, 4, 6, & 9** High	**Lead:** Franklin Conservation District and WSU Extension **Support:** Franklin County Fire Districts and local schools	1year
6.2.c: Prepare for wildfire events in high risk areas by conducting home site risk assessments and developing area-specific "Response Plans" to include participation by all affected jurisdictions and landowners.	**CWPP Goal #1, 2, 4, 6, & 9** High	**Lead:** Franklin Conservation District and WSU Extension **Support:** Franklin County Fire Districts	2 years

Table 6.2. Action Items for Fire Prevention, Education, and Mitigation.

Action Item	Goals Addressed (see page 4)	Responsible Organization	Timeline
6.2.d: Work with area homeowner's associations to foster cooperative approach to fire protection and awareness and identify mitigation needs.	**CWPP Goal #1, 2, 4, 6, & 9** High	**Lead:** Franklin Conservation District and WSU Extension **Support:** Franklin County Fire Districts	2 years
6.2.e: Work with WSU Extension, Master Gardeners, and other existing programs to offer firewise landscaping clinics to assist property owners in maintaining fire-resistant defensible space around structures.	**CWPP Goal #1, 4, 6, & 9** Moderate	**Lead:** Franklin Conservation District **Support:** Spokane Master Gardeners and WSU Extension	Ongoing
6.2.f: Develop a range of public education programs to encourage healthy management of natural resources on private property.	**CWPP Goal #1, 4, 6, & 9** High	**Lead:** Franklin Conservation District **Support:** Franklin County Fire Districts, WSU Extension, and BLM	1 year
6.2.g: Review building codes and revise to meet Firewise standards as needed**.**	**CWPP Goal #1, 3, 5, 6, 8, & 9** Low	**Lead:** CWPP Steering Committee **Support:** County Emergency Management and Building & Planning Department	5 years
6.2.h: Develop a Countywide chip day where property owners can have their slash disposed of.	**CWPP Goal #1, 2, 4, 6, & 9** Moderate	**Lead:** Franklin Conservation District **Support:** Franklin Co. Fire Districts	2 years
6.2.i: Locate funding for fuel reduction projects throughout the County, but particularly around Pasco.	**CWPP Goal #1, 2, 4, 6, 7, & 9** Moderate	**Lead:** Franklin Conservation District **Support:** Franklin Co. Fire Districts	3 years
6.2.j: Develop a residential/agriculture burning procedures pamphlet that addresses each Fire District, Pasco, and Connell.	**CWPP Goal #1, 4, 5, 6, & 9** Moderate	**Lead:** Franklin Conservation District **Support:** Franklin Co. Fire Districts	1 year
6.2.k: Fund the existing Fire Prevention/ Public Education team to continue the public information campaign addressing wildland fire, fire safety, Firewise, etc.	**CWPP Goal #1, 4, 5, 6, & 9** Moderate	**Lead:** Franklin Co. Fire Districts **Support:** Franklin Conservation District	1 year then On-going
6.2.l: Provide residents of Connell with a one-time offer to remove debris from select properties (identified by Chief) at no charge to the property owner.	**CWPP Goal #1, 6, & 9** Moderate	**Lead:** Franklin Co. Fire Districts **Support:** Franklin Conservation District	1 year

Infrastructure Enhancements

Critical infrastructure refers to the communications, transportation, power lines, and water supply that service a region. All of these components are important to central Washington and to Franklin County specifically. These networks are, by definition, a part of the wildland urban interface in the protection of people, structures, infrastructure, and unique ecosystems. Without supporting infrastructure, a community's structures may be protected, but the economy and way of life lost. As such, a variety of components will be considered here in terms of management philosophy, potential policy recommendations, and mitigation recommendations.

Table 6.3 Action Items for Infrastructure Enhancement.

Action Item	Goals Addressed (see page 4)	Responsible Organization	Timeline
6.3.b: Map, develop GIS database, and provide signage for onsite water sources such as hydrants, underground storage tanks, and drafting or dipping sites on all ownerships across the county.	**CWPP Goal #1, 2, 6, 8, & 9** High	**Lead:** Franklin County Fire Districts **Support:** Franklin County GIS Dept.	1 year
6.3.d: Develop a program to encourage landowners to put up reflective address signage on their drive to allow firefighters to better locate residences.	**CWPP Goal #1, 2, 6, 8, & 9** High	**Lead:** Planning Department **Support:** Franklin County Fire Districts, BLM	1 year
6.3.e: Develop a program to replace worn out road signage with new reflective road signs to allow firefighters to easily navigate to a wildfire.	**CWPP Goal #1, 2, 6, 8, & 9** High	**Lead:** Franklin County Fire Districts **Support:** CAD GIS Dept.	1 year
6.3.f: Provide funding to create County map books to be placed in all emergency vehicles which will allow emergency responders to navigate across jurisdictions.	**CWPP Goal #1, 6, 8, & 9** Moderate	**Lead:** Franklin County Emergency Department **Support:** Franklin County GIS Dept., Fire Districts	1 year

Resource and Capability Enhancements

There are a number of resource and capability enhancements identified by the rural and wildland firefighting districts in Franklin County. All of the needs identified by the districts are in line with increasing the ability to respond to emergencies and are fully supported by the CWPP steering committee.

The implementation of each action item will rely on either the isolated efforts of the rural fire districts or a concerted effort by the county to achieve equitable enhancements across all of the districts. Given historic trends, individual departments competing against neighboring departments for grant monies and equipment will not necessarily achieve countywide equity.

Table 6.4 Action Items for Resource and Capability Enhancements.

Action Item	Goals Addressed (see page 4)	Responsible Organization	Timeline
6.4.a: Improve departmental capability by establishing a program to increase the retention and recruitment of volunteer firefighters.	**CWPP Goal #1, 4, 6, 7, & 9** High	**Lead:** Franklin County Fire Districts **Support:** Washington DNR, and BLM	Ongoing
6.4.b: Update personal protective equipment for all fire districts in Franklin County and provide training on the importance of proper PPE.	**CWPP Goal #1, 4, 6, 7, & 9** High	**Lead:** Franklin County Fire Districts **Support:** Washington DNR, BLM	Ongoing
6.4.c: Enhance radio availability in each district, link to existing dispatch, improve range within the region, and convert to a consistent standard of radio types.	**CWPP Goal #1, 6, 8, & 9** High	**Lead:** Franklin Dispatch/Information Services **Support:** Franklin County Fire Districts	3 years
6.4.d: Obtain funding to support the Type 3 Communication Trailer including annual maintenance.	**CWPP Goal #1, 6, 8, & 9** High	**Lead:** Franklin County Emergency Management **Support:** Franklin County Fire Districts	1 year / Ongoing
6.4.e: Obtain monitors for hazardous materials, air quality, and hazmat kits to protect citizens should a wildland fire burn into areas were such things are stored.	**CWPP Goal #1, 6, & 9** High	**Lead:** Franklin County Emergency Management **Support:** Franklin County Fire Districts	2 years
6.4.f: Training for Fire Districts including FFT1, Engine Boss, ICS, etc.	**CWPP Goal #1 & 9** High	**Lead:** Region 8 Fire Training Group **Support:** Franklin County Fire Districts, DNR	Ongoing

Table 6.4 Action Items for Resource and Capability Enhancements.

Action Item	Goals Addressed (see page 4)	Responsible Organization	Timeline
6.4.g: Fire District #2 & #5 need fire hose and wildland fire engine upgrades.	**CWPP Goal #1 & 9** High	**Lead:** Franklin County Fire Districts #2 & #5 **Support:** Franklin County Emergency Management	2 years
6.4.h: Upgrade Connell Fire department's firefighting apparatus.	**CWPP Goal #1 & 9** High	**Lead:** Connell Fire Department **Support:** Franklin County Fire Districts	3 years
6.4.i: Fire and EMS training designed for law enforcement needs for County dispatch.	**CWPP Goal #1, 8, & 9** High	**Lead:** Franklin County Emergency Management **Support:** Franklin County Fire Districts	2 years
6.4.j: Upgrade and interlink the County's CAD system to accurately fulfill resource requests.	**CWPP Goal #1, 8, & 9** High	**Lead:** Franklin County Emergency Management **Support:** Franklin County Fire Districts	2 years
6.4.k: Purchase water tenders and Type 3 engines to be used in both rural and suburban settings.	**CWPP Goal #1 & 9** High	**Lead:** Franklin County Fire Districts **Support:** Franklin County Emergency Management	3 years
6.4.l: Support the County Emergency Management activation of the Emergency Operations Center during a large wildland fire and other disasters.	**CWPP Goal #1, 8, & 9** High	**Lead:** Franklin County Fire Districts **Support:** Franklin County Sheriff's Department	Ongoing
6.4.m: Train local firefighters to perform home assessments which will provide home owners with quality advice on how to make their homes defensible.	**CWPP Goal #1, 4, 6, & 9** High	**Lead:** Region 8 Fire Training Group **Support:** Franklin County Fire Districts, DNR	Ongoing

Proposed Project Areas

The following project areas were identified by the CWPP steering committee and from citizens' recommendations during the public meetings. Most of the sites were visited during the field assessment phase. The areas where these projects are located were noted as having multiple factors contributing to the potential wildfire risk to residents, homes, infrastructure, and the ecosystem. Treatments within the project areas will be site specific, but will likely include homeowner education, creation of a wildfire defensible space around structures, fuels reduction, and access corridor improvements. All work on private property will be performed with consent of, and in cooperation with the property owners. Specific site conditions may call for other types of fuels reduction and fire mitigation techniques as well. Defensible space projects may include, but are not limited to thinning, pruning, brush removal, chipping, noncombustible building materials, noncombustible perimeter around structures, and general range health improvements.

Table 6.5. Proposed 5- Year Fuels Reduction Project Areas.

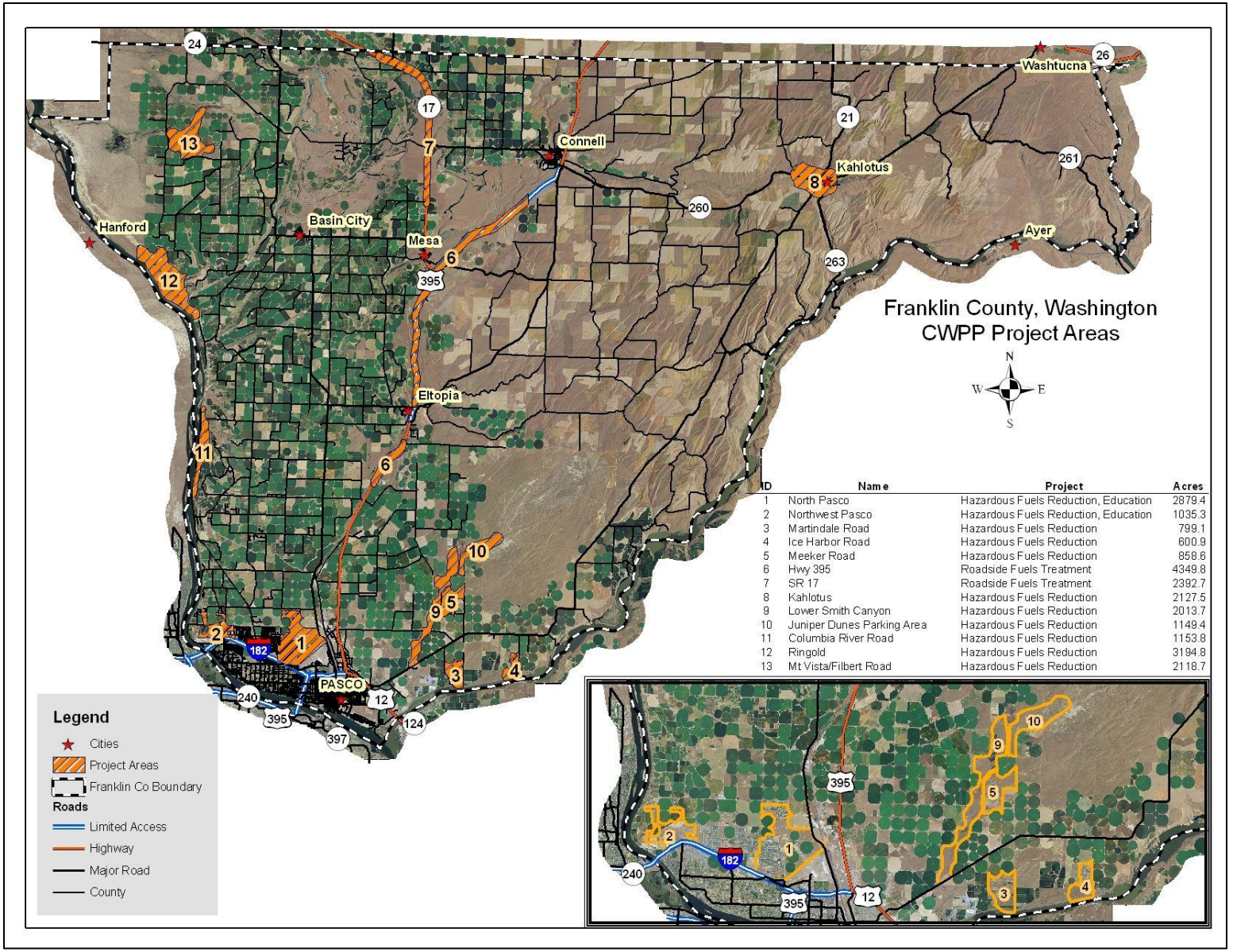
Map Id#	Project Name	# of Acres	# of Structures	Priority
1	North Pasco	2,879	2311	Moderate
2	Northwest Pasco	1,035	494	Low
3	Martindale Road	799	53	High
4	Ice Harbor Road	601	26	Moderate
5	Meeker Road	859	41	Moderate
6	Highway 395	4,350	2	Moderate
7	State Route 17	2,393	3	Moderate
8	Kahlotus	2,128	62	High
9	Lower Smith Canyon	2,014	0	Moderate
10	Juniper Dunes Parking Area	1,149	0	Moderate
11	Columbia River Road	1,154	4	Moderate
12	Ringold	3,195	0	Moderate
13	Mt. Vista/Filbert Road	2,119	0	Moderate
14	Basin City			Moderate

The steering committee does not want to restrict funding to only those projects that are high priority because what may be a high priority for a specific community may not be a high priority at the county or agency level. Regardless, the project may be just what the community needs to mitigate disaster. The flexibility to fund a variety of diverse projects based on varying criteria, landowner participation, and available dollars is a necessity for a functional mitigation program at the county and community level.

During the next 5 years, Franklin County will continue to search for opportunities to complete projects. These projects may include point protection program, chipping programs, educational pamphlets, public relations/education, and Fire Danger Rating System signs for Kahlotus, Fire District #2, and #4.

The Washington Department of Natural Resources, Bureau of Land Management, Conservation District, and/or individual Fire Protection Districts may take the lead on implementation of many of these projects; however, project boundaries were purposely drawn without regard to land ownership in order to capture the full breadth of the potential wildland fire risk. Coordination and participation by numerous landowners will be required for the successful implementation of the identified projects. A map of the Proposed Project Areas is included on the following page.

Figure 6.1. Map of Proposed Projects.



ID	Name	Project	Acres
1	North Pasco	Hazardous Fuels Reduction, Education	2879.4
2	Northwest Pasco	Hazardous Fuels Reduction, Education	1035.3
3	Martindale Road	Hazardous Fuels Reduction	799.1
4	Ice Harbor Road	Hazardous Fuels Reduction	600.9
5	Meeker Road	Hazardous Fuels Reduction	858.6
6	Hwy 395	Roadside Fuels Treatment	4349.8
7	SR 17	Roadside Fuels Treatment	2392.7
8	Kahlotus	Hazardous Fuels Reduction	2127.5
9	Lower Smith Canyon	Hazardous Fuels Reduction	2013.7
10	Juniper Dunes Parking Area	Hazardous Fuels Reduction	1149.4
11	Columbia River Road	Hazardous Fuels Reduction	1153.8
12	Ringold	Hazardous Fuels Reduction	3194.8
13	Mt Vista/Filbert Road	Hazardous Fuels Reduction	2118.7

Representative Fuels Treatment Project Prescriptions

The following project areas were identified during the field assessments and interviews as potentially having several factors contributing to high wildfire risk as well as being representative of the types of projects likely to be pursued for grant funding. The intent is that these project prescriptions be as site specific as possible, but serve as templates for writing prescriptions for similar projects throughout the County. These projects/templates will aid land stewards in applying for grants specific to their property. The chosen project areas do not reflect the highest priority projects identified by the steering committee, but were written for communities with a high level of existing interest in implementation.

- The Columbia River Road project area consists of numerous homes that have been built on a plateau above the Columbia River. Moderate slope exists between the homes and the river with scattered shrubs and grasses. Many homes have irrigated landscaping and noncombustible roofing.
- Highway 395 is a main corridor connecting Interstates 90 and 82 and serves to connect Spokane to the Tri-Cities. This project area crosses numerous ownerships, both private and public. Vegetation along this stretch of road is primarily grass with scattered shrubs. Irrigated agriculture is prevalent on the west side of the highway, while vast acreage of dryland agriculture and CRP extends eastward.
- Martindale is a small cluster of homes nestled within vast acreages of agriculture along the Snake River. Much of the surrounding area is irrigated agriculture but there are significant native grasses and shrubs that extend from the river, through the community, and continues to the northeast.

The project areas were identified without regard for landownership boundaries; thus, site-specific prescriptions will require coordination and approval by the various landowners. The following descriptions provide as much detail as possible regarding the objectives, prescription, and unique nature of each project; however, exact acreages and site plans will be determined after consultation with the affected landowners. The prescriptions described in the following projects may be modified to suit other similar projects, for example the Martindale project may apply to the Pasco project area.

Columbia River Road

This project area encompasses a stretch of the breaks that occur along the Columbia River. Slopes encountered in this project area are moderately steep and extremely unstable as evidenced by the numerous landslides that have occurred over the years. Several homes have been constructed on a bench adjacent to the Columbia River. Dryland and irrigated agriculture exists to the east of this project area. Many of the homes are situated on the break of a moderately steep slope which can increase fire activity and expose the homeowners to higher intensity wildland fires. Embers would be another concern for most of the homeowners in this project

area, as they can collect in gutters and under decks, and may ignite homes regardless of having an irrigated lawn.

The surrounding vegetation consists of various bunchgrass species as well as scattered shrubs. Invasive weeds such as cheatgrass do occur and have been known to increase the length of the fire season because this species cures much earlier than native grasses. Only four homes exist in the current project area; however, the perimeter could easily be expanded to include numerous others.

Columbia River Road is the primary access to this area, but it does not pass through because of frequent landslide activity. Numerous ATV trails occur at the southern end of this project area which can increase the ignition potential during dry conditions.

Project Prescription

Homeowners will manage their property with Firewise principles in mind. This means that structures will have a non-combustible material around the perimeter and extending out three to five feet from the structure. Shrubs within thirty feet from any structure will be heavily thinned (2.5 times a shrub's height between shrubs). They will also be mindful of anywhere that embers could accumulate and ignite such as patio furniture cushions, decks, roof vents, etc.

Education is often the most critical part in protecting a community such as that in theColumbia River project area. Often, having a trained individual perform a home assessment for a homeowner is sufficient. The home assessment determines a score which tells the homeowner the level of risk their property would face in the event of a wildland fire. The trained individual will then provide advice on how to minimize the risks identified in the home assessment.

A community workshop is another form of education that will benefit the community. The workshop will be scheduled for a weekend that allows as many people to attend as possible. Free lunch and fire safe plant giveaways are a great way to get people to attend. Experts from Bureau of Land Management, Washington Department of Natural Resources, conservation districts, weed boards, consultants, and any others will be invited to attend to provide the homeowners with advice.

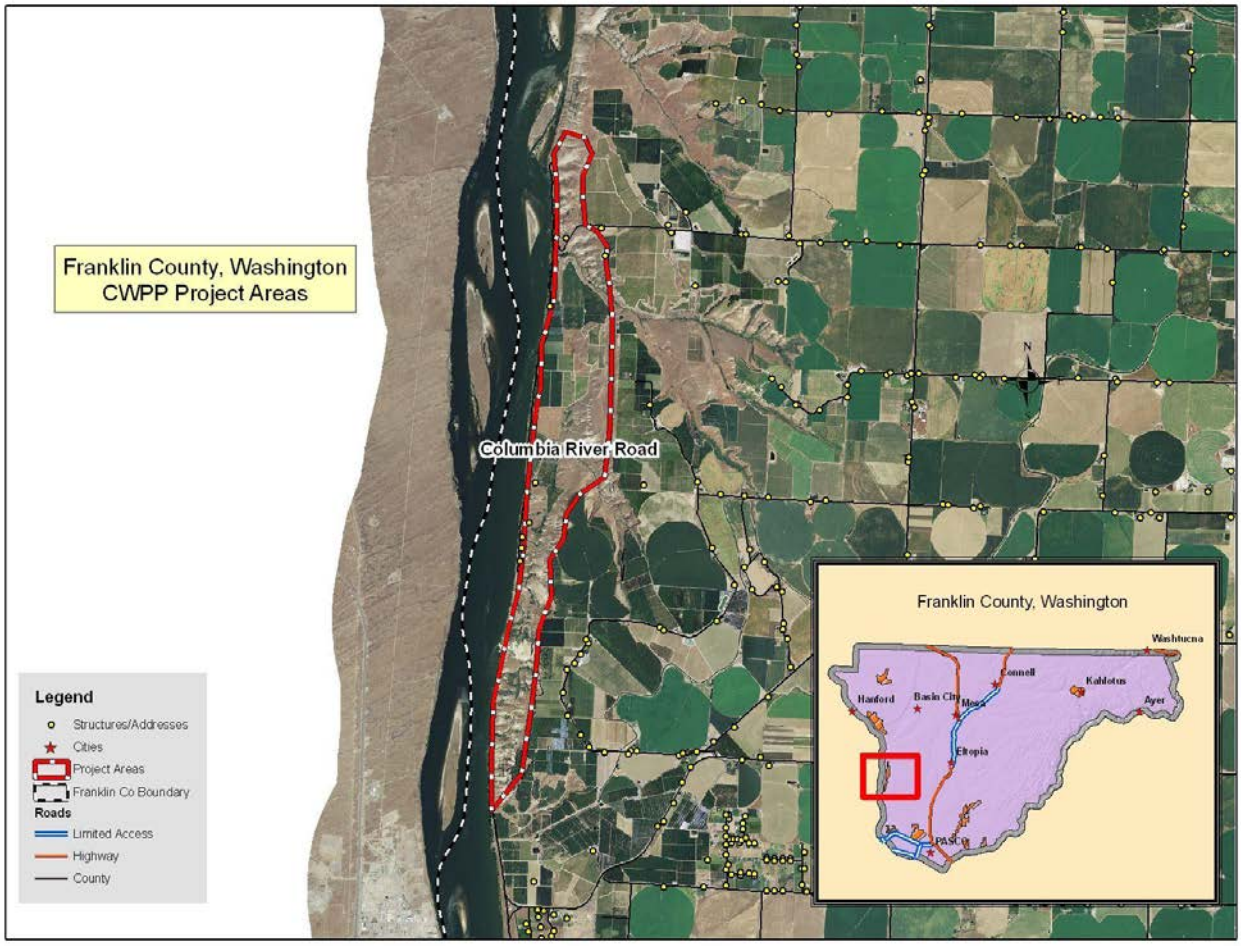
Select a property to be a 'demo' for other properties to use as guidance can also be a useful tool in educating a community. The demo property will be in a highly visible location and the property owner should be extremely motivated to maintain the property and provide encouragement to neighbors. Homeowners are often reluctant to cut down any trees because they want it to look natural and not like a clearcut. Providing these homeowners with a property that allows them to visualize what their property will look like often gets them over that hurdle.

