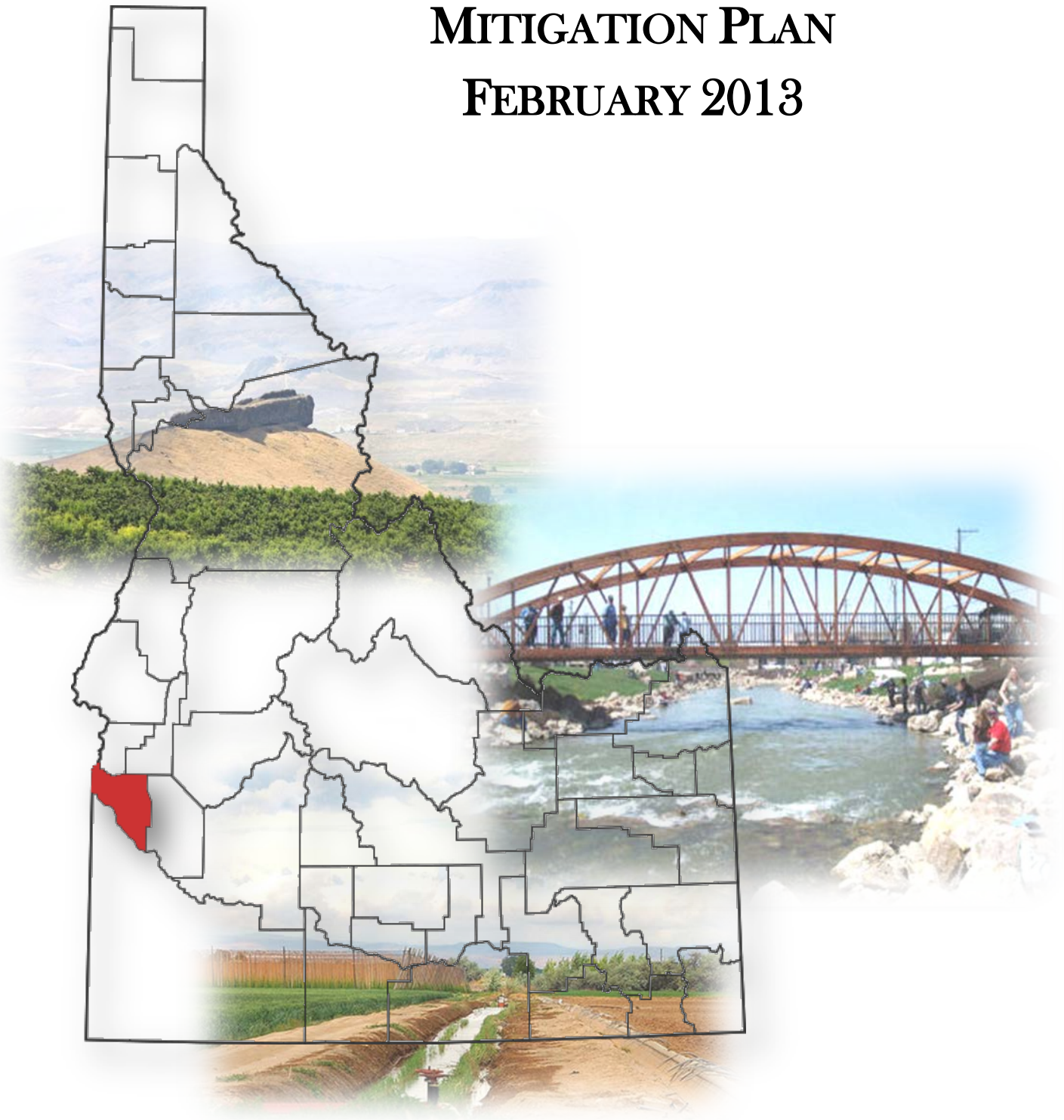
CANYON COUNTY IDAHO
MULTI-JURISDICTION
ALL HAZARD
MITIGATION PLAN
FEBRUARY 2013



Executive Summary

The Canyon County All Hazard Mitigation Plan (AHMP), developed during 2005-2006 and updated 2012, contains information pertaining to hazards faced by the County and options for mitigation of those hazards. It is designed to interface with the State of Idaho Multi-Hazard Mitigation Plan published in November 2004, and revised in November 2010.

While the focus of this Plan is on County-wide mitigation activities, it was developed through an integrated effort by representatives from many County jurisdictions. The following cities and highway districts have also participated in the development of this plan:

- City of Caldwell
- City of Melba
- City of Middleton
- City of Greenleaf
- City of Wilder
- City of Nampa
- City of Notus
- City of Parma
- Nampa Highway District #1
- Notus Parma Highway District #2
- Golden Gate Highway District #3
- Canyon County Highway District #4

The Canyon County Mitigation Team as led by the Canyon County Emergency Management Coordinator who, under the direction of the Canyon County Commissioners, is responsible for implementing the mitigation actions recommended in this Plan.

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CANYON COUNTY IDAHO MULTI-JURISDICTIONAL

ALL HAZARD MITIGATION PLAN

PROMULGATION OF ADOPTION

Be it known that the Canyon County Idaho Board of County Commissioners do hereby approve the Adoption of the Canyon County Idaho Multi-Jurisdictional All Hazard Mitigation Plan and direct its implementation through the Canyon County All Hazard Mitigation Planning Committee.

Be it also known that the Board of County Commissioners hereby directs the Emergency Management Coordinator, to continue to lead the implementation of this plan as the Canyon County All Hazard Mitigation Committee Chair.

This Plan has been developed in the interest of providing all hazard mitigation protection to populations living in Canyon County and the incorporated Cities within its boundary. Through adoption of this Plan, all county and city agencies are requested to develop directives, Standing Operating Procedures, checklists, or other supplemental guidance to insure its maximum effectiveness.

Canyon County Commissioner — Date: 10-8-13

Canyon County Commissioner — Date: 10-8-13

Canyon County Commissioner — Date: 10-8-13

Attest:
Canyon County Clerk (Deputy) — Date: 10-8-13

Endorsed:
Emergency Management Coordinator — Date: 10-07-2013

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U.S. Department of Homeland Security
Region X
130 228th Street, SW
Bothell, WA 98021-9796

FEMA

October 18, 2013

Honorable Steven J. Rule
Chair, Canyon County Commissioners
1115 Albany St.
Caldwell, Idaho 83605

Dear Chair Rule:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) has approved the ***Canyon County Multi-Jurisdictional Hazard Mitigation Plan*** as a multi-jurisdictional local plan as outlined in 44 CFR Part 201. With approval of this plan, the following entities are now eligible to apply for the Robert T. Stafford Disaster Relief and Emergency Assistance Act's hazard mitigation project grants through October 17, 2018:

Canyon County	**City of Caldwell**	**City of Greenleaf**
City of Melba	**City of Middleton**	**City of Nampa**
City of Notus	**City of Parma**	**City of Wilder**
Nampa Highway District #1	**Canyon County Highway District #4**	

The plan's approval provides the above jurisdictions eligibility to apply for hazard mitigation projects through your State. All requests for funding will be evaluated individually according to the specific eligibility and other requirements of the particular program under which the application is submitted. For example, a specific mitigation activity or project identified in the plan may not meet the eligibility requirements for FEMA funding, and even eligible mitigation activities are not automatically approved for FEMA funding under any of the aforementioned programs. Approved mitigation plans may be eligible for points under the National Flood Insurance Program's Community Rating System (CRS). Additional information regarding the CRS can be found at www.fema.gov/business/nfip/crs.shtm or through your local floodplain manager.

Over the next five years, we encourage your communities to follow the plan's schedule for its monitoring and updating, and to develop further mitigation actions. The plan must be reviewed, revised as appropriate, and resubmitted for approval within five years in order to continue project grant eligibility.

www.fema.gov

Chair Rule
October 18, 2013
Page 2

If you have questions regarding your plan's approval or FEMA's mitigation grant programs, please contact our State counterpart, Idaho Bureau of Homeland Security, which coordinates and administers these efforts for local entities.

Sincerely,

Mark Carey, Director
Mitigation Division

Enclosure

cc: Mark Stephensen, Idaho Bureau of Homeland Security

BH:bb

TOM DALE
MAYOR

CITY HALL
411 3RD ST. SOUTH
NAMPA, IDAHO 83651
(208) 465-2201
FAX: (208) 465-2227

OFFICE OF THE MAYOR

Notice of Endorsement and Participation in the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

I, Tom Dale, Mayor for the City of Nampa do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the City of Nampa.

Dated this 1st day of April, 2013.
Received by the City Clerk this 1st day of April, 2013.

City of Nampa

By: Tom Dale
Mayor

Attest:

By: Debbie K Bishop
City Clerk

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Notice of Endorsement and Participation
In the
Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

I, Garret L. Nancolas, Mayor for the City of Caldwell do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the City of Caldwell.

DATED this 18 day of March ~~XXXXX~~, ~~2012~~ 2013

CITY OF CALDWELL

By: Garret L. Nancolas

Mayor

Received by the City Clerk this 18 day of March ~~XXXXX~~ 2013

Signature: Debbie Geyer

Clerk

CITY OF CALDWELL INCORPORATED JAN 15 1891 CANYON COUNTY, IDAHO

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Notice of Endorsement and Participation
In the
Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

I, Doug Sturges, Mayor for the City of Melba do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the City of Melba.

DATED this 13th day of May, 2013

CITY OF MELBA

By: _____

Mayor

Received by the City Clerk this 13th day of May 2013

Signature: _____

Clerk

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Notice of Endorsement and Participation

In the

Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

I, DARIN TAYLOR, Mayor for the City of Middleton

do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the City of Middleton.

DATED this 3rd day of July, 2013

CITY OF MIDDLETON

By: ____________________

Mayor

Received by the City Clerk this 3rd day of July, 2013

Signature:
Clerk

CITY OF MIDDLETON INCORPORATED APRIL 20, 1910 CANYON COUNTY, IDAHO

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Notice of Endorsement and Participation
In the
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan

I, BRADLEY HOLTOM, Mayor for the City of Greenleaf do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the City of Greenleaf.

DATED this 06TH day of AUGUST, 2013

CITY OF GREENLEAF

By: Bradley Holton

Mayor

Received by the City Clerk this 06TH day of AUGUST 2013

Signature:

Clerk

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Notice of Endorsement and Participation
In the
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan

I, Chris Collins, Mayor for the City of Notus do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the City of Notus.

DATED this 26 day of June, 2013

CITY OF NOTUS

By: _____

Mayor

Received by the City Clerk this 26 day of June 2013

Signature: _____

Clerk

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Notice of Endorsement and Participation
In the
Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

I, Craig Telford, Mayor for the City of Parma do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the City of Parma.

DATED this 29th day of May, 2013

CITY OF PARMA

By: _____

Mayor

Received by the City Clerk this 29 day of May 2013

Signature: _____

Clerk

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Notice of Endorsement and Participation In the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

I, John F. Bechtel, Mayor for the City of Wilder do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the City of Wilder.

DATED this 9th day of April, 2013.

CITY OF WILDER

BY: _____
John F. Bechtel, Mayor

ATTEST: _____
Wendy L. Burrows, City Clerk

CITY OF WILDER INCORPORATED MAY 15, 1919 CANYON COUNTY IDAHO

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Notice of Endorsement and Participation
In the
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan

I, Bryce Miller, Chairman of the Nampa Highway District #1 do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the Nampa Highway District.

DATED this 31 day of May, 2012

NAMPA HIGHWAY DISTRICT #1

By Bryce Miller

Chairman

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Notice of Endorsement and Participation
In the
Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

I, _____, Chairman of the Notus Parma Highway District #2 do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the Notus Parma Highway District.

DATED this _____ day of _____, 2012

NOTUS PARMA HIGHWAY DISTRICT #2

By: _____

Chairman

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Notice of Endorsement and Participation
In the
Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

I, _____, Chairman of the Golden Gate Highway District #3 do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the Golden Highway District.

DATED this _____ day of _____, 2012

GOLDEN GATE HIGHWAY DISTRICT #3

By: _____

Chairman

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Notice of Endorsement and Participation
In the
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan

I, Rick Youngblood, Chairman of the Canyon County Highway District #4 do hereby endorse and agree to participate in the implementation of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan as it applies to the Canyon County Highway District.

DATED this 10th day of April, 2013

CANYON COUNTY HIGHWAY DISTRICT #4

By: _____

Chairman

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Table of Contents

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Section 1: Planning Process

2012 Revision summary: The planning process section has been restructured to document how this updated plan was put together. It also reflects overall changes in the planning and mitigation strategy.

Canyon County, Idaho and the incorporated cities that lie within the County boundaries are vulnerable to natural, technological, and man-made hazards that have the potential to cause serious harm to the health, welfare, and security of its residents. The cost of response to, and recovery from, disaster events can be lessened when attention is turned to mitigating their impacts and effects before they occur or re-occur.

This Plan seeks to identify the County's hazards, understand the vulnerabilities to those hazards, and craft solutions that, if implemented, will significantly reduce threats to life and property. The Plan is based on the premise that hazard mitigation works! With increased attention to managing natural hazards, communities can reduce the threats to citizens and, through proper land use and emergency planning, avoid creating new problems in the future. Many solutions can be implemented at minimal cost and social impact.

This is not an emergency response or management plan. The Plan can certainly be used to identify weaknesses and refocus emergency response planning. Enhanced emergency response planning is an important mitigation strategy. The focus of this Plan, however, is to support better decision making directed toward avoidance of future risk and to implement activities or projects that will eliminate or reduce current risks.

Plan Organization

- **Section 1** of the Plan provides a general overview of the process, the scope, purpose, and overall goals of the plan.
- **Section 2** of the Plan describes the County's demographic, economic, cultural, and physiographic characteristics.
- **Section 3** documents the public involvement component of the Plan.
- In **Section 4**, Risk Assessment, all hazards identified as affecting the County are briefly defined, analyzed at the County and incorporated city level, and then summarized. For expanded definitions of the analyzed hazards refer to the State of Idaho Hazard Mitigation Plan as adopted in November 2007.
- **Section 5** is a review of Land Use Ordinances and Comprehensive Plans developed and adopted by participating jurisdictions, and provides suggestions for integration between this All Hazard Mitigation Plan (AHMP) and the Land Use Planning efforts throughout the County.
- **Section 6** presents selected Mitigation Alternatives with supporting project descriptions and a "roadmap" to implementation.

Plan Use

The Plan should be used to help County and city officials plan, design, and implement programs and projects that will help reduce the jurisdiction's vulnerability to natural and technological

(manmade) hazards. The Plan should also be used to facilitate inter-jurisdictional coordination and collaboration related to all hazard mitigation planning and implementation within the County and at the regional level. Lastly, the Plan should be used to develop or provide guidance for local emergency response planning. When adopted, this Plan will achieve compliance with the Disaster Mitigation Act of 2000.

Hazard Mitigation

Hazard mitigation is defined as cost-effective actions that have the effect of reducing, limiting, or preventing the vulnerability of people, culture, property, and the environment to potentially damaging, harmful, or costly hazards. Hazard mitigation measures which can be used to eliminate or minimize the risk to life, culture, and property fall into three categories:

1) Those that keep the hazard away from people, property, and structures,

2) Those that keep people, property, or structures away from the hazard, and

3) Those that reduce the impact of the hazard on victims, i.e., insurance.

Hazard mitigation measures must be practical, cost effective, and culturally, environmentally, and politically acceptable. Actions taken to limit the vulnerability of society to hazards must not, in themselves, be more costly than the anticipated damages.

Hazard mitigation planning must be based on vulnerabilities, and its primary focus must be on the point where capital investment and land use decisions are made. The placement of capital investments, whether for homes, roads, public utilities, pipelines, power plants, or public works, determine to a large extent the nature and degree of a community's hazard vulnerability. Once a capital facility is in place, there is little opportunity to reduce hazard vulnerability through correction of errors in location or construction. It is for this reason that often the most effective mitigation tools are zoning and other ordinances that manage development in high vulnerability areas, and building codes that ensure that new buildings are constructed to withstand the damaging forces of anticipated hazards.

Because disaster events are generally infrequent, the nature and magnitude of the threat is often ignored or poorly understood. Thus, the priority to implement mitigation measures is low and implementation is slowed. Mitigation success can be achieved, however, if accurate information is portrayed through complete hazard identification and impact studies, followed by effective mitigation management.

The Federal Emergency Management Agency has identified hazards to be analyzed by each jurisdiction completing an All Hazard Mitigation Plan. The hazards analyzed in this Plan include the following:

<u>Natural Hazards</u>

Weather: Drought
Extreme Heat
Extreme Cold
Severe Winter Storm
Lightning
Hail
Tornado

Straight Line Wind
Flooding: Flash Flood
River Flooding
Dam Failure
Canal/Drainage Failure
Geologic: Earthquake
Landslide/Mudslide
Other: Wildfire
Biological
Rodents (Burrowing)
Communicable Disease
Bird Flu
West Nile

Technological (Manmade) Hazards
Structural Fire
Hazardous Materials Event
Riot/Demonstration/Civil Disorder
Terrorism

Purpose

The purposes of this plan are to:

- Fulfill Federal and local mitigation planning responsibilities;
- Promote pre and post disaster mitigation measures with short/long range strategies that minimize suffering, loss of life, impact on traditional culture, and damage to property and the environment resulting from hazardous, or potentially hazardous, conditions to which citizens and institutions within the County are exposed;
- Eliminate or minimize conditions which would have an undesirable impact on our people, our culture, our economy, environment, and the well being of the County at large.
- Aid in enhancing elected officials, departments, and the public awareness to the threat that hazards have on the community's way of life and what can be done to prevent or reduce the vulnerability and risk.

Scope

This Plan covers all areas within Canyon County Idaho including the incorporated cities of Caldwell, Greenleaf, Melba, Middleton, Nampa, Notus, Parma, and Wilder along with the four independent Highway Districts, Nampa, Notus Parma, Golden Gate, and Canyon County, will be asked to endorse the Plan and participate in the implementation.

Mission Statement

The Canyon County Multi-Jurisdiction All Hazard Mitigation Plan sets forth public policy designed to protect citizens, critical facilities, infrastructure, private and public property, the local economy, and the environment from risks associated with natural and manmade hazards.

Goals

2012 Revision Summary: The following are the goals from the 2006 Canyon County Multi-Jurisdiction All Hazard Mitigation Plan. Hazard specific objectives have been added to the Plan as well, where appropriate. In the 2006 Plan, goals and objectives were intermixed with the mitigation strategies in the individual hazard sections. In this revision the objectives that were previously identified are linked to specific goals. Mitigation Goals for the participating jurisdiction were developed and added to this revision.

- ***Prioritize the protection of people, structures, infrastructure, and unique ecosystem that contribute to our way of life and the sustainability of the local and regional economy.***

  Objectives:

  - Conduct prioritization scoring for all mitigation projects identified in the County (including Highway Districts) and the Cities

- ***To provide a plan that will not diminish the private property rights of landowners in Canyon County.***

  Objectives:

  - Review Land Use planning documents to ensure that mitigation strategies align with existing land use goals and objectives in the County and participating jurisdiction

- ***Educate communities about the unique challenges of natural hazard preparedness in the County.***

  Objectives:

  - Develop a culture of preparedness for serve weather events through public education
  - Enforce severe weather standards through the building codes
  - Ensure readiness of snow removal equipment and schedule within the community
  - Identify shelter locations with emergency power and heating, water supplies, and sanitary services
  - Install backup electrical generation in critical facilities
  - Provide information on personal and family preparedness for severe weather

- ***Establish mitigation priorities and develop mitigation strategies in Canyon County.***

  Objectives:

  - Conduct prioritization scoring for all mitigation projects identified in the County (including Highway Districts) and the Cities
  - Ensure that Benefit Cost is a part of the prioritization score

- ***Strategically locate and plan infrastructure projects that take into consideration the impacts of natural hazards.***

Objectives – Flooding:

- Canyon County will continue to participate in the National Flood Insurance Program and develop actions that will reduce the damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures
- Improve protection of County roads, bridges, and critical infrastructure

Objectives – Earthquake:

- Conduct assessment of seismic hazards to quantify and understand the threat
- Enforce seismic building code provisions
- Implement land-use and development policy to reduce exposure to seismic hazards
- Implement retrofit, redevelopment, and/or abatement programs to strengthen existing structures; pay particular attention and priority to schools, public buildings, and community evacuation and relocation sites
- Conduct ongoing public-education efforts to raise awareness and build constituent support
- Develop collaborative public/private partnerships to build a prepared and resilient community

Objectives – Landslides:

- Establish a countywide landslide hazard identification program
- Restricting development in landslide prone areas
- Standardize codes for excavation, construction, and grading.
- Post warnings of potentially hazardous areas and educate the public about areas to avoid
- Increase Public Education regarding landslides and debris flows in the community

Objectives – Wildfire:

- Canyon County will reduce the losses caused by wildfire by continuing the Wildland Urban Interface Mitigation Program
- Enhance Wildfire Rehabilitation efforts in the ecological recovery of burned areas

Objectives – Biological:

- Reduce damage caused by burrowing rodents

- ***Meet or exceed the requirements of a FEMA All Hazard Mitigation Plan.***

  Objectives:

  - Update the Canyon County Multi-Jurisdiction Plan every five years
  - Ensure that the Canyon County Multi-Jurisdiction Plan meets the requirements of 44 CFR 201.6
  - Complete the FEMA Review Cross Walk to determine requirement compliance

AHMP Jurisdiction Specific Goals describe the basis for the direction that incorporated City agencies, organizations, and citizens will take to select mitigation projects which are designed specifically to address risks posed by natural and manmade hazards. The goals are stepping-stones between the mission statement and the specific objectives developed for the individual mitigation projects.

Participating Jurisdiction Goals

City of Caldwell

- The City of Caldwell will continue participation in NFIP and enforcement of building codes in the floodplain.

  Objectives:

  - Use the building permit process to ensure enforcement of building codes in the floodplain
  - Determine where elevating structures in the floodplain would be beneficial
  - Determine where relocating structures out of the floodplain would be beneficial
  - Communicate how to dry-proof structures to the construction community
  - Examine where the addition of berms or levees would reduce damage in the floodplain
  - Ensure that critical facilities in the floodplain have emergency power capabilities

City of Greenleaf

- The City of Greenleaf will continue participation in NFIP and enforcement of building codes in the floodplain.

  Objectives:

  - Ensure awareness of the availability of flood insurance
  - Maintain culverts in the floodplain
  - Ensure that critical facilities in the floodplain have emergency power capabilities

- The City of Greenleaf will protect citizens and visitors from manmade hazards.

  Objectives:

  - Improve safety of the entrances to buried irrigation systems

City of Melba

- Develop a culture of preparedness for serve weather events through public education.

  Objectives:

  - Protect the community from storm water and spring run off
  - Enforce severe weather standards through the building codes

- Improve fire water supply
- Identify shelter locations with emergency power and heating, water supplies, and sanitary services
- Provide information on personal and family preparedness for severe weather

City of Middleton

- The City of Middleton will continue participation in NFIP and enforcement of building codes in the floodplain.

  Objectives

  - Ensure awareness of the availability of flood insurance
  - Improve awareness of the risks associated with living and working in a floodplain
  - Maintain culverts in the floodplain
  - Reduce flooding potential by removing willows and overgrowth from the stream channel

City of Nampa

- The City of Nampa will continue participation in NFIP and enforcement of building codes in the floodplain.

  Objectives:

  - Maintain availability to low cost flood insurance
  - Ensure awareness of the availability of flood insurance
  - Improve awareness of the risks associated with living and working in a floodplain
  - Use the building permit process to ensure enforcement of building codes in the floodplain

City of Notus

- The City of Notus will continue participation in NFIP and enforcement of building codes in the floodplain.

  Objectives:

  - Ensure awareness of the availability of flood insurance
  - Maintain culverts in the floodplain
  - Determine where elevating structures in the floodplain would be beneficial
  - Ensure that critical facilities in the floodplain have emergency power capabilities

City of Parma

- The City of Parma will continue participation in NFIP and enforcement of building codes in the floodplain.

  Objectives:

  - Ensure awareness of the availability of flood insurance
  - Improve storm water collection
  - Determine where elevating structures in the floodplain would be beneficial
  - Determine where relocating structures out of the floodplain would be beneficial
  - Communicate how to dry-proof structures to the construction community
  - Examine where the addition of berms or levees would reduce damage in the floodplain
  - Ensure that critical facilities in the floodplain have emergency power capabilities

City of Wilder

- Develop a culture of preparedness for serve weather events through public education.

  Objectives:

  - Enforce severe weather standards through the building codes
  - Ensure readiness of snow removal equipment and schedule within the community
  - Identify shelter locations with emergency power and heating, water supplies, and sanitary services
  - Provide information on personal and family preparedness for severe weather

Canyon County All Hazard Mitigation Planning Committee

The Canyon County All Hazard Planning Committee was formed on November 9, 2011. Committee membership is comprised of representatives from the Canyon County Local Emergency Planning Committee, Canyon County Department heads, representatives from the Transportation Districts, representatives from the incorporated cities, representatives from the major utility providers, interested media, and members of the public. Minutes of the committee meetings are provided in Attachment 1.

The Committee Roster is provided below in Table 1.1:

Agency	Representative	Position
Canyon County	Kathy Alder	Commissioner
Canyon County	Steven Rule	Commissioner
Canyon County DSD	Kevin LoPiccolo	Director
Canyon County DSD	Dan Hunter	Building Official
Canyon County Facilities Management	Paul Navarro	Facility Manager
South West District Health	Laurel Bennett	Liaison
Canyon County Sheriff	Christine McPartlan	Dispatch
South West District Health	Doug Clegg	Health Educator
Private Sector	Don Lynn	CEO
Canyon County CERT	Fred Mould	Member
Canyon County Sheriff's Department	Todd Herrera	Lieutenant
Canyon County sheriff's Office	Louaine Elfering	Field Services
Idaho State Police	Jim Eavenson	CVS Lieutenant
Disaster Kleenup	Lyndsay Salb	Relationship Mgr
Canyon County Sheriff	Craig Hanson	Captain
Canyon County Mosquito Abatement District	Ed Burnett	District Director
Canyon County Mosquito Abatement	Teresa Babcock	Director's Assist
The College of Idaho	Ben Mosley	Lieutenant
West Valley Medical Center	Wayne Tuckness	Safety
Canyon County	Sarah Higulera	Mapping
Disaster Kleenup	Gary Botts	General Manager
Canyon County Ambulance District	Greg Owen	Director
St. Al's Meidcal Center North	Teresa Pron	Emergency Preparedness Coordinator/RN
Idaho Department of Labor/COSSA	Jeanie Allen	
Vallivue School District	Susan James	Safety Coordinator
Private Sector	Don Lynn	CEO
Idaho Transportation Dept	Dan Bryant	Dist. Mtng. Coord.
Idaho Transportation Dept	Ken Couch	Maint Foreman
Idaho Power	Paul Walz	DGM Safety Engineer

Agency	Representative	Position
Northwest Nazarene University	Dave Jacobsen	Safety Specialist
Canyon Highway District #4	Tim Richard	Engineer
Nampa Highway District #1	Casey Bequeath	Director
Notus Parma Highway District #2	Von Bowman	Work Director
Notus Parma Hwy District	Gary Hickman	Foreman
Golden Gate Highway District #3	Teila Noe	Clerk
Canyon Highway District #4	Tim Richard	Engineer
City of Caldwell	Jim Blacker	City Council
City of Caldwell	Dennis Callsen	City Council
City of Caldwell	Debbie Geyer	City Clerk
City of Caldwell	Karl Baker	GIS Analyst
City of Caldwell	Mike Pollard	City Council
City of Caldwell	Garret Nancolas	Mayor
City of Caldwell	Mark Wendelsdorf	Fire Chief
City of Caldwell	Dave Wright	LT.
City of Caldwell	Robb MacDonald	Engineering
City of Caldwell	Brent Orton	Public Works Director
City of Caldwell	Rob Oates	Airport Manager
City of Caldwell	Lee J Van De Bogart	Project Engineer
City of Caldwell	Shannon Ozuna	City Council
City of Caldwell	David Clark	City Council
City of Caldwell	Rob Hopper	City Council
City of Caldwell	Jeremy Fuchs	Citizen
Salvation Army	Silvia DeAvda	Office Manager
City of Greenleaf	Cherea McLain	Attorney
City of Greenleaf	Amy Woodruff	City Engineer
City of Greenleaf	Brad Holton	Mayor
City of Greenleaf	Kurt Kopadt	City Council
City of Greenleaf	Steve Jett	City Council
City of Greenleaf	Ryan Schnuerle	City Council
City of Greenleaf	Doug Amick	Public Services
City of Greenleaf	DeAngelo Enrico	City Council
City of Greenleaf	Bill Sali	Citizen
City of Greenleaf	Lee Belt	Clerk
City of Nampa	Lynn Thompson	Risk Manager
Idaho Press Tribune	Jona Funk	Reporter
KBOI 670AM	Ray Amaya	Reporter
City of Nampa	Robin Collins	CE Supervisor
City of Nampa	Martin Thorne	City Council
City of Nampa	Pam White	City Council
City of Nampa	Stephen Kren	City Council

Agency	Representative	Position
City of Nampa	Bob Henry	City Council
City of Nampa	Tom Dale	Mayor
City of Nampa	Kim Lord	Water/Sewer Superintendant
Nampa Fire Department	Karl Malott	Chief
City of Melba	Dennis Rogers	Superintendent
City of Melba	Doug Sturges	Mayor
City of Melba	Noni Stapleton	City Clerk/Treasurer
City of Melba	Chris Hinderliter	Councilman
City of Melba	Hal Forsgreen	Councilman
City of Melba	Parkie Stapleton	Councilman
City of Melba	Cory Dickard	Councilman
City of Melba	Jerry Shaul	Citizen
City of Melba	Kelly Shaul	Citizen
White, Peterson	Mark Johnson	City of Melba Attorney
Holladay Engineering	Mike Davis	City of Melba Engineer
City of Wilder	Luke McHenry	Superintendant Public Works
City of Wilder	Leonard Wilson	City Council
City of Wilder	Tila Godina	City Council
City of Wilder	Wendy Burrows-Johnson	City Clerk
City of Wilder	Roger G Howell	Council President
City of Wilder	Ed Dantt	Citizen
Western Canyon Chronicle	Karen Wagoner	Reporter
City of Wilder	Elizabeth Rusco	Volunteer
Wilder Economic Development Committee	David Lincoln	Chairman
White, Peterson	William F Gigray	Wilder City Attorney
Parma City Council	Thomas S. Smith	Councilman
Parma City Council	W. Keith Vickers	Councilman
City of Parma	Craig Telford	Mayor
Parma City Council	Oney Eguia	Councilman
Parma City Council	Angie Lee	Councilwoman
City of Parma	Teresa Phelps	Clerk
Parma City Council	Nathan Leigh	Councilman
City of Parma	Ken Steinhaus	Public Works
City of Parma	Brett Laird	Public Works
City of Notus	Randall Taylor	Councilman
City of Notus	Michelle DeGiorgio	Councilwoman
City of Notus	David Porterfield	Councilman
City of Notus	Chris Collins	Mayor

Agency	Representative	Position
Citizen	Gary Vezzoso	Library Building Owner
Citizen	Carol Vezzoso	Library Building Owner
City of Notus	Sally Wells	Library Board Chair
City of Notus	Nate Wells	Citizen
City of Notus	Ginny Linderman	Clerk
City of Middleton	Lenny Riccio	Council
City of Middleton	Brad Spencer	Council
City of Middleton	Darin Taylor	Mayor
City of Middleton	Carrie Huggins	Council
City of Middleton	Loni Parry	Council
City of Middleton	Cindy LoPiccolo	Clerk
City of Middleton	Chris Yorgason	Attorney
Middleton Fire District	Brad Trosky	Chief
Citizen	Betty Mitchell	
Citizen	Randy Mitchell	
Citizen	Jeremy Fielding	
Citizen	Doug Anawalt	
City of Middleton	Becky Crofts	Administrator
Citizen	Mark Garnpois	
City of Middleton	Jim Gibbons	Public Works

Table 1.1: Committee Member Roster

Planning Process

One of the key, necessary steps of this Planning Process was the organization of a Canyon County Hazard Mitigation Committee. The Committee was established under the direction of the Canyon County Coordinator of Emergency Services. Figure 1.1 illustrates the Fifteen Step Planning Process that was used in the update of the Canyon County AHMP.

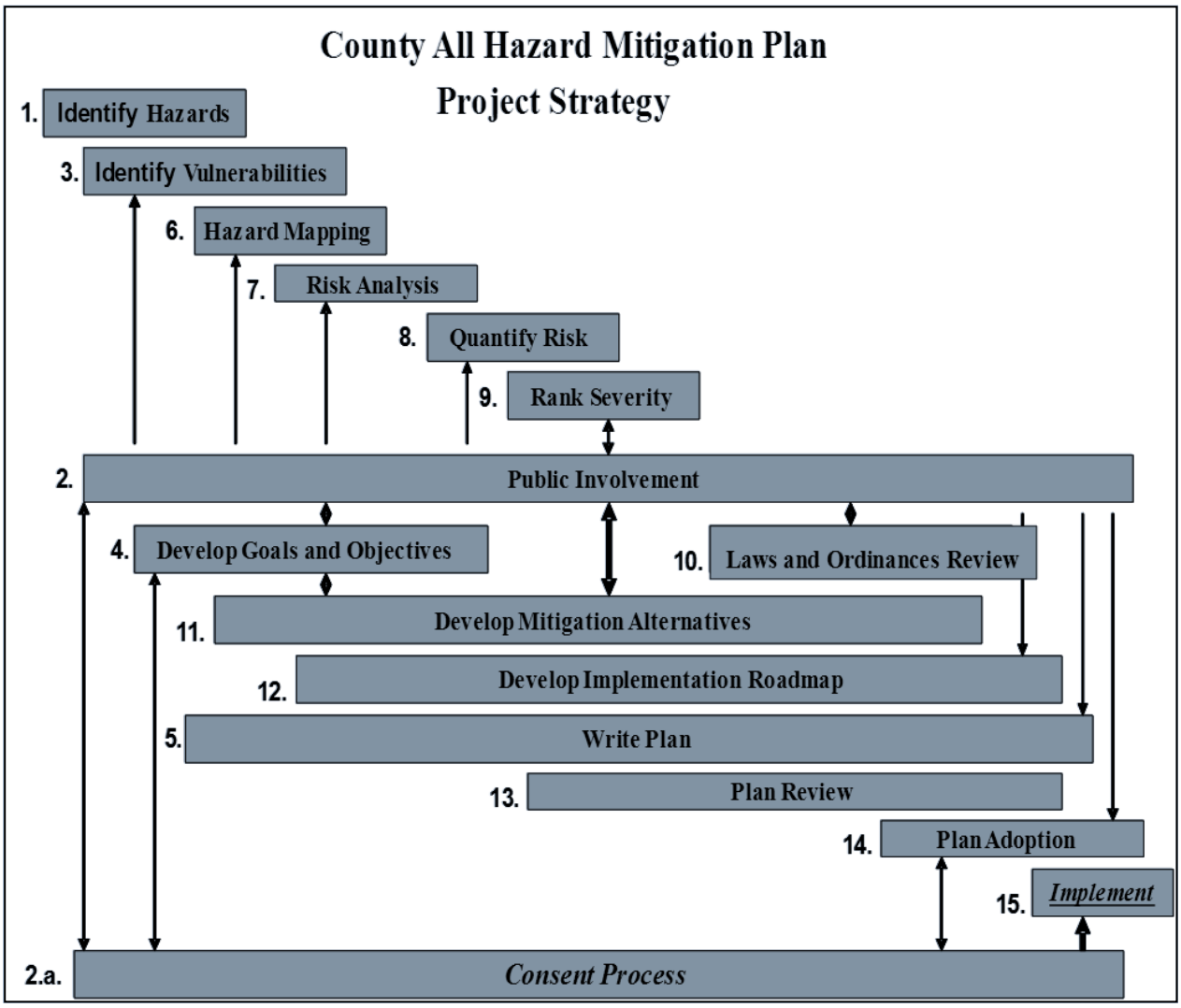

Figure 1.1: Fifteen Step Planning Process

Step 1 Identify Hazards

Canyon County hazards were identified and their frequency of occurrence evaluated using a number of resources including:

- Hazard planning documents developed by state, federal, and private agencies,
- National Weather Service weather data from the past 50 years, and
- 100 year historical analysis of hazardous event occurrences published by federal, state, and local government agencies

To determine frequency of occurrence the historical analysis of hazardous events will be conducted. One of the difficult tasks facing hazard mitigation professionals is the determination of the potential frequency of a natural hazard occurrence. Comparing historical facts against technically determined probability allows one to establish confidence, or not, in published

scientific predictions. The process whereby the frequency is determined and then expressed in an expected reoccurrence interval, (see Table 1.2 below for an illustration) is based on research conducted at the University of South Carolina.

Location	No. of Years	No. of Events	Frequency	Reoccurrence Interval
County	23	17	73.9%	1.35

Table 1.2: Example of Reoccurrence Interval

The estimated occurrence of the hazard is a useful element in the hazards assessment so one can distinguish between infrequent hazards, like hurricanes, from frequent hazards, such as flooding. This calculation provides a useful indicator of the relative importance of each of the hazards that affect the jurisdictions, individually or collectively. The frequency of occurrence is a straight-forward calculation from the historical data and the length of that record in years. The number of hazard occurrences is divided by the number of years in the record. This yields the probability of the event occurring in any given year. For instance, if a hypothetical hazard "A" occurred 17 times in the county over the past 23 years, the probability of occurrence for that hazard in a given year would be 17 / 23 = .739, or 73.9%. The reverse of this equation results in a reoccurrence interval in years. For example, the reoccurrence interval of this hazard is calculated as 23 / 17 = 1.35. Hazard "A" can be expected to occur every 1.35 years. These frequencies are then correlated with magnitude to define the risk of a given hazard.

Step 2 Public Involvement

A community survey was emailed to 1,000 residents of Canyon County. A copy of the survey and results are compiled in Section 3 and discussed in some detail. Additionally, the members of the AHMP Committee were requested to provide, through a short worksheet instrument, their opinions regarding the risk posed to the County as private citizens. This was done at the first AHMP Committee meeting.

Additional Public Involvement will take place as the Plan is reviewed. Specific groups of stakeholders will be requested to participate in a local mitigation workshop to review the Plan. Stakeholder involvement will come through open invitations in the local newspaper to participate, and specific invitations linked to locations of selected hazards in the County.

Step 3 Identify Vulnerabilities

The Committee examined the potential effects on the County of the listed raw hazards by identifying vulnerable populations, infrastructure, critical services, facilities, and the environment. Vulnerabilities will be geographically identified using Geographical Information System (GIS) technology and then linked to a GIS database describing the vulnerable target, including potential damage and estimates of losses.

Step 4 Develop Goals and Objectives

As required by FEMA, this planning effort is centered on community supported hazard reduction goals to be implemented and evaluated based on measurable objectives. Mitigation projects are

to be assessed against the established goals and objectives to ensure that the selected projects reduce risk as desired.

Step 5 Write Plan

This plan meets, and in some instances exceeds, the requirements set forth by FEMA in the Local Mitigation Plan Review Tool. Plan drafts will be presented in hard and electronic copy as requested by the Committee. This plan will include information on Plan adoption, including a promulgation page for the County, and an agreement to participate page for each incorporated city and participating district.

Step 6 Hazard Mapping

As described in Steps 1 and 4, hazard maps are extremely important in illustrating hazard and vulnerability locations. Information used to conduct the risk assessment and to make loss estimates will be linked electronically to the maps using GIS technology. The electronic versions of these maps were provided to the Committee and other reviewing agencies.

Step 7 Risk Analysis

A risk analysis was conducted using the information gathered in steps 1-4 and 6. For each hazard, two kinds of information are required in order to assess risk; information concerning the potential amount of damage a hazard event can cause (hazard magnitude), and that pertaining to how frequently such events are likely to occur (hazard frequency). To the extent that such data can be obtained quantitatively, "risk" may then be determined as the product of the hazard's magnitude and its frequency. In practice, precise quantitative data of both kinds is most often difficult or impossible to obtain.

Frequency of occurrence for a given hazard may be estimated using historical records. The value of frequency estimates obtained in this way is subject to the existence of such records, their availability, and their accuracy. Even with good historical records, however, projections of future frequency may not be valid because of changing conditions. Long- and short-term climate cycles (among other factors) affect weather events and economic conditions, and technical advances affect man-made hazards and land use, and the passage of time affects geological hazards, etc. For this reason, scientific projections, when available, are also used to modify, enhance, or replace those made from historical data. For any given location, however, historical records are often scarce and/or unreliable, and scientific projection methods either do not exist or require data that has not been, or cannot be gathered. Thus, a third source of frequency data will be utilized in this Plan; the subjective judgments of the location's inhabitants. While semi-quantitative at best, and subject to biases, data of this sort may well be as reliable as any other. It reflects, in any event, the perceived needs of those for whom the planning is being done. Frequency projection data from all three sources will be used, as appropriate, in this Plan. Because all are subject to considerable uncertainty, the composite data was examined and assigned a relative level based on the criteria shown in Table 1.3, Frequency Level Criteria.

Frequency	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Table 1.3: Frequency Level Criteria

Repetitive Loss designations are used to eliminate or reduce the damage to property and the disruption of life caused by repeated damage, such as flooding, of the same properties. The criteria to determine repetitive loss includes the following:

- Four or more losses of more than $1,000 each in a 5 year period; or
- Two losses within a 10-year period that, in the aggregate, equal or exceed the current value of the insured property; or
- Three or more paid losses that, in the aggregate, equal or exceed the current value of the insured property.

Hazard magnitude estimates, too, must rely on data gathered from a number of sources, none of which may be precise. Historical data, scientific projections, and inhabitants' subjective judgments are, again, used for this purpose. Magnitude estimates are generally based on the severity of potential impact on three critical vulnerabilities: human life, property, and the environment. FEMA has, however, recognized that there are other issues tied to community support of risk mitigation including social, cultural, and economical issues. Composite data from all sources, including the vulnerabilities identified in Section 4.7, for the County and for each local jurisdiction and district will be utilized to assign a quantitative magnitude for each hazard, based on the criteria shown in Table 1.4 as follows:

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Table 1.4: Hazard Magnitude Criteria

A hazard's total magnitude is the sum of the values for each of the six categories. Thus, a hazard event that is expected to require Reconstruction Assistance from the state government (Value = 4), affect an area consisting of Multiple Sections (Value = 4), cause Little to No Injury and No Deaths (Value = 1), Require Little Sheltering (Shelter = 2), or cause Some Economic Loss (Value = 2), and have a Warning Lead Time of Hours (Value = 4), would be assigned a magnitude value of 17 (4+4+1+2+2+4=17).

Risk assessment methods included the use of FEMA's HAZUS Risk Assessment software. Risk assessment activities also included the mapping of hazard occurrences, at-risk structures (including critical facilities and repetitive flood loss structures), land use, and populations.

Step 8 Quantify Risk

Once a hazard's magnitude and its frequency have been evaluated, a picture of the over-all risk severity associated with that hazard emerges. Because the values are necessarily imprecise and subjective, the risk is visualized by plotting them as shown in Figure 1.2. Here, the frequency is plotted on the vertical axis (Low at the top to High at the bottom), and magnitude is on the horizontal axis (Low = 6 to 12, Medium = 13 to 20, and High = 21 to 48). Hazards with the most severe associated risk, therefore, appear toward the lower right while lowest severity risk hazards appear near the upper left.

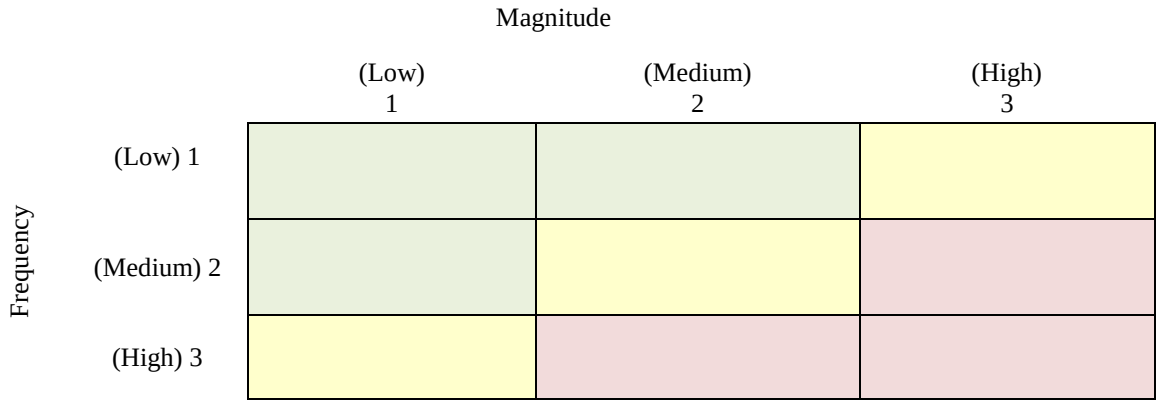

Figure 1.2: Risk Ranking Plot

Step 9 Rank Severity

To assist in prioritizing mitigation activities, the severities of all hazards considered in the Plan are ranked relative to one another using the above plotting scheme. Prioritization is also based on goals and objectives developed and approved by the Canyon County Board of County Commissioners.

Step 10 Law and Ordinances Review

The Canyon County Comprehensive Plan and land use ordinances will be reviewed against the list of ranked hazards to determine if there were any restrictions or enabling powers that affect possible hazard mitigation alternatives. A report of this action is provided in Section 5, Land Use Planning.

Step 11 Develop Mitigation Alternatives

Potential projects to address identified risk have been developed and listed in Section 6 of this Plan. The project descriptions and associated roadmap address approximate costs, possible returns on investments, environmental, and socioeconomic benefits. Engineering cost estimates based on the conceptual design will be included for the top 3 mitigation actions if needed.

Step 12 Develop Implementation Roadmap

Road mapping is essentially the development of a high level project schedule. The Mitigation Roadmap in the updated Plan will provide the necessary steps to be taken and the order in which they should occur to insure project implementation. The Implementation Roadmap addresses the four highest priority mitigation projects identified during the planning effort, and includes possible funding options. Other possible mitigation projects have been identified in list form linking them to the Plan's Goals and Objectives, desired outcome, and assigned agency or department.

Step 13 Plan Review

Plan review occurred at two distinctly different times. The initial plan review was conducted by the Planning Committee during development. Once the Plan was completed, it was submitted along with the completed FEMA PDM Criteria Cross Walk to the Idaho Bureau of Homeland Security's Hazard Mitigation Officer, and then to FEMA Region 10's Hazard Mitigation Officer for review. The Canyon County Board of County Commissioners also reviewed the Plan in a parallel time frame.

Step 14 Plan Adoption

The Coordinator made a formal public presentation to the Canyon County Board of County Commissioners seeking their approval of the Plan. A letter of Promulgation is provided in the Plan. In addition, each participating jurisdiction or district was requested to adopt the Plan by resolution, with the respective representatives signing the appropriate multi-jurisdiction participation document.

Step 15 Implement

By using this process, the Canyon County AHMP Committee has developed a fully implementable All Hazard Mitigation Plan to be presented for approval to the County Board of Commissioners, to the Mayors of the incorporated cities, and to the representatives of participating districts. Upon approval of the Plan, the implementation process can and should begin.

Plan Maintenance

The Canyon County AHMP maintenance process includes a schedule for annually monitoring and evaluating the programmatic outcomes called for in the Plan, and for producing a Plan revision every five years.

Formal Review Process

The Plan will be reviewed on an annual basis by the Coordinator and reviewed and revised every five years by the committee to determine the effectiveness of programs and to reflect changes that may affect mitigation priorities. The Emergency Management Coordinator, or designee, will be responsible for contacting the Mitigation Committee members and organizing the review. Committee members will be responsible for monitoring and evaluating the progress of the mitigation strategies in the Plan. The Committee will review the goals and action items to determine their relevance to changing situations in the County as well as changes in Federal policy, and to insure that they address current and expected conditions. The Committee will also review the risk assessment portion of the Plan to determine if this information should be updated or modified, given any new available data. The organizations responsible for the various action items will report on the status of the projects, the success of various implementation processes, difficulties encountered, success of coordination efforts, and which strategies should be revised or removed.

The Coordinator or designee will be responsible to insure the update of the Plan. The Coordinator will also notify all holders of the County AHMP and affected stakeholders when changes have been made. Every five years the updated plan will be submitted to the State of Idaho Bureau of Homeland Security's Mitigation Program and the Federal Emergency Management Agency for review.

Continued Public Involvement

The Emergency Management Coordinator is dedicated to the concept of public involvement in the planning process, including the review and updating of the Plan. This Plan will be reviewed on an annual basis by the AHMP Committee, and during that review will seek public input through public involvement activities. Copies of the Plan will be made available to the public by appropriate County departments and outside agencies, and the public will be provided with the opportunity to provide input into Plan revisions and updates. To this end, public meetings will be held when deemed necessary by the Coordinator, providing a forum where the public can express concerns, opinions, or new alternatives. These will be recorded and considered by the Committee when updating the plan. The Board of County Commissioners will be responsible for using County resources to publicize public meetings and to maintain public involvement.

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Section 2: County Description

2012 Revision Summary: The County Description was updated to reflect changes that have taken place since the original Plan was developed.

Canyon County is a well populated area located on the west side of Idaho, along the Oregon state border. Canyon County is the 2nd most populous county in Idaho and is the 7th smallest county in geographical area. It covers an area of 603.55 square miles. Canyon County is the home of the College of Idaho, the WWII Warhawk Air Museum, as well as the Train Depot Museum. The County consists of beautiful views of vineyards, mountain ranges in the distance, and is full of farms and ranches.

Canyon County was established on March 7, 1891. Its county seat is located in Caldwell. The County received its name from the Snake River canyon which forms a natural boundary for the County. Emigrants traveled through Canyon County on the Oregon Trail and shortly after on the Oregon Short Line Railroad making some of the County's cities a very important railroad town. Overall, Canyon County is a friendly, diverse community.

Location

Canyon County is located in southwest Idaho, immediately adjacent to the Oregon border. To the north it is bordered by Payette County, Idaho. On the northeast corner it is bordered by Gem County, Idaho. To the east, it is bordered by Ada County, Idaho. Owyhee County, Idaho borders it on the south. On the west it is bordered by Malheur County, Oregon.

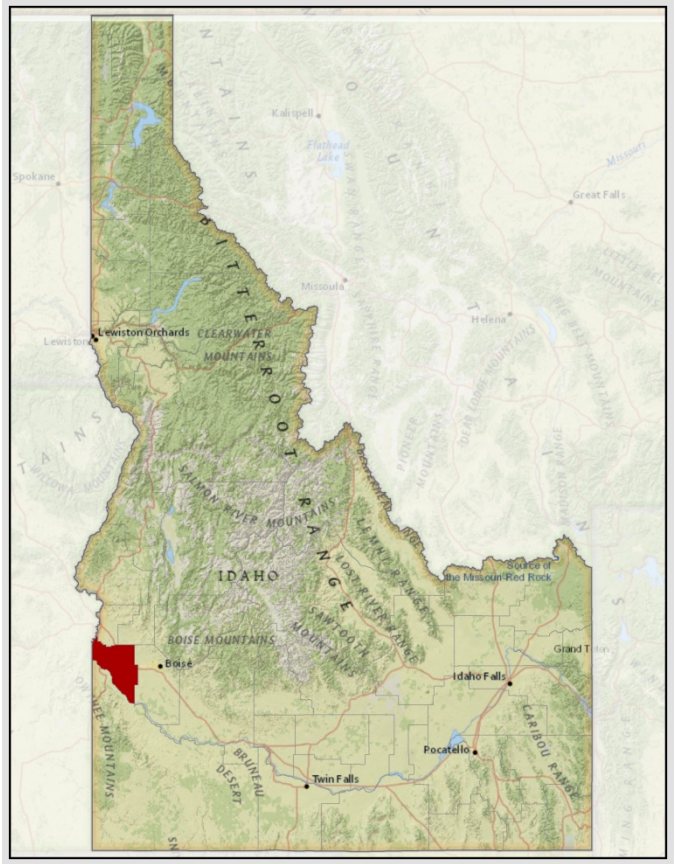

Figure 2.1: Canyon County Location Map

Topography & Geography

Canyon County consists of 587.37 square miles of land and 16.18 miles of water. The County is generally level with some rolling hills and bench terrain. The most prominent and populated area of the County is near the cities of Nampa and Caldwell which the Boise River runs along. The Boise River empties into the Snake River near Parma at an elevation of 2,100 feet. The Boise River has a wide floodplain and becomes a braided stream as it crosses the northern part of the County west to the Snake River, entering it at the Idaho-Oregon border west of Parma. The Boise River serves several purposes from agricultural irrigation, hydroelectricity, drinking water, and fishing to other recreational purposes.

Total withdrawal of fresh water for public supply is 24.79 millions of gallons per day, all of the supply being from ground water. Canyon County is comprised of many small streams, rivers, canals, lakes, and reservoirs which provide for much recreational activity. Lake Lowell is part of the Boise Project, located 5 miles southwest of Nampa, 14 square miles, with 28 miles of shoreline. This reservoir provides for boating, fishing, and wildlife viewing.

The County is home to a few notable parks: The Ward Memorial State Park, Snake River Birds of Prey National Conservation Area, and Deer Flat Nation Wildlife Refuge, which serves as a habitat for many fish and bird species.

Vegetation

Canyon County's land is primarily for agricultural use. 84% of the county's land is made of irrigated farms totaling 322,800 acres. The County's unique dry climate and ability to divert irrigation water from reservoirs to farms and ranches, makes it possible to raise specialty crops which virtually cannot be grown anywhere else in the world. Canyon County is one of the nation's major agricultural producers, specializing in seed and vegetable crops. The County has shifted away from large farms to small farms that produce specialized crops such as lavender, grape seed oil, vineyards, berry and fruit farms, and other oil seeds for small bio-fuels projects.

Canyon County is vegetated in the uplands with sagebrush, Rabbitbrush, and Great Basin Wild Rye. Aquatic vegetation such as smartweed, are located around the lakes and marsh areas. Areas around the lakes and rivers are home to mainly Cottonwood, Peachleaf Willow, Coyote Willow, Russian Olives, and Salt Cedars.

You can find many tree farms throughout Canyon County that consist of fruit trees, Ash, Birch, Maple, Locust, Aspen/Poplar, and Willow trees.

Geology

The rocks over the majority of Canyon County are stratified glacial sediment. This type of rock is comprised of clay, silt, and minor sand. It is caused by distal deposits of glacial floods and outwash. In the uplands deposits of alluvium, made from gravel, sand and silt, can be found. Basalt and lava flows, along with pyroclastic debris, can be found near the Snake Plain Canyon. The southeastern part of the County is covered in sandstone, limestone, claystone, shale, and siltstone.

Soils

The soils in Canyon County range in texture and richness, which is based on elevation and water supply. The areas with elevations of about 2,200 to 2,700 feet, such as where the Boise River meets the Snake River, are the most cultivated soils. These areas are well suited for intensive cultivation due to water of excellent quality that is available in adequate amounts. The principal crops grown are alfalfa, clover seed for hay, winter and spring wheat, field corn, sweet corn, hybrid sweet corn, sugar beets, potatoes, hops, onions, beans, and barley. Specialty crops are also grown here. Areas with elevation of about 3,083 such as at Pickles Butte are bordered by escarpments of 400 to 500 feet high that extend along the Snake River for several miles. In these areas there are terraces that consist of stream-laid and lacustrine deposits. Soils in these south facing slopes are more suitable for cherry, plum, peach, and apple orchards.

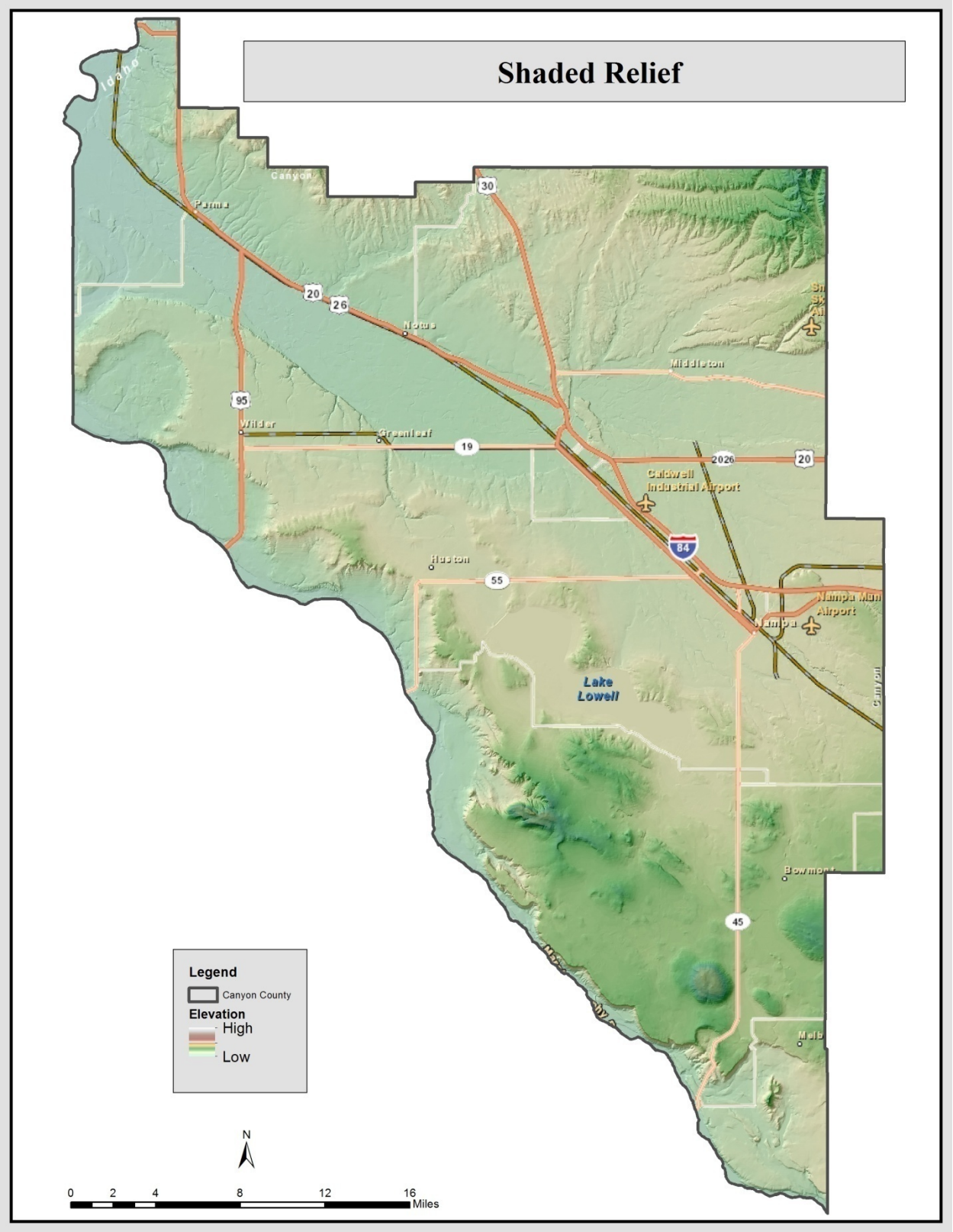

Figure 2.2: Shaded Relief

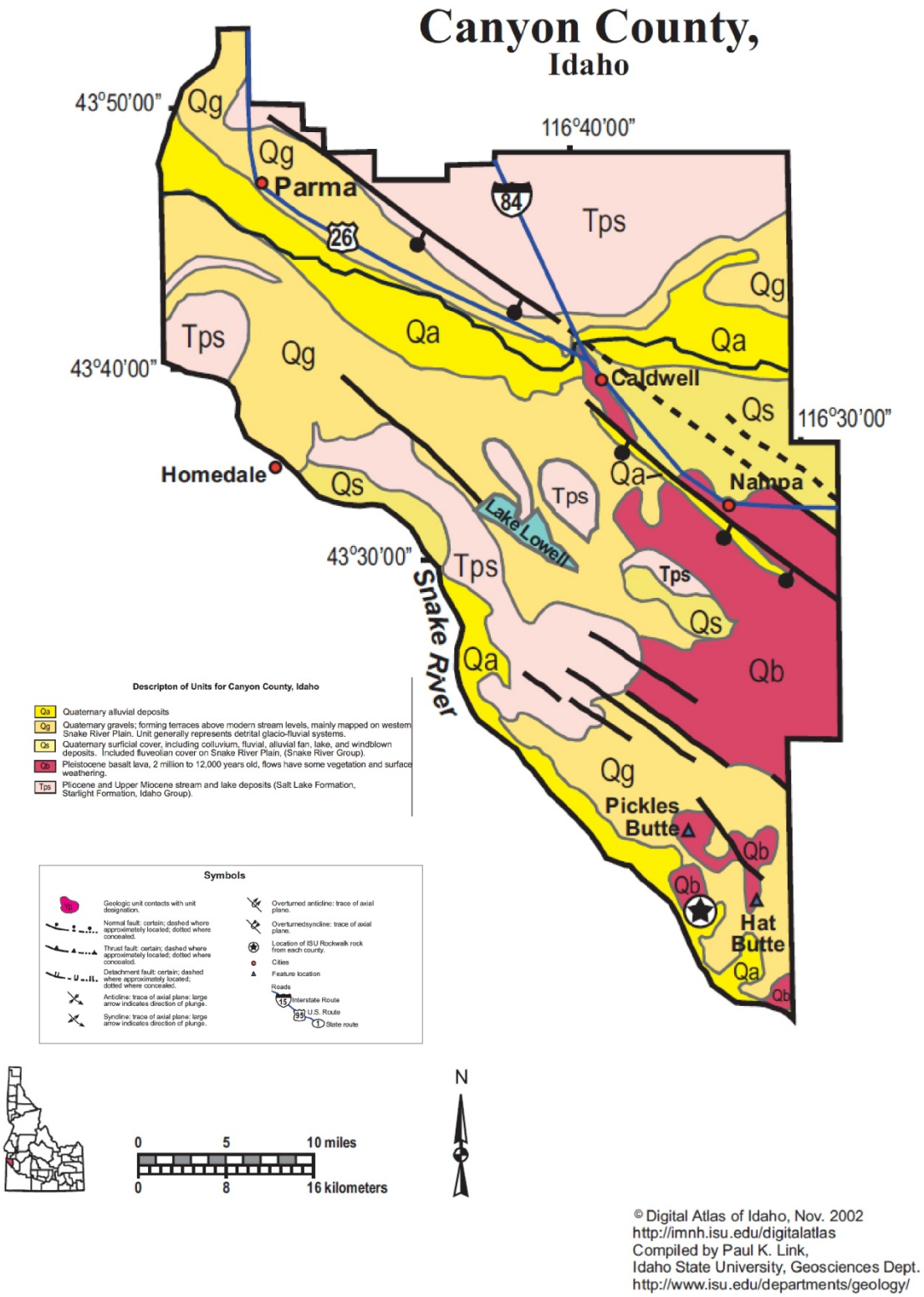

Figure 2.3: Canyon County Geologic Map

Bahem silt loam soils are found on slopes of 0 to 3 percent. It occurs on medium and high terraces, fans, and uplands. The upper layer is light-gray silt loam, and the lower soil is light brownish-gray very fine to fine sandy loam. Bahem silt loams of 3 to 12 percent slopes also occur on smooth slopes, ridges, and alluvial fans that are similar to the 0 to 3 percent slopes, except that cemented and strongly calcareous nodules occur at a shallower depth. Also found on terraces and alluvial fans are Cencove fine sandy loams, Durargidic Arents, and the Chilcott Series.

Baldock loam occurs on 0 to 1 percent slopes in the alluvial plains and bottom lands. The surface layer is gray loam, and below the surface layer is mottled, moderately calcareous, very friable, light brownish-gray loam. Also occurring in the bottom lands is Bram silt loam that on the surface is pale-brown silt loam, and the Draper series as well as the Falk series that were formed in micaceous alluvium derived from acid igneous rock material, that is found in elevations ranging from 2,200 to 2,400 feet.

Baldock loam and Bram silt loam are also found in drainage ways, old river and stream channels, and in filled lake basins. These are typically found at slopes of 0 to 3 percent and can be used for irrigated pastures. Bram silt loams found at these slopes are typically less strongly saline-alkali, in contrast to the Saline-alkali spots in which plant growth is poor. Moulton fine sandy loam is also found in lake basins derived from granite quartz monzonite, quartz diorite, or related intrusive acid igneous rocks.

Catherine silt loam is found in the County in level to very gently sloping lowland area. This soil is typically gray silt loam and is underlain by stratified layers of mixed alluvium. The soil is deep to very deep and somewhat poorly drained. Baldock and Moulton soils also make up as much as 5 to 10 percent of this area as well. Found in the level bottomlands is the Cruickshank fine sandy loam, Elijah series, and Grandview loam at about 0 to 3 percent slopes.

Found in swales and depressions in flood plains is Chance fine sandy loam generally on slopes of less than 1 percent. Usually a gray fine sandy loam that is mottled, micaceous, and noncalcareous. This soil has a moderately rapid permeability and is poorly to very poorly drained. This soil is used for pasture and wildlife habitat. Notus soils are also found on the flood plains that is over gravel and sand that makes it appear as cobbly.