A fuel break will be developed on the slope just north of the landslide area. The fuel break would run up the slope at a width of at least fifty feet. Fuels in this fifty foot strip would be reduced to approximately 2.5 times a shrub's height between shrubs. Invasive weeds will be

treated with appropriate herbicide annually if necessary. Slash may be piled and burned during the wet season, or chipped and spread back onto the landscape to reduce erosion.

Persons initiating work in any proposed project areas should refer to the County's Critical Areas Ordinance http://www.co.franklin.wa.us/planning/documents/AdoptedCriticalAreasOrdinance3-2009-asamended2012.pdf to determine if the project is within, adjacent to, or is likely to impact a critical area. The Critical Areas Planning Director may be consulted to determine if a project will impact a critical area and a waiver may be given.

Figure 6.2. Columbia River Project Area Map.



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Highway 395

The purpose of this project area is to provide a buffer between the heavily traveled highway and the wildland fuels to the east. The large amount of traffic through this project area creates a very high, human-caused ignition potential. The summer of 2013 witnessed several roadside fires ignited along Highway 395 near Connell that were believed to be caused by a defective wheel bearing on a tractor trailer. This particular event was extinguished relatively quickly primarily because of its close proximity to Connell and easy access. For a wildland fire exhibiting rapid rates of spread through the unbroken fuels east of the highway, potentially impacting Kahlotus, Washtucna, and beyond, is not unimaginable.

A majority of the landscape west of the highway is irrigated agriculture that may burn on occasion. East of the highway is mostly dryland agriculture, CRP fields, or natural fuels. The natural vegetation is comprised of native bunchgrasses, scattered shrubs, and invasive species (cheatgrass).

Highway 395 is a main travel route between Interstate 90 and 82 that connects Spokane with the Tri-cities. Highway 17 intersects with Highway 395 in Mesa. Highway 17 travels north from Mesa passing through Othello, Moses Lake, and Soap Lake before terminating in Brewster.

Project Prescription

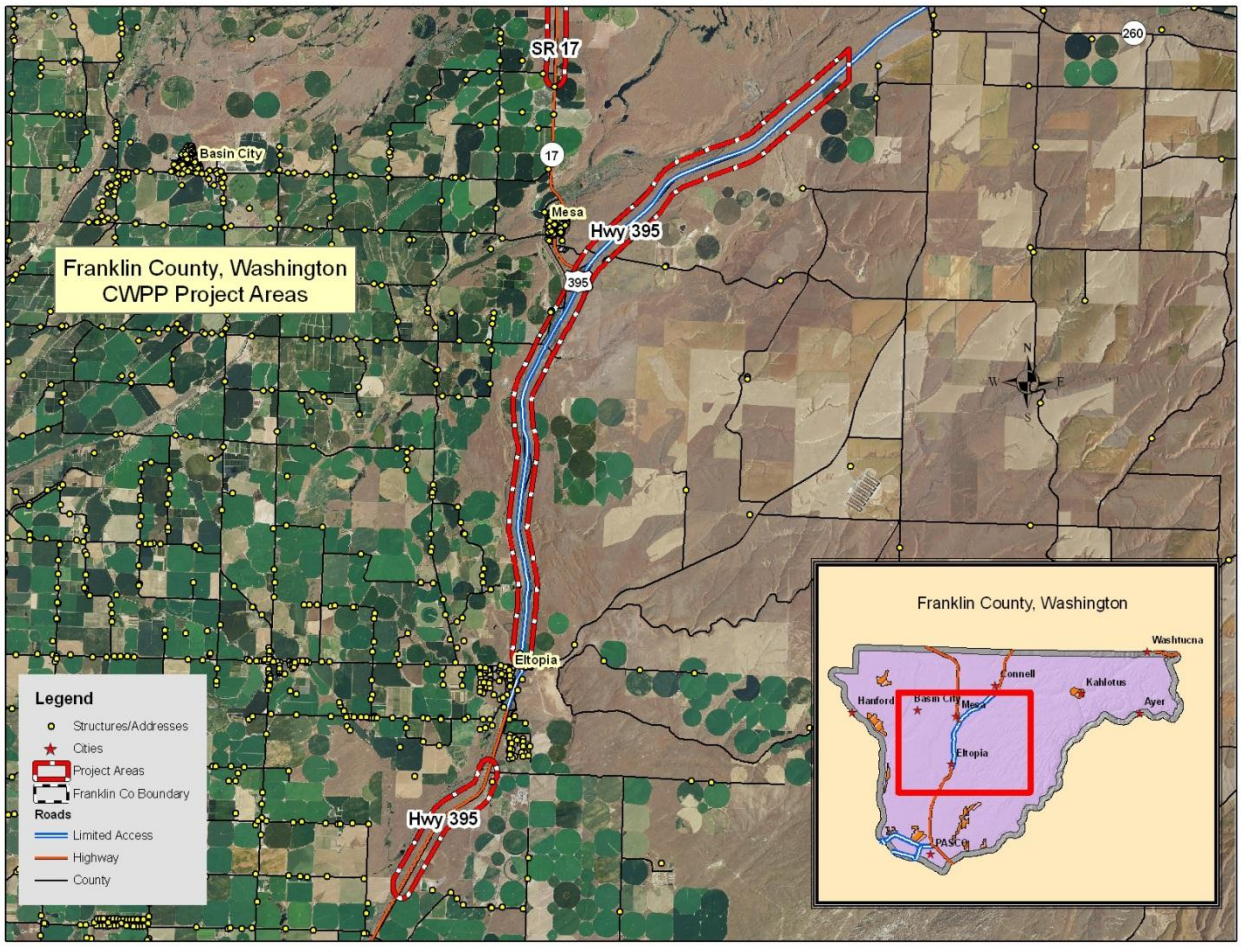
The Highway 395 project encompasses numerous landowners both private and public. Due to the size of this project, it may be necessary to split the project into several sections and complete one or two sections per year.

Prescribed burning does not appear to be an option for this project due to liability issues and unlikely landowner agreement. Therefore it is recommended that a fuel break be created parallel to the highway. This fuel break will be constructed by disking a ten to fifteen foot wide strip along the east and west sides of the highway. This could also be achieved through mowing however it would not be as effective. The fuel break will lie completely within the road right-of-way and will not require adjacent landowner permission.

The fuel break will be initiated prior to the growing season (i.e. April) and maintained through the wildfire season (i.e. October).

Controlling the spread of invasive plant species in disturbed areas is a major concern in Franklin County. The Franklin County Noxious Weed Board will be asked to provide guidance and/or assistance with monitoring invasive weeds within the treated areas. If treatments are required, the Franklin County Noxious Weed Board should be consulted to determine the proper herbicide to use, time of year to apply, and how often to apply.

Figure 6.3. Highway 395 Project Area Map.



Martindale

The Martindale project is a small cluster of approximately fifty structures just north of the Snake River near the confluence of the Snake and Columbia Rivers. There is irrigated agriculture bounding this community on the west, north, and lower half of the east flanks. Throughout the community there are many areas of natural vegetation that continues towards the northeast and through another small cluster of homes. The terrain is gently rolling with some minor drainages that lead to the river.

The Martindale Road provides river access for recreating, fishing, and boating. These activities increase the ignition potential for this area. Fire Danger Rating signs should be erected to educate users of the wildand fire risk in the area.

Project Prescription

Homeowners should manage their property with Firewise principles in mind. This means that structures should have a three to five foot wide strip of non-combustible material around the perimeter of the structure. Shrubs that occur within thirty feet of the structure should be heavily thinned (2.5 times a shrub's height between shrubs or clusters of shrubs).

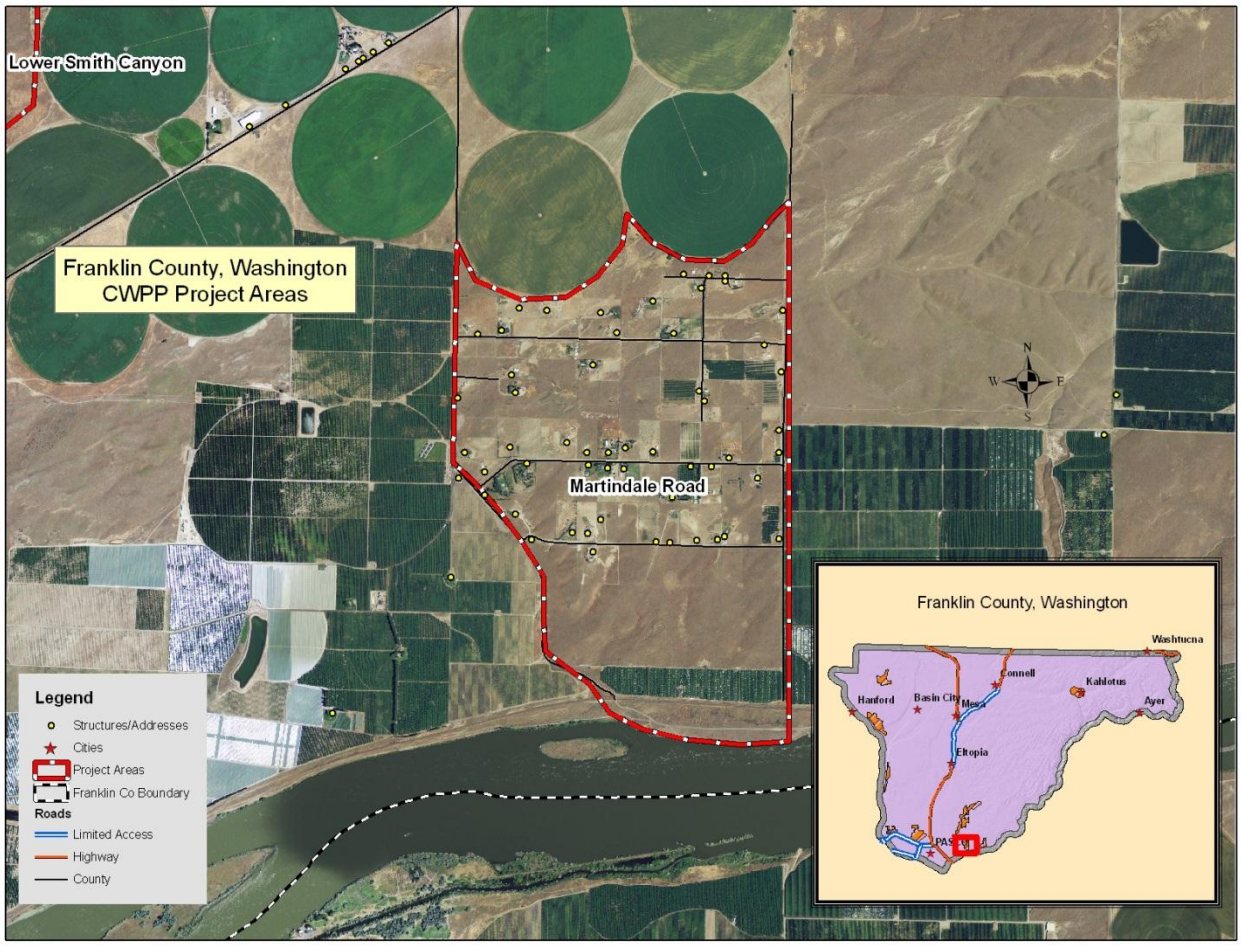
Roadside fuels will be treated to create fuel breaks throughout the community. This will also enable fire apparatus to gain access to structures if needed. This will be achieved through a thirty foot 'buffer' in addition to the road width. The buffer can be done on one side of the road or thirty feet on each side of the road. Roadside treatments should include thinning shrubs to the same standards as mentioned above. Monitor and spray herbicides to reduce invasive weeds along roads and around homes.

Education is often the most critical part in protecting a community such as Martindale. Often, having a trained individual perform a home assessment for a homeowner is sufficient. The home assessment determines a score telling the homeowner the level of risk their property would face in the event of a wildland fire. The trained individual would then provide advice on how to minimize the risks identified in the home assessment.

A community workshop is another form of education that will benefit the community. The workshop will be scheduled for a weekend that allows as many people to attend as possible. Free lunch and fire safe plant giveaways are a great way to get people to attend. Experts from Bureau of Land Management, Washington Department of Natural Resources, conservation districts, weed boards, consultants, and any others will be invited to attend to provide the homeowners with advice.

Select a property to be a 'demo' for other properties to use as guidance can also be a useful tool in educating a community. The demo property will be in a highly visible location and the property owner should be extremely motivated to maintain the property and provide encouragement to neighbors. Homeowners are often reluctant to cut down any trees because they want it to look natural and not like a clearcut. Providing these homeowners with a property that allows them to visualize what their property will look like often gets them over that hurdle.

Figure 6.4. Martindale Project Area Map.



Regional Land Management Recommendations

Wildfires will continue to ignite and burn depending on the weather conditions and other factors enumerated earlier. However, active land management that modifies fuels, promotes healthy shrubland and grassland conditions, and promotes the use of natural resources (consumptive and non-consumptive) will ensure that these lands have value to society and the local region. The Washington DNR, Washington Department of Fish and Wildlife Service, BLM, Bureau of Reclamation, private landowners, and all agricultural landowners in the region should be encouraged to actively manage their wildland-urban interface lands in a manner consistent with reducing fuels and wildfire risks.

Targeted Livestock Grazing

Livestock grazing, particularly cattle, has been a long standing tradition in the rangelands of central Washington. Historically, ranchers were able to make agreements with state and federal

land managers to expand their grazing operations on public ground for mutual benefit. In the last 30 years, this practice has been limited due to liability issues, environmental concerns, and litigation. Additionally, where federal grazing allotments are still available, the restrictions on timing are often inappropriate and/or too inflexible for the objectives of reducing fuel loads (i.e. wildfire risk), eradicating noxious and invasive species, and restoring native grass and sagebrush communities.

Most rangeland ecologists agree that in site-specific situations, livestock can be used as a tool to lower fire risk by reducing the amount, height, and distribution of fuel. Livestock can also be used to manage invasive weeds in some cases and even to improve wildlife habitat.

Targeted grazing can indeed reduce the amount, height, and distribution of fuel on a specific rangeland area, potentially decreasing the spread and size of wildfires under normal burning conditions. By definition, "targeted" or "prescribed" grazing is the use of an appropriate kind of livestock at a specified time, duration, and intensity to accomplish a specific vegetation management goal.

There are many factors to consider regarding the use of livestock for reducing the amount, height, and continuity of herbaceous cover (especially cheatgrass) in site-specific situations:

- During the spring, cheatgrass is palatable and high in nutritional value before the seed hardens. Repeated intensive grazing (two or three times) at select locations during early growth can reduce the seed crop that year, as well as the standing biomass. In areas where desirable perennial species are also present, the intensive grazing of cheatgrass must be balanced with the growth needs of desired plants that managers and producers want to increase.
- Late fall or winter grazing of cheatgrass-dominated areas, complemented with protein supplement for livestock, should also be considered. After the unpalatable seeds have all dropped, cheatgrass is a suitable source of energy, but low in protein. Strategic intensive grazing of key areas can reduce carry-over biomass that would provide fuel during the next fire season. Late fall grazing can also target any fall-germinating cheatgrass before winter dormancy, thus reducing the vigor of these plants the following spring. Fall/winter grazing when desirable perennial grasses are dormant and their seeds have already dropped, results in minimal impact to these species and therefore can be conducted with minimal adverse impact to rangeland health in many areas.
- The Bureau of Land Management (BLM) in some locations has an active "green-strip" program designed to reduce fire size and spread in key areas. Obviously, livestock can be used to maintain such green-strips to reduce the fine fuels (grasses) and control the spread of fire.
- The concept of "brown-strips" refers to areas where one or more treatments (prescribed fire, mechanical thinning, herbicide, and/or grazing) are used to reduce shrub cover, releasing the native perennial grasses. These grassy areas are preferred by cattle, which

can then be grazed to reduce herbaceous fuels. This method leaves "brown-strips" when the stubble dries out in mid-summer, serving as fuel breaks to control the spread of wildfire. Where appropriate, protein-supplemented cows or sheep could be used to intensively graze and create brown-strips (e.g. along fences) to reduce the spread of fires during or after years of excess fuel build-up.

- Targeted grazing for the management of herbaceous fuels often requires a high level of livestock management, especially appropriate timing, as well as grazing intensity and frequency. In order to meet prescription specifications, operators often use herders, portable fencing, and/or dogs to ensure pastures are grazed to specification before the livestock are moved. Other expenses may include feed supplements, guardian dogs and/or night enclosures for protection from predators, water supply portability, mobile living quarters, and grazing animal transport. Targeted grazing is a business whose providers must earn a profit. Therefore, land management agencies need the option of contracting such jobs to willing producers and paying them for the ecosystem service rendered. This payment approach is already being implemented in some private and agency-managed areas to a limited extent, primarily for control of invasive perennial weeds. The use of and payment for prescription livestock grazing as a tool has substantial potential in the immediate and foreseeable future for managing vegetation in site-specific situations.

- In general, and less intensively, livestock can be used strategically by controlling the timing and duration of grazing in prioritized pastures where reduction of desirable perennial grass cover is needed for fire reduction purposes. Strategic locations could be grazed annually to reduce fuel loads and continuity at specific locations. Rotation of locations across years prevents overgrazing of any one area but confers the benefits of fuel load reductions to much larger landscapes. Even moderate grazing and trampling can reduce fuels and slow fire spread.[38]

Dormant season grazing of perennial grasses has also been reported to aid in seedling recruitment. Some seeds require scarification before they will germinate. That can be accomplished by passage through the digestive tract or by hoof action on the seed. Hoof action can also press the seed into the ground and compress the soil around it, i.e. preparing a beneficial seed bed. These processes can also reasonably be expected to provide some benefit to the exotic annual grasses. These grasses; however, appear to succeed very well without that assistance. One can speculate that the perennial grasses would demonstrate a greater response to these effects and thus would gain some edge in the struggle for dominance with the exotic annuals. If those annuals were also grazed in the early spring before the perennials started or during fall germination events, or both, it is likely the annuals would have less vigor and produce less seed

[38] McAdoo, Kent, et al. "Northeastern Nevada Wildfires 2006: Part 2 – Can Livestock Grazing be Used to Reduce Wildfires?" University of Nevada Cooperative Extension. Fact Sheet-07-21. Available online at http://www.unce.unr.edu/publications/files/nr/2007/fs0721.pdf. Accessed June 2011.

which would detract from their ability to out compete the perennials.[39] While the exact details of how the perennials benefit from dormant season grazing are not fully understood, Agricultural Research Service research in Nevada has reported success in decreasing annual grass dominance.

Targeted grazing can reduce wildfire risk in specific areas. The targeted grazing strategies discussed above all require a very flexible adaptive management approach by both land management agencies and targeted grazing providers. Managers must determine objectives, then select and implement the appropriate livestock grazing prescription, monitor accomplishments, and make adjustments as needed.[40]

Many local residents feel that livestock grazing is a more desirable tool for managing wildland fire risk on both private and public lands because it poses less risk than prescribed burning, is less expensive than chemical applications, can be managed effectively for the long-term, and it benefits a large sector of the local economy.

[39] Schmelzer, L., Perryman, B. L., Conley, K., Wuliji, T., Bruce, L. B., Piper, K. 2008. *"Fall grazing to reduce cheatgrass fuel loads"*. Society for Range Management 2008.

[40] McAdoo, Kent, et al. "Northeastern Nevada Wildfires 2006: Part 2 – Can Livestock Grazing be Used to Reduce Wildfires?" University of Nevada Cooperative Extension. Fact Sheet-07-21. Available online at http://www.unce.unr.edu/publications/files/nr/2007/fs0721.pdf. Accessed June 2011.

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Chapter 7

Supporting Information

List of Tables

List of Figures

Signature Pages

This Franklin County Community Wildfire Protection Plan has been developed in cooperation and collaboration with representatives of the following organizations and agencies.

Franklin County Commissioners

Brad Peck - Absent

n/a

Brad Peck
Franklin County Commissioner District #1

Date

May 21, 2014

Robert Koch
Franklin County Commissioner District #2

Date

May 21, 2014

Rick Miller
Franklin County Commissioner District #3

Date

FRANKLIN COUNTY RESOLUTION NO. 2014 220

BEFORE THE BOARD OF COUNTY COMMISSIONERS, FRANKLIN COUNTY, WASHINGTON

RE: FRANKLIN COUNTY, WASHINGTON COMMUNITY WILDFIRE PROTECTION PLAN, MAY 2014

WHEREAS, the Board of County Commissioners of Franklin County understand the necessity to mitigate, prepare for, respond to and recover from disasters and other extraordinary emergencies, both natural and human caused; and

WHEREAS, a planning committee representing Franklin County has coordinated an extensive plan to help our county and responders refine their priorities and management for the protection of life, property and critical infrastructure in the wildland-urban interface on both public and private land; and

WHEREAS, the Board of Franklin County Commissioners constitutes the legislative authority of Franklin County and desires approve the Franklin County, Washington Community Wildfire Protection Plan, May 2014:

NOW, THEREFORE, BE IT RESOLVED that the Franklin County Board of Commissioners hereby approves the attached Franklin County, Washington Community Wildfire Protection Plan, May 2014.

APPROVED this 21st day of May, 2014.

BOARD OF COUNTY COMMISSIONERS
FRANKLIN COUNTY, WASHINGTON

Robert E. Koch, Chairman

Brad Peck - Absent
Brad Peck, Chair Pro Tem

Rick Miller, Member

Attest:

~~Mary Withers~~, Clerk to the Board

Signatures of Participation by Franklin County Fire Districts and Departments

This Community Wildfire Protection Plan and all of its components identified herein were developed in close cooperation with the participating entities listed. These members of the CWPP steering committee formally recommended that this document be adopted by the Franklin County Commissioners.

5-21-14

Eric Mauseth, Chief
Franklin County Fire District #1

Date

5-28-14

Luke Vanhollenbeke, Chief
Franklin County Fire District #2

Date

5-21-2014

Mike Harris, Chief
Franklin County Fire District #3

Date

5-21-14

Steve Cooper, Chief
Franklin County Fire District #4

Date

5/28/14

Bryan Thornhill, Chief
Franklin County Fire District #5

Date

	5-24-14
Bob Gear, Chief Pasco Fire Department	Date
Bruce Blackwell	May 19, 2014
Bruce Blackwell, City of Connell Mayor	Date

Signatures of Participation by other Franklin County CWPP Steering Committee Entities

This Community Wildfire Protection Plan and all of its components identified herein were developed in close cooperation with the participating entities listed. These members of the CWPP steering committee formally recommended that this document be adopted by the Franklin County Commissioners.

Sean Davis

05-21-14

Sean Davis, Director

Date

Franklin County Emergency Management

Joe Weeks

06/02/2014

Joe Weeks, Landowner Assistance Coordinator

Southeast Region Washington State Department of Natural Resources

5/14/14

Aaron Everett, Deputy Supervisor,

Date

Forest Practices and Federal Relations, State Forester, Washington State Department of Natural Resources

Linda Clark

6/5/14

Linda Clark, Border Resource Manager

Date

Spokane District Bureau of Land Management

June 4,2014

Brad Tucker, Project Co-Manager

Date

Northwest Management, Inc.

This plan was developed by Northwest Management, Inc. under contract with the Bureau of Land Management and Franklin County Emergency Management.

Citation of this work:

Tucker, Brad and V. Bloch. *Lead Authors.* 2014 Franklin County, Washington Community Wildfire Protection Plan. Northwest Management, Inc., Moscow, Idaho. Pp 103.

Tucker, Brad and V. Bloch. *Lead Authors.* 2014 Franklin County, Washington Community Wildfire Protection Plan Appendices. Northwest Management, Inc., Moscow, Idaho. Pp 61.

Northwest Management, Inc.
233 East Palouse River Drive
PO Box 9748
Moscow ID 83843

208-883-4488 Telephone
208-883-1098 Fax
NWManage@consulting-foresters.com
http://www.Consulting-Foresters.com/

Franklin County, Washington

Community Wildfire Protection Plan

Appendices

Approved by the

Franklin County Commissioners 2014

Juniper Dunes Wilderness Area

Acknowledgements

This Community Wildfire Protection Plan represents the efforts and cooperation of a number of organizations and agencies working together to improve preparedness for wildfire events while reducing factors of risk.

F.C.F.P.D.s #1, #2, #4, & #5

Pasco Fire Department

Franklin County Weed Board

To obtain copies of this plan contact:

Franklin County Emergency Management

502 Boeing St.
Pasco, WA 99301
509-545-3546

Table of Contents

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Appendix 1

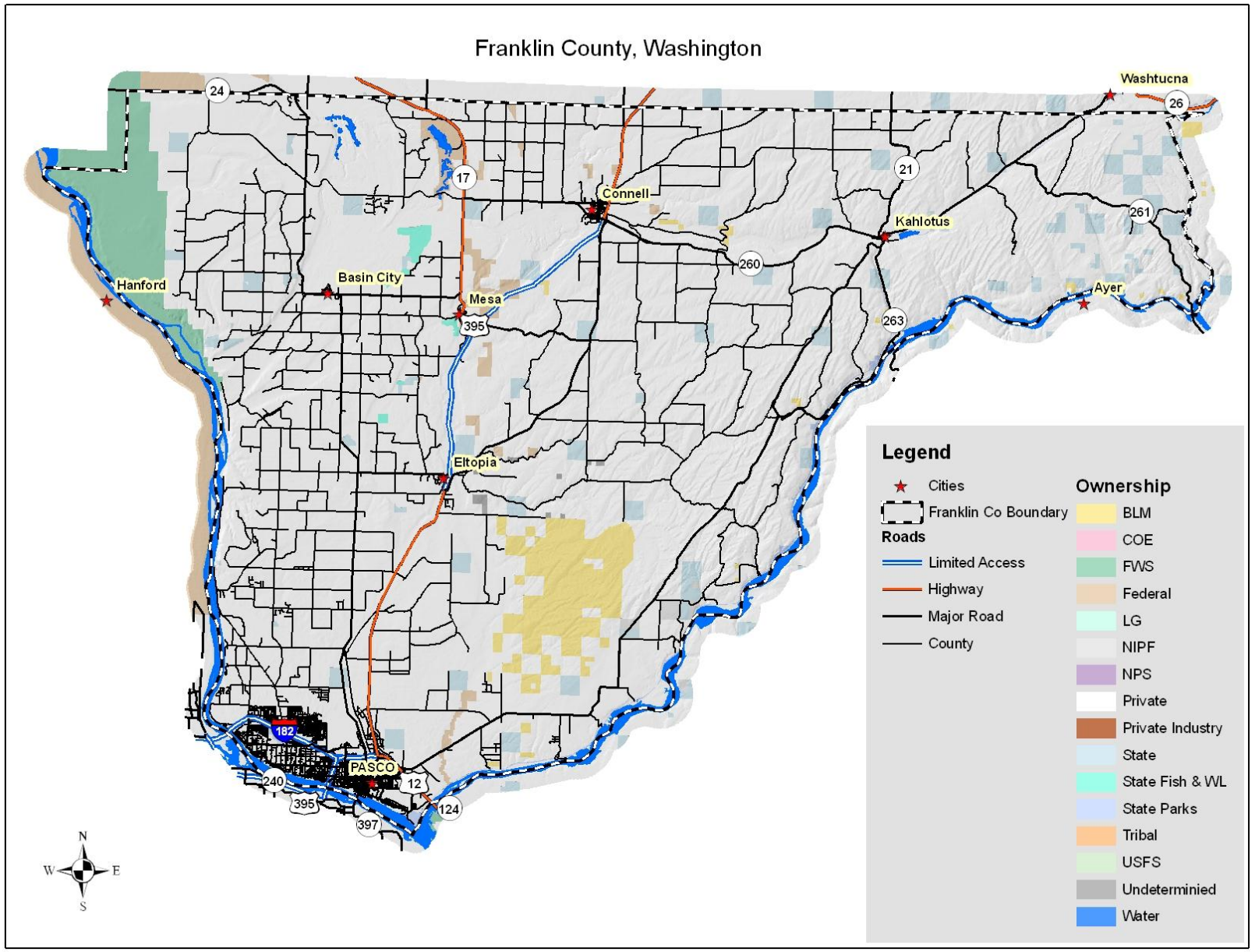
Mapping Products

Northwest Management, Inc.

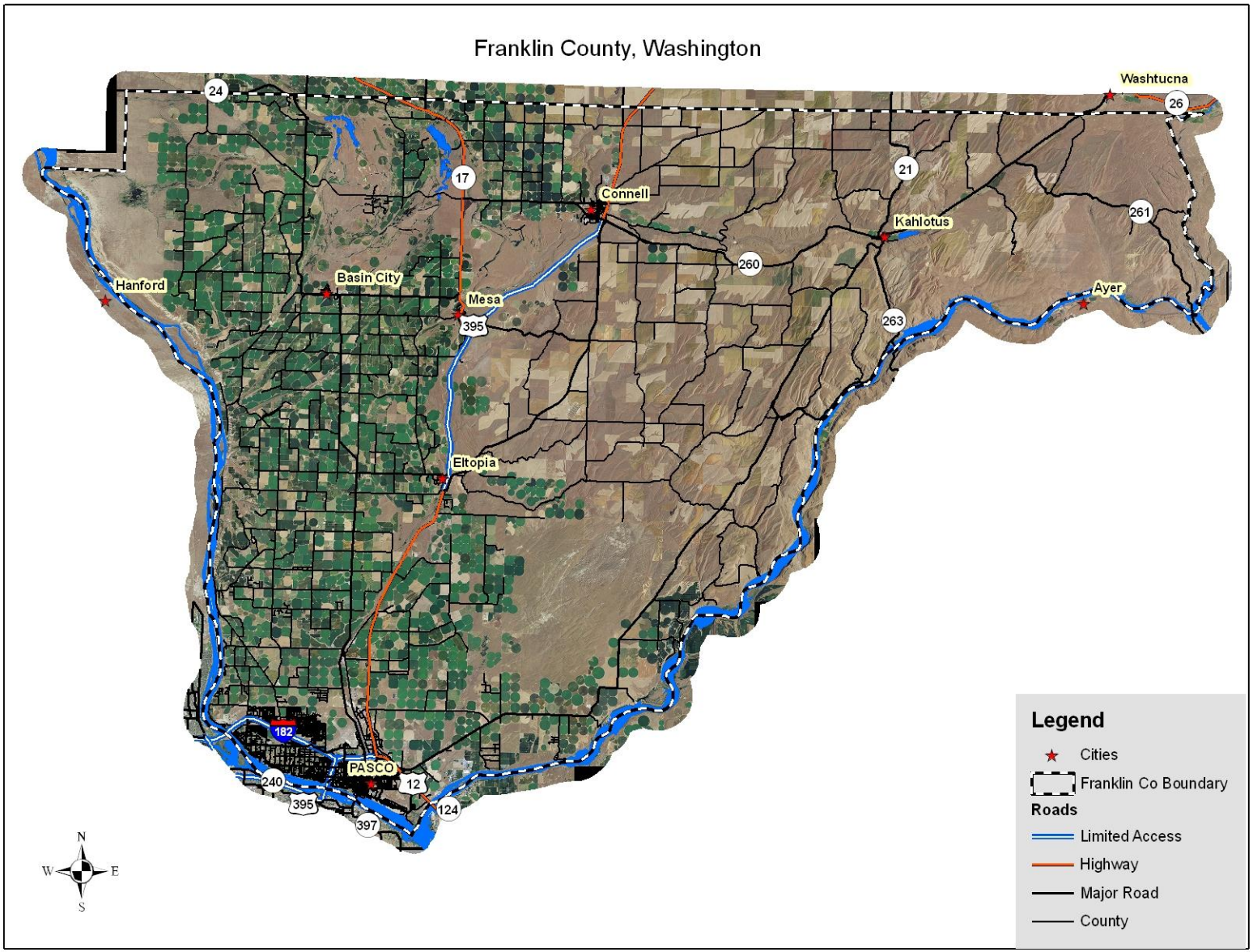
233 East Palouse River Dr.
P.O. Box 9748
Moscow, ID 83843
208-883-4488
www.Consulting-Foresters.com

The information on the following maps was derived from digital databases held by Northwest Management, Inc. Care was taken in the creation of these maps, but all maps are provided "as is" with no warranty or guarantees. Northwest Management, Inc. cannot accept any responsibility for errors, omissions, or positional accuracy, and therefore, there are no warranties accompanying this product. Although information from land surveys may have been used in the creation of this product, in no way does this product represent or constitute a land survey. Users are cautioned to field verify information on this product before making any decisions.