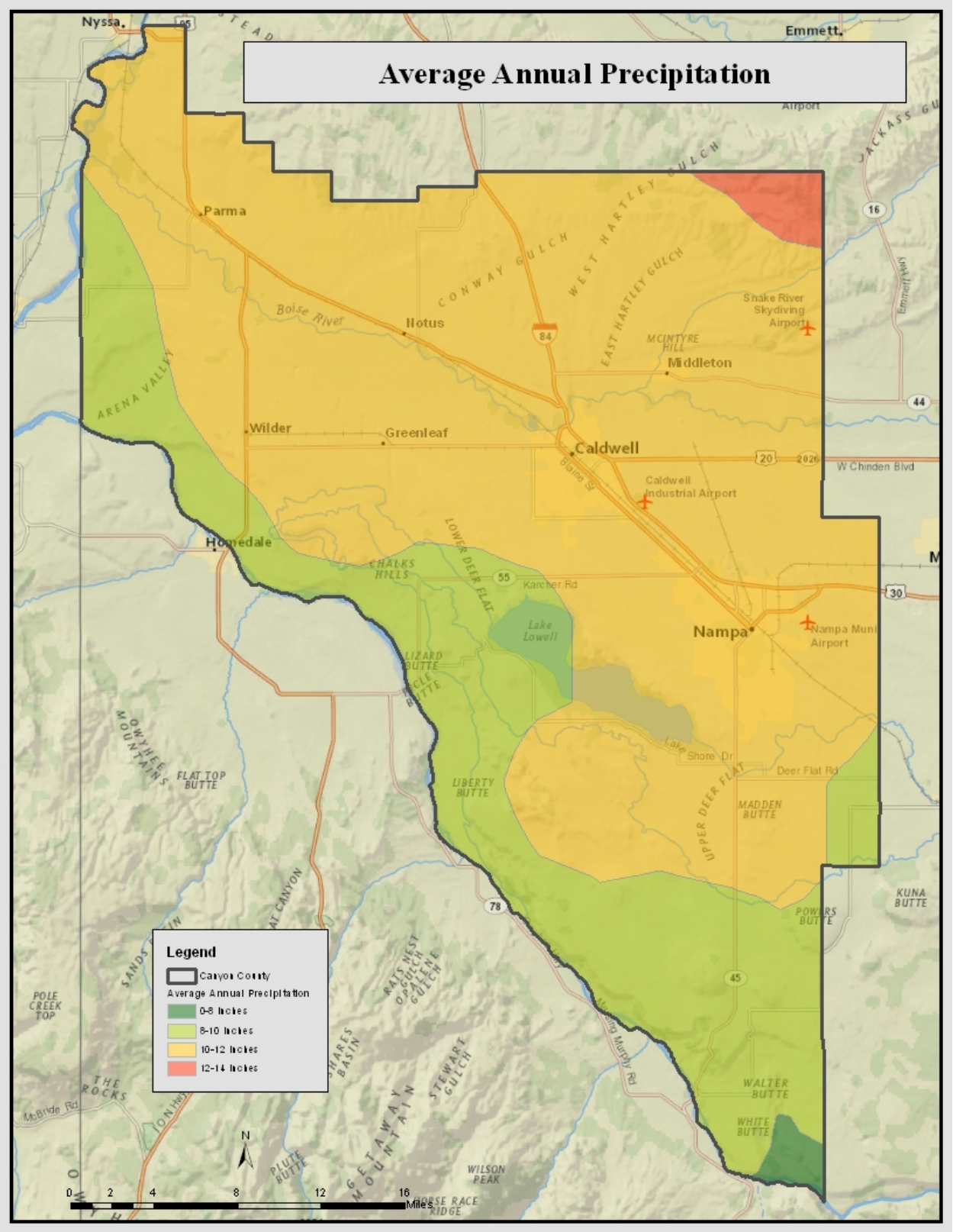

Figure 2.4: Average Annual Precipitation Map

Climate

Canyon County's average winter temperature is 40 degrees, with an average low of 28 degrees. The average summer temperature is 52 degrees with an average daily high of 87 degrees. Prevailing winds blow from the northwest during warmer months and from the southeast the rest of the year, averaging about 6 miles per hour. The annual precipitation for the County averages 10.5 inches with 70 percent of the precipitation falling in the months of November through March. Seasonal snowfall averages 16 inches at Caldwell and 22 inches in the City of Parma. The following table summarizes climate in Canyon County.

Average	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Annual
Max Temp	66	70	84	94	102	106	110	112	104	94	79	69	112
Min Temp	37	46	57	66	75	84	93	92	81	67	49	38	65
Total Precipitation in inches	1.5	1.1	1.3	1.1	1	.7	.3	.4	.6	.7	1.3	1.4	11.4
Total Snowfall in inches	6.5	3.7	1.7	.6	.1	0	0	0	0	.1	2.3	5.7	20.7
Snow Depth in inches	6	2.5	1	1	.5	0	0	0	0	1	4	4	20

Table 2.5: Percent of Monthly Climate Summary: 1971-2008

Land Ownership

The majority of Canyon County's land is privately owned. The rest of land is owned by Canyon County, the State of Idaho, Municipal use, and Bureau of Land Management (Federal). About 84% of the land in the County is used for cropland and irrigated farms.

Land Use & Natural Resources

The chief use of land and natural resources are recreational, educational, and farming. The County relies on the Boise River and Snake River to irrigate their crops as well as provide recreational activities.

Canyon County is home to a few of several of Idaho's colleges. Located in the City of Nampa is the Northwest Nazarene University. The City of Caldwell is the home of the College of Idaho, Canyon College, and Treasure Valley Community College. Along with colleges, the Deer Flat National Wildlife Refuge is home to different wildlife and provides opportunity for volunteering, learning about the area's wildlife, and recreational activities such as hiking and fishing.

In the early 1880s, the Oregon Short Line Railroad built a line from Granger, Wyoming to Huntington, Oregon. This railroad line passed through the City of Nampa, encouraging more railroad lines to spring up throughout Nampa, making it a very important railroad town. Unlike most towns where the streets run true north and south, Nampa built their streets perpendicular to the railroad tracks going northwest to southeast. The streets were laid out this way to prevent an accident occurring while crossing the railroad tracks.

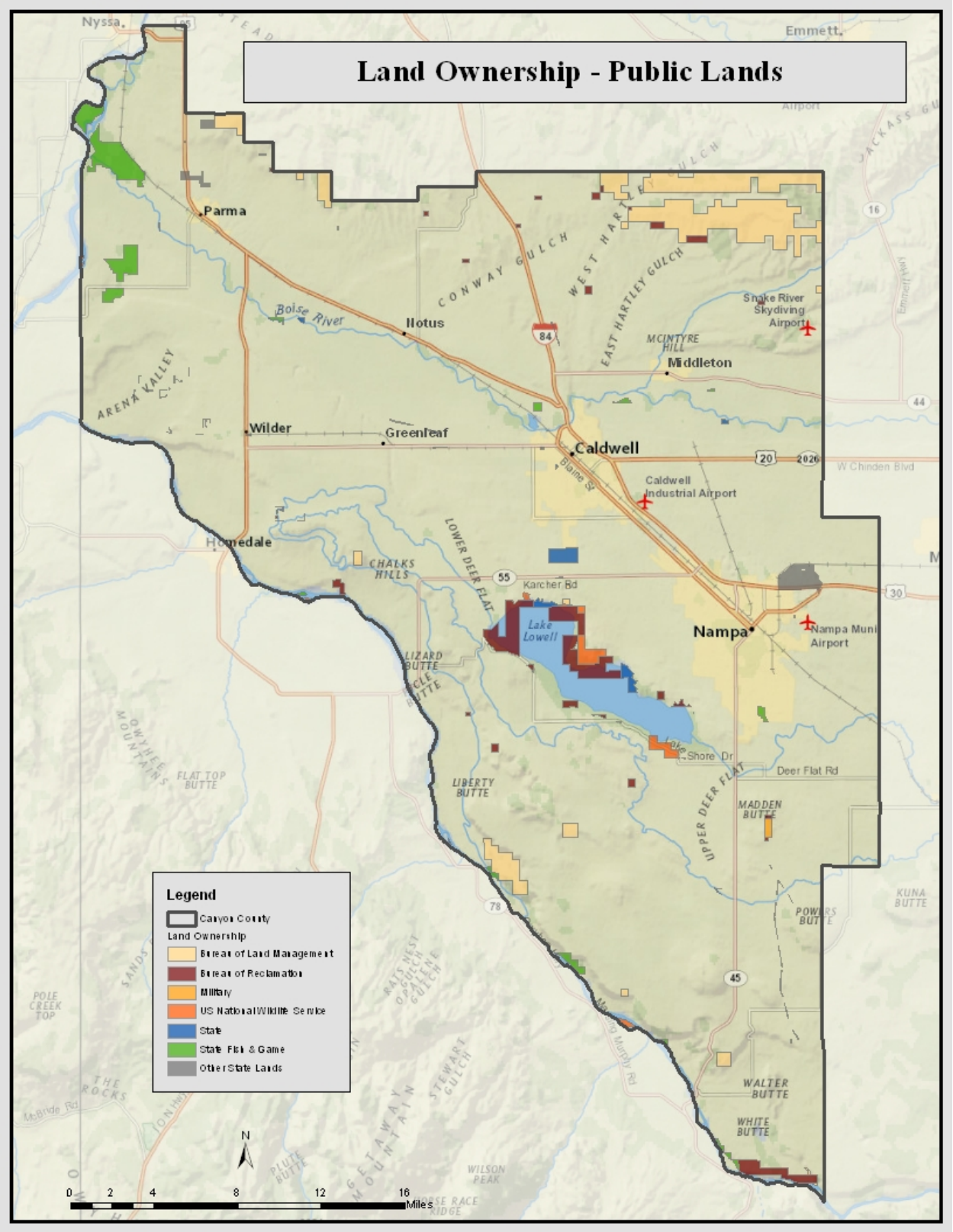

Figure 2.6: Public Land Ownership Map

History

Canyon County is in southwest Idaho immediately adjacent to the state of Oregon. Emigrants traveled through Canyon County on the Oregon Trail. Later, the Oregon Short Line Railroad was completed in 1883, running through the city of Nampa. Early inhabitants of the County are Oregon Trail settlers, Chinese immigrants, Quakers, and homesteaders. The county's economy was based on farming and other immigrants passing through on the Oregon Trail and the Oregon Short Line Railroad.

The first settlement in Canyon County was Fort Boise in 1834, established by the Hudson Bay Company near what is now the city of Parma. Parma is located near where the Boise River meets the Snake River. Fort Boise was a shelter that provided rest and comfort to the travelers traveling along the Oregon Trail. Fort Boise was abandoned in 1855; however, Parma continues to be a place of rest.

Middleton was another one of the oldest settlements in the County and was named Middleton because it was midway between Boise and an old ferry on the Snake River. The city had a stage station in the early days of the Oregon Trail, a post office, and a water powered grist mill. Middleton's land was parceled out in 1863 by William Montgomery. In 1872 the Boise River flooded and cut a new channel that isolated the town on an island; as a result, the town moved to a new location in the years after 1880.

In the 1870s and 1880s, the City of Caldwell was settled by hundreds of Chinese immigrants. The town quickly became central in Idaho's aggressive anti-Chinese backlash in the 1886 convention of the Anti-Chinese League in Boise. By 1890, every last immigrant had been driven from town by social pressures and violence. Later, when Canyon County was instituted in 1891, Caldwell became the County Seat.

The City of Nampa was settled in the early 1880s when the Oregon Short Line Railroad was built through this part of the County. The name "Nampa" came from a Shoshone word meaning either moccasin or footprint. Many of the first settlers referred to the town as "New Jerusalem" because of the strong religious focus of its citizens. The town grew quickly as new amenities were added to the town and became a very important City in Canyon County.

Early Quaker settlers founded the City of Greenleaf in 1900. The City was named after a Quaker poet and abolitionist John Greenleaf Whittier. Most settlers in the Greenleaf area were dry land farmers and started the first fruit orchards in Canyon County.

Homesteaders began arriving as early as 1904 and settled in the City of Wilder. They came with the hope of irrigation water being provided soon with the development of the Boise Project-a dam for irrigation. The area bloomed into one of the most fertile agricultural regions in the nation. In 1909, a railway was constructed from Caldwell to the City of Wilder.

The last city to be settled in Canyon County was the City of Melba. Pioneers had homesteaded south of Melba near the Snake River, and were nearly 20 miles away from the nearest town and in desperate need for a new town. Clayton C Todd was passing through the area on his way to Alaska to search for gold. He heard about the new sale of state land going on and in 1912 purchased 160 acres of land that was along a siding on the railroad. He laid out a town and named it after his daughter. The City of Melba became a boom town with stores, lumberyards, blacksmith shops and gas stations quickly built. Melba was also a well known farming

community that raised highbred sweet corn seed after the First World War. The town was called "The Seed Heart of America".

Canyon County was known for its many farms and crops that were raised. The land was also used for cattle, ranch, and dairy settlement. The ability to irrigate their farms and cropland from the Boise Project Dam, the Boise River, and the Snake River is what made the County an opportune place for farming homesteaders to settle into.

Demographics

The 2010 Census reported the population of Canyon County at 189,428 persons. That is a 5.6% increase from the population recorded in 2007. The following chart shows that from 1980 to 2008 the population grew by 100,183 people, a 220% increase in population. At an annual rate, this represents an increase of 8%. Over the past 28 years population growth in Canyon County, Idaho is growing at the same pace as that of the State.

Population Trends

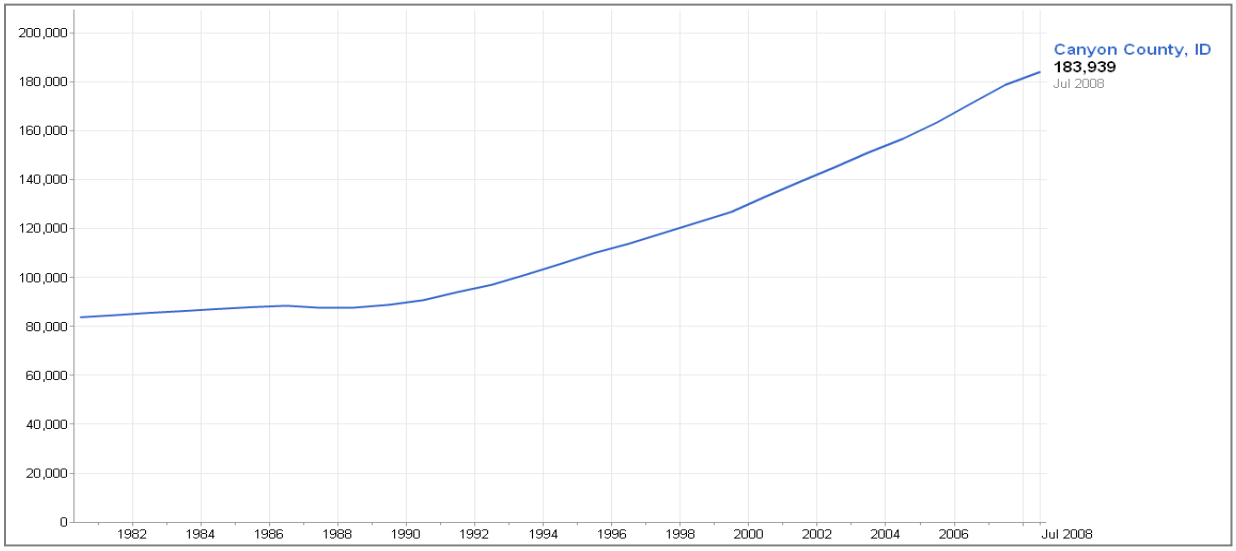

Figure 2.7: Canyon County Population Trends

The County is fairly homogenous with 85.7% of the population identifying themselves as white-non-Hispanic. In the same census report 24% of the population was reported as Hispanic and 3% of the population reported two or more races. Native Americans and Alaska Native make up 2.1% of the county population.

The 2010 US Census Report lists 69,409 housing units in Canyon County with a home ownership of 70.5% and a renter-occupied percentage rate of 29.5%. The median value for a home in the County in 2009 was $144,200. The median age of residents in Canyon County was 32 years, while the median age for a Idaho resident was 35 years. Fifty-one percent of the housing units built were 19 years old. The average household size was 2.9 people. In 2009 renters were paying an average rent of $578 a month.

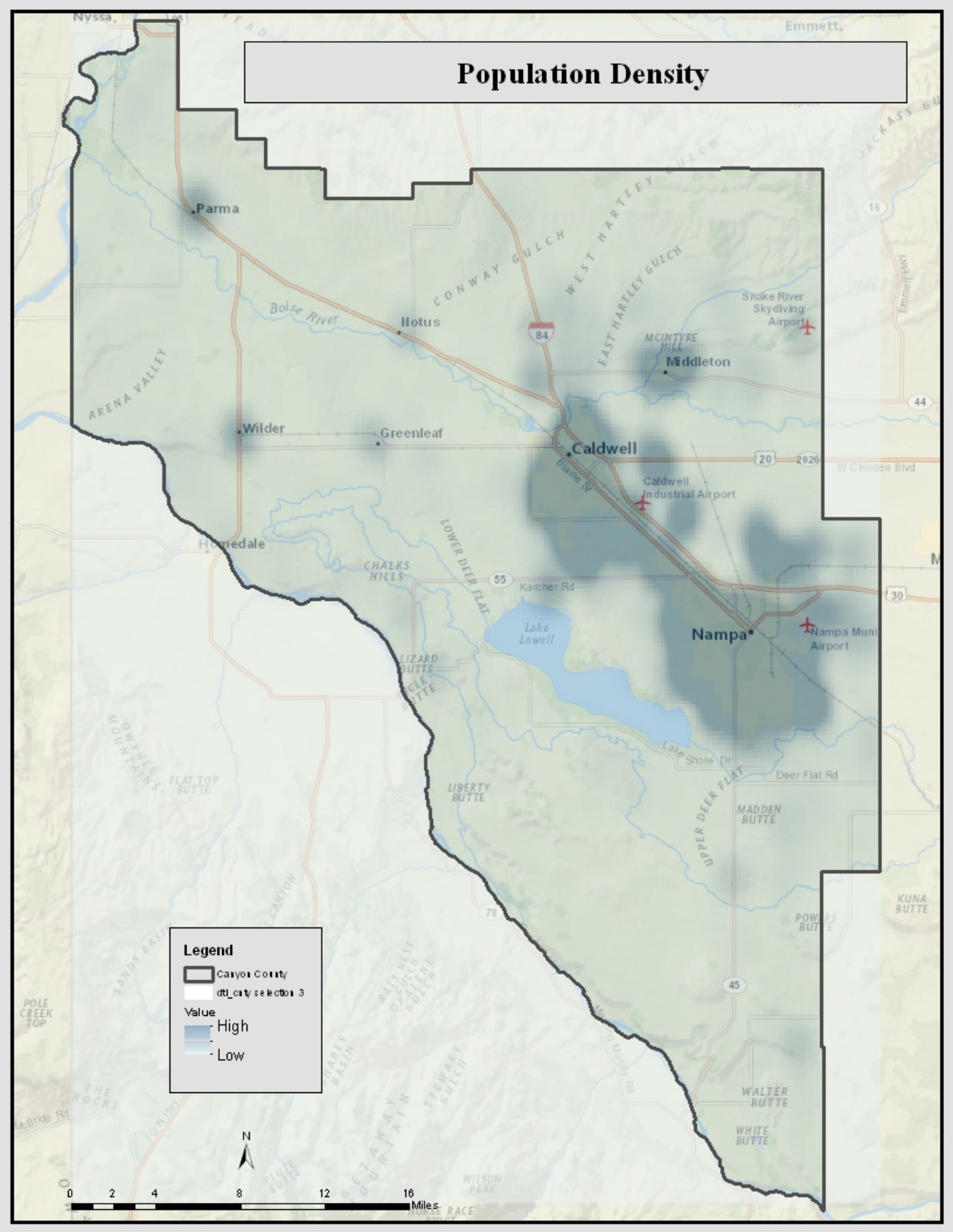

Figure 2.8: Population Density Map

Participation Jurisdiction Descriptions

As a multi-jurisdiction All Hazard Mitigation Plan, there are several municipal and taxation jurisdictions included in this planning effort. The following is a brief introduction of each.

City of Nampa

Nampa, Idaho is located in Canyon County just 16 miles from the capital city, Boise. Nampa is about 2,480 feet above mean sea level. Nampa, approximately 25 square miles in size, is one of the Treasure Valley's fastest growing and dynamic cities. Nampa's population increased dramatically from 28,365 in 1990, to 51,867 in 2000 and 81,567 in 2010.

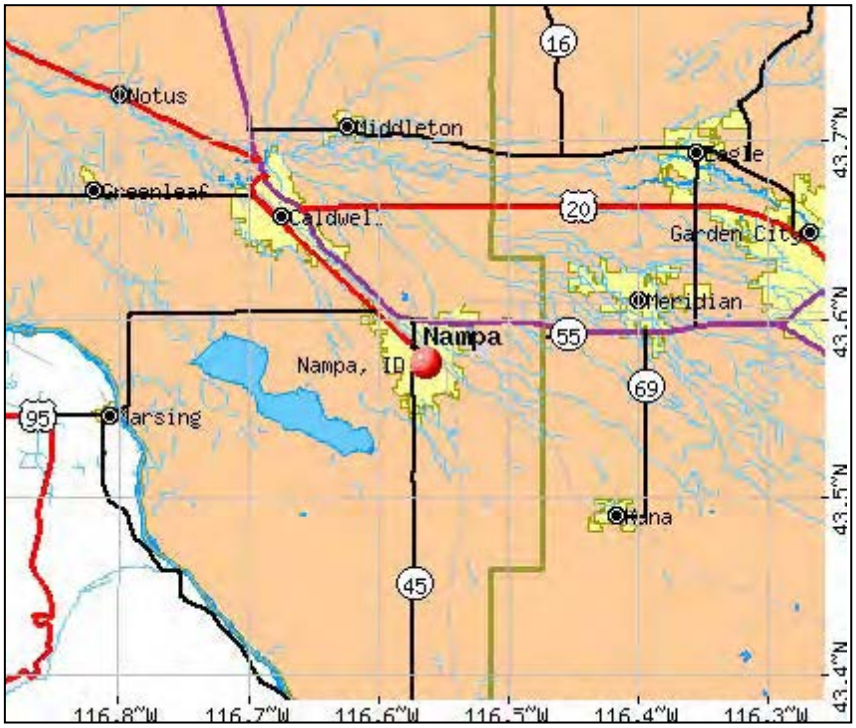

Figure 2.9: Jurisdictions in Canyon County

The City of Nampa, Idaho has a diversified economic base with a strong history of agriculture and food processing, manufacturing, distribution, and technology. Founded as a railroad town in the 1880's, the railroad also continues to play an important role in the economy. Two major institutions of higher education, public and private K-12 schools, a community hospital, medical facilities, manufacturing, and other businesses provide professional employment opportunities. In recent years, economic growth in Nampa has included expansion of Saint Alphonsus Medical Center – Nampa (formerly Mercy Medical Center) and St. Luke's Health System, as well as the development of two regional shopping centers and increased commercial activity in Downtown Nampa. Even though Nampa remains at the center of one of the fastest growing regions in the country, Nampa's economy has been significantly impacted by the economic downturn which began nationwide in 2008.

Nampa's major employers fall within the fields of education, retail trade, administration, health care, manufacturing, printing industries, transportation, and food service. A few examples of the products produced in Nampa include White Satin sugar, Micron CMOS image chips, Simplot frozen potatoes, Plexus custom electronic products, Transform Solar renewable energy products, Syngenta bio-tech seeds, and Sorrento cheese.[1]

City of Caldwell

[1] Nampa 2035 Comp Plan

The City of Caldwell is located along a natural passageway to the Inland and Pacific Northwest. This passageway, created by the Snake River and its tributary rivers of the Boise, Weiser, Payette, and Malheur was used by indigenous peoples as early as five thousand years ago. Indian tribes from the west coast, north Idaho, and as far away as Colorado would come to the area for annual trading fairs, or rendezvous. Caldwell's inception occurred largely as a result of the construction of the Oregon Short Line Railroad. The original town site was platted in August of 1883 by the Idaho and Oregon Land Improvement Company, which was interested in persuading settlers and businessmen to move to the area.

The Boise River Valley provides a broad and fertile setting for Caldwell. The City is an ideal residential community, which also serves as a trading, political, social, educational, and economic center for the surrounding countryside. In addition, Caldwell is the County Seat, and thus the political capital of Canyon County with a rich historical and cultural heritage, and a strong sense of local identity. The City's location also provides accessibility to numerous advantages of the nearby Boise metropolitan area.

Covering an area of approximately 22 square miles with a 2010 resident population of approximately 46,237, Caldwell is located within the greater geographic region commonly known as the Treasure Valley. The community is situated adjacent to Interstate 84 and the Boise River, twenty miles from Idaho's capital city of Boise. The topography is nearly level to gently sloping with the city center at an elevation of 2,428 feet above sea level. Much of the urbanized area was originally covered by sagebrush and native grasses reflecting the arid climate. For the most part, this vegetation has been cleared as land was developed for agriculture or urban uses.

The City is within a transition area between steppe and desert, and consequently the climate is semi-arid to arid. Summers are warm and dry, and winters relatively mild. Temperatures range from an average 93 degrees high/58 degrees low in summer to 37 degrees high/21 degrees low in winter. Average annual precipitation is approximately 10.9 inches of rainfall and 13.5 inches of snowfall.[2]

City of Middleton

Middleton is one of the oldest communities in the State of Idaho. The City was originally platted in 1863. A post office was established in 1866 and the first school was reportedly operating about 1869. Middleton was so named because it was located approximately halfway between Boise and the original Fort Boise near the mouth of Boise River. In early 1872, the Boise River flooded its banks and opened up a new channel. The village and some farmland became an island, separating inhabitants from the flourmill that was an important industry at the time. People were compelled to ferry back and forth across the river. Subsequently, in 1880-81, citizens moved the City across the river to a new site in the vicinity of the grade school on the north side of Main Street where they would not be cut off from the mill. Today the City of

[2] City of Caldwell Comprehensive Plan adopted May 2010

Middleton has a total of approximately 1150 acres with some of the original buildings still being used.[3]

The population of the City of Middleton was thought to have peaked in 1980. Through the period of 1970 to 1980 the City experienced a growth rate of 15.72% per year. The following years from 1980 to 1990 the population of the City declined by 0.26%. The decline was followed by a growth period from 1990 to 2000 of 6.08% a year, much less than experienced between 1970 and 1980.[4] The 2010 Census lists the population as 5,524 a growth rate of 21.1% in the past 10 years.[5]

Many residents of the City are employed on farms or in agricultural business industries in the valley. Middleton has been a rural community for many years, where the residents are working in nearby communities such as Nampa, Caldwell, and Boise in professional, technical, sales, service, and industrial jobs.

Middleton's domestic water is supplied by wells. A 2,000,000 gallon storage is in operation. The water system has been upgraded and is available to nearly every property in the City. A recently completed upgrade of the sewage treatment plant has greatly increased the available capacity to 600,000 gallons per day. Plans are proceeding to extend sewer service lines south of the Boise River to service developing and existing industrial users on the south side of the river.[6]

City of Wilder

The City of Wilder is nestled between the Boise and Snake Rivers in the western part of Canyon County, located thirty miles west of Boise. Homesteaders began arriving as early as 1904 with the hope of irrigation water being provided soon with the development of the Boise Project. Referred to as a barren tract of sagebrush land, the area bloomed into one of the most fertile agricultural regions in the nation.[7]

The population was 1,462 at the 2000 census and increased by 4.86% to 1,533 in the 2010 census.[8] The City covers an area of 0.4 square miles. Wilder is primarily an agricultural

[3] City of Middleton Comprehensive Plan July 2004
[4] City of Middleton Transportation Plan September 2007
[5] http://quickfacts.census.gov/qfd/states/16/1652660.html
[6] City of Middleton Comprehensive Plan July 2004
[7] http://www.cityofwilder.org/historypage.html
[8] http://quickfacts.census.gov/qfd/states/16/1652660.html

community, with onions, hops, seed corn, beans, and alfalfa seed among the major crops.

City of Notus

Notus is one of 8 cities in Canyon County in the State of Idaho. It is considered the smallest town in Canyon County because of its size and population. It is located 5 miles west of Caldwell and Interstate 84, and 8 miles east of Parma on Hwy 20/26. The Union Pacific Railroad runs east to west thru Notus with Hwy 20/26 on the north side and the Boise River on the south side. The City business district runs along the north side of the Hwy the length of the city limits and 1 block wide. Across the tracks is agricultural industry with a few homes. North of the business district are single family homes of architectural designs dating back to 1904.

Providing a less congested hectic lifestyle, this quiet rural town is a short drive in the country. A large silvery sphere water tower spans high above a park that can be seen from a distance and has become a landmark. Crime is low with the help of the Community Watch program and the Canyon Sheriffs Dept. Surrounding the city are rich vibrant fields of tree groves, seed crops, onions, potatoes, corn, alfalfa and sugar beets. A patchwork quilt of farmland, carved into the landscape, create a colorful array of texture and design. Sheep and cattle dot the green pastures with occasional horses and haystacks.

The City provides water, sewer, and garbage services. There is a Library, Community Center, Post Office, Museum, and 2 Parks available to the public. The City is located on Hwy 20/26 and only 5 miles from Interstate 84, and 7 miles to Hwy 95. [9]

The population was 458 at the 2000 census and increased by 15.94% to 531 in the 2010 census.[10]

City of Parma

The City of Parma itself is a compact and thriving metro-village, with shops, services, small restaurants, multiple churches, a newspaper, several parks, and a great many opportunities for youth, senior citizens, and everyone in-between. Its distinctive placement at the juncture of two rivers, on the Union Pacific main line, directly on US Highway 95, and just a short jump away from Interstate 84 renders it ideal for growers, shippers, manufacturers, commuters, and travelers to make the most of its location.

The environs around Parma offer rich farmland, small business ventures, beautiful home sites, and recreational adventures. Farmers raise cattle, horses, goats, potatoes, onions, seeds of all kinds, hay, grain, hops, and other crops. Many family-run businesses offer a multitude of products and services, from auto-body repair to pet supplies, to espresso, to agricultural research.

[9] http://notusidaho.org/index.html
[10] http://quickfacts.census.gov/qfd/states/16/1652660.html

Recreationists hunt pheasants, quail, and other upland game birds, while others "stalk" wildlife and beautiful sunsets armed only with cameras. All four seasons come to Parma, along with the pleasures of each: soft, flowering springtime; bright, warm summer; colorful, harvest-ripe autumn, and cold, snowy winter.[11]

The population of Parma in 1970 was 1,229 people. The population increased to 1,820 in 1980, and then decreased to 1,597 people in 1990. According to the 2010 census, the City has now grown to 1,983.[12] Parma is a small town with a good retail base. Within minutes of anywhere in Parma is a super market, a pharmacy-variety store, and a furniture store. The City of Parma is served daily by commercial truck lines as well as the national delivery services, i.e., UPS, FEDEX, and the U.S. Postal Service.[13]

City of Melba

Melba is a small farming community, nestled in the Snake River Valley in Southwest Idaho. The town is surrounded by vast agricultural lands growing a diverse variety of crops which include potatoes, beans, sugar beets, onions, corn, and grain. Known as The Seed Heart of America, Melba area farmers excel in growing seed crops for onions, carrots, peas, beans and sweet corn seed as well as alfalfa and clover.[14]

The population was 513 at the 2010 census, up from 439 in 2000.[15]

City of Greenleaf

The City of Greenleaf is located on State Highway 19 between the cities of Caldwell and Wilder. Greenleaf serves as a rural community with few public services. Many people commute to jobs in Caldwell, Nampa, and Boise. Although some of the farmland surrounding Greenleaf has been sold, the economy of the area is based on agriculture.

The City's history is centered on the Quaker faith, with the establishment of Greenleaf Friends Church and Greenleaf Friends Academy. The first settlers began arriving in 1902. These people settled on a farm one-half mile east of the present Greenleaf Store. A strong need for church services was felt when Quaker families started arriving in 1904, and they held their first church service on 03 January, 1906. The people came together and built a small frame church which opened on 09 February, 1908.

Greenleaf has a long history as a rural community. It was settled in 1903 and incorporated as a city in 1973. The population remained stable until the decade of 1990. In the year 2000, according to the census, the population of Greenleaf was 862[16] and decreased to 846. The City of Greenleaf currently encompasses approximately 417 acres. Land uses in Greenleaf include residential, commercial, active agricultural, educational, religious oriented, and civic uses.

[11] http://parmacity.net/
[12] http://quickfacts.census.gov/qfd/states/16/1652660.html
[13] City of Parma Comprehensive Plan May 2004
[14] http://www.cityofmelba.org/
[15] http://quickfacts.census.gov/qfd/states/16/1652660.html
[16] City of Greenleaf Comprehensive Plan October 2006

Greenleaf and the surrounding area provide a habitat for pheasants, quail, turkeys, mink, waterfowl, fox, weasels, rock chucks, birds of prey, many songbirds, and deer. Many of these are game species that provide an important source of recreation for hunters in our community. Other species are natural predators, which play a vital role in pest control.

Greenleaf is in the Vallivue Public School District, which operates primary schools, a middle school, a high school, and a charter school. Greenleaf Friends Academy (GFA) operates a private pre-school through high school facility within the Greenleaf city limits. Established in 1909 and graduating its first class in 1911, GFA is one of the oldest private Christian schools west of the Mississippi. Maximum capacity at the current facility is 420 students. GFA operates its own bus transportation system. Eligibility for attendance is not based on residency within the city limits.[17]

Nampa Highway District #1

Nampa Highway District No. 1 (NHD) is one of four highway districts that serve Canyon County. Each is a political subdivision of the State of Idaho, and is independent of state, city or county governments. The authority of the highway districts is set forth in Idaho Code Title 40, Chapter 13. NHD maintains 367 miles of roadways, and associated signs, bridges, and culverts. NHD is governed by three elected Commissioners, and has 35 employees.

Notus Parma Highway District #2

The Notus Parma Highway District is located in Parma, Idaho. The District covers the northwest section of rural Canyon County.

Golden Gate Highway District #3

The Golden Gate Highway District is located in Wilder, Idaho. The District covers the southwest section of Canyon County. The District manages approximately 225 miles of rural roadways and 135 bridges. The District was formed in 1916 and restructured in 1981. The District is responsible for roads, bridges, signs, and weed control within the boundaries of the District.

Canyon County Highway District #4

Canyon Highway District No. 4 (CHD4) was formed in 1981 to maintain public rights-of-way, roads, and bridges in the highway system within the District's boundaries, excluding cities. The Highway District is a political subdivision of the State of Idaho and, according to state law, functions like a corporation. It is a special-purpose district and is not part of the state, city or county governments. The District manages and maintains 329.66 total miles of roadways including 325.88 improved miles and 3.78 unimproved miles.

[17] City of Greenleaf Comprehensive Plan October 2006

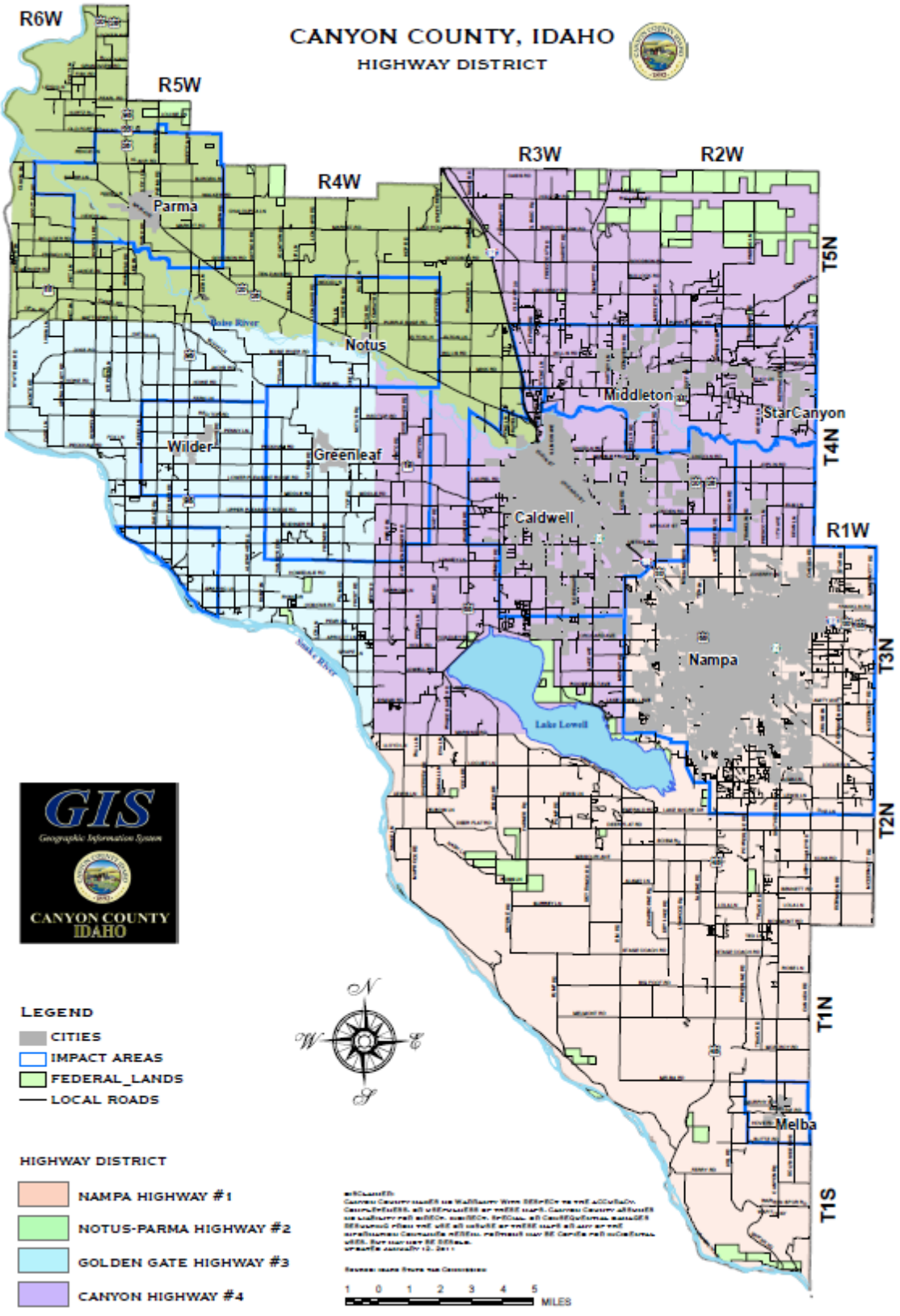

Figure 2.10: Highway Districts in Canyon County

Transportation

Canyon County residents travel an average of 22.3 minutes to work each day. Of the total population of Canyon County, 65.7% of the residents live and work within the County. A detailed listing of critical transportation facilities is found in Attachment 3.

Roadways

Canyon County roads fall into three types: state maintained, federal highways, and local streets. There is one Interstate highway, three U.S. highways, and two main Idaho State highways in Canyon County.

Interstate 84 passes through the northeast area of Canyon County. It starts at the Oregon state line, heads southeast through Caldwell and Nampa to spur with another Interstate in Boise. The interstate stretches for a length of 275.7 miles, of which approximately 35 miles pass through Canyon County.

There are three main U.S. highways that travel through Canyon County: U.S. Hwys 26 and 20 start at the Oregon state line and travel east through Parma and Notus approximately 22 miles, and then joins onto Interstate 84 just north of the city of Caldwell; U.S. Highway 95 starts north of the County following U.S. Hwy26, then branches off traveling through the City of Parma and south to the City of Wilder traveling about 25 miles through the County.

Idaho State highway 55 enters the County from the west over the Snake River border and heads east about 25 miles until it meets with Interstate 84 in the City of Nampa. Idaho State highway 45 connects State Highway 78, just south of Canyon County, to Nampa. Highway 45 travels north from the southernmost part of the County, past the City of Melba, approximately 20 miles up to the downtown Nampa.

Canyon County has four highway districts: Nampa Highway #1 is located in the south-southeast section of the County, services the cities of Nampa and Melba, and maintains 367 miles of roadways, Notus-Parma Highway #2 is located in the northwest corner of the County, servicing the cities of Notus and Parma, Golden Gate Highway #3 is in the southwest section of Canyon County, serving the Cities of Wilder and Greenleaf, and manages about 225 miles of rural roadways, and Canyon Highway #4 covers the northeast area of the County, including the City of Caldwell, with a total miles of 330 miles in roadways.

Airports

Caldwell Industrial Airport and Nampa Municipal Airport are the region's main commercial and freight airports used for Canyon County. Private plane service is available also in other parts of Nampa and Caldwell. The Nampa Municipal Airport is located in the City of Nampa and is home to the Warhawk Air Museum and the National Guard Base. It is used for private, emergency, military, and industrial reasons. The airport has a paved runway and hangars available for private use. Parma Airport, located in Parma in Canyon County is another public-owned airport. It is a smaller airport, with single engine airplanes.

The County also has a Heliport at St. Alphonsus-Nampa located in the city of Nampa. The City of Caldwell has a heliport located at the West Valley Medical Center.

Railroads

Railroads started being built in the early 1880s when the Oregon Short Line Railroad was built through the city of Nampa. More railroad lines sprang up running throughout the city. At the time, a train depot was built but has since been turned into the Canyon County Historical Museum. The Union Pacific Railroad is a national railroad network that now runs through the city of Nampa. It is called the Union Pacific Northwest Corridor Line, connecting Salt Lake City and east with the Pacific Northwest. This railway is used for the transportation of goods and has some passenger train services.

Public Safety

A detailed listing of public safety facilities is found in Attachment 3.

Fire Protection

Canyon County has 7 fire districts that are located and operate within its borders, with a few fire districts from other counties that overlap into the borders of Canyon County.

Parma Rural Fire Protection District is a local organization that protects the residents of Parma, parts of Notus, the northwestern corner of Canyon County, and parts of surrounding counties. They offer fire protection, Technical Rescue, and ALS Transport Ambulance services to its district. This fire department is a volunteer based organization.

Wilder Rural Fire Protection District exists as an organization of volunteers who operate under the Fire Chief. Wilder Fire covers the south western area of the County, servicing the City of Wilder and parts of Greenleaf.

Middleton Rural Fire District services the City of Middleton and the northeast corner of the County. The district is divided into three subsections and has two stations with 9 career staff and 30 reserved staff or volunteers to cover these areas. Middleton Fire District also provides EMT services for its areas.

Caldwell Fire Department covers the Cities of Caldwell, Notus, and Greenleaf. The Department is made up of mostly career type employees.

Nampa Fire Department is a career type of department servicing the City of Nampa and assisting surrounding fire districts. Nampa Fire Department has five fire stations located throughout the City of Nampa.

Upper Deer Flat Fire Department is made up of volunteers servicing the area south of Nampa and Lake Lowell. This fire department covers the Deer Flat National Wildlife Refuge also.

Melba Rural Fire Protection District is based on volunteers and services the City of Melba and the southern point of Canyon County.

Ambulance services are provided by Canyon County Paramedics Countywide. Parma Fire District provides their own ambulance services to their areas of service. Melba Quick Response provides basic life support services in the Melba area. Canyon County is also served by two air ambulance services from Life flight and Air St. Luke's.

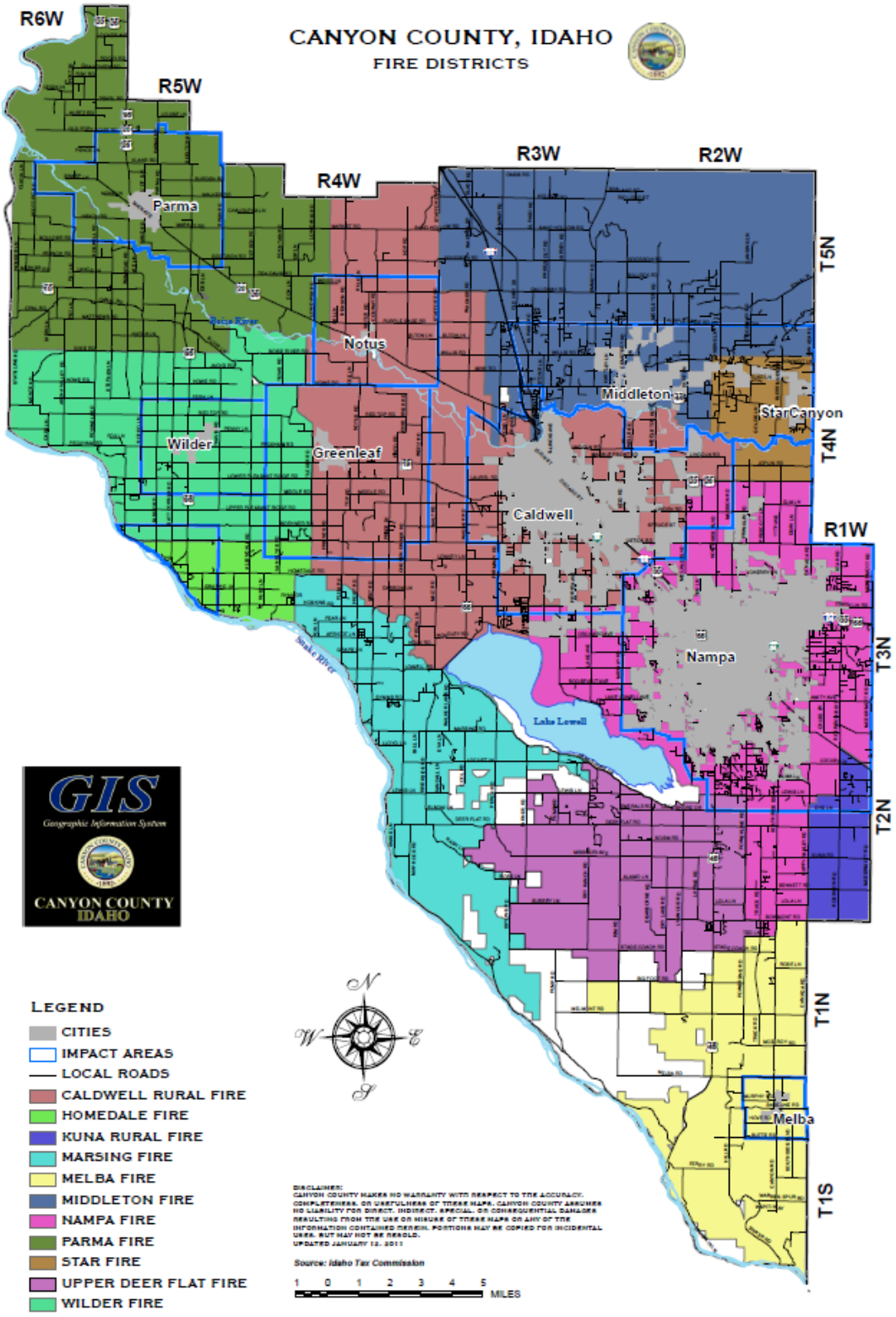

Figure 2.11: Canyon County Fire Districts Map

Health Care

Canyon County is one of six counties in the Southwest Health District for the State of Idaho. The Board of Health meets monthly at the Southwest Health District Building in Caldwell, Idaho.

Saint Alphonsus Medical Center – Nampa (SAMC-N) is located in Nampa, ID. The facility is a 152 bed acute care, non-profit hospital. SAMC-N offers a variety of services including a cancer care center, intensive care unit, sleep center, outpatient surgery center, orthopedics, a women's imaging center, and hospice. This medical center provides services for the residents of Nampa, Greenleaf, Melba, and surrounding areas. SAMC-N is the only location in Canyon County with a heliport. The center also provides ambulance and emergency services. SAMC-N is also associated with the Saint Alphonsus Medical Group physician clinics throughout the County and the rest of the hospitals in the Saint Alphonsus Health System (Saint Alphonsus Regional Medical Center (in Boise), Saint Alphonsus Medical Center – Ontario, and Saint Alphonsus Medical Center – Baker City.)

The West Valley Medical Center is located in Caldwell, Idaho and provides services for Caldwell, Middleton, Parma, Greenleaf, Wilder, Notus, and other surrounding areas. West Valley Medical Center is a 150 bed facility offering Mental Health services, in-patient care, and Lifeline services for in home. West Valley Medical Center is associated with Family Medical Clinics and Primary Care practices located throughout the County, offering primary care, urgent care, and specialty care services for children and adults.

St. Lukes is currently building a Hospital and medical facility in North Nampa.

Canyon County has several Assisted Living Complexes located in Caldwell and Nampa. Karcher Estates, Sunbridge for Nampa, Caldwell Care Center, and Nampa Care Center are a few of the living complexes available that offer nursing home, short term care, rehabilitation, and skilled nursing facilities.

Developmental Disability, Mental Health, Substance Abuse, and Prevention Programs offer counseling services in Caldwell and Nampa.

Emergency Services

Canyon County Sheriff's Office Dispatch Center provides dispatch services to Canyon County. The center is located in Caldwell and has a staff of 23 dispatchers and call takers working on four separate teams, each with a dispatch team supervisor. The center receives, evaluates, and refers all calls, emergency 911 and non emergency calls, coming in. The dispatchers work closely with the local Police Departments, Fire Departments, and Ambulance service providers. They dispatch for two of the ambulance services in the County, Canyon County Paramedics and Parma Fire District.

Canyon County Emergency Management Services are under the direction of the Canyon County Sheriff's Office.

Law Enforcement

Canyon County has five public safety agencies: the Parma Police Department, Wilder Police Department, Caldwell Police Department, and the Nampa Police Department. The Canyon County Sheriff's Office handles public safety in the unincorporated areas of the County.

Public Service Facilities

Public Service Facilities provide essential services to the citizens of Canyon County. A detailed listing of public service facilities is found in Attachment 3.

Electricity

Canyon County receives its electricity source from Idaho Power. Idaho Power is an investor-owned company that provides electricity for most of southern Idaho. The company's headquarters is located in Boise, Idaho. The closest hydroelectric power plant to Canyon County is the Swan Falls hydroelectric power plant on the Snake River in Ada County.

Telecommunications

Canyon County is serviced by eight Internet service providers. The County is serviced by five Telephone companies and five Wireless telephone companies for telecommunications. There is also a Radio Paging Service available for the area used specifically for pagers and paging systems. Cable TV telecommunications is provided by four major providers throughout the area. Qwest, now Century Link and Comcast Communications provide all telecommunication services and is available throughout the County.

Sewer and Water

Canyon County residents are served by Water District #63. Water District #63 receives its water from the Boise River drainage. Therefore, this district covers the entire County as well as into some of the County's neighboring counties. Each city within the County contracts with the water district to provide, maintain, and bill the residents using the water and sewer services provided by that city.

Waste Management

Canyon County has its own landfill within its boundaries. The Pickles Butte Sanitary Landfill is located on Missouri Ave, south of Nampa and Lake Lowell. The landfill accepts Household Waste, Solid Waste, and Commercial/Industrial Waste. The landfill also provides an opportunity for the individuals to recycle various materials including, but not limited to, newspapers, appliances, batteries, gasoline, wood material, and truck tires. The County has more information for those interested on the County website.

Educational Facilities

Canyon County has eight school districts within its boundaries. The **Caldwell School District** is in Caldwell and consists of six Elementary Schools, two Middle Schools, a High School, and an Alternate High School. In the school year 2009-2010, the Elementary Schools provide services to a total of 3,126 students in grades Pre-K to 5. The Middle Schools provide services from

grades 6 to 8 for 1,397 students. The Caldwell High School provides education for grades 9 through 12 and has 1,583 students. The Canyon Springs Alternate High School provides education to students in grades 7 to 12 for a total of 142 students in the year 2009-2010.

Also in the city of Caldwell and Nampa, is the **Vallivue School District**. This district consists of six Elementary Schools, three Middle Schools, a High School, and an Alternate High School. Elementary Schools in this district for year 2009-2010 service grades Pre-K to 5 with a total enrollment of 3,559 students. The Sage Valley, and Vallivue Middle Schools service grades 6 to 8 for a total enrollment of 1,481 students. This district is also in the process of finishing the construction of the new Rivervue Middle School. Vallivue High School services grades 9 through 12 and in the year 2009-2010 had an enrollment of 1,551 students. Vallivue Alternate Academy services grades 9 through 12 and in 2009-2010 had an enrollment of 86 students.

The **Melba School District** in Melba has a total of three schools: Melba Elementary School, Melba Junior/Senior High School, and Melba Alternate School. Melba Elementary School has a total enrollment of 294 students in grades Pre-K to 5. Melba Junior/Senior High School has a total enrollment of 354 students in grades 7 to 12. The Melba Alternate School is currently in the beginning stages and does not have any information available.

The **Middleton School District** currently has five schools: three Elementary Schools, Middleton Middle School, and Middleton High School. The Elementary Schools are located in the city of Middleton and Caldwell where they provide education for grades Pre-K to 5 for a total of 1,384 students. Middleton Middle School services 681 students in grades 6 to 8. Middleton High School provides education for grades 9 to 12 for 918 students.

Nampa School District is located in the city of Nampa and they currently have: The Park View Early Childhood Center, fifteen Elementary Schools, four Middle Schools, three High Schools, and two Alternative Schools. Park View Early Childhood Center services Preschool age students and in the 2009-2010 school year had 144 students enrolled. The Elementary Schools educated 7,183 students in the year 2009-2010 for grades K to 5. The four Middle Schools had 3,382 students enrolled for grades 6 to 8. The three traditional High schools educated a total of 3,833 students for grades 9 through 12. The Ridgeline Alternative High School educated 113 students in 2009-2010 in grades 9 through 12, and The Parkview Alternative High School, formerly known as Nampa Teen Parent Alternative, educated grades 9 through 12 for a total of 44 students in 2009-2010.

Notus School District, located in the City of Notus has two schools: Notus Elementary School, and Notus Junior/Senior High School. Notus Elementary School educated 199 students in the 2009-2010 school year for grades K to 6. Notus Junior/ Senior High School educated 187 students for grades 7 to 12.

The **Parma School District** consists of Maxine Johnson Elementary School, Parma Middle School, and Parma High School. Maxine Johnson Elementary School educates approximately 422 students in grades K to 4. Parma Middle School educates about 329 students for grades 5 to 8, and Parma High School educates about 322 students in grades 9 to 12.

Wilder School District consists of Wilder Elementary School and Wilder Middle-High School. Wilder Elementary School educates approximately 212 students for grades K to 5. Wilder Middle-High School educates about 185 students in grades 6 to 12.

Canyon County has several College campuses within its boundaries. **Northwest Nazarene University** offers Undergraduate and Graduate Programs ranging from Arts to Business, Counseling, Religion, and Education.

College of Western Idaho is located in Nampa and offers undergraduate degrees and technical training.

The **College of Idaho** is located in Caldwell is the State's oldest private college focusing on competencies in the four knowledge peaks of the fine arts and humanities, natural sciences and mathematics, social sciences and history, and a professional field.

The **Treasure Valley Community College** of Ontario, Oregon has a center in the City of Caldwell where they offer a variety of academic programs.

A detailed listing of educational facilities is found in Attachment 3.

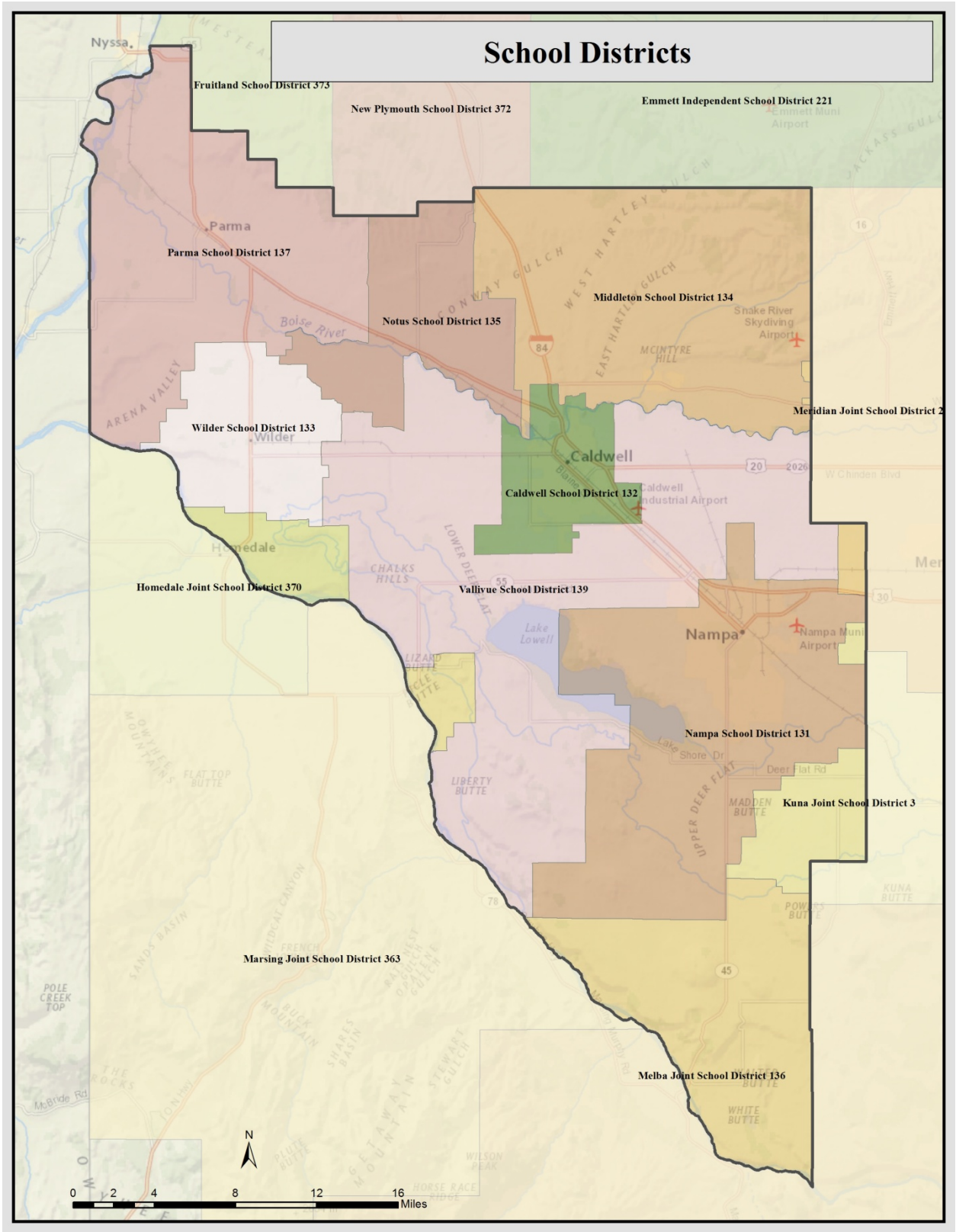

Figure 2.12: Canyon County School Districts Map

Recreation Areas

Canyon County has plenty of recreational areas full of natural resources and activities for families and friends. Canyon County put an emphasis on education at all the parks in the area. These parks also offer a variety of activities such as boating, camping, fishing, hiking, and horseback riding. **Celebration Park**, located in the southern part of Canyon County near Melba, is Idaho's only archaeological park. The park was a wintering ground for the Paiute Indians. The park has high desert floral, unique Indian art dating back 12,000 years, campsites, boating, and horseback riding trails.

Jubilee Park is a 1,350 acre park located on Pickle's Butte southwest of Nampa that offers a beautiful view of the Snake River Canyon, Owyhee Mountains, and Boise Front vistas. The park preserves the open spaces in honor of the American Cowboy and the equestrian trails. Activities offered there are the shooting range, hiking, mountain biking, ORV Facility, and hang gliding.

Lake Lowell offers fishing, boating, swimming, and picnicking for family and friends to visit. Lake Lowell consists of an Upper Dam and a Lower Dam, both with their own facilities and are located at the east and west end of the lake.

Deer Flat National Wildlife Refuge is a great recreational area that offers wildlife-watching, photography, hunting, fishing, and river and lake tours. This park is managed by the U.S. Fish & Wildlife Services.

Fort Boise Wildlife Management Area is located northwest of Parma, Idaho at the confluence of the Boise, Snake, and Owyhee Rivers. This recreational area offers wildlife watching, camping, hunting, and fishing. The original site of Fort Boise is located here on the east bank of the Snake River.

Canyon County has recently added a new educational park, the **Wilson Springs Nature Area Fishing Ponds** Field Trip. This park is a field trip experience for grades 1 to 3. The program consists of an Ecology Walk, where they look for bugs, birds, and plants; a visit to the Idaho Fish & Game Hatchery where they learn about the care and feeding of Idaho native fish species and get to fish.

Canyon County is working on a **Snake River Water Trail** that will provide educational and recreational activities for the County. The Snake River Water Trail will consist of a 205 mile float or powerboat experience through the Great Rift section of the Snake River Plain. This trail will start in Glenn's Ferry, Idaho and end in Huntington, Oregon. Part of this trail will flow through the Canyon County. Along the trail there will be fishing, wildlife viewing, camping, and historic stories told about the areas.

Cultural & Historic Sites

Nampa Train Depot Museum, originally the Oregon Short Line Depot in downtown Nampa, was constructed in 1903. It was Nampa's train Depot until the Union Pacific depot on the north side of the tracks was completed in 1925. The building was then used as offices for the Union Pacific. Today, it serves as a museum for Canyon County.

Our Memories Indian Creek Museum was originally started by Archie & Opal Gulley. This museum is dedicated to thousands of artifacts and has over thirty rooms depicting various scenes from the past.