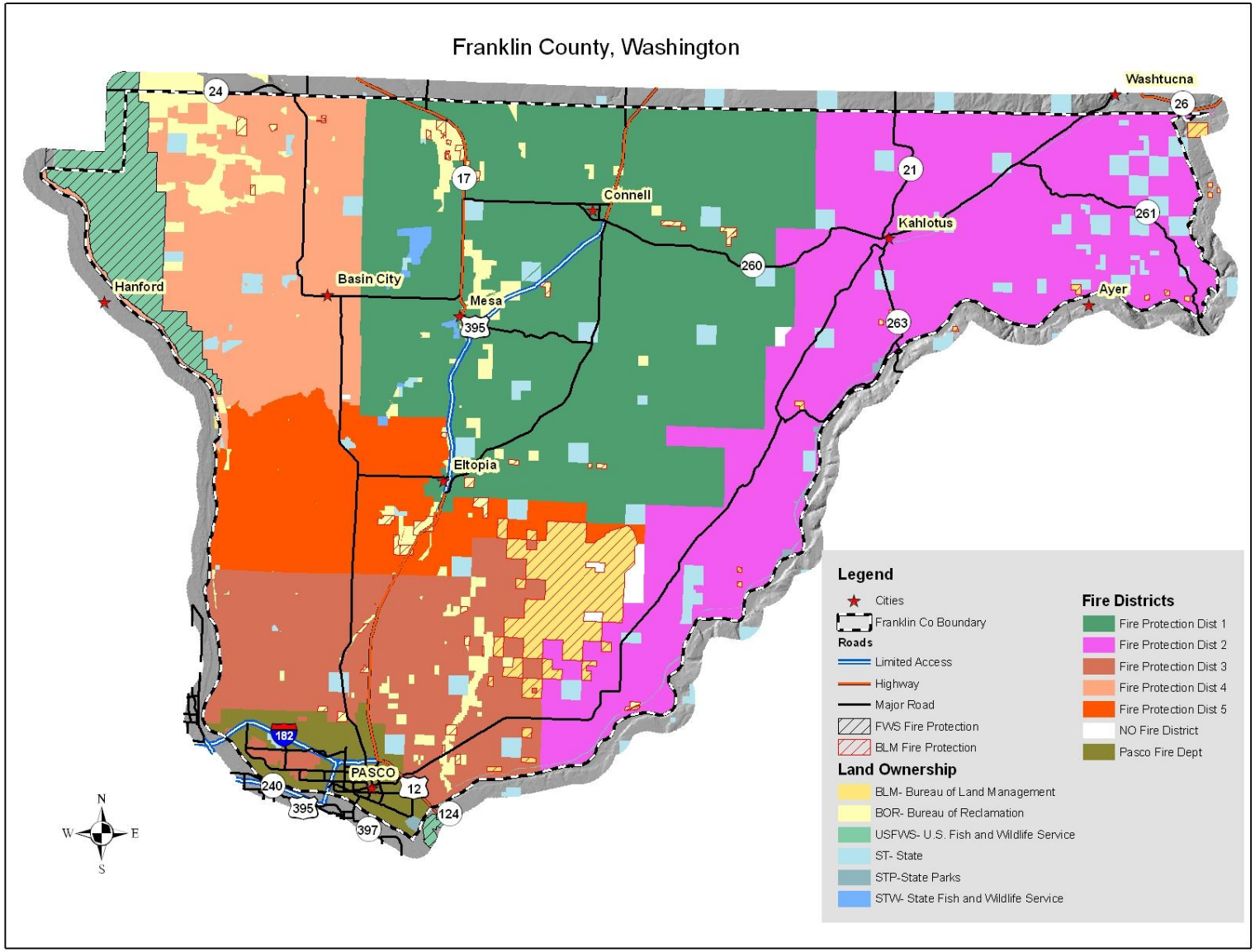
Land Ownership Map



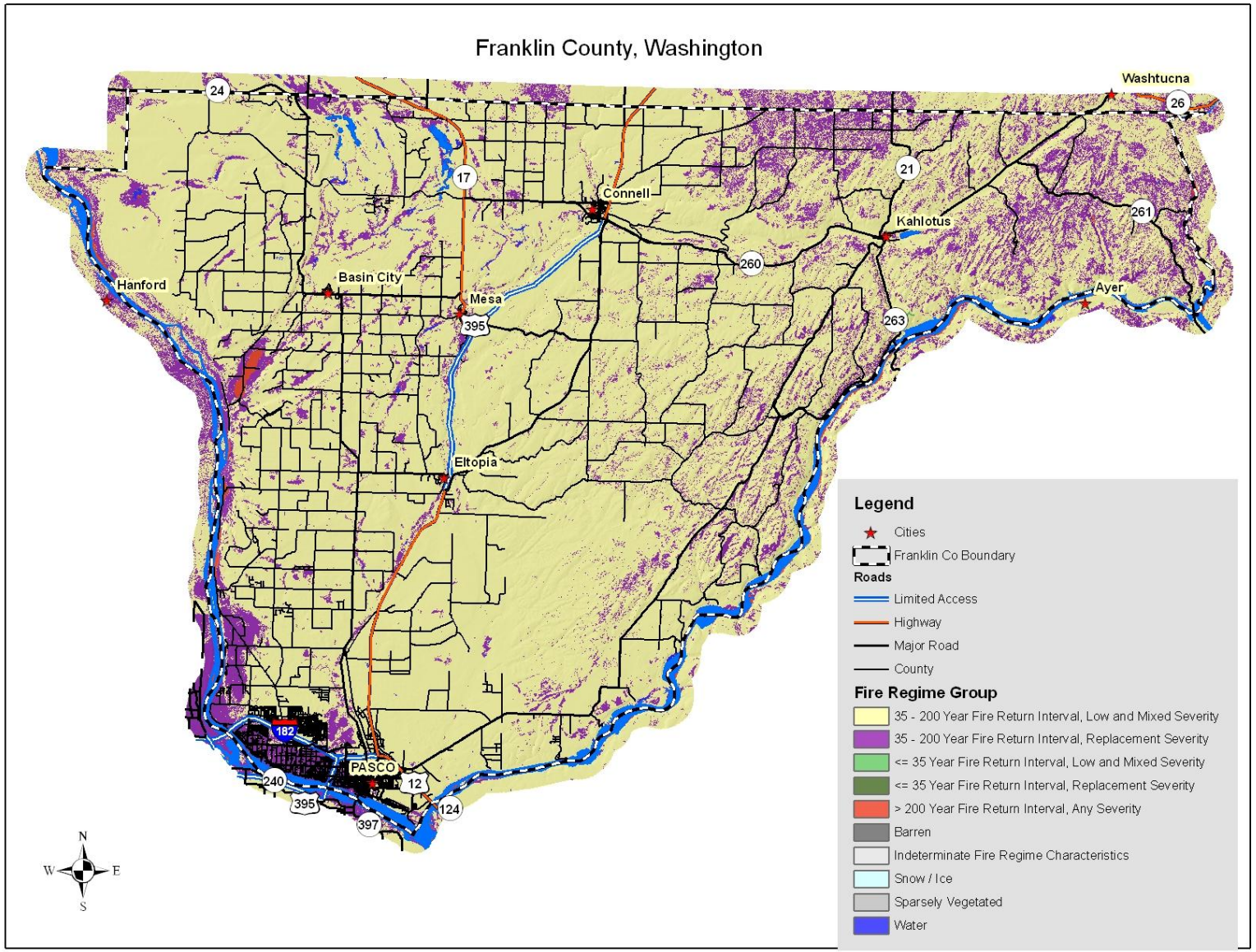
Aerial Imagery



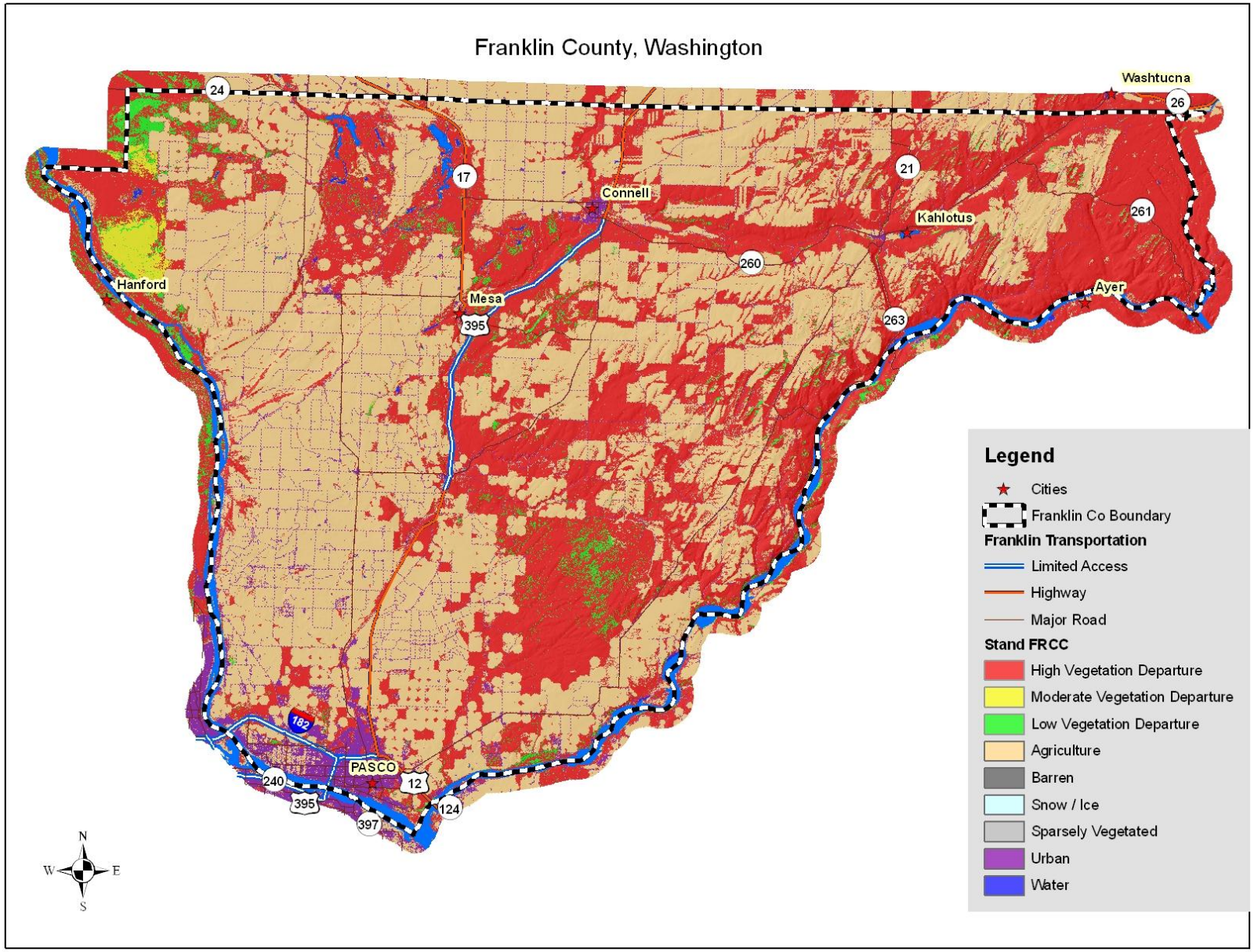
Fire Protection Boundary Map



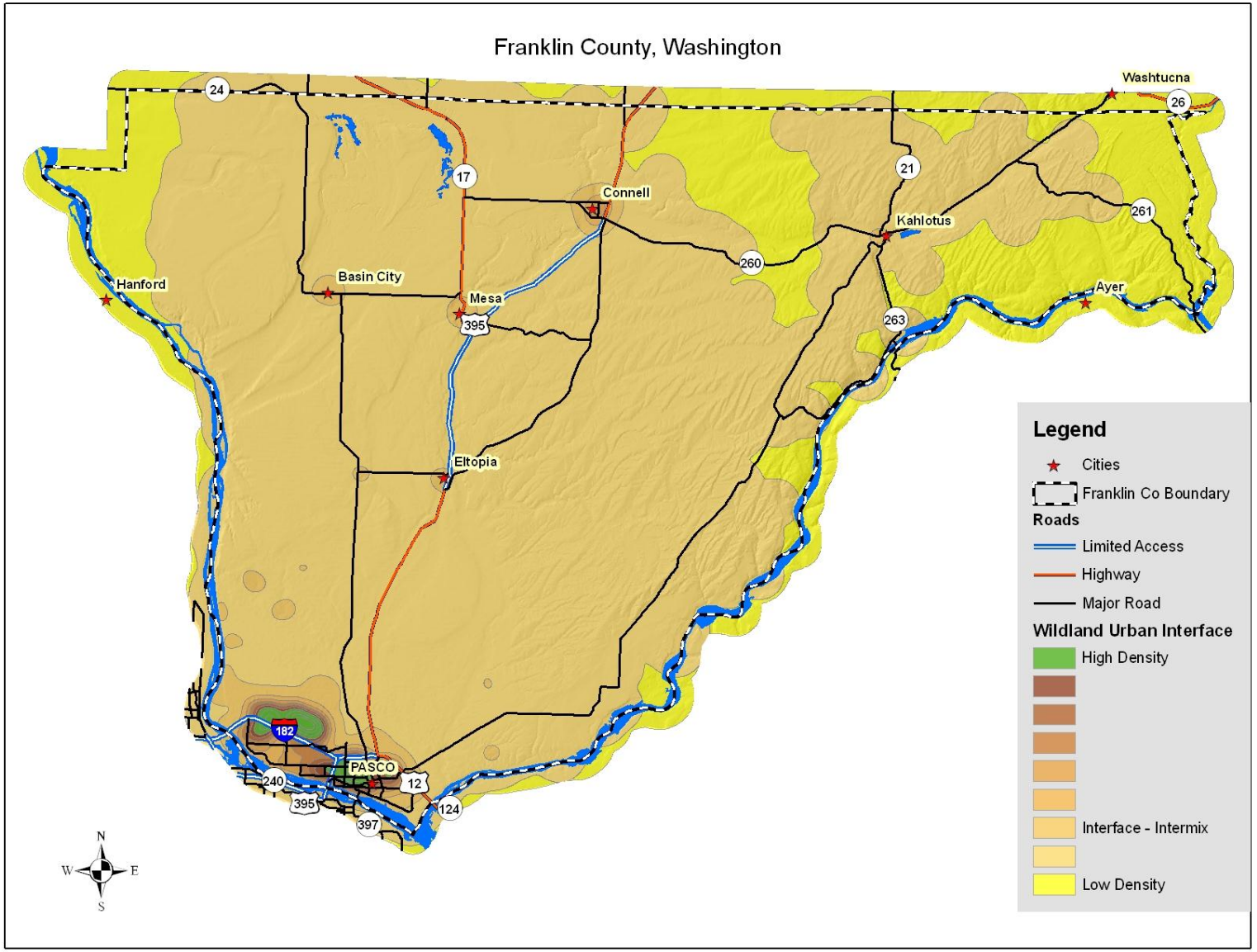
Historic Fire Regime Map



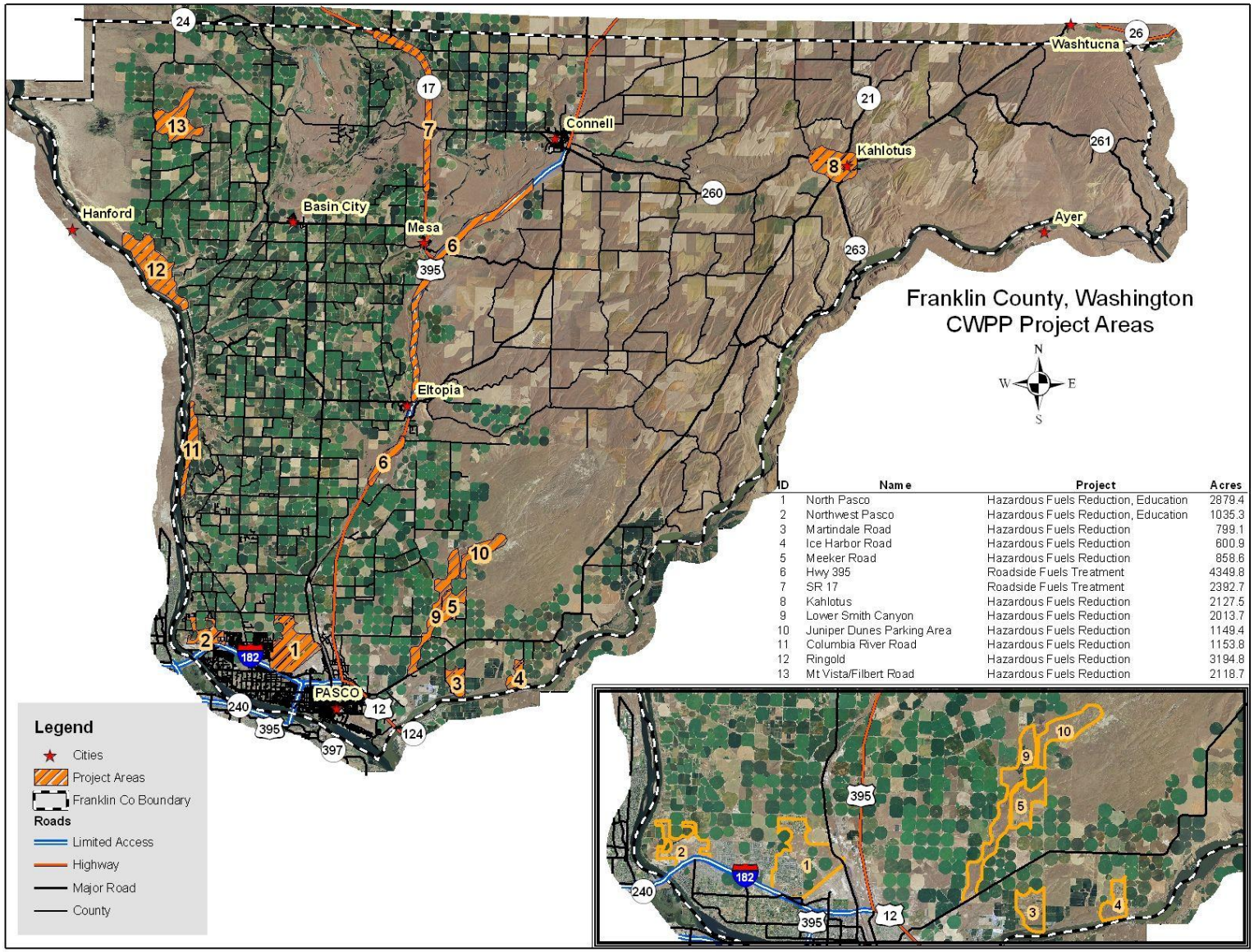
Vegetation Condition Class Map



Wildland Urban Interface Map

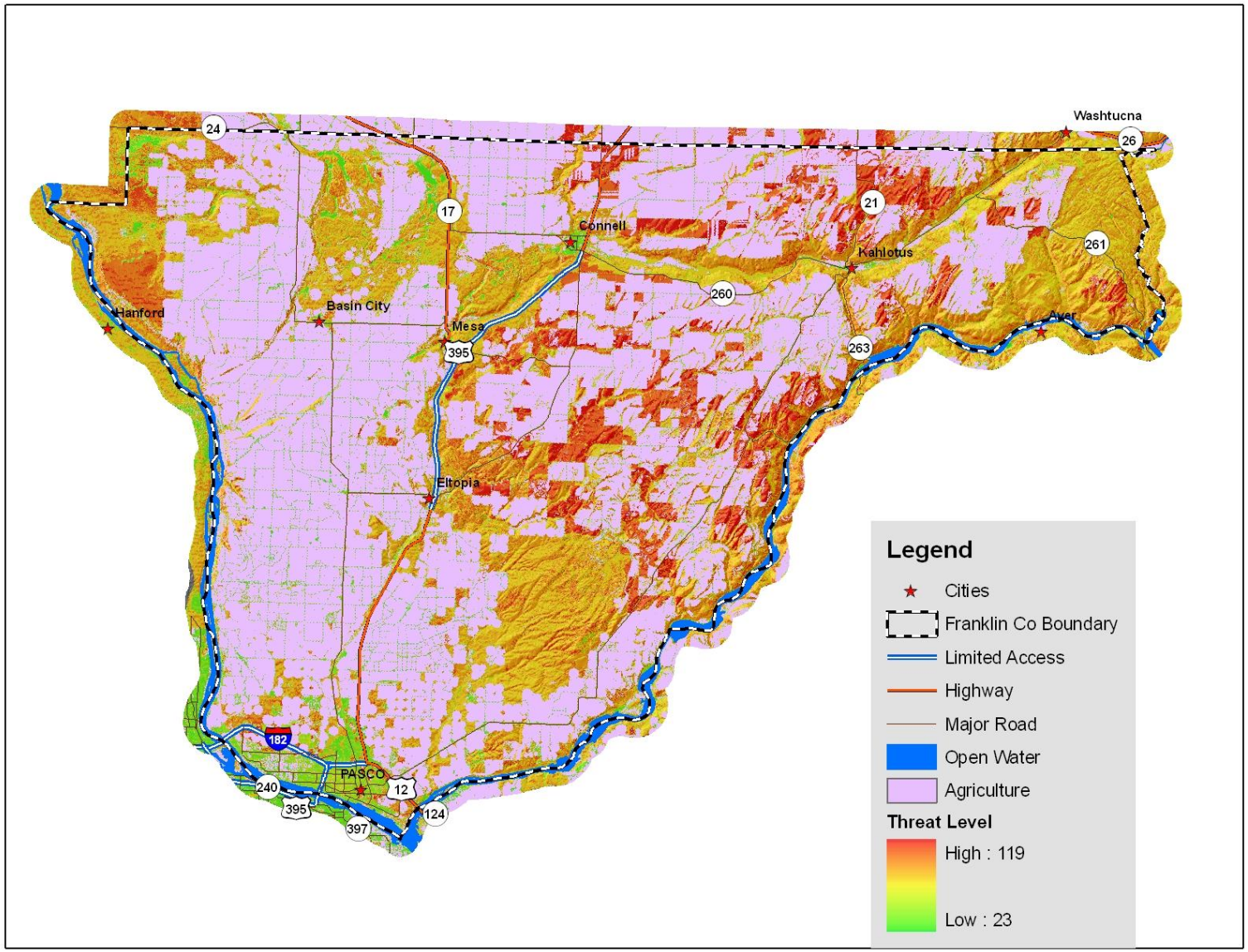


Proposed Treatment Area Map



ID	Name	Project	Acres
1	North Pasco	Hazardous Fuels Reduction, Education	2879.4
2	Northwest Pasco	Hazardous Fuels Reduction, Education	1035.3
3	Martindale Road	Hazardous Fuels Reduction	799.1
4	Ice Harbor Road	Hazardous Fuels Reduction	600.9
5	Meeker Road	Hazardous Fuels Reduction	858.6
6	Hwy 395	Roadside Fuels Treatment	4349.8
7	SR 17	Roadside Fuels Treatment	2392.7
8	Kahlotus	Hazardous Fuels Reduction	2127.5
9	Lower Smith Canyon	Hazardous Fuels Reduction	2013.7
10	Juniper Dunes Parking Area	Hazardous Fuels Reduction	1149.4
11	Columbia River Road	Hazardous Fuels Reduction	1153.8
12	Ringold	Hazardous Fuels Reduction	3194.8
13	Mt Vista/Filbert Road	Hazardous Fuels Reduction	2118.7

Relative Threat Level Map



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Appendix 2

Documenting the Planning Process

Documentation of the planning process, including public involvement, is necessary to meet FEMA's DMA 2000 requirements (44CFR§201.4(c)(1) and §201.6(c)(1)). This appendix includes the minutes taken at planning committee meetings, a record of published articles regarding the CWPP, and the presentation given at local public meetings.

Planning Committee Meeting Minutes

May 2nd, 2013 – Connell Fire Station

Attendance:

Richard Parrish, BLM Spokane District	Marvin Leonard, Kennewick Fire
Bob Gear, Pasco F.D.	Tom Hughes, Franklin Co. F.P.D. 3
Chris Schulte, North end of County	Michael S. Lesky, U.S. Bureau of Reclamation
Bryan Thornhill, Franklin Co. Emergency Management	Tera King, Northwest Management, Inc.
Jacob Gear, Fish & Wildlife Service	Vaiden Bloch, Northwest Management
Les Litzenberger, Franklin Co. F.P.D. 3	Brad Tucker, Northwest Management, Inc.

Introduction:

Richard Parrish introduced the project and the BLM's hope that the committee will roll the Risk Assessment into a CWPP. Individuals introduced themselves. NMI passed around handouts.

Agenda Item #1 – NMI Presentation:

Brad gave a brief background of the process and explained the purpose of the Risk Assessment. Richard and Brad explained the benefits for the committee to roll the process into a Community Wildfire Protection Plan. Brad made a general request for committee members to send NMI relevant data (GIS, projects, plans, fire history, etc.)

Agenda Item #2 – Map Products:

Brad went over the preliminary maps and asked that the committee review them for accuracy and to draw potential projects/high risk areas. Brad also briefly touched on field assessments, explaining that NMI will lead a team into the field to verify map outputs and to become familiar with Franklin Co.

Agenda Item #3 – Immediate Concerns:

The committee discussed current issues some of which include; access, CRP, what fuel model Russian Olive should be in, communications in northeast portion of County, contact weed board about spraying disc lines, excessive tumbleweed buildup, and a possible free slash disposal day.

Agenda Item #4 – Public Involvement:

NMI will be responsible with providing press releases to the necessary media outlets throughout the planning process. NMI will also schedule and facilitate public meetings near the end of the project to acquire information and comments from the public. There will also be a period of time that the Final Draft will be available for the public to review and provide comments on.

Agenda Item #5 – Meeting Schedule:

Brad advised the committee on a rough timeline for the project.

1. Next meeting will be held on June 6th, 10 am, Connell F.D.

2. Field assessments tentatively in July or August.
3. Public meetings and committee meeting in October.
4. First draft in November with the public review in mid-late November.
5. Final draft ready for committee review December followed by County Approval.

Other Stuff:

Richard emphasized the BLM's wish that the committee pursue the development of a CWPP. The committee asked that NMI provide a quote to write the CWPP.

Adjournment:

The Franklin County Wildfire Risk Assessment steering committee meeting was adjourned at 11:30 a.m. The next meeting will be held June 6th at 10:00 am at the Connell Fire Department located at 605 S Columbia, Connell.

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June 6th, 2013 – Connell Fire Station

Attendance:

Richard Parrish, BLM Spokane District	Eric Mauseth, Franklin Fire #1
Todd Harris, Franklin County Weed Board	Brandon Lewis, US Fish & Wildlife Service
Chris Schulte, North end of County	Jonathan Brooks, U.S. Bureau of Reclamation
Dennis Strange, BLM Spokane District	Vic Reeve, Franklin County Weed Board
Jacob Gear, U.S. Fish & Wildlife Service	Brad Tucker, Northwest Management, Inc.
Les Litzenberger, Franklin Co. F.P.D. 3	

Agenda Item #1 - CWPP Decision?:

Brad asked the committee if they had determined whether they found funding to pursue a Community Wildfire Protection Plan. There has not been a decision made as the committee is still looking for funding sources and unsure if pursuing the CWPP is worth the effort.

It should be known that the Wildfire Risk Assessment would satisfy about 80% of a CWPP. However, if the committee decides to wait on completing the CWPP, they will have to go through the public meetings, public review, and collect signatures again.

Agenda Item #2 – Mission Statement:

NMI provided some examples of Mission Statements and the committee developed a draft statement which NMI will email to the entire committee for review.

Agenda Item #3 – Goals Statements:

NMI provided some examples of Goals Statements and the committee developed draft goals which NMI will email to the entire committee for review.

Agenda Item #4 – Fire District Surveys:

NMI passed out surveys that will assist each district and agency within Franklin Co. (who has firefighting responsibilities) summarize the resources, needs, wishes, etc. of each. NMI will send the surveys out to each district and agency electronically.

Agenda Item #5 – Fire History:

NMI expressed the need for assistance with compiling Franklin County's fire history. The Fire Districts were asked to provide a fire history (acres, year, cause, location) for at least the past 10 years. The fire history is important because it shows how significant / frequent of a risk wildland fires are in Franklin County.

Agenda Item #6 – Wildland Urban Interface WUI:

NMI explained that identifying the WUI will assist in planning mitigation projects. When applying for grants, the application often asks if the project is within the WUI. The current WUI map that NMI has created for Franklin County was based on population density. The committee asked that NMI create a map that includes the entire County for the committee to review. NMI will attempt to send this new WUI map to the committee via email prior to the next meeting.

Agenda Item #7 – Meeting Schedule:

The next meeting will be held on July 11th at 10:00 am, at the Connell Fire Station

July 11th, 2013 – Connell Fire Station

Attendance:

Richard Parrish, BLM Spokane District	Les Litzenberger, Franklin Co. F.P.D. 3
Jacque Cook, Franklin County Emergency Management	Jonathan Brooks, U.S. Bureau of Reclamation
Chris Schulte, North end of County	Brad Tucker, Northwest Management, Inc.
Jacob Gear, U.S. Fish & Wildlife Service	

Agenda Item #1 – Old Business:

Brad asked the committee if they had determined whether they found funding to pursue a Community Wildfire Protection Plan. There has not been a decision made as the committee is still looking for funding sources and unsure if pursuing the CWPP is worth the effort.

It should be known that the BLM has set aside funding if the County decides to pursue the CWPP and can verbally commit prior to the end of July.

Brad reminded the Fire Districts that they need to provide NMI with the Fire District Surveys.

The group reviewed the Mission & Goals Statements and WUI map that were discussed at the previous meeting and subsequently revised.

Agenda Item #2 – Map Presentation:

NMI provided the committee draft maps. These included; Rate of Spread, Wildfire Intensity, Fire Regime Condition Class, Fire Regime Group, Wildland Urban Interface. A draft Relative Threat Level map was also provided and will be discussed at the next meeting. These maps assist the group in determining areas that could require fuel reduction work projects and/or other types of projects.

Agenda Item #3 – Identify Project Locations:

The group used their knowledge of the County, as well as the maps, to provide some specific areas that will be visited during field assessments. These site visits are used to verify what the maps are showing and to determine what type of project is warranted in each area.

Agenda Item #4 – Meeting Schedule:

The next meeting will be held on August 8th at 10:00 am, at the Connell Fire Station

August 8th, 2013 – Connell Fire Station

Attendance:

Sean Davis, Franklin County Emergency Management	Les Litzenberger, Franklin Co. F.P.D. 3
Jacque Cook, Franklin County Emergency Management	Jonathan Brooks, U.S. Bureau of Reclamation
Greg Bjornstrom, Washington Department of Fish & Wildlife	Mike Lesky, U.S. Bureau of Reclamation
Phillip Buser, Washington Department of Fish & Wildlife	Vaiden Bloch, Northwest Management, Inc.
Dave Hare, Pasco Fire Department	Brad Tucker, Northwest Management, Inc.
Thomas Skinner, U.S. Fish & Wildlife Service	

Agenda Item #1 – Old Business:

Brad asked the committee if they had determined whether they found funding to pursue a Community Wildfire Protection Plan. The committee had found funding to pursue the CWPP and asked Northwest Management to send Franklin Co. Emergency Management a contract.

Brad reminded the Fire Districts that they need to provide NMI with the Fire District Surveys and Resource Lists.

Northwest Management briefly talked about the Field Assessments. The field assessments will be used to verify if the maps being developed by Northwest Management (i.e. Rate of Spread, Relative Threat Level, etc.) are showing accurate information. These field assessments are also used to identify potential project areas so that when the document is completed the Committee has some areas to focus when the County receives grant funding. The assessments are tentatively scheduled to occur for the first week in October and anyone is welcome to join the assessment crew. We will discuss this more at the September meeting.

Agenda Item #2 – Map Presentation:

NMI provided the committee a draft Relative Threat Level map. NMI gave a brief powerpoint presentation which explained how this map was created. There are several maps that go into making the Relative Threat Level map. Each map has categories that are weighted. For example, using the precipitation map, the drier portions of the County are weighted heavier than portions of the County that may see more precipitation. We do this for Slope, Aspect, Population Density, Rate of Spread, Wildfire Intensity, and Fuel Type. So essentially each pixel on every map has a designated weight, and then we stack the maps onto each other, add each stack of pixels together to show the accumulated weight on the Relative Threat Level map. We can adjust how heavy categories are weighted to change the outcome of the Relative Threat Level Map as the committee sees fit.

Because of how dynamic agriculture is from year to year it is difficult to assign a fuel model to it. Often agriculture is considered a non-burnable which we all know is not true most of the time. There are times when the field may be in fallow or it is irrigated, but the following year it may be 3 foot tall wheat field. For this reason, in other Counties we chose to put a mask over the agriculture areas on the Relative Threat Level Map and then provide a narrative within the document explaining what types of fire behavior to expect in these ag fields. We could also run all of the agriculture areas as short or tall grass fuel model. This is something that the committee will have to decide.

Agenda Item #3 – Review Chapters 1-4:

Northwest Management passed out the rough draft of the first four chapters. The committee briefly reviewed each. These chapters are mostly general information about the planning process, documentation of the process, Franklin County descriptions and demographics, and general wildfire information.

Agenda Item #4 – Meeting Schedule:

The next meeting will be held on September 5th at 10:00 am, at the Franklin County Fire District #3 Fire Station located at: **7809 Road 36, Pasco, WA 99301**

September 5th, 2013 – Fire Protection District #3 Fire Station #36

Attendance:

Sean Davis, Franklin County Emergency Management	Les Litzenberger, Franklin Co. F.P.D. 3
Brandon Lewis, US Fish and Wildlife Service	Jonathan Brooks, U.S. Bureau of Reclamation
Joe Weeks, Washington DNR	Thomas Skinner, U.S. Fish & Wildlife Service
Phillip Buser, Washington Department of Fish & Wildlife	Brad Tucker, Northwest Management, Inc.
Bob Gear, Pasco Fire Department	

Agenda Item #1 – Old Business:

Brad thanked everyone involved in upgrading the project from a Wildfire Risk Assessment to a Community Wildfire Protection Plan (CWPP). From this point forward the document will be referred to as a CWPP.

Brad reminded the Fire Districts that they need to provide NMI with the Fire District Surveys and Resource Lists.

Brad asked if there were any comments on the rough draft chapters 1-4 and Relative Threat Level Map that was discussed at the August meeting (there were none).

Northwest Management briefly talked about the Field Assessments. The field assessments will be used to verify if the maps being developed by Northwest Management (i.e. Rate of Spread, Relative Threat Level, etc.) are showing accurate information. These field assessments are also used to identify potential project areas so that when the document is completed the Committee has some areas to focus when the County receives grant funding. The assessments are tentatively scheduled to occur for the first week in October and anyone is welcome to join the assessment crew.

Locations identified for the field assessments include (but are not limited to); Smith Canyon, Martindale, Haugen/Kepps road, Juniper Dunes, Hanford Reach National Wildlife Refuge, Non-ag lands in northeast corner of county, and intersection of Fir and N. Columbia River road. If anyone has other areas for potential projects let Brad know.

Agenda Item #2 – Action Items:

The committee used example Action Items from other counties to get a start on the Franklin County Action Items. The majority of the meeting was spent discussing the Action Items and who should be responsible. Brad will create the list and send it to the committee prior to the October meeting so the committee can review and we can discuss at that meeting.

Agenda Item #4 – Meeting Schedule:

The next meeting will be held on October 3rd at 10:00 am, at the Franklin County Fire District #3 Fire Station located at: **7809 Road 36, Pasco, WA 99301**

October 3rd, 2013 – Fire Protection District #3 Fire Station #36

Attendance:

Jacque Cook, Franklin County Emergency Management
Phillip Buser, Washington Department of Fish & Wildlife
Les Litzenberger, Franklin Co. F.P.D. 3
Vaiden Bloch, Northwest Management, Inc.
Brad Tucker, Northwest Management, Inc.

Agenda Item #1 – Old Business:

The Committee was reminded that Northwest Management still needs some District Surveys and Resource lists.

Northwest Management asked if there were any comments on the Relative Threat Level map, there were none.

Northwest Management performed field assessments the day prior to the meeting and after the meeting. There were no additional areas the committee could think of that needed to be looked at

Locations that field assessments were conducted included; Smith Canyon, Martindale, Haugen/Kepps road, Juniper Dunes, Non-ag lands in northeast corner of county, and intersection of Fir and N. Columbia River road.

Agenda Item #2 – Action Items:

There were no comments on the list of Action Items previously developed.

Agenda Item #3 – Public Meetings:

Northwest Management is hoping to have the public meetings in November. It was initially planned for the first Wednesday and Thursday in November but that date is rapidly approaching and Northwest Management hasn't done enough public outreach regarding the issue. The next Wednesday and Thursday that Northwest Management is available is November 20 and 21. It was discussed with committee members present, that we should have one public meeting in Connell and one in Pasco. We are open to modifying that if someone thinks that we should have public meetings in other areas.

Agenda Item #4 – Meeting Schedule:

The next meeting will be held in November in conjunction with the public meetings. Northwest Management will send out a doodle poll to determine when and where the committee meeting should be held.

November 20th, 2013 – Fire Protection District #3 Fire Station #36

Attendance:

Sean Davis, Franklin County Emergency Management
Jonathan Brooks, Bureau of Reclamation
Les Litzenberger, Franklin Co. F.P.D. 3
Mike Solheim, Bureau of Land Management
Brad Tucker, Northwest Management, Inc.

Agenda Item #1 – Old Business:

The Committee was reminded that Northwest Management still needs some District Surveys and Resource lists.

Northwest Management asked if there were any comments on the WUI map, there were none.

There were no comments on the list of Action Items previously developed.

Agenda Item #2 – Chapter 5:

The group went over the draft of Chapter 5 which describes the types of fuels and landscape seen throughout the County. The committee recommended changing the "Channeled Scablands" title of one section to "Shrub/Steppe". The committee was asked to review this chapter more thoroughly and provide NMI with changes.

Agenda Item #3 – Proposed Projects:

Northwest Management developed a map of proposed projects. The committee reviewed these projects and added several more to the list. NMI will provide this map electronically when it gets updated with the new projects. These projects will be prioritized by the committee at the next meeting.

Agenda Item #4 – Public Meetings:

Northwest Management hosted two public meetings at F.P.D. #3 station #36 and the Connell station. We had several committee members attend each meeting with one citizen at each meeting.

Agenda Item #5 – Meeting Schedule:

The next meeting will be tentatively held December 17th at 10 am. This meeting will be at the Connell Fire Station. Northwest Management hopes to have the draft plan ready for this meeting for the committee to review.

December 17th, 2013 – Fire Protection District #3 Fire Station #36

Attendance:

Sean Davis, Franklin County Emergency Management	Jacque Cook, Franklin County Emergency Management
Thomas Skinner, US Fish & Wildlife	Joe Blazek, Washington DNR
Les Litzenberger, Franklin Co. F.P.D. 3	Chuck Wytko, Washington DNR
Mike Solheim, Bureau of Land Management	Mike Harris, Franklin CO. F.D. #3
Brad Tucker, Northwest Management, Inc.	Chris Schulte, Connell Fire Department

Agenda Item #1 – Old Business:

The Committee was reminded that Northwest Management still needs some District Surveys and Resource lists.

Agenda Item #2 – Public Review:

Northwest Management informed the committee that the public will have a chance to review the draft plan before it is finalized. Northwest Management asked the committee to decide how long the public should have to review it, where the plan should be made available, and what media outlets should be utilized to inform the public about the opportunity to review.

The public will have a chance to review the document for 4 weeks following the 4 weeks given to the committee to review the Plan. Press releases will be provided to the Tri-City Herald, Graphic, and KONA radio station. The committee decided that these media outlets reach a sufficient amount of people and are easy to work with. The committee determined that the document will be posted on the Emergency Management Department, Fire District #3, and the City of Connell's websites. Hardcopies of the plan will be made available at Franklin Co. F.D. #3 station 36, Connell library, Kahlotus library, and Basin city library.

Agenda Item #3 – Proposed Projects:

Northwest Management developed a map of proposed projects. The committee reviewed these projects and prioritized them with a low, moderate or high ranking. Some concern was brought up on the type of projects that were on the list (e.g. roadside fuels treatments along 395). The committee felt that some projects were not feasible for several reasons. The committee decided to leave the list as it was but add a narrative describing the criteria used to develop the project areas and also provide a blanket statement that would allow Franklin County to use funding to provide Point Protection for specific areas of the County that may be deemed 'at risk' during any given year.

Agenda Item #4 – Draft Document:

Northwest Management passed out the draft plan to the committee and gave the committee until January 14th to provide comments or make edits. Franklin Co. F.D. #3 will provide NMI with a map showing the latest Fire District changes. NMI will send the PDF version of the plan in an email to everyone on the email list for review.

Agenda Item #5 – Meeting Schedule:

Once the final version of the plan is developed, we will likely host one last meeting to acquire signatures (NMI will inform at a later date). There will be no future monthly meetings unless significant changes are required and NMI needs the committees advice on how to proceed. NMI will inform everyone if that is the case.

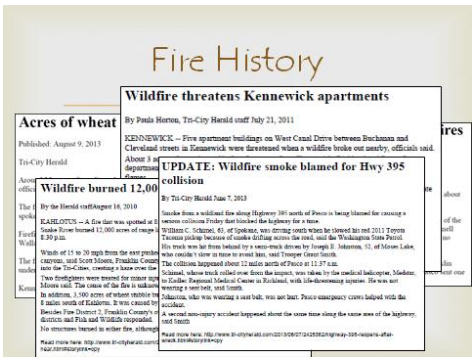
Public Meeting Presentation

The following slideshow was presented at each of the public meetings by Brad Tucker of Northwest Management, Inc. In addition, where possible, a fire district or other planning committee representative opened the meeting with a brief introduction.

Slide 1

Slide 2

Slide 3



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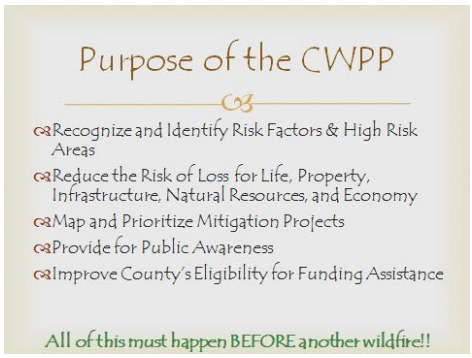

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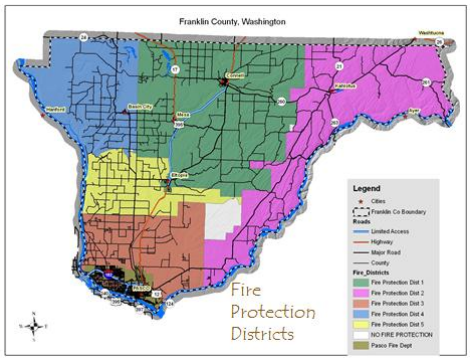

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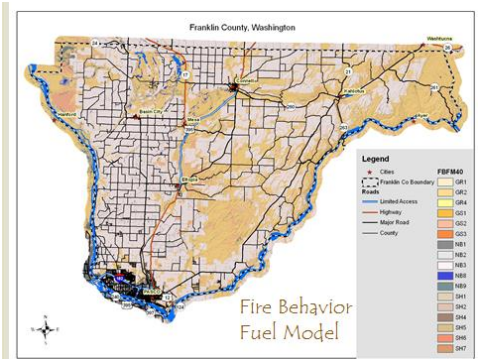

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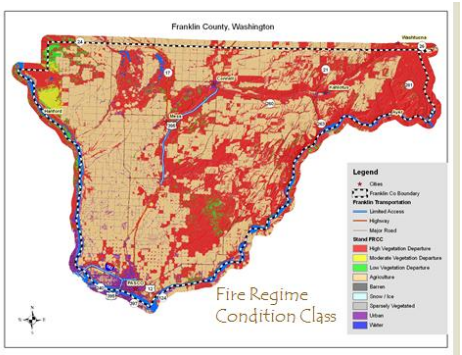

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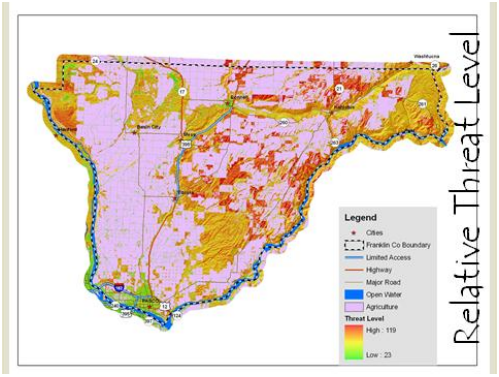


Slide 11

Preparedness

- Fire Services & Emergency Services
  - Resources & Training
- Wildland Fire Protection
  - Who's Jurisdiction?
  - What MOUs are in place?
- Local Government
  - Protecting citizens through policy & education
- Local Organizations
  - Find out how you can get involved

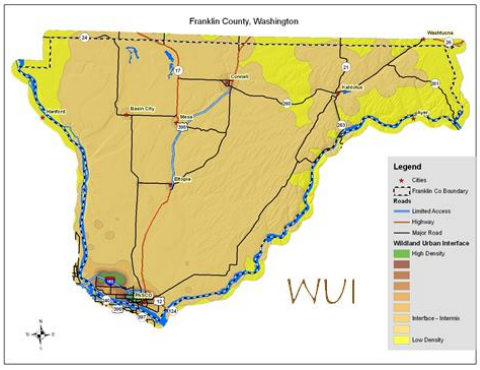
Slide 12

Public Involvement

- Press Releases about planning efforts
- Informational flyers
- Public Meetings X2
- Public Review of the DRAFT Plan

Slide 13

Slide 14



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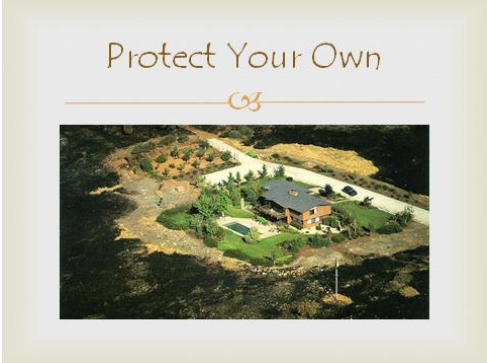

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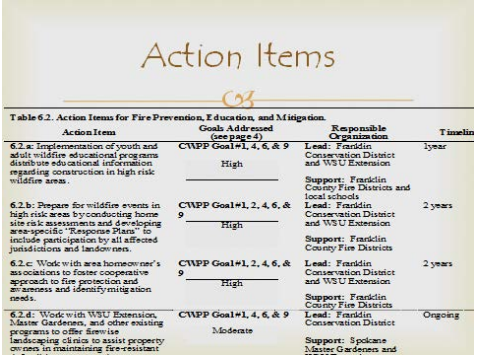

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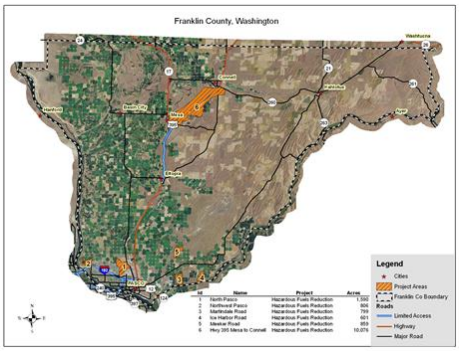

Slide 20

Slide 21

Public Comments

There have been no public comments regarding this plan to this point.

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Appendix 3

Risk Analysis Models

Historic Fire Regime

A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). Coarse-scale definitions for natural (historical) fire regimes have been developed by Hardy et al. (2001) and Schmidt et al. (2002) and interpreted for fire and fuels management by Hann and Bunnell (2001). The five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation. These five regimes include: I – 0-35 year frequency and low (surface fires most common) to mixed severity (less than 75% of the dominant overstory vegetation replaced); II – 0-35 year frequency and high (stand replacement) severity (greater than 75% of the dominant overstory vegetation replaced); III – 35-100+ year frequency and mixed severity (less than 75% of the dominant overstory vegetation replaced); IV – 35-100+ year frequency and high (stand replacement) severity (greater than 75% of the dominant overstory vegetation replaced); V – 200+ year frequency and high (stand replacement) severity.

A database of fire history studies in Washington was used to develop modeling rules for predicting historical fire regimes (HFRs). Tabular fire-history data and spatial data was stratified into ecoregions, potential natural vegetation types (PNVs), slope classes, and aspect classes to derive rule sets which were then modeled spatially. Expert opinion was substituted for a stratum when empirical data was not available.

Fire is one of the dominant disturbance processes that manipulate vegetation patterns in Washington. The HFR data were prepared to supplement other data necessary to assess integrated risks and opportunities at regional and subregional scales. The HFR theme was derived specifically to estimate an index of the relative change of a disturbance process, and the subsequent patterns of vegetation composition and structure.

These data were derived using fire history data from a variety of different sources. These data were designed to characterize broad scale patterns of historical fire regimes for use in regional and subregional assessments. Any decisions based on these data should be supported with field verification, especially at scales finer than 1:100,000. Because the resolution of the HFR theme is 30 meter cell size, the expected accuracy does not warrant their use for analyses of areas smaller than about 10,000 acres (for example, assessments that typically require 1:24,000 data).

Vegetation Condition Class

Vegetation Condition Class (VCC) is an interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels, and disturbance regimes. Assessing VCC can help guide management objectives and set priorities for treatments.

As scale of application becomes finer the five historic fire regimes may be defined with more detail, or any one class may be split into finer classes, but the hierarchy to the coarse scale definitions should be retained. Coarse-scale VCC classes have been defined and mapped by Hardy et al. (2001) and Schmidt et al. (2001). They include three condition classes for each historic fire regime. The classification is based on a relative measure describing the degree of departure from the historical natural fire regime. This departure results in changes to one (or more) of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated disturbances (e.g. insect and diseased mortality, grazing, and drought). There are no wildland vegetation and fuel conditions or wildland fire situations that do not fit within one of the three classes.

The three classes are based on low (VCC 1), moderate (VCC 2), and high (VCC 3) departure from the central tendency of the natural (historical) regime (Hann and Bunnell 2001, Hardy et al. 2001, Schmidt et al. 2002). The central tendency is a composite estimate of vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated natural disturbances. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside.

Characteristic vegetation and fuel conditions are considered to be those that occurred within the natural (historical) fire regime. Uncharacteristic conditions are considered to be those that did not occur within the natural (historical) fire regime, such as invasive species (e.g. weeds, insects, and diseases), “high graded” forest composition and structure (e.g. large trees removed in a frequent surface fire regime), or repeated annual grazing that maintains grassy fuels across relatively large areas at levels that will not carry a surface fire.

Determination of amount of departure is based on comparison of a composite measure of fire regime attributes (vegetation characteristics; fuel composition; fire frequency, severity and pattern) to the central tendency of the natural (historical) fire regime. The amount of departure is then classified to determine the vegetation condition class. A simplified description of the fire regime condition classes and associated potential risks follow.

Vegetation Condition Class	Description	Potential Risks
Condition Class 1	Within the natural (historical) range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	Fire behavior, effects, and other associated disturbances are similar to those that occurred prior to fire exclusion (suppression) and other types of management that do not mimic the natural fire regime and associated vegetation and fuel characteristics. Composition and structure of vegetation and fuels are similar to the natural (historical) regime. Risk of loss of key ecosystem components (e.g., native species, large trees, and soil) is low.
Condition Class 2	Moderate departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	Fire behavior, effects, and other associated disturbances are moderately departed (more or less severe). Composition and structure of vegetation and fuel are moderately altered. Uncharacteristic conditions range from low to moderate. Risk of loss of key ecosystem components is moderate.
Condition Class 3	High departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	Fire behavior, effects, and other associated disturbances are highly departed (more or less severe). Composition and structure of vegetation and fuel are highly altered. Uncharacteristic conditions range from moderate to high. Risk of loss of key ecosystem components is high.

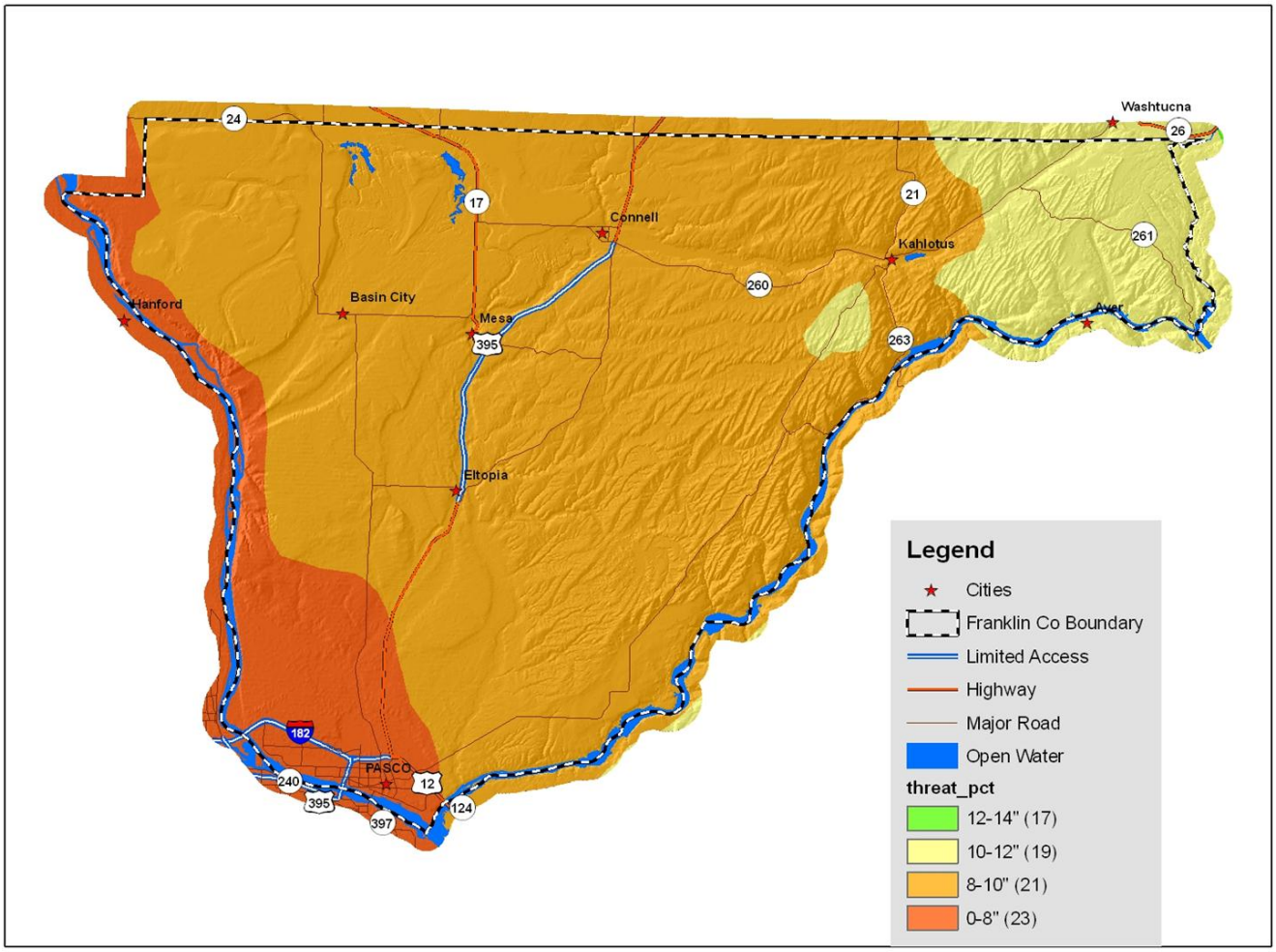
Relative Threat Level

Development of a Threat Level map for the Franklin County CWPP involved geographically developing and ranking the various threat categories identified by the CWPP Committee. Threat categories identified for the analysis include Slope, Aspect, Fire Behavior Fuel Model, Predicted Flam Length Class, Precipitation Levels, Predicted Rate of Fire Spread, Predicted Wild Fire Intensity and Population Density. The various data sets for each threat or condition were developed and ranked based on their significance pertaining to wildfire. The various ranked layers were then analyzed in a geographical information system to produce a cumulative effects map based on the ranking. Following is a brief explanation of the various threats identified for

the analysis, and the general value ranking scheme used for each. The Relative Threat Level Map is found on page 9 of the appendices of the CWPP document.