National Historic Register Listings for Canyon County:

F.F. Beale House (added 1993-Building #93000386) 1802 Cleveland Boulevard, Caldwell

Blatchley Hall (added 1978-Building-#78001055) College of Idaho campus, Caldwell

Boise River and Canal Bridge (added 2007-Structure-#07000003) Plymouth St., Caldwell

Caldwell Carnegie Library (added 1979-Building-#79000784) 1101 Cleveland Boulevard, Caldwell

Caldwell Historic District (added 1982-Politics/Government-#82002509) Roughly bounded by Railroad and Arthur St. and 7th and 9th Aves., Caldwell

Caldwell Odd Fellow Home for the Aged (added 1982-Building-#8200322) N. 14th Ave., Caldwell

Caldwell Residential Historic District (added 2002-Building-#02001064) Roughly bounded by Cleveland Boulevard, Everett St., S. 12th Ave., and S. 20th Ave., Caldwell

E.H. Dewey Stores (added 1982-Buildings-#82000323) 1013-15 1st. St., S., Nampa

Henry W. and Ida Frost Dorman House (added 2000-Building-#00000756) 114 Logan St., Caldwell

Farmers and Merchants Bank (added 1976-Building-#76000670) 101 11th Ave., S., Nampa

Fort Boise and Riverside Ferry Sites (added 1974-Site-#74000736) Northwest of Parma on the Snake River, Parma

Horse Barn (added 1978-Building-#78001057) Northeast of Nampa at Idaho State School and Hospital, Nampa

Ellen Houlder Farm (added 1994-Building-#9400631) Arena Valley Rd. (Route 2) west of Wilder, Wilder

Idaho State Sanitarium Administration Building (added 1982-Building-#82000324) Northeast of Nampa on 11th Ave., N., Nampa

Thomas K. Little House (added 1980-Building-#80001295) 703 E. Belmont St., Caldwell

Jacob P. Lockman House (added 2005-Building-#05000735) 23 9th Ave. N, Nampa

Map Rock Petroglyphs Historic District (added 1982-District-#82000325) Givens Springs

Middleton Substation (added 1973-Building-#73000683) State Highway 44, Middleton

Nampa American Legion Chateau (added 1982-Building-#82000326) 1508 2nd St., S., Nampa

Nampa and Meridian Irrigation District Office (added 1982-Building-#82000329) 1503 1st St., S., Nampa

Nampa City Hall (added 1985-Building-#85000967) 203 12th Ave., S., Nampa

Nampa Department Store (added 1982-Building-#82000327) 1st St., S. and 13th Ave., Nampa

Nampa Depot (added 1972-Building-#72000438) 12th Ave. and Front St., Nampa

Nampa First Methodist Episcopal Church (added 1982-Building-#82000328) 12th Ave., S. and 4th St., Nampa

Nampa Historic District (added 1983-Building-#83000284) 1200 and 1300 blocks S. 1st St., Nampa

Nampa Neighborhood Historic District, Old (added 2007-District-#07000164) Roughly bounded by 4th Ave S, 4th St. S, 11th Ave S, and 9th St. S, Nampa

Nampa Presbyterian Church (added 1982-Building- #82000330) 2nd St. and 15th Ave., S., Nampa

North Caldwell Historic District (added 1979-District-#79000785) 9th, Albany, and Belmont Sts., Caldwell

George Obendorf Gothic Arch Truss Barn (added 1999-Building-#99001278) 24047 Batt Corner Rd., Wilder

Peckham Barn (added 1982-Building-#82000389) North of Wilder on U.S. Route 95, Wilder

John C. Rice House (added 1980-Building-#80001296) 1520 Cleveland Boulevard, Caldwell

Sacred Hearts of Jesus and Mary Church (added 1982-Building-#82000334) 608 7th St., Parma

St. Mary's Catholic Church (added 1982-Building-#82000332) 616 Dearborn, Caldwell

St. Paul's Rectory and Sisters' House (added 1982-Building-#82000333) 810 15th Ave., S., Nampa

Sterry Hall (added 1978-Building-#78001056) College of Idaho campus, Caldwell

A.K. Steunenberg House (added 1982-Building-#82000335) 409 N. Kimball, Caldwell

A.H. Stewart House (added 1979-Building-#79000786) 3rd St. and Bates Ave, Parma

Carrie Adell Strahorn Memorial Library (added 1982-Building-#82002510) College of Idaho, Caldwell

US Post Office-Caldwell Main (added 1989-Building-#89000131) 823 Arthur St., Caldwell

US Post Office-Nampa Main (added 1989-Building-#89000132) 123 11th Ave., S., Nampa

Orton H. Wiley House (added 1986-Building-# 86002163) 524 E. Dewey, Nampa

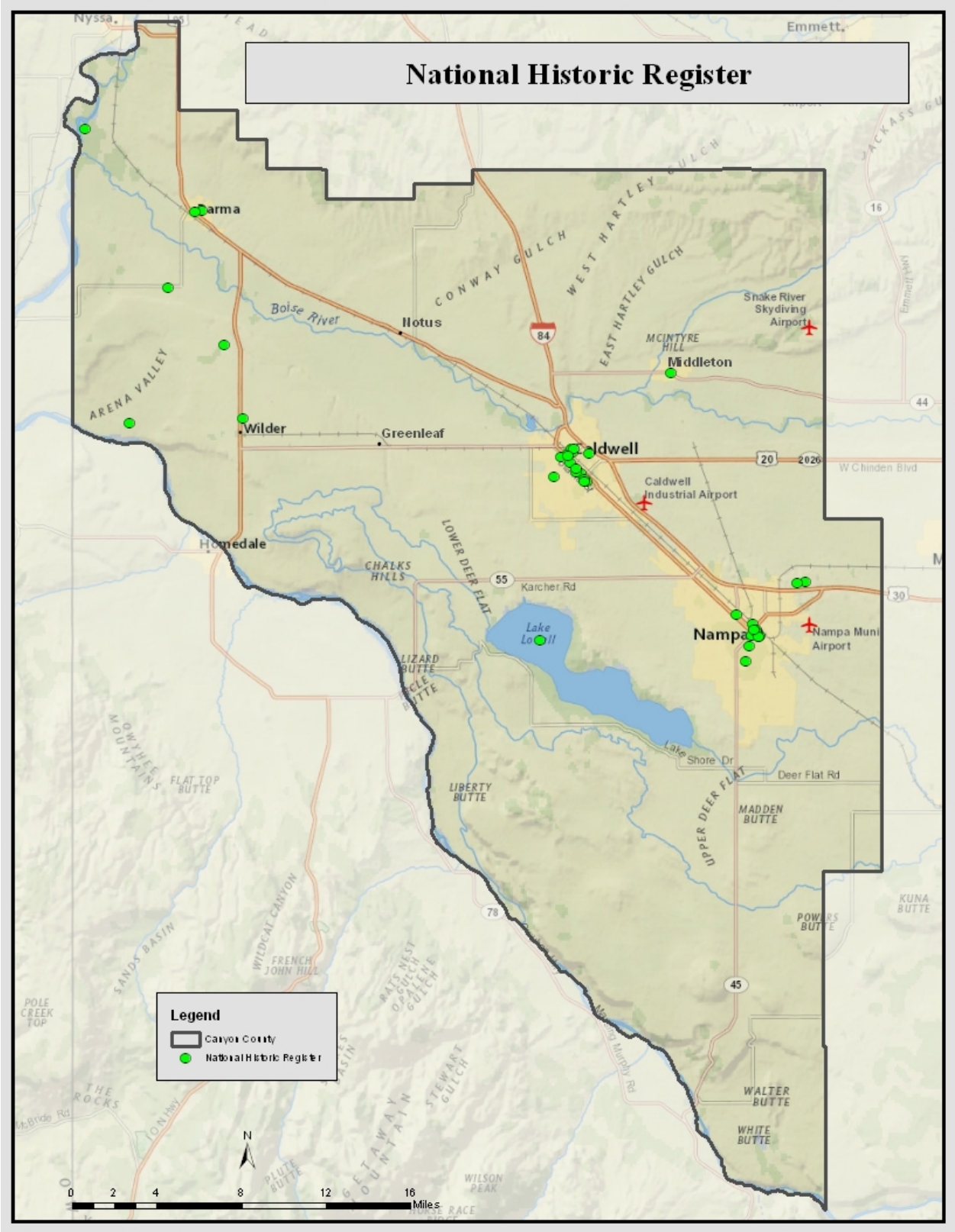

Figure 2.13: Canyon County Historical Sites Map

Economic Profile

The long term employment trend for Canyon County is shown in Figure 2.14 and Figure 2.15. From 1970 to 2009, 48,555 new jobs were created in the County. The majority of job growth, 50% of new jobs, was in Proprietors (the self-employed). In 1970, Wage and Salary Jobs represented 77.3% of the total employment; by 2005, they represented 70%.

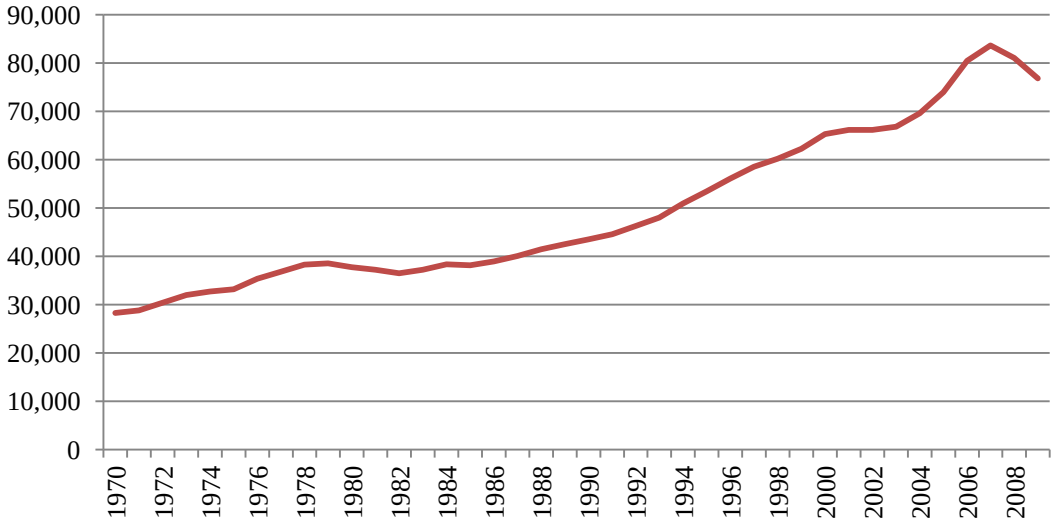

Figure 2.14: Number of Jobs in Canyon County

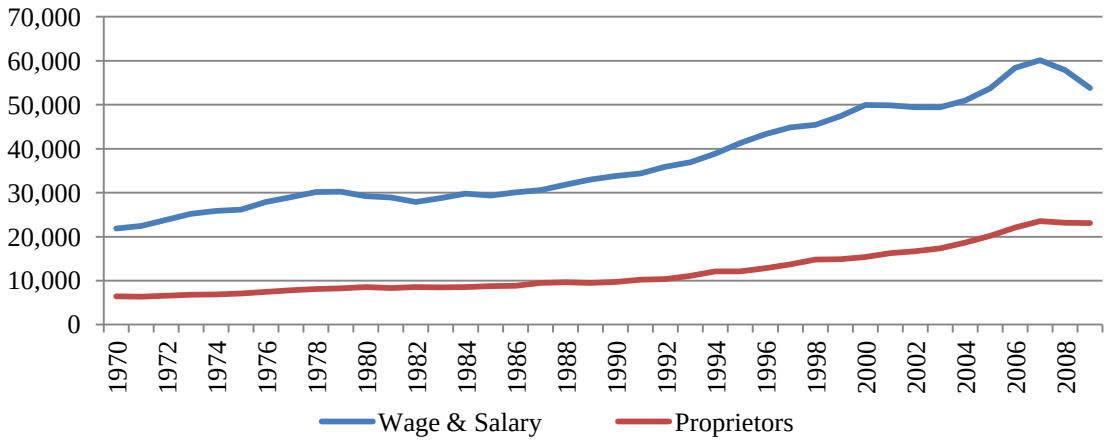

Figure 2.15: Proprietor vs. Wage & Salary Jobs

The average earnings per job, adjusted for inflation, decreased from $32,439 in 1970 to $32,248 in 2009. In 2009 the average earnings per job for Canyon County were lower than the State of Idaho ($35,707) and the nation ($50,695). Figure 2.16 shows the recovery of earnings per job are affected by recessions, but appear to recover within a few years.

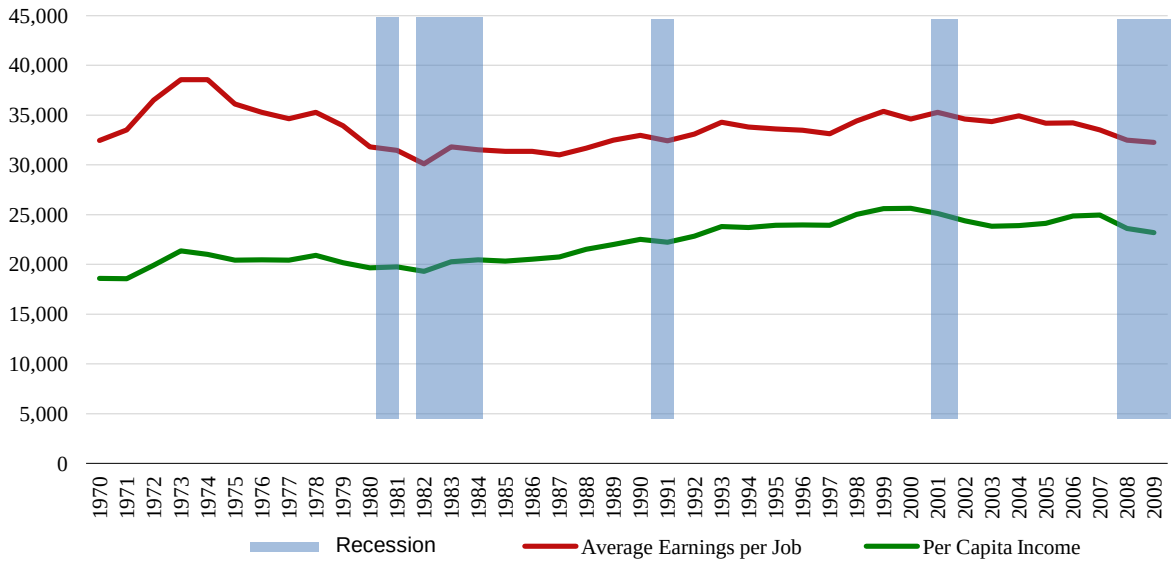

Figure 2.16: Earnings Per Job & Per Capita Income

The growth of employment demonstrated in Figure 2.17 highlights an increase in the number of jobs overall from 1970 to 2000. Services and manufacturing jobs maintain the highest number of jobs. The construction industry has grown the most by percentage of jobs, rising from 4.1% in 1970 to 8.7% in 2000. Mining jobs have had minimal growth within the thirty year period analyzed, starting at 0.1% in 1970, reaching its highest employment at 0.4% in 1980, and working its way back down to 0.1% in 2000.

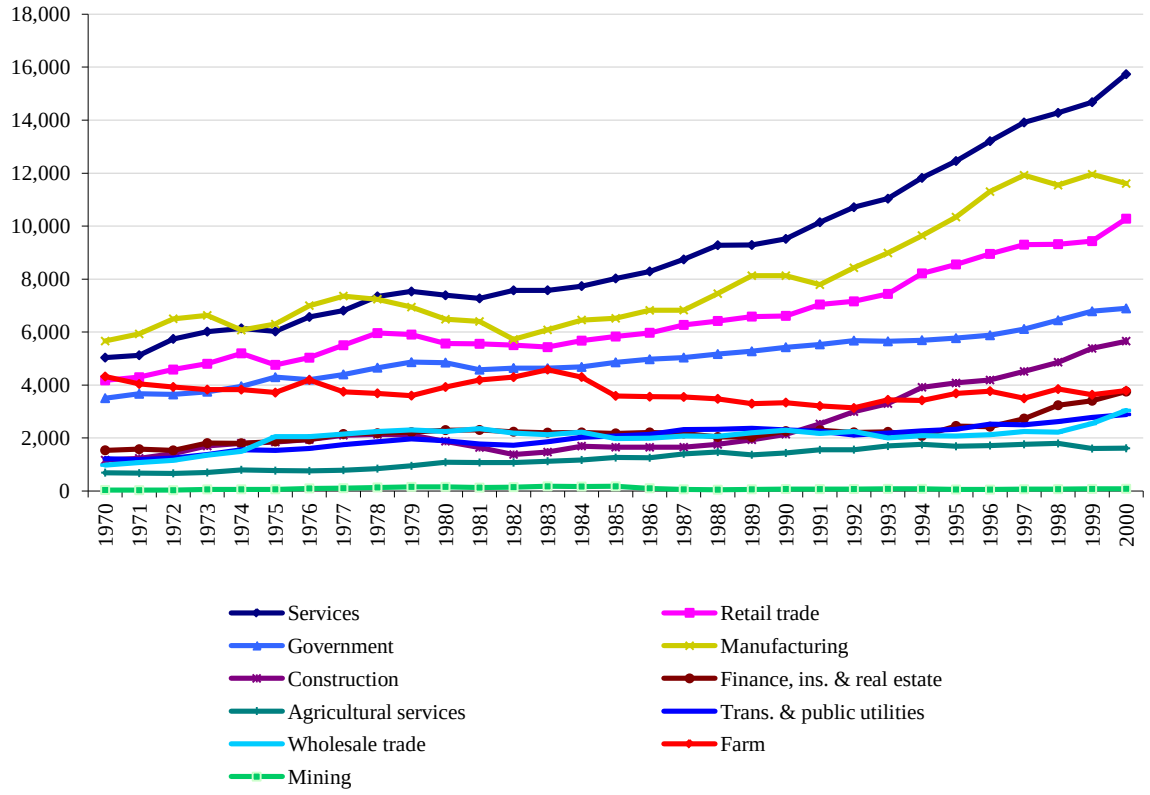

Figure 2.17: Employment by Industry

Figure 2.18 shows employment and wages by sector. Private jobs sector provides the most jobs at just over 40,000, and ranks about average for wages in the County. The highest wage jobs in the County are in the Federal Government sector, which is one of the four sectors having the lowest employment. The main employers for 2010 in Canyon County include: Amalgamated Sugar Company, Caldwell School District, Canyon County, City of Nampa, J.R. Simplot, Mercy Medical Center, Nampa School District, Plexus Corporation, Woodgrain Millwork Inc., Vallivue School District, Wal-Mart, and West Valley Medical Center.

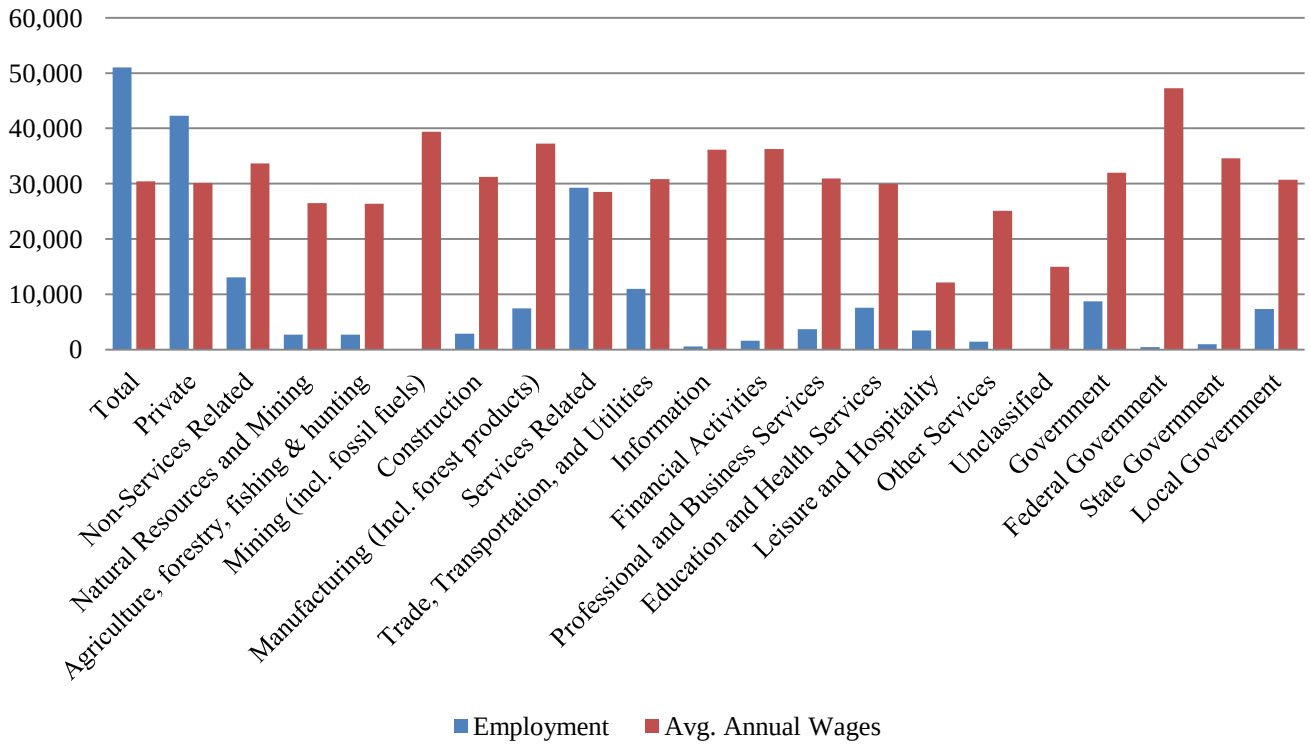

Figure 2.18: 2010 Wages & Employment

The unemployment rate in the County is currently higher than both the State and Nation. From the years 2000 to 2010, the unemployment rates have continued to be higher than the state average, and has flexed between higher and lower rates than the national average. Canyon County reached record lows for unemployment in both 2006 and 2007 before the recession began in the second half of 2008, in which the unemployment rate nearly doubled from 2007 to 2008. By the year 2010, the unemployment rate ended at 11.3% compared to a little over 9% for state and national rates. The aforementioned figures are illustrated in Figure 2.19.

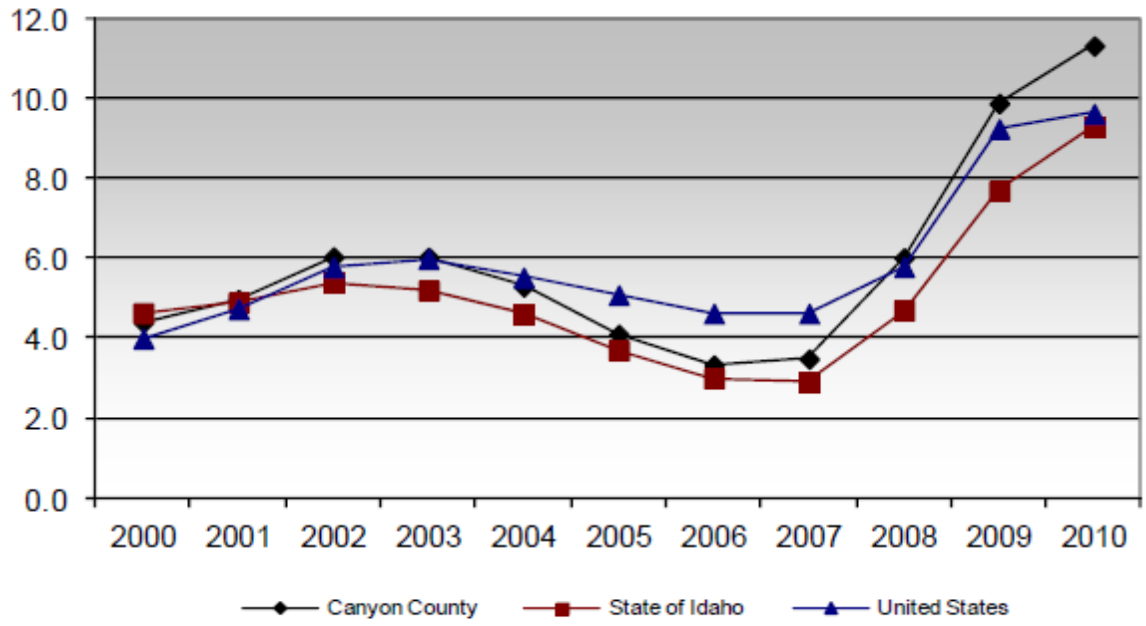

Figure 2.19: Unemployment Rate

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Section 3: Public Involvement

2012 Revision Summary: The Public Involvement section was updated to include the public involvement during this Plan update cycle. It includes new Committee involvement information, as well as the details of the Public survey mailed out to 1,000 residents of Canyon County (details are found in Attachment 2). The Committee and Public Meeting Minutes are also included in Attachment 1.

Public Involvement

Public Involvement in the All Hazard Mitigation Process is used for three distinct purposes. The first is risk perception. Risk perception is used to develop a subjective measure of how the public believes the risks impact their community. The second is development of the requirements for risk reduction projects. The third is to solicit support to the elected and appointed officials as they seek to implement the mitigation actions identified in the AHMP.

Public Meetings

"Focused" Public Meetings were held in each of the participating incorporated cities with the elected officials, staff members, and the general public. Notices of the meetings were published in advance, as required by open meeting laws in Idaho, by placing notices of the meetings in the local newspapers and physically posting notices in public locations. The minutes of each city's meeting are contained in Attachment 1. In each City a presentation was given to the attendees outlining the purpose of the AHMP, why each jurisdiction is requested to participate, and the benefits of participation. In addition, the presentation outlined the risks posed to the communities, the potential losses, and then a request was made to those attending to propose any potential mitigation alternatives which might be undertaken to reduce the risk posed to the City's infrastructure, critical facilities, private residences, and businesses. The meetings were well attended by the elected officials; however, attendance by the general public was typically low.

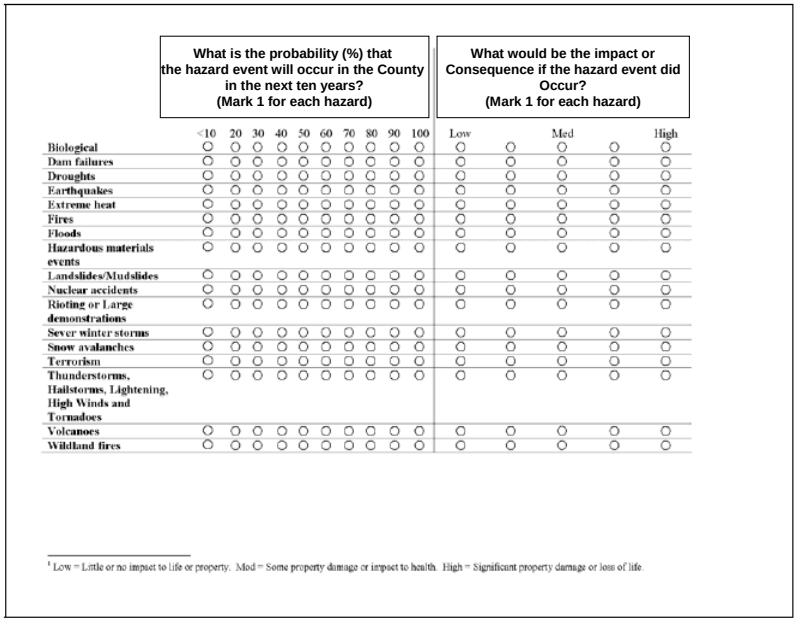
A public meeting was also held with the County Commissioners with the same purpose. The Commissioners expressed a desire to support mitigation efforts and suggested some potential areas of concern. The meeting was supported by the Planning and Building Department Staff as well as the County Emergency Manager. Even though the public was invited, none were present.

Risk Perception

Risk perception is the subjective judgment that people make about the characteristics and severity of a risk. The phrase is most commonly used in reference to natural hazards and threats to the environment or health, such as nuclear power. Several theories have been proposed to explain why different people make different estimates of the danger of risks. Risk Perception is a significant part of the Public Involvement Section of the Canyon County All Hazard Mitigation Planning Process. Two distinct tools were used to gather public input and to measure, at least subjectively, the public attitudes towards the risk posed by the hazards in Canyon County.

Committee Perception Tool

Members of the All Hazard Mitigation Committee in reality play two important roles; first they represent the agency from which their assignment was derived. That representation brings with it certain roles, ensuring the interests of the agency are expressed and included in the planning process, acting as a subject matter expert on issues and matters managed by the agency, and in identifying methods to reduce or mitigate the risk. Second, each individual on the committee brings to the table certain expertise, but also certain attitudes, knowledge, and bias. These attributes, brought into the process also qualifies them as excellent "expressers" of public perception. A Risk Perception Tool was used in the first committee meeting to measure the committee, as individual citizens, perception of the hazards posed and their perception of the severity of the impact from those hazards upon their personal life situations. An example of the Perception Tool is illustrated above, and the results below.



	What is the probability (%) that the hazard event will occur in the County in the next ten years? (Mark 1 for each hazard)										What would be the impact or Consequence if the hazard event did Occur? (Mark 1 for each hazard)				
	<10	20	30	40	50	60	70	80	90	100	Low		Med		High
Biological	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Dam failures	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Droughts	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Earthquakes	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Extreme heat	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Fires	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Floods	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Hazardous materials events	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Landslides/Mudslides	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Nuclear accidents	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rioting or Large demonstrations	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Sever winter storms	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Snow avalanches	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Terrorism	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Thunderstorms, Hailstorms, Lightening, High Winds and Tornadoes	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Volcanoes	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Wildland fires	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

[1] Low = Little or no impact to life or property. Med = Some property damage or impact to health. High = Significant property damage or loss of life.

Figure 3.1: Perception Worksheet

Canyon County	
Hazard Type	**Probability of Occurrence**
Biological	Med
Dam Failure	Low
Droughts	High
Earthquakes	Med
Extreme Heat	Med
Fire (Structure)	High
Floods	High
Hazardous Materials Events	High
Landslides/Mudslides	Low
Nuclear Accidents	Low
Rioting or Large Demonstrations	Low
Severe Winter storm	High
Snow Avalanches	Low
Terrorism	Med
Thunderstorms, Hailstorms, Lightening High winds, Tornadoes	High
Volcanoes	Low
Wildland Fires	High

Level of Impact if Event Occurred					
Hazard Type	**low**	**low-med**	**med**	**med-high**	**high**
Biological				X	
Dam Failure					X
Droughts			X		
Earthquakes				X	
Extreme Heat			X		
Fire (Structure)			X		
Floods			X		
Hazardous Materials Events				X	
Landslides/Mudslides	X				
Nuclear Accidents					X
Rioting or Large Demonstrations			X		
Severe Winter storm			X		
Snow Avalanches	X				
Terrorism				X	
Thunderstorms, Hailstorms, Lightening, High winds, Tornadoes			X		
Volcanoes	X				
Wildland Fires			X		

The Committee's (five highest) perceptions of the probability of hazard occurrence and (five highest) perceptions of how the hazards would impact the community were expressed as follows:

Probability of Occurrence:

1. Thunderstorms, Hailstorms, Lightning, High winds, Tornadoes
2. Hazardous Materials Events
3. Wildland Fires
4. Floods
5. Severe Winter Storms

Public Questionnaire

A Public questionnaire was provided to 1,000 residents of the County. Of the 1,000 mailed 160 were completed and returned for a return rate of 16%. The complete text of the questionnaire, along with results, and written comments from the respondents, are provided in Attachment 2.

The Figure 3.2 shows how respondents ranked hazards in Canyon County, and the top five results are shown below.

1. High Wind
2. Winter Storms
3. Drought
4. Air Quality
5. Earthquake

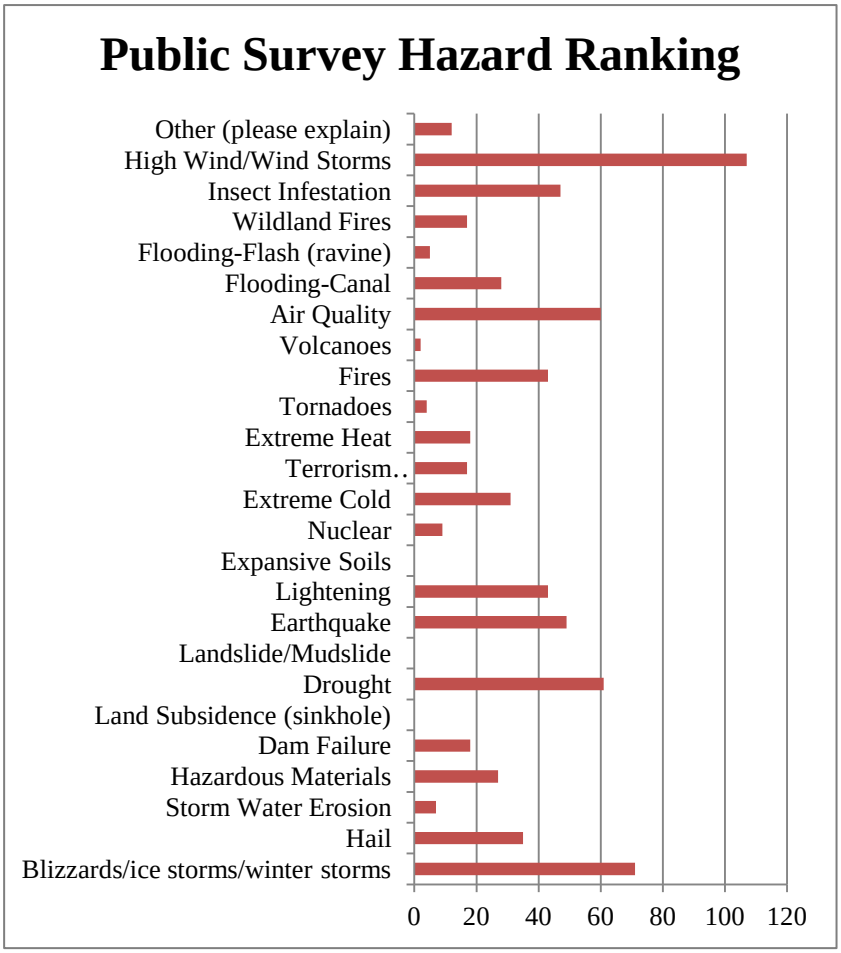


Figure 3.2: Canyon County Public Survey Hazard Ranking

Section 4: Risk Assessment

2012 Revision Summary: The Risk Assessment has been updated to include the following hazards not included in the original Plan: Dam Failure, Canal/Drainage Failure, Rodents, Communicable Disease, Structure Fire, Hazardous Material Event, Riot/Demonstration/Civil Disorder, and Terrorism.

Each hazard's risk assessment was updated with new information regarding losses, historic frequencies, and impacts.

Hazards that pose a threat to human life, health, and well-being are myriad and no attempt is made here to compile an exhaustive list. Those that are addressed in disaster planning are generally categorized as "natural" or "technological" (sometimes "manmade"). The FEMA website[18] contains a thorough discussion of hazards in the section entitled "FEMA's Multi-Hazard Identification and Risk Assessment (MHIRA)"[19]. Some hazards are a threat to all geographic areas while others (e.g. Tsunami in coastal regions) are more limited in their extent. Studies were conducted to determine which hazards are of concern in Canyon County. Hazards that have been identified as significant in this County and that will be considered in this plan are:

Natural Hazards

- Weather: Drought
  - Extreme Heat
  - Extreme Cold
  - Severe Winter Storm
  - Lightning
  - Hail
  - Tornado
  - Straight Line Wind
- Flooding: Flash Flooding
  - River Flooding
  - Dam Failure
  - Canal/Drainage Failure
- Geologic: Earthquake
  - Landslide/Mudslide
- Other: Wildfire
  - Rodents (Burrowing)
    - Communicable Disease
      - Bird Flu
      - West Nile

Technological (Manmade) Hazards

- Structural Fire
- Hazardous Material Event
- Riot/Demonstration/Civil Disorder
- Terrorism

[18] http://www.fema.gov/index.shtm
[19] http://www.fema.gov/plan/prevent/fhm/ft_mhira.shtm

Section 4.1: Weather Hazards

2012 Revision Summary: Weather Hazards were segmented from the following sections:

- *Winterstorms*
- *Thunderstorms*
- *Drought*

To the following sections:

- *Drought*
- *Extreme Heat*
- *Extreme Cold*
- *Severe Winter Storm*
- *Lightning*
- *Hail*
- *Tornado*
- *Straight Line Wind*

Additionally each weather section was updated with new data.

The impact of weather hazards may be widespread (drought) or more localized (lightning), but all have the potential to be severe and directly life-threatening. Historical weather data is generally available in good detail over long time periods, allowing for reasonably accurate risk assessment for planning purposes.

Drought

2012 Revision Summary: The drought section was updated with more historic drought data, impacts, and loss estimates.

Description

Drought is an expected phase in the climactic cycle of almost any geographical region. Certainly that is the case in the State of Idaho. Objective, quantitative definitions for drought exist but most authorities agree that, because of the many factors contributing to it and because its onset and relief are slow and indistinct, none is entirely satisfactory. According to the National Drought Mitigation Center, drought "originates from a deficiency of precipitation over an extended period of time, usually a season or more. This deficiency results in a water shortage for some activity, group, or environmental sector." What is clear is that a condition perceived as "drought" in a given location is the result of a significant decrease in water supply relative to what is "normal" in that area.

It should be noted that water supply is not only controlled by precipitation (amount, frequency, and intensity), but also by other factors including evaporation (which is increased by higher than normal heat and winds), transpiration, and human use. According to the NOAA National Climactic Data Center, much of the State of Idaho most recently experienced moderate to extreme drought conditions from the years 2000 through 2012. Drought Emergency Declarations were issued for various counties by the Idaho Department of Water Resources in the years 2002

through 2012. Idaho's only Presidential Drought Emergency Declaration was issued in 1977. Years in which drought has occurred and/or was declared in Canyon County include:

- 1988
- 1991
- 1992
- 2001
- 2005

In 2012 Canyon County received a contiguous drought declaration as part of a secretarial drought declaration. The map of the Secretarial Drought Designations for 2012 is found in Figure 4.1.1

Figure 4.1.3 illustrates the precipitation conditions for Canyon County using the Palmer Modified Drought Index at 5 year intervals[20]. The data depicted covers the years 1911 to 2011. The Palmer Modified Drought Index (PMDI) is a means of quantifying drought in terms of moisture demands versus moisture supply. Moisture demands include plant requirements and water needed for recharge of soil moisture supplies.

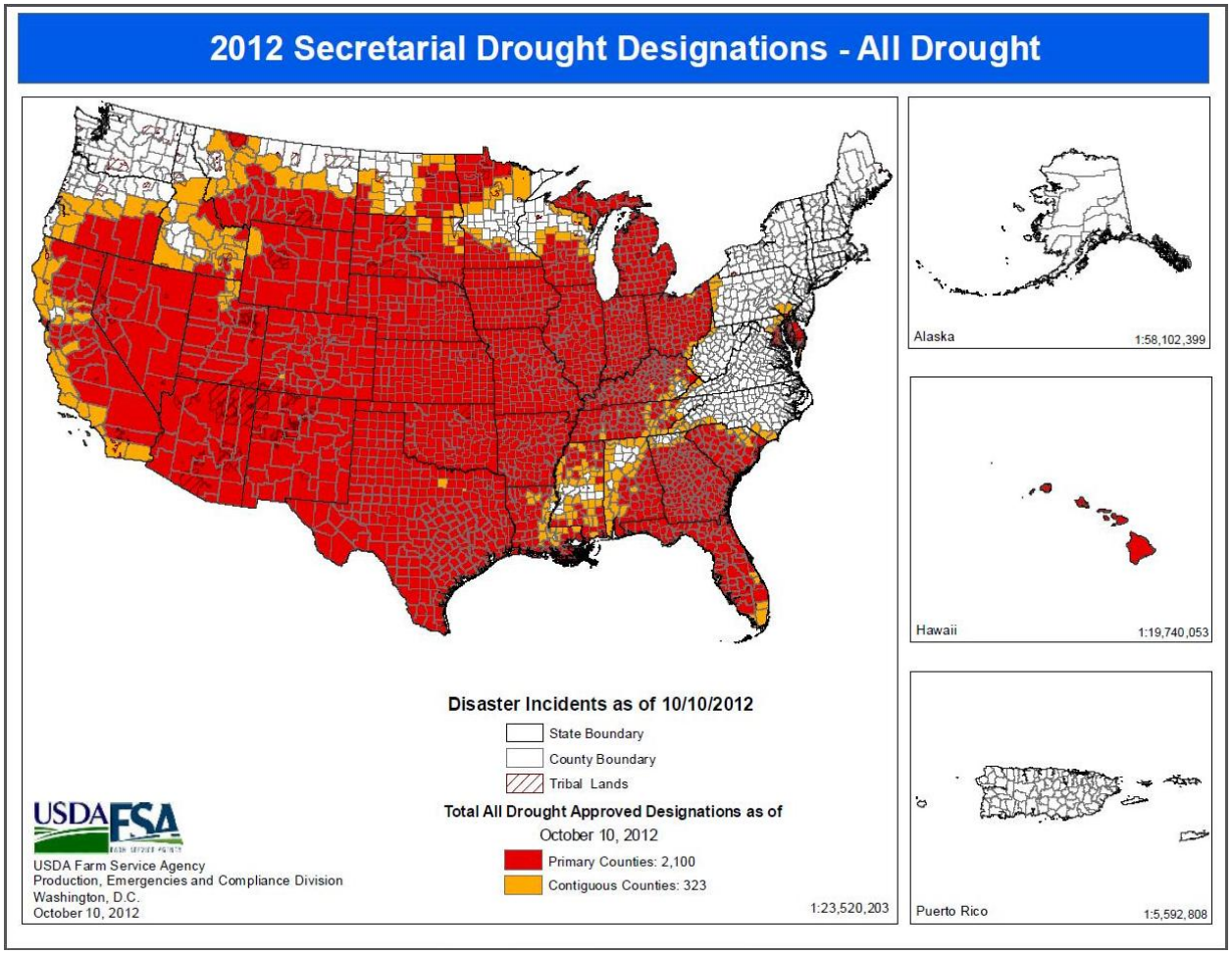


Figure 4.1.1: PMDI Canyon County

[20] NOAA – National Climatic Data Center

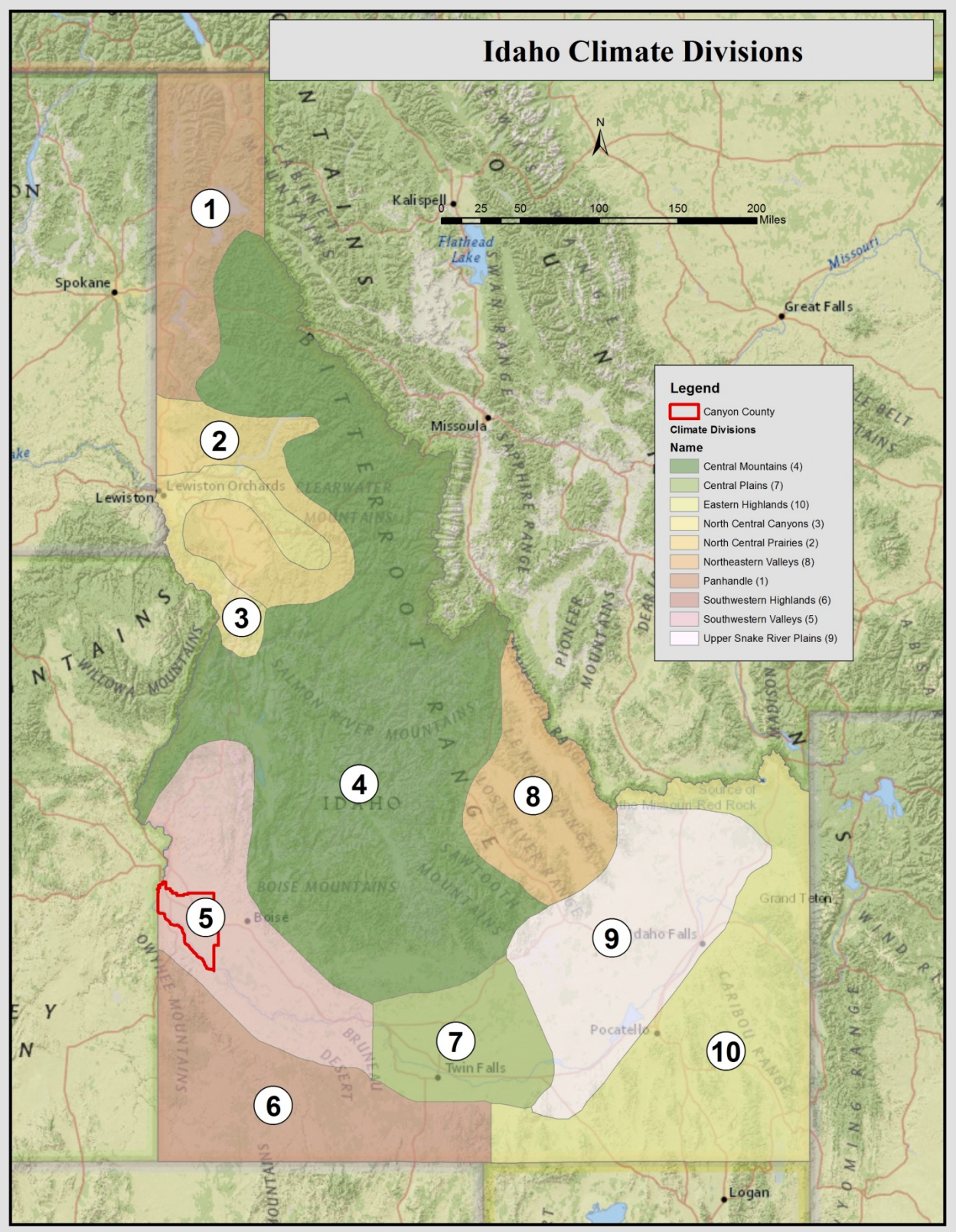


Figure 4.1.2: Idaho Climate Divisions

An allowance is also included for runoff amounts necessary for recharging both ground water and surface water supplies such as rivers, lakes, aquifers, and reservoirs. The PMDI balances the moisture demands against the moisture supply available.

The PMDI expresses this comparison of moisture demand to moisture supply on a numerical scale that usually ranges from positive six to negative six. Positive values reflect excess moisture supplies while negative values indicate moisture demands in excess of supplies.

Approximate Cumulative Frequency %	Category	PMDI Range
> 96	Extreme Wetness	> 3.50
90-95	Severe Wetness	2.50 – 3.49
73 – 89	Mild to Moderate Wetness	1.00 – 2.49
28 – 72	Near Normal	-1.24 - .099
11 -27	Mild to Moderate Drought	-1.25 - -1.99
5 – 10	Severe Drought	-2.00 – 2.74
1 - <4	Extreme Drought	< -2.75

Table 4.1.1 Climate Divisional Boundaries in Idaho

Canyon County is located in Idaho Climate Division 5: The Southwestern Valleys. Data used in this analysis is grouped by the recognized climate divisions. Figure 4.1.2 shows the climate division boundaries in Idaho.

Historical Frequencies

The Idaho Department of Water Resources reports that meteorological drought conditions (a period of low precipitation) existed in the State approximately 30% of the time during the period 1931-1982. Principal drought in Idaho, indicated by stream flow records, occurred during 1929-41, 1944-45, 1959-61, 1977, and 1987-92. The most prolonged drought in Idaho was during the 1930s. For most of the State, that drought lasted for 11 years (1929-41), despite greater than average stream flows in 1932 and 1938. In 1977, the worst single year on record, a severe water shortage occurred throughout Idaho and the West. Stream flows were below normal from 1979 to 1981. A Federal Declaration was issued in 1977 for the State of Idaho and several counties[21].

According to the Idaho Department of Water Resources (IDWR) the following Drought Emergency Declaration was issued for Canyon County since 2002:

- April 13, 2005

The following charts show the drought cycle in Canyon County over at 100 year period (1911-2011). These figures depict the same Palmer Modified Drought Index data as described above, but the data is shown yearly, at 5 year intervals, and by decade.

Drought occurs at 5 to 10 year intervals.

[21] Idaho State Hazard Mitigation Plan 2010.

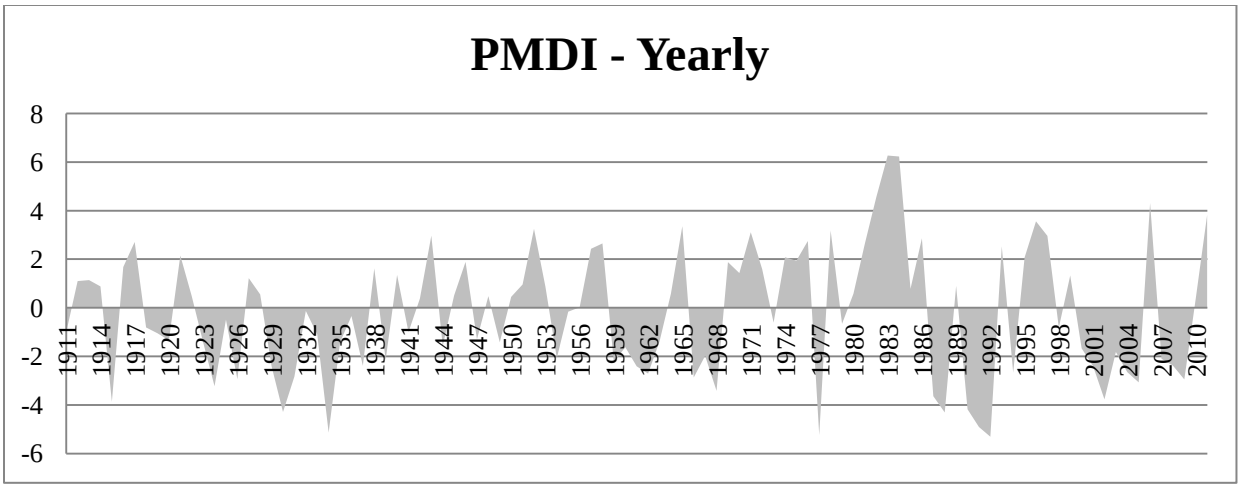


Figure 4.1.3: Yearly PMDI

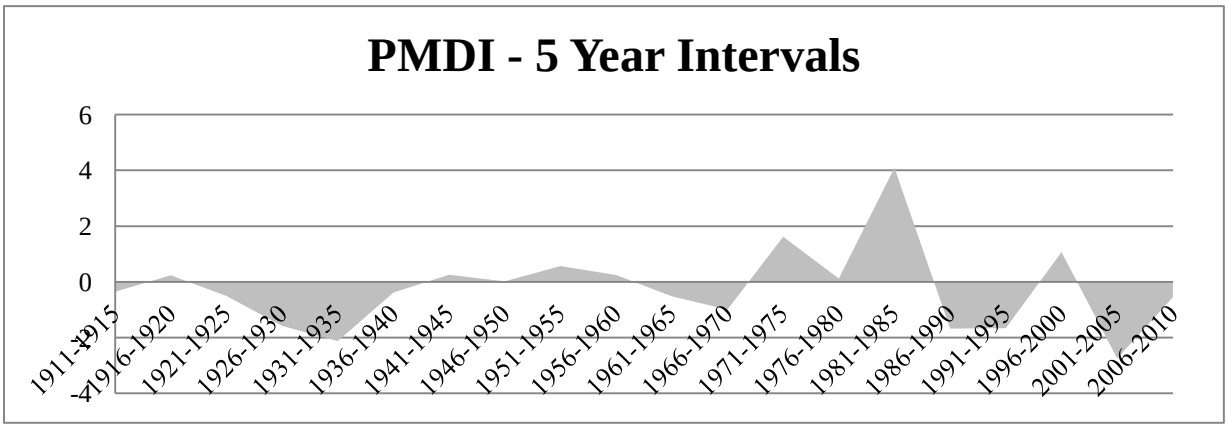


Figure 4.1.4: 5 Year PMDI

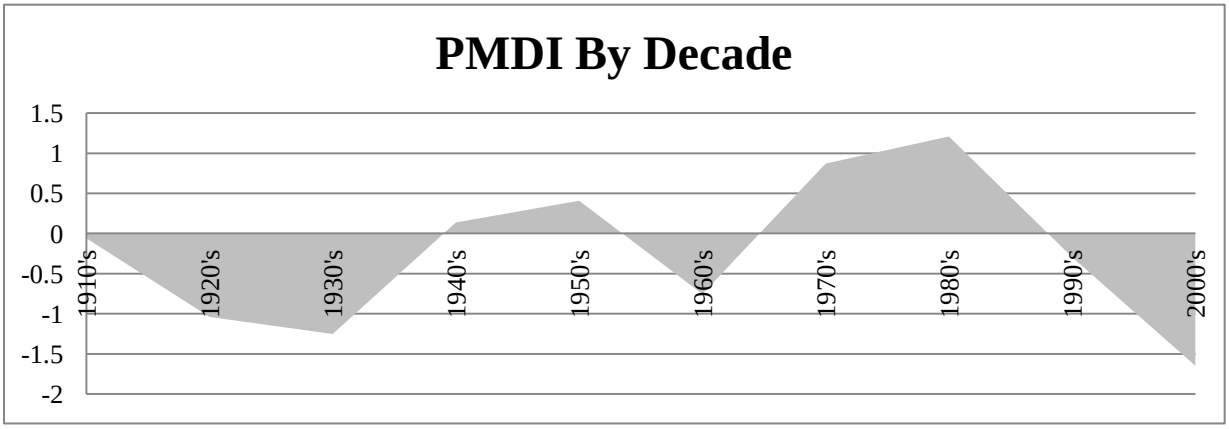


Figure 4.1.5: PMDI by Decade

Impacts

Drought is agriculture's most expensive, frequent, and widespread form of natural disaster. The current drought in the interior West is part of a multi-year drought that began in 1999, worsened in 2000, and has continued, with some interruptions thus far into 2012. As a result, the drought in the West was slow to develop, and likewise, will be slow to recede. Drought produces a complex web of impacts that spans many sectors of the economy and reaches well beyond the area experiencing physical drought. This complexity exists because water is integral to our ability to produce goods and provide services.

Impacts are commonly referred to as direct or indirect. Reduced crop, rangeland, and forest productivity, increased fire hazard, reduced water levels, increased livestock and wildlife mortality rates, and damage to wildlife and fish habitat are a few examples of direct impacts. The consequences of these impacts illustrate indirect impacts. For example, a reduction in crop, rangeland, and forest productivity may result in reduced income for farmers and agribusiness, increased prices for food and timber, unemployment, reduced tax revenues because of reduced expenditures, increased crime, foreclosures on bank loans to farmers and businesses, migration, and disaster relief programs. Direct or primary impacts are usually biophysical. Conceptually speaking, the more removed the impact from the cause, the more complex the link to the cause. In fact, the web of impacts becomes so diffuse that it is very difficult to come up with financial estimates of damages. The impacts of drought can be categorized as economic, environmental, or social.

Many economic impacts occur in agricultural and related sectors because of the reliance of these sectors on surface and subsurface water supplies. In addition to obvious losses in yields in crop and livestock production, drought is associated with increases in insect infestations, plant disease, and wind erosion. Droughts also bring increased problems with insects and diseases to forests and reduce growth. The incidence of forest and range fires increases substantially during extended droughts, which in turn places both human and wildlife populations at higher levels of risk.

Loss Estimates

Income loss is another indicator used in assessing the impacts of drought because so many sectors are affected. Reduced income for farmers has a ripple effect. Retailers and others who provide goods and services to farmers face reduced business. This leads to unemployment, increased credit risk for financial institutions, capital shortfalls, and loss of tax revenue for local, State, and Federal government. Less discretionary income affects the recreation and tourism industries. Prices for food, energy, and other products increase as supplies are reduced. In some cases, local shortages of certain goods result in the need to import these goods from outside the stricken region. Reduced water supply impairs the navigability of rivers and results in increased transportation costs because products must be transported by rail or truck. Hydropower production may also be curtailed significantly.

The following charts in Figures 4.1.6 and 4.1.7 illustrate the net income for individual, as well as corporate farms in Canyon County from 1970 through 2009. Note the income drops during the late 1970's when Idaho declared a drought disaster. There are also significant income drops beginning in the early to mid 1990's when a severe drought hit most of central and southern Idaho.

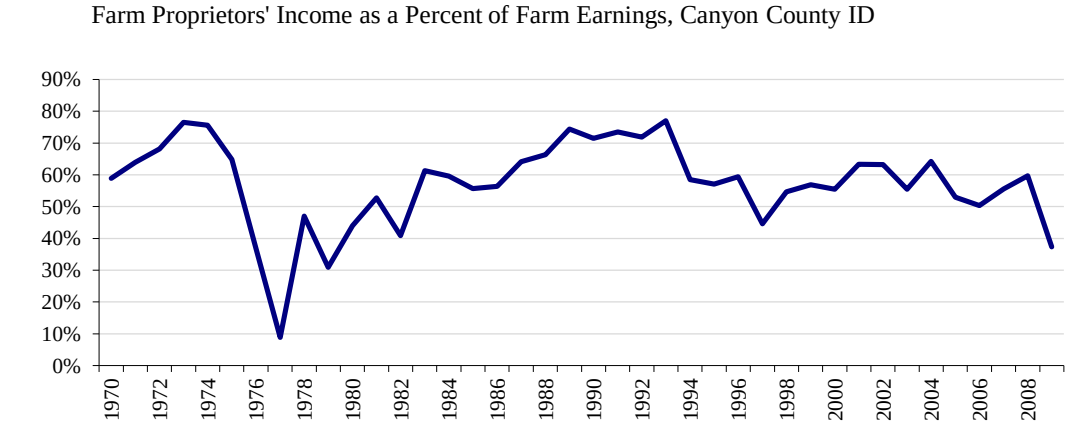


Figure 4.1.6: Farm Proprietors' Income 1970 - 2009

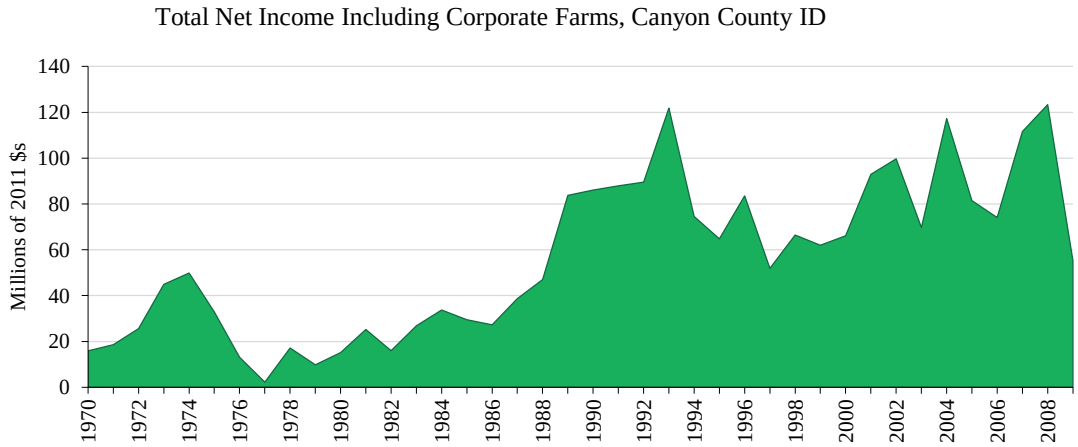


Figure 4.1.7: Net Income Including Corporate Farms 1970 - 2009

Hazard Evaluation

Drought risk is based on a combination of the frequency, severity, and spatial extent of drought (the physical nature of drought) and the degree to which a population or activity is vulnerable to the effects of drought. The degree of a region's vulnerability depends on the environmental and social characteristics of the region and is measured by their ability to anticipate, cope with, resist, and recover from drought.

Society's vulnerability to drought is determined by a wide range of factors, both physical and social, such as demographic trends and geographic characteristics.

Repetitive Loss

Canyon County experiences repetitive loss due to drought. Losses are related primarily to the crop production loss and the associated economics.

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Drought has a magnitude score of 15.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

By its nature, drought develops slowly (Warning Lead Times = 1), and affects wide geographical areas (Geography Affected = 4) but is the direct cause of little or no death or injury (Bodily Harm = 1). Because agriculture is a large component of Canyon County's economy, economic loss could be sustained (Economic Loss = 4). In practice, drought recovery is generally managed at the State level (Reconstruction Assistance = 4). There is no need for sheltering or relocation of individuals (Sheltering = 1). The total Magnitude score is, therefore, fifteen (15) which, for Canyon County, is in the "Medium" range. Historical records for drought are available and reliable, indicating that drought occurs in the five to twenty-five year range in Canyon County (Frequency = Medium).

Extreme Heat

2012 Revision Summary: Extreme Heat was added in this update.

Description

The term "extreme heat," sometimes called "heat wave," is to some extent a relative one describing a period when weather conditions include temperatures and humidity significantly of extreme heat, which are often exacerbated in large urban areas due to the heat island effect and because stagnant atmospheric conditions may trap pollutants. Extreme heat conditions are not common to Idaho where, in general, humidity is low and weather patterns are variable. The National Weather Service (NWS) issues alerts to the public based on its Heat Index which takes both temperature and humidity into account (see Figure 4.1.8). The NWS will initiate alert procedures when the High is expected to exceed 105°- 110°F (depending on local climate) for at least two consecutive days. The effects pattern is variable.

NOAA's National Weather Service Heat Index

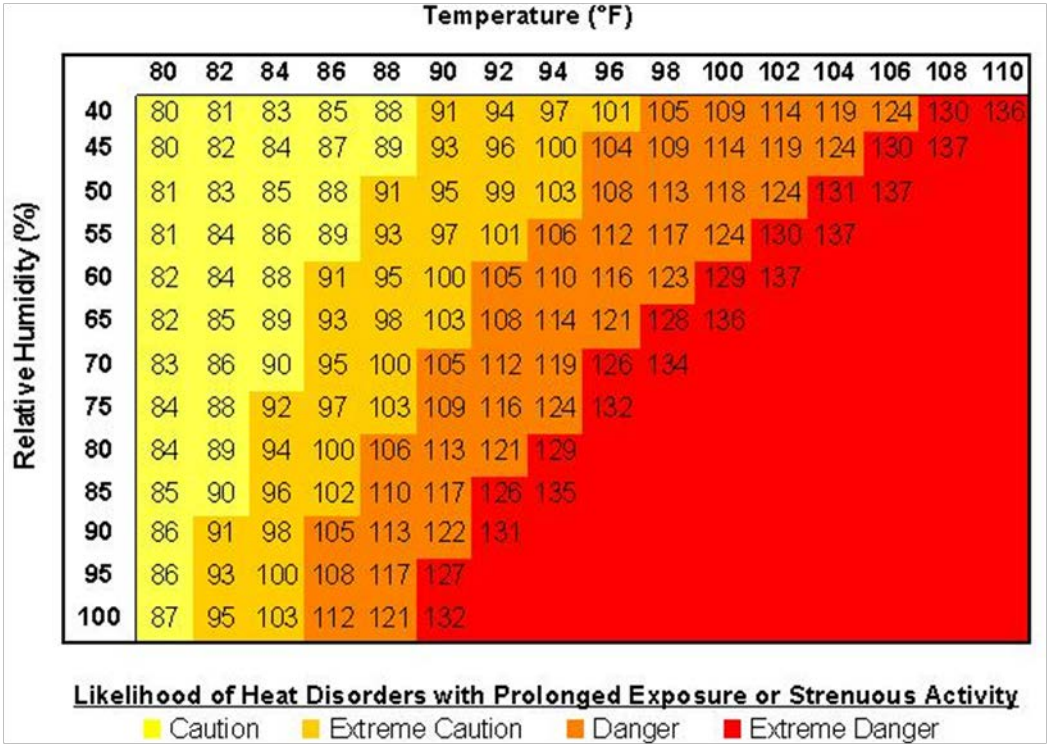


Figure 4.1.8: National Weather Service Heat Index Chart

Source: http://www.nws.noaa.gov/om/heat/index.shtml)

Historic Frequencies

Unlike most of Idaho, extreme heat events occur relatively frequently in Canyon County. Daily weather summaries were taken from the Sugar Factory COOP Station in Nampa for a 35 year period (1977-2011) and analyzed using a Pearson Log III method to determine return interval.

Table 4.1.2 below details the return interval of extreme heat events in Canyon County.

Return Period (years)	Probability (%)	Maximum Temperature
1.05	95.2	99
1.11	90.1	100
1.25	80	101
2	50	103
5	20	105
10	10	107
25	4	108
50	2	109
100	1	110
200	0.5	111

Table 4.1.2: Historic Extreme Heat Summary

Impacts

The primary impact of extreme heat is on human health, causing such disorders as sunstroke, heat exhaustion, and heat cramps. Particularly susceptible are the elderly, small children, and persons with chronic illnesses. There are also undoubtedly indirect and chronic health effects from extreme heat the magnitude of which are difficult or impossible to estimate. Environmental effects can include loss of wildlife and vegetation, and increased probability of wildfires.

Loss Estimates

Extreme heat places high demands on electrical power supplies that can lead to blackouts or brownouts. Economic impacts result from such factors as increased energy prices, loss of business as people avoid leaving their homes to avoid the heat, and agricultural losses. The magnitude of these and other, more indirect impacts is, again, difficult to assess, but for severe heat waves, has been estimated to be in the billions to hundreds of billions of dollars.

Hazard Evaluation

The magnitude of the effects of extreme heat is centered on the individual citizen. Shelters might be opened for the elderly and/or homeless who do not have a means of relief from the heat. Heat related illnesses could cause death if shelter and hydration are not provided. Because the higher elevations are typically five to ten degrees cooler than the valley, extreme heat would most likely affect only that portion of the County at the lower elevations. Economic loss would primarily be related to the cost of energy consumption and to agricultural impacts. Extreme heat would exacerbate drought conditions and make response to wildfire more hazardous.

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Extreme Heat has a magnitude score of 11.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Warning times for extreme heat are subject to the limitations of short-term weather forecasting (Warning Lead Times = 2). The geographical areas affected are somewhat limited (Geography Affected = 4) and while injuries may occur, deaths are not expected in Canyon County (Bodily Harm = 1). Because the duration of extreme heat events is usually only a few days, agriculture is seldom significantly affected and economic loss is usually small (Economic Loss = 1). Because extreme heat usually affects a few, scattered individuals, assistance is seldom required or available from governmental entities; however, relocation of individuals who are affected by the heat may be required (Reconstruction Assistance = 1, Sheltering = 2). The total Magnitude score is, therefore, eleven (11) which, for Canyon County, is in the "Low" range. Historical records for extreme heat are available and reliable, indicating that extreme heat events occur frequently in Canyon county (Frequency = High).

Extreme Cold

2012 Revision Summary: The extreme cold section was added during this update. It was integrated with severe winter storms in the original plan.

Description

"Extreme cold" is another of the terms describing hazards that must be defined relative to what is considered normal in a given locale. What might be considered extreme cold varies considerably in the State of Idaho where normal winter temperatures in the southwest are appreciably more moderate than those in the northwest and far north. Very cold temperatures become a particular hazard when accompanied by winds of 10 mph or greater. The NWS has developed a formula for calculating "wind chill" based on temperature and wind speed (see Figure 4.1.11) and, in this region, issues wind chill advisories when the wind chill temperature is predicted to be -10°F or less with winds of 10 mph or higher for one hour or more. Wind chill warnings are issued when wind chill temperature will be -20°F or less with winds of 10 mph or higher for one hour or more. As with extreme heat, extreme cold is of greatest concern when the condition persists for an extended period of time.

Historic Frequencies

Extreme cold events occur in Canyon County. Daily weather summaries were taken from the Sugar Factory COOP Station in Nampa for a 35 year period (1977-2011).

Table 4.1.3 below details the average minimum temperature by month at the Sugar Factory COOP Station in Nampa.

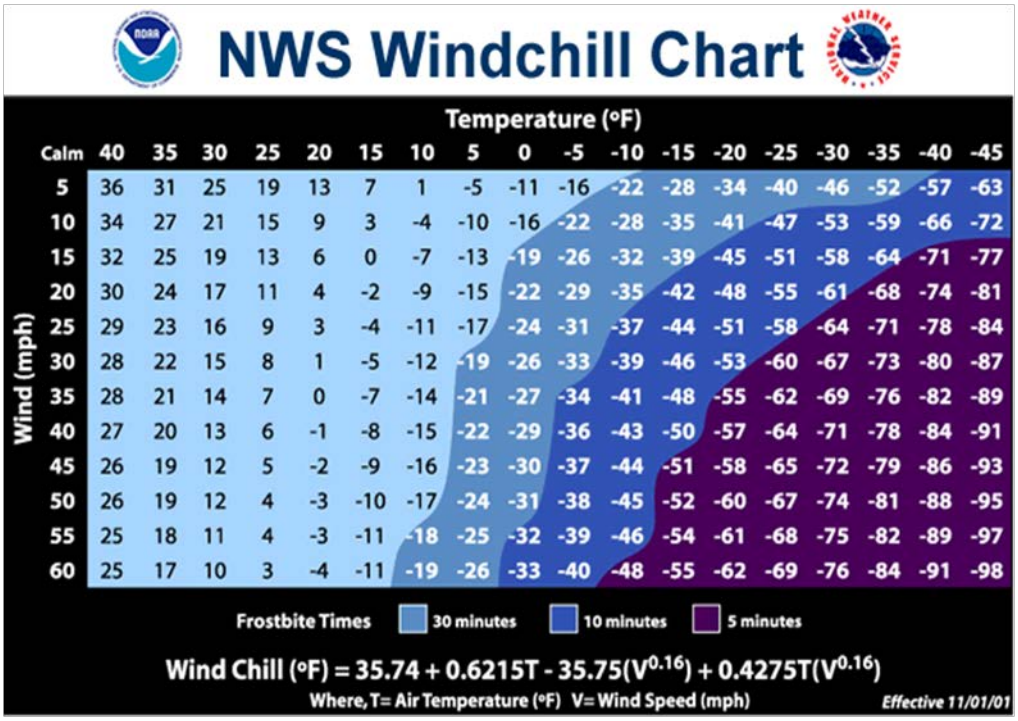


Figure 4.1.9 National Weather Service Windchill Chart
http://www.weather.gov/om/windchill/index.shtml

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Min. Temperature (F)	22	25	31	36	44	51	57	55	46	36	28	21	38

Table 4.1.3: Average Minimum Temperature by Month

For the study period the lowest daily minimum temperature is -26 degrees with three of thirty-five years recording a minimum temperature at -20 degrees or below. The average yearly minimum temperature is 0 degrees. The return interval for extreme cold events exceeding -19 degrees is 11.6 years.