Precipitation

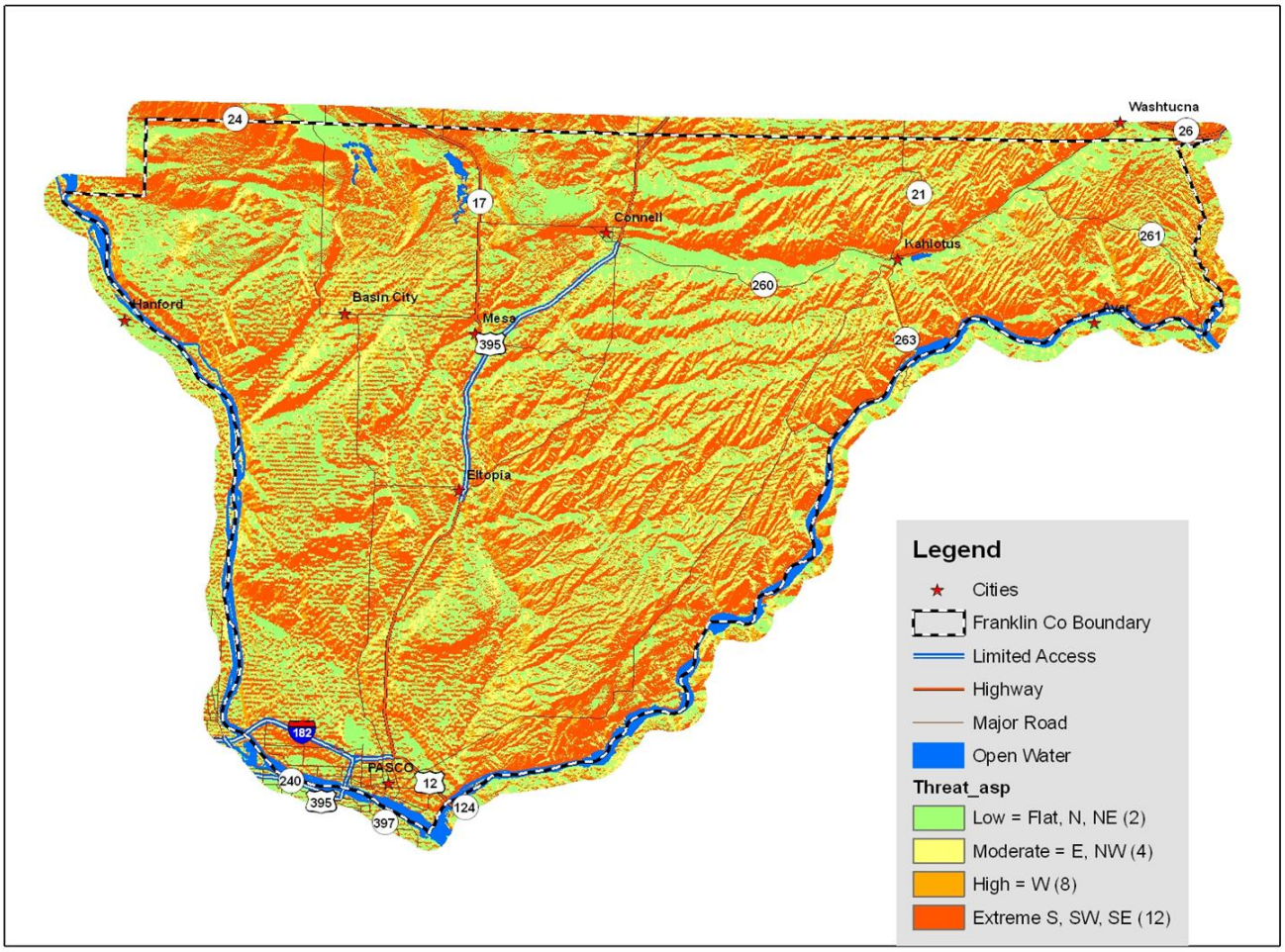
A GIS precipitation data layer developed by the USDA/NRCS – National Cartography & Geospatial Center, was used to identify average precipitation across Franklin County. The dataset provides derived average annual precipitation in polygon contour format according to a model using point precipitation and elevation data for the 30 year period of 1971-2000. Precipitation plays a role in wildfire threat; areas of lower precipitation are more likely to exhibit a higher threat than high precipitation areas. For the threat level analysis, a precipitation layer value was derived using the average for the range of values, multiplied by two, and subtracting the range value. This gives an inverse value relationship indicating that increased precipitation has a decreased threat level. The threat level range is between 7 and 23 with low precipitation



areas exhibiting the high threat level value, and high precipitation area the low value.

Aspect

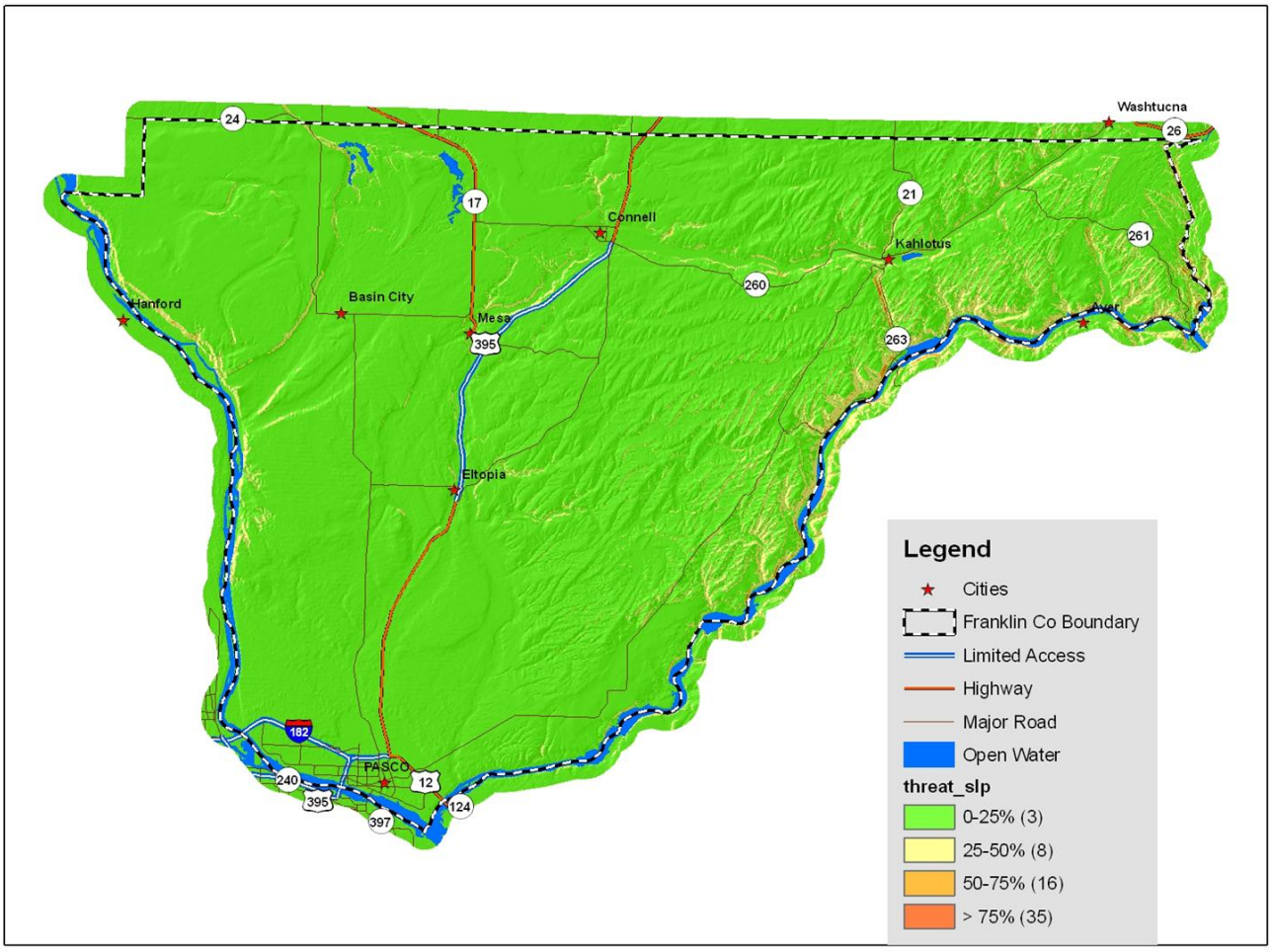
An aspect raster data layer was created in ArcGIS using the Spatial Analyst extension and a 10 meter digital elevation model. Data processing in ArcGIS assigns an aspect value from 0-359° to each pixel to represent compass azimuths. These azimuths were interpreted and given a treat value based on their relative contribution to wildfire behavior. In general, the southerly and westerly aspects have a higher threat level than the easterly and northerly aspects. Based on this, the raster values were classified into 4 aspect threat levels and assigned a threat value. The aspects Flat, North and Northeast were assigned a value of 2 for low, East and Northwest were assigned a value of 4 for moderate, West was assigned a value of 8 for high, and Southwest,



South and Southeast were assigned a value of 12 for extreme aspect threat level.

Slope

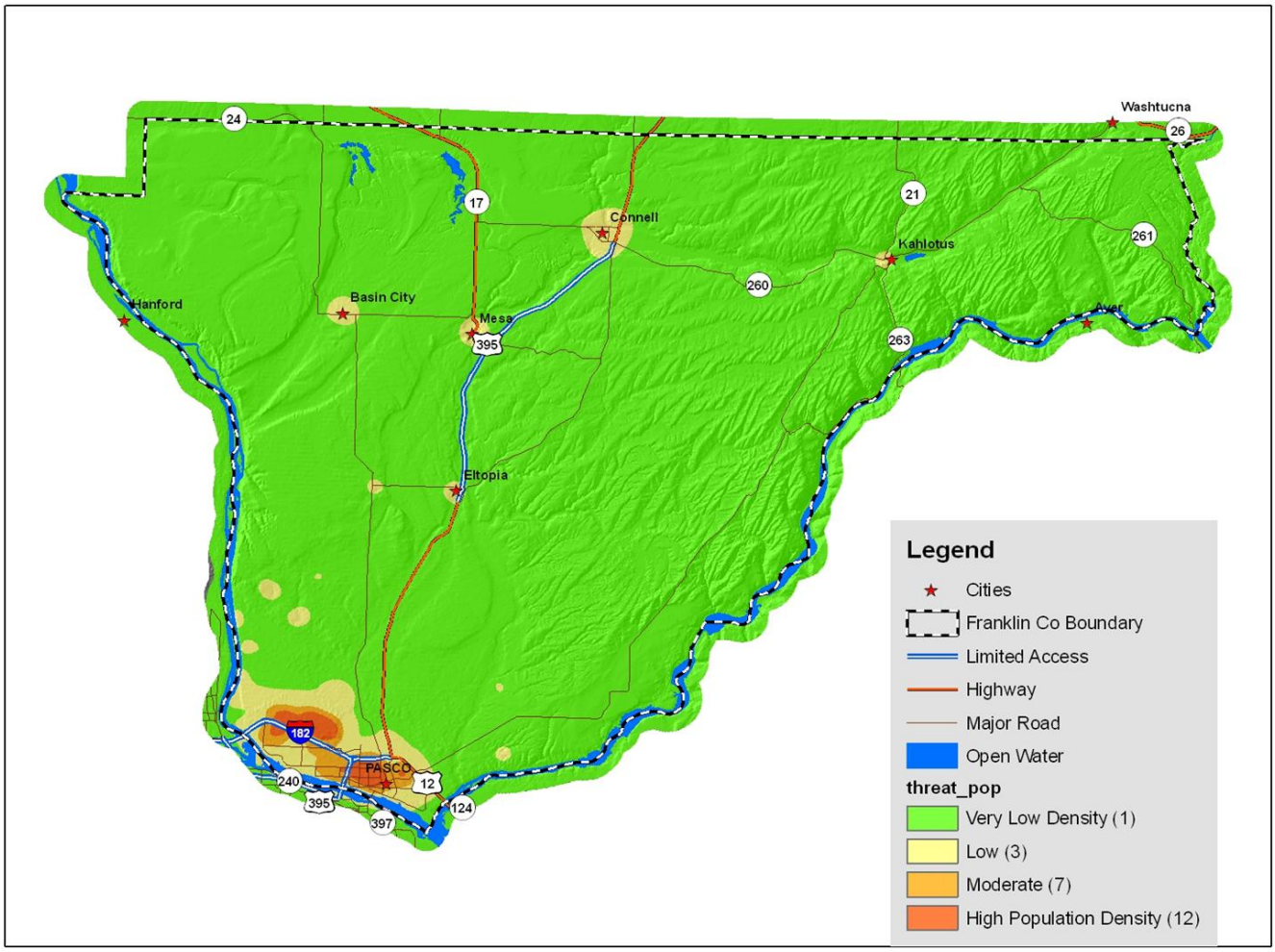
A slope raster data layer was created in ArcGIS using the Spatial Analyst extension and a 10 meter digital elevation model. Data processing in ArcGIS assigns a slope value in percent for each pixel. Once created, the slope model was classified into 4 groups, Low, Moderate, High and Extreme for final analysis. From a wildfire stand point, the treat from fire increases with increased slope. For this analysis, 0-25% slope was assigned a value of 8 for low threat, 25-50% slope a value of 25 for moderate threat, 50-75% slope a value of 32 for high threat, and greater



than 75% slope a value of 50 for extreme threat.

Population

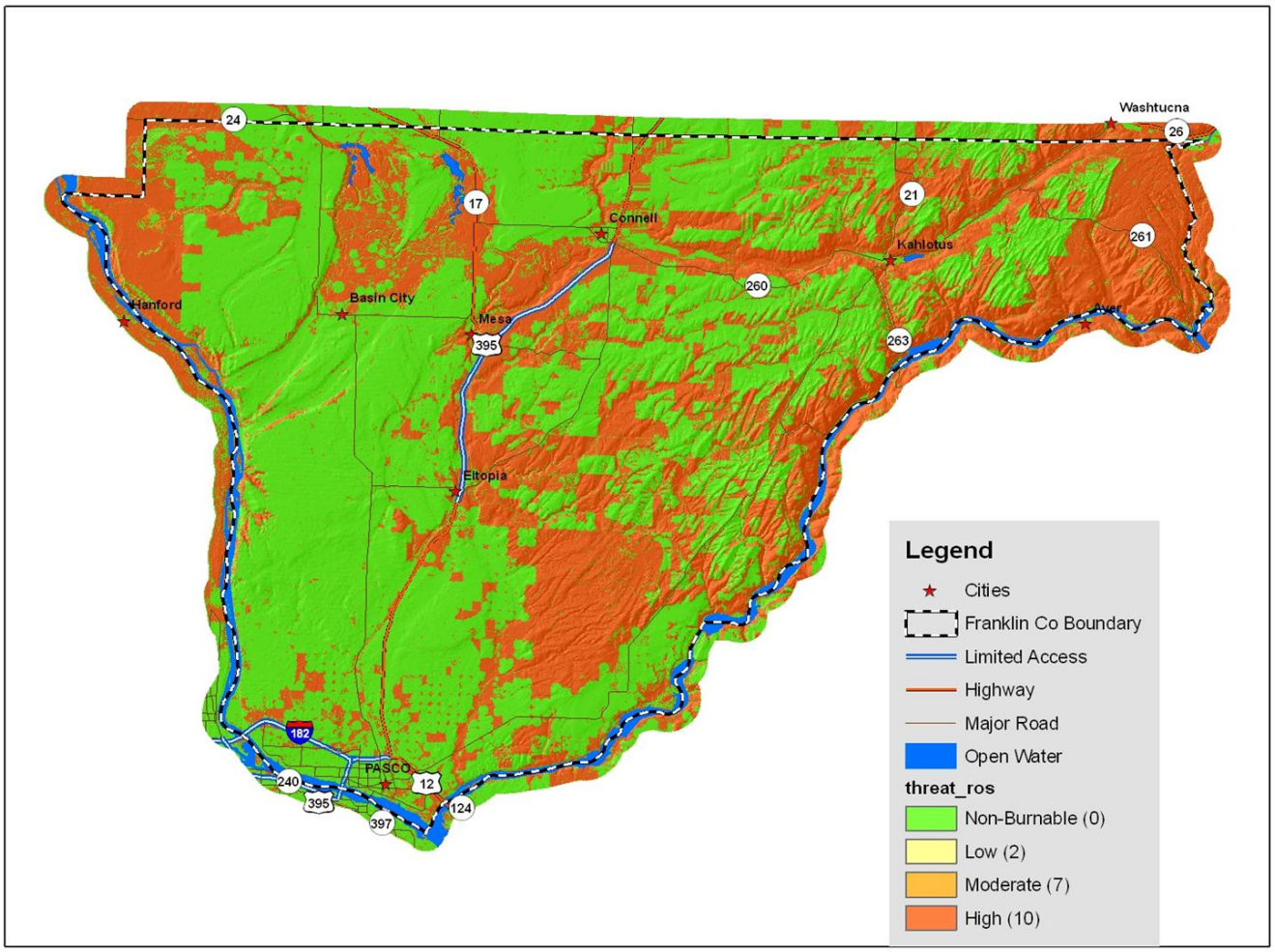
Population density plays a role in Franklin County wildfire threat. Most wildfires in the county are man caused. To represent this in a threat level analysis, population density across the county was mapped using a Kernel density model based on structure point locations. The output from this analysis produces contour polygons of equal population density across the landscape. The contour polygon data set was then reclassified into four categories and assigned a population threat level value. The assigned threat level values represent the relative threat caused by population density and the increased risk of fire being man caused as population increases. The



four values used are 1 for very low population density, 3, 7 and 12 for high density.

Rate of Spread

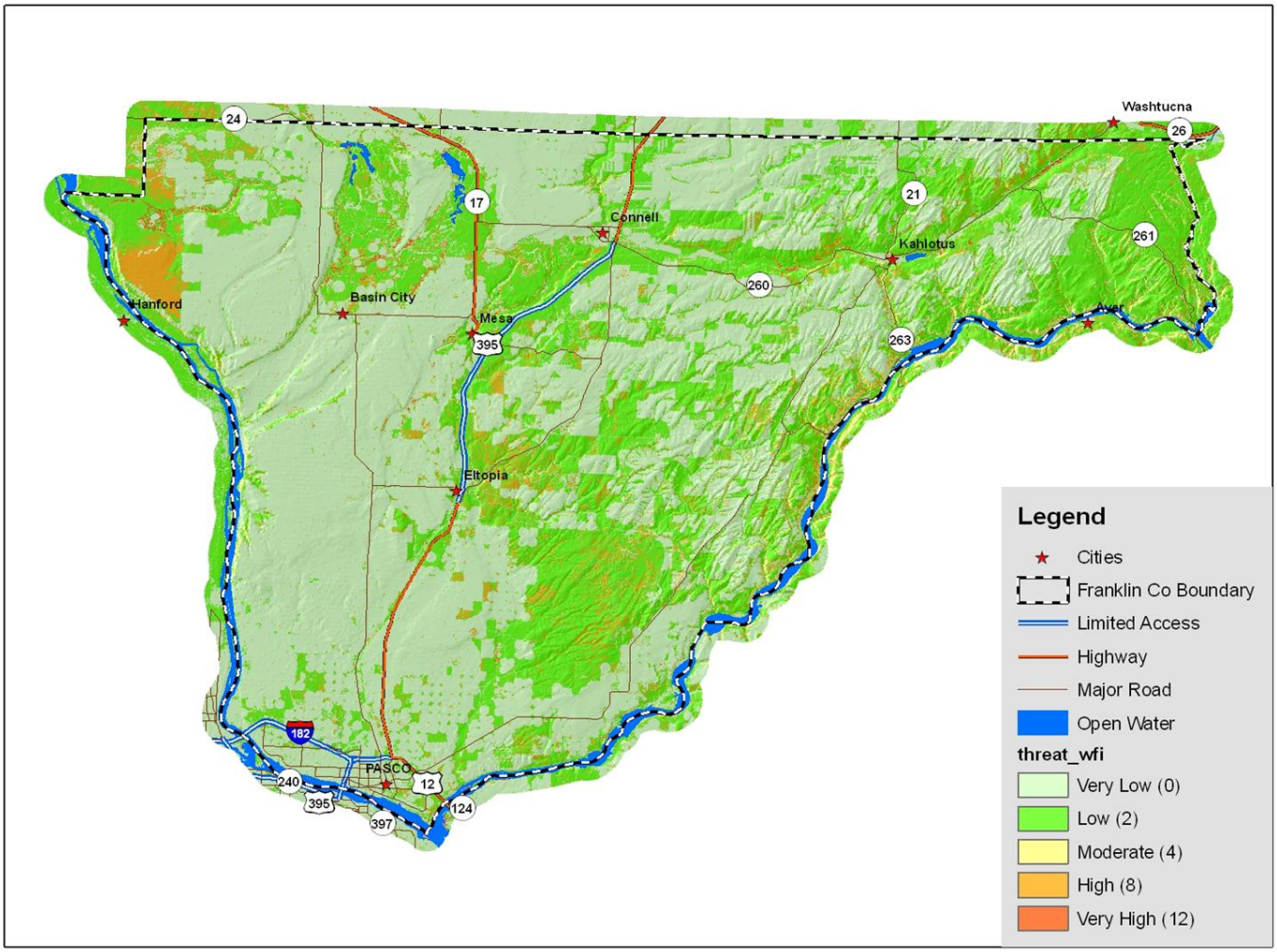
Output data from the Fire Behavior Assessment Tool (FBAT) was used to predict Rate of Spread (ROS). Rate of Spread is a derived metric that classifies areas into four classes representing non-burnable low (0<ROS<5.5 ft/min), moderate (5.5ft/min< ROS< 55ft/min) and high spread rates (>55 ft/min ROS). Predicted ROS outputs from the FBAT model were reclassified to incorporate a threat level value. A value of 0 was assigned to the non-burnable ROS, 2 to the



low ROS, 7 to the moderate ROS, and 10 to the high ROS.