Impacts

Health effects of exposure to extreme cold include hypothermia and frostbite, both of which can be life-threatening. Infants and the elderly are most susceptible. In the United States, nearly 700 deaths are directly attributed to hypothermia annually. When temperatures reach -20 degrees Fahrenheit, a large amount of electrical consumption on the existing electric system occurs.

Loss Estimates

Extreme cold may cause loss of wildlife, vegetation, and kill livestock and other domestic animals. Economic loss may result from flooding due to burst pipes and diminished business activity. River flooding may take place as a result of the formation of ice jams.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Extreme Cold has a magnitude score of 16.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Warning times for extreme cold are subject to the limitations of short-range weather

forecasting (Warning Lead Times = 2). The geographical area affected is usually the entire County (Geography Affected = 8). Because very cold weather is common during the winter in Canyon County, citizens are prepared; however, there is potential for injuries due to extreme cold (Bodily Harm = 1). The duration of extreme cold events is generally a few days, but the County reports that coupled with other severe weather events the economic effect could be serious. (Economic Loss = 2). The extent and severity of extreme cold is generally quite limited, but will probably not require relocation or sheltering from outside the County (Sheltering = 1). Damage due to extreme cold is typically by the community at large. (Reconstruction Assistance = 2). The total Magnitude score is, therefore, sixteen (16) which, for Canyon, is in the "High" range. Historical records for extreme cold are available and reliable, and indicate that extreme cold events have occurred relatively frequently in Canyon County (Frequency = Medium).

Severe Winter Storms

2012 Revision Summary: The historical frequency, impacts, and loss estimates sections were updated.

Description

Severe Winter Storms are a significant risk to personal injury and property in all areas of the County. These storms may create conditions that disrupt essential regional systems, such as public utilities, telecommunications, and transportation routes. These storms may also produce rain, freezing rain, ice, snow, cold temperatures, and wind. Ice storms accompanied by high winds can have destructive impacts, especially to trees, power lines, and utility services.

The NWS describes "Winter Storm" as weather conditions that produce heavy snow or significant ice accumulations. For purposes of this analysis, Severe Winter Storm is defined as any winter condition where the potential exists for a blizzard (winds >= 35mph and falling/drifting snow frequently reduce visibility < ¼ mile, for 2 hrs or more) heavy snowfall (valleys 6 inches or more snowfall in 24 hrs; mountains 9 inches or more snowfall in 24 hrs), ice storm, and/or strong winds.

Blizzards are defined as having considerable falling and/or blowing snow that is combined with a sustained high wind, or frequent gusts of 35 mph or greater, often resulting in reduced visibility of less than one-quarter mile.

Historic Frequencies

Severe Winter Storms occur frequently in Canyon County. The following are three of the largest winter storms to hit Canyon County.

- November 1948 – February 1949: November 1948 – February 1949 saw weekly snow storms in the valley; 14.5" of snow was dumped in one night. There was so much snow that roofs collapsed; Morrison-Knudsen used front-end loaders to haul snow to the Boise River.
- January – February 1916: A severe winter storm occurred resulting in 20" of snow in 3 weeks.

The return intervals for extreme winter storm events were calculated from daily weather observations at the Nampa Sugar Factory Cooperative Weather Station for the years 1992 – 2011, a 20 year period. Unfortunately, wind data was not available from this weather station to

include in this analysis. There is wind data available at the Caldwell Industrial Airport (KEUL), but it was not used in this analysis.

Snow in a 24 hour period exceeded 20 inches in three years during the 20 year period. In 2004, 26 inches of snow fell in a single 24 hour period. The average maximum snowfall in any given year is statistically 10.75 inches. In sheer snowfall measures severe winter storms occur yearly in Canyon County but when wind speeds are incorporated, local common knowledge dictates that severe winter storms occur on a 5 to 10 year basis.

Impacts

The impacts of the very cold temperatures that may accompany a Severe Winter Storm are discussed above. Other life threatening impacts are numerous. Motorists may be stranded by road closures or may be trapped in their automobiles in heavy snow and/or low visibility conditions. Bad road conditions cause automobiles to go out of control. People can be trapped in homes or buildings for long periods of time without food, heat, and utilities. Those who are ill may be deprived of medical care by being stranded, or through loss of utilities and lack of personnel at care facilities. Use of heaters in automobiles and buildings by those who are stranded may result in fires or carbon monoxide poisoning. Fires during winter storm conditions are a particular hazard because fire service response is hindered or prevented by road conditions, and because water supplies may be frozen. Disaster Services may also not be available if telephone service is lost. People who attempt to walk to safety through winter storm conditions often become disoriented and lost. Downed power lines not only deprive the community of electricity for heat and light, but pose an electrocution hazard. Death and injury may also occur if heavy snow accumulation causes roofs to collapse.

Loss Estimates

Economic impacts arise from numerous sources including: hindered transportation of goods and services, flooding due to burst water pipes, forced closing of businesses, inability of employees to reach the workplace, damage to homes and structures, automobiles and other belongings by downed trees and branches, loss of livestock and vegetation, and many others.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Severe Winter Storm has a magnitude score of 17.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Conditions leading winter storms are usually forecast at least 24 hours in advance. (Warning Lead Times =2). In Canyon County, the entire County is vulnerable to winter storms (Geography Affected = 8) and deaths and major injuries are possible (Bodily Harm = 2). The duration of a winter storm is generally a few days or less and, while Canyon County generally takes harsh winter conditions into account in agricultural practices, losses and business interruptions are possible (Economic Loss = 2). With the closure of major roadways during severe winter storms there is very little likelihood of the need to shelter stranded individuals (Sheltering = 1). Winter storms can, in some cases, require local recovery and reconstruction requiring County resources (Reconstruction Assistance = 2). The total Magnitude score is, therefore, seventeen (17) which, for Canyon County, is in the "High" range. Historical records for winter storms are available and reliable, indicating that they occur frequently in Canyon County (Frequency = Medium).

Lightning

2012 Revision Summary: Lightning was added as a hazard in this plan update.

Description

Lightning is defined by the NWS as, "A visible electrical discharge produced by a thunderstorm. The discharge may occur within or between clouds, between the cloud and air, between a cloud and the ground or between the ground and a cloud." A lightning discharge may be over five miles in length, generate temperatures upwards of 50,000^{o}F, and carry 50,000 volts of electrical potential. Lightning is most often associated with thunderstorm clouds but lightning can strike as far as five to ten miles from a storm. Thunder is caused by the rapid expansion of air heated by a lightning strike. Cloud-to-ground lightning strikes occur with much less frequency in the northwestern U.S. than in other parts of the country.

Historic Frequencies

The following table details the NWS Severe Storm Events Database entries pertaining to lightning events in Canyon County.

Date	Death	Injuries	Description
4/4/1993	0	0	A lightning bolt hit a 69,000 volt transmission line between Boise and Caldwell. The hit caused power outages to 1,700 people in the Star and Middleton areas, 20 miles west of Boise. Power was restored by 2100 MST.
8/4/1993	0	0	Lightning struck two power poles, downing the lines and knocking out power to about 200 people for a short time.
8/7/1993	0	0	Lightning was the cause of a structure fire at a church in Caldwell, 25 miles west of Boise. The roof sustained major damage while minor smoke damage occurred throughout the church. Total damage was estimated at $3,000.
5/27/1994	0	0	Lightning caused a house fire near Lake Lowell, 20 miles west of Boise. An estimated $40,000 in damage was done to the house. No one was injured.
5/14/1996	0	0	Thunderstorm activity caused damage from heavy rain, large hail, and lightning. In Canyon and Ada Counties, thunderstorms produced up to 1 inch hail and .85" of rain in less than one hour. Thunderstorms developed later in the afternoon in Malheur County in Oregon producing 1/2 inch of rain in 40 minutes at Owyhee Dam and over an inch at Nyssa. Several lightning strikes from a thunderstorm in Canyon County hit three different homes. One strike blew a hole through one home starting a fire, another destroyed a satellite dish and the third blasted light bulbs and a water heater.
6/30/1997	1	0	A farm worker was struck and killed by lightning while working on an irrigation pipe in a farm field during a thunderstorm.
7/7/2002	1	2	One man was killed instantly when struck by lightning while moving an aluminum irrigation pipe on an alfalfa farm near Sunnyslope. A second man, standing about four feet away, received serious burns to the head and shoulder.

Table 4.1.4 NWS Severe Storm Event Database

Lightning strikes occur frequently in Canyon County. From 1972 to the present there have been 4 injuries and 2 deaths attributed to lightning in Canyon County[22]. During that same period there was recorded $36,470 in property damage attributed to lightning in Canyon County. The return interval for damaging lightning events (excluding wildfire) is in the 5 to 25 year interval.

Impacts

Lightning is a very deadly weather phenomenon in the U.S. On average, sixty to seventy deaths per year are attributed to lightning nationally and in Idaho the average is less than one per year. Injuries and fatalities due to lightning do occur in Canyon County. Despite the enormous energy carried by lightning, only about 10% of strikes are fatal. Injuries include central nervous system damage, burns, cardiac effects, hearing loss, and trauma. The effects of central nervous system injures tend to be long-lasting and severe, leading to such disorders as depression, alcoholism, and chronic fatigue and in some cases to suicide. Lightning also strikes structures causing fires and damaging electrical equipment. Wildland fires are often initiated by lightning strikes as are petroleum storage tank fires. About one third of all power outages are lightning-related.

Loss Estimates

The magnitude of economic loss is difficult to estimate. Government figures suggest annual national costs at around $30 million but some researchers find evidence that losses may be in the billions of dollars. Over a 40 year period there was a recorded $36,470 in property damage attributed to lightning in Canyon County. The annualized loss from lightning in Canyon County is less than $1,000. Based on the historic frequency it can be expected that there is 1 death per 20 years and 1 injury per decade from lightning.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours

[22] SHELDUS Historic Hazard Database

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Lightning has a magnitude score of 16.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Conditions leading to lightning may arise quickly and unpredictably (Warning Lead Times =8). Lightning strikes are highly localized in Canyon County (Geography Affected = 2) and fatalities and injuries do occur (Bodily Harm = 2). Economic loss due to lightning is usually limited to a single structure, but it also is a cause of wildfires that cause much more economic loss (Economic Loss = 2). There is no need for public sheltering (Shelter = 1) and government resources are not available for reconstruction (Reconstruction Assistance = 1). The total Magnitude score is, therefore, sixteen (16) which, for Canyon County, is in the "Medium" range. Historical records for lightning strikes are available and reliable, indicating that lightning events occur relatively frequently in Canyon County (Frequency = High).

Hail

2012 Revision Summary: Hail was added as a hazard in this plan update.

Description

The NWS definition of "hail" is: Showery precipitation in the form of irregular pellets or balls of ice more than 5 mm in diameter, falling from a cumulonimbus cloud. Its size can vary from the defined minimum, a little over a quarter of an inch, up to 4.5 inches or larger. "Severe hail" is defined as being 0.75 inches or more in diameter. The largest hailstones are formed in supercell thunderstorms because of their sustained updrafts and long duration. Hail and severe hail are relatively uncommon in Idaho. In the ten year period from 1986 to 1995 the national weather service recorded severe hail in Idaho on 113 occasions while in the same time period severe hail was recorded in Colorado nearly 1,400 times.

Historic Frequencies

The following table summarizes the NWS Severe Storm Event Database for hail in Canyon County.

Location or County	Date	Mag	Description
Canyon County	5/18/1956	1.50 in.	None
Canyon County	6/7/1964	1.00 in.	None
Canyon County	7/8/1965	1.25 in.	None

Location or County	Date	Mag	Description
Canyon County	5/30/1966	0.75 in.	None
Canyon County	8/11/1982	0.75 in.	None
Canyon County	6/20/1984	1.75 in.	None
Canyon County	6/15/1987	1.50 in.	None
Garrity	4/7/1995	0.75 in.	None
Canyon County	7/9/1995	1.00 in.	None
Parma	5/14/1996	0.88 in.	None
Caldwell	4/30/1997	0.75 in.	During the afternoon and evening of April 30 1997 a series of strong and severe thunderstorms moved into Southwest Idaho. 3/4 inch hail was reported just south of Caldwell , Idaho and 1 inch hail was reported just west of the Boise Airport.
Melba	4/23/1998	1.75 in.	A long lived severe thunderstorm crossed into Idaho from south east Oregon and cut a path of damage from Owyhee County, through the Boise metropolitan area and into the Boise Mountains. In Owyhee County the storm produced winds which knocked down power poles. As the storm crossed into Ada County numerous reports of large hail up to golf ball size were received, along with damaging winds up to 59 mph. Many trees were blown down and a greenhouse sustained heavy damage from large hail. In Canyon County and Gem County golf ball hail was reported. As the storm moved into Boise County golf ball size hail was reported by spotters in Horseshoe Bend, and winds damaged a mobile home. Windblown debris smashed a car window. A wind gust of 74 mph was reported south of Idaho City. In Elmore County, outflow winds from the thunderstorm gusted to 74 mph at Mountain Home Air Force Base. The winds damaged roofs and irrigation equipment in and around Mountain Home. In Owyhee County the gust front spawned a short lived, weak tornado which did no damage.
Nampa	4/6/2003	0.75 in.	A low pressure system with an assocciated cold front was moving through the area.
Huston	5/19/2006	1.25 in.	Sunnyslope Market
Middleton	6/13/2006	1.00 in.	Deep shear aloft destabilized the airmass sufficiently for supercell thunderstorm development across parts of Idaho and Southeast Oregon. Reports of 1 inch hail were common including a few funnel cloud sightings, and gradient winds of over 50 MPH in the extreme eastern portion of the County Warning Area.
Nampa	4/17/2007	0.88 in.	EVENT NARRATIVE: Retired USAF weather forecaster reported nickel size hail. EPISODE NARRATIVE: A strong cold front combined with a vigorous upper feature to kick off scattered convection across Southwest Idaho.
Nampa	7/13/2007	1.00 in.	EVENT NARRATIVE: Quarter Sized Hail Reported. EPISODE NARRATIVE: A shortwave trough lifting through Central Oregon and the associated jet stream speed max over Southwest Idaho lead to the development of severe thunderstorms over the Nampa and Caldwell, Idaho areas.
Caldwell	9/4/2007	0.75 in.	EPISODE NARRATIVE: The air mass over the Intermountain Region rapidly destabilized as a cold front originating from the Pacific Northwest set off a round of severe convection over parts of Southwest Idaho.

Location or County	Date	Mag	Description
Nampa	8/29/2009	0.75 in.	EVENT NARRATIVE: A trained spotter in Nampa, Idaho reported three quarter inch hail. EPISODE NARRATIVE: A strong cold front pushed through the Pacific Northwest on August 29th aiding the development of showers and thunderstorms including large hail and gusty winds.

Table 4.1.5: Severe Hail Events

From 1956 to 2009 there were 19 reported severe hail (>.75" in diameter) events. According to the data, Canyon County can expect to have a severe hail storm once every 2.8 years.

Impacts

Damage from hail approaches $1 billion in each year in the United States. Much of the damage caused by hail is to crops. Even relatively small hail can cause tremendous damage to crops in a matter of minutes. Vehicles, roofs of buildings and homes, and landscaping are also frequently damaged by large sized hail[23].

Hail has been known to cause injury to humans, and occasionally has been fatal.

Loss Estimates

Property loss estimates for 22 severe hail events are recorded in the SHELDUS historic hazard database. These events occurred between the years of 1962 and 1998. The total property damage for the period is $5,530,741, averaging over $250,000 per event. The annualized loss for hail events according to the data is $149,479.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days

[23] NOAA National Severe Storms Laboratory. http://www.nssl.noaa.gov/primer/hail/hail_damage.html

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Hail has a magnitude score of 17.

Magnitude/Frequency Scoring Rationale
Conditions leading hail may arise quickly; however, the NWS usually predicts these types of storms and gives warning within hours (Warning Lead Times =4). Hail events cover a somewhat large region (Geography Affected = 4) and when they occur, fatalities are very rare and injuries uncommon (Bodily Harm = 1). Economic loss due to hail could be extensive in Canyon County (Economic Loss = 4), and reconstruction resources are generally left to individuals and families (Reconstruction Assistance = 1). There is no need for public sheltering (Shelter = 1). The total Magnitude score is, therefore, fifteen (15) which, for Canyon County, is in the "medium" range. Historical records for hail storms are available and reliable, indicating that such events occur on a frequent basis in Canyon County (Frequency = High).

Tornado

2012 Revision Summary: The tornado section was enhanced, and update information about hazard frequency, impacts, and loss estimates was added.

Description

The NWS describes tornado as, "a violently rotating column of air, usually pendant to a cumulonimbus, with circulation reaching the ground. It nearly always starts as a funnel cloud and may be accompanied by a loud roaring noise. On a local scale, it is the most destructive of all atmospheric phenomena." Like hail, most tornadoes are spawned by super cell thunderstorms. They usually last only a few minutes, although some have lasted more than an hour and traveled several miles. "Multiple tornadoes may occur during a single storm, resulting in highly destructive events. Damage is generally confined to a narrow path (approximately one-quarter mile)." [24] Wind speeds within tornadoes are estimated based on the damage caused and expressed using the Enhanced Fujita (EF) Scale (Table 4.1.6)

[24] As described in the State of Idaho Hazard Mitigation Plan 2010

F scale	Class	Wind speed		Description
		mph	km/h	
F0	weak	65-85	105-137	Gale
F1	weak	86-110	138-177	Moderate
F2	strong	111-135	178-217	Significant
F3	strong	136-165	218-266	Severe
F4	violent	166-200	267-322	Devastating
F5	violent	> 200	> 322	Incredible

Table 4.1.6
Enhanced Fujita (EF) Scale for Estimation of Tornado Wind Speeds

http://www.srh.noaa.gov/srh/jetstream/mesoscale/tornado.htm

Idaho has relatively few tornadoes, averaging three reported per year between 1953 and 2004. Tornadoes of F2 strength or greater are extremely rare in Idaho.

Historic Frequencies

The following table shows the recorded tornado touchdown events recorded by the NWS in Canyon County. Note that the database extends back to 1956, but the first recorded event in Canyon County occurred in 1986. For the purposes of this analysis, the data analyzed was assuming that tornadoes were not recorded prior to 1986.

Location	Date	Type	Magnitude	Property Damage	Description
Canyon	9/26/1986	Tornado	F0	0K	
Canyon	7/30/1990	Tornado	F0	3K	
Canyon	4/24/1991	Tornado	F0	25K	
Parma	5/17/1996	Tornado	F1	50K	
Nampa	12/14/2000	Tornado	F0	0	A strong frontal system moved through southeast Oregon and southwest Idaho during the late evening/early morning hours of December 14th and 15th. A weak tornado formed on the leading edge of the gust front and touched down in a largely rural area of Nampa. A National Weather Service storm survey found evidence that suggested the tornado touched down intermittently over a period of approximately 3 minutes and traveled approximately one mile through a rural area scattered with a few subdivisions. At its widest path, the width was estimated at 30 yards. The tornado was witnessed by a naval officer who described the tornado as a well defined rope-like funnel which was occasionally lighted by exploding transformers and power line arching at the base of the funnel. Damage along the path was confined to shingle damage to a number of homes, a power pole snapped off at its base and a 3 foot diameter tree uprooted.
Nampa	4/6/2003	Tornado	F0	0	A low pressure system with an associated cold front was moving through the area.

Table 4.1.7: Tornado Events

Based on the historic events that have occurred, there is a 33% chance per year that a tornado will occur. The return interval is every 3 years.

Impacts

Loss of utilities (primarily due to fallen trees) is common following tornadoes and, depending on circumstances, communities might be deprived of almost any kind of goods and services including food, water, and medical care. Agriculturally, crop and livestock loss is also possible as is loss of timber production.

Loss Estimates

From 1986 to 2003 there have been six reported tornadoes with an estimated cumulative loss of $78,000. The annualized loss for tornadoes in Canyon County is $4,333.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Tornado has a magnitude score of 12.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Conditions leading to tornado formation may arise quickly and unpredictably; however, the NWS provides warnings of potential tornado activity within hours of the event (Warning Lead Times = 4). The path of a tornado is usually relatively localized (Geography Affected = 2) and given their historically low F-scale magnitude in Canyon County fatalities and injuries are unlikely (Bodily Harm = 1). Economic loss due to structural damage is possible (Economic Loss = 2), but only County resources would be required for reconstruction (Reconstruction Assistance = 2). Public Sheltering would not be required (Shelter = 1). The total Magnitude score is, therefore, twelve (12) which, for Canyon County, is in the "Low" range. Historical records for tornadoes are available and reliable, indicating that tornadoes occur frequently in Canyon County (Frequency = High).

Straight Line Wind

2012 Revision Summary: Straight Line Wind was separated from Tornado. Updates were made to the historic frequencies, impacts, and loss estimates.

Description

The term "straight line wind" is used to describe any wind not associated with rotation, particularly tornadoes. Of concern is "high wind," defined by the NWS as, "Sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration." Like tornadoes, strong, straight line winds are generated by thunderstorms and they can cause similar damage. Straight line wind speeds can approach 150 mph, equivalent to those in an F3 tornado.

Historic Frequencies

The following table details Historic Wind Events as recorded in the NWS Severe Storm Event Database.

Location	Date	Magnitude	Description
Canyon County	1/11/2010	49 kts.	EVENT NARRATIVE: The entire metal covering over the hamburger stand trailer at the White Bird Arena was blown off by strong gusty southwest winds. The wooden supports and metal posts were yanked upwards, with some of the debris carried 75 feet away. The Slate Creek RAWS weather observation to the south of the site, measured a wind gust up to 47 mph. EPISODE NARRATIVE: Gusty south winds near White Bird caused damage to a Hamburger Stand Trailer.
Bowmont	8/31/2007	52 kts.	EVENT NARRATIVE: A trained spotter reported wind gusts to 60 MPH with trees blown down and heavy rain. EPISODE NARRATIVE: A potent shortwave trough moved northeast out of the Sierras into an unstable airmass situated over the Northern Great Basin. Severe thunderstorms developed across extreme Eastern Oregon and the outflow winds swept through parts of Southwest Idaho.
Greenleaf	8/3/2009	52 kts.	EVENT NARRATIVE: A measured gust of 51 MPH was reported, but tree and shingle damage, and extensive blowing dust point to a likely wind in excess of 58 MPH from the storm. EPISODE NARRATIVE: A strong impulse coming out of an upper low off the coast of California moved through Southwest Idaho with thunderstorms producing gusty winds and periods of heavy rains.
Nampa	4/25/2011	52 kts.	EVENT NARRATIVE: A coop observer in Nampa reported a fence blown over and a 6 inch diameter tree uprooted. EPISODE NARRATIVE: A strong cold front produced high winds and isolated severe convection leading to significant wind damage to locations in the Treasure Valley of Southwest Idaho on the 25th.
Nampa	7/7/2011	52 kts.	EVENT NARRATIVE: Several reports of downed trees and fences and damage to homes were received from local media. EPISODE NARRATIVE: Severe thunderstorms developed over parts of the Treasure Valley in Southwest Idaho on the 7th causing damage to trees and property to locations in Meridian and Boise.
Boise	8/10/1993	0 kts.	In Caldwell, 25 miles west of Boise, a large tree fell on a car after being blown over by strong winds. Winds estimated at 60 to 70 mph blew near Sand Hollow, 30 miles northwest of Boise. A large tree in Nampa, 15 miles west of Boise, was downed by strong wind.

Location	Date	Magnitude	Description
Boise	8/10/1993	0 kts.	In Caldwell, 25 miles west of Boise, a large tree fell on a car after being blown over by strong winds. Winds estimated at 60 to 70 mph blew near Sand Hollow, 30 miles northwest of Boise. A large tree in Nampa, 15 miles west of Boise, was downed by strong wind.
Boise	8/10/1993	0 kts.	In Caldwell, 25 miles west of Boise, a large tree fell on a car after being blown over by strong winds. Winds estimated at 60 to 70 mph blew near Sand Hollow, 30 miles northwest of Boise. A large tree in Nampa, 15 miles west of Boise, was downed by strong wind.
Canyon County	2/1/1995	0 kts.	Thunderstorms associated with a cold front produce strong winds which knocked over TV antennas and power poles.
Caldwell	4/27/1995	52 kts.	Blowing Dust
Middleton	6/7/1996	60 kts.	A microbrust from high-based thunderstorms in Canyon County produced 70 mile an hour winds. In Wilder, the roof was torn off of a house. In Caldwell, five large trees were blown down and one damaged a parked car; an aluminum shed was thrown 50 feet. A grainery in Middleton was thrown over a fence and landed in a neighbor's pool.
Wilder	6/7/1996	70 kts.	
SE Nampa	8/26/1996	60 kts.	Thunderstorms moved through Southwestern Idaho with strong winds and lightning. Several locations reported downed trees and power lines. The hardest hit area was Nampa in Canyon County. Wind lifted a dairy barn and smashed it, several roofs were pulled off of houses, barns and sheds were blown over, large trees were uprooted, one fell on a house, and several residents reported small grass and barn fires. 911 in Canyon County had a record number of calls. Several fires were ignited by lightning. In the Vale District, 16 fires were started totaling 26000 acres. In Owyhee County, reports of visibility, reduced to zero in blowing dust, occurred at Givens Hot Springs.
Caldwell	8/27/1996	60 kts.	Severe thunderstorms caused several flash floods and gusty winds. Flash flooding occurred near Reynolds Creek in Owyhee County when 1.4" of rain fell in 40 minutes. Several drainages and creeks were flooded. Also in Owyhee County, Rabbit Creek flooded over the roadway 2 to 5 miles Northwest of Murphy. Damage amounts were unavailable.
Melba	7/9/1998	50 kts.	A severe thunderstorm produced damaging winds in southern Canyon and Ada Counties. Trees were uprooted in Melba and a spotter in Kuna reported a 60 mph wind gust.
Melba	6/15/1999	55 kts.	Scattered thunderstorms moved through southern Canyon and western Ada Counties and produced damaging wind gusts. Numerous trees and powerlines were downed throughout the area. A 75 foot tall tree fell on a home in Nampa and a porch was torn off another home. In Boise, the I-84 connector was closed due to downed powerlines.
Greenleaf	7/20/1999	50 kts.	Thunderstorm winds uprooted 2 1/2 foot diameter tree.
Nampa	5/16/2000	60 kts.	A line of thunderstorms moved through Southwest Idaho with reports of 1 inch hail in Boise and Ada Counties and wind gusts to 60 mph in Canyon County. Idaho Power Company reported power outages in Nampa....Caldwell and Meridian due to numerous trees and limbs down on power lines.

Location	Date	Magnitude	Description
Canyon County	7/18/2000	60 kts.	Monsoonal moisture moving into Southeast Oregon and Southwest Idaho, coupled with a weak area of low pressure, initiated afternoon convection in Southeast Oregon. As the line of thunderstorms moved into Southwest Idaho, a thunderstorm outflow boundary collided with another strong cell in southern Ada County, generating a short-lived tornado. Three storm spotters independently witnessed the evolution and touchdown of the tornado, which was also confirmed by a follow-up storm survey. The tornado touched down on an unpopulated, barren butte and no injuries or damages were sustained. Prior to the tornado, high winds ripped through Canyon County with gusts to 60 mph. An old growth tree was snapped and several power lines were felled.
Nampa	4/14/2002	54 kts.	A severe thunderstorm wind gust of 54 knots destroyed a carport 10 miles South of Nampa in Canyon County. A line of strong thunderstorms resulting from a Pacific cold frontal passage caused damage as it moved East from Canyon and Ada Counties through Boise, Owyhee, and Camas County to the Eastern edge of the county warning area. Mudslides also occurred on Highway 17 East of Banks in Boise County. These mudslides occurred near steep terrain in an area undermined by previous mudslides.
Parma	6/27/2002	52 kts.	An area of thunderstorms intensified as it moved northward from northwest Owyhee County into Canyon County. A utility pole was blown down in Parma, taking down power lines.
Notus	7/7/2002	50 kts.	A line of thunderstorms swept across Owyhee, Washington, Payette and Canyon Counties. Several limbs were broken off trees and sheet metal was blown from a roof under construction.
Nampa	7/13/2002	50 kts.	Thunderstorm winds along a gust front toppled a stack of speakers from the stage of the Idaho Center Amphitheater and into the audience. Four persons were treated for injuries at a local medical center. Outflow winds continued across Canyon County and into Payette, Gem, and Ada Counties, bringing numerous trees and power lines down across the four counties..
Canyon County	7/13/2002	50 kts.	Thunderstorm winds along a gust front toppled a stack of speakers from the stage of the Idaho Center Amphitheater and into the audience. Four persons were treated for injuries at a local medical center. Outflow winds continued across Canyon County and into Payette, Gem, and Ada Counties, bringing numerous trees and power lines down across the four counties..
Parma	7/14/2002	51 kts.	A combination of monsoonal moisture and record-breaking heat fed afternoon thunderstorms broke out across Southeast Oregon and Southwest Idaho. Clusters of thunderstorms marched northeastward from Malheur County, Oregon and Owyhee County, Idaho, through the Treasure Valley, Boise Foothills and Magic Valley, and then exited the county warning area. Numerous power lines were down in Payette County. A skylight was blown out of a home in southeast Boise and three inch diameter tree limbs were downed in Twin Falls County. Wind gusts to 53 knots were recorded at Lucky Peak RAWS.
Middleton	7/15/2002	52 kts.	Evening thunderstorms produced outflow winds across Canyon County that brought down tree limbs up to four inches in diameter in Caldwell. A funnel cloud was spotted in Gem County near the Canyon County line.

Location	Date	Magnitude	Description
Nampa	7/25/2002	50 kts.	Thunderstorm winds brought down trees and power lines which left over 5000 homes and businesses without power. Winds also kicked up dust which reduced visibility to near zero on Interstate 84 near Blacks Creek Road. This resulted in a 12 car pileup in which four persons were injured. Wind gusts were measured at 62 mph at KTVB TV in Meridian and at 69 mph at Dead Indian RAWS in western Washington County.
Middleton	4/24/2003	65 kts.	A cold front moving through the area had strong convection embedded along the leading edge. A strong downburst from a cell moving through the Middleton area produced the damaging winds in the vicinity of the Middleton High School.
Nampa	7/26/2003	56 kts.	A gust of 54 knots was also reported from this site. A massive outbreak of thunderstorms developed ahead of a very moist upper level trough that moved across Eastern Oregon and Southwest Idaho during the afternoon and evening. This system produced very heavy rain with several areas of flash flooding, large hail, and strong winds in the Boise County Forecast Office Warning area.
Caldwell	8/22/2003	60 kts.	High winds blew down trees and damaged power lines which knocked out power to over 8000 homes as well as traffic signals, tying up traffic in Canyon County during the afternoon and evening. Heavy rain also caused street flooding in Nampa and Caldwell. A very moist upper level trough moved eastward from California into southern Idaho during the afternoon and evening. This system spawned numerous severe thunderstorms and wide spread heavy rain which caused flash flooding mainly in the mountains.
Canyon County	1/30/2004	60 kts.	During the morning of January 30th a fast moving cold front produced several severe thunderstorms, very strong winds and snow showers as it moved eastward across Eastern Oregon and Southwestern Idaho. Fairly large trees were blown down in Payette in Payette County and in Nampa in Canyon County. There were also reports of trees down in Baker and Malheur Counties in Oregon. Power was briefly knocked out in northern Owyhee County as the line of thunderstorms moved across the County..
Canyon County	6/29/2006	60 kts.	Very moist air mass combined with a well defined vorticity center and maximum day time heating to produce widespread pulse thunderstorms yielding numerous reports of nickel size hail and wind damage including downed trees and power lines.
Parma	8/10/2006	59 kts.	Wind Gust measured by home weather station at 68 M.P.H
Caldwell	7/29/1998	0 kts.	A thunderstorm produced gusty winds which knocked out power to over a thousand customers in Caldwell. A tree was knocked onto a house causing moderate damage to the structure.

Table 4.1.8: Severe Wind Events in Canyon County

Damaging straight line wind events occur multiple times a year in Canyon County. Historically damages include downed trees, downed power lines, traffic disruption, and damage to structures.

Impacts

The impacts of straight line winds are virtually the same as those from tornadoes with similar wind speeds. The damage is distinguishable from that of a tornado only in that the debris is generally deposited in nearly parallel rows. Downbursts are particularly hazardous to aircraft in flight.

Loss Estimates

Documented losses from straight line wind over a 55 year period from 1956 to 2010 exceed $230,000. The annualized loss for straight line wind in Canyon County is $4,327. There have also been 4 recorded injuries during the same period.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Straight Line Wind has a magnitude score of 18.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale
Conditions leading straight line winds typically develop with hours of warning (Warning Lead Times = 4). The geographical area affected is generally county-wide (Geography Affected = 8). Death is rare but injuries have occurred in Canyon County (Bodily Harm = 1), but some economic loss due to structure damages can occur (Economic Loss = 2). Reconstruction from damage is left to the County level (Reconstruction Assistance = 2). There would be no need for public sheltering (Shelter = 1). The total Magnitude score is therefore, eighteen (18) which, for Canyon County, is in the "Medium" range. Historical records for straight line winds are available and reliable, indicating that they occur yearly in Canyon County (Frequency = High).

Section 4.2: Flooding

Flooding is defined by NWS as "the inundation of normally dry areas as a result of increased water levels in an established water course." River flooding, the condition where the river rises to overflow its natural banks, may occur due to a number of causes, including prolonged, general rainfall, locally intense thunderstorms, snowmelt, and ice jams. In addition to these natural events, there are a number of factors controlled by human activity that may cause or contribute to flooding. These include dam failure, levee failure, and activities that increase the rate and amount of runoff such as paving, reducing ground cover, and clearing forested areas. Flooding is a periodic event along most rivers with the frequency depending on local conditions and controls such as dams and levees. The land along rivers that is identified as being susceptible to flooding is called the floodplain. The Federal standard for floodplain management under the National Flood Insurance Plan (NIFP) is the "100-year floodplain." This area is chosen using historical data such that in any given year there is a one percent chance of a "Base Flood" (also known as "100-year Flood" or "Regulatory Flood"). A Base Flood is one that covers or exceeds the 100-year floodplain. In Idaho, flooding most commonly occurs in the spring of the year and is caused by snowmelt. Floods occur in Idaho every one to two years and are considered the most serious and costly natural hazard affecting the State. In the twenty-five years from 1976 to 2000 there were five Federal and twenty-eight State disaster declarations due to flooding. The amount of damage caused by a flood is influenced by the speed and volume of the water flow, the length of time the impacted area is inundated, the amount of sediment and debris carried and deposited, and the amount of erosion that may take place.

Flooding is a dynamic natural process. Along rivers, streams and coastal bluffs a cycle of erosion and deposition is continuously rearranging and rejuvenating the aquatic and terrestrial systems. Although many plants, animals and insects have evolved to accommodate and take advantage of these ever-changing environments, property and infrastructure damage often occurs when people develop coastal areas, and floodplains and natural processes are altered or ignored.

Flooding can also threaten life, safety, and health and often results in substantial damage to infrastructure, homes, and other property. The extent of damage caused by a flood depends on the topography, soils and vegetation in an area, the depth and duration of flooding, velocity of flow, rate of rise, and the amount and type of development in the floodplain.

Community	*Number of properties in the community (please see community for this number)	Date Participating in Regular Phase of NFIP	Participating in CRS (class)	What CRS Categories could be improved to raise ranking	Date of current FIRM	Number of NFIP Policies	Are FIRMs digital or paper	Insurance in Force (Total coverege)	Total Premiums	Number Claims Paid	$ Total Claims Paid	# Substantial Damage Claims	Rep Loss Properties	Severe Rep Loss Properties
Canyon County	83,339	9/28/1984	N	All	5/24/2011	275	Digital	$60,003,500	$143,945	2	$3,304	0	0	0
Caldwell, City of		9/3/1980	N	All	5/24/2011	18	Digital	$3,858,500	$7,931	0	$0	0	0	0
Greenleaf, City of														
Melba, City of	Not Participating													
Middleton, City of		9/3/1980	N	All	5/24/2011	95	Digital	$14,465,700	$573,334	8	$37,076	0	0	0
Nampa, City of		9/28/1984	N	All	5/24/2011	172	Digital	$30,555,300	$94,411	0	$0	0	0	0
Notus, City of		3/18/1980	N	All	5/24/2011	2	Digital	$465,200	$2,406	0	$0	0	0	0
Parma, City of		9/30/1980	N	All	5/24/2011	14	Digital	$2,399,700	$14,146	0	$0	0	0	0
Wilder, City of	Not Participating													

Table 4.2.1 NFIP Participation

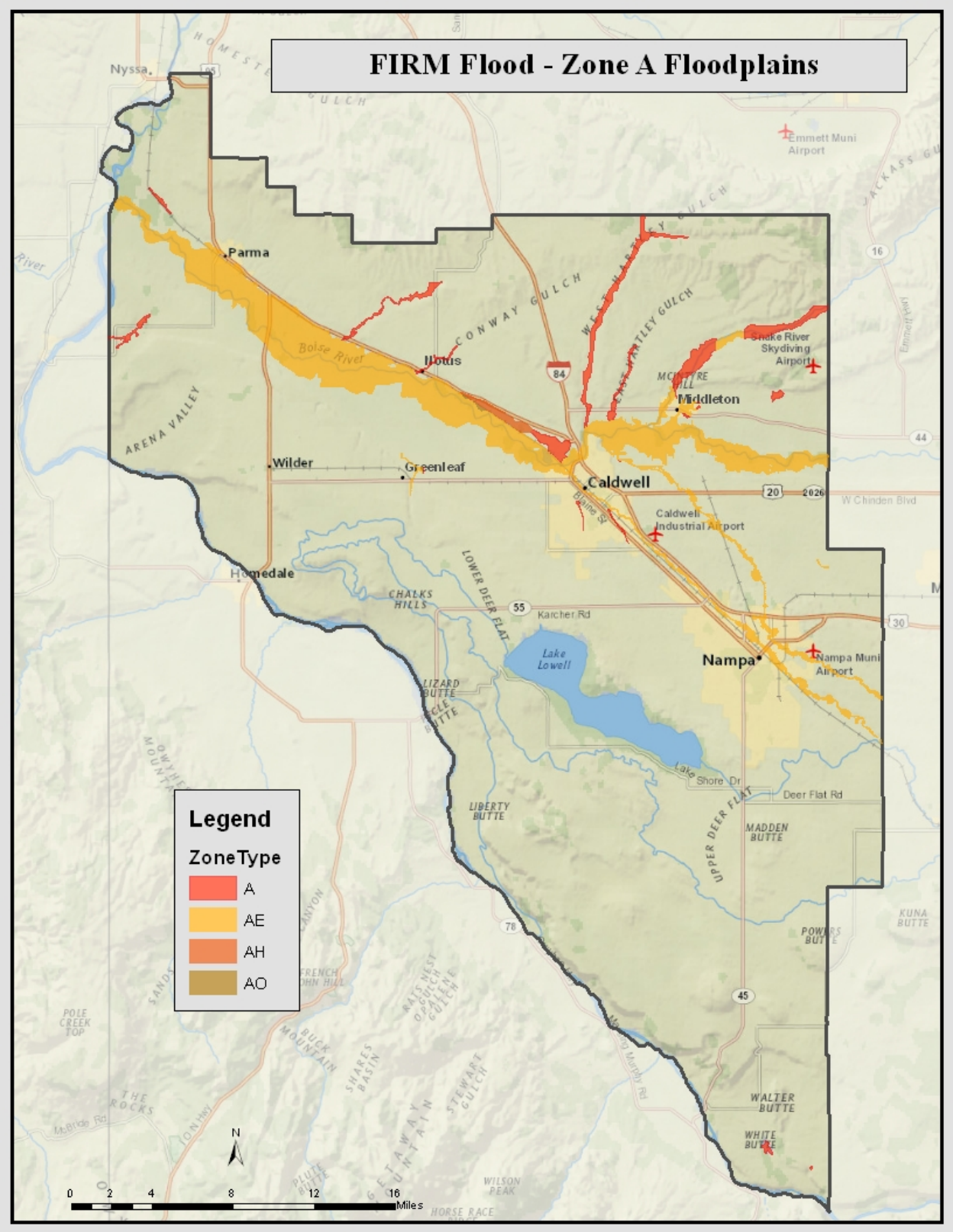


Figure 4.2.1: FIRM 100 Year Floodplain

Flash Flooding

Description

Flash flood is defined by NWS as, "A rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level, beginning within six hours of the causative event (e.g., intense rainfall, dam failure, ice jam). Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising flood waters." Flash floods differ from floods in the rapidity with which they develop. Floods generally develop over a period of several days, providing more warning time and time for preparation and evacuation. Flash floods occur with little or no warning. They may occur during thunderstorms due to rapid runoff from steep terrain, from areas where the soil is already saturated, or in urban areas where vegetation has been removed and pavement has replaced exposed soil. Flash floods may also arise as the result of dam failure or the breakup of ice jams.

Historic Frequencies

Flash flooding damage is historically under reported due to the localized nature of the damage. According to the NWS Severe Storm Event Database, the only reported flash flood event occurred on May 6, 2005 and caused $50,000 in damage. The flood affected the Caldwell Airport, parts of Caldwell, and Conway Road was washed out.

Many times flash floods are underreported because damage is localized and individuals respond and recover.

Impacts

Because flash floods develop so rapidly, people on foot or in automobiles may be stranded or may be swept away and injured or drowned. They are characterized by high velocity water flow and large amounts of debris, both of which cause damage to or destroy structures and other objects in their path. Other impacts are discussed below under River Flooding.

Loss Estimates

There are 4,216 structures within the medium-high to high flash flood potential areas in Canyon County, with a total structural exposure of $528.7 million. It is noted that a large percentage of the structures are in cities or subdivisions that have storm water management processes that were not part of this analysis.

Loss estimates for a probable flash flood event in Canyon County are calculated based on the following assumptions[25]:

- Flood Depth – one foot average
- Structures impacted – 4,216
- Maximum value of an individual structure in flash flood prone areas - $9,227,000
- Total valuation of all Structures in flood plain - $528,704,200
- Total Potential Building Loss - $74,018,588
- Total Potential Contents Loss - $55,513,941
- Functional down time for each damaged structure – 23 days

[25] FEMA State and Local Mitigation Program Planning How to Guide: Understanding your Risks

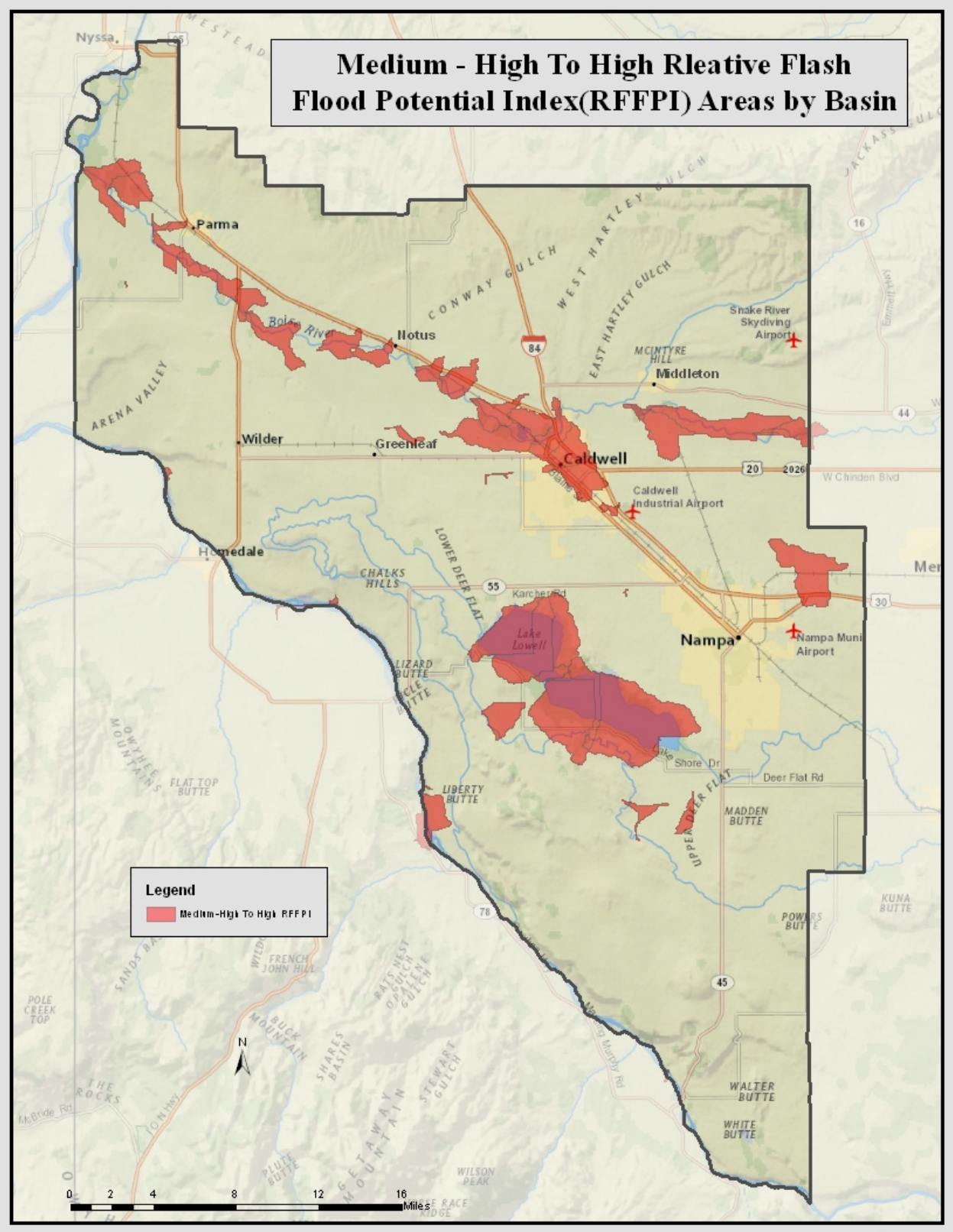


Figure 4.2.2: Relative Flash Flood Potential Map

- Displacement time for each damaged structure – 134 days

It is noted that flash flood events are normally localized, and therefore only a small percentage of the structures in flash flood prone areas would be affected in a single event.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Flash Flooding has a magnitude score of 15.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Conditions leading to flash flooding may arise quickly, but conditions are forecasted by the NWS usually within hours of the event. (Warning Lead Times = 4). The vulnerability to flash flooding in Canyon County is reasonably limited and events are localized (Geography Affected = 2). Fatalities and injuries are improbable (Bodily Harm = 1), but some economic loss due to structural damage is possible (Economic Loss = 4) and may be extensive enough to require county resources for reconstruction (Reconstruction Assistance = 2). Depending on the location and amount of damage associated with the event, public sheltering may be required (Shelter = 2). The total Magnitude score is, therefore, fifteen (15) which, for Canyon County, is in the "Medium" range. Historical records for flash flooding are available and reliable, indicating that flash floods occur in the multiple times a year to 5 year range in Canyon County (Frequency = High).

River Flooding

Description

River flooding, the condition where the river rises to overflow its natural banks, may occur due to a number of causes including prolonged, general rainfall, locally intense thunderstorms, snowmelt, and ice jams.

Individual Jurisdiction Flooding Analysis (2006 AHMP Analysis Updated)

Nampa

Nampa is the largest city in Canyon County and is located along Interstate 84 to the southeast of Caldwell. The Mason Creek, Indian Creek, and Tenmile Creek drainages make up the only FEMA identified flood zones; however, these are very narrow and end near the Nampa city limits. There are also a multitude of irrigation canals in the area; most of which have a southeast to northwest orientation. Additionally, Lake Lowell, which makes up most of the Deer Flat National Wildlife Refuge, lies about three miles to the west.

Flood Potential

The expansive agricultural lands surrounding Nampa are, for the most part, relatively flat; therefore, any indention or low spot, whether it be natural or manmade can cause water to pool during a flood. Floods in the area are generally the result of a rain-on-snow event or heavy spring runoff.

Thunderstorms are also likely events to affect the community. These events are usually localized, but still can have a significant impact. They are typified by intense rain with flooding occurring rapidly, overwhelming the carrying capacity of the nearby streams. The duration is usually only a matter of hours, but the affects can be widespread throughout the impact areas of the city.

A small portion of Nampa along its eastern edge and northern edges and extending to the southeast and north, respectively, is within the Mason Creek floodplain. The Tenmile Creek floodplain lies along the northeastern edge of the city limits and the Indian Creek floodplain is a narrow strip between the railroad tracks and Interstate 84 extending from the northwest corner of the City. Together the floodplains of these three small drainages encompass several subdivisions, businesses, and agricultural, industrial, or commercial facilities. Levees along Tenmile Creek, Indian Creek, and Mason Creek, as well as several of the irrigation canals, provide reasonable protection against flood waters; however, bank failures, siltation, blockages, or other circumstances could result in flood waters overtopping the levees. In some parts of Nampa, stream and irrigation water is piped underground. This piping system has been designed to handle larger flood events, but a blockage or other damage could lead to extensive flooding around the inlets of the pipes.

Infrastructure

Some of Nampa's critical infrastructure may be affected during flooding events. Access into and out of the City could pose the most serious problem. Many roads, bridges, and culverts would restrict traffic in the area. Several homes, businesses, and industrial, agricultural, or commercial facilities are located within the floodplain. Most residents of Nampa are connected to the municipal water system or have drilled personal wells. Well heads and the water storage tanks

are located well outside of the floodplain and have backup generators to provide power during electrical blackouts. Several of the lift stations on the Nampa sewer system have an alternative power source to keep the lines from backing up; however, the Nampa Police Department, Nampa Fire Stations, and the City Hall do not have generators for emergency power backup.

Assets at Risk

Loss estimates for a probable river/stream flood event in the City of Nampa were calculated based on the following assumptions[26]:

- Flood depth of two feet average
- Total structures impacted – 825
- Total valuation of all structures in Flood Plain - $98,892,700
- Total potential building loss – $19,778,540
- Total potential content loss - $25,217,639
- Functional down time for each damaged structure – 30 days
- Displacement time for each damaged structure – 230 days

The regulatory floodplain has a 1% annual chance of flood, so the annualized loss estimate is $449,962.

Flood Protection

Currently, there is no countywide agency responsible for managing drainage issues. Prevention of future problems and enforcement of established standards, as well as mitigation and correction of existing deficiencies are joint responsibilities of the public works, engineering, and planning and zoning agencies of each jurisdiction in Canyon County.

[26] FEMA State and Local Mitigation Program Planning How to Guide: Understanding your Risks

Figure 4.2.3: City of Nampa 100 Year FIRM Floodplain Map

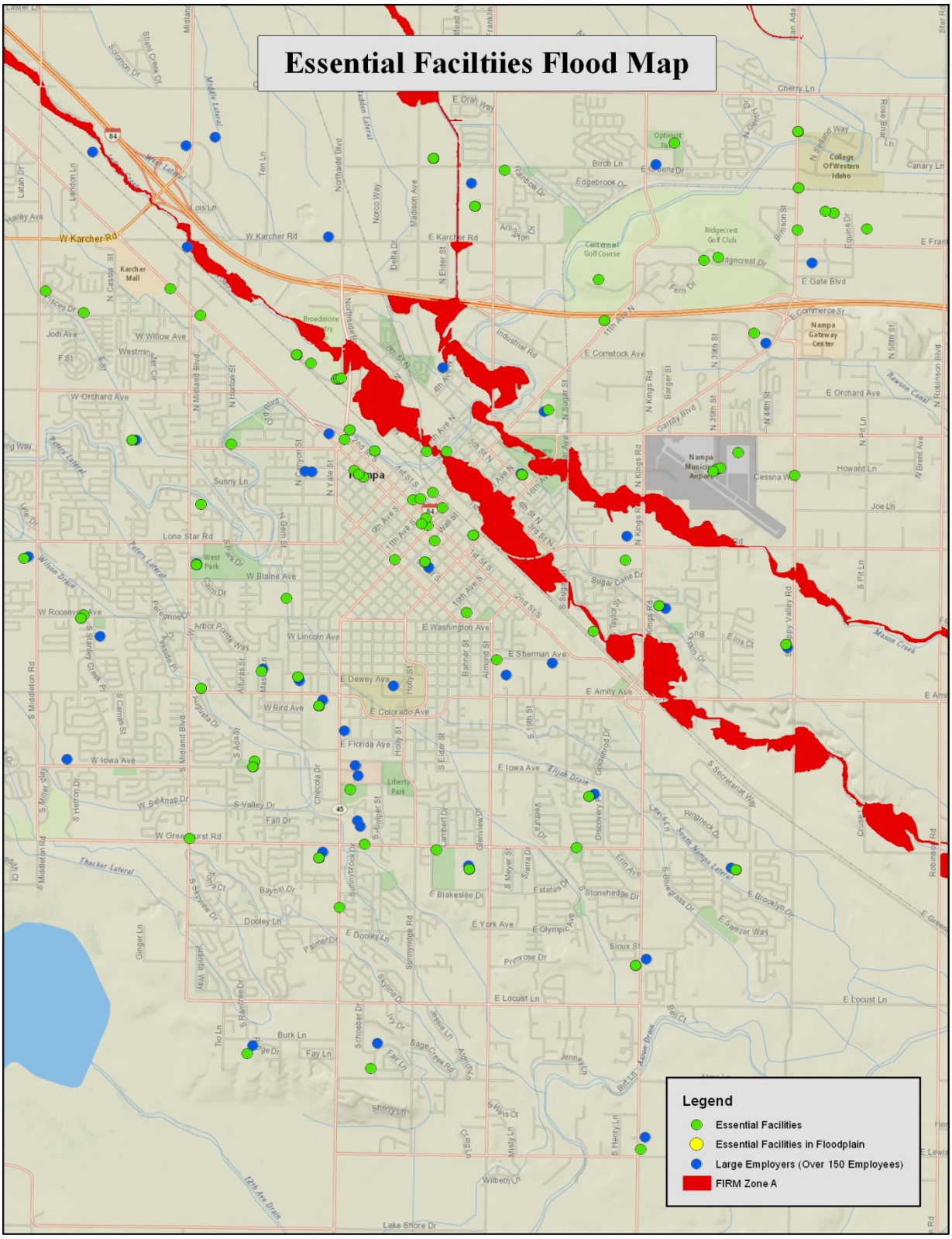


Figure 4.2.4: City of Nampa Essential Facilities Map

Caldwell

Caldwell, the second largest city in Canyon County, is virtually connected to Nampa by urban development. The primary flooding potential comes from the Boise River; however, several of the river's tributaries drain into the river channel at or near Caldwell. These smaller waterways are particularly prone to flash flooding. West Hatley Gulch and East Hatley Gulch all flow into the Boise River along the north side of Caldwell, while Mason Creek and Indian Creek drain from south. There are numerous industrial, agricultural, and commercial sites as well as residential areas within the floodplain in the Caldwell area.

Flood Potential

Floods in the area are the result of two different types of weather events: rain-on-snow and thunderstorms. Rain-on-snow- events that affect Caldwell occur when significant snow pack exists in the Boise National Forest to the east. Warm rains falling on the snow pack result in a significantly increased rate of snowmelt. Often this melting occurs while the ground is frozen and the water cannot be absorbed into the soil, resulting in increased overland flows. Flood waters recede slowly as rain-on-snow weather events tend to last for several days. Low velocity flooding occurs in Caldwell almost annually during the spring runoff period. Ice jams in the smaller tributaries have historically caused flooding problems. The impacts of successive ice dams being built up and then breaking are felt all the way to the mouth of the creeks in Caldwell as the rush of water quickly overwhelms culverts, bridges, and storm drainage systems.

Sandy soil and sparse vegetation combine to foster flash flooding when intense thunderstorms hit the Caldwell area. Floods from thunderstorms do not occur as frequently as those from general rain and snowmelt conditions, but are far more severe. The possibility for injury and death from flash floods is heightened because they are so uncommon that people do not recognize the potential danger. The major impacts from both types of flooding in Caldwell are the restricted use of several streets, highways, railroad lines, and commercial, industrial, and residential areas. There are numerous bridge and culvert crossings over both the Boise River and several of the tributaries and irrigation canals throughout their extents within the city and the surrounding area.

Warm weather or rain after a heavy snowfall is responsible for high flows in these waterways. A high level of sediment is prevalent during periods of high runoff. This sediment tends to cause a deteriorating condition in streambeds and channels through deposition. Natural obstructions to flood waters include trees, brush, and other vegetation along the stream banks in the floodplain area. Considerable debris is allowed to accumulate in these channels, plugging culverts and bridges at several locations throughout the city.

The onset of flooding in the smaller drainages can range from extremely slow to very fast. This variability depends on the cause of flooding and other factors such as rainfall intensity, the areas receiving the rain, temperature, and the condition of the soil. Floods that occur quickly are usually caused by thunderstorms, while floods that occur more slowly are often the result of moderate, but prolonged rainfall, snowmelt, or a combination of both. In the case of intensive rainfall immediately above developed areas, the onset of flooding may occur in a matter of minutes.

Infrastructure

A large portion of downtown Caldwell, as well as numerous roads and bridges, would be greatly affected by a flood event. Blockages at bridge and culvert crossings could cause flood waters to overtop the roadway or trigger road failures. Alternative routes would be available during most floods; however, this can add additional time to reach a desired destination or emergency location.

Power line substations within the Caldwell flood zones can be protected by constructing levees around the facility. A plan for supplying an alternative power source to run substations during prolonged outages will also help mitigate the potential effects to the community.

Most residents of Caldwell are connected to the municipal water system or have drilled personal wells. Well heads and the water storage tanks are located well outside of the floodplain and have backup generators to provide power during electrical blackouts. The Caldwell Police Department and Caldwell Fire Stations also have generators for emergency power backup; however, the City Hall and most of the emergency community shelters and senior centers do not.

The Caldwell Sewer Facility is currently within the floodplain. A flooding incident may result in the release of untreated sewage with severe impacts upon the environment and potential contamination of water supplies. Inundation of the sewer system with floodwaters could also cause sewage to be backed up into homes and businesses.

Assets at Risk

Loss estimates for a probable river/stream flood event in the City of Caldwell were calculated based on the following assumptions[27]:

- Flood depth of two feet average
- Total structures impacted – ~15
- Total valuation of all structures in Flood Plain - ~$3,000,000
- Total potential building loss – $375,000
- Total potential content loss - $637,500
- Functional down time for each damaged structure – 30 days
- Displacement time for each damaged structure – 230 days

The regulatory floodplain has a 1% annual chance of flood, so the annualized loss estimate is $10,125.

Flood Protection

Many of the housing developments in Caldwell are removed from the 100-year floodplain as they are developed by using fill dirt to elevate them slightly above the flood level. Berms along the Boise River, streams, and canals have been constructed in many areas to help shield homes and other structures from damaging flood waters; however, they are not reinforced and were never meant to serve as engineered levees

[27] FEMA State and Local Mitigation Program Planning How to Guide: Understanding your Risks

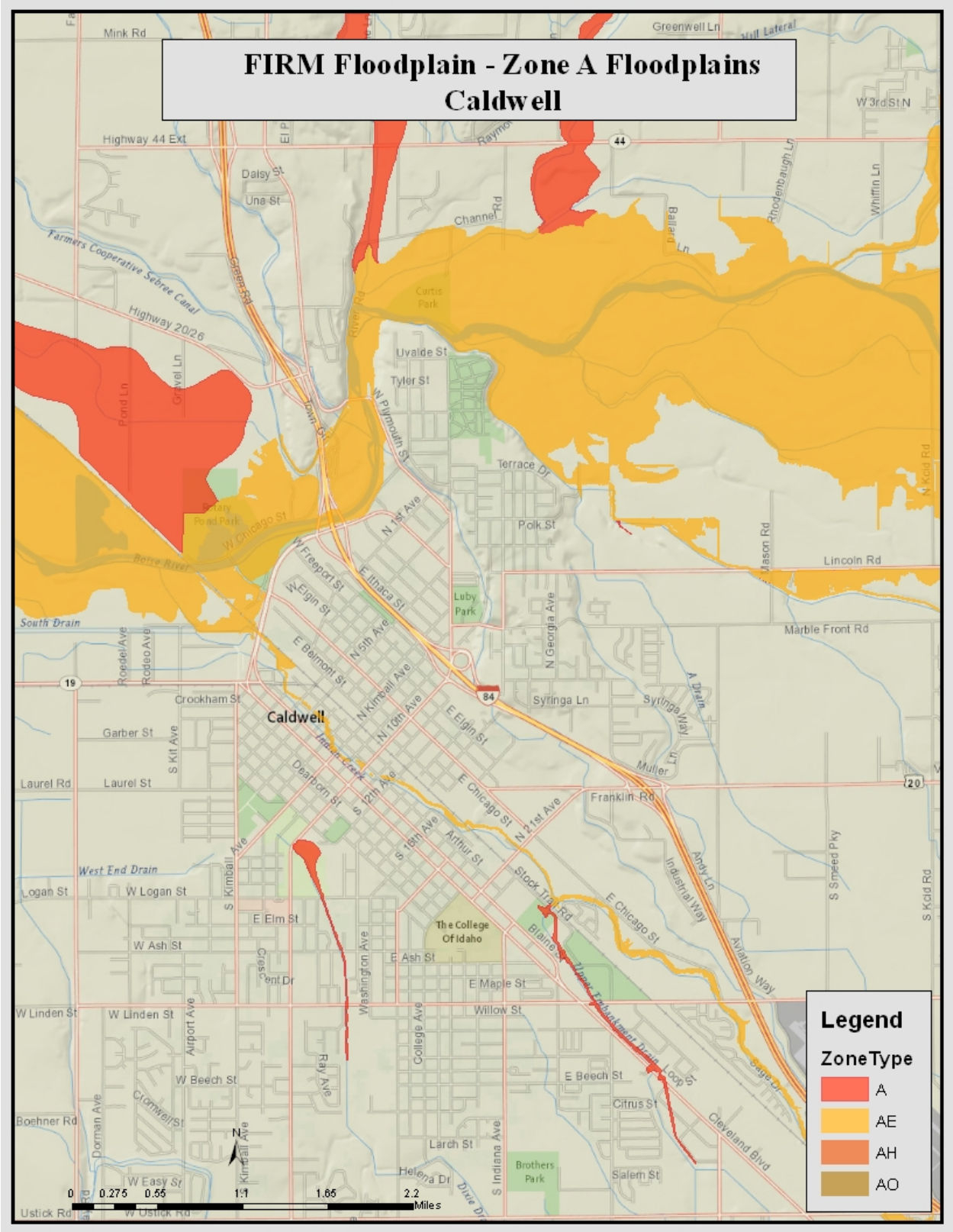


Figure 4.2.5: City of Caldwell 100 Year FIRM Floodplain Map

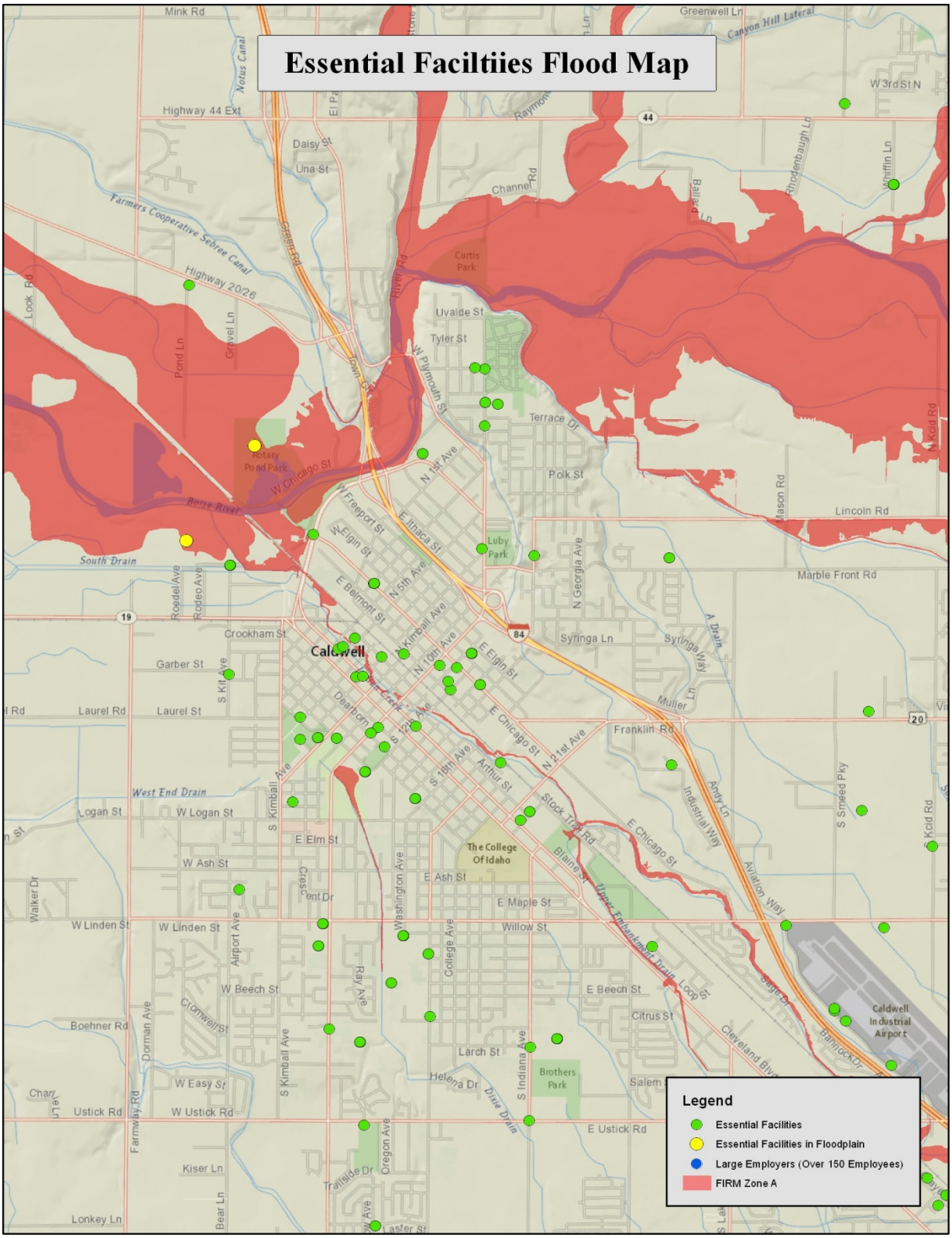


Figure 4.2.6: City of Caldwell Essential Facilities Map

Middleton

Middleton is located along State Route 44 near the eastern boundary of Canyon County. The Boise River flows just to the south of the community with the FEMA floodplain extending within about ½ miles of State Route 44 in some places. Middleton does not experience a significant flood risk from the river; however, the smaller drainages of Willow Creek and the Mill Creek Slough flowing directly through the city do pose serious flood risks. There are also numerous agricultural operations surrounding the community center that would also be affected by flood events.

Flood Potential

In addition to the potential flood hazard of the Boise River, the Middleton Canal, which drains several small tributaries out of the foothills flows through the center of Middleton. Although the Middleton Canal does not have FEMA identified floodplain, a blockage or malfunction could cause the canal to breach its banks resulting in severe damage to many homes and businesses. Willow Creek, which flows through Middleton out of the foothills to the north, is dry throughout most of the year; however, thunderstorms and spring runoff events have been known to cause flooding events. The Mill Creek Slough is a small drainage that flows into the city from its eastern side. Throughout most of the year, there is very little water flowing through this drainage; however, like Willow Creek, during thunderstorms and spring runoff, the water flow in this drainage is significantly increased.

Flooding in Middleton is usually the result of rain-on-snow events or heavy spring runoff. Warm weather or rain after a heavy snowfall is called a rain-on-snow event. Warm rains falling on the snow pack result in a significantly increased rate of snowmelt. Often the melting occurs when the ground is frozen and the water cannot be absorbed fast enough, resulting in increased overland flows. Flood waters recede slowly as the weather events tend to last for several days. The three dams on the Boise River provide good flood protection along the main channel; however, several of the tributaries downriver from the dams can contribute to unusually high flow rates and potential flooding downstream.

Thunderstorms are also likely events to affect the community. These events usually are localized, but still can have a significant impact. They are usually typified by intense rainfall in a localized area with flooding occurring rapidly and overwhelming the carrying capacity of the nearby streams and rivers. This duration usually only lasts a matter of hours, but the affects can be spread throughout the impact areas of the town.

Infrastructure

Much of Middleton's critical infrastructure is located within the floodplains, including City Hall, the Fire Station, and the Civic Center. Flood water inundation of these buildings would significantly impact the community's ability to respond to emergencies. Bridges and culvert crossings along the Boise River, the Middleton Canal, Willow Creek, and the Mill Creek Slough may experience blockage problems due to downed trees, shrubs, or other debris. Siltation is also an issue in the Boise River channel due to long term control of the water flow.

The State Route 44 bridges across the Mill Creek Slough and Willow Creek is not adequate to withstand a 100-year flood and has been known to cause flood damage due to blockages at this bottleneck. This is a particularly a problem due to the location of City Hall, the Fire Station, the Civic Center, and other parts of downtown Middleton, within the floodplain, on the

adjacent blocks. Larger culverts and better engineered bridges are needed to alleviate this problem.

Most residents of Middleton are connected to the municipal water system or have drilled personal wells. Although the Middleton Sewer Facility is located outside of the floodplain, if the electrical power were cut off for any reason, the city does not currently have generators to run the lift station, which would likely cause sewer water backup into area homes and business within one or two days.

Assets at Risk

Loss estimates for a probable river/stream flood event in the City of Middleton were calculated based on the following assumptions[28]:

- Flood depth of two feet average
- Total structures impacted – 534
- Total valuation of all structures in Flood Plain - $36,356,900
- Total potential building loss – $7,271,380
- Total potential content loss - $9,271,010
- Functional down time for each damaged structure – 30 days
- Displacement time for each damaged structure – 230 days

The regulatory floodplain has a 1% annual chance of flood, so the annualized loss estimate is $165,424.

The aggressive development of lands within the Treasure Valley includes pressures on Middleton as well. The negative impacts of locating residential and light commercial resources in the areas most prone to flooding have been seen during the spring flooding events. While city and county planning efforts have mitigated many of the risks associated with developing the floodplain, these developments are not without risk to the owners of new homes, and also the owners of existing homes and businesses as the flood waters rise.

[28] FEMA State and Local Mitigation Program Planning How to Guide: Understanding your Risks

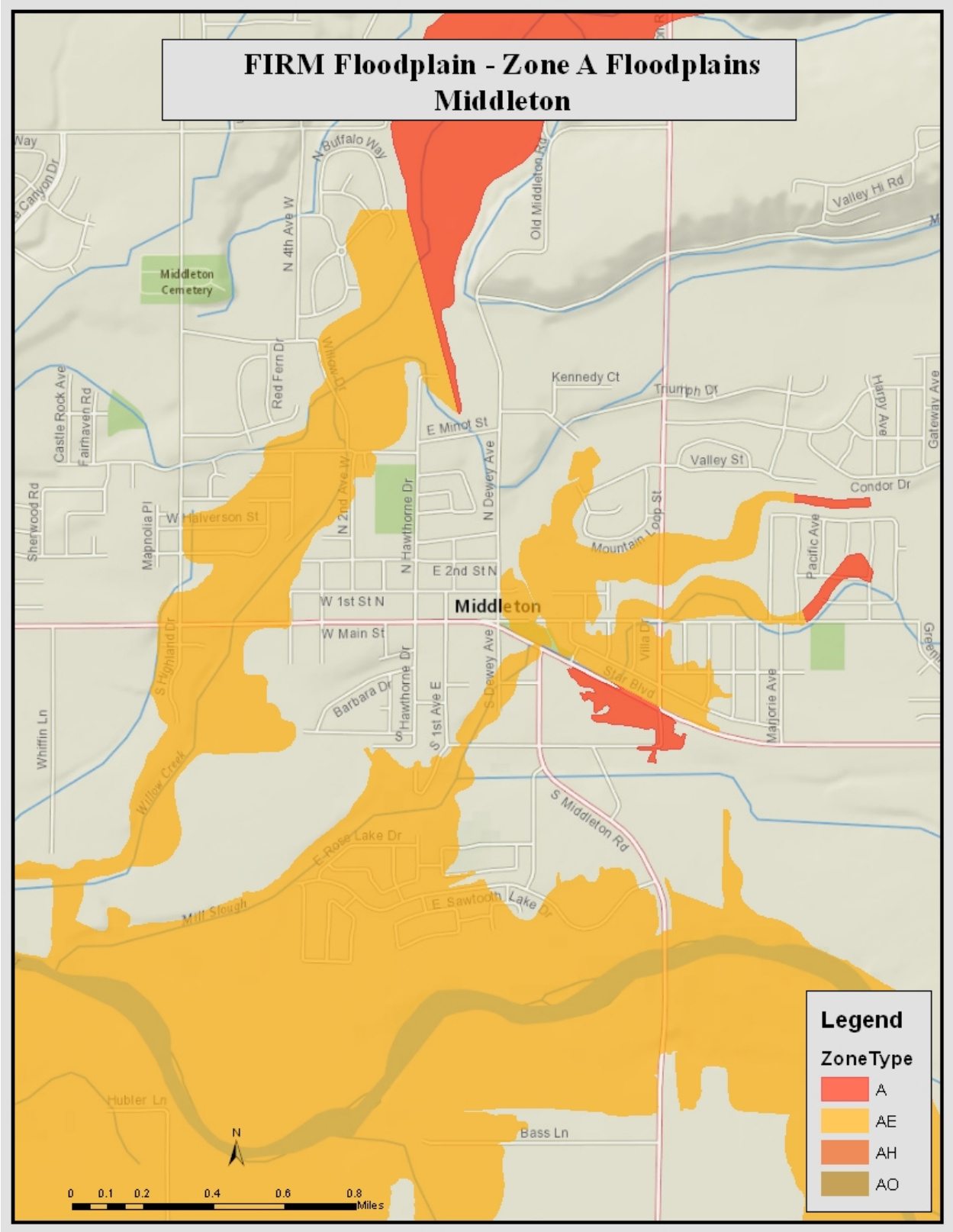


Figure 4.2.7: City of Middleton 100 Year FIRM Floodplain Map

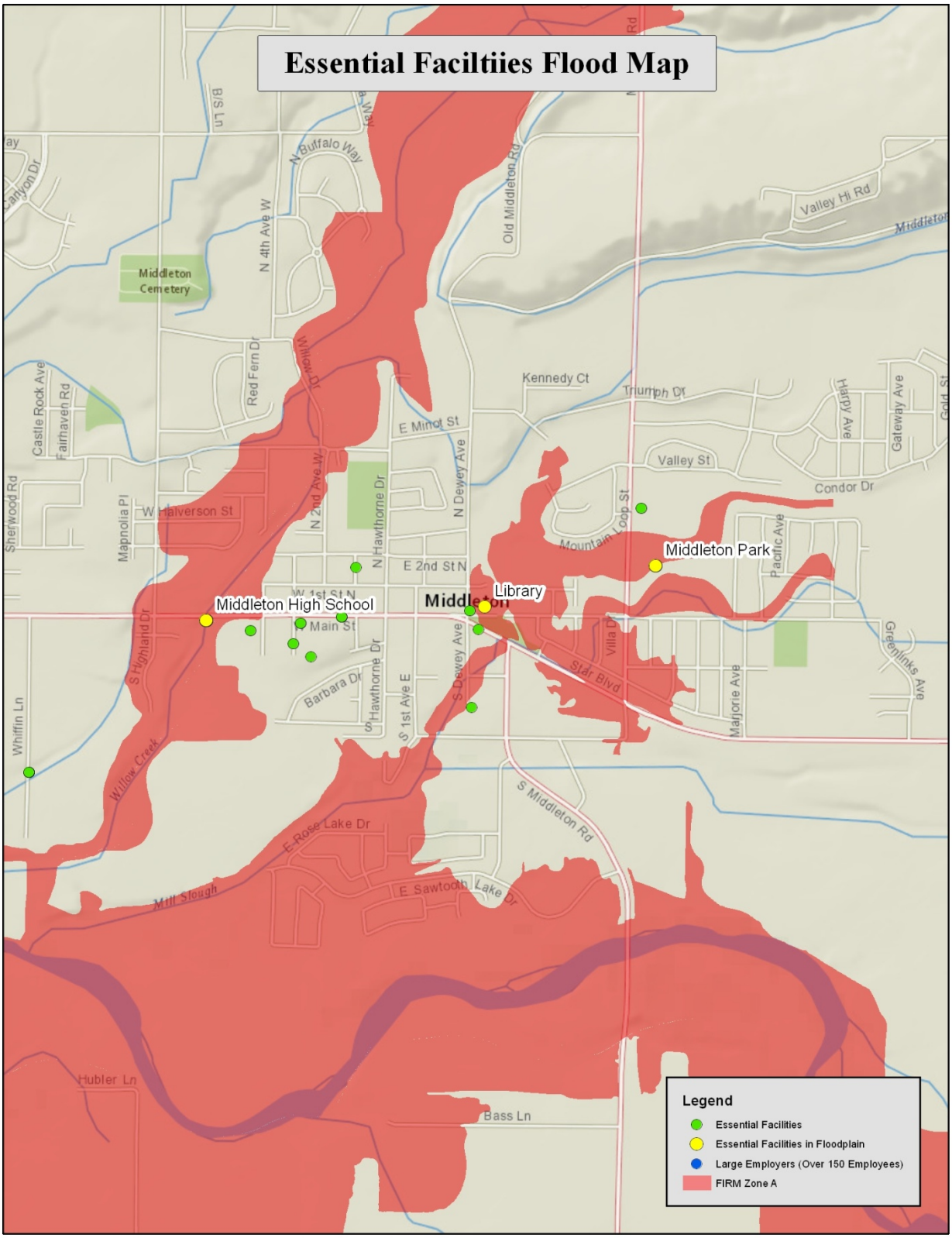


Figure 4.2.8: City of Middleton Essential Facilities Map

Notus

Notus is located along U.S. Highway 20/26 about six miles northwest of Caldwell. The Boise River flows along the south side of the community. The Conway Gulch is a very small drainage that flows through Notus from the northeast corner of the community. There are numerous homes, businesses, and agricultural operations in and around Notus that would be affected by flood.
events.

Flood Potential

The Boise River runs along the south side of the Notus community. There are many residences as well as businesses, industrial operations, and critical infrastructure, including the sewer facility, in this area. The Union Pacific railroad bed, which parallels U.S. Highway 20/26, has been elevated several feet creating a berm that provides much of the community on the north side of the tracks flood protection from the river. Nevertheless, this berm was not designed or engineered to serve this purpose and may fail. Some of the homes and other structures within the floodplain have been slightly elevated as well, but it is not known whether or not this elevation will protect them through 100 year flood events. Due to the contour of the landscape, most of the floodplain associated with the Boise River at Notus extends from the southern river bank.

In addition to the potential flood hazard of the Boise River, the Conway Gulch drainage flows through the center of Notus. Historically, this small waterway has not caused a significant amount of flood damage due its regulation by irrigation head-gates. However, the potential for blockages or malfunctions of the irrigation system could cause water in the narrow stream to overtop its banks and cause significant damage to adjacent homes and businesses.

Flooding in Notus is usually the result of rain-on-snow events or heavy spring runoff. Warm weather or rain after a heavy snowfall is a called rain-on-snow event. Warm rains falling on the snow pack result in a significantly increased rate of snowmelt. Often the melting occurs when the ground is frozen and the water cannot be absorbed fast enough, resulting in increased overland flows. Flood waters recede slowly as the weather events tend to last for several days. The three dams on the Boise River provide good flood protection along the main channel; however, several of the tributaries downriver from the dams can contribute to unusually high flow rates and potential flooding.

Thunderstorms are also likely events to affect the community. These events usually are localized, but still can have a significant impact. They are usually typified by intense rainfall in a localized area with flooding occurring rapidly and overwhelming the carrying capacity of the nearby streams and rivers. This duration usually only lasts a matter of hours, but the affects can be spread throughout the impact areas of the town.

Infrastructure

Most of Notus's critical infrastructure is on the north side of U.S. Highway 20/26 and is, therefore, outside of the floodplain. However, the Notus Sewer Facility and several industrial operations are on the south side and have a high risk of flood damage. The sewer ponds have been elevated and are additionally protected from floodwaters by earthen berms. However, flood water inundation of the sewer system could cause back up into structures and

contamination of the water supply as well as have significant environmental impacts. Siltation is also an issue in the Boise River channel due to long term control of the water flow.

Blockages at bridge and culvert crossings on Conway Gulch or other waterways in the area could cause flood waters to overtop roadways. Alternative routes would be available during most floods; however, this can add additional time to reach a desired destination or emergency location.

Most residents of Notus are connected to the municipal water system or have drilled personal wells. The city maintains a mobile generator to provide backup power to the sewer and water systems, but the Notus City Hall, as well as the Fire Station, are not hardwired to accept a generator.

Assets at Risk

Loss estimates for a probable river/stream flood event in the City of Notus were calculated based on the following assumptions[29]:

- Flood depth of two feet average
- Total structures impacted – 26
- Total valuation of all structures in Flood Plain - $22,460,000
- Total potential building loss – $4,492,000
- Total potential content loss - $5,727,300
- Functional down time for each damaged structure – 30 days
- Displacement time for each damaged structure – 230 days

The regulatory floodplain has a 1% annual chance of flood, so the annualized loss estimate is $102,193.

[29] FEMA State and Local Mitigation Program Planning How to Guide: Understanding your Risks

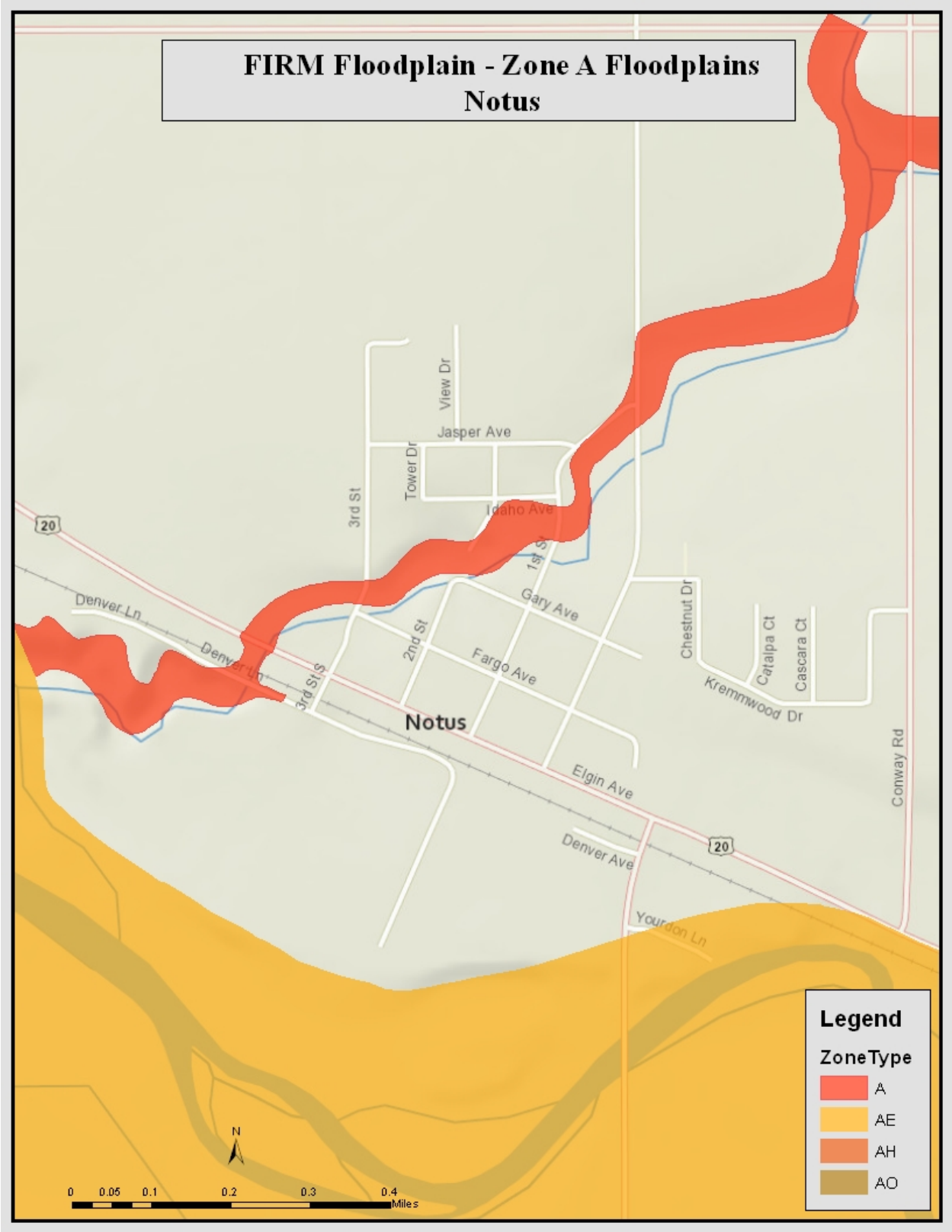


Figure 4.2.9: City Notus 100 Year FIRM Floodplain Map

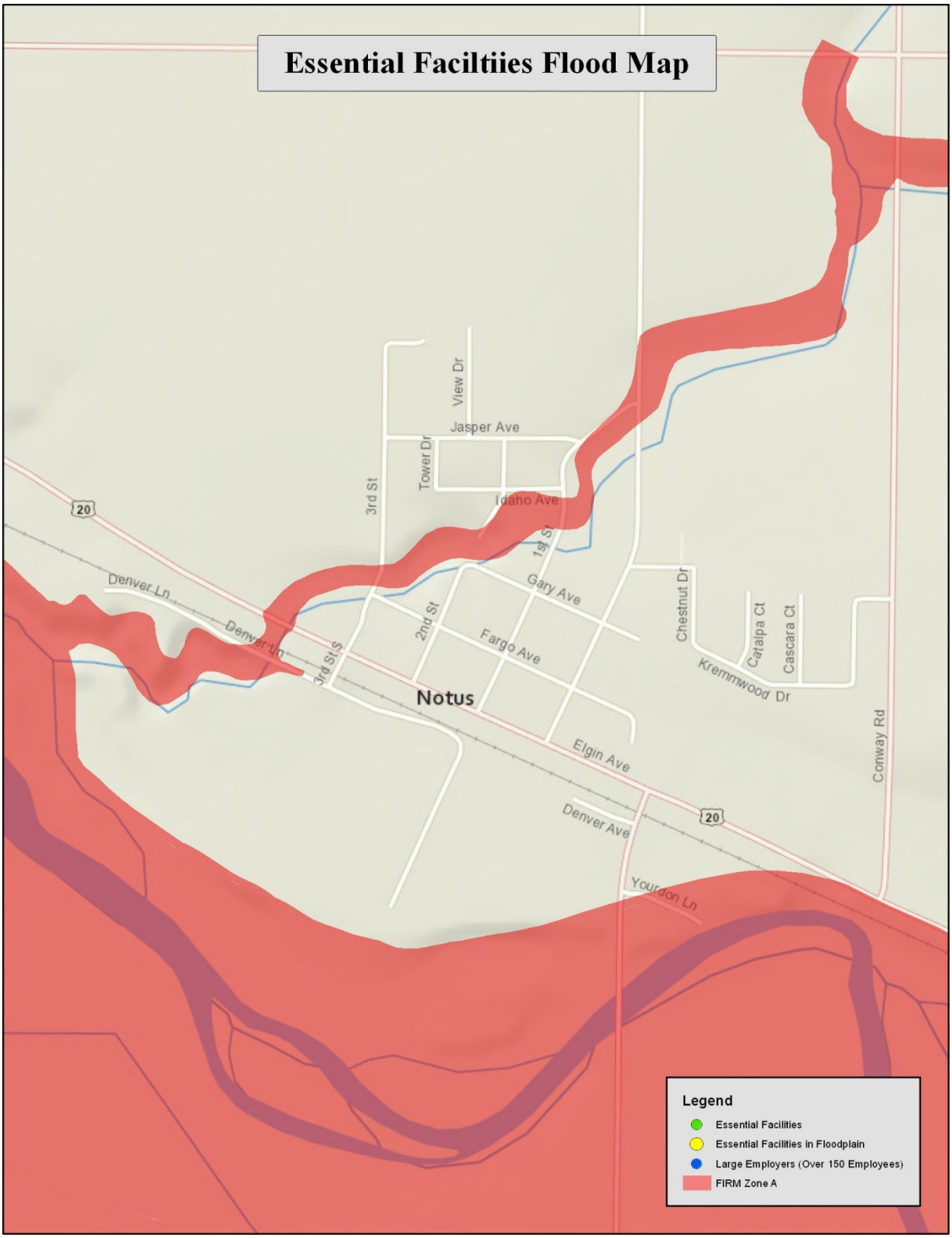


Figure 4.2.10: City of Notus Essential Facilities Map

Parma

The City of Parma is also located along the Boise River to the northwest of Notus and, therefore, has many of the same flood issues. The primary flooding potential comes from the Boise River, which flows along the south side of the community. There are numerous industrial, agricultural, and commercial sites as well as residential areas within the floodplain in the Parma area. The confluence of the Boise River and the Snake River is located about four miles to the west at the Oregon-Idaho border.

Flood Potential

The Boise River runs along the south side of the Parma community. There are many residences as well as businesses, industrial operations, and critical infrastructure, including the sewer facility, in this area. The Union Pacific railroad bed, which parallels U.S. Highway 20/26, has been elevated several feet creating a berm that provides much of the community on the north side of the tracks flood protection from the river. Nevertheless, this berm was not designed or engineered to serve this purpose and may fail. The area between the river channel and the community and extending west towards the mouth of the river is very marshy with several braided streams throughout. The higher water table in this area may lead to extensive flooding of structures in this area.

Floods in the Parma area are usually the result of two different types of weather events: rain-on-snow and thunderstorms. Rain-on-snow- events that affect Parma occur when significant snow pack exists in the upper reaches of the Boise National Forest to the east. Warm rains falling on the snow pack results in a significantly increased rate of snowmelt. Often this melting occurs while the ground is frozen and the water cannot be absorbed into the soil, resulting in increased overland flows. Flood waters recede slowly as rain-on-snow weather events tend to last for several days. Low velocity flooding occurs in Parma almost annually during the spring runoff period.

Sandy soil and sparse vegetation combine to foster flash flooding when intense thunderstorms hit the Parma area. Floods from thunderstorms do not occur as frequently as those from general rain and snowmelt conditions, but are far more severe. The possibility for injury and death from flash floods is heightened because they are so uncommon that people do not recognize the potential danger.

The major impacts from both types of flooding in Parma are the restricted use of several streets, highways, railroad lines, and commercial, industrial, and residential areas. There are numerous bridge and culvert crossings over both the Boise River and several of the tributaries and irrigation canals throughout their extents within the cities and the surrounding area.

Warm weather or rain after a heavy snowfall is responsible for high flows in these waterways. A high level of sediment is prevalent during periods of high runoff. This sediment tends to cause a deteriorating condition in streambeds and channels through deposition. Natural obstructions to flood waters include trees, brush, and other vegetation along the river and stream banks in the floodplain area. Considerable debris is allowed to accumulate in these channels, plugging culverts and bridges at several locations throughout the city.

The onset of flooding in the smaller drainages can range from extremely slow to very fast. This variability depends on the cause of flooding and other factors such as rainfall intensity, the

areas receiving the rain, temperature, and the condition of the soil. Floods that occur quickly are usually caused by thunderstorms, while floods that occur more slowly are often the result of moderate, but prolonged rainfall, snowmelt, or a combination of both. In the case of intensive rainfall immediately above developed areas, the onset of flooding may occur in a matter of minutes.

Assets at Risk

Loss estimates for a probable river/stream flood event in the City of Parma were calculated based on the following assumptions[30]:

- Flood depth of two feet average
- Total structures impacted – 106
- Total valuation of all structures in Flood Plain - $10,263,900
- Total potential building loss – $2,052,780
- Total potential content loss - $2,617,295
- Functional down time for each damaged structure – 30 days
- Displacement time for each damaged structure – 230 days

The regulatory floodplain has a 1% annual chance of flood, so the annualized loss estimate is $46,701.

[30] FEMA State and Local Mitigation Program Planning How to Guide: Understanding your Risks

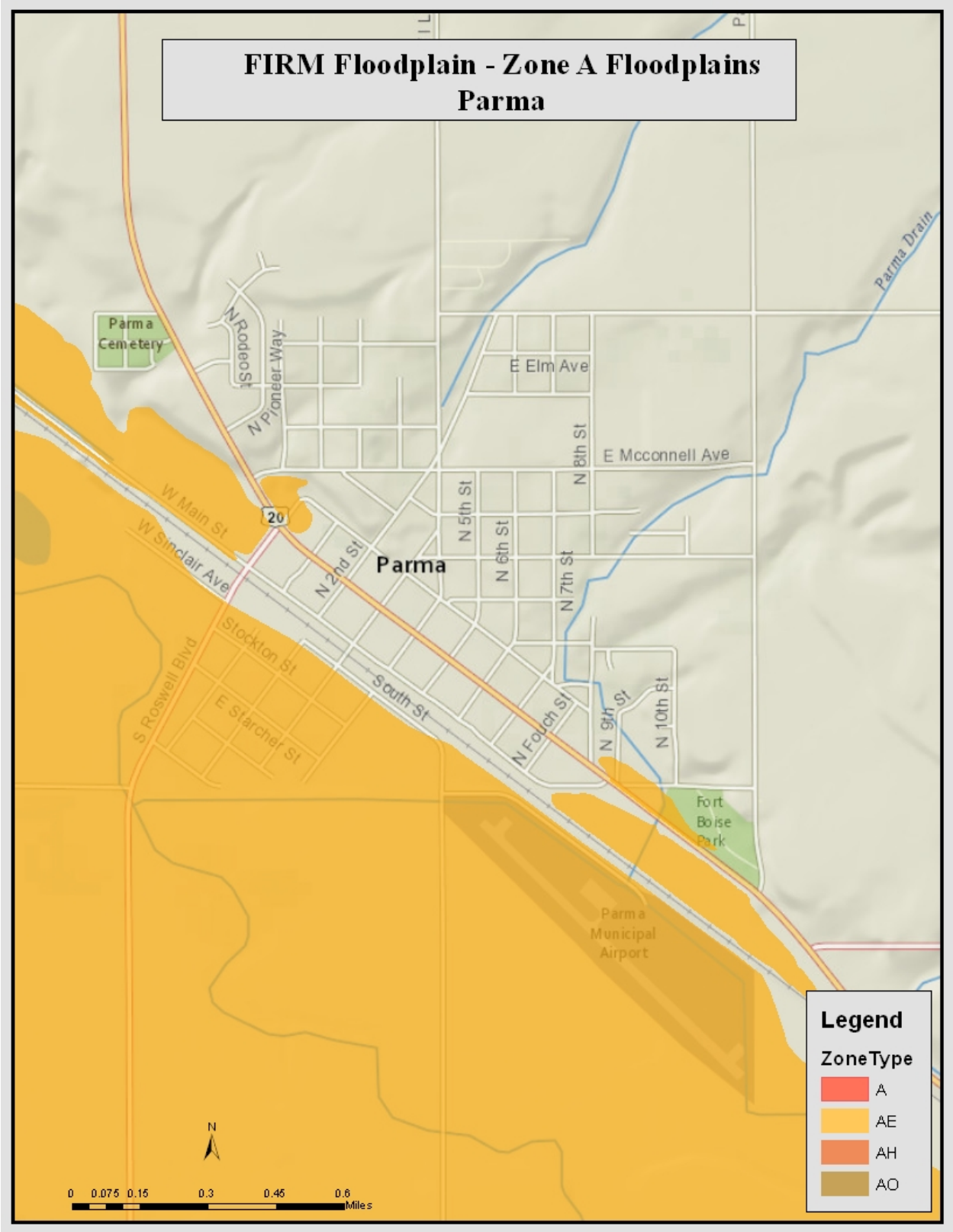


Figure 4.2.11: City Parma 100 Year FIRM Floodplain Map

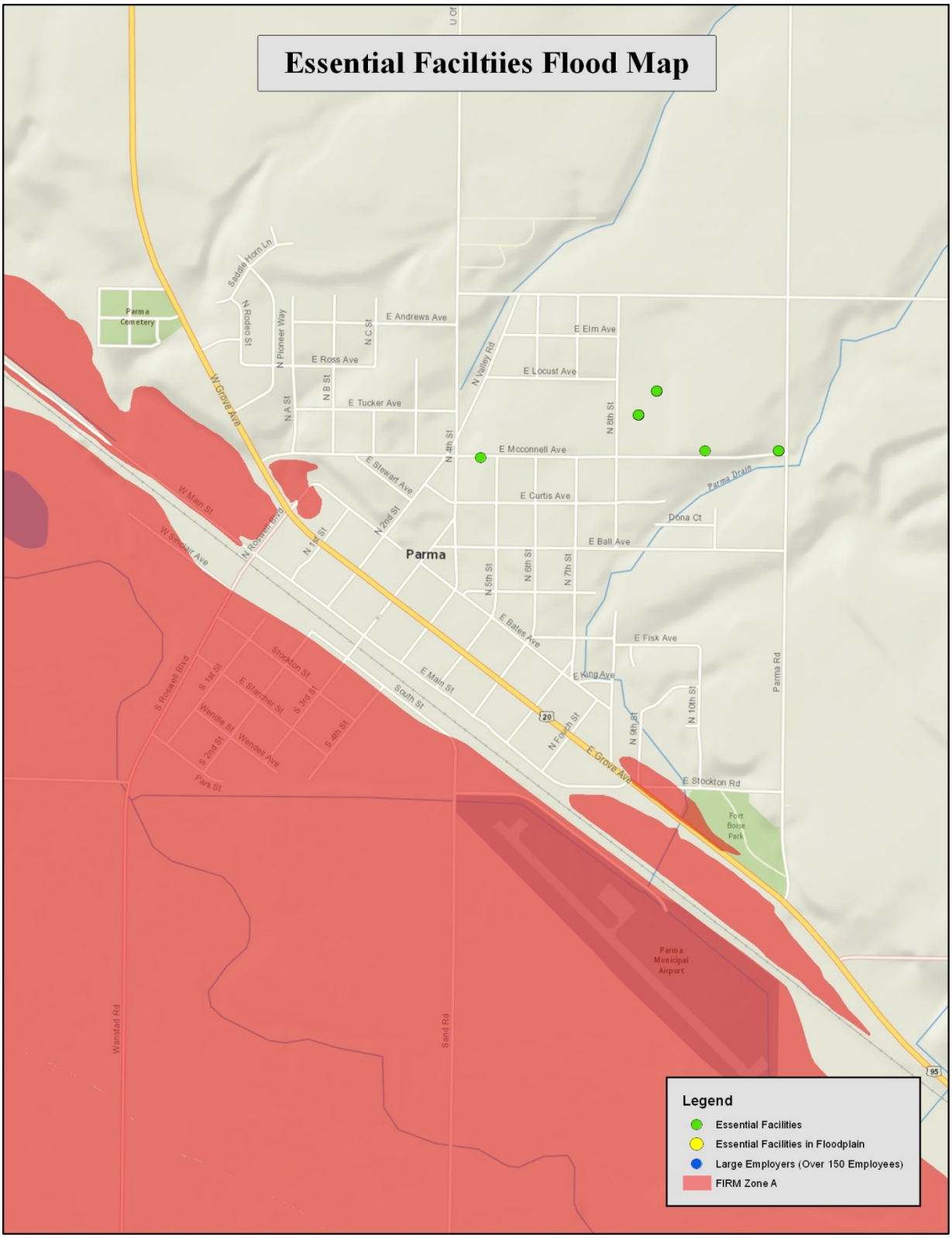


Figure 4.2.12: City of Parma Essential Facilities Map

County Wide Historic Frequencies

The greatest flood of known magnitude on the Boise River occurred on June 14, 1896. The 1896 flood peak flow was 69 percent larger than the largest recent flood, which occurred in April of 1943. It was also approximately 3.0 feet higher in stage. Peak flow was estimated at 35,500 cubic feet per second. A recent large flood occurred April 1943. This was the third largest flood on the Boise River. Peak flow was estimated at 21,000 cubic feet per second. The highest flow with existing flood control storage in the Boise River was 9,500 cubic feet per second in June 1983. The reservoirs were over 98% full when the inflow subsided in 1983 and normal regulation was resumed. Irrigation canals at maximum flow took 3,700 cubic feet per second from the total discharge or flooding would have been worse.

The Snake River forms the southern boundary of Canyon County. The river flows from east to west through a deep canyon bordered by high, steep walls. The main threat of flooding on the Snake River is from ice jams. The potential for other types of flooding is limited because large dams control the river. Additionally, most of the development along this part of the river is limited to agricultural fields and scattered homes, farms, and ranches. Depending on the time of year, varying numbers of recreationists may also be on the river.

Impacts

Human deaths and injuries sometimes occur as a result of river flooding, but are not common. Human hazards during flooding include drowning, electrocution due to downed power lines, leaking gas lines, fires and explosions, hazardous chemicals and displaced wildlife. Economic loss and disruption of social systems are often enormous. Floods may destroy or damage structures, furnishings, business assets including records, crops, livestock, roads and highways, and railways. They often deprive large areas of electric service, potable water supplies, wastewater treatment, communications, and many other community services including medical care, and may do so for long periods of time.

Loss Estimates

Losses for flood events in Canyon County can be extensive. The value of structures in the FEMA FIRM 100 year floodplain is $270,465,000. The contents of those structures can be calculated using a standard value of 50% of structure value conservatively at $135,232,500.

Of the 2,840 Structures in FIRM Floodplain the majority (1,708) are residential with 136 commercial and 64 industrial. There are 932 structures that are uncategorized; in all likelihood these are mostly uninhabited or residential structures.

Loss estimates for a probable river/stream flood event in Canyon County were calculated based on the following assumptions[31]:

- Flood depth of two feet average
- Total structures impacted – 2,840
- Maximum value of an individual structure in flood plain - $12,376,400
- Total valuation of all structures in Flood Plain - $270,465,000
- Total potential building loss – $59,502,300
- Total potential content loss - $44,626,725

[31] FEMA State and Local Mitigation Program Planning How to Guide: Understanding your Risks

- Functional down time for each damaged structure – 30 days
- Displacement time for each damaged structure – 230 days

The regulatory floodplain has a 1% annual chance of flood, so the annualized loss estimate is $1,041,290

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Flooding has a magnitude score of 24.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Conditions leading to river/stream flooding usually develop over a period of days (Warning Lead Times=2). In Canyon County, such flooding is usually fairly localized, but the floodplain spreads across the County (Geography Affected = 4) and is expected not to cause death or injury (Bodily Harm = 1). Some economic loss may be expected from river/stream flooding (Economic Loss = 4) and recovery is managed at the State level for large floods (Reconstruction Assistance = 4). Some public sheltering would be required (Shelter = 2). The total Magnitude score is, therefore, twenty-four (24) which, for Canyon County, is in the "High" range. Historical records for river/stream flooding are available and reliable, indicating that flooding occurs in the five to twenty-five year time scale within Canyon County (Frequency = Medium).

Dam Failure

2012 Revision Summary: This hazard was added with this update.

Description

Dam failure is the unintended release of impounded waters. Dams can fail for one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam
- Deliberate acts of sabotage
- Structural failure of materials used in dam construction
- Poor design and/or construction methods
- Movement and/or failure of the foundation supporting the dam
- Settlement and cracking of concrete or embankment dams
- Piping and internal erosion of soil in embankment dams
- Inadequate maintenance and upkeep

Failures may be categorized into two types: component failure of a structure that does not result in a significant reservoir release, and uncontrolled breach failure that lead to a significant release. With an uncontrolled breach failure of a manmade dam there is a sudden release of the impounded water, sometimes with little warning. The ensuing flood wave and flooding have enormous destructive power. The Idaho Department of Water Resources (IDWR) is responsible for dam safety in this State. The program is described as follows (from the "Dam Safety Program," IDWR web site[32]).

Dams 10 feet or higher or which store more than 50 acre feet of water are regulated by the Idaho Department of Water Resources (as are mine tailings impoundment structures). Idaho currently has 546 water storage dams and 21 mine tailings structures that are regulated by IDWR for safety. The Dam Safety Section inspects these dams or tailings structures every other year unless one has a particular problem. Copies of all inspection reports for each of the dams and tailing structures are available at the IDWR State Office in Boise. Inspection reports are also available at the four IDWR Regional Offices for dams and tailing structures located in their specific regions.

Dam Classifications

Each dam inspected by Idaho Water Resources is given both a size and risk classification.

Size Classification:

Small – 3: Twenty (20) feet high or less and a storage capacity of less than one hundred (100) acre feet of water

Intermediate – 2: More than twenty (20) but less than forty (40) feet high or with a storage capacity of one hundred (100) to four thousand (4,000) acre feet of water

[32] http://www.idwr.state.id.us/water/stream_dam/dams/dams.htm

Large – 1: Forty (40) feet high or more with a storage capacity of more than four thousand (4,000) acre feet of water

Risk Classification

This classification is used by IDWR to classify potential losses and damages anticipated in down-stream areas that could be attributable to failure of a dam during typical flow conditions:

Low Risk – 3: No permanent structures for human habitation; Minor damage to land, crops, agricultural, commercial or industrial facilities, transportation, utilities or other public facilities or values

Significant Risk – 2: No concentrated urban development, one (1) or more permanent structures for human habitation which are potentially inundated with flood water at a depth of two (2) ft. or less or at a velocity of two (2) ft. per second or less; Significant damage to land, crops, agricultural, commercial or industrial facilities, loss of use and/or damage to transportation, utilities or, other public facilities or values

High Risk – 1: Urban development, or any permanent structure for human habitation which are potentially inundated with flood water at a depth of more than two (2) ft. or at a velocity of more than two (2) ft. per second; Major damage to land, crops, agricultural, commercial or industrial facilities, loss of use and/or damage to transportation, utilities, or other public facilities or values

Name	Stream	Purpose	Risk Category	Size Category	Type	Storage Capacity (Acre Ft)	Height (Ft)
Nampa Land Ranch	TR-Snake River, Irrigation Waste	G	3	2	Earth	30	22.4
Ethington	TR-Snake River	J	3	3	Earth	2	17
Deer Flat Lower	Boise River (OS)	I	1	1	Earth	190,000	42
Deer Flat Middle Dike	Boise River (OS), Lake Lowell	AUXDAM	1	1	Earth	0	16
Deer Flat Upper	Boise River (OS), Lake Lowell	AUXDAM	1	1	Earth	0	70
Tiegs	Boise River (OS)	I	2	3	Earth	9	11

Table 4.2.2: Dams in Canyon County

Historic Frequencies

The only recorded dam failure event to affect Canyon County was the failure of the Indian Creek Reservoir Dam (in Ada County) in the early 1890's. Both Nampa and Caldwell were affected by flooding.

Impacts

The only risk category 1 dam in Canyon County, which has a storage capacity, is the Deer Flat Lower Dam. If this dam were to fail the effects would be catastrophic. The Deer flat dam was built in the beginning of the 20th century for irrigation purposes. Lake Lowell is fed by a series of canals and water is discharged into other canals for irrigation.

The impacts from a failure of the Deer Flat Lower Dam would be catastrophic. It would affect a rather large population, and if it were to occur with little to no warning then lives would be in danger. Infrastructure would be damaged and the agriculture economy would suffer.

Loss Estimates

Loss estimates for a probable dam failure event in Canyon County were calculated based on the following assumptions[33]:

- Flood depth of two feet average
- Total structures impacted – 4,784
- Total valuation of all structures in Inundation Zone - $495,212,330
- Total potential building loss – $99,042,466
- Total potential content loss - $126,279,144
- Functional down time for each damaged structure – 30 days
- Displacement time for each damaged structure – 230 days

[33] FEMA State and Local Mitigation Program Planning How to Guide: Understanding your Risks

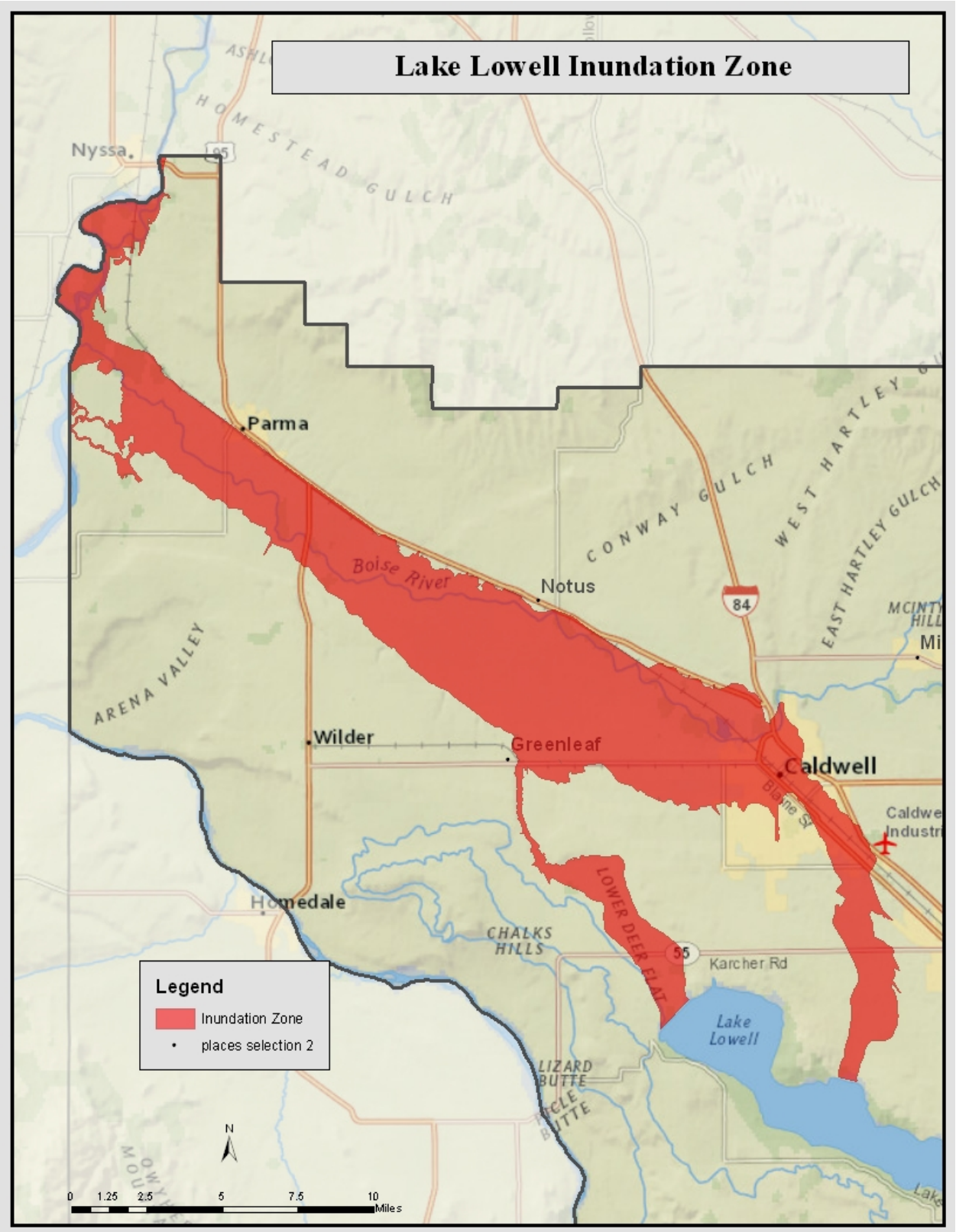


Figure 4.2.13: Lake Lowell Inundation Map

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Dam Failure has a magnitude score of 28.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Conditions leading to dam failure may develop quickly, providing little or no warning time (Warning Lead Times = 4). Vulnerabilities in Canyon County are rather large (Geography Affected = 4) and there is potential for death or injury especially in (Bodily Harm = 2) and economic loss would be large (Economic Loss = 8). Because the impacts would be large, it is expected that federal reconstruction assistance would be required (Reconstruction Assistance = 8). There would be need for public sheltering (Shelter = 2). The total Magnitude score is, therefore, twenty-eight (28) which, for Canyon County, is in the "High" range. Historical records for dam failure indicate that events have not occurred in Canyon County (Frequency =Low).

Canal/Drainage Failure

2012 Revision Summary: This hazard was added in this update.

Description

According to the US Department of Agriculture "an irrigation canal or lateral is constructed to convey water from the source of supply to one or more farms.[34]" The objective of canals is to reduce erosion, prevent degradation of water quality, and to improve the efficient use of water my minimizing conveyance losses from seepage or structural failure.

There are several types of flood threats posed by canals. The first type is a canal break or breach. This occurs when the canal walls are breached because of erosion or deterioration caused by rodents and other small animals. This has the potential to cause significant flooding, especially if the canal is elevated. The second type of flood threat posed by canals is overtopping. This can be caused by an obstruction in the canal that causes the water to overtop the bank. This type of event usually causes erosion of the bank and causes a canal breach.

Historic Frequencies

Canal failure events occur in Canyon County. The following narratives were taken from newspaper accounts that describe canal failure events in dating back to 1910. This is by no means an exhaustive list of canal failure events in the County, but it does provide some insight into the historic impacts of canal failure.

February 1910: "Fifty families were forced to leave their homes in Nampa, Idaho on account of a flood which has partially submerged the northern part of the town. Owing to a break in the government irrigation canal, it became necessary to turn the water into Indian Creek, causing an overflow.

Another break in the irrigation canal resulted in flooding several blocks in the northern part of the city.[35]"

July 1989: "Crews continued fixing roads and ditches as farmers began tallying their losses from last week's break in the Mora Canal south of Nampa. 'The damage wasn't probably as bad as people thought,' Butch Ryals fo the Nampa Highway District said Monday.

Barriers were removed from Bowmont, Bennett, Missouri, Scism, and Deer Flat roads over the weekend after crews repaired four intersections damaged by the canal break on Thursday.

Thousands of gallons of water escaped from the canal, flooding about 200 acres of farmland along a five-mile trip. About 30 people helped block the canal leak using 600 yards of material and a mixture of gravel, clay, and topsoil.

Linda Strandley, whose family farms 240 acres near the canal, was one of about a dozen farmers with crops under water. 'It's pretty much a loss on our beans, but the corn may still come out," she said.

Total crop damage and repair costs had not been determined Tuesday, and three families whose basements flooded during the accident were continuing to mop up water and their belongings.

[34] http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_026512.pdf
[35] Spokane Daily Chronicle – Februayr 28, 1910, 1

Water in the Mora Canal was restored to 80 percent of normal flow Monday, but a Boise Project Board of Control official said it would be days until the canal could resume full flow.[36]"

January 2006: "At 3 a.m. Thursday morning, an irrigation canal northwest of Parma broke, and water flooded Carolyn Winslow's Home. The canal was breached again at about 11 a.m. Friday. 'We got a river right in our yard and a couple of inches in the house,' Carolyn told the *Idaho Statesman*, 'I don't know what we're going to do.'[37]"

April 2011: "A gopher may be to blame for the breach in irrigation canal that flooded as many as 40 homes across a mile swath of an Idaho neighborhood Tuesday morning causing a serious neighborhood flood in Caldwell.

The breach in the Phillips Canal at about 7:30 a.m. affected 30 to 40 homes. Six homes received significant damage. Firefighters have been helping homeowners pump out the water.

Figure 4.2.14: Canal Failure City of Caldwell

Water washed across Caldwell a mile from the canal. A lot of the water went into a grass field, which is now a muddy pond. Streets in the area are covered in mud.

'The Pioneer Irrigation District sincerely regrets any damage or inconvenience caused to the public by the rupture of the Phyllis Canal today,' the district said in a news release. 'Pioneer is most grateful there appears to have been no injuries to individuals caused by the event.'

Fire officials told KBOI2 News that the water flooded the area for about an hour and a half before the leak could be plugged. No word yet on how much the price tag will be for the cleanup efforts.

Irrigation districts workers will be checking 350 miles of canals to make sure there are no other vulnerable areas.[38]"

[36] The Spokesman-Review July 19, 1989, B2.
[37] Moscow-Pullman Daily News – January 2, 2006, 3A
[38] Associated Press Report April 12, 2011. http://www.capitalpress.com/idaho/AP-ID-Caldwell-canal-break-041211

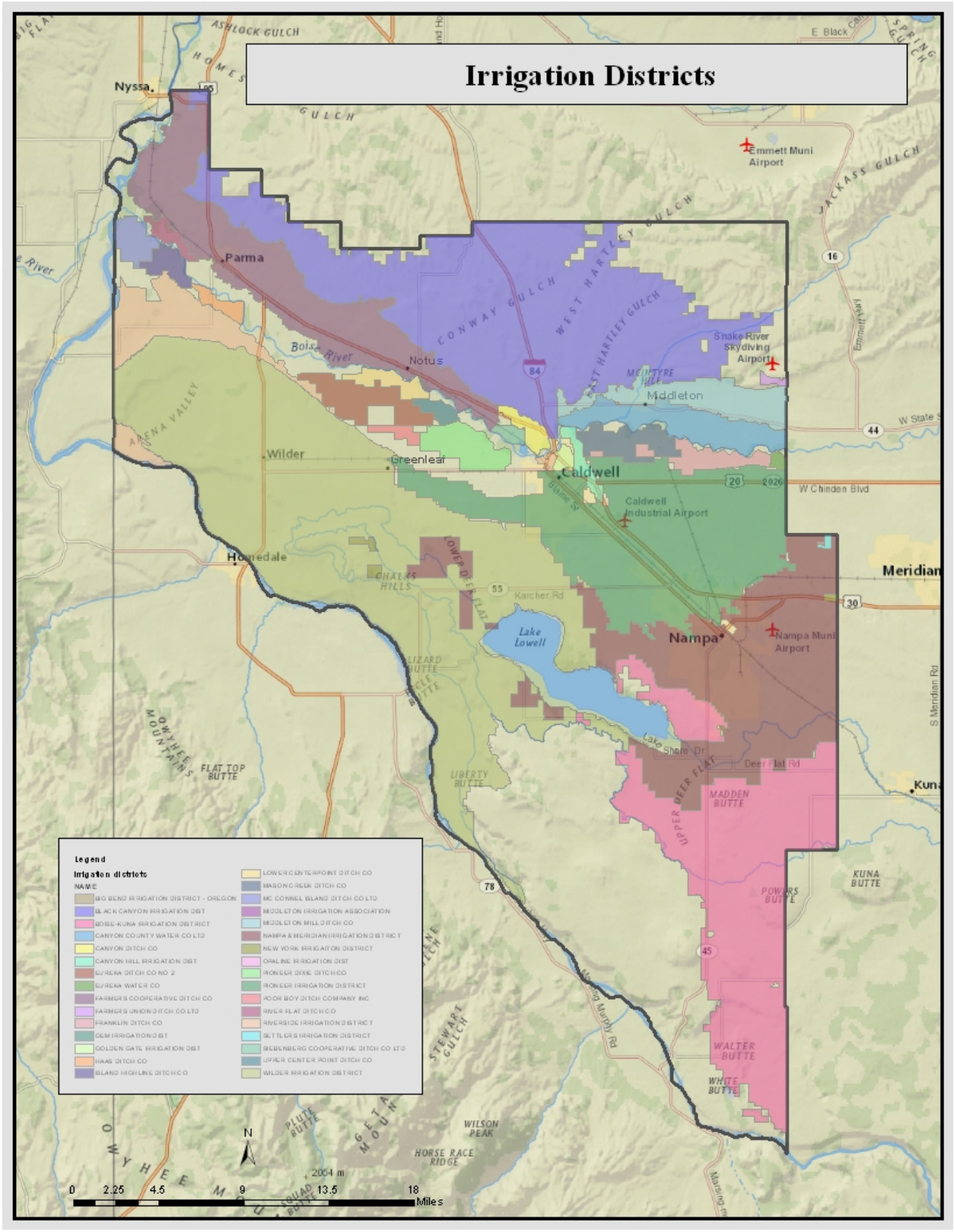


Figure 4.2.15: Irrigation Districts Map

Figure 4.2.16: Canal Failure Damage City of Caldwell

Impacts

Impacts from canal failure are similar to those of flash and riverine flooding. With canal failure flooding there is usually large amounts of debris and erosion. Canal failure can happen without warning and residents may be stranded.

Loss Estimates

Losses from canal failure can be extensive. Not only is structural damage possible, especially in urban areas, but the response and clean -up effort can be extremely costly. Losses for a single event can be in the millions of dollars

Hazard Evaluation

Repetitive Loss *– Repetitive loss from Canal or Drainage failures do not typically happen in the same location in Canyon County; however, losses seem to happen repetitively from the canal or drainage failures throughout the County due to loss of containment of canals and ditches due to burrowing rodent damage to the infrastructures.*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Canal Failure has a magnitude score of 23.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Conditions leading to canal failure may develop quickly, providing little to no warning time (Warning Lead Times = 8). Vulnerabilities in Canyon County are rather large (Geography Affected = 4) and there is little potential for death or injury especially in (Bodily Harm = 1) and economic loss would be fairly large (Economic Loss = 4). Because the impacts would be sizeable, it is expected that state reconstruction assistance would be required (Reconstruction Assistance = 8). There would be need for public sheltering (Shelter = 2). The total Magnitude score is, therefore, twenty-three (23) which, for Canyon County, is in the "High" range. Historical records for canal failure indicate that events occur frequently in Canyon County (Frequency =High).

Section 4.3: Geologic

Geologic hazards are adverse conditions capable of causing loss of life and damage to property that involve the movement of geologic features or elements of the surface of the earth. There are a wide variety of such hazards that may be categorized as either sudden or slow phenomena. Slowly developing geologic hazards include soil erosion, sinkholes and other ground subsidence, and migrating sand dunes. Only sudden geologic hazards will be considered in this planning and will be limited to earthquake and landslide/mudslide.

Earthquake

2012 Revision Summary: This section was updated with more historical earthquake information. The loss estimate section was also updated with HAZUS loss estimates.

Description

The U.S. Geological Survey (USGS) defines earthquake as: "Ground shaking caused by the sudden release of accumulated strain by an abrupt shift of rock along a fracture in the Earth or by volcanic or magmatic activity, or other sudden stress changes in the Earth." The hazards associated with earthquake are essentially secondary to ground shaking (also called seismic waves) which may cause buildings to collapse, displacement or cracking of the earth's surface, flooding as a result of damage to dams or levees, and fires from ruptured gas lines, downed power lines and other sources. Earthquakes cause both vertical and horizontal ground shaking which varies both in amplitude (the amount of displacement of the seismic waves) and frequency (the number of seismic waves per unit time), usually lasting less than thirty seconds. Earthquakes are measured both in terms of their inherent "magnitude" and in terms of their local "intensity."

The magnitude of an earthquake is essentially a relative estimate of the total amount of seismic energy released and may be expressed using the familiar "Richter Scale" or using the "moment magnitude scale" now favored by most technical authorities. Both the Richter scale and the moment magnitude scale are based on logarithmic formulae, meaning that a difference of one unit on the scales represents about a thirty-fold difference in amount of energy released (and, therefore, potential to do damage). On either scale, significant damage can be expected from earthquakes with a magnitude of about 5.0 or higher. What determines the amount of damage that might occur in any given location, however, is not the magnitude of the earthquake but the intensity at that particular place. Earthquake intensity decreases with distance from the earthquake's "epicenter" (its focal point) but also depends on local geologic features such as depth of sediment and bedrock layers. Intensity is most commonly expressed using the "Modified Mercalli Intensity Scale." This measure describes earthquake intensity on an arbitrary, descriptive, twelve degree scale (expressed as Roman numerals from I to XII) with significant damage beginning at around level VII. Mercalli intensity is assigned based on eyewitness accounts. More quantitatively, intensity may be measured in terms of "peak ground acceleration" (PGA) expressed relative to the acceleration of gravity (g) and determined by seismographic instruments.

While Mercalli and PGA intensities are arrived at differently, they correlate reasonably well. While the locations most susceptible to earthquakes are known, there is little ability to predict an earthquake in the short term.

I. Instrumental	Generally not felt by people unless in favorable conditions.
II. Weak	Felt only by a few people at best, especially on the upper floors of buildings. Delicately suspended objects may swing.
III. Slight	Felt quite noticeably by people indoors, especially on the upper floors of buildings. Many do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration similar to the passing of a truck. Duration estimated.
IV. Moderate	Felt indoors by many people, outdoors by few people during the day. At night, some awaken. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rock noticeably. Dishes and windows rattle alarmingly.
V. Rather Strong	Felt inside by most, may not be felt by some outside in non-favorable conditions. Dishes and windows may break and large bells will ring. Vibrations like large train passing close to house.
VI. Strong	Felt by all; many frightened and run outdoors, walk unsteadily. Windows, dishes, glassware broken; books fall off shelves; some heavy furniture moved or overturned; a few instances of fallen plaster. Damage slight.
VII. Very Strong	Difficult to stand; furniture broken; damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken. Noticed by people driving motor cars.
VIII. Destructive	Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture moved.
IX. Violent	General panic; damage considerable in specially designed structures, well designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X. Intense	Some well built wooden structures destroyed; most masonry and frame structures destroyed with foundation. Rails bent.
XI. Extreme	Few, if any masonry structures remain standing. Bridges destroyed. Rails bent greatly.
XII. Cataclysmic	Total destruction – Everything is destroyed. Lines of sight and level distorted. Objects thrown into the air. The ground moves in waves or ripples. Large amounts of rock move position. Landscape altered, or leveled by several meters. In some cases, even the routes of rivers are changed.

Figure 4.3.1: Modified Mercalli Intensity Scale

Historic Frequencies

Earthquakes affect Canyon County. Though earthquakes occurring with epicenters in Canyon County are infrequent, the shaking caused by earthquakes occurring outside the County are a frequent occurrence. The following paragraphs summarize historic earthquakes that have affected Canyon County. There is not a shaking record available from 1984 to 2002; for this reason there is a sizeable gap in the historical record.

June 28, 1925

The most severe damage from this strong earthquake occurred in Gallatin County, Montana at Manhattan, Three Forks, Logan, and Lombard. Because no large cities were near the epicenter, property damage did not exceed $150,000.

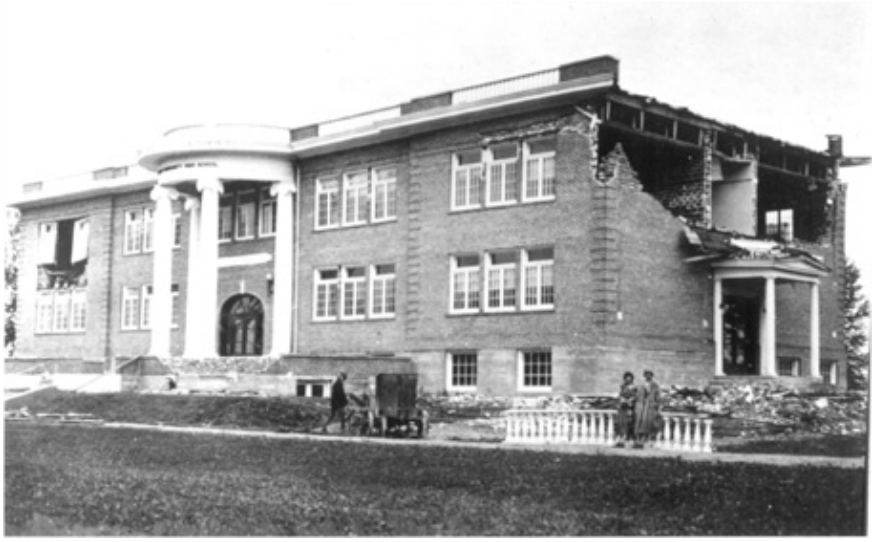


Figure 4.3.2: Damage to Community High School at Manhattan, MT

At Manhattan, the community high school and the grade school were both damaged severely, but reinforced concrete buildings were undamaged. Many chimneys were toppled.

At Three Forks Montana, walls of the schoolhouse bulged on all sides, and its foundation and basement were damaged. A church, whose walls were not tied together by an upper floor, also sustained heavy damage. Later shocks demolished the walls. Almost all masonry buildings showed cracks and damage, but because most of the buildings were of frame construction, they sustained only cracks in plaster and some fallen chimneys.

At Logan Montana, the poorly designed and constructed schoolhouse was damaged heavily. However, a large brick roundhouse sustained only a few cracks. As at Three Forks, most of the buildings at Logan were of frame construction and therefore sustained only cracks in plaster and destruction of chimneys[39].

According to USGS reports this event was felt in the City of Caldwell at a MMI 2.

[39] http://earthquake.usgs.gov/earthquakes/states/events/1925_06_28.php

October 19, 1935

This is the main earthquake of the 1935 series of shocks at Helena, Montana. Two people were killed by falling bricks, several were injured, and property damage was estimated at about $3 million. The earthquake damaged about 300 buildings, of which more than 200 lost their chimneys. Damage was most severe in 2 and 2 1/2-story brick houses on alluvial soil in northeast Helena, but severe damage also occurred in the southern business section of Helena. Downed chimneys and cracked plaster were common throughout the city, and in sections, almost all chimneys were destroyed. Gables commonly were damaged, regardless of the structural material used or the location of the building.

The most severely damaged structure in the area was the Helena High School, constructed a few months earlier, in August 1935. Many large buildings were damaged heavily, including the City Hall, Kessler Brewery, and St. Joseph's Orphanage, but damage was slight to structures on solid bedrock (e.g., the State Capitol, Federal Building, and St. Helena Cathedral). In general, wood buildings covered with wood siding and structures having a framework of reinforced concrete or steel sustained little damage. Tombstones in all the cemeteries in the area were twisted or overturned.