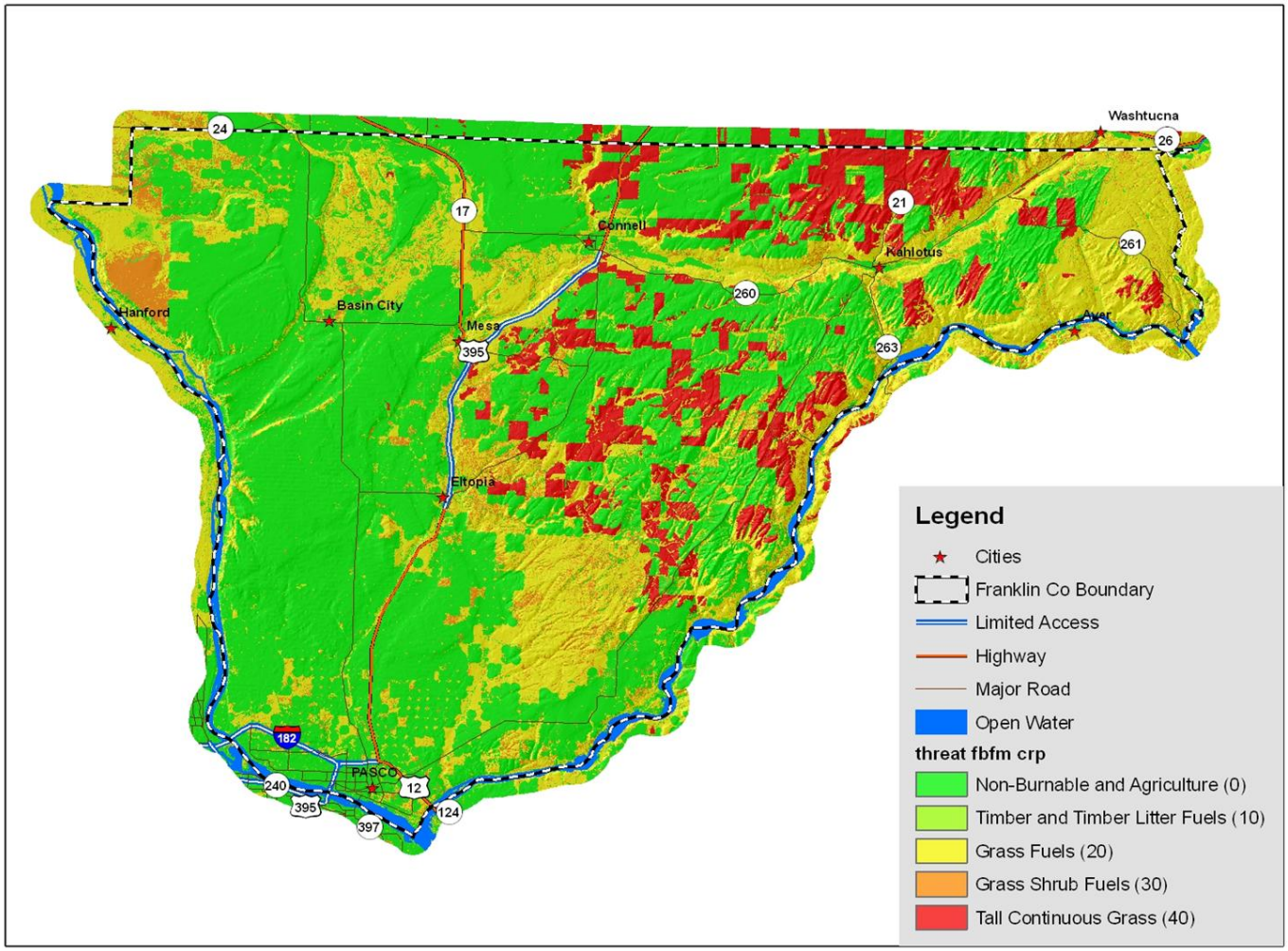
Wildland Fire Intensity

Output data from the Fire Behavior Assessment Tool (FBAT) was used to predict Wildland Fire Intensity (WFI). Wildland Fire Intensity is a derived metric that facilitates communication about and interpretation of fireline intensity. It is analogous to the logarithmic Richter scale used to measure the magnitude of earthquakes. For threat level analysis, the predicted WFI outputs from the FBAT model were classified into four categories, (Low, Moderate, High and Extreme) and given threat level values from 0-40 with a 10 fold increase in treat value between threat levels.



Fire Behavior Fuel Model

Scott and Burgan's 40 Fire Behavior Fuel Model was used in the threat level analysis to provide wildfire fuels information. For this analysis, the variety of fuels present in Franklin County that were depicted in the fuels layer were grouped into 5 threat level value categories based on perceived relative contribution to wildfire threat. The following ranking was used in the analysis. Agricultural areas were assigned a value of 0, timber fuels were assigned a value of 10, grasslands were assigned a value of 20, mixed shrub and grass were assigned a value of 30, and tall grass and CRP fields were assigned a value of 40. The values given the categories are meant



to represent the role various surface fuels contribute to overall wildfire threat in Douglas County.

Each data layer was developed, ranked and converted to a raster format using ArcGIS 9.3.1. The ten data layers were analyzed in ArcGIS using the Spatial Analyst extension to calculate their cumulative effects. This process sums the ranked overlaid values geographically at the pixel level to produce a draft overall threat map layer. The draft layer had many areas of mixed pixel classification. To clean up and create a final output the draft data set was reprocessed in ArcGIS Spatial Analyst using the Majority Filter and Boundary Clean tools. This process cleaned and generalized areas of the data layer by grouping areas of scattered and mixed pixelization into areas of uniform pixelization. Values in the cleaned version were then grouped into four categories based on the summed value and color coded to produce the final threat map layer. The final layer show areas of highest threat using red, to lowest threat using purple (see threat level map). Areas with the highest values are the areas of concern based on the threats identified and values used. Varying results will occur by adjusting the threat value with in a particular layer, or omitting layers from the analysis. All threat values used in this analysis are based on discussion with committee members, documentation and general wildfire behavior characteristics. Adjusting or varying threat level values may result in a different final threat level in a particular geographic area.

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Appendix 4

Fire Services Information

Franklin County Fire Protection District #1:	Chief: Eric Mauseth Telephone: 509-234-2421 Address: 150 E Franklin, Connell, WA 99326
Franklin County Fire Protection District #2:	Chief: Luke Vanhollenbeke Address: 116 W 2nd Ave., Lind, WA 99341 Telephone: 509-282-3435
Franklin County Fire Protection District #3:	Chief: Mike Harris Telephone: 509-547-9306 Email: mharris@fcfd3.org Address: 7809 North Road 36, Pasco, WA 99301
Franklin County Fire Protection District #4:	Chief: Steve Cooper Telephone: Address:
Franklin County Fire Protection District #5:	Chief: Bryan Thornhill Telephone: E-Mail: Address:
Pasco Fire Department:	Chief: Bob Gear Telephone: 509-310-3426 E-Mail: gearb@pasco-wa.gov Address: 310 N Oregon St., Pasco, WA 99301
Connell Fire Department:	Chief: Chris Schulte Telephone: 509-234-5451 E-Mail: CSchulte@connellwa.org Address: 104 E. Adams St., Connell, WA 99326
U.S. Fish and Wildlife Service:	FMO: Thomas Skinner Telephone: 509-371-1801 Address: 3250 Port of Benton Blvd., Richland, WA 99352

Bureau of Land Management	Spokane District District FMO: Dennis Strange Telephone: 509-536-1237 Address: 1103 N. Fancher, Spokane Valley, WA 99212

Fire Services Resource List

	Type	Resource	Gallons	Drive	Vehicle or License #	Specifications	Location
Franklin County Fire District #1	Command 201	Command Vehicle	0	4 x 4	WA, 19545D	F-250, Pick up, Crew cab	Connell Fire Station
	T-1 Engine/Pumper	E2011	1000	2 x 4	WA, 09818D	Structural Apparatus	Connell Fire Station
	T-2 Aerial	T2021	400	2 x 4	WA, 47588D	Structural Apparatus	Connell Fire Station
Franklin County Fire District #2							
Franklin County Fire District #3	Engine 1	Structural Engine	1000	2x4	E2316	1250 gpm	St36
	Engine 1	Structural Engine	1000	2x4	E2314	1250 gpm	St34
	Engine 1	Structural Engine	1000	2x4	E2313	1500 gpm	St33
	Engine 1	Structural Engine	1500	2x4	E2311	1000 gpm	St31
	Engine 1	Structural Engine	750	2x4	E2812	1250 gpm	St32
	Engine 5	Wildland Engine	400	4x4	E2356	125 gpm, FOAM Remote	St36
	Engine 5	Wildland Engine	400	4x4	E2854	125 gpm, FOAM Remote	St34
	Engine 6	Wildland Engine	300	4x4	E2365	125gpm, FOAM Remote	St35
	Engine 6	Wildland Engine	300	4x4	E2363	100 gpm FOAM	St33
	Engine 6	Wildland Engine	300	4x4	E2361	100 gpm FOAM	St31
	Engine 6	Wildland Engine	300	4x4	E2862	100 gpm FOAM	St32
	Plow 1	Tractor/Disk		4x4	PL231	10’ Three point	St31
	Rescue 4	Medium Rescue	60 CAFS	2x4	R2346	12kw Generator, JAWS, CAFS, Lighting	St36
	Rescue 4	Rescue/Cascade		4x4	R2844	JAWS, CAHI	St34
	Water Tender 2	Water Tender	1875	4x6	W2822	1250 gpm	St32
	Water Tender 2	Water Tender	2500	4x6	W2326	1000 gpm	St36
	Water Tender 2	Water Tender	2500	4x6	W2321	500 gpm	St31
	Water Tender 2	Water Tender	2500	4x6	W2824	400 gpm	St36
	Utility	Utility		4x4	UT231	Duty Officer	
	Utility	Utility		4x4	UT232	Fire Chief	

	Type	Resource	Gallons	Drive	Vehicle or License #	Specifications	Location
	Utility	Utility		4x4	UT233	2 Passenger ¾ ton, Winch	
	Maintenance	Maintenance	300	4X4	MA232	100gpm FOAM	St33
	ATV	ATV	70	6x6	AT233	25gpm FOAM	St31
	Aid 2	BLS ambulance		2x4	A2326	EMT Basic Life Support	ST36
	Aid 2	BLS ambulance		2x4	A2822	EMT Basic Life Support	ST32
Franklin County Fire District #5	Command 251	Command Vehicle	0	4 x 4	WA	F-250, Pick up, Crew cab	Chiefs Residence
	T-1 Engine/Pumper	E2211	1200	2 x 4	WA	Structural Apparatus	Glade north Station
	T-1 Structure engine	E2512	1800	2x4	WA	Pumper tender	Dogwood RD
	W-1 Water tender	W2511	5000	2x4	WA	Water tender	Glade north Station
	T-6 Engine	E2561	400	4x4	WA	Wildland Engine	Glade north Station
	T-6 Engine	E2562	350	4x4	WA	Wildland Engine	Glade north Station
City of Connell Fire Department	Command 201	Command Vehicle	0	4 x 4	WA, 19545D	F-250, Pick up, Crew cab	City of Connell Fire Station
	T-1 Engine/Pumper	E2011	1000	2 x 4	WA, 09818D	Structural Apparatus	City of Connell Fire Station
	T-2 Aerial	T2021	400	2 x 4	WA, 47588D	Structural Apparatus	City of Connell Fire Station
City of Pasco Fire Department	Eng 1	Structural Engine	750		E2811	1500 gpm pump	Station 81
	Eng 1	Structural Engine	750		E2813	1500 gpm pump	Station 83
	Eng 1	Structural Engine	750		E2819	1500 gpm pump	Station 83
	Eng 6	Wildland Engine	300	4X4	E2861	150 gpm pump	Station 81
	Eng 6	Wildland Engine	300	4X4	E2863	150 gpm pump	Station 83
	ICT4	Command Vehicle	N/A	2X4	BC281	Battalion Chief	Station 81
	ICT 1	Command Vehicle	N/A	4X4	CH281	Fire Chief	Station 81
	PSC 3	Command Vehicle	N/A	4X4	TO281	Training/Plans Section Chief	Station 81
	Lad. 2	Aerial Ladder	300		L2811	1500 gpm pump	Station 82
	Amb 2	ALS Amb	N/A		M2821	Advanced Life Support/Paramedics	Station 81
	Amb 2	ALS Amb	N/A		M2822	Advanced Life Support/Paramedics	Station 82
	Amb 2	ALS Amb	N/A		M2823	Advanced Life Support/Paramedics	Station 83
	Amb 2	ALS Amb	N/A		M2824	Advanced Life Support/Paramedics	Station 83

	Type	Resource	Gallons	Drive	Vehicle or License #	Specifications	Location
	Res 4	Tech. Rescue	50	4X4	R2841	Light Rescue	Station 82
	Eng 1	Structural Engine	750		E2811	1500 gpm pump	Station 81
U.S. Fish & Wildlife Service	Type 6	Wildland Engine	300	4x4	E-863		Burbank
	Type 6	Wildland Engine	300	4x4	E-861	Not currently funded	Othello
	Type 4	Wildland Engine	750	4x4	E-841		Burbank
	Type 5	Wildland Engine	500	4x4	E-852		Othello
	ICT3/DIVS	Command Vehicle		4x4	Div-802		Burbank
	ICT3/DIVS	Command Vehicle		4x4	CH-801		Burbank
	ICT4/DIVS	Command Vehicle		4x4	BC-804		Burbank
	ICT3	Command Vehicle		4X4	BC-802		Othello
	Type 3	Fire Boat			FB-831	Staffed when needed	Burbank
BLM	Type 6	Wildland Engine	300	4x4	E-6696		Spokane
	Type 6	Wildland Engine	300	4x4	E-6695		Wenatchee
	Type 2	Handcrew		4x4	C-6201	10-person handcrew	Spokane
	ICT3	Command Vehicle					Spokane
		Chipper		Trailer		Vermeer BC1200	Spokane
Washington Department of Natural Resources	Type 5				WA-NWS-E5-462 H5S-4198		
	Type 5				WA-NWS-E5-463 H5S-5230		
	Type 5				WA-NWS-E5-465 H5S-5232		
	Type 5			4 X 4	WA-NWS-E5X-541 H4S-0007		
	Type 5			4 X 4	WA-NWS-E5X-542 H4S-0022		
	Type 5			4 X 4	WA-NWS-E6X-543 H4S-0010		
	Type 5				WA-NWS-E5-566 H5S-088		
	Type 6			4X 4	WA-NWS-E6X-421 A1S-4540		
	Type 6			4 X 4	WA-NWS-E6X-523 A1S-4259 w/ tow hitch		
	Type 5				WA-NWS-E5-563 H5S-4197		
	Type 5				WA-NWS-E5-564 H5S-4199		
	Type 5				WA-NWS-E5-565 H5S-072		

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Appendix 5

State and Federal CWPP Guidance

National Cohesive Strategy

In response to requirements of the Federal Land Assistance, Management, and Enhancement (FLAME) Act of 2009, the Wildland Fire Leadership Council (WFLC) directed the development of the National Cohesive Wildland Fire Management Strategy (Cohesive Strategy).

The Cohesive Strategy is a collaborative process with active involvement of all levels of government and non-governmental organizations, as well as the public, to seek national, all-lands solutions to wildland fire management issues.

The Cohesive Strategy is being implemented in three phases, allowing stakeholders to systematically develop a dynamic approach to planning for, responding to, and recovering from wildland fire incidents. This phased approach is designed to promote dialogue between national, regional and local leadership.

Phase I involved the development of two documents: *A National Cohesive Wildland Fire Management Strategy* and the *The Federal Land Assistance, Management And Enhancement Act Of 2009 - Report to Congress*. These documents provide the foundation of the Cohesive Strategy.

In Phase II, regional assessments were completed to address the national goals to the needs and challenges found at regional and local levels. Regional Strategy Committees representing three regions of the country—the Northeast, Southeast, and West—examined the processes by which wildland fire, or the absence thereof, threatens areas and issues that American value, including wildlife habitats, watershed quality, and local economies, among others.

Phase III involves taking the qualitative information gathered in Phase II and translating it into quantitative models that can help inform management actions on the ground. Once the strategy is finalized, it will be implemented across the country and overseen by the Wildland Fire Executive Council (WFEC), which will establish a five-year review cycle to provide updates to Congress.

The Wildland Fire Executive Council (WFEC) accepted the final Regional Action Plans for each of the Cohesive Strategy Regions: Northeast, Southeast, and West in April 2013. The WFEC tasked the Cohesive Strategy Sub-Committee (CSSC) to use the regional action plans to inform the development of the national action plan. The National Risk Analysis Report and National Action Plan will become WFEC recommendations to the Wildland Fire Leadership Council (WFLC) and ultimately to the Secretaries of the Interior and Agriculture. The regional action plans reflect the regional perspective that is important in the development of that national-level recommendation. Implementation of actions identified in Regional Action Plans is the responsibility of the sponsoring organizations at the discretion of those organizations.

National Fire Plan

The National Fire Plan (NFP) was developed by the U.S. Departments of Interior and Agriculture and their land management agencies in August 2000, following a landmark wildland fire season, with the intent of actively responding to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future. The NFP addresses five key points: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability. The National Fire Plan continues to provide invaluable technical, financial, and resource guidance and support for wildland fire management across the United States. Together, the USDA Forest Service and the Department of the Interior are working to successfully implement the key points outlined in the National Fire Plan.

This Community Wildfire Protection Plan fulfills the National Fire Plan's 10-Year Comprehensive Strategy Implementation Plan (WFLC 2006). The projects and activities recommended under this plan are in addition to other federal, state, and private / corporate forest and rangeland management activities. The implementation plan does not alter, diminish, or expand the existing jurisdiction, statutory and regulatory responsibilities and authorities or budget processes of participating federal and state agencies.

The NFP goals of this Community Wildfire Protection Plan include:

1. Improve Fire Prevention and Suppression
2. Reduce Hazardous Fuels
3. Restoration and Post-Fire Recovery of Fire-Adapted Ecosystems
4. Promote Community Assistance

By endorsing this implementation plan, all signed parties agree that reducing the threat of wildland fire to people, communities, and ecosystems will require:

- Maintaining firefighter and public safety continuing as the highest priority.
- Communities and individuals in the wildland-urban interface to initiate personal stewardship and volunteer actions that will reduce wildland fire risks.
- A sustained, long-term and cost-effective investment of resources by all public and private parties, recognizing overall budget parameters affecting federal, state, county, and local governments.
- A unified effort to implement the collaborative framework called for in the strategy in a manner that ensures timely decisions at each level.
- Accountability for measuring and monitoring performance and outcomes, and a commitment to factoring findings into future decision making activities.
- The achievement of national goals through action at the local level with particular attention to the unique needs of cross-boundary efforts and the importance of funding on-the-ground activities.

- Management activities, both in the wildland-urban interface and in at-risk areas across the broader landscape.
- Active forestland management, including thinning that produces commercial or pre-commercial products, biomass removal and utilization, prescribed fire and other fuels reduction activities to simultaneously meet long-term ecological, economic, and community objectives.

The National Fire Plan identifies a three-tiered organizational structure including 1) the local level, 2) state/regional and tribal level, and 3) the national level. This plan adheres to the collaboration and outcomes consistent with a local level plan. Local level collaboration involves participants with direct responsibility for management decisions affecting public and/or private land and resources, fire protection responsibilities, or good working knowledge and interest in local resources. Participants in this planning process include local representatives from federal and state agencies, local governments, landowners and other stakeholders, and community-based groups with a demonstrated commitment to achieving the strategy's four goals. Existing resource advisory committees, watershed councils, or other collaborative entities may serve to achieve coordination at this level. Local involvement, expected to be broadly represented, is a primary source of planning, project prioritization, and resource allocation and coordination. The role of the private citizen should not be underestimated as all phases of risk assessment, mitigation, and project implementation are greatly facilitated by their involvement.

National Association of State Foresters

This plan is written with the intent to provide decision makers (elected and appointed officials) the information they need to prioritize projects across the entire county. These decisions may be made by the Board of Commissioners or other elected body or through the recommendations of ad hoc groups tasked with making prioritized lists of communities at risk as well as project areas. It is not necessary to rank communities or projects numerically, although that is one approach. Rather, it may be possible to rank them categorically (high priority set, medium priority set, and so forth) and still accomplish the goals and objectives set forth in this planning document.

The following was prepared by the National Association of State Foresters (NASF), June 27, 2003, and is included here as a reference for the identification and prioritizing of treatments between communities.

Purpose: To provide national, uniform guidance for implementing the provisions of the "Collaborative Fuels Treatment" Memorandum of Understanding (MOU), and to satisfy the requirements of Task e, Goal 4 of the Implementation Plan for the 10-Year Comprehensive Strategy.

Intent: The intent is to establish broad, nationally compatible standards for identifying and prioritizing communities at risk, while allowing for maximum flexibility at the state and regional level. Three basic premises are:

- Include all lands and all ownerships.

- Use a collaborative process that is consistent with the complexity of land ownership patterns, resource management issues, and the number of interested stakeholders.
- Set priorities by evaluating projects, not by ranking communities.

The National Association of State Foresters (NASF) set forth the following guidelines in the Final Draft Concept Paper; Communities at Risk, December 2, 2002.

Task: Develop a definition for "communities at risk" and a process for prioritizing them, per the Implementation Plan for the 10-Year Comprehensive Strategy (Goal 4.e.). In addition, this definition will form the foundation for the NASF commitment to annually identify priority fuels reduction and ecosystem restoration projects in the proposed MOU with the federal agencies (section C.2 (b)).

Conceptual Approach

1. NASF fully supports the definition of the Wildland Urban Interface (WUI) previously published in the Federal Register. Further, proximity to federal lands should not be a consideration. The WUI is a set of conditions that exists on, or near, areas of wildland fuels nationwide, regardless of land ownership.
2. Communities at risk (or, alternately, landscapes of similar risk) should be identified on a state-by-state basis with the involvement of all agencies with wildland fire protection responsibilities: state, local, tribal, and federal.
3. It is neither reasonable nor feasible to attempt to prioritize communities on a rank order basis. Rather, communities (or landscapes) should be sorted into three, broad categories or zones of risk: high, medium, and low. Each state, in collaboration with its local partners, will develop the specific criteria it will use to sort communities or landscapes into the three categories. NASF recommends using the publication "Wildland/Urban Interface Fire Hazard Assessment Methodology" developed by the National Wildland/Urban Interface Fire Protection Program (circa 1998) as a reference guide. (This program, which has since evolved into the Firewise Program, is under the oversight of the National Wildfire Coordinating Group (NWCG)). At a minimum, states should consider the following factors when assessing the relative degree of exposure each community (landscape) faces.
    - **Risk:** Using historic fire occurrence records and other factors, assess the anticipated probability of a wildfire ignition.
    - **Hazard:** Assess the fuel conditions surrounding the community using a methodology such as fire condition class, or [other] process.
    - **Values Protected:** Evaluate the human values associated with the community or landscape, such as homes, businesses, and community infrastructure (e.g. water systems, utilities, transportation systems, critical care facilities, schools, manufacturing and industrial sites, and high value commercial timber lands).
    - **Protection Capabilities:** Assess the wildland fire protection capabilities of the agencies and local fire departments with jurisdiction.