The ground cracks observed were shallow, narrow, surface cracks in alluvial material caused by shaking of the ground, and none represent slip along the fault plane. East of town, water flowed from the cracks that formed in the ground. The largest crack, a maximum of 13 centimeters wide and 91 meters long, was observed on the gravel road leading into the Stanchfield Gun Club.

Changes in the volume of flow of many wells and springs occurred. The most noted change was an increase in flow of springs or the formation of new springs. Seven Mile Creek, which was almost dry before the earthquake, was about 1.5 meters wide and 30 to 45 centimeters deep when it was observed on Oct. 31. Also felt in parts of Idaho, Washington, Wyoming, and in adjacent areas of Canada.

According to USGS reports this earthquake was felt at an undetermined scale in the City of Caldwell.

October 31, 1935

This aftershock was almost as severe as the main tremor on October 19. Two people were killed at Helena, Montana and about $1 million in property damage occurred, bringing the death toll from this series to four and the damage total to $4 million. (Ref. 512 reports a total of 6 deaths and $5.5 million damage). It intensified the damage in all the towns and damaged structures weakened by previous shocks. Most residents described it as “sharper and more pronounced than the main earthquake on October 19”.

Many buildings previously damaged were demolished, including the new Helena High School and the Kessler Brewery. Damage was most severe in the neighborhood of the City Hall on Main Street and in the residential district on 9th Street. On the west side of town, damage from this shock was more severe than that caused by the October 19 earthquake. Damage to frame buildings was slight, except to their chimneys and brick-veneer facing.

The ground in Helena Valley again was cracked. Water was observed spurting 30 cm or more from cracks, and dust was emitted from others. All chimneys in this neighborhood were downed, and a bridge was shifted slightly. Several tombstones turned over in the Resurrection Cemetery,

about 5 km north of Helena. Shaking was also felt in parts of Idaho, Washington, Wyoming, and Canada.

According to USGS reports this earthquake was felt at an undetermined scale in the City of Caldwell.

July 16, 1936

A damaging earthquake occurred at 11:08 PM PST on July 15, 1936, near the State line between Milton-Freewater, Oregon, and Walla Walla, Washington. The magnitude 5.75 shock affected an area of about 272,000 square kilometers in the two States and adjacent Idaho. Ground cracking was observed about 6.5 kilometers west of Freewater, and there were marked changes in the flow of well water (VII). Many chimneys were damaged at the roof level in Freewater; in addition, plaster was broken, and walls cracked. Similar damage was reported from Umapine. Total damage amounted to $100,000. There were numerous aftershocks up to November 17; more than 20 moderate shocks occurred during the night, and stronger ones were felt (V) on July 18 and August 4 and 27.

According to USGS reports this earthquake was felt at an undetermined scale in the City of Caldwell.

July 12, 1944

This earthquake apparently was most severe in the area of Fontez Creek, near Sheep Mountain, Idaho, where buildings were shaken so severely that occupants thought the structures were falling apart. A new cabin set on concrete piers was displaced on its foundation. Along Seafoam Creek, rocks and boulders were thrown down the hillside.

Cracks about 30.5 meters long formed in the ground in the Duffield Canyon trail along Fontez Creek. Cracks 2.5 to 7.5 centimeters wide extended for several meters in a continuous break near Seafoam. A section of the Rapid River Canyon Wall (near Lime Creek) fell into the river. Also felt in Montana, Oregon, and Washington. Seventeen shocks were reported felt, the first of which was the strongest.

According to USGS reports this earthquake was felt at an MMI 3 in the City of Caldwell.

February 14, 1945

Dishes rattled, window shades creaked, and buildings swayed slightly in Boise, Idaho and vicinity last night shortly after 9 p.m. as earth tremors sent ground currents through the area disrupting momentarily the normal flow of life in downtown and residential sections.

No damage had been reported last night in the Boise vicinity, although the newspaper offices, police department and fire department switchboards were jammed with calls between 9 and 10 p.m.

An Associated Press dispatch from Spokane said that *Mount St. Michael's Scholasticate* reported earth tremors of moderate intensity on its seismograph at 9:01 p.m. (MWT). Observers expressed doubt there that damage had resulted.

Distance and direction could not be determined, but the *Scholasticate* said the epicenter was not far from Spokane. Washington residents called Spokane offices to report that chandeliers in homes were seen to sway and that slight shocks were felt.

Boise police reported calls from Star and Eagle reporting the tremor, and C. L. Schoenhut of Cascade called *The Statesman* to report the quake had rattled dishes and jiggled shades in that Idaho town. No damage was known of there, he said.

Peter Scherer, Boise accountant, who was working on the fourth floor of the First National bank building, said the quake jerked venetian blinds in the building and that he felt the structure sway slightly with a creaking sound.

Hundreds of Boiseans who called downtown offices to report the disturbance said that the quake seemed to be of "three or four seconds" duration, but no residents had reported damage. One Boisean, sitting in her living room, said she felt the tremor tug at her chair with short, quick jerks but that there was no swaying motion.

The switchboard at radio station KIDO was flooded with calls for an hour and station officials said it appeared that the tremor in Boise had been strongest in the northern section of town.

Helen Motzko, who lives in an apartment house at 100 Warm Springs avenue in Boise, said all residents of the building reported feeling the quake and that the chair she was sitting in "shook" a few times[40].

According to USGS reports this event was felt in the City of Caldwell at a MMI 3.

November 23, 1947

Chimneys fell, twisted, or cracked in several towns in Madison County Montana, including Alder, Cameron, Ennis, Laurin, and Virginia City. New springs formed in several areas, and creeks became muddy. Huge rocks rolled down the mountainside. Brick, masonry, and concrete structures sustained much damage. Also felt in parts of Idaho, Washington, and Wyoming[41].

According to USGS reports this event was felt in throughout Canyon County at an undetermined scale.

August 24, 1954

Ground surface movement was increased several centimeters at the break of the main fault of July 6, 1954 (11 13 UTC), along the east edge of Rainbow Mountain in Nevada. Displacement from this shock was much more continuous than that of July 6, probably as a result of the larger relative movement (76 cm compared to 30 cm on July 6). The ground breakage extended north for about 18 km to the region southeast of Carson Sink. Only vertical movement was observed, however. Except for the Lovelock area, where this earthquake considerably damaged the Rogers Dam, damage to buildings, roads, and irrigation facilities occurred in the same general areas as for the shock on July 6. Also felt in California, Idaho, Oregon, and Utah[42].

According to USGS reports this event was felt in the City of Caldwell at a MMI 4, Nampa at a MMI 5, Parma at a MMI 4, Marsing at a MMI 4, and in Melba at an undetermined scale.

December 16, 1954

The population was sparse in the epicentral region of this earthquake in Nevada, and few man-made structures existed. Damage to structures, therefore, was minor despite the geologic and seismographic evidence of a major earthquake.

[40] February 14, 1945
[41] http://earthquake.usgs.gov/earthquakes/states/events/1947_11_23.php
[42] http://earthquake.usgs.gov/earthquakes/states/events/1954_08_24.php

The earthquake was accompanied by offsets along many faults in the four main zones of a north-trending belt 96 kilometers long by 32 kilometers wide. Minor geologic effects included changes in the flow of springs and wells, formation of craters and water fountains, landslips and landslides, mudflows, and rockfalls.

The fault displacements were mainly along normal faults in the following areas: (1) west of Dixie Valley, (2) southeast of Dixie Valley, (3) east of Fairview Peak, and (4) east of Stingaree Valley. The maximum strike-slip component was 3.6 meters or right-lateral movement at Fairview Peak, and the maximum vertical-slip component was 3.6 meters at Bell Flat.

Heavy furniture was displaced at Frenchman Station, about 11 kilometers west of major surface faulting, but damage to buildings was negligible. Differential settlement of about 10 centimeters that occurred under a wood-frame store resulted in minor cracking of the building. Damage at Fallon, about 48 kilometers west of the nearest major surface break, was limited to a few toppled chimneys. Hundreds of aftershocks occurred. The main earthquake also was felt in Arizona, California, Idaho, Oregon, and Utah[43].

According to USGS reports this event was felt in the City of Caldwell at a MMI 2.

March 23, 1959

A magnitude 6.3 earthquake centered in Dixie Valley, Nevada was felt at an undetermined scale in the Cities of Caldwell Nampa.

August 18, 1959

This earthquake caused 28 fatalities and about $11 million in damage to highways and timber. It is characterized by extensive fault scarps, subsidence and uplift, a massive landslide, and a seiche in Hebgen Lake in Wyoming. A maximum MM intensity X was assigned to the fault scarps in the epicentral area. The instrumental epicenter lies within the region of surface faulting. Area of perceptibility, maximum intensity, and Richter magnitude all were larger for this earthquake than for any earlier earthquake on record in Montana (from May 1869).

The most spectacular and disastrous effect of the earthquake was the huge avalanche of rock, soil and trees that cascaded from the steep south wall of the Madison River Canyon. This slide formed a barrier that blocked the gorge and stopped the flow of the Madison River and, within a few weeks, created a lake almost 53 meters deep. The volume of material that blocked the Madison River below Hebgen Dam has been estimated at 28 - 33 million cubic meters. Most of the 28 deaths were caused by rockslides that covered the Rock Creek public campground on the Madison River, about 9.5 kilometers below Hebgen Dam.

On the basis of vibration damage (and excluding geologic effects), damage to buildings along the fault zone was singularly unspectacular (MM intensity VIII at places, intensity VII generally). Minor damage occurred throughout southern Montana, northeast Idaho, and northwest Wyoming. Felt as far as Seattle, Washington, to the west; Banff, Canada, to the north; Dickinson, North Dakota, to the east; and Provo, Utah, to the south. This area includes nine Western States and three Canadian Provinces. Aftershocks continued for several months[44].

According to USGS reports this event was felt in the following locations in Canyon County at the correlated MMI scale: Middleton -6, Caldwell-5, Homedale-5, Marsing-5,Nampa-5, Parma-5.

[43] http://earthquake.usgs.gov/earthquakes/states/events/1954_12_16.php
[44] http://earthquake.usgs.gov/earthquakes/states/events/1959_08_18.php

April 26, 1969

A magnitude 4.9 shock on April 26, 1969, cracked a foundation at Ketchum, Idaho, plaster at Livingston Mills, and a cement floor at Warm Springs. It was felt over 9,000 square miles[45].

According to USGS reports this event was felt in the following locations in Canyon County at the correlated MMI scale: Greenleaf-5, Caldwell-3, Nampa-3.

June 30, 1975

This widely felt earthquake downed one chimney in the park at Norris Junction and formed cracks 90 m long in a parking lot. Rock-falls and landslides closed or hindered traffic on many roads in the park. Two new geysers formed; the Gibbon River was muddied; and the earth settled and cracked in the backcountry. Several aftershocks occurred through early July. Also felt in Montana, Idaho, South Dakota, Nebraska, Nevada, Utah, and Washington[46].

According to USGS reports this event was felt in the following locations in Canyon County at the correlated MMI scale: Huston-3.

November 27, 1977

A magnitude 4.5 earthquake centered near Cascade, Idaho was felt at Homedale at a MMI scale 4

October 28, 1983

The Borah Peak earthquake is the largest ever recorded in Idaho - both in terms of magnitude and in amount of property damage. It caused two deaths in Challis, about 200 kilometers northeast of Boise, and an estimated $12.5 million in damage in the Challis-Mackay area. A maximum MM intensity IX was assigned to this earthquake on the basis of surface faulting. Vibrational damage to structure was assigned intensities in the VI to VII range.

Spectacular surface faulting was associated with this earthquake - a 34-kilometer-long northwest-trending zone of fresh scarps and ground breakage on the southwest slope of the Lost River Range. The most extensive breakage occurred along the 8-kilometer zone between West Spring and Cedar Creek. Here, the ground surface was shattered into randomly tilted blocks several meters in width. The ground breakage was as wide as 100 meters and commonly had four to eight echelon scarps as high as 1-2 meters. The throw on the faulting ranged from less than 50 centimeters on the southern-most section to 2.7 meters south of Rock Creek at the western base of Borah Peak.

Other geologic effects included rockfalls and landslides on the steep slopes of the Lost River Range, water fountains and sand boils near the geologic feature of Chilly Buttes and the Mackay Reservoir, increase or decrease in flow of water in springs, and fluctuations in well water levels. A temporary lake was formed by the rising water table south of Dickey.

The most severe property damage occurred in the towns of Challis and Mackay, where 11 commercial buildings and 39 private houses sustained major damage and 200 houses sustained minor to moderate damage.

[45] http://earthquake.usgs.gov/earthquakes/states/idaho/history.php
[46] http://earthquake.usgs.gov/earthquakes/states/events/1975_06_30.php

At Mackay, about 80 kilometers southeast of Challis, most of the commercial structures on Main Street were damaged to some extent; building inspectors condemned eight of them. Damaged buildings were mainly of masonry construction, including brick, concrete block, or stone. Visible damage consisted of severe cracking or partial collapse of exterior walls, cracking of interior walls, and separation of ceilings and walls at connecting corners. About 90 percent of the residential chimneys were cracked, twisted, or collapsed.

At Challis, less damage to buildings and chimneys was sustained, but two structures were damaged extensively: the Challis High School and a vacant concrete-block building (100 years old) on Main Street. Many aftershocks occurred through 1983. Also felt in parts in Montana, Nevada, Oregon, Utah, Washington, Wyoming, and in the Provinces of Alberta, British Columbia, and Saskatchewan, Canada[47].

According to USGS reports this event was felt in the following locations in Canyon County at the correlated MMI scale: Caldwell-5, Greenleaf-5, Homedale-5, Huston-5, Marsing-5, Melba-5, Middleton-5, Nampa-5, Parma-5, Notus-4.

August 22, 1984

A magnitude 5.8 earthquake with an epicenter near Challis, Idaho was felt at the following locations in Canyon County at the correlated MMI scale: Marsing-4, Greenleaf-3, Homedale-3, Middleton-3, Huston-2.

February 4, 2006

A magnitude 4.6 earthquake with an epicenter near West Yellowstone was felt in Nampa at a MMI 1.

July 4, 2007

A magnitude 3.1 earthquake with an epicenter in Utah was felt in Nampa at a MMI 2.7.

February 21, 2008

Three people injured, more than 20 buildings heavily damaged, almost 700 buildings slightly damaged and a water main broken at Wells, Nevada. Felt (VI) at Wells, with maximum intensity VIII in the Historic District. Felt (V) at Jackpot; (IV) at Battle Mountain, Carlin, Elko, Mountain City and Spring Creek.

Seismological data from this earthquake show that it occurred on a normal fault that trends roughly north-south and has a dip of 30-60 degrees. The revised location of the main shock puts the earthquake in the area northeast of Wells, Nevada, where geologically young faulting is poorly expressed[48].

According to USGS reports this event was felt in the following locations in Canyon County at the correlated MMI scale: Caldwell-2, Greenleaf-3.4, Middleton-2, Nampa-2.4, Parma-2.7, Wilder-2.

April 28, 2008

A magnitude 4.2 earthquake with an epicenter near Reno, Nevada was felt in Caldwell Idaho at a MMI 2.

[47] http://earthquake.usgs.gov/earthquakes/states/events/1983_10_28.php
[48] http://earthquake.usgs.gov/earthquakes/eqinthenews/2008/us2008nsa9/#summary

December 27, 2008

A magnitude 3.9 earthquake in Wyoming was felt in Nampa at a MMI 2.

Earthquake shaking is a frequent occurrence in Canyon County. Earthquakes are felt on a 5 -25 year return interval.

Impacts

Earthquakes are capable of catastrophic consequences, especially in urban areas. Worldwide, earthquakes have been known to cost thousands of lives and enormous economic and social losses. In minor earthquakes, damage may be done only to household goods, merchandise, and other building contents and people are occasionally injured or killed by falling objects. More violent earthquakes may cause the full or partial collapse of buildings, bridges, and overpasses, and other structures. Fires due to broken gas lines, downed power lines, and other sources are common following an earthquake and often account for much of the damage. Economic losses arise from destruction of structures and infrastructure, interruption of business activity, and innumerable other sources. Utilities may be lost for long periods of time and all modes of transportation may be disrupted. Disaster Services including medical may be both disabled and overwhelmed. In addition to broken gas lines, other hazardous materials may be released.

Loss Estimates

A HAZUS Level I analysis was run to determine the amount of damage that would occur in Canyon County based on two scenarios. The first scenario is an annual probabilistic loss estimate, and the second scenario is a probabilistic 100 year event that affects Canyon County. The results of that analysis are below.

Annual Probabilistic Event

Debris Generation

HAZUS estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

If the debris tonnage is converted to an estimated number of truckloads, it will require 40 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.

Loss Estimates

The total economic loss estimated for the earthquake is $0.84M (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building related losses were $0.35M (millions of dollars); 22 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 55 % of the total loss.

Probabilistic 100 Year Magnitude 7 Event

Debris Generation

HAZUS estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

If the debris tonnage is converted to an estimated number of truckloads, it will require 40 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.

Loss Estimates

The total economic loss estimated for the earthquake is 3.43 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory.

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building related losses were 2.94 (millions of dollars); 25 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 61 % of the total loss.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Earthquake has a magnitude score of 28.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Predictive methodology for earthquakes is not capable of providing warning for specific events which usually occur suddenly, with no warning (Warning Lead Times = 8). Earthquakes affect wide areas (Geography Affected = 8). In Canyon County, such an event is not expected to cause some injuries and deaths (Bodily Harm = 1). Some structural and infrastructure damage is possible in the event of a strong earthquake, interrupting business activities and requiring some reconstruction (Economic Loss = 2). No sheltering would be required (Shelter = 1). Recovery assistance at the Federal level would be required (Reconstruction Assistance = 8). The total Magnitude score is, therefore, twenty-eight (28) which, for Canyon County, is in the "High" range. Historical records for earthquake are available and reliable, indicating that earthquakes occur in the five to twenty-five year range in Canyon County (Frequency = High).

Landslide/Mudslide

2012 Revision Summary: The landslide section was streamlined and changed to reflect the overall risk assessment approach in the updated plan.

Description

The term "landslide" encompasses several types of occurrence (including mudslides) in which slope-forming materials such as rock and soil move downward under the influence of gravity. Such downward movement may occur as the result of an increase in the weight of slope-forming materials, an increase in the gradient (angle) of the slope, a decrease in the forces resisting downward motion (friction or material strength) or a combination of these factors. Factors that may trigger a landslide include weather related events such as heavy rainfall (one of the most common contributors), erosion, and freeze-thaw weakening of geologic structures, and human causes such as excavation and mining, deforestation, vibration from explosions or other sources, and such geologic causes as earthquake, volcanic activity, and shearing or fissuring. The speed of descent ranges from sudden and rapid to an almost imperceptibly slow creep where effects are only observable over a period of months or years.

Canyon County is generally level with some rolling and bench terrain. Canyon County is entirely on the Snake River Plain, between the Snake River to the south and the foothills of the central

Idaho Mountains to the north. Much of the County is underlain by Quaternary alluvium of the Boise River and Pleistocene gravel from glacial outwash. This gravel forms high benches above the Boise River.

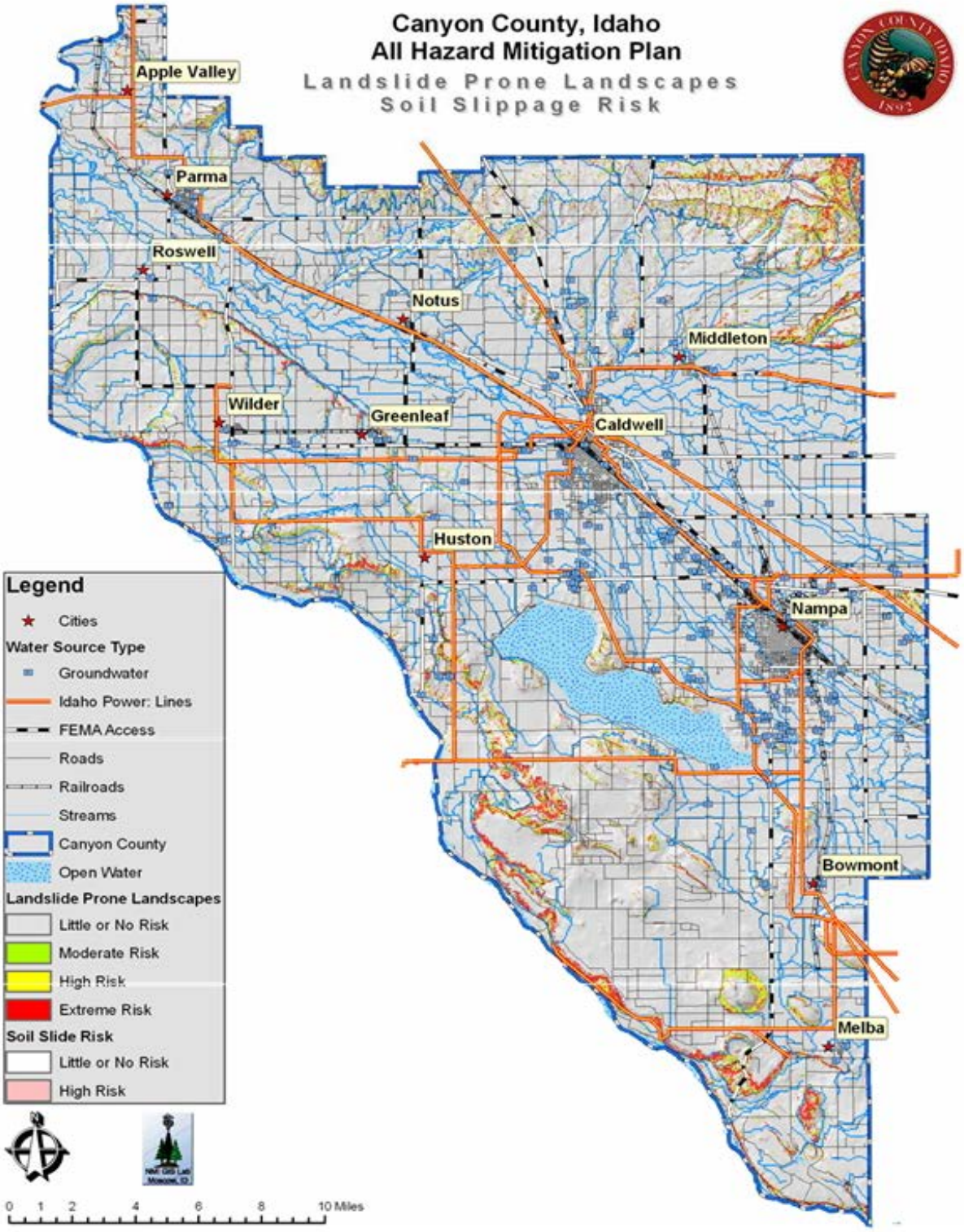


Figure 4.3.3: Landslide Prone Areas Map

Historic Frequencies

There have been no reported damaging landslides in Canyon County. However, according to the landslide potential map (figure 4.3.3) above there is a potential for landslides in mostly the northern and southern portions of the County. It is apparent that landslides are underreported in Canyon County.

Impacts

Some of the many direct and indirect impacts of landslides are:

- Human and animal deaths and injuries and resulting productivity losses
- Damage or destruction of structures
- Destruction or blockage of roadways and resulting transportation interruption
- Loss of, or reduced land usage
- Loss of industrial, agricultural and forest productivity
- Reduced property values in areas threatened by landslide
- Loss of tourist revenues and recreational opportunities
- Damage or destroyed infrastructure and utilities
- Damming or alteration of the course of streams and resulting flooding
- Reduced water quality

Loss Estimates

Losses associated with landslide in Canyon County are associated with debris removal and repair of transportation networks. Normally these losses aren't itemized and recorded; rather they are just paid for from the general operating budget of the Highway Districts. Losses from landslide in Canyon County are in the 10,000's dollars annually.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Landslide/Mudslide has a magnitude score of 12.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Conditions leading to landslide/mudslide may develop quickly, providing little warning time (Warning Lead Times = 4). Vulnerabilities in Canyon County are minimal (Geography Affected = 2) and there is little potential for death or injury (Bodily Harm = 1) and economic loss would be limited (Economic Loss = 2). Because impacts would be primarily to County and Forest Service Roads recovery would be managed at the County level for County Roads (Reconstruction Assistance = 2). There would be no need for public sheltering (Shelter = 1). The total Magnitude score is, therefore, twelve (12) which, for Canyon County, is in the "Low" range. Historical records for landslide/mudslide indicate that events occur somewhat frequently in Canyon County (Frequency =Medium).

Section 4.4: Other Natural Hazards

Wildfire

2012 Revision Summary: The wildfire hazard was summarized and the 2006 Community Wildfire Protection Plan was referenced. Loss estimates, historic frequencies, and the hazard evaluation subsections were also updated.

Description

Wildfire is defined by the USDA Forest service as, "A fire naturally caused or caused by humans, that is not meeting land management objectives."[49] It is generally thought of as an uncontrolled fire involving vegetative fuels, oxygen, and sufficient heat [50]occurring in wildland areas. Such fires are classified for hazard analysis purposes as either "Wildland" or "Wildland Urban Interface" fires. Wildland fires occur in areas that are undeveloped except for the presence of roads, railroads, and power lines, while Wildland Urban Interface fires occur where structures or other human development meets, or is intermingled with, the wildland or vegetative fuels. Wildland fire is currently considered a natural and necessary component of wildland ecology and, as such, is most often allowed to progress to the extent that it does not threaten inhabited areas or human interests and well-being. At the Wildland Urban Interface (WUI), vigorous attempts are made to control fires, but this becomes an increasingly difficult challenge as more and more development for recreational and living purposes takes place in wildland areas. Some wildland fires are ignited naturally (almost exclusively by lightning), but most ignitions are a result of human activities, either careless or intentional. The rapidity with which a wildland fire spreads and the intensity with which it burns is controlled by a number of factors including:

- Weather - wind speed and direction, temperature, precipitation
- Terrain – fires burn most rapidly upslope
- Type of vegetation
- Condition of vegetation - dryness
- Fuel load – the amount and density of vegetation
- Human attempts to suppress

In Idaho, fire was once an integral function of the majority of ecosystems. The seasonal cycling of fire across the landscape was as regular as the July, August and September lightning storms plying across the canyons and mountains. 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[51]. The fires burned from 1 to 47 years apart, with most at 5- to 20-year intervals[52]. With infrequent return intervals, plant communities tended to burn more severely and are replaced by vegetation different in composition, structure, and age[53]. 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

[49] http://www.fs.fed.us/fire/fireuse/education/terms/fire_terms_pg5.html
[50] As described in the State of Idaho Hazard Mitigation Plan 2010
[51] Johnson 1998
[52] Barrett 1979
[53] Johnson et al. 1994

(from fire scars and charcoal deposits) suggest fire has played an important role in shaping the vegetation in the Columbia Basin for thousands of years[54].

Historic Frequencies

Wildfires occur yearly in Canyon County. The following table details large wildfires that have occurred in Canyon County from 1957 to 2011. During this 55 year period there were 52 fires that burnt more than 10 acres each. These large fires burned a total of 48,360 acres.

Fire Year	Fire Name	Acreage Burnt	Date Started	Fire Number
1957	Walters Ferry	46.8	6/16/1957	0200E
1957	Hartley Gulch	95.5	7/1/1957	38
1957	S. Little Freezeout	138.5	6/28/1957	34
1957	White Sage	203.1	6/23/1957	24
1957	Lake Lowell	530.6	7/5/1957	50
1957	Rifle Pit	566.9	6/23/1957	26
1957	Stock Trail	2952.4	6/25/1957	20
1957	Hare	3089.2	7/29/1957	128
1961	Stock Driveway	6434.5	9/16/1961	86
1962	Little Freezeout	1302.3	7/10/1962	22
1963	WY 16 & Pipeline	1460.6	8/6/1963	51
1965	Parma	2021.7	6/22/1965	A06
1966	Ittchybon	1231.1	5/21/1966	04A
1971	Pickles Butte	146.1	7/9/1971	1235
1979	Pickles Butte	901.9	N/A	F1223
1979	Chaparrel	2301.4	N/A	F1319
1980	Jennes	4769.9	N/A	F1230
1981	Pickles Butte	436.9	N/A	F1204
1984	Pickles Butte	275.6	N/A	F053
1984	Gouch DRn	334.8	N/A	F028
1986	Pickles Butte	236.4	N/A	F034
1988	Hartley	921.9	N/A	F103
1989	Deer Flat	311.4	N/A	F136
1992	Pickles Butte	91.3	N/A	F299
1992	W Hartley	170.9	N/A	F308
1992	Dautrich	1043.0	N/A	F296
1994	Jenness	1939.4	N/A	F108
1995	Celebrate	370.0	N/A	F093
1995	D Line	2215.3	N/A	F110
1996	Dill	142.5	N/A	F214
1996	C Line	178.5	N/A	F254
1996	Kuna	5869.6	N/A	F288
1997	Pickles Butte	340.6	N/A	F013

[54] Steele et al. 1986, Agee 1993

Fire Year	Fire Name	Acreage Burnt	Date Started	Fire Number
1999	Pickles Butte	14.6	N/A	F319
1999	RadioTwr 2	70.4	N/A	Z408
1999	W Hartley	121.6	N/A	F327
2000	Pickle SW	14.3	7/19/2000	F054
2000	Hartley	22.3	7/2/2000	F018
2000	Weber Ranch	42.9	7/22/2000	F060
2000	Old Dump	51.0	6/1/2000	Z529
2000	Pickles Butte	51.1	9/26/2000	F114
2001	Towers	106.5	6/1/2001	F139
2001	Radio	139.4	8/15/2001	F253
2001	Sproat	275.5	7/27/2001	F228
2002	Rocky	76.9	7/8/2002	F002
2002	Hardly Lunch	108.6	8/17/2002	F056
2005	Gotch Canyon	969.9	7/2/2005	BPX8
2007	Ross	28.6	8/17/2007	DW56
2007	Pickles South	56.2	6/12/2007	DH4T
2007	Radio	110.7	7/10/2007	DPZ5
2007	Celebration	134.8	7/2/2007	DL42
2011	Goody	2893.4	7/19/2011	F7V7

Table 4.4.1: Historic Large Wildfires

Wildfires occur almost yearly in Canyon County. .

Impacts

Wildland fires threaten the lives of anyone in their path including hikers, campers, and other recreational users and, where suppression efforts are made, firefighters. Enormous volumes of smoke and airborne particulate materials are produced that can affect the health of persons for many miles downwind. Nearer to the fire, smoke reduces visibility, disrupting traffic and increasing the likelihood of highway accidents. As a result of wildland fire there may be changes in water quality in the area and erosion rates may increase along with increased rainfall runoff and flash flood threat, and decreased rainfall interception and infiltration. Indirect impacts include losses to tourism, recreational and timber interests, and loss of wildlife habitat. Wildland Urban Interface fires have most or all of the above impacts as well as those of structural fires including injury and loss of life, structures, and contents. Agricultural losses may also be sustained including livestock, crops, fencing, and equipment.

Loss Estimates

Losses associated with wildfire include loss of life, structural loss, the cost to respond, and loss of services. Many times the greatest loss comes from the cost to fight the fire. The map in figure 4.4.2 shows the basins at highest risk to wildfire in Canyon County.

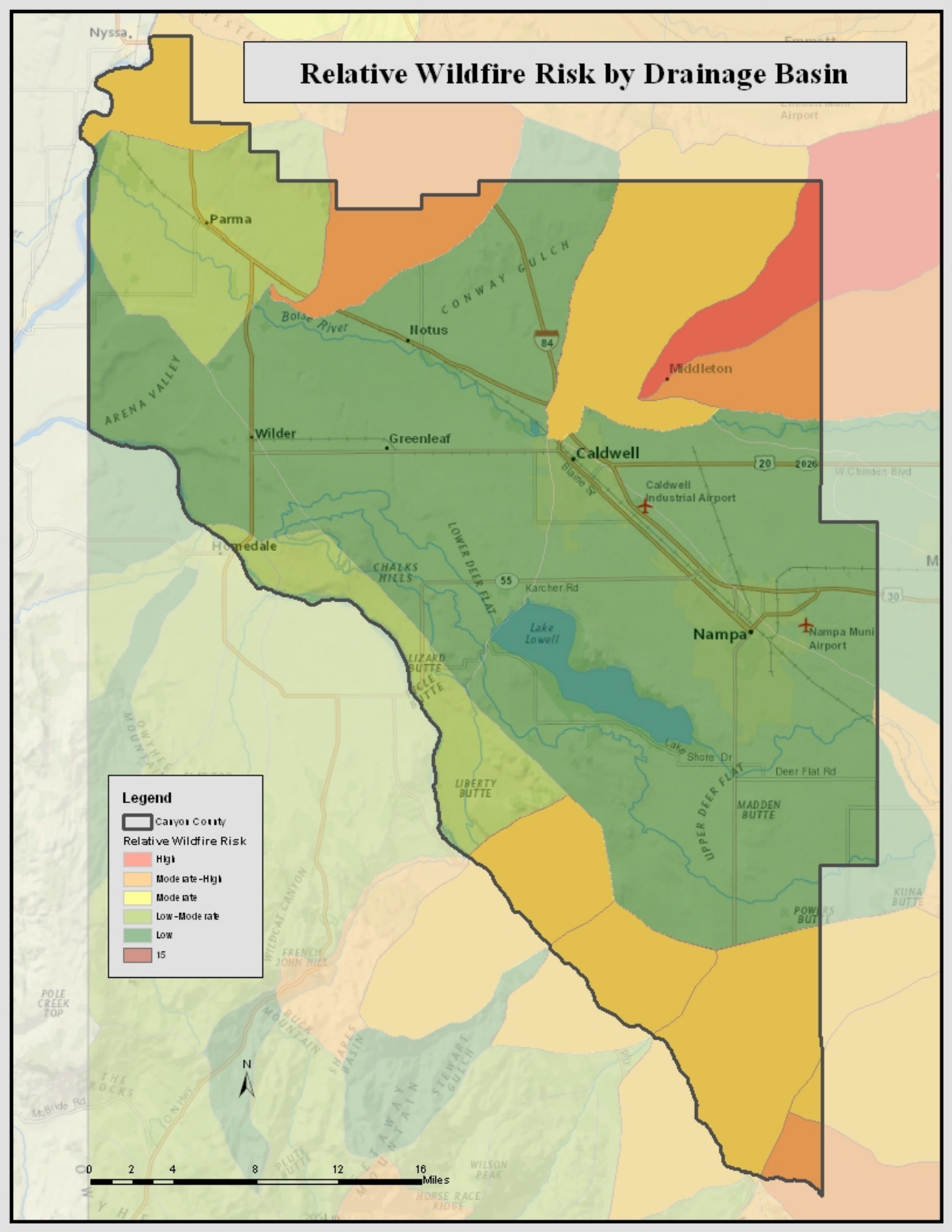


Figure 4.4.1: Relative Wildfire Risk Map

The total exposure of structures in moderate to high wildfire risk areas is 5,941 structures with an estimated value of $593,550,250. The estimated contents value in these structures is $296,775,125. It is assumed that total structural and contents loss would result if these structures were damaged by wildfire. According to the LANDFIRE Mean Fire Return analysis, the return interval for wildfire in these areas averages 85 years. Therefore, the annual estimated loss from wildfires is estimated at $10,474,416.

Because of the way that the BLM Wildfire Risk dataset is compiled, the exposure is exaggerated in this analysis. The data is aggregated by drainage basin, but in many of the basins the population density lies at one end of the basin; however, the wildfire risk is concentrated on the opposite side. Even with these discrepancies this estimate gives us a number for comparison to the other hazards in this plan. Also, note that these losses don't include the cost to respond to wildfires.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Wildfire has a magnitude score of 31.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Even with slowly developing wildfire there is usually only minutes to warn affected residents (Warning Lead Times = 8). Rather large areas in Canyon County are vulnerable to wildfire (Geography Affected = 4) but because these areas are remote, minimal deaths and/or

injuries are expected (Bodily Harm = 1). Canyon County can experience great economic loss due to wildfire (Economic Loss = 8) and Federal recovery assistance might be required (Reconstruction Assistance = 8). Some public sheltering would be required (Shelter = 2). The total Magnitude score is, therefore, thirty-one (31) which, for Canyon County, is in the "High" range. Historical records are available and reliable, indicating that wildfires occur frequently in the County, (Frequency =High).

Communicable Disease

2012 Revision Summary: This hazard was added in this update.

Description

Epidemic is defined as a disease that appears as new cases in the human population at a rate, during a given time period and location, that substantially exceeds the number expected. It is, thus, a relative term and there is no quantitative criterion for designating a health crisis as an epidemic. In addition to its application to infectious diseases, the term is sometimes used to describe outbreaks of other adverse health effects including those stemming from chemical exposure, sociological problems, and psychological disorders. A "pandemic" is a worldwide epidemic while the term "outbreak" may be applied to more geographically limited medical problems as, for instance, in a single community rather than statewide or nationwide. The term "cluster" is often used with reference to non-communicable diseases.

Health agencies closely monitor for diseases having potential to cause an epidemic, and seek to develop immunizations and eliminate vectors. While this effort has been remarkably successful, there are many diseases of concern and the HIV/AIDS pandemic is still not controlled despite more than 25 years of effort since recognition of the disease in 1981. When disease control efforts are relaxed, diseases controlled in the past can resurface and become an epidemic again (i.e. whooping cough).

Pandemic influenza versus regular influenza season

A flu pandemic has little or nothing in common with the annual flu season. A pandemic flu would be a new strain and a much more serious and contagious flu virus. Humans would have no natural resistance to a new strain of influenza. Also, there is a vaccine for seasonal flu, but there is no vaccine available at this time for a pandemic flu.

If a new, highly contagious strain of influenza began to infect humans, it would likely cause widespread illness and death within a matter of months, and could last up to two years. The Centers for Disease Control and Prevention (CDC) predict that as much as 25% to 30% of the U.S. population could be sick, hospitalized, and in many cases die as a result of severe illness.

The Southeastern Idaho District Health Department is currently working on a plan to limit the spread of a pandemic influenza and to maintain essential health care and community services if an outbreak should occur. In fact, governments all around the world are preparing for the possibility of a pandemic outbreak.

Although the Federal government is stockpiling large quantities of medical supplies and antiviral drugs, no country in the world has enough anti-virals to protect their citizens. There currently is no vaccine to protect humans against a pandemic influenza virus; however, vaccine development efforts are under way to protect humans against the current H5N1 bird flu virus.

Pandemic Flu

H5N1 "Bird Flu"

Efforts are currently underway to develop a vaccine to protect humans from the H5N1 bird flu virus. While it has so far affected few humans, there is the danger that the bird flu virus may mutate into a new form of human flu that would be easily spread person to person. Some migratory waterfowl carry the H5N1 virus with no apparent harm, but transmit the virus to susceptible domestic poultry. The highly lethal H5N1 outbreak among domestic poultry is widespread and uncontrolled, and has directly infected a small number of humans (Figure 4.4.2).

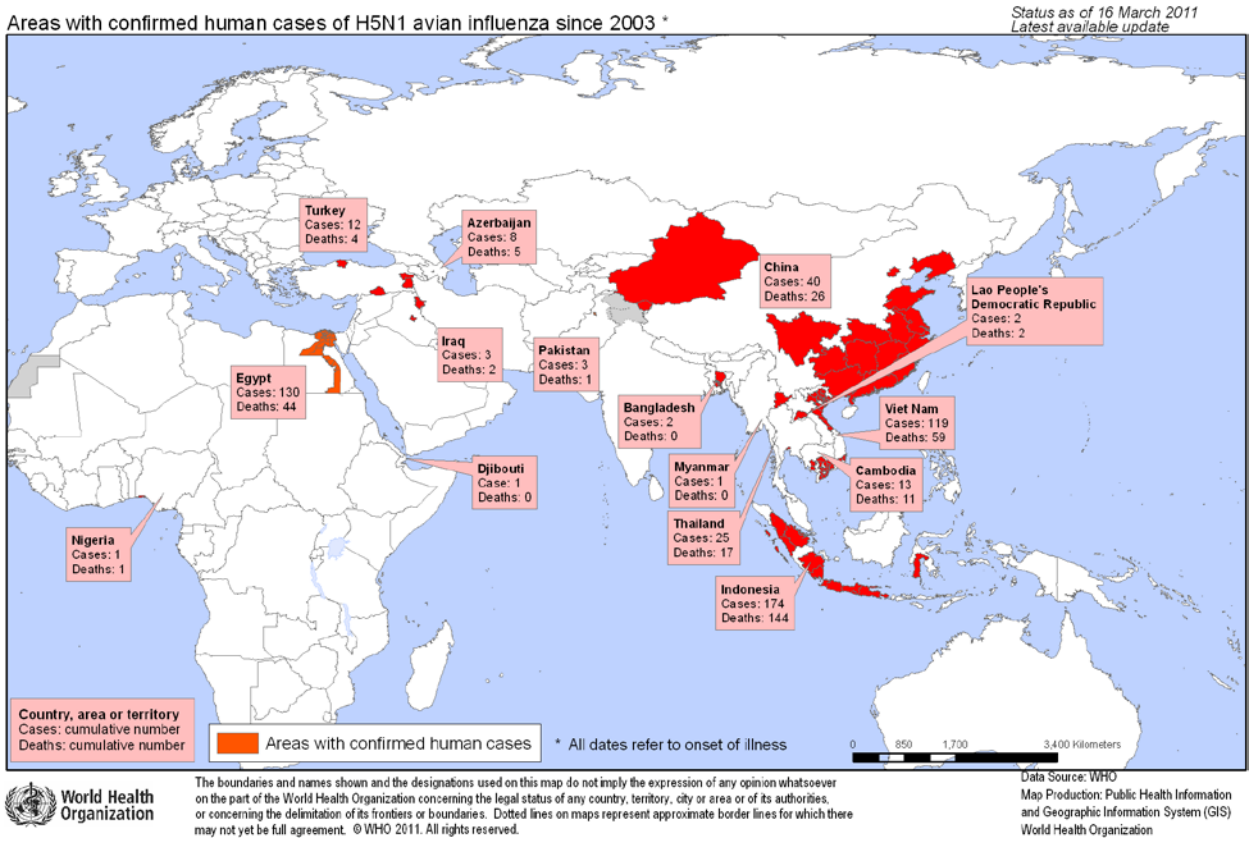


Figure 4.4.2: Reported Cases

People who have close contact with infected birds or with surfaces that have been contaminated with droppings from infected birds are at risk of becoming infected. In infected countries, poultry consumption has not been shown to be a risk factor if food is thoroughly cooked, nor are travelers in these countries at increased risk of infection provided the person does not visit live poultry markets, farms, or other environments where exposure to diseased birds may occur. More than 200 million birds in affected countries have either died from the disease, or were killed in order to try to control the outbreak.

Many Asian countries are currently dealing with bird flu outbreaks. Bird flu continues to spread geographically from its original focus in Asia. Further spread of the virus along migratory routes of wild waterfowl is anticipated. So far, there has been no sustained person-

to-person spread of the disease, but a few isolated cases of apparent human-to-human spread between family members are currently under investigation.

The reported symptoms of bird flu in humans range from typical influenza-like symptoms (e.g., fever, cough, sore throat, and muscle aches), to eye infections (conjunctivitis), pneumonia, acute respiratory distress, viral pneumonia, and other severe and life threatening complications. Diarrhea, vomiting, abdominal pain, chest pain, and bleeding from the nose and gums have also been reported as early symptoms in some cases. In many cases, health deteriorates rapidly leading to a high percentage of death in those infected.

Severe Acute Respiratory Syndrome (SARS)

Severe acute respiratory syndrome (SARS) is a viral respiratory illness caused by a corona virus, called SARS-associated corona virus (SARS-CoV). SARS was first reported in Asia in February 2003. Over the next few months, the illness spread to more than two dozen countries in North America, South America, Europe, and Asia before the SARS global outbreak of 2003 was contained.

According to the World Health Organization (WHO), a total of 8,098 people worldwide became sick with SARS during the 2003 outbreak. Of these, 774 died. In the United States, only eight people had laboratory evidence of SARS-CoV infection. All of these people had traveled to other parts of the world with SARS. SARS did not spread more widely in the community in the United States.

In general, SARS begins with a high fever (temperature greater than 100.4°F [>38.0°C]). Other symptoms may include headache, an overall feeling of discomfort, and body aches. Some people also have mild respiratory symptoms at the outset. About 10 percent to 20 percent of patients have diarrhea. After 2 to 7 days, SARS patients may develop a dry cough. Most patients develop pneumonia.

The main way that SARS seems to spread is by close person-to-person contact. The virus that causes SARS is thought to be transmitted most readily by respiratory droplets (droplet spread) produced when an infected person coughs or sneezes. Droplet spread can happen when droplets from the cough or sneeze of an infected person are propelled a short distance (generally up to 3 feet) through the air and deposited on the mucous membranes of the mouth, nose, or eyes of persons who are nearby. The virus also can spread when a person touches a surface or object contaminated with infectious droplets and then touches his or her mouth, nose, or eye(s). In addition, it is possible that the SARS virus might spread more broadly through the air (airborne spread) or by other ways that are not now known.

Historic Communicable Disease Outbreak Events

The 1918 -1920 Spanish Flu:

The first cases of Spanish Flu were reported in Canyon County (northwest of Boise) on September 30, 1918. Within three weeks, the disease was raging all across the State. The numbers of deaths in the State and in Canyon County are unknown but it is estimated that 675,000 Americans died during the epidemic and that 20 to 40 million died worldwide.

Asian Flu 1957 -1958:

First identified in China, this virus caused roughly 70,000 deaths in the United States during the 1957-58 seasons. Because this strain has not circulated in humans since 1968, no one under 30 years old has immunity to this strain.

Hong Kong Flu 1968-1969:

First detected in Hong Kong in early 1968 and spread to the United States later that year. The Hong Kong Flu killed about 34,000 people in the United States and one million people worldwide.

Swine Flu – 2009

Novel influenza A (H1N1) is a new flu virus of swine origin that was first detected in April, 2009. The virus is infecting people and is spreading from person-to-person, sparking a growing outbreak of illness in the United States. An increasing number of cases are being reported internationally as well.

It's thought that novel influenza A (H1N1) flu spreads in the same way that regular seasonal influenza viruses spread; mainly through the coughs and sneezes of people who are sick with the virus.

It's uncertain at this time how severe this novel H1N1 outbreak will be in terms of illness and death compared with other influenza viruses. Because this is a new virus, most people will not have immunity to it, and illness may be more severe and widespread as a result. In addition, currently there is no vaccine to protect against this novel H1N1 virus. The 2009 totals for cases and deaths in Idaho are as follows:

- Official Cases: 166
- Unofficial Cases: 1165
- Deaths: 22

The death rate per infection of confirmed cases for the United States was 9.39%. The death rate of confirmed cases in Idaho was 7.5%.

Impacts

The following are potential impacts from a worldwide pandemic event. The impacts in Canyon County would be similar on a local level.

- Rapid Spread
- Health Care Systems Overloaded
- Medical Supplies Inadequate
- Economic and Social Disruption

Loss Estimates

Historically, epidemics have claimed far more lives than any other type of disaster. While modern epidemiology and medical advances make the decimation of populations much less likely, new forms of disease continue to appear. The potential, therefore, exists for epidemics to cause widespread loss of life and disability, overwhelm medical resources, and have tremendous economic impacts

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Communicable Disease has a magnitude score of 19.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Pandemic and epidemics develop relatively slowly, usually providing at least weeks of warning (Warning Lead Times = 2). When pandemic/epidemic does occur, wide geographical areas are affected (Geography Affected = 8) and deaths and injuries are likely to occur (Bodily Harm = 4). Business interruption and some economic loss are likely (Economic Loss = 2) but recovery is left to individuals and families (Reconstruction Assistance = 1). Some public relocation of individuals to protect them from the virus may be required (Shelter = 2).The total Magnitude score is, therefore, nineteen (19) which, for Canyon County, is in the "Medium" range. Historical records for pandemic/epidemic are available and reliable, indicating that such events are rare (Frequency = Low).

West Nile Virus

2012 Revision Summary: This hazard was added in this update.

Description

West Nile Virus (WNV) is transmitted to people, birds and other animals by the bite of an infected mosquito. This virus can cause serious illness in people of any age, but especially in people over the age of 50 or those with other underlying medical conditions. The best form of protection is by avoiding mosquito bites, and second is having mosquito abatement programs to decrease the number of infectious mosquitoes.

West Nile Virus infections occur in the summer and fall in Idaho, when mosquitoes are active. WNV does not occur in northern states when it is too cool for mosquitoes to survive. In southern states, with warmer climates and mosquitoes present year-round, the risk of infection may still be present in the winter months.

Historic Frequencies

Locally-acquired mosquito-borne human infections were first recorded in Idaho in 2004. In 2006, Idaho led the nation in reports of human illness associated with WNV with 996 cases being reported to the State Health Department. In addition to infected people, WNV was also detected in 338 horses, 127 birds, and numerous mosquitoes. Table 4.4.4 details the reported number of West Nile cases in Canyon County 2004-2011.

Date	Human	Horse/other mammal	Bird	Mosquitoes
2004	0	4	1	Positive
2005	2	17	3	Positive
2006	182	49	14	Positive
2007	26	1	1	Positive
2008	2	0	0	Positive
2009	9	3	0	Positive
2010	1	0	0	Negative
2011	0	0	0	Negative

Table 4.4.2: Reported Cases of WNV in Canyon County
Source:http://healthandwelfare.idaho.gov/Portals/0/Health/Epi/WNV/WNV%20case%20counts%20-%20maps for%20archiving.pdf

Impacts

West Nile fever may include a fever, headache, body aches, rash, and swollen glands. The symptoms of West Nile fever may last for days, or linger for weeks to months. Serious illness infecting the brain or spinal cord can occur in some individuals, and although anyone can experience the more severe form of the disease, it tends to occur in people over the age of 50 or those with other underlying medical conditions or weakened immune systems. The severe symptoms may include high fever, headache, neck stiffness, stupor, disorientation, coma,

tremors, convulsions, muscle weakness, vision loss, numbness, and paralysis. These symptoms may last several weeks or more, and neurological effects may be permanent. Usually, symptoms occur from 5 to 15 days after the bite of an infected mosquito. There is no specific treatment for infection, but hospitalization and treatment of symptoms may improve the chances of recovery for severe infections. There is no vaccine available for humans.

Loss Estimates

Losses brought about by the effects of West Nile Virus are centered on loss of income for those affected by the virus, as well as a loss of productivity by businesses. Death has occurred in Idaho from the West Nile Virus both in humans and animals.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

West Nile Virus has a magnitude score of 10.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Outbreaks of West Nile Virus, like other epidemics, develop relatively slowly, usually providing months of warning (Warning Lead Times = 1). When an outbreak does occur, wide geographical areas can be affected but may be much more isolated based on localized mosquito populations (Geography Affected = 2). Major medical care is required with the potential for death. (Bodily Harm = 4). Little or no economic loss is likely (Economic Loss = 1) and recovery is left to individuals and families (Reconstruction Assistance = 1). Public Sheltering would not be required (Shelter = 1). The

total Magnitude score is, therefore, ten (10) which, for Canyon County, is in the "Low" range. Historical records are available and reliable, indicating that instances of West Nile Virus have occurred in the past five years (Frequency = High).

Burrowing Rodents - Pocket Gophers

2012 Revision Summary: This hazard was added in this update.

Description

Pocket Gophers are burrowing rodents of the Geomyidae family. They are "true" gophers, though several ground squirrels of the Sciuridae family are often called gophers as well. The name "pocket Gopher" on its own may be used to refer to any number of subspecies of the family.

Pocket Gophers are heavily built and most are 4.5 to 12 inches long and weighing nearly 1 pound. Within the species males are larger than females and can be nearly double their weight. Their most characteristic features are their large cheek pouches, from which the word "pocket" in their name derives. These pouches are fur-lined and can be turned inside out. They extend from the side of the mouth well back onto the shoulders. They have small eyes and a short, hairy tail, which they use to feel around tunnels when they walk backwards.

All pocket gophers are burrowers. They are larder hoarders, and their cheek pouches are used for transporting food back to their burrows. Their presence is unambiguously announced by the appearance of mounds of fresh dirt about 8 inches in diameter. They like moist soil.

Pocket gophers are considered an agricultural pest. They have been known to destroy crops as well as cause the collapse of irrigation canal banks.

Canyon County Weed & Pest Control Offering Owl House Installation

The Canyon County Weed and Gopher Control department is offering to help residents manage pocket gophers and other rodents by installing Barn Owl houses on their property. Barn Owls offer an effective form of natural pest control that often provides better results than conventional trapping or poisons. The use of Barn Owls for pest control is also eco-friendly, and requires little to no maintenance.

Gophers blamed in fatal sinkhole accident that killed Melba woman

By PATRICK ORR — porr@idahostatesman.com

Sonia Lopez, 32, apparently didn't see the 3-foot-deep sinkhole that wiped out a large section of Butte Road and didn't slow her car before it fell into the hole around 4 a.m. Saturday, Canyon County sheriff's officials said. The woman and her vehicle were discovered about an hour later; a short time after that, she was pronounced dead at the scene. The hole, which has since been filled, was 15 feet wide and 40 feet long. Officials say the road apparently was undermined when gopher holes funneled water under it

http://www.idahostatesman.com/2012/07/20/2195499/gophers-blamed-in-fatal-accident.html#storylink=cpy

Historic Frequencies

Historically, in Canyon County, Pocket Gophers have destroyed canal banks and caused major flooding.

On April 21, 2011 the Phyllis Canal broke and, "the Pioneer Irrigation District says gophers may have led to the canal break that send mud and water into a Caldwell neighborhood." It affected the Manchester subdivision[55].

[55] http://www.ktvb.com/news/Canal-break-causing-flooding-in-Caldwell-119691769.html

In June 2010 the Deer Flat Lowline Canal broke near Marsing and flooded 6 homes. It was reported that the canal failure was caused by rodent burrowing[56].

Impacts

Impacts from pocket gophers include:

- Lawn & Garden Damage
- Chewed & Damaged Underground Wiring
- Chewed & Damaged Irrigation Lines
- Landscape Erosion
- Ditch Banks & Earthen Dams Compromised and Leaking
- Potential Injury to Livestock
- Crop Damage

Loss Estimates

Losses associated with Pocket Gophers are tied to canal failure and agricultural crop losses.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

[56] http://www.ktvb.com/news/Canal-break-causing-flooding-in-Caldwell-119691769.html

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Burrowing Rodents has a magnitude score of 13.

Magnitude/Frequency Scoring Rationale

Burrowing Rodent's, such as Pocket Gophers, populations have increased significantly in Canyon County causing significant damage to canals, drainage systems, and private property. The outbreak and damage warning is usually a matter of days. (Warning Lead Times = 2). When an outbreak does occur, wide geographical areas can be affected, but may be much more isolated based on localized populations (Geography Affected = 2). There was a death due to the damage incurred in 2012. (Bodily Harm = 2). Significant economic loss to crops is likely (Economic Loss = 4) and recovery is left to irrigation and highway districts (Reconstruction Assistance = 2). Public Sheltering would not be required (Shelter = 1). The total Magnitude score is, therefore, thirteen (13) which, for Canyon County, is in the "Low" range. Historical records are available and reliable, indicating that outbreaks of pockets gophers have occurred in the past five years (Frequency = High).

Section 4.5: Technological (Manmade) Hazards

Structural Fire

2012 Revision Summary: This hazard was added in this update.

Description

Structural fires produce high heat, toxic gases, and particulate material as smoke and soot. The heat produced or burning debris can, in turn, cause additional fires. Toxic gases and smoke are extreme hazards in the interior of burning structures and may also be a threat downwind of the structure. Where the building contents include toxic materials, the downwind threat can extend a mile or more. Burning structures may collapse, injuring persons inside or nearby, and floors or roofs may give way beneath those walking on them. Burning structures present electrical, explosion and flashover hazards, and partially burned structures may, themselves, be physical hazards even after the fire is extinguished.

Historic Frequencies

Structure fires are extremely common in Canyon County as they are across the nation. The following charts illustrate the number of structural fires by year in Canyon County and their associated dollar loss, injuries, and fatalities.

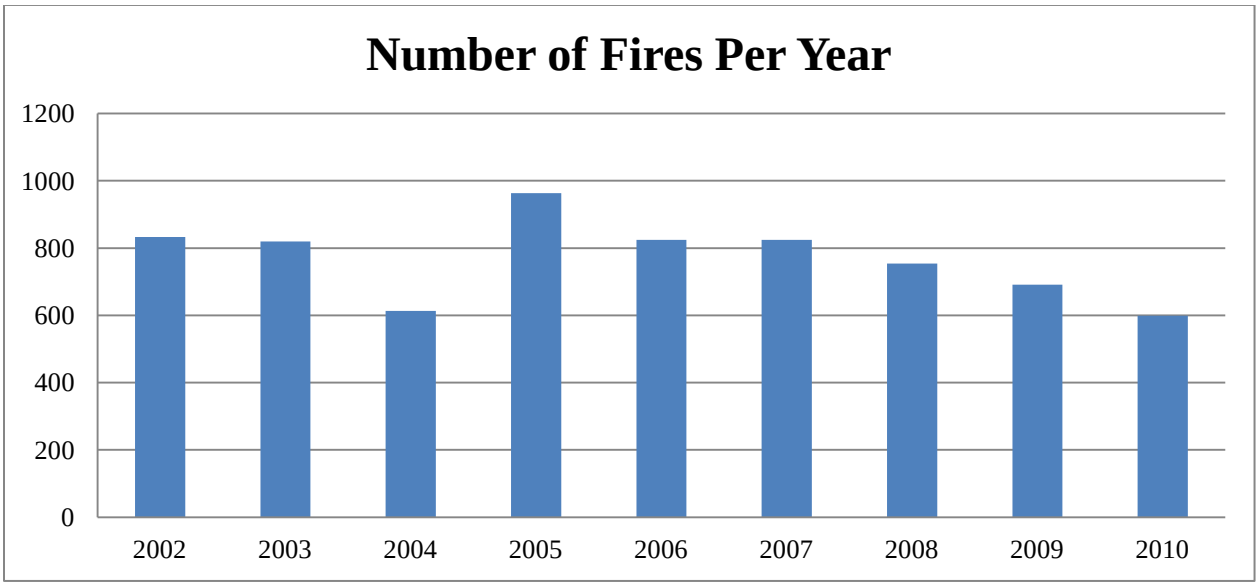


Figure 4.5.1: Canyon County Fires per Year

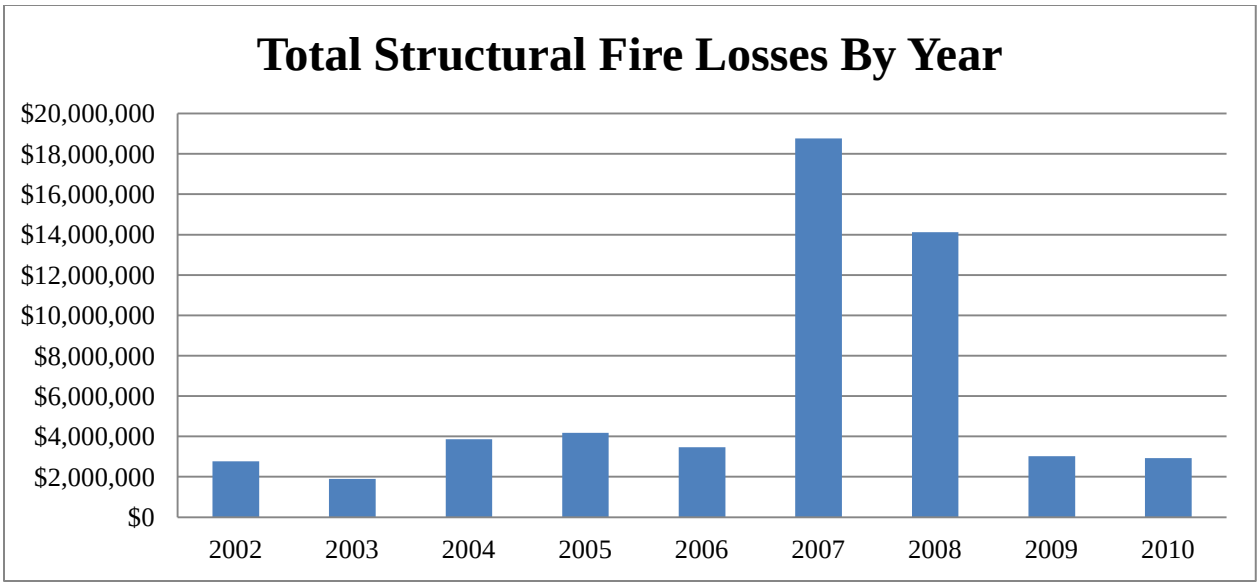


Figure 4.5.2 Canyon County Fire Structural Loss

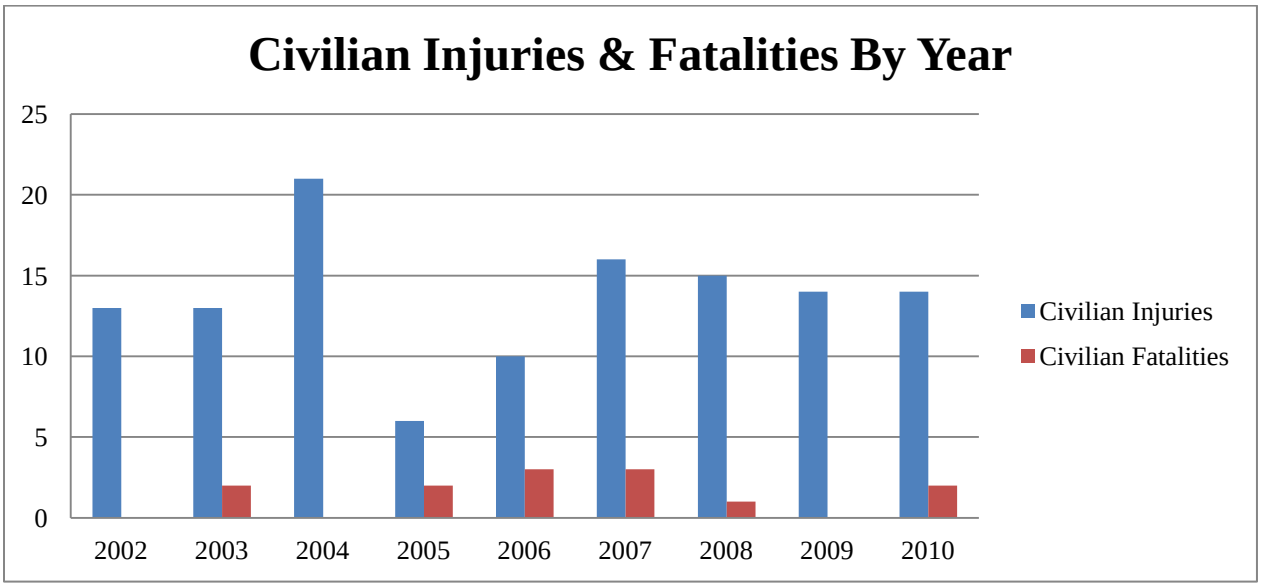


Figure 4.5.3: Canyon County Injuries & Fatalities from Fire

Structural Fires occur yearly in Canyon County.

Impacts

Indirect dollar losses, as is often the case, may be much larger than direct losses. Costs also include those for development and enforcement of fire codes and maintaining fire response capabilities. Firefighters are, additionally, at risk from such hazards as physical exhaustion and cardiac stresses, heat exhaustion or heat stroke, acute and chronic health effects from toxic exposures, hearing damage, and injuries from many sources.

Loss Estimates

Losses from structural fire include property as well as injuries and death. Over the 9 year period of this analysis there was a total structural dollar loss of more than $55 million. The average loss per year is $6.1 million. Over the same period there were 314 injuries (civilian and fire service) and 13 fatalities (all civilian), averaging 34.9 injuries and 1.4 fatalities per year.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Structural Fire has a magnitude score of 20.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Structural fires develop rapidly with little or no warning (Warning Lead Times = 8). Structural fire almost invariable affects only one or a very few structures (Geography Affected = 1) but fatalities and injuries do occur (Bodily Harm = 4). Some economic loss occurs (Economic Loss = 4), but recovery is left to individuals and families (Reconstruction Assistance = 1). Sheltering of the residents may be required (Shelter = 2). The total Magnitude score is, therefore, twenty (20) which, for Canyon County, is in the "High" range. Historical records for Canyon County are available and reliable, indicating that structural fires are occur frequently (Frequency = High).

Hazardous Material Event

2012 Revision Summary: This hazard was added in this update.

Description

Substances that, because of their chemical or physical characteristics, are hazardous to humans and living organisms, property, and the environment are regulated by the U.S. Environmental Protection Agency (EPA) and, when transported in commerce, by the U.S. Department of Transportation (DOT). EPA regulations address "hazardous substances" and "extremely hazardous substances".

EPA chooses to specifically list hazardous substances and extremely hazardous substances rather than providing objective definitions. Hazardous substances, as listed, are generally materials that, if released into the environment, tend to persist for long periods of time and pose long-term health hazards for living organisms. They are primarily chronic, rather than acute health hazards. Regulations require that spills of these materials into the environment in amounts at or above their individual "reportable quantities" must be reported to the EPA. Extremely hazardous substances, on the other hand, while also generally toxic materials, are acute health hazards that, when released, are immediately dangerous to the life of humans and animals, as well as cause serious damage to the environment. There are currently 355 specifically listed extremely hazardous substances listed along with their individual "threshold planning quantities" (TPQ). When facilities have these materials in quantities at or above the TPQ, they must submit "Tier II" information to appropriate state and/or local agencies to facilitate emergency planning.

The Department of Transportation (DOT) regulations provide the following definition for the term "hazardous material":

> *Hazardous material* means a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated it as hazardous under section 5103 of Federal Hazardous Materials Transportation Law (49 U.S.C. 5103). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in part 173 of subchapter C of this chapter.

When a substance meets the DOT definition of a hazardous material, it must be transported under safety regulations providing for appropriate packaging, communication of hazards, and proper shipping controls.

In addition to Environmental Protection Agency (EPA) and DOT regulations, the National Fire Protection Association (NFPA) develops codes and standards for the safe storage and use of hazardous materials. These codes and standards are generally adopted locally and include the use of the NFPA 704 standard for communication of chemical hazards in terms of health, fire, instability (previously called "reactivity"), and other special hazards (such as water reactivity and oxidizer characteristics).

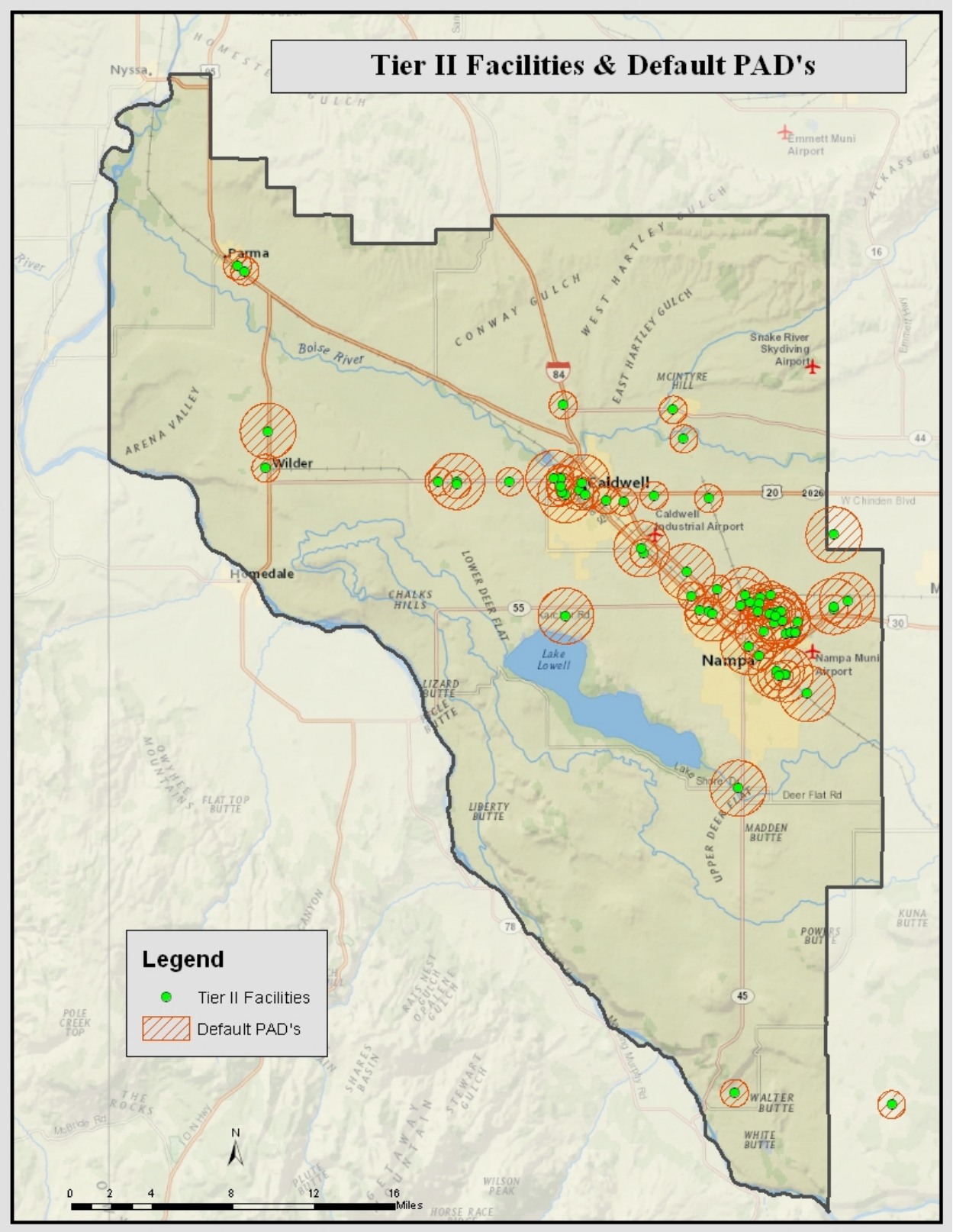


Figure 4.5.4: Canyon County Hazardous Materials Facility PADs

Diamond-shaped NFPA 704 signs ranking the health, fire and instability hazards on a numerical scale from zero (least) to four (greatest) along with any special hazards, are usually required to be posted on chemical storage buildings, tanks, and other facilities. Similar NFPA 704 labels may also be required on individual containers stored and/or used inside facilities.
While somewhat differently defined by the above organizations, the term "hazardous material" may be generally understood to encompass substances that have the capability to harm humans and other living organisms, property, and/or the environment. There is also no universally accepted, objective definition of the term "hazardous material event." A useful working definition, however, might be framed as: Any actual or threatened uncontrolled release of a hazardous material, its hazardous reaction products, or the energy released by its reactions that poses a significant risk to human life and health, property, and/or the environment.

Facility Name	Street Address	Chemicals	PAD (ft)
Airgas Intermountain, Inc.	5318 Cleveland Blvd.	OXYGEN	2,640
Americold	231 4th Avenue North	ANHYDROUS AMMONIA	5,280
Amerigas Propane L.P.	324 2nd Street South	LIQUIFIED PETROLEUM	5,280
Amerigas Propane, L.P.	5635 Industrial Road	LIQUIFIED PETROLEUM	5,280
BHS Marketing LLC / Nampa	1717 E. Fargo	SULFUR DIOXIDE, HYDROCHLORIC ACID	5,280
BOC/Linde, LLC	114 Pfe Drive	CARBON DIOXIDE	2,640
Boise Packaging	1808 E. Chisholm Drive	CAUSTIC SODA SOLUTION (50%)	2,640
Boise Project Board of Control	17802 Lowell Road	PROPANE AND PROPYLENE	5,280
CALDWELL ADMINISTRATIVE (330032)	3110 COMMERCIAL WAY	GASOLINE	2,640
CALDWELL CO	701 CLEVELAND BLVD	SULFURIC ACID, DIESEL	2,640
Cintas Corporation	2302 E Railroad St.	SULFURIC ACID, 66 BE 93.2%	2,640
Clements - Caldwell	211 N. Kit Ave.	CEMENT	2,640
Costco Wholesale (734)	16700 N. Marketplace Blvd.	SULFURIC ACID	2,640
Crop Production Services - 232	10257 Hwy 20-26	PARAQUAT DICHLORIDE , SULFURIC ACID	2,640
Crop Production Services 202	1010 Grove Avenue	CHLOROPICRIN, DIMETHOATE, PARAQUAT DICHLORIDE, CHLOROPYRIFOS, METHYL PARATHION, METAM-SODIUM, SULFUR, 1,3-DICHLOROPRENE, ALDICARB, OXAMYL,	2,640
Crop Production Services 7007	4914 Hwy 20/26	PARAQUAT DICHLORIDE, FURADAN 4F, 2,4-D AMINE SALT, ETHOPROP, PEROXUACETIC ACID/HYDROGEN DIOXIDE, METHYL PARATHION, SULFUR, ENDOSULFAN, OXAMYL,	2,640

Facility Name	Street Address	Chemicals	PAD (ft)
		CHLORPYRIFOS	
CTI-SSI Foods, LLC	22303 Hwy. 95 North	ANHYDROUS AMMONIA	5,280
DARIGOLD	520 ALBANY	AHHHYDROUS AMMONIA, LIQUID PETROLEUM GAS	5,280
Eagle Precast Company - Caldwell	20059 Simplot Blvd Blvd	DIESEL FUEL #2	2,640
Ferrell Gas LP	2508 E. Railroad	LIQUEFIED PETROLEUM GAS	5,280
Hart & Cooley, Inc. - Nampa	1820 E. Fargo Avenue	SULFURIC ACID (BATTERY ELECTROLYTE)	2,640
IdaCold LLC	6198 Treasure Valley Way	AMMONIA (ANHYDROUS)	5,280
Idaho Asphalt Supply Inc.	800 North Sugar Street	HYDROCHLORIC ACID, ASPHALT CEMENT	2,640
IGC LNG PLANT	Can-Ada Rd.	METHANE, REFRIGERATED LIQUID	5,280
Industrial Ventilation, Inc.	723 E. Karcher Road	ACETIC ACID, HYDROGEN PEROXIDE	2,640
J.R. Simplot Company	3704 N. Middleton Road	AMMONIA (ANHYDROUS)	5,280
JR Simplot Co. Food Group, Caldwell	HWY 19, 2 Miles West of City	AMMONIA (ANHYDROUS), PROPANE	5,280
Level 3 Communications - Caldwell - CLWLIDBW - 2C	15589 Mink Road	SULFURIC ACID	2,640
Lowe's of Nampa, ID. (Store #1785)	1400 Nampa-Caldwell Blvd.	DIESEL FUEL	2,640
Maverik Country Stores # 430	4923 Cleveland Blvd	GASOLINE	5,280
Micron Technology, Inc.	1401 N Kings Road	SULFURIC ACID, CHLORINE, NITROGEN, SODIUM HYDROXIDE, TETRAMETHYLAMMONIUM HYDROXIDE, DIESEL FUEL	2,640
Micron Technology, Inc.	906 East Karcher Road	LEAD ACID BATTERIES, SULFURIC ACID, DIESEL FUEL	2,640
MIDDLETON COMMUNITY DIAL OFFICE (330190)	MAIN & HAWTHORNE	SULFURIC ACID	2,640
MTM Resources2LLC dba Idaho Specialty Storage & Distribution	1336 N. 20th St.	SULFUR DIOXIDE, LIQUEFIED	5,280
NAMPA CENTRAL OFFICE (330230)	111 11TH AVE SOUTH	DIESEL, SULFURIC ACID	2,640
Norco, Inc.	16205 Norco Way	OXYGEN, NITROGEN, ARGON	2,640
Norco, Inc.	2324 Caldwell Blvd.	OXYGEN	2,640
oxarc, inc	1901 bingham drive	AMMONIA, SULFUR DIOXIDE	5,280
Pacific Steel	1900 N. 20th	OXYGEN	2,640

Facility Name	Street Address	Chemicals	PAD (ft)
Pepsi Bottling Ventures of Idaho	8925 Birch Lane	AMMONIA ANHYDROUS	5,280
PerforMix Nutrition Systems - Nampa facility	2205 N. 20th Street	AMMONIA, ANHYDROUS	5,280
Pioneer Hi-Bred International, Inc.	9178 Lakeshore Drive	ACETYLENE, PROPANE	5,280
Plexus Manufacturing Solutions	16399 N. Franklin Blvd.	NITROGEN, REFRIGERATED LIQUID (CRYOGENIC LIQUID)	2,640
Rhodes International Inc.	14702 Karcher Rd.	AMMONIA (ANHYDROUS) (LIQUEFIED)	5,280
Rule Steel Tanks	11299 Bass Lane	OXYGEN	2,640
Samªs Club #4940 - Closed	5725 East Franklin Road	BATTERY ELECTROLYTE 35% SULFURIC ACID SOLUTION	2,640
Silicon Mountain Contract Service	1400 Shilo Dr	LIQUID NITROGEN	2,640
Simplot Grower Solutions	2005 E. Chicago	ALDICARB, AZINPHOS-METHYL, DIMETHOATE, S-(2-(ETHYLSULFINYL)ETHYL)O,O-DIMETHYL PHOSPHOROTHIOATE, ENDOSULFAN, ETHOPROPHOS, OXAMYL, PARAQUAT, PARATHION METHYL, STRYCHNINE, TERBUFOS, ETHOPROPHOS, ZINC PHOSPHIDE, DIAZINON AG 500, MALATHON, 2,6-DICHLOROBENZONI	2,640
Simplot Grower Solutions	17505 Simplot Blvd	CARBOFURAN, PARQUAT, DIMETHYL PHOSPHOROCHLORIDOTHIOATE	2,640
Simplot Grower Solutions	535 Peckham Rd	PARQUAT, DIMETHYL PHOSPHOROCHLORIDOTHIOATE, DICHLOROPROPENE	2,640
Simplot Transportation-Caldwell	323 LaFond St.	DIESEL FUEL #2	2,640
Sorrento Lactalis	4912 E. Franklin Road	AMMONIA, ANHYDROUS	5,280
Ste. Chapelle Winery	19348 Lowell Rd	CARBON DIOXIDE, NITROGEN	2,640
SUBURBAN PROPANE	100 22ND STREET	PROPANE	5,280
Teton Sales Company	518 Kit Avenue	ACETONE	2,640
The Amalgmated Sugar Company, LLC	138 W. Karcher Road	ACETYLENE, PROPANE, HYRDROGEN CHLORIDE	5,280
THE HOME DEPOT STORE #8941	2003 N CASSIA ST	SULFURIC ACID	2,640
Transform Manufacturing, LLC	900 E Karcher Road	NITROGEN, SULFURIC ACID	2,640
U.S. AutoForce - Nampa, ID	1906 Madison Avenue	SULFURIC ACID	2,640
UNIVAR USA INC	1804 NORTH 20TH STREET	BUFFERED OXIDE ETCHANT 100:1 KMG ELEC	5,280
V-1 Propane - 20415 Pinto Rd	20415 Pinto Rd.	PROPANE	5,280
V-1 Propane - 824 W. Simplot Blvd.	824 W. Simplot Blvd.	PROPANE	5,280
Valley Wide Coop Inc.	2616 2nd St	DIESEL FUEL, GASOLINE	

Facility Name	Street Address	Chemicals	PAD (ft)
Nampa Bulk plant			2,640
Valley Wide Coop Inc. Parma C-Store	28028 Highway 20/26	DIESEL FUEL, GASOLINE	2,640
West Valley Medical Center	1717 Arlington Ave	DIESEL FUEL OIL, LIQUID OXYGEN	2,640
Western Stockmen's	223 Rodeo Ave	ZINC DUST	2,640
WILBUR-ELLIS COMPANY - CALDWELL, ID	20471 PINTO LANE	DICHLORVOS, DIMETHOATE, ENDOSULFAN, OXAMYL LIQUID, PARAQUAT DICHLORIDE, STRYCHNINE, ZINC PHOSPHIDE, AZINPHOS-METHYL, 2,4-D AMINE , LIQUID, CAPTAN LIQUID, DICHLOROPROPENE, ISOPROPYL ALCOHOL, TRICHLOROPROPENE, XYLENE, CARBARYL	2,640
XL Four Star Beef Inc.	3611 E. Amity Ave.	ANHYDROUS AMMONIA	5,280

Table 4.5.1: Tier II Facilities

Historic Frequencies

The following table details the reported hazardous materials incidents that have occurred in Canyon County for the years 2006 – 2011, a five year period.

Incident #	Date	Substance/Product Identification	Level
H-2006-00009	01/17/2006	Anhydrous Ammonia	Level I- No Conference Call
H-2006-00020	02/02/2006	Explosive Material	Level II
H-2006-00025	02/10/2006	Explosive Material	Level II
H-2006-00036	02/24/2006	Anhydrous Ammonia	Level I- No Conference Call
H-2006-00048	03/06/2006	Gasoline	Level I
H-2006-00080	04/11/2006	Diesel	Level I- No Conference Call
H-2006-00083	04/11/2006	Gasoline and Antifreeze	Level I
H-2006-00106	05/06/2006	Non PCB - mineral oil	Level I- No Conference Call
H-2006-00110	05/08/2006	Liquid Ammonia	Level II
H-2006-00116	05/12/2006	Hydrochloric Acid 35%	Level I- No Conference Call
H-2006-00123	05/18/2006	Sodium Hydroxide	Level I- No Conference Call
H-2006-00142	06/07/2006	Explosive Material	Level II
H-2006-00162	06/26/2006	Anhydrous Ammonia	Regulatory
H-2006-00226	08/18/2006	Mineral Oil	Level II
H-2006-00242	08/29/2006	Explosive Material	Level I
H-2006-00271	09/28/2006	Anhydrous Ammonia	Regulatory
H-2006-00279	10/10/2006	Unknown	Level II
H-2006-00288	10/22/2006	Diesel	Level I
H-2006-00296	11/01/2006	Anhydrous Ammonia	Level I- No Conference Call

Incident #	Date	Substance/Product Identification	Level
H-2006-00298	11/07/2006	Sodium Hydroxide	Level I- No Conference Call
H-2006-00301	11/09/2006	Ether, Uranal Acitate	Level II
H-2006-00307	11/17/2006	Herbicides and Pesticides	Level II
H-2006-00312	11/27/2006	Ammonia	Level I- No Conference Call
H-2006-00327	12/07/2006	K061 Electric ARC Furnace Dust	Level I- No Conference Call
H-2006-00340	12/18/2006	Diesel	Level I- No Conference Call
H-2006-00342	12/25/2006	Unknown	Level II
H-2007-00032	02/12/2007	Recycled oil	Regulatory
H-2007-00053	03/12/2007	Sodium Hydroxide Solution	Level I
H-2007-00077	03/30/2007	Green Liquid coming up in the parklot	Level I
H-2007-00085	04/11/2007	Potassium Hydroxide	Level I- No Conference Call
H-2007-00102	04/24/2007	Ammonia	Level I- No Conference Call
H-2007-00105	04/28/2007	Warhawk Pesticide	Level I
H-2007-00108	05/02/2007	Diesel	Level I
H-2007-00118	05/14/2007	Sodium Hydroxide	Regulatory
H-2007-00132	05/30/2007	Ammonia	Level I- No Conference Call
H-2007-00152	06/09/2007	Diesel	Level I- No Conference Call
H-2007-00154	06/11/2007	Nitric Acid	Regulatory
H-2007-00183	07/10/2007	Oil	Level I
H-2007-00184	07/10/2007	Oil	Level I- No Conference Call
H-2007-00191	07/16/2007	Allumin Phosphide	Level I
H-2007-00239	08/30/2007	Hydraulic Fluid	Regulatory
H-2007-00260	09/21/2007	Mercury	Regulatory
H-2007-00263	09/26/2007	Old Pineapple Granade, improvised into a real granade	Level II
H-2007-00281	10/17/2007	Sodium Hydroxide	Regulatory
H-2007-00304	11/06/2007	Plastics	Level I
H-2007-00311	11/13/2007	Diesel	Level I- No Conference Call
H-2007-00337	12/27/2007	Anhydrous Ammonia	Level I- No Conference Call
H-2008-00024	01/30/2008	Unknown	Level II
H-2008-00071	03/13/2008	Diesel	Level I
H-2008-00073	03/19/2008	Non-PCB Mineral Oil	Regulatory
H-2008-00087	04/09/2008	Explosive Material	Level II
H-2008-00108	04/30/2008	Diesel	Regulatory

Incident #	Date	Substance/Product Identification	Level
H-2008-00113	05/06/2008	1,1,2-Trichloro-1,2,2-trifluoroethane	Level II
H-2008-00135	05/19/2008	Oil	Level I
H-2008-00140	05/25/2008	Farm Chemicals	Level I
H-2008-00160	06/12/2008	Zinc fertilizer	Level I
H-2008-00176	06/27/2008	Anhydrous Ammonia	Regulatory
H-2008-00207	07/28/2008	Sodium Hydroxide (LYE)	Regulatory
H-2008-00209	07/29/2008	Cobalt, insecticide, fertilizer, fuel	Level II
H-2008-00219	08/09/2008	Antifreeze	Level II
H-2008-00225	08/14/2008	Suspected Biohazard	Level II
H-2008-00243	08/25/2008	Diesel	Regulatory
H-2008-00300	10/21/2008	Sodium Hydroxide	Regulatory
H-2008-00311	11/02/2008	Gasoline	Regulatory
H-2008-00319	11/12/2008	Motor Oil	Level II
H-2008-00330	11/25/2008	Sodium Hydroxide	Regulatory
H-2008-00334	12/05/2008	Unknown	Regulatory
H-2008-00342	12/15/2008	Oil,Mineral/Non-PCB	Regulatory
H-2008-00347	12/26/2008	Diesel and motor oil	Level I
H-2009-00002	01/03/2009	Ammonia	Regulatory
H-2009-00013	01/16/2009	Ammonia and Hydrogen Sulfide	Regulatory
H-2009-00031	02/11/2009	Oil,Mineral/Non-PCB	Regulatory
H-2009-00032	02/11/2009	Diesel	Regulatory
H-2009-00035	02/19/2009	Mercury	Level II
H-2009-00051	03/02/2009	Suspected BioHazard	Level II
H-2009-00060	03/14/2009	Gasoline, Oil	Regulatory
H-2009-00072	03/26/2009	Oil	Regulatory
H-2009-00083	04/07/2009	Fertilizer	Regulatory
H-2009-00093	04/18/2009	Oil	Regulatory
H-2009-00097	04/20/2009	Unknown	Level II
H-2009-00096	04/20/2009	Oil, Mineral/Non-PCB	Regulatory
H-2009-00099	04/22/2009	Sodium Hydroxide 50%	Regulatory
H-2009-00102	04/28/2009	Highway Transfer Oil	Regulatory
H-2009-00105	04/29/2009	Anhydrous Ammonia	Regulatory
H-2009-00110	05/05/2009	Anhydrous Ammonia	Regulatory
H-2009-00148	06/24/2009	Mercury	Level II

Incident #	Date	Substance/Product Identification	Level
H-2009-00184	07/28/2009	Non PCB Mineral Oil	Regulatory
H-2009-00222	09/05/2009	Unknown	Level I
H-2009-00233	09/17/2009	Mercury	Level I
H-2009-00240	09/21/2009	Hydraulic Fluid	Regulatory
H-2009-00245	09/29/2009	Drug Lab Assist	Level I
H-2009-00256	10/14/2009	Explosive Material	Level III
H-2009-00266	10/26/2009	Anhydrous Ammonia	Regulatory
H-2009-00272	11/11/2009	Diesel	Level I
H-2009-00281	11/23/2009	Mercury	Level II
H-2009-00282	11/24/2009	Diesel	Regulatory
H-2010-00023	02/01/2010	Anhydrous Ammonia	Level I
H-2010-00027	02/08/2010	Diesel	Regulatory
H-2010-00049	03/17/2010	Anhydrous Ammonia	Regulatory
H-2010-00054	03/21/2010	Diesel	Regulatory
H-2010-00074	04/14/2010	Gasoline	Regulatory
H-2010-00075	04/15/2010	Motor oil	Level II
H-2010-00129	06/12/2010	Phosphoric Acid	Regulatory
H-2010-00160	07/09/2010	Non-Specific Coal Burner Fuel	Regulatory
H-2010-00170	07/20/2010	Lube Oil	Regulatory
H-2010-00183	08/04/2010	Diesel	Level I
H-2010-00202	08/18/2010	Anhydrous Ammonia	Regulatory
H-2010-00215	09/21/2010	Diesel	Regulatory
H-2010-00223	09/27/2010	Mercury	Level I
H-2010-00227	09/30/2010	Anhydrous Ammonia	Regulatory
H-2010-00249	10/30/2010	Chloropicrin	Level I
H-2010-00255	11/09/2010	Chloropicrin	Level I
H-2010-00282	12/17/2010	Diesel	Level II
H-2011-00034	02/22/2011	Mercury	Level II
H-2011-00054	03/17/2011	Oil	Regulatory
H-2011-00078	04/21/2011	Ferric Chloride Solution	Level I
H-2011-00084	04/27/2011	Unknown Oily Substance	Regulatory
H-2011-00091	05/05/2011	Oil	Level I
H-2011-00104	05/21/2011	Fertilizer	Level I- No Conference Call
H-2011-00110	05/31/2011	Mortar round	Level II

Incident #	Date	Substance/Product Identification	Level
H-2011-00125	06/18/2011	Drug Lab Assist	Level I- No Conference Call
H-2011-00126	06/19/2011	Diesel	Regulatory
H-2011-00133	07/04/2011	Magnesium Chloride	Level I
H-2011-00144	07/11/2011	Mold Inhibitor	Regulatory
H-2011-00162	07/29/2011	Motor Oil, Transmission Fluid	Level I- No Conference Call
H-2011-00173	08/14/2011	Oil	Level I- No Conference Call
H-2011-00176	08/19/2011	Hydraulic Fluid	Level I
H-2011-00177	08/19/2011	Diesel	Regulatory
H-2011-00179	08/20/2011	Mineral Oil	Regulatory
H-2011-00192	09/06/2011	Drug Lab Assist	Level II
H-2011-00202	09/28/2011	Gasoline	Level I
H-2011-00239	11/04/2011	Diesel	Regulatory
H-2011-00250	11/22/2011	Phenol	Level I
H-2011-00264	12/19/2011	Hydrochloric Acid	Level I

Table 4.5.2: HAZMAT Incidents 2006 - 2011

Hazardous materials incidents occur multiple times a year in Canyon County.

Impacts

Because hazardous materials are so widely used, stored and transported, a hazardous material event could take place almost anywhere. Further, many hazardous materials are used, stored, and transported in very large quantities so that the impact of an event may be widespread and powerful. Regulations and safety practices make such large scale events unlikely, but smaller scale incidents may have severe impacts including:

- Human deaths, injuries, and permanent disabilities
- Livestock/animal deaths
- Destruction of vegetation and crops
- Property damage and destruction
- Pollution of groundwater, drinking water supplies, and the environment
- Contamination of foodstuffs, property, land and structures
- Temporary or long-term closure of transportation routes and/or facilities
- Loss of business and industrial productivity
- Utility outages
- Clean-up and restoration costs
- Losses and inconvenience due to evacuation
- Loss of valuable chemical product

A sample hazardous material transportation incident was used to show the potential impacts of this type of incident. The scenario is a chlorine transportation incident that occurs on I-84 at the Hwy 20 interchange.

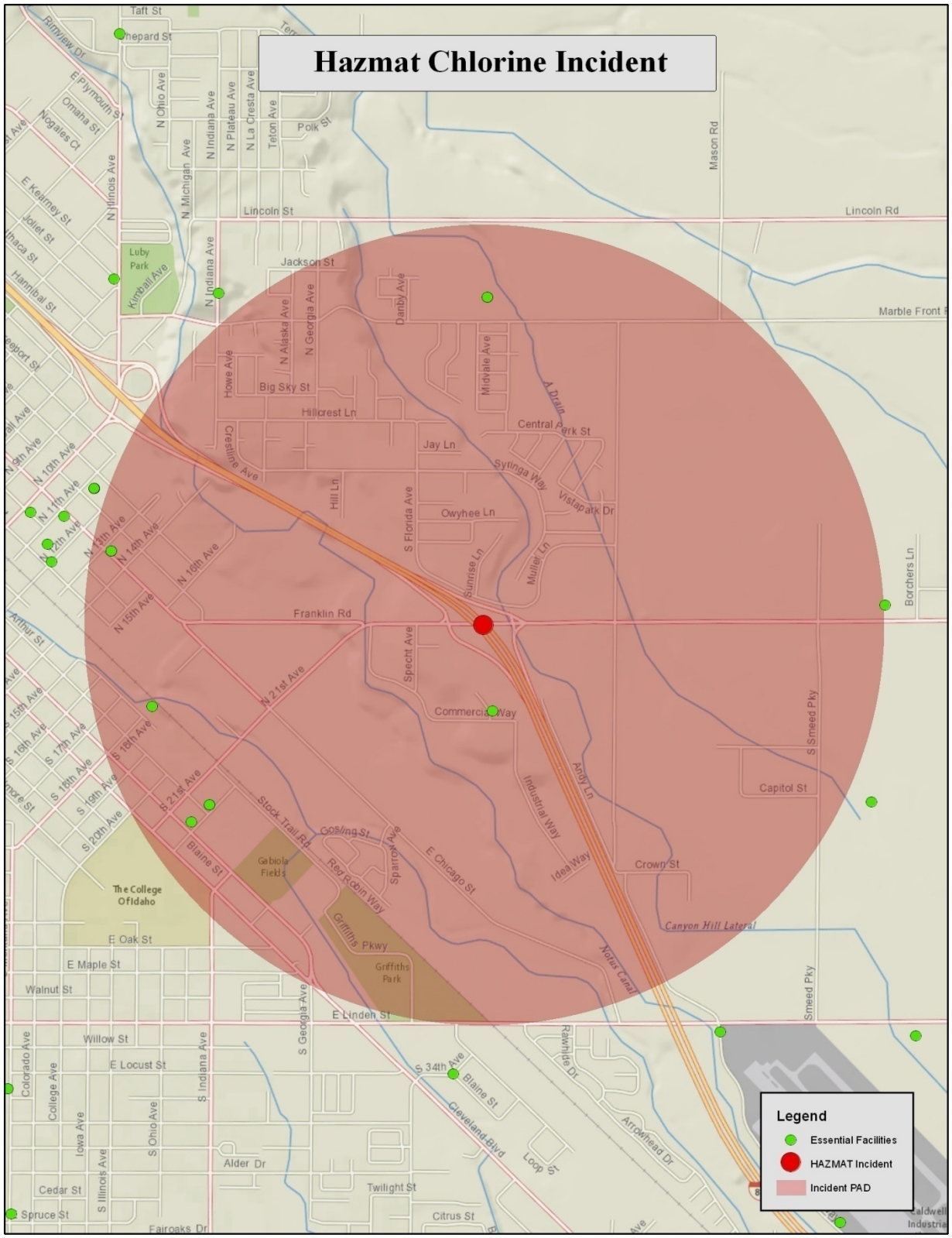


Figure 4.5.5: Example – Hazardous Materials Transportation Impacts

The incident would affect a residential population of 5,430 people. The estimated housing units affected is 1,836. The following essential facilities would also be affected:

- O'Connor Event Center
- Well House #6
- Well House #9
- Exhibition Building
- Shop/Building Maintenance
- Vehicle Maintenance Building
- Radio Tower
- Van Buren Elementary

Loss Estimates

Losses due to the release of Hazardous Materials is linked specifically to two (2) areas: 1) Response, including evacuation, and 2) Clean Up. Releases of hydrocarbon fuels are a constant threat. Clean up of these releases is the responsibility of the spiller. Response to releases is reimbursed to the responding jurisdiction by the Idaho Bureau of Homeland Security Hazardous Materials Division.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Hazardous Materials has a magnitude score of 20.

Magnitude/Frequency Scoring Rationale

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Hazardous materials events often occur suddenly and with little or no warning (Warning Lead Times = 8). Such events usually affect a relatively limited area (Geography Affected = 2) and injuries but minimal deaths may occur (Bodily Harm = 2). Business interruption and economic losses are limited (Economic Loss = 2) and recovery assistance is provided locally by the State of Idaho Regional Hazardous Materials Response Team (Reconstruction Assistance = 4). Some sheltering of the general public may be required (Shelter = 2). The total Magnitude score is, therefore, twenty (20) which, for Canyon County, is in the "High" range. Historical records for hazardous material events are available and reliable, indicating that significant hazardous materials events occur annually (Frequency = High).

Riot/Demonstration/Civil Disorder

2012 Revision Summary: This hazard was added in this update.

Description

State of Idaho statutes define "riot" as follows (Idaho Statute 18-6401 – RIOT DEFINED):

> Any action, use of force or violence, or threat thereof, disturbing the public peace, or any threat to use such force or violence, if accompanied by immediate power of execution, by two (2) or more persons acting together, and without authority of law, which results in:
>
> (a) physical injury to any person; or
> (b) damage or destruction to public or private property; or
> (c) a disturbance of the public peace;
>
> is a riot.

Also defined in the statutes (Idaho Statute 18-8102 – DEFINITIONS) is "civil disorder":

> "Civil disorder" means any public disturbance involving acts of violence by an assemblage of two (2) or more persons which acts cause an immediate danger to or result in damage or injury to the property or person of any other individual.

The term "demonstration" is not defined in this context in the Idaho statutes but the following is given for "unlawful assembly" (Idaho Statute 18-6404 - UNLAWFUL ASSEMBLY DEFINED):

> Whenever two or more persons assemble together to do an unlawful act, and separate without doing or advancing toward it, or do a lawful act in a violent, boisterous or tumultuous manner, such assembly is an unlawful assembly.

Riots are generally thought of as being spontaneous, violent events, whereas demonstrations are usually planned events and are usually intended to be non-violent. Riots seem often to be motivated by frustration and anger, usually over some real or perceived unfair treatment of some group. There are instances, however, where riots have begun during celebrations and other events where the only initiating factor seems to have been the gathering of a crowd of people. The potential for rioting, then, exists any time people gather but a number of factors are associated with the increased probability one will occur including:

- Drug and alcohol use
- Youth of crowd members
- Low socio-economic status of members
- High level of emotions
- A history of rioting on the same or similar previous occasions
- Initiating event, person, or persons

Once violent or illegal activity is initiated, it escalates, possibly at least partly because of the perception that, because all are acting together, there is little probability that any given individual will be arrested or otherwise suffer consequences. Riots may range in scope from a very few people in a small area to thousands over an entire city. Once initiated, large riots are very difficult to suppress, particularly in the United States where law enforcement is constrained by constitutional guarantees as well as personnel limits. Early and decisive action by law enforcement may be effective in suppressing a riot, but police actions may also lead to further escalation.

Historic Frequencies

There are no recorded riot events in Canyon County.

Impacts

Riots may result in loss of life, injury, and permanent disability (to participants, bystanders, and law enforcement personnel) as well as looting, vandalism, setting of fires, and other property destruction. Law enforcement, emergency medical services and medical facilities, and personnel, firefighting, and other community resources may be overwhelmed and unavailable to the community at large. Transportation routes may be closed, infrastructure and utilities damaged or destroyed, and public buildings attacked, damaged, or destroyed. Social and psychological effects may also cause great impacts. Lingering fear and resentment can be long-lasting and can greatly impair the ability of a community to function politically, socially, and economically.

Loss Estimates

A loss from Riot/Demonstration/Civil Disobedience comes primarily from damage to community and private property. It is difficult to estimate specific losses; however, losses would be consistent with losses due to structure fires and similar incidents.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Riot/Demonstrations/Civil Disorder has a magnitude score of 11.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Riot/Demonstration/Civil Disorder events usually provide less than a day of warning (Warning Lead Times = 4). Very limited geographical areas would be affected (Geography Affected = 2) and no deaths and injuries would be expected (Bodily Harm = 1). Business interruption and economic loss are likely to be quite limited (Economic Loss = 1) and any recovery assistance would be provided at the local level (Reconstruction Assistance = 2). No public sheltering would be expected (Shelter = 1). The total Magnitude score is, therefore, eleven (11) which, for Canyon County, is in the "Low" range. Historical records are available and reliable, indicating that no such events have occurred in Canyon County (Frequency = Low).

Terrorism

2012 Revision Summary: This hazard was added in this update.

Description

Terrorism is an unlawful act under both Federal and State of Idaho statutes. Definitions are as follows:

U.S. Code : Title 18 : Section 2331. Definitions:

(5) the term "domestic terrorism" means activities that:

(A) involve acts dangerous to human life that are a violation of the criminal laws of the

United States or of any State;
(B) appear to be intended
(i) to intimidate or coerce a civilian population;
(ii) to influence the policy of a government by intimidation or coercion; or
(iii) to affect the conduct of a government by mass destruction, assassination, or kidnapping; and
(C) occur primarily within the territorial jurisdiction of the United States.

Idaho Statute 18-8102 – DEFINITIONS

(5) "Terrorism" means activities that:
(a) Are a violation of Idaho criminal law; and
(b) Involve acts dangerous to human life that are intended to:
(i) Intimidate or coerce a civilian population;
(ii) Influence the policy of a government by intimidation or coercion; or
(iii) Affect the conduct of a government by the use of weapons of mass destruction, as defined in section 18-3322, Idaho Code.

The Federal Emergency Management Agency gives the following as general information on terrorism[57]:

"Terrorism is the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom.

Terrorists often use threats to:

- Create fear among the public
- Try to convince citizens that their government is powerless to prevent terrorism
- Get immediate publicity for their causes

Acts of terrorism include threats of terrorism, assassinations, kidnappings, hijackings, bomb scares and bombings, cyber attacks (computer-based), and the use of chemical, biological, nuclear, and radiological weapons.

High-risk targets for acts of terrorism include military and civilian government facilities, international airports and transportation centers, large cities, and high-profile landmarks. Terrorists might also target large public gatherings, water and food supplies, utilities, and corporate centers. Further, terrorists are capable of spreading fear by sending explosives or chemical and biological agents through the mail."

Acts of terrorism, then, are essentially the intentional initiation of the sorts of hazard events that have been discussed in previous sections.

Historic Frequencies

There are no recorded terrorism events in Canyon County.

Impacts

Since the events of September 11, 2001, no citizen of the United States is unaware of the enormous potential impacts of terrorist acts. The emotional impacts of fear, dread, anger, outrage, etc., serve to compound the enormous physical, economic, and social damage. The

[57] http://www.fema.gov/hazard/terrorism/info.shtm

continuing terrorist threat itself has a profound impact on many aspects of everyday life in this Country and on the U.S. economy.

Loss Estimates

Specific loss estimates are not provided due to security policies.

Hazard Evaluation

Repetitive Loss *– None*

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Terrorism has a magnitude score of 24.

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Magnitude/Frequency Scoring Rationale

Terrorism events may occur with little or no warning (Warning Lead Times = 8). Numerous scenarios are possible, many of which could affect a moderately large area (Geography Affected = 2), but most of which would cause injuries but few deaths (Bodily Harm = 2). Business interruption and economic loss, under most scenarios, are likely to be moderate (Economic Loss = 2) but Federal recovery assistance would probably be available (Reconstruction Assistance = 8). Some sheltering of those in the immediate area may be required (Shelter = 2). The total Magnitude score is, therefore, twenty-four (24) which, for Canyon County, is in the "High" range. Historical records are available and reliable, indicating that such events have never occurred in Canyon County and the likelihood is considered to be extremely low (Frequency = Low).

Section 4.6: Risk Summary

2012 Revision Summary: This section was added to summarize the risk assessments of all of the hazards. It was found in Chapter 1 of the previous plan.

The Hazard Assessment Process conducted in sections 4.1 – 4.5 was used to establish a basis for determining the cost effectiveness and priority of implementing mitigation strategies. To this end, the following steps were carried out:

1. A list of hazards to be considered was developed.
2. Each hazard was profiled. Profiles include:
    a. A description of the hazard and, where possible, objective definitions including levels of severity
    b. A description of the possible impacts of the hazard
    c. A County profile and/or profiles of individual locations where the hazard event may occur, including levels of severity and probabilities of occurrence
3. For each location, vulnerabilities that may be affected by a hazard event were identified. These vulnerabilities include but are not necessarily limited to:
    a. Human population
    b. Structures
    c. Structure contents
    d. Crops and livestock
    e. Other property
    f. Critical Infrastructure
    g. Economic assets and business activities
    h. Social systems
    i. Others
4. Possible losses due to a hazard event at each location and at the various levels of severity were estimated.

To complete the process of establishing the level of risk severity associated with the hazard each hazard was estimated based on estimated losses and the likelihood of a hazard event to provide the following risk summary.

The Team conducted a hazard analysis using the information gathered in steps 1-4 and 6. The risks associated with each hazard were based on historical occurrences and scientific projections. Hazard assessment activities include the use of FEMA's HAZUS and local property data to generate loss estimates.

Hazard assessment activities include the mapping of hazards, at-risk structures including critical facilities, and repetitive flood loss structures, the location of at-risk

Frequency of Hazard	
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Table 4.6.1: Frequency Table

structures, land use, and populations. These mapping activities were completed as part of a hazard assessment and linked to appropriate mitigation strategies which address requirements derived during the assessment process with the specific goal of reducing the risk.

Risk was determined in part by the frequency of an event for various hazards as determined by looking at historical and scientific data and then balanced against perception of the AHMP Committee and scored using the criteria below.

Magnitude of Hazard						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

Table 4.6.2: Magnitude Table

Quantification of the risk was based on the three critical issues: life safety, property damage, and environmental insult. In addition, other issues tied to community support of risk mitigation including social, cultural, and economical issues were included.

Severity Ranking was then completed based on derived criteria compiled by the AHMP Committee from technical experts and the identified stakeholders. The severity ranking includes the determination of magnitude using the criteria below multiplied by the frequency score discussed above.

2006 Hazard Assessment

The 2006 Hazard Assessment for Canyon County was conducted to determine the relative likelihood of a hazard's occurrence and the potential damage to people, property, infrastructure, and the economy. This assessment is summarized in the table below.

Frequency	Magnitude (Low) 1	Magnitude (Medium) 2	Magnitude (High) 3
(Low) 1	**Landslide**	**Earthquake**	
(Medium) 2		**Wildfire**	
(High) 3		**Flood**	**Hazardous Materials** **Severe Weather** **Wind Storms**

Table 4.6.3: Canyon County Hazard Severity Ranking 2006

The 2006 Canyon County All Hazard Mitigation Plan Hazard Assessment focused on four specific areas; Wildland Urban Wildfire Interface, Flooding, Landslides, and Earthquakes. One other hazard issue, Hazard Materials Transport within the County and specifically for the Cities of Caldwell and Nampa, was included in the 2006 Plan. Hazardous Materials are transported on Interstate 84 and the railroads. The rail lines bisect the cities of Caldwell and Nampa. Interstate 84 runs through the northern sections of Caldwell and Nampa.

Civil Unrest/Terrorism were not addressed in the 2006 Plan due its historically low impact in the County. With the presence of the jail next to the County Courthouse as well as major rail routes and with the heightened awareness countrywide, these hazards were identified to be addressed in this update and have been.

The 2012 update of the Canyon County Multi-Jurisdiction has been more expansive in its focus and has thus added additional hazards to the severity rankings.

Risk Severity Ranking

Each hazard was scored as to magnitude and frequency of occurrence. Table 4.6.4 provides an overall ranking of the hazards by magnitude. Boxes highlighted in Red indicate the highest magnitude; boxes highlighted in yellow indicate the medium magnitude with green boxes signifying the lowest magnitude. Table 4.6.2 illustrates the severity ranking for the hazards facing Canyon County when magnitude is compared to frequency. For those hazards with a high magnitude score and a loss estimate greater than $100,000,000 the frequency score is replaced with an Ex or an extreme loss. Those with extreme loss potential are ranked as the highest hazards. The remaining risk rankings, as described in Section 1, are based on frequency and magnitude. Repetitive loss is used specifically to aide in the prioritization of projects identified for risk reduction. Risk reduction activities are based on the overall risks rankings which are determined using the processes described above. The hazards are placed in the risk ranking Table 4.6.5 on a comparative scale which is used to determine the priorities for risk reduction.

The highest score would be a high frequency and a high magnitude, as depicted in the lower right hand box of each ranking table.

Hazard	Magnitude	Frequency
Wildfire	31	High
Earthquake	28	Medium
Dam Failure	28	Low
River Flood	24	Medium
Terrorism	24	Low
Canal Failure	23	High
Structural Fire	20	High
Hazardous Material Event	20	High
Communicable Disease	19	Low
Straight Line Wind	18	High
Hail	17	High
Severe Winter Storm	17	Medium
Lightning	16	High
Extreme Cold	16	Medium
Flash Flood	15	High
Drought	15	Medium
Burrowing Rodents	13	High
Tornado	12	High
Landslide	12	Medium
Extreme Heat	11	High
Riot/Civil Disobedience	11	Low
West Nile Virus	10	High

Table 4.6.4: Hazard Magnitude and Frequency Scoring

Ranges
48-19 High
18-13 Medium
12-0 Low

Frequency
Extreme – $100,000,000 in loss or greater
High – Yearly to Five Years
Medium – Five Years to 25 Years
Low - 25 Years to Never Happened

Frequency	Magnitude (Low) 1	Magnitude (Medium) 2	Magnitude (High) 3
(Low) 1	Riot/Demonstration/Civil Disobedience		Communicable Disease Terrorism Dam Failure
(Medium) 2	Landslide	Extreme Cold Drought Severe Winter Storms	Earthquake River/Stream Flooding
(High) 3	Extreme Heat Tornado West Nile Virus	Flash Flood Lightning Hail Burrowing Rodents Straight Line Wind	Hazardous Materials Structural Fire Wildfire Canal/Drainage Failure

Table 4.6.5: Canyon County Hazard Severity Ranking

Repetitive Loss Summary

There is no repetitive damage from natural hazards in Canyon County that has been documented. According to the FEMA's Region 10 NFIP Coordinator, there have been 10 NFIP Claims (2 in the County and 8 in the City of Middleton) in Canyon County, but none of them have been repetitive. There is reoccurring flooding along the Boise River and other small streams in the County. While the flooding is repetitive in nature, i.e., in the same basic locations (floodplains), there have been no recorded repetitive property losses due to flooding.

There is reoccurring flooding caused by drainage issues and canal failures in Canyon County; however, the locations are dispersed and not repetitive. Wildfires reoccur in the County as well, but again, wildfires do not typically repeat in the same locations.

Individual Jurisdictional Risk Rankings

The Canyon County All Hazard Mitigation Plan has been developed as a multi-jurisdictional plan ,therefore each jurisdiction risk must be ranked independently from the County and the other jurisdictions. The tables below provide a summary of the ranking for each jurisdiction.

Caldwell

Frequency \ Magnitude	(Low) 1	(Medium) 2	(High) 3
(Low) 1	Riot/Demonstration/Civil Disobedience Landslide Wildfire West Nile Virus		Communicable Disease Terrorism
(Medium) 2	Tornado Drought	Extreme Cold Severe Winter Storms	Earthquake Flash Flood Canal/Drainage Failure
(High) 3	Extreme Heat	Hail Lightning Burrowing Rodents	Hazardous Materials Structural Fire River/Stream Flooding Straight Line Wind

Table 4.6.6: City of Caldwell Hazard Severity Ranking

Nampa

Frequency \ Magnitude	(Low) 1	(Medium) 2	(High) 3
(Low) 1	Riot/Demonstration/Civil Disobedience Landslide River/Stream Flooding Wildfire West Nile Virus	Flash Flood	Communicable Disease Terrorism
(Medium) 2	Drought Tornado	River/Stream Flooding Extreme Cold Severe Winter Storms	Earthquake Canal/Drainage Failure
(High) 3	Extreme Heat	Hail Lightning Burrowing Rodents	Hazardous Materials Structural Fire Straight Line Wind

Table 4.6.7: City of Nampa Hazard Severity Ranking

Middleton

Frequency \ Magnitude	(Low) 1	(Medium) 2	(High) 3
(Low) 1	Riot/Demonstration/Civil Disobedience Landslide West Nile Virus	Flash Flood	Communicable Disease Terrorism
(Medium) 2	Tornado Drought	Hazardous Materials Earthquake Canal/Drainage Failure Extreme Cold Severe Winter Storms	Wildfire River/Stream Flooding
(High) 3	Extreme Heat	Hail Lightning Burrowing Rodents	Structural Fire Straight Line Wind

Table 4.6.8: City of Middleton Hazard Severity Ranking

Notus

Frequency \ Magnitude	(Low) 1	(Medium) 2	(High) 3
(Low) 1	Riot/Demonstration/Civil Disobedience Landslide West Nile Virus		Communicable Disease Terrorism
(Medium) 2	Tornado Drought	Extreme Cold Hazardous Materials Earthquake Canal/Drainage Failure Severe Winter Storms	Wildfire River/Stream Flooding Flash Flood
(High) 3	Extreme Heat	Hail Lightning Burrowing Rodents	Structural Fire Straight Line Wind

Table 4.6.9: City of Notus Hazard Severity Ranking

Parma

Frequency \ Magnitude	(Low) 1	(Medium) 2	(High) 3
(Low) 1	Riot/Demonstration/Civil Disobedience Landslide Wildfire West Nile Virus		Communicable Disease Terrorism
(Medium) 2	Drought Tornado	Earthquake Canal/Drainage Failure Severe Winter Storms Extreme Cold	River/Stream Flooding Flash Flood
(High) 3	Extreme Heat	Hail Lightning Burrowing Rodents	Hazardous Materials Structural Fire Straight Line Wind

Table 4.6.10: City of Parma Hazard Severity Ranking

Wilder

Frequency \ Magnitude	(Low) 1	(Medium) 2	(High) 3
(Low) 1	Riot/Demonstration/Civil Disobedience Landslide Wildfire West Nile Virus	Canal/Drainage Failure	Communicable Disease Terrorism
(Medium) 2	Drought Tornado	Extreme Cold Earthquake Flash Flood River/Stream Flooding	Hazardous Materials
(High) 3	Extreme Heat	Hail Lightning Severe Winter Storms Burrowing Rodents	Structural Fire Straight Line Wind

Table 4.6.11 City of Wilder Hazard Severity Ranking

Greenleaf

Frequency \ Magnitude	(Low) 1	(Medium) 2	(High) 3
(Low) 1	Riot/Demonstration/Civil Disobedience Landslide Wildfire West Nile Virus River/Stream Flooding	Canal/Drainage Failure Flash Flood	Communicable Disease Terrorism
(Medium) 2	Drought Tornado	Extreme Cold Earthquake Severe Winter Storms	Hazardous Materials
(High) 3	Extreme Heat	Hail Lightning Burrowing Rodents	Structural Fire Straight Line Wind

Table 4.6.12: City of Greenleaf Hazard Severity Ranking

Melba

Frequency \ Magnitude	(Low) 1	(Medium) 2	(High) 3
(Low) 1	Riot/Demonstration/Civil Disobedience Landslide West Nile Virus River/Stream Flooding	Canal/Drainage Failure	Communicable Disease Terrorism
(Medium) 2	Drought Tornado	Earthquake Flash Flood Hazardous Materials Extreme Cold Severe Winter Storms	Wildfire
(High) 3	Extreme Heat	Hail Lightning Burrowing Rodents	Structural Fire Straight Line Wind

Table 4.6.13: City of Melba Hazard Severity Ranking

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Section 5: Land Use Planning and Hazard Mitigation Integration

2012 Revision Summary: This section was added to meet the FEMA requirements of examination of the relationship between the mitigation plan and land use planning activities in the County.

The State of Idaho Local Land Use Planning Act (LLUPA), first adopted in 1975 by the Idaho Legislature, (Idaho Code § 67-6508) mandates that all cities and counties develop a Comprehensive Plan. The Code identifies the chapters that should be placed in the plan. The Code does not tell local governments how the plan should be developed, where they should get their information, or documentation on how the plan should be assembled. That is the responsibility of each jurisdiction. The fourteen chapters of the Comprehensive Plan work as one, but in order for the reader to focus on similar subject matter, subsections were established. The subsections are developed to focus on subjects that interact more with each other.

This chapter of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan examines the relationship between land use documents, such as the jurisdictions' Comprehensive Plans and Land Use Ordinances, and Mitigation Planning activities undertaken in the past and proposed for the future in Canyon County. Each of the participating jurisdictions' land use documents has been reviewed.

Transportation Planning in Canyon County is integrated into a single regional entity,COMPASS, or the Community Planning Association of Southwest Idaho. This entity conducts long-range transportation planning for the entire Treasure Valley, which includes both Canyon and Ada Counties and the incorporated cities in those counties. The COMPASS planning activities are integrated with the Goals and Policies of the individual jurisdiction comprehensive plans.

Canyon County

The Canyon County 2020 Comprehensive Plan serves as the County's planning tool or blueprint for the County's future. The associated Zoning Ordinance is the formal codification of land use policies in Canyon County. The Comprehensive Plan establishes policies to help the County grow and develop. The Plan meets the requirements of the State of Idaho Local Land Use Planning Act as codified in Idaho Code § 67-6508. The Plan is based on the premise that if citizens of Canyon County know what they want to do, in regards to land use planning, the Plan provides a better prospect of arriving there. The Plan indicates, in a general way, how the County, outside of city limits, should develop in the next ten years. The Comprehensive Plan therefore is a roadmap or a framework for land use decision making in the County.

Land Use:

"The ability to manage and control the use of one's property as well as privacy and enjoyment of land, without unreasonable interference from another landowner's activities, are the values that the Canyon County community was built on."

Canyon County

2020 Comprehensive Plan

The Land Uses addressed in the Canyon County Comprehensive Plan include agriculture, residential, commercial, and industrial. The plan covers all land use within the County outside of City limits. The County conducts joint planning with the incorporated cities in the cities areas of impact.

Unlike many of the counties in Idaho, 94% of Canyon County is privately owned. Eighty four percent of Canyon County is agricultural; however, between 2002 and 2007 Canyon County lost 25% of its agricultural lands to development due to the phenomenal growth experienced in the Treasure Valley. Land resources within Canyon County are extremely valuable and should be used in a constructive manner. The goals in the Land Use Section of the Plan are based on managing growth while protecting the land as a valuable resource. The goals seek to establish policies which ensure orderly, rather than explosive growth. Mitigation techniques are used to manage incompatible land uses and policies and direct land use development in areas which are favorable for future community services. The overall land use goal seeks a balance between development and agriculture. Agriculture is the basis of the County's economy.

The County has adopted the International Building Code and has an active building inspection program. The Planning and Zoning Ordinances appear to be aligned with the land use policies of the Comprehensive Plan.

The Hazardous Areas Component of the Plan is covered in Section 7. The County takes a unique approach to this planning component; rather than focus on hazards, the Plan looks to the impacts of hazards, such as human accidents, personal injury and loss of life, and limitations on activity. Some of the hazards examined include flooding, unstable soil conditions and/or geological conditions, and contaminated groundwater. The use of this unique approach provides an excellent opportunity to integrated land use planning and mitigation actions into a synergistic program of prevention and protection.

Storm Water

"Stormwater drainage responsibilities and issues within Canyon County are split between multiple agencies, including drainage entities, cities and the county highway districts. Designated agencies frequently are underfunded and have limited ability to acquire adequate funding. Stormwater management issues that impact both water quality and quantity tend to be resolved piecemeal as a result of fragmented authorities and limited funding."

Canyon County

2020 Comprehensive Plan

One of the implementation actions in the Hazardous Areas section of the Plan is to create a county-wide drainage plan. During the Risk Assessment and Public Outreach processes of the mitigation plan effort it was discovered that there are many drainage areas owned by Drainage Districts which are causing repeated damaged to residences and infrastructure. Many of these Districts are not currently active, and maintenance of the drainage infrastructure is not being conducted. A countywide program to address this issue would be supportive of both goals of the Comprehensive Plan and the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan.

Another implementation action from the Hazardous Areas section is to define and map hazardous areas. This action item has been completed as part of the mitigation planning process. The definition, mapping, and associated risk rankings are contained in Section 4 of this Mitigation Plan.

Figure 5.1 Canyon County Future Land Use Map

City of Wilder

The City of Wilder's Comprehensive Plan was adopted on July 14, 2009. The Plan superseded the Plan adopted on September 11, 2007. The Plan meets the requirements of the Local Land Use Planning Act, Planning Duties, Idaho Code § 67-6508. The Land Use Section of the Plan sets forth guidance for growth and development that is consistent with the community's vision and with the policies articulated in the Comprehensive Plan. The policies outlined in the Land Use Section are focused on the maintenance of the community's agricultural base with provisions for some growth; however, the policies do not outline the control of natural or manmade hazards.

Section 10 of the Plan states that there are no specific areas in the community that are consider "hazardous". This finding is similar to the hazard analysis completed on the community with one notable exception of two hazardous chemical sites, one in the city and one just outside of the city, both of which would impact the City should there be a release. There are no goals outlined in Section 10 which are focused on the control of hazardous areas. It is recommended that the Risk Assessment completed as part of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan for the City of Wilder be added to the Comprehensive Plan.

Section 11, Public Services, Facilities, and Utilities addresses Fire and Police Protection for the City of Wilder. The issue of growth was addressed in the section, with appropriate growth policies articulated to ensure continued public safety for the City, including ensuring adequate fire suppression capability, access to developments, and the acquisition of response equipment.

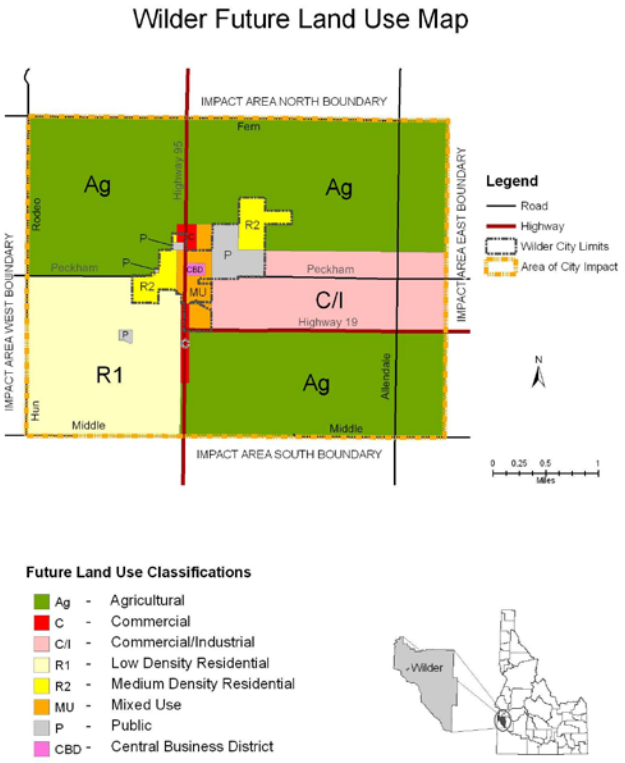


Figure 5.2 City of Wilder Future Land Use Map

The future Land Use Map for the City of Wilder indicates that thoughtful planning has occurred; however, there should be some consideration to the location of agri-businesses that handle hazardous chemicals and also future development in proximity to existing irrigation systems.

City of Parma

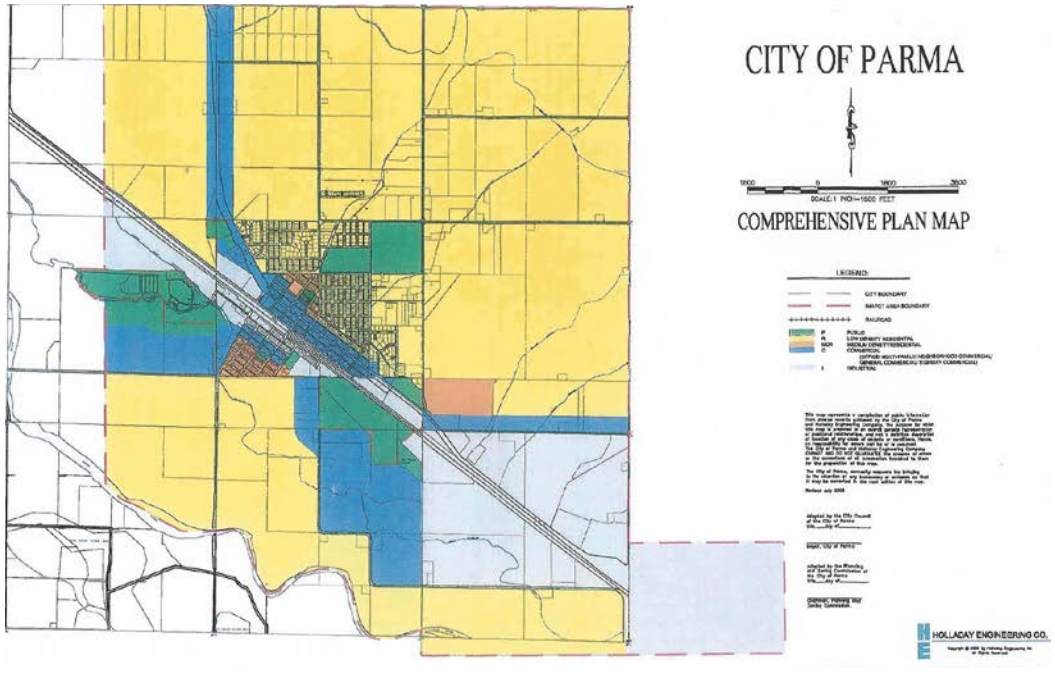
The City of Parma's Comprehensive Plan was adopted on May 10, 2004. The Plan identifies a planning horizon of 20 years. The Plan meets the requirements of the Local Land Use Planning Act, and Planning Duties, Idaho Code § 67-6508. The main goals of the Plan are to protect property rights and enhance property values. The goals fit within the frame work of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan.

Chapter Three of the Plan addresses Land Use. Land Use goals focus on reserving areas suited for business and industry as well as identification of areas of special concern. The Plan seeks an integrated mixture of residential, commercial, and other types of land use in what is termed as "a compact community". Industrial uses are focused primarily on agriculture and supporting businesses.

Chapter Eight of the Plan is dedicated to Hazardous Areas. The Hazards addressed are consistent with the risk analysis performed for the City of Parma in the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan. The Comprehensive Plan also does a good job detailing manmade hazards which could be expected based on the agri-businesses that are found in the community. Straight line wind hazards could be added as there is significant risk of damage to structures and crops in the Parma area due to straight line wind.

Chapter Nine of the Plan covers Public Services and Utilities. This chapter describes the current police, fire, and emergency medical services capabilities for the City. The Plan identifies that the fire water protection system was upgraded as part of a 2001 water systems improvement project. The Plan identified a need to improve storm water drainage. An upgrade of the system was considered to be cost prohibitive.

Figure 5.3 City of Parma Land Use Map



City of Notus

Chapter 3 of the City of Notus's Comprehensive Plan addresses Land Use Goals. The goals are focused similar to other jurisdictions in Canyon County which are to provide for an integrated and coordinated mixture of residential, commercial, and other types of uses in a small rural community. As stated, the goal is to assist in the arrangement of existing and future land uses in order to make them harmonious with each other. This goal would, by necessity, include the planning for hazardous areas. One of the policies articulated in the Chapter is to develop buffer areas between commercial and residential zones to reduce noise, light, and traffic caused by commercial activity. The policy should be revised to include hazards, such as chemicals, that are typically found in agri-businesses.

A discussion of the Hazard Areas found in the City is included in Chapter 8 of the Plan. The list of hazards that should be examined contains hazards that are not present in the City of Notus. It is recommended that the Hazardous Areas descriptions be updated to reflect the hazards identified in the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan. The Plan seems to be a template style plan that has been used by several of the small rural cities in Canyon County. Community specifics could be added to the Plan to improve the outcomes of comprehensive planning.

Chapter 9 of the Plan covers the Public Services and Utilities. The City has its own volunteer fire department. The City contracts with the Canyon County Sheriff for Law Enforcement within the City limits. Emergency Medical Services are provided by the County through the Caldwell Rural Fire District. During the Public Meeting with the City Elected Officials storm water drainage was discussed. The Conway Drain bisects the City. There is a need to create a storm water collection and drainage system for the City that could dump into the Conway Drain. This item was identified as a mitigation project in the Multi-Jurisdiction All Hazard Mitigation Plan and should be added to the City's Capital Improvement Plan.

The copy that was provided as part of this review of the City of Notus's Comprehensive Plan did not have an adoption date on it. The Plan does have out of date information in it and it is recommended that the Plan be updated and revised to include the risk assessment for the City of Notus found in this Multi-Jurisdiction All Hazard Mitigation Plan.

City of Melba

The City of Melba does not have a Comprehensive Plan, but does have ordinances that state that the City has adopted the Canyon County Comprehensive Plan as the duly enacted Plan for the City of Melba. The City's Land Use Ordinances include ordinances for subdivision of land and adoption of the Impact Area Map for the City of Melba that is contained in the Canyon County Comprehensive Plan.

Figure 5.4 City of Melba Land Use Map

City of Greenleaf

The City of Greenleaf's Comprehensive Plan was adopted on October 25, 2006. The Plan covers a 20 year planning horizon. The purpose of the Plan, as stated in the introduction, is to facilitate the land use decision-making process based on the needs of the citizens of the City. The Plan meets the requirements of the Local Land Use Planning Act, Planning Duties, Idaho Code § 67-6508.

Chapter 5 of the Plan addresses land use goals and implementing policy. As stated in the Plan, "land use planning needs to protect the community character by managing growth and channeling it in an orderly way that reduces land use conflicts, reduces costs of providing services, and controls development in and around the City limits".[58] Land Use Implementation Strategies include the review and evaluations of land use applications to ensure compatibility with issues such as air pollutants, drainage systems, effects on neighboring land uses, employment characteristics, fire and safety, nature of activity, noise, odor, sewage treatment, solid waste, transportation, visual impacts, water and utility needs, and environmental impacts. This strategy supports the goals and objectives of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan including the strategy of encouraging public participation in the planning process.

A description and discussion of the Hazardous Areas is found in Chapter 7. Hazards identified in the Chapter include earthquakes, avalanches, and snow slides. The Risk Analysis conducted as part of the Canyon County indicates that there is no risk to the City of Greenleaf to avalanches or snow slides. References to these two hazards should be removed from the Hazardous Areas Chapter and the Chapter revised to reflect the hazard potentials identified in the risk analysis, which include straight line wind and hazardous chemical transportation through the City. The Chapter does an excellent job addressing the possible flooding in the Renshaw Gulch Drain.

Public Facilities, Services, and Utilities are covered in Chapter 8 of the Plan. Public Safety services are all provided by other jurisdictions. Fire protection services are provided by the Caldwell Rural Fire Protection District. Emergency Medical Services are provided by the County Ambulance District through the Caldwell Rural Fire Protection District. Law Enforcement is provided through a contract with the City of Wilder. The Plan addresses the non-compliant nature of the City's sewer system; however, the City has since resolved that issue by upgrading the system. As stated in the Goals section of the Chapter, the City is committed to maintain adequate fire water protection capacity. There is a need to develop a City wide storm water master plan which should lead to improved storm water management and reduce the potential of flooding from severe thunderstorm events.

The City has adopted the International Building Code and has an active building inspection program. The City also has zoning requirements and has identified an area of city impact. The Planning and Zoning Ordinances appear to be aligned with the land use policies of the Comprehensive Plan.

[58] Greenleaf City Comprehensive Plan, October 25, 2006, Chapter 5, page 19

City of Middleton

The City of Middleton's Comprehensive Plan was adopted on July 21, 2004 with amendments made to it on February 6, 2008 and December 2, 2009. The Plan is focused on the next 20 years and reflects the needs and desires of the community. The Plan is intended to be a set of positive, rather than restrictive statements concerning what Middleton wishes to be and accomplish, and to introduce long-range considerations into the determination of short-range actions. The Plan meets the requirements of the Local Land Use Planning Act, Planning Duties, Idaho Code § 67-6508.

Land Use Policy is described in some detail in Chapter 3 of the Plan. The Plan seeks to set a pathway to a harmonious mixture of residential, agricultural, commercial, and industrial uses. The City has identified an Area of City Impact based on 1) trade areas, 2) geographic factors, and 3) areas that can reasonably be expected to be annexed into the City in the future. The Land Use Policies in the Plan seek to improve City services, maintain and improve community design components, and provide access for all types of developments. The City has adopted the International Building Code and has an active building inspection program. The City also has zoning requirements and has identified an area of city impact. The Planning and Zoning Ordinances appear to be aligned with the land use policies of the Comprehensive Plan.

Chapter 8 describes the Hazardous Areas in Middleton. Flooding has the highest potential to impact the City of Middleton. Middleton's floodplain includes the Boise River, Mill Slough, and Willow Creek. The City has adopted a Flood Hazard Protection Ordinance that establishes flood protection practices. Other hazards addressed in the Chapter include air quality and noise. The Canyon County Multi-Jurisdiction All Hazard Mitigation Plan's risk assessment for the City of Middleton also identified wildland and structure fires, severe weather including straight line wind, and irrigation system damage caused by burrowing rodents as hazards that impact the City. Chapter 8 of the Comprehensive Plan should be updated to be consistent with the Mitigation Plan's risk rankings.

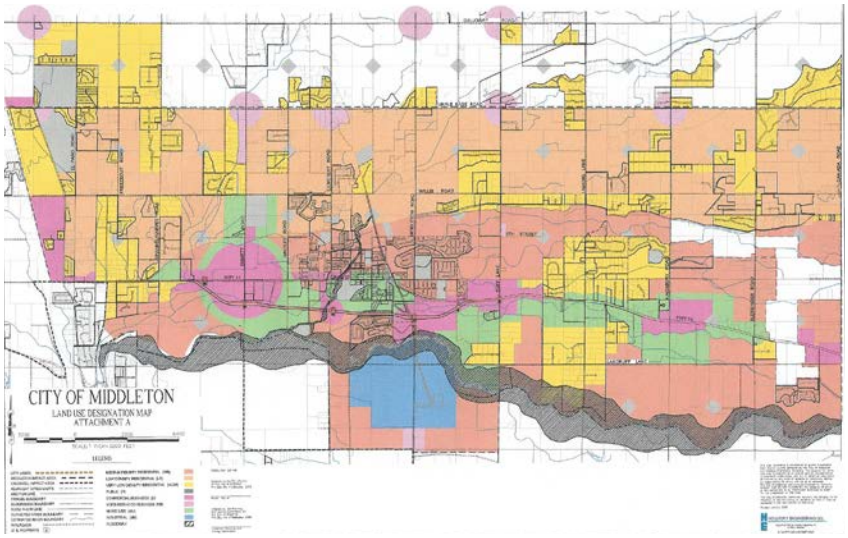


Figure 5.5 City of Middleton Land Use Map

Chapter 9 covers the Public Services and Facilities. This Chapter looks primarily at the critical infrastructure owned and operated by the City, including the water and sewer systems, irrigation, and solid waste management. The Chapter also examines the Fire Protection and Emergency Services which are provided by the City of Middleton Rural Volunteer Fire Department. Law Enforcement is provided by the Sheriff's Office which is located in a satellite office located at Fire Station One. One policy of interest is that the cost of

extending City services should be borne by the development. An accompanying policy in the land use chapter should also require that protection from hazardous conditions posed by development should be paid for by the developer.

City of Nampa

The City of Nampa's Comprehensive Plan is titled "Nampa 2035". The Plan is especially well done and covers a planning horizon of approximately 23 years. The Plan was adopted in February 2012 by the Nampa City Council. The goal of the Plan is to introduce long-range considerations into the determination of short-range actions. The Plan contains a specific mission statement for the Nampa City Planning Department. The statement sets forth seven (7) principles or standards:

1. Secure safety from fire
2. Provide adequate open spaces for air and light
3. Prevent the overcrowding of land
4. Avoid undue concentration of population
5. Conserve and stabilize property values
6. Stabilize expectations regarding the use and development of land
7. Promote the achievement of the goals, strategies, and implementation strategies of the Nampa Comprehensive Plan

The City of Nampa experienced phenomenal growth from 1990 to 2010. The City increased from 28,365 in 1990 to 81,567 in 2010, an increase of 187%. During the same time period Canyon County increased in population by 109%. Growth of this significances demands good comprehensive planning which appears to have taken place in both Nampa and Canyon County. Much of the housing stock in Nampa was constructed during this 20 year time frame.

Chapter Five of the Plan covers Land Use Policies issues. The purpose of the Land Use Chapter is to guide public and private decisions regarding the use of land in the City of Nampa and its area of City Impact. The 2012 revision of the 2004 Comprehensive Plan broadened the density options for residential development, introduced several mixed use zoning requirements, and added two new designations for large businesses or

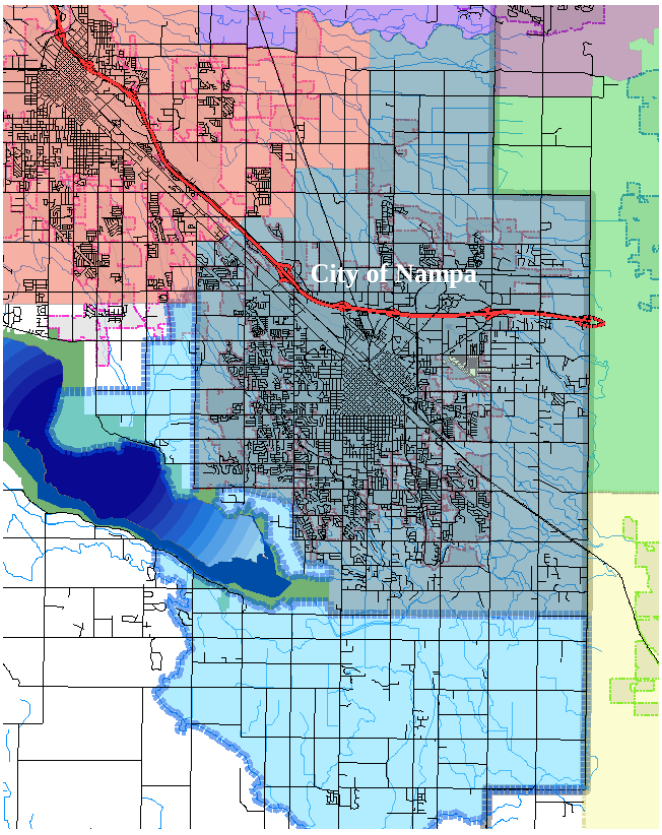


Figure 5.6 City of Nampa Land Use Map

industrial complexes. It also added new special use areas like the airport and downtown business area.

The Chapter is to be used for day-to-day decision making with a long-range focus. The Plan addresses land uses including agricultural, residential, mixed use, commercial, industrial, and open spaces. One area of special focus was transit-oriented mixed use development.

The City's Smart Growth principles concentrate growth in compact walking distance urban centers to avoid sprawl and advocate transit-oriented, walking distance community, bicycle friendly land use, including neighborhood schools, complete streets, and mixed used development with a range of housing choices. The risks assessment indicates that this is a good choice of development for Nampa as there is only a small area of flooding hazard and virtually no other significant natural hazardous conditions posed to the community.

The City has adopted the International Building Code and has an active building inspection program. The City also has zoning requirements and has identified an Area of City Impact. The Planning and Zoning Ordinances appear to be aligned with the land use policies of the Comprehensive Plan.

Chapter Seven describes the Public Services, Facilities, Utilities, and National Interest Electrical Transmission Lines. This Chapter focuses on those essential public services and critical infrastructure that is owned and protected by the City of Nampa. Nampa is a full service community with all of the public services expected from a major metropolitan western city. The City uses Development Impact Fees to cover the cost of expansion of services in support of City growth. The City has its own fulltime, Fire, EMS, and Law Enforcement departments. These departments also provide mutual aid in support of other communities in Canyon County and neighboring Ada County. The City has an expansive potable water and wastewater systems. The wastewater system also collects and drains the City from storm water. There are three irrigation systems that serve the City of Nampa.

Hazardous Areas in the City are described in Chapter Thirteen. Hazards considered include floodplains, landsides, snow slides, and earthquakes. Manmade hazards considered include landfills, rail crossings, airport clear zones, and the transport of hazardous chemicals by rail and truck. According to the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan risk assessment, the City of Nampa is not prone to landslides or snow slides. These hazards should be removed from consideration from the Comprehensive Plan, and Chapter Thirteen revised to reflect that risk ranking.

City of Caldwell

The City of Caldwell's Comprehensive Plan titled "2030 Comprehensive Plan" was adopted by the Caldwell City Council on May 17, 2012. The intent of the Plan is to provide for orderly growth and development and to further provide individuals and businesses with a more reliable way of predicting the future of various areas in the City. With the growth challenges facing the City, the Plan elicits polices that address overcrowding, congestion, hazards to health, peace of mind, loss of a sense of community identity and neighborliness, blight, and the general deterioration of the quality of life presently experienced in the City of Caldwell. As stated in the Plan, Caldwell's future growth and transformation provides an opportunity to improve the "quality" of life through making the City more attractive, convenient, and satisfying.

The Land Use portion of the Plan is contained in Section 5. To meet the challenges of maintaining and enhancing the City's quality of life, the Plan utilizes "Smart Growth" principles to guide future land use development. Smart Growth principles encourage mixed use communities, focusing on a small community atmosphere within the context of a larger urban setting. Smart Growth principles are compatible with the goals and objectives of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan; however, planners must carefully design "smart growth" developments by taking into account the natural and manmade hazards present in the community.

Smart growth addresses these concerns through application of the following principles:

- Create a range of housing opportunities and choices
- Create walking distance neighborhoods
- Foster distinctive, attractive places with a strong sense of place
- Preserve open space, farmland and critical environmental areas
- Provide a mix of land uses and a variety of transportation choices
- Strengthen and direct development towards existing communities
- Provide connectivity to adjacent parcels and land uses

Land Uses examined and addressed in the Caldwell City Comprehensive Plan include residential, commercial, industrial, institutional, mixed uses, and open spaces. Even though the City is surrounded with agricultural lands, agricultural practices were not addressed in the Plan, but there was a goal to "Ensure the viability of agricultural operations through appropriate land use actions." This goal is of significance because much of the damage caused by flooding in Caldwell is due to failure of agricultural irrigation canals that flow through parts of the City. The Plan does articulate set of land use recommendations which support this goal, including working with Irrigation Districts to develop a Comprehensive Canal and Drain Crossing Plan.

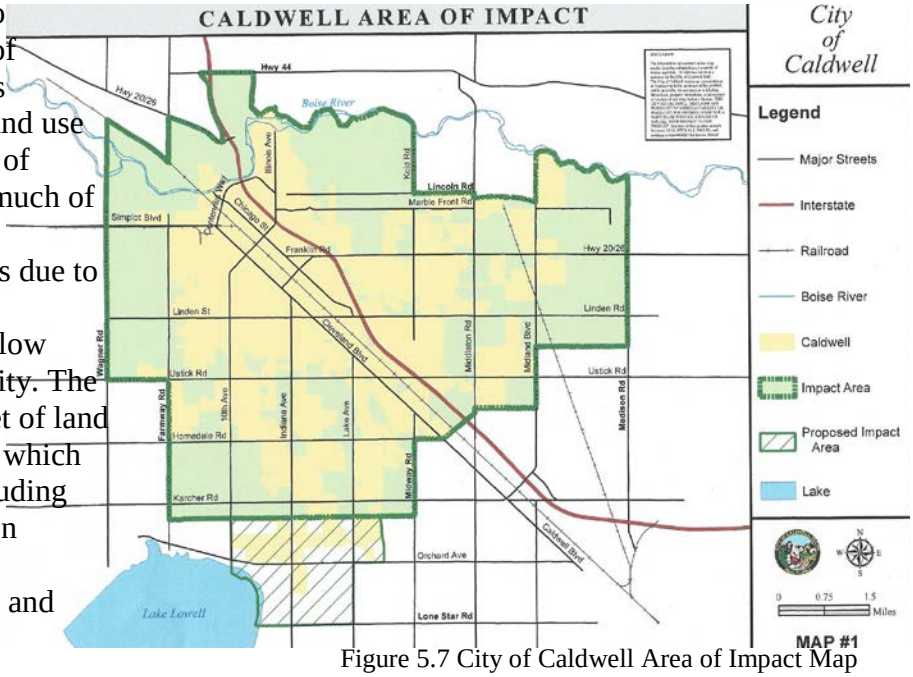


Figure 5.7 City of Caldwell Area of Impact Map

The City has adopted the International Building Code and has an active building inspection program. The City also has zoning requirements and has identified an area of city impact. The Planning and Zoning Ordinances appear to be aligned with the land use policies of the Comprehensive Plan.

Section 7 of the Plan covers the Hazardous Areas. Hazardous areas in the City were described as the floodplain areas of the Boise River and Indian Creek, and hazardous waste sites linked to underground storage tanks. The risk assessment for the Canyon County Multi-Jurisdiction All Hazards Mitigation Plan for the City of Caldwell also suggests that earthquakes, flash flooding, canal and drainage failure caused by burrowing rodents, severe weather including straight line wind, and hail to be considered as having the potential to cause damage or harm to the community. This section of the Comprehensive Plan should be updated to align with the risk rankings in the Mitigation Plan.

The City of Caldwell has public services, utility systems, and facilities that are typical of a City of its size. The Comprehensive Plan discusses these attributes in Section 8. The Plan contains a set of goals and polices to govern growth and expansion of the systems. Of specific note is a goal to protect the City's domestic water supply through the development of pressurized irrigation systems. Physical protection of the water system and other critical infrastructure such as the sewer treatment plant from natural hazards should also be considered and polices developed to do so.

Of special interest in the City of Caldwell's Comprehensive Plan is Section 18 which provides an implementation schedule that supports the goals and policies that are articulated in the Plan. In the next revision of the Comprehensive Plan it is recommended that the Planner examine the mitigation actions and projects identified in the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan and integrate the implementation schedules.

Section 6: Mitigation Implementation

2012 Revision Summary: This section was updated to show the status of the previously identified mitigation actions. New mitigation actions were also added.

Hazard mitigation is defined as any cost-effective action(s) that has the effect of reducing, limiting, or preventing vulnerability of people, culture, property, and the environment to potentially damaging, harmful, or costly hazards. Hazard mitigation measures which can be used to eliminate or minimize the risk to life, culture, and property fall into three categories:

1) Keep the hazard away from people, property, and structures
2) Keep people, property, or structures away from the hazard
3) Reduce the impact of the hazard on victims, i.e., insurance

This mitigation plan has identified key strategies that fall into all three categories and specifically address natural hazards. Strategies to address man-made hazards are not included in this Plan, but rather are linked to the Canyon County Threat and Hazard Identification and Risk Assessment (THIRA) which is currently being developed.

Hazard mitigation measures must be practical, cost effective, and culturally, environmentally, and politically acceptable. Actions taken to limit the vulnerability of society to hazards must not in themselves be more costly than the anticipated damages.

The primary focus of the Canyon County Multi-Jurisdiction All Hazard Mitigation Plan has been to identify the point at which capital investment and land use decisions are made, based on vulnerability, or in other words where capital investments can be made to reduce the risk posed to the County from hazardous events. Capital investments for mitigation projects, whether for homes, roads, public utilities, pipelines, power plants, or public works determine to a large extent the nature and degree of hazard vulnerability reduction in a community.

Previously, mitigation measures have been the most neglected programs within emergency management. Since the priority to implement mitigation activities is usually very low in comparison to the perceived threat, some important mitigation measures take time to implement. Mitigation success can be achieved, however, if accurate information is portrayed through complete hazard identification and impact studies, such as those presented in the previous sections, followed by effective mitigation management. Hazard mitigation is the key to eliminating long term risk to people, cultures, and property.

Prioritization Process

Prioritization of the Mitigation Projects occurred through an electronic scoring system. Each member of the mitigation committee was asked to electronically score each of the projects based on the criteria listed below. All participants scored the County Mitigation Projects; the City Mitigation Projects were scored only by the members of the AHMP Committee that represent the individual cities. Note that members of the AHMP Committee include all elected officials from the incorporated Cities in the County as well as the County Commissioners. The completed scoring spreadsheet is included as Attachment 5. Once the scoring was completed, the top four (4) Canyon County projects were roadmapped. The Roadmap is included at the end of this section.

Ongoing Prioritization Process

Differing prioritization processes will occur within the County and the participating Cities after the Plan is adopted and then becomes a living document with annual evaluation and updating.

The prioritization process will continue to be based on the three basic tenants of Mitigation Planning: 1) Save lives, 2) Protect critical infrastructure, and 3) Eliminate repetitive loss.

The process will reflect that a key component in a funding decision is determination that the project will provide an equivalent, or more, in benefits over the life of the project when compared with the costs. Projects will be administered by county and local jurisdictions with overall coordination provided by the County Emergency Services Coordinator.

County Commissioners, and the elected officials of all jurisdictions, may evaluate opportunities and establish their own unique priorities to accomplish mitigation activities where existing funds and resources are available, and there is community interest in implementing mitigation measures. If no Federal funding is used in these situations, the prioritization process may be less formal. Often the types of projects that the County can afford to do on their own are in relation to improved codes and standards, department planning and preparedness, and education. These types of projects may not meet the traditional project model, selection criteria, and benefit-cost model. The County will consider all pre-disaster mitigation proposals brought before the County Commissioners by department heads, city officials, fire districts, and local civic groups.

When Federal or State funding is available for hazard mitigation, the requirements that establish a rigorous benefit-cost analysis as a guiding criterion in establishing project priorities will be followed. The County will understand the basic Federal grant program criteria which will drive the identification, selection, and funding of the most competitive and worthy mitigation projects.

Prioritization Scheme

The prioritization serves as a guide for the County when developing mitigation activities. This project prioritization scheme was used during the development of the initial All Hazard Mitigation Plan for the County in 2006 and been used in other Counties with the State of Idaho and is designed to rank projects on a case by case basis. The top 13 projects were identified though the prioritization process. The top 13 projects were then ranked independently by members of the Canyon County LEPC. The ranking scores are included in the project tables below for the top 13 projects. The top four projects are highlighted in the project table and were then roadmapped. The roadmap appears at the end of this section.

The County mitigation program does not want to restrict funding to only those projects that meet the high priorities 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 reasons and criteria is a necessity for a functional mitigation program at the County and community level.

To implement this case by case concept, a more detailed process for evaluating and prioritizing projects has been detailed below. Any type of project, whether County or City specific, will be prioritized in this more formal manner.

To prioritize projects, a general scoring system has been developed. This prioritization scheme has been used in Statewide all hazard mitigation plans. These factors range from cost-benefit ratios, to details on the hazard being mitigated, to environmental impacts.

The factors for the non-planning projects include:

- Hazard Magnitude/Frequency
- Potential for repetitive loss reduction
- Benefit / Cost
- Population Benefit
- Property Benefit
- Economic Benefit
- Project Feasibility (environmentally, politically, socially)
- Potential project effectiveness and sustainability
- Potential to mitigate hazards to future development

Since some factors are considered more critical than others, two ranking scales have been developed. A scale of 1-10, 10 being the best, has been used for hazard magnitude/frequency, potential for repetitive loss reduction, cost, and vulnerability to the community, population benefit, and property benefit. Economic benefit, project feasibility, potential to mitigate hazards to future development, and potential project effectiveness and sustainability are all rated on a 1-5 scale, with 5 being the best. The highest possible score is 65.

The guidelines for each category are as follows:

Hazard Magnitude/Frequency

The Hazard Magnitude/Frequency rating is a combination of the recurrence period and magnitude of a hazard. The severity of the hazard to be mitigated and the frequency of that event must both be considered. For example, a project mitigating a 10-year event that causes significant damage would receive a higher rating than one that mitigates a 500-year event that causes minimal damage. For a ranking of 10, the project mitigates a high frequency, high magnitude event. A 1 ranking is for a low frequency, low magnitude event. Note that only the damages being mitigated should be considered here, not the entire losses from that event.

Potential for repetitive loss reduction

Those projects that mitigate repetitive losses receive priority consideration here. Common sense dictates that losses that occur frequently will continue to do so until the hazard is mitigated. Projects that will reduce losses that have occurred more than three times receive a rating of 10. Those that do not address repetitive losses receive a rating of 1.

Benefit / Cost

The analysis process will include summaries as appropriate for each project, but will include benefit /cost (BC) analysis results. Projects with a negative benefit /cost (BC) analysis result will be ranked as a 0. Projects with a positive benefit /cost (BC) analysis will receive a score equal to the projects benefit /cost analysis results divided by 10. Therefore a project with a BC ratio of 50:1 would receive 5 points; a project with a BC ratio of 100:1 (or higher) would receive the maximum points of 10.

Population Benefit

Population Benefit relates to the ability of the project to prevent the loss of life or injuries. A ranking of 10 has the potential to impact 90% or more of the people in the municipality (county, city, or district). A ranking of 5 has the potential to impact 50% of the people, and a ranking of 1 will not impact the population. The calculated score will be the percent of the population impacted positively multiplied by 10. In some cases, a project may not directly provide population benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly effects the population, but should not be considered to have no population benefit.

Property Benefit

Property Benefit relates to the prevention of physical losses to structures, infrastructure, and personal property. These losses can be attributed to potential dollar losses. Similar to cost, a ranking of 10 has the potential to save $1,000,000 or more in losses. Property benefit of less than $1,000,000 will receive a score of the benefit divided by $1,000,000 (a ratio below $1 million). Therefore, a property benefit of $300,000 would receive a score of 3. In some cases, a project may not directly provide property benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly effects property, but should not be considered to have no property benefit.

Economic Benefit

Economic Benefit is related to the savings from mitigation to the economy. This benefit includes reduction of losses in revenues, jobs, and facility shut downs. Since this benefit can be difficult to evaluate, a ranking of 5 would prevent a total economic collapse, a ranking of 3 could prevent losses to about half the economy, and a ranking of 1 would not prevent any economic losses. In some cases, a project may not directly provide economic benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly affects the economy, but should not be considered to have no economic benefit.

Project Feasibility (Environmentally, Politically & Socially)

Project Feasibility relates to the likelihood that such a project could be completed. Projects with low feasibility would include projects with significant environmental concerns or public opposition. A project with high feasibility has public and political support without environmental concerns. Those projects with very high feasibility would receive a ranking of 5, and those with very low would receive a ranking of 1.

Potential to mitigate hazards to future development

Proposed actions that can have a direct impact on the vulnerability of future development are given additional consideration. If hazards can be mitigated on the onset of the development, the County will be less vulnerable in the future. Projects that will have a significant effect on all future development receive a rating of 5. Those that do not affect development should receive a rating of 1.

Potential project effectiveness and sustainability

Two important aspects of all projects are effectiveness and sustainability. For a project to be worthwhile, it needs to be effective and actually mitigate the hazard. A project that is questionable in its effectiveness will score lower in this category. Sustainability is the ability for the project to be maintained. Can the project sustain itself after grant funding is spent? Is maintenance required? If so, are or will the resources be in place to maintain the project. An action that is highly effective and sustainable will receive a ranking of 5. A project with effectiveness that is highly questionable and not easily sustained should receive a ranking of 1.

Final ranking

Upon ranking a project in each of these categories, a total score can be derived by adding together each of the scores. The project can then be ranked high, medium, or low based on the non-planning project thresholds of:

Project Ranking Priority Score

- High >= 40
- Medium 25-39
- Low <= 24

2006 Mitigation Project Status Report

2012 Revision Summary: The 2006 Mitigation Projects were updated with their current status.

The following table shows the mitigation actions identified in the 2006 Canyon County All Hazard Mitigation Plan. The status column indicates if the project is completed or not, and what roadblocks are slowing progress of each project. Those projects that are not completed or underway, but are deemed feasible, have been integrated into the current project listing. Those projects that are not feasible have been removed from the mitigation project listing.

Completed Moved to 2012 List Non-Mitigation Preparedness Project

Action Item	Hazard	Status
8.1.a: Public Education Programs	All Hazards	We do limited education programs through Citizen Corps programs.
8.1.b: Implement land-use and development policy to reduce exposure to hazards	All Hazards	Comprehensive Plans were updated in Nampa and Caldwell
8.1.c: Develop a landslide hazard identification program	Landslide, Flood, Wildfire, and Earthquake	Landslide Hazards were identified in the 2006 Plans and verified in the 2012 Update.
8.1.d: Standardize practices for excavation, construction, and grading of home sites and roads	Wildfire, Flood, Earthquake, and Landslides	Canyon County Developmental Services has standardized and provides inspections of all development in the County.
8.1.e: Increase participation in National Flood Insurance Program	Flood	The Canyon County FIRM maps were updated in 2009.
8.1.f: Rural signage (road signs & rural fire district boundary signs) improvements across the County	All Hazard	The County has continued to update signage across the county. At this time we are up to date.
8.1.g: Complete All Hazard Mitigation Plan for additional hazards	All Hazards	Additional Hazards were added as part of this update.
8.1.h: Conduct review of local ordinances policies, and comprehensive plans to characterize current policies related to the Boise River and inconsistencies among jurisdictions	Flood and Landslide	This was completed as a part of this plan update. See section 5.
8.1.i: Change the policy to give local officials the authority to open irrigation canal head gates during flood events	Flood	Not completed.
8.1.j: Enforce a policy to engineer bridge and culvert crossings on canals with the same standards as river and stream bridges and culverts	Flood	Not Completed
8.2.a: Assess and hardwire emergency facilities and shelters for use with a portable generator (e.g. Notus City Hall, Notus Community center, Middleton City Hall, Middleton City Shop, Nampa City Hall, Nampa Police Department, Caldwell City Hall, Melba City Hall, Wilder City Hall, Parma City Hall, and local fire stations, community shelters, and senior centers throughout the County)	All Hazards	We have had limited success due to limited funds. The County Shop received a generator which powers the EOC and County Fuel site. Some Cities have added generator backups.

8.2.b: Inspect buildings, particularly un-reinforced masonry, for hazard stability	All Hazard	On-going as developmental services permits new and addition construction.
8.2.c: Obtain needed resources for health care facilities community centers, and other shelters to protect themselves from potential hazards (e.g. sandbags, cots, nonperishable foods, etc.)	All Hazards	We have added some resources. Purchased a cache of sandbags. The Health organizations through ASPR have caches of medical supplies
8.3.a: Review bridge and culverts along all Primary Access Routes identified in this plan which cross through flood zones.	Floods and Landslides	All bridges and culverts are examined annually by the jurisdictional road department.
8.3.c: Review all road profiles which are within flood zones to determine degree of road profile rise needed to elevate it above the flood zone.	Flood	All roads are examined annually by the jurisdictional road department.
8.3.d: Reinforce the 4 well intakes in the County which are within the flood zone.	Flood	Not completed
8.3.e: Post FEMA "Emergency Evacuation Route" signs along the identified primary, secondary and escape access routes in the County.	All Hazards	Not Completed
8.3.f: Conduct feasibility study to install debris catchment structures in the Boise River system upstream of critical access crossings, and develop program for maintaining these structures during flooding events with high debris flow.	Flood	Flood Control Districts have not done this due to limited budgets.
8.3.g: Reinforce or replace head gates on canals to stabilize them during flood events and mud slides	Flood, Debris Flows	On-going as needed
8.3.h: Obtain generators for community of Middleton, specifically to power water and sewer systems.	All Hazards	Not completed
8.3.i: Construct engineered levees around power lines substations within the floodplain.	Flood	Not completed
8.3.j: Install diversion gate to redirect water from Boise River to the Dixie Slough near Caldwell during flood events.	Flood	Under review by local irrigation districts
8.3.k: Conduct risk assessment of gravel mining in the Boise River channel and adjacent floodplain for both commercial operations and annual channel maintenance.	Flood and Severe Weather	Flood control districts are limited in their ability to remove gravel from the river channel due to permitting.
8.4.a: Acquisition of mapping system for Canyon County (compatible with CAD)	All Hazards	This has been completed as GIS is combined with the County CAD system.
8.4.b: Install Automatic Vehicle Locator systems on all emergency response units	All Hazards	This has been completed as all vehicles are AVL equipped and are visible in real time on the CAD/GIS map in dispatch.

8.4.c: Construct an Emergency Operations Center within the County	All Hazards	The EOC was constructed at the County Shop building near the courthouse. In planning phase to move it to the EMS building at Happy Day.
8.4.d: Establish and train a Type 2 Overhead Team	All Hazards	The State of Idaho has created a type 3 overhead team and Canyon County emergency personnel are members of that team.
8.4.e: Obtain portable generators for use in Canyon County during power outages and other emergency situations	All Hazards	We have obtained a couple generators which are at the County Shop building.
8.4.f: Evaluate location of emergency services headquarters, field offices, and storage facilities for proximity to potentially hazards, particularly the flood zone.	All Hazards	All critical infrastructure as identified and mapped as part of this update
8.4.g: Maintain snow removal equipment and schedule for communities and primary transportation routes	Winter Storm	Local Highway Districts and city street departments maintain snow removal equipment

Table 6.1 2006 Canyon County AHMP Identified Mitigation Actions

Mitigation Projects

Listed below are the goals and objectives developed by the AHMP and the projects, listed by hazard, that were developed to address the risks posed. Included in the list is a rough order of magnitude (ROM) cost estimate, where established, and an anticipated period for further investigation, project development, and implementation.

Denotes Priority Projects

Severe Weather

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
Strategically locate and plan infrastructure projects that take into consideration the impacts of natural hazards	Standardizing codes for excavation, construction, and grading	Lancing Lane Hill Regrade	HWY District #4	ROM – $650K 2013 – Seek Funding 2014 - Regarde
		Middleton Hill Regrade	HWY District #4	ROM – $750K 2013 – Seek Funding 2014 - Regarde
		Blessinger Hill Regrade	HWY District #4	ROM – $650K 2013 – Seek Funding 2014 - Regarde

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
Educate communities about the unique challenges of natural hazard preparedness in the county.	Install Backup electrical generation in critical facilities	Canyon Highway District #4 Back-Up Generator	HWY District #4	ROM – $60K 2013 – Identify Funding Source 2014 – Install Generator

Flooding

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
Strategically locate and plan infrastructure projects that take into consideration the impacts of natural hazards	Improve the Safety of County roads, bridges, and critical infrastructure	Boise River Bank Stabilization on River Road	HWY District #4	ROM – $500K 2015 – Apply for FMA Funding 2016 – Conduct Engineering 2017 – Construction Project
		Canyon County will develop a "storm water" master plan that addresses the management of the Drainage Districts **Ranking #1**	Flood Plain Administrator	ROM - $10K 2013 – Create a Drainage Management Committee and Develop Policy 2014 – Develop Master Plan to Manage and Integrate Drainage Districts
	Canyon County will continue to participate in the National Flood Insurance Program and develop actions that will reduce the damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures	Boise River Gravel Bar Removal for Flood Control **Ranking #3**	HWY District #4	ROM – $75K 2014 – Seek Funding to do Engineering 2015 – Apply for Project Funding
		Fifteen Mile Creek Culvert Upgrade at Madison Road	HWY District #4	ROM - $300K 2014 – Apply for FMA Funding 2015 – Construction Project
		Madison Creek Culvert Upgrade at Marble Front Road	HWY District #4	ROM - $300K 2015 – Apply for FMA Funding 2016 – Construction Project
		Madison Creek Culvert Upgrade at Middleton Road ***Ranking #6***	HWY District #4	ROM - $300K 2017 – Apply for FMA Funding 2018 – Construction Project

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
		Madison Creek Culvert Upgrade at Midland Road ***Ranking #7***	HWY District #4	ROM - $500K 2018 – Apply for FMA Funding 2019 – Construction Project
		West Hartley Gulch & East Hartley Gulch Culvert Replacement Study ***Ranking #10***	Hwy District #4	ROM - $144K 2014 – Apply for FMA Planning Project
		Willow Creek Bridges flood study ***Ranking #13***	HWY District #4	ROM - $56K 2014– Apply for FMA Planning Project
		Five Mile Drain Culvert @ Franklin Road	HWY District #4	ROM - $139K 2018 – Apply for FMA Funding 2019 – Construction Project
		Five Mile Drain Culverts @ Prescott, 11th Ave, and Dean Lane study.	HWY District #4	ROM - $150K 2015– Apply for FMA Planning Project
		Replace Failing Culverts where Middleton Road and Chacartegui Lane cross Indian Creek **Ranking #2**	HWY District #4	ROM – $490K 2012 – Submit FMA Grant 2013 – Begin Engineering 2014 – Replace Culverts
Strategically locate and plan infrastructure projects that take into consideration the impacts of natural hazards	Canyon County will continue to participate in the National Flood Insurance Program and develop actions that will reduce the damage to County infrastructure due to flash and stream	Increase the size of the Linden Road culvert.	HWY District $4	ROM - $150K 2019 – Apply for FMA Funding 2020 – Construction Project
		Conduct feasibility study to install debris catchment structures in the Boise River system upstream of critical access crossings, and develop program for maintaining these structures during flooding events with high debris flow.	Flood Control District	ROM – $150K 2014 Submit an FMA Planning Grant to BHS

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
	flooding, irrigation and drainage, and dam failures	Install diversion gate to redirect water from Boise River to the Dixie Slough near Caldwell during flood events. **Ranking #4**	Flood Control District	ROM – $500K 2015 – Conduct Engineering 2016 – Apply for Funding
		Enforce a policy to engineer bridge and culvert crossings on canals with the same standards as river and stream bridges and culverts.	Highway Districts	ROM – No Cost 2012 – Begin Policy Coordination
		Change the policy to give local officials the authority to open irrigation canal head gates during flood events	Irrigation Districts	ROM – $50K 2013 – Begin Policy Discussions and Change Planning Documents
		Develop methods to control surface-water and ground water drainage to improve slope-stabilization	Drainage Districts	ROM – $150K 2015 – Develop methodology as part of a Storm Water Drainage Master Plan
		Construct engineered levees around power lines substations within the floodplain.	Flood Control District/Idaho Power	ROM – $500K 2013 – Identify Locations 2014 – Conduct Engineering Designs 2015- Apply for Funding
		Reinforce the 4 well intakes in the County which are within the flood zone	Flood Control District	ROM – $500K 2013 – Identify Locations 2014 – Conduct Engineering Designs 2015- Apply for Funding

Geological

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
Strategically locate and plan infrastructure projects that take into consideration the impacts of natural	Implement retrofit, redevelopment, and/or abatement programs to strengthen existing	Shop Building Upgrades	HWY District #4	ROM - $460K 2015 – Conduct Seismic Analysis 2016- Engineer Upgrades 2017 – Apply for Project Funding

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
hazards	structures; pay particular attention and priority to schools, public buildings, community evacuation and relocation sites	Old Hwy 30/Plymouth Street Bridge Replacement ***Ranking #8***	HWY District #4	ROM - $1,650K 2015 – Conduct Engineering 2016 – Apply for LHTAC Funding 2017 – Replace Bridge
		Initial Post-Event Bridge/Structure Evaluation Training	HWY District #4	ROM - $5K 2013 – Conduct Training
	Conduct assessment of seismic hazards to quantify and understand the threat	Inspect county owned buildings, particularly un-reinforced masonry, for hazard stability	County Engineer	ROM – $100K 2013 – Identify list of buildings to be examined 2014 – Conduct Assessments
	Conduct ongoing public-education efforts to raise awareness and build constituent support	Publish a special section in your local newspaper with emergency information on earthquakes.	Canyon County Emergency Manager	ROM – $2.5K 2012 – Develop public information materials and submit to newspapers
	Establish a countywide landslide hazard identification program	Develop a County-wide policy that directs the floodplain administrator to document all landslides, bank failures, “washouts”, and manmade embankment failures	Floodplain Administrator	ROM – $5K 2013 – Develop Policy and Update Flood Hazard Ordinance
Strategically locate and plan infrastructure projects that take into consideration the impacts of natural hazards	Restricting development in landslide prone areas	Develop a Land Use Policy that promotes removing or converting existing development or discouraging or regulating new development in unstable areas. ***Ranking #5***	Canyon County Development Services	ROM – $5K 2013 – Develop Policy and incorporate into Planning and Zoning Ordinances

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
		Develop a Land Use Policy that restricts construction in areas of known landslides, debris flows, steep slopes, streams and rivers, intermittent-stream channels, and the mouths of mountain channels.	Canyon County Development Services	ROM – $5K 2013 – Develop Policy and incorporate into Planning and Zoning Ordinances

Wildfire

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
Strategically locate and plan infrastructure projects that take into consideration the impacts of natural hazards	Canyon County will reduce the losses caused by wildfire by continuing the Wildland Urban Interface Mitigation Program	Range Land Access *Ranking #9*	HWY District #4	ROM - Unknown
	Enhance Wildfire Rehabilitation efforts in the ecological recovery of burned areas	Develop a policy that requires a Burned Area Recovery (BAER) Plan in the County ***Ranking #11***	Fire Districts and Development Services	ROM – $5K 2013 – Adopt the International Wildland Fire Code and update land use planning ordinances to include the requirements of the Code including BAER Planning

Biological

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
Strategically locate and plan infrastructure projects that take into consideration the impacts of natural hazards	Reduce damage caused by burrowing rodents	Installing Barn Owl houses on private property near areas of pocket gopher infestations ***Ranking #12***	Canyon County Weed and Pest Control	ROM – $1000 2013 – Develop a program to work closely with private property owners to construct and install Barn Owl housing

Other

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
Educate communities about the unique challenges of natural hazard preparedness in the county	Develop a culture of preparedness for serve weather events through public education	Develop a temporary traffic control equipment and response plan.	HWY District #4	ROM – $15K 2013 – Develop Plan and Add to EOP
	Provide information on personal and family preparedness for severe weather	Identify Ustick, Homedale, Notus, and Allendale Roads as critical evacuation routes	Golden Gate Highway District	ROM - $1000 2013 – Add to EOP Update
	Identify shelter locations with emergency power and heating, water supplies, and sanitary services	Identification of Emergency Shelters and Alternate Dispatch sites.	Canyon County Emergency Management	ROM - $5000 2013 Add to EOP Update

Participating Jurisdiction Goals

City of Caldwell

Flooding

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
The City of Caldwell will continue participation in NFIP and enforcement of building codes in the floodplain.	Examine where the addition of berms or levees would reduce damage in the floodplain	Construct diversion gates to direct floodwaters from the Boise River to the Dixie Slough	City of Caldwell Public Works	ROM – $500K 2015 – Conduct Engineering 2016 – Apply for Funding
		Place Engineered dikes along the River channel through Caldwell	City of Caldwell Public Works	ROM – Unknown 2014 – Develop Engineering Designs and Cost Estimates

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
		Raise the banks on the larger canals that run through Caldwell	Irrigation Districts	ROM – Unknown 2014 – Develop Engineering Designs and Cost Estimates
		Develop Policies that all local irrigation districts to open headgates or irrigation canals and ditches to divert floodwaters on to fields.	Irrigation Districts	ROM – $50K 2013 – Begin Policy Discussions and Change Planning Documents
		Cement the Banks on the Phillips Canal	Phillips Canal Irrigation District	ROM – Unknown 2014 – Develop Engineering Designs and Cost Estimates
		Cement the Banks on the Canyon Hill Canal	Canyon Hill Canal Irrigation District	ROM – Unknown 2015 – Develop Engineering Designs and Cost Estimates
		Cement the Banks on the Notus Canal	Notus Canal Irrigation District	ROM – Unknown 2016 – Develop Engineering Designs and Cost Estimates
		Replace the culvert where the canal crosses Mason Road	City of Caldwell Public Works	ROM – $300K 2015 – Conduct Engineering 2016 – Apply for FMA Grant
	Determine where elevating structures in the floodplain would be beneficial	Protect the Waste Water System Clarifier #2 from Flooding	City of Caldwell Public Works	ROM – $1.5M 2013 – Conduct Engineering 2014 – Apply for FMA Grant

City of Greenleaf

Flooding

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
The City of Greenleaf will continue participation in NFIP and enforcement of building codes in the floodplain.	Ensure awareness of the availability of flood insurance	Participate in the NFIP	Planning and Zoning	ROM –No Cost 2013 – Apply to be part of the NFIP

Manmade

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
The City of Greenleaf will protect citizens and visitors from manmade hazards	Improve safety of the entrances to buried irrigation systems	Install safety barriers on the entrances to buried irrigation systems	Irrigation Districts	ROM – $25K 2013 – Design and Install Barriers

City of Melba

Flooding

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
Develop a culture of preparedness for serve weather events through public education.	Protect the community from storm water and spring run off	Install a storm water collection/drainage system	Public Works	ROM – $1M 2013 – Conduct Engineering 2014 – Apply for an HMA Grant
		Install a culvert at 7420 Hove Road	Public Works	ROM - $25K 2013 – Install Culvert
	Improve fire water supply	Upgrade Fire Water Storage and delivery pressure system including adding emergency power	City of Melba Public Works	ROM - $1.438M 2013 – Seek Integrated Funding from various sources

City of Middleton

Flooding

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
The City of Middleton will continue participation in NFIP and enforcement of building codes in the floodplain.	Maintain culverts in the floodplain	Develop a culvert and storm water collection maintenance program	City of Middleton Public Works	ROM - $50K 2013 – Map culverts and develop program
	Reduce flooding potential by removing willows and overgrowth in the stream channel	Conduct periodic cleaning of willows and other overgrowth from the streams that run through the City	City of Middleton Public Works	ROM – $25K Annually – Conduct Cleaning of overgrowth in streams

City of Nampa

Flooding

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
The City of Nampa will continue participation in NFIP and enforcement of building codes in the floodplain.	Maintain culverts in the floodplain	Replace the Culvert at Kings Road	City of Nampa Public Works	ROM – $300K 2013 – Design Culvert Replacement 2014 –Apply for Funding
		Replace the Culvert at Mason Creek	City of Nampa Public Works	ROM – $300K 2014 – Design Culvert Replacement 2015 –Apply for Funding
		Develop a culvert and storm water collection maintenance program	City of Nampa Public Works	ROM - $50K 2013 – Map culverts and develop program

City of Notus

Flooding

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
The City of Notus will continue participation in NFIP and enforcement of building codes in the floodplain.	Maintain culverts in the floodplain	Develop a culvert and storm water collection maintenance program	City of Notus Public Works	ROM - $50K 2013 – Map culverts and develop program
		Replace the Conway Drain culvert on 1st Street	Conway Drain District/City of Notus Public Works	ROM – $300K 2014 – Design Culvert Replacement 2015 –Apply for Funding
		Replace the Conway Drain Culvert with a bridge on Notus Road	Conway Drain District/City of Notus Public Works	ROM – $300K 2013 – Design Culvert Replacement 2014 –Apply for Funding
		Raise manhole covers in areas prone to storm water run off	City of Notus Public Works	ROM – $150K Annually – Raise manholes as part of road maintenance
	Determine where elevating structures in the floodplain would be beneficial	Protect the Sewer System Treatment Ponds located in the Floodplain	City of Notus Public Works	ROM – $1M 2015 – Design new sewer lagoons 2016 – Seek FMA Funding 2017 -Raise lagoons using new design

City of Parma

Flooding

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
The City of Parma will continue participation in NFIP and enforcement of building codes in the floodplain.	Improve storm water collection	Install a pipeline and storm water inlets to convey storm water runoff to a natural drainage area owned by the City of Parma	City of Parma Public Works	ROM – $300,000 2012 – Submit a LOI for a FMA Project, submit grant if accepted. 2013 – Receive Grant and begin engineering 2014 – Construct Storm Water System

City of Wilder

Severe Weather

Goal	Objective	Project	Responsible Entity	Order of Magnitude Cost & Planning Horizon
Develop a culture of preparedness for serve weather events through public education.	Identify shelter locations with emergency power and heating, water supplies, and sanitary services	Develop relocation shelters for the City of Wilder	Wilder City Council and Canyon County Emergency Management	ROM - $2500 2013 – Update Canyon County EOP

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Attachment 1: Meeting Minutes

Canyon County Multi-Jurisdiction All-Hazards Mitigation Plan Committee (LEPC) Meeting Agenda November 9, 2011 9:00 A.M. – 11:00 A.M.

Introductions: **Todd Herrera, Committee Chair**

Purpose of All Hazard Mitigation/THIRA: **Rick Fawcett**

Update Data Needs: **Derrick Sharp**

- ❑ **Project Updates**
- ❑ **Historical Events**
- ❑ **HVAs and Comprehensive Plans**

Hazard Perception: **Rick Fawcett**

- ❑ **Committee Questionnaire**
- ❑ **Public Questionnaire Review and Approval**

Setting Mitigation Goals – An Event? **Rick Fawcett**

- ❑ **Examples**
- ❑ **Assignment**

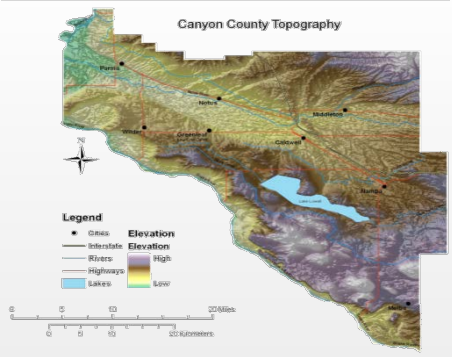
Next Meeting

Thank you for your participation!

Canyon County
AHMP Committee Members
Attendance Roster
November 9, 2011

Agency	Representative	Position
South West District Health	Laurel Bennett	Liason
Canyon County Sheriff	Christine McPartlan	Dispatch
South West District Health	Doug Clegg	Health Educator
Caldwell Fire	Mark Wendelsdorf	Fire Chief
Private Sector	Don Lynn	CEO
City of Nampa	Lynn Thompson	Risk Manager
Canyon County CERT	Fred Mould	Member
Bureau of Homeland Security	Susan Cleverley	Mitigation Planner
Bureau of Homeland Security	Dale Nalder	Area Field Officer
Canyon County Sheriff's Department	Todd Herrera	Lieutenant
Canyon County sheriff's Office	Louaine Elfering	Field Services
Idaho State Police	Jim Eavenson	CVS Lieutenant
Nampa Fire Department	Karl Malott	Chief
The College of Idaho	Ben Mosley	Lieutenant
West Valley Medical Center	Wayne Tuckness	Safety
Canyon County	Sarah Higulera	Mapping
Disaster Kleenup	Gary Botts	General Manager
Canyon County Ambulance District	Greg Owen	Director
St. Al's Meidcal Center North	Teresa Pron	Emergency Preparedness Coordinator/RN

Agency	Representative	Position
Idaho Department of Labor/COSSA	Jeanie Allen	
Canyon Highway District #4	Tim Richard	Engineer



Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

Using the ***"Whole Community"*** Planning Approach
November 9, 2011

Integrated "Whole Community" Approach

- Update and revise AHMP to include Multi-Jurisdiction Requirements
- Meet 2011 EMPG Requirements to Develop a "Whole Community" Threat and Hazard Identification and Risk Assessment (THIRA)
  - Roll Up of AHMP
  - Multi- Jurisdictional Participation (all levels of government, local public and private participants)

Emergency Management Basics

- All Hazard Approach
  - Preparedness
  - Response
  - Recovery
  - Mitigation – THIRA Base Risk Planning
- Past Practices has been *"Response "Centric"* based!

"Whole Community" Basis

- Risk Assessments Based on Threat and Hazard Identification – THIRA
- THIRA is a prioritized risk process – no mandate for complex assessment methodologies
- All Levels of Government are able to access their risks using appropriate methods
  - Framework for preparedness investment justification
  - Foundation for *Prevention and Protection* Measures
  - Preparedness levels and progress are measured from year to year by risk based evaluation of gaps between current and target capability levels
  - Investments made to close gaps in capability levels result in reduced risk, improved community preparedness, and reflect a measureable return on investment

Using the "Whole Community" Potential THIRA/AHMP Input

- Existing AHMPs
  - Natural Hazards
  - Man Made Hazards
- Flood Mitigation Plans
- Wildfire Mitigation Plans
- Dam Hazard Analysis Reports
- Hazmat Flow Studies
- Hospital HVAs
- Health District HVAs on Public Health Preparedness Facilities or Operations
- County Transportation Plan
- County and City Comprehensive Plan
  - Planning and Zoning Ordinances
  - Building Codes
- Agricultural Assessments – Crops and Livestock
- Law Enforcement Assessments – Idaho Criminal Intelligence Center
  - Threat Assessments
  - Drug and extremists intelligence
- Court House Security Plans
- School District HVA
- Tier II Reporting
- Process Safety Management Plan for Commercial and Industrial Facilities dealing with highly hazardous materials
- Fire Department Pre-Fire Plans
- Business Vulnerability Assessments

Whole Community – Risk Based Planning

- Identify Hazards
- Identify Vulnerabilities
- Develop Mitigation Techniques
  - Prevention
  - Protection
- Then Plan
  - Based on the Risk and Capability Assessments
  - Better Balance between Response and Recovery

What Shall I Spend it On?

- Road Map = A Schedule for Program Improvement
- Three to Five Year Project Plan

County Program Plans

↓

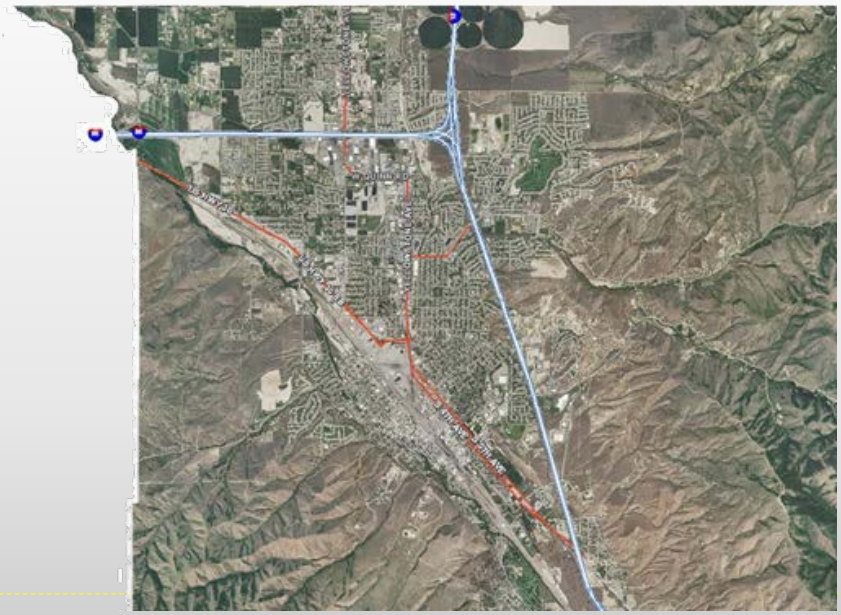
State Investment Strategies

↓

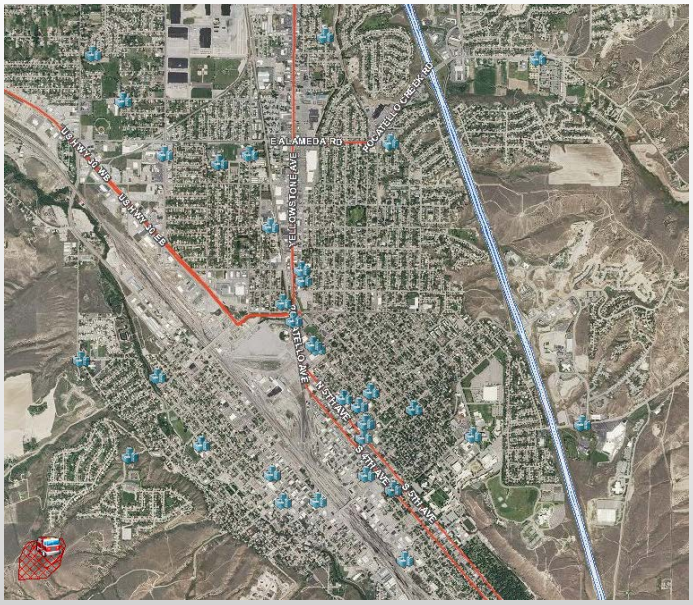
Grant Requirements = Available Funding

GIS Based Risk Assessment

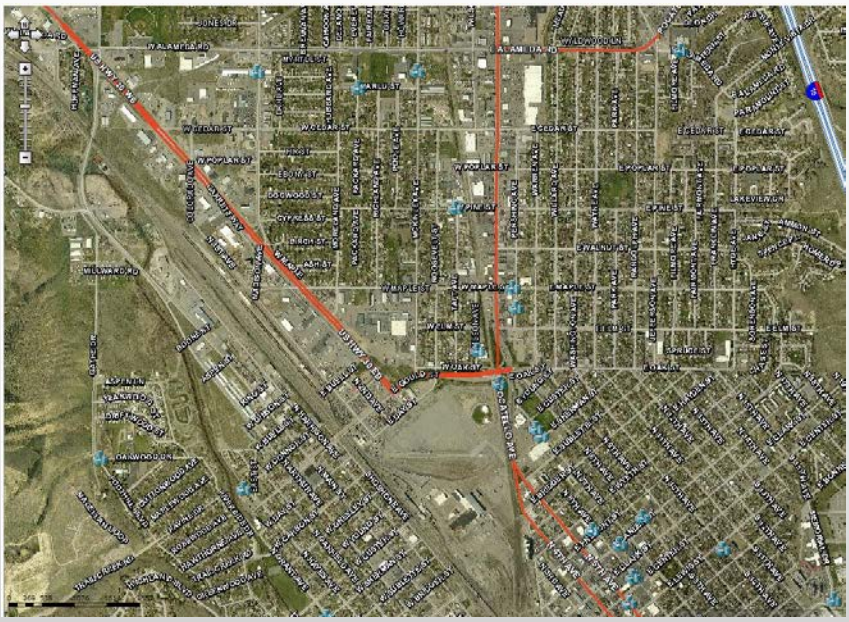
Target Location



Public and Government Buildings

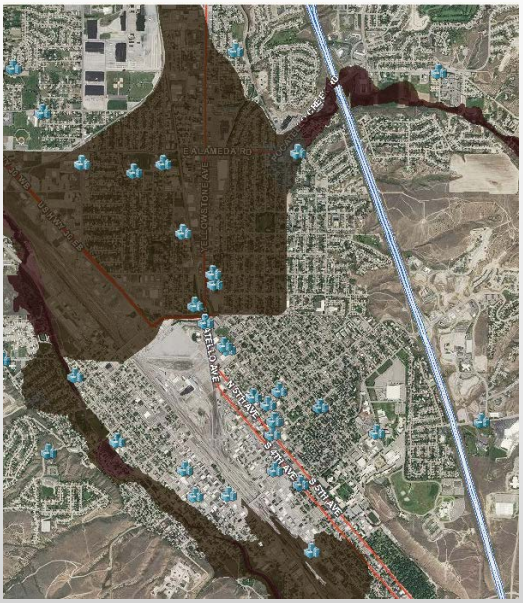


Transportation Networks

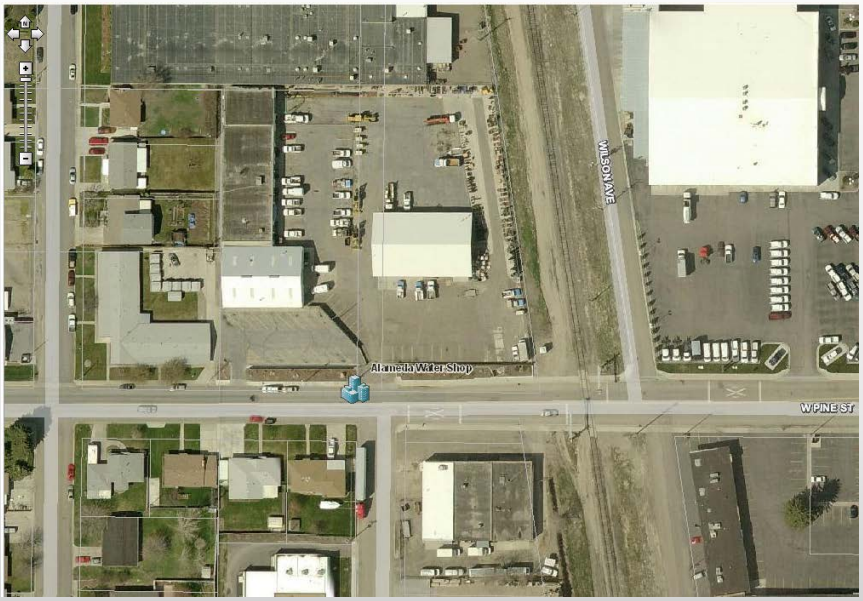


High Resolution Imagery

Flood Locations



Site Specific Uses



What Does the Analysis Tell Us?

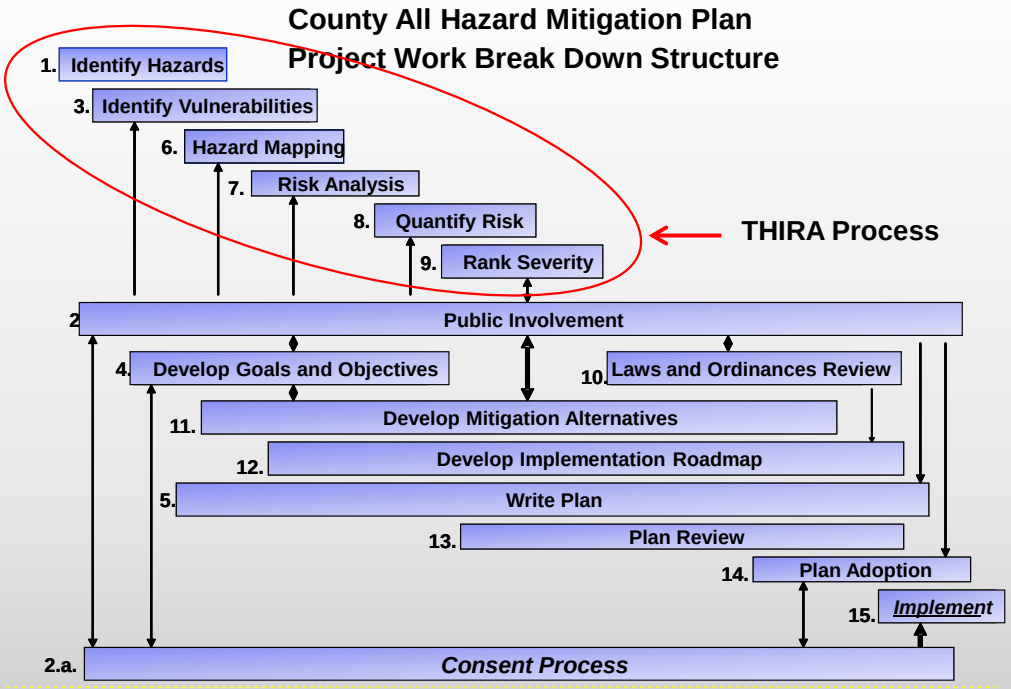
- What Areas area specifically impacted?
- What Facilities are included in the Area?
- What Residential Areas are included in the Area?
- What vulnerable populations are included in the Area?
- How do we protect those vulnerabilities?
- What prevention steps need to be taken?

"Whole Community" Preparedness

- Hazard Based Planning
  - ***Prevention and Protection is the Foundation - Mitigation***
- Response Plans and Procedures
- Staffing
- Equipment
- Training
- Validation - Drills and Exercises

Hazard Mitigation

Hazard mitigation is defined as any sustained action taken to reduce or eliminate long-term risk to life and property from a hazardous event. Hazard mitigation results in long-term, cost-effective, and environmentally-conscious reduction of hazard vulnerability. ***The goal of hazard mitigation is to save lives and reduce property damage.*** ***(Protect and Prevent)*** This, in turn, can reduce the enormous cost of disasters to property owners and all levels of government. In addition, hazard mitigation can protect critical community facilities, reduce exposure to risk, and minimize community disruption.



Hazard Examined – AHMP Natural
THIRA – Full Range – Includes Man Made

- **Natural Hazards**
  - Weather:
    - Drought
    - Extreme Heat
    - Extreme Cold
    - Severe Winter Storm
    - Lightning
    - Hail
    - Tornado
    - Straight Line Wind
  - Flooding:
    - Flash Flood
    - River Flooding
    - Dam Failure
  - Geologic:
    - Earthquake
    - Landslide/Mudslide
    - Snow Avalanche
  - Other:
    - Wildfire
    - Biological
    - Communicable Disease
      - Bird Flu
      - Swine Flu
      - West Nile
- **Technological (Manmade) Hazards (**
  - Structural Fire
  - Hazardous Material Event
  - Riot/Demonstration/Civil Disorder
  - Terrorism
    - Chemical
    - Radiological
    - Nuclear
    - Biological
    - Explosive

Hazard Profile =
Impacts of Hazards on Vulnerabilities

Magnitude of Natural Disasters						
Value	**Reconstruction Assistance From**	**Geography (Area) Affected**	**Expected Bodily Harm**	**Loss Estimate Range**	**Population Sheltering Required**	**Warning Lead Times**
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

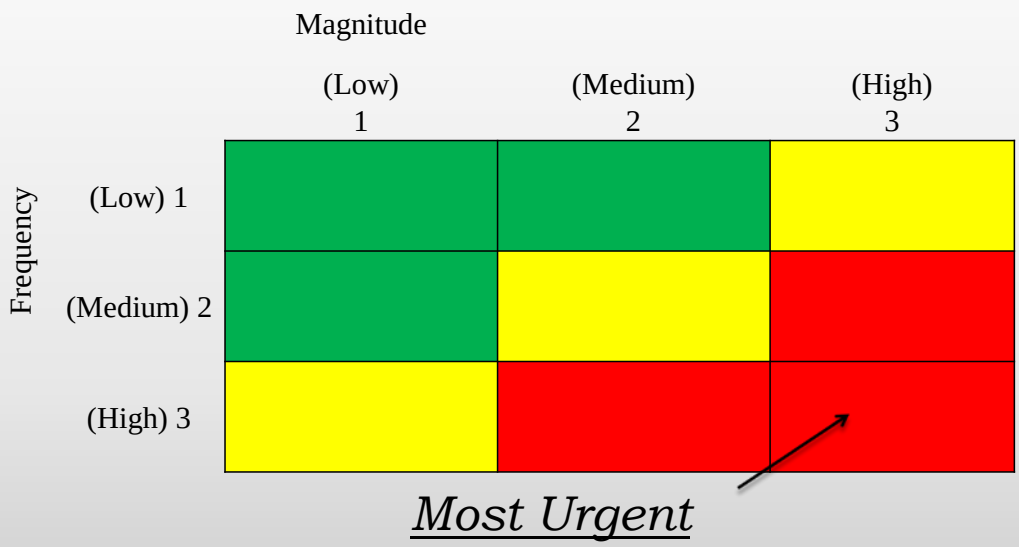
Impact

How Often

Location	No. of Years	No. of Events	Reoccurrence Interval
County	23	17	1.35

	Frequency
Ranking	**Description**
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

Risk Ranking



'Whole Community" Means Multi-Jurisdictional

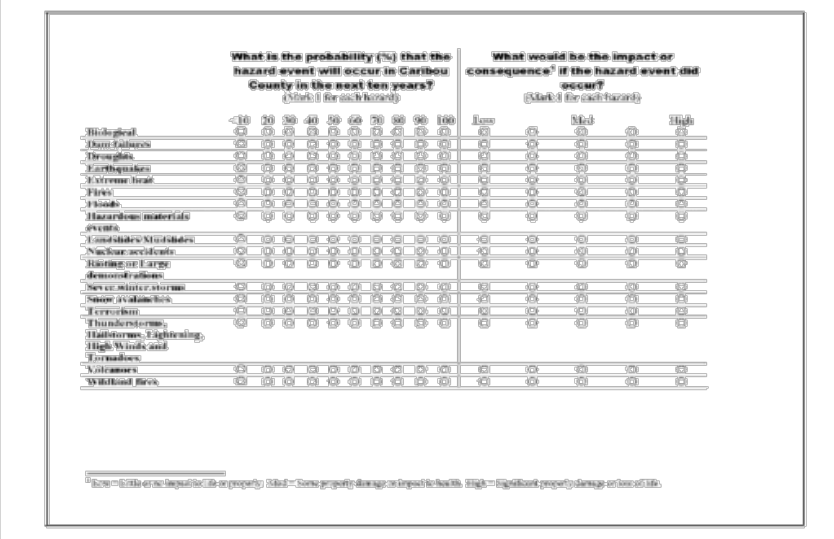
- Jurisdictions Included