4. Prioritize by project not by community. Annually prioritize projects within each state using the collaborative process defined in the national, interagency MOUs, "For the Development of a Collaborative Fuels Treatment Program." Assign the highest priorities to projects that will provide the greatest benefits either on the landscape or to communities. Attempt to properly sequence treatments on the landscape by working first around and within communities, and then moving further out into the surrounding landscape. This will require:
    - First, focusing on the zone of highest overall risk but considering projects in all zones. Identify a set of projects that will effectively reduce the level of risk to communities within the zone.
    - Second, determining the community's willingness and readiness to actively participate in an identified project.
    - Third, determining the willingness and ability of the owner of the surrounding land to undertake, and maintain, a complementary project.
    - Last, setting priorities by looking for projects that best meet the three criteria above. It is important to note that projects with the greatest potential to reduce risk to communities and the landscape may not be those in the highest risk zone, particularly if either the community or the surrounding landowner is not willing or able to actively participate.
5. It is important, and necessary, that we be able to demonstrate a local level of accomplishment that justifies to Congress the value of continuing the current level of appropriations for the National Fire Plan. Although appealing to appropriators and others, it is not likely that many communities (if any) will ever be removed from the list of communities at risk. Even after treatment, all communities will remain at some, albeit reduced, level of risk. However, by using a science-based system for measuring relative risk, we can likely show that, after treatment (or a series of treatments); communities are at "*reduced risk."*

Using the concept described above, the NASF believes it is possible to accurately assess the relative risk that communities face from wildland fire. Recognizing that the condition of the vegetation (fuel) on the landscape is dynamic, assessments and re-assessments must be done on a state-by-state basis, using a process that allows for the integration of local knowledge, conditions, and circumstances, with science-based national guidelines. We must remember that it is not only important to lower the risk to communities, but once the risk has been reduced, to maintain those communities at a reduced risk.

Further, it is essential that both the assessment process and the prioritization of projects be done collaboratively, with all local agencies with fire protection jurisdiction taking an active role.

Healthy Forests Restoration Act

On December 3, 2003, President Bush signed into law the Healthy Forests Restoration Act of 2003 to reduce the threat of destructive wildfires while upholding environmental standards and encouraging early public input during review and planning processes. The legislation is based on

sound science and helps further the President's Healthy Forests Initiative pledge to care for America's forests and rangelands, reduce the risk of catastrophic fire to communities, help save the lives of firefighters and citizens, and protect threatened and endangered species.

The Healthy Forests Restoration Act (HFRA) seeks to:

- Strengthens public participation in developing high priority projects;
- Reduces the complexity of environmental analysis allowing federal land agencies to use the best science available to actively manage land under their protection;
- Creates a pre-decisional objections process encouraging early public participation in project planning; and
- Issues clear guidance for court action challenging HFRA projects.

The Douglas County Community Wildfire Protection Plan was developed to adhere to the principles of the HFRA while providing recommendations consistent with the policy document. This should assist the federal land management agencies with implementing wildfire mitigation projects in Douglas County that incorporate public involvement and the input from a wide spectrum of fire and emergency services providers in the region.

Federal Emergency Management Agency Philosophy

Effective November 1, 2004, a hazard mitigation plan approved by the Federal Emergency Management Agency (FEMA) is required for Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Program (PDM) eligibility. The HMGP and PDM programs provide funding, through state emergency management agencies, to support local mitigation planning and projects to reduce potential disaster damages.

The local hazard mitigation plan requirements for HMGP and PDM eligibility are based on the Disaster Mitigation Act (DMA) of 2000, which amended the Stafford Disaster Relief Act to promote an integrated, cost effective approach to mitigation. Local hazard mitigation plans must meet the minimum requirements of the Stafford Act-Section 322, as outlined in the criteria contained in 44 CFR Part 201. The plan criteria cover the planning process, risk assessment, mitigation strategy, plan maintenance, and adoption requirements.

FEMA only reviews a local hazard mitigation plan submitted through the appropriate State Hazard Mitigation Officer (SHMO). FEMA reviews the final version of a plan prior to local adoption to determine if the plan meets the criteria, but FEMA will not approve it prior to adoption.

A FEMA designed plan is evaluated on its adherence to a variety of criteria.

- Adoption by the Local Governing Body
- Multi-jurisdictional Plan Adoption
- Multi-jurisdictional Planning Participation
- Documentation of Planning Process
- Identifying Hazards

- Profiling Hazard Events
- Assessing Vulnerability: Identifying Assets
- Assessing Vulnerability: Estimating Potential Losses
- Assessing Vulnerability: Analyzing Development Trends
- Multi-jurisdictional Risk Assessment
- Local Hazard Mitigation Goals
- Identification and Analysis of Mitigation Measures
- Implementation of Mitigation Measures
- Multi-jurisdictional Mitigation Strategy
- Monitoring, Evaluating, and Updating the Plan
- Implementation through Existing Programs
- Continued Public Involvement

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Appendix 6

Potential CWPP Project Funding Sources

Assistance to Firefighters Grant

http://www.rkb.mipt.org/contentdetail.cfm?content_id=44122
To provide direct assistance, on a competitive basis, to fire departments of a State or tribal nation for the purpose of protecting the health and safety of the public and firefighting personnel against fire and fire-related hazards.

Buffer Zone Protection Program (BZPP)

http://www.rkb.mipt.org/contentdetail.cfm?content_id=135490
The FY 2006 BZPP provides funds to build capabilities at the state and local levels to prevent and protect against terrorist incidents primarily done through planning and equipment acquisition.

Chemical Sector Buffer Zone Protection Program (Chem-BZPP)

http://www.rkb.mipt.org/contentdetail.cfm?content_id=135466
The Chem-BZPP, provides funds to build capabilities at the State and local levels through planning and equipment acquisition.

Citizen Corps

http://www.rkb.mipt.org/contentdetail.cfm?content_id=56829
The purpose of the Citizen Corps Program is to supplement and assist State and local efforts to expand Citizen Corps. This includes Community Emergency Response Team (CERT) training, establishing Citizen Corps Councils, and supporting oversight and outreach..

Citizen Corps Support Program

http://www.rkb.mipt.org/contentdetail.cfm?content_id=135192
Support the mission to engage everyone in America in hometown security through the establishment and sustainment of Citizen Corps Councils throughout the United States and territories.

Commercial Equipment Direct Assistance Program (CEDAP) FY2006 Description and Application

http://www.rkb.mipt.org/contentdetail.cfm?content_id=83219
To ensure that law enforcement and emergency responder agencies, departments, and task forces can acquire, through direct assistance, the specialized equipment and training they require to meet their homeland security mission.

Community Disaster Loans

http://www.rkb.mipt.org/contentdetail.cfm?content_id=44126
To provide loans subject to Congressional loan authority, to any local government that has suffered substantial loss of tax and other revenue in an area in which the President designates a major disaster exists. The funds can only be used to maintain ...

Disposal of Federal Surplus Real Property

http://www.rkb.mipt.org/contentdetail.cfm?content_id=43990
To dispose of surplus real property by lease, permits, sale, exchange, or donation.

Emergency Management Institute (EMI) Independent Study Program

http://www.rkb.mipt.org/contentdetail.cfm?content_id=44100
To enhance public and selected audience knowledge of emergency management practices among State, local and tribal government managers in response to emergencies and disasters. The program currently consists of 32 courses. They include IS-1, Emergency ....

Emergency Management Institute (EMI) Resident Educational Program

http://www.rkb.mipt.org/contentdetail.cfm?content_id=44102
To improve emergency management practices among State, local and tribal government managers, and Federal officials as well, in response to emergencies and disasters. Programs embody the Comprehensive Emergency Management System by unifying the ....

Emergency Management Institute Training Assistance

http://www.rkb.mipt.org/contentdetail.cfm?content_id=44098
To defray travel and per diem expenses of State, local and tribal emergency management personnel who attend training courses conducted by the Emergency Management Institute, at the Emmitsburg, Maryland facility; Bluemont, Virginia facility; and ....

Fire Management Assistance Grant

http://www.rkb.mipt.org/contentdetail.cfm?content_id=44124
To provide grants to states, Indian tribal governments and local governments for the mitigation, management and control of any fire burning on publicly (nonfederal) or privately owned forest or grassland that threatens such destruction as would ....

Hazard Mitigation Grant Program

http://www.rkb.mipt.org/contentdetail.cfm?content_id=44130
To provide states and local governments financial assistance to implement measures that will permanently reduce or eliminate future damages and losses from natural hazards through safer building practices and improving existing structures and ....

Hazardous Materials Planning and Training

http://www.rkb.mipt.org/contentdetail.cfm?content_id=133349
Hazmat Planning and Training grants to state, territory and native American Tribal grantees.

Homeland Defense Equipment Reuse Program - HDER

http://www.rkb.mipt.org/contentdetail.cfm?content_id=83222
The goal of the HDER Program is to provide excess radiological detection instrumentation and other equipment, as well as training and long-term technical support, at no cost to emergency Responder agencies nationwide.

Homeland Security Grant Program (HSGP)

http://www.rkb.mipt.org/contentdetail.cfm?content_id=118605
Through the DHS National Preparedness Directorate, State and local organizations will receive approximately $2.5 billion in grant funding to build capabilities that enhance homeland security.

Interagency National Fire Plan Community Assistance

www.nwfireplan.gov
This grant provides a collaborative process for awarding funds to hazardous fuels reduction projects on non-federal land in the Wildland-Urban Interface. Eligible projects must be adjacent to Federal Land and identified in a Community Wildfire Protection Plan (CWPP) completed by February 6, 2009. Collaborated CWPP projects must implement fuels treatments in the wildland-urban interface.

National Fire Academy Educational Program/Harvard Fellowship Grant

http://www.rkb.mipt.org/contentdetail.cfm?content_id=133343
Each fellowship enables a senior fire executive to attend and participate in the three-week "Senior Executives in State & Local Government Program" course that is held twice each year at Harvard University.

National Fire Academy Training Assistance

http://www.rkb.mipt.org/contentdetail.cfm?content_id=44104
To provide travel stipends to students attending Academy courses.

Pre-Disaster Mitigation Program

http://www.rkb.mipt.org/contentdetail.cfm?content_id=102626
The PDM program will provide funds to states, territories, Indian tribal governments, and communities for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event.

Rural Fire Assistance (RFA)

http://www.rkb.mipt.org/contentdetail.cfm?content_id=97736
The RFA program provides cost-share grants for equipment, training, and fire prevention and mitigation activities for those rural/Volunteer fire departments (RFDs) that protect rural communities.

Staffing of Adequate Fire and Emergency Response (SAFER) Grant Program

http://www.rkb.mipt.org/contentdetail.cfm?content_id=133340
The purpose of the Staffing for Adequate Fire and Emergency Response (SAFER) grants is to help fire departments increase their cadre of firefighters.

State Fire Assistance Wildland Urban Interface Hazard Mitigation Grants

http://egov.oregon.gov/ODF/FIRE/grantopps.shtml
Funds are provided to reduce the threat of fire in the wildland urban interface including hazard mitigation, fuels and risk reduction, and information and education programs for homeowners and communities. This is a competitive grant process among the 17 western states and Pacific Island Territories.

Volunteer Fire Department Assistance

http://egov.oregon.gov/ODF/FIRE/grantopps.shtml
Provides financial assistance to volunteer fire departments for organizing, training, and equipping rural fire districts.

Western States Fire Managers Wildland Urban Interface Grant Program

http://www.oregon.gov/ODF/FIRE/docs/PREV/CriteriaandInstructions.pdf
The focus of much of this funding is mitigating risk in Wildland Urban Interface (WUI) areas. In the West, the State Fire Assistance (SFA) funding is available and awarded through a competitive process with emphasis on hazard fuel reduction, information and education, and community and homeowner action. This portion of the National Fire Plan was developed to assist interface communities manage the unique hazards they find around them. Long-term solutions to interface challenges require informing and educating people who live in these areas about what they and their local organizations can do to mitigate these hazards.

Wildland-Urban Interface Community and Rural Fire Assistance

http://www.rkb.mipt.org/contentdetail.cfm?content_id=43914
To implement the National Fire Plan and assist communities at risk from catastrophic wildland fires by providing assistance in the following areas: Provide community programs that develop local capability including; assessment and planning.

Appendix 7

Additional Information

Glossary of Terms

Defensible Space - The area within the perimeter of a parcel, development, neighborhood or community where basic wildland fire protection practices and measures are implemented, providing the key point of defense from an approaching wildfire or defense against encroaching wildfires or escaping structures fires. The perimeter as used in this definition is the area encompassing the parcel or parcels proposed for construction and or development, excluding the physical structure itself. The establishment and maintenance of emergency vehicle access, emergency water reserves, street names and building identification, and fuel modification measures characterize the area.

Disturbance - An event which affects the successional development of a plant community (examples: fire, insects, windthrow, and timber harvest).

Diversity - The relative distribution and abundance of different plant and animal communities as well as species within an area.

Exotic/Invasive Plant Species - Plant species that are introduced and not native to the area.

Fire Behavior - The manner in which a fire reacts to the influences of fuel, weather, and topography.

Fire Behavior Prediction Model - A set of mathematical equations that can be used to predict certain aspects of fire behavior when provided with an assessment of fuel and environmental conditions.

Fire Danger - A general term used to express an assessment of fixed and variable factors such as fire risk, fuels, weather, and topography which influence whether fires will start, spread, and do damage; also the degree of control difficulty to be expected.

Fire Exclusion - The disruption of a characteristic pattern of fire intensity and occurrence (primarily through fire suppression).

Fire Intensity Level - The rate of heat release (BTU/second) per unit of fire front. Four foot flame lengths or less are generally associated with low intensity burns and four to six foot flame lengths generally correspond to "moderate" intensity fire behavior. High intensity flame lengths are usually greater than eight feet and pose multiple control problems.

Fire Prone Landscapes – The expression of an area's propensity to burn in a wildfire based on common denominators such as plant cover type, canopy closure, aspect, slope, road density, stream density, wind patterns, position on the hillside, and other factors.

Fireline - A loose term for any cleared strip used in control of a fire. That portion of a control line from which flammable materials have been removed by scraping or digging down to the mineral soil.

Fire Management - The integration of fire protection, prescribed fire and fire ecology into land use planning, administration, decision making, and other land management activities.

Fire Prevention - An active program in conjunction with other agencies to protect human life, prevent modification of the ecosystem by human-caused wildfires, and prevent damage to cultural resources or physical facilities. Activities directed at reducing fire occurrence, including public education, law enforcement, personal contact, and reduction of fire risks and hazards.

Fire Regime - The fire pattern across the landscape, characterized by occurrence interval and relative intensity. Fire regimes result from a unique combination of climate and vegetation. Fire regimes exist on a continuum from short-interval, low-intensity (stand maintenance) fires to long-interval, high-intensity (stand replacement) fires.

Fire Return Interval - The number of years between two successive fires documented in a designated area.

Fire Risk - The potential that a wildfire will start and spread as determined by the presence and activities of causative agents.

Fire Severity - The effects of fire on resources displayed in terms of benefit or loss.

Fire Use – The management of naturally ignited fires to accomplish specific prestated resource management objectives in predefined geographic areas.

Flashy Fuel - Quick drying twigs, needles, and grasses that are easily ignited and burn rapidly.

Fuel - The materials which are burned in a fire: duff, litter, grass, dead branchwood, snags, logs, etc.

Fuel Break - A natural or manmade change in fuel characteristics which affects fire behavior so that fires burning into them can be more readily controlled.

Fuel Loading - Amount of dead and live fuel present on a particular site at a given time; the percentage of it available for combustion changes with the season.

Fuel Model - Characterization of the different types of wildland fuels (trees, brush, grass, etc.) and their arrangement, used to predict fire behavior.

Fuel Type - An identifiable association of fuel elements of distinctive species; form, size, arrangement, or other characteristics, that will cause a predictable rate of fire spread or difficulty of control, under specified weather conditions.

Fuels Management - Manipulation or reduction of fuels to meet protection and management objectives, while preserving and enhancing environmental quality.

Habitat - A place that provides seasonal or year-round food, water, shelter, and other environmental conditions for an organism, community, or population of plants or animals.

Habitat Type - A group of habitats that have strongly marked and readily defined similarities that when defined by its predominant or indicator species incites a general description of the area; *e.q. a ponderosa pine habitat type*.

Heavy Fuels - Fuels of a large diameter, such as snags, logs, and large limbwood, which ignite and are consumed more slowly than flashy fuels.

Human-Caused Fires - Refers to fires ignited accidentally (from campfires, equipment, debris burning, or smoking) and by arsonists; does not include fires ignited intentionally by fire management personnel to fulfill approved, documented management objectives (prescribed fires).

Intensity - The rate of heat energy released during combustion per unit length of fire edge.

Inversion - Atmospheric condition in which temperature increases with altitude.

Ladder Fuels - Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees with relative ease. They help initiate and assure the continuation of crowning.

Landsat Imagery - Land remote sensing, the collection of data which can be processed into imagery of surface features of the Earth from an unclassified satellite or satellites.

Landscape - All the natural features such as grasslands, hills, forest, and water, which distinguish one part of the earth's surface from another part; usually that portion of land which the eye can comprehend in a single view, including all its natural characteristics.

Lethal - Relating to or causing death.

Lethal Fires - A descriptor of fire response and effect in forested ecosystems of high-severity or severe fire that burns through the overstory and understory. These fires typically consume large woody surface fuels and may consume the entire duff layer, essentially destroying the stand.

Litter - The top layer of the forest floor composed of loose debris, including dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition.

Mitigation - Actions to avoid, minimize, reduce, eliminate, replace, or rectify the impact of a management practice.

Monitoring Team - Two or more individuals sent to a fire to observe, measure, and report its behavior, its effect on resources, and its adherence to or deviation from its prescription.

Native - Indigenous; living naturally within a given area.

Natural Ignition - A wildland fire ignited by a natural event such as lightning or volcanoes.

Noxious Weeds - Rapidly spreading plants that have been designated "noxious" by law which can cause a variety of major ecological impacts to both agricultural and wildlands.

Planned Ignition - A wildland fire ignited by management actions to meet specific objectives.

Prescribed Fire - Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition.

Prescription - A set of measurable criteria that guides the selection of appropriate management strategies and actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

Seral - Refers to the stages that plant communities go through during succession. Developmental stages have characteristic structure and plant species composition.

Stand Replacing Fire - A fire that kills most or all of a stand.

Surface Fire - Fire which moves through duff, litter, woody dead and down and standing shrubs, as opposed to a crown fire.

Watershed - The region draining into a river, river system, or body of water.

Wetline - Denotes a condition where the fireline has been established by wetting down the vegetation.

Wildland Fire - Any non-structure fire, other than prescribed fire, that occurs in the wildland.

Wildland Fire Use - The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in FMP's. Operational management is described in the WFIP. Wildland fire use is not to be confused with "fire use," which is a broader term encompassing more than just wildland fires.

Wildland Fire Use for Resource Benefit (WFURB) - A wildland fire ignited by a natural process (lightning), under specific conditions, relating to an acceptable range of fire behavior and managed to achieve specific resource objectives.

Wildland-Urban Interface (WUI) - For purposes of this plan, the wildland-urban interface is located defined in Section 4.5. In general, it is the area where structures and other human development meet or intermingle with undeveloped wildland.

General Mitigation Strategies

There are many actions that will help improve safety in a particular area; there are also many mitigation activities that can apply to all residents and all fuel types. General mitigation activities that apply to all of Franklin County are discussed below while area-specific mitigation activities are discussed within the strategic planning area assessments.

Prevention. The safest, easiest, and most economical way to mitigate unwanted fires is to stop them before they start. Generally, prevention actions attempt to prevent human-caused fires. Campaigns designed to reduce the number and sources of ignitions can be quite effective and can take many forms.

Limiting Use. The issues associated with debris burning during certain times of the year are difficult to negotiate and enforce. However, there are significant risks associated with the use of fire adjacent to expanses of flammable vegetation under certain scenarios. Fire departments

typically observe the State of Washington closed fire season between July 1st to September 30th. During this time, an individual seeking to conduct an open burn of any type shall obtain a permit to prescribe the conditions under which the burn can be conducted and the resources that need to be on hand to suppress the fire. Although this is a statewide regulation, compliance and enforcement has been variable between fire districts.

Defensible Space. Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Franklin County must be made aware that home defensibility starts with the homeowner. Once a fire has started and is moving toward a structure, the probability of that structure surviving is largely dependent on the structural and landscaping characteristics of the building. The Firewise Communities USA program is an excellent tool for educating homeowners on the steps to take in order to create an effective defensible space. Residents of Franklin County should be encouraged to work with local fire departments and fire management agencies within the county to complete individual home site evaluations. Home defensibility steps should be enacted based on the results of these evaluations. Beyond the homes, forest management efforts must be considered to slow the approach of a fire that threatens a community.

Evacuation. Development of community evacuation plans is necessary and critical to assure an orderly evacuation in the event of a threatening wildland fire. Designation and posting of escape routes would reduce chaos and escape times for fleeing residents. Community safety zones should also be established in the event safe evacuation is impossible and 'sheltering in place' becomes the better option.

Access. Also of vital importance is the accessibility of homes to emergency apparatus. The fate of a home will often be determined by homeowner actions prior to the event. A few simple guidelines such as widening or pruning along driveways and creating a turnaround area for large vehicles, can greatly enhance home survivability.

Facility Maintenance. Recreational facilities near communities or in the surrounding forests such as parks or natural areas should be kept clean and maintained. In order to mitigate the risk of an escaped campfire, escape-resistant fire rings and barbeque pits should be installed and maintained. In some cases, restricting campfires during dry periods may be necessary. Surface fuel accumulations in nearby forests can also be kept to a minimum by periodically conducting pre-commercial thinning, pruning and limbing, and possibly controlled burns.

Fire District Response. Once a fire has started, how much and how large it burns is often dependent on the availability of suppression resources. In most cases, rural fire departments are the first to respond and have the best opportunity to halt the spread of a wildland fire. For many districts, the ability to reach these suppression objectives is largely dependent on the availability of functional resources and trained individuals. Increasing the capacity of departments through funding and equipment acquisition can improve response times and subsequently reduce the potential for resource loss.

Development Standards. County, city, and even fire district policies can be updated or revised to provide for more fire conscious techniques such as using fire resistant construction materials; improving roads, and establishing permanent water resources.

Other Mitigation. Other actions to reduce fire hazards are thinning and pruning timbered areas, creating a fire resistant buffer along roads and power line corridors, and strictly enforcing fire-use regulations. Ensuring that areas beneath power lines have been cleared of potential high risk fuels and making sure that the buffer between the surrounding lands is wide enough to adequately protect the poles as well as the lines is imperative.

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Northwest Management, Inc.
233 East Palouse River Drive
PO Box 9748
Moscow ID 83843

208-883-4488 Telephone
208-883-1098 Fax
NWManage@consulting-foresters.com
http://www.Consulting-Foresters.com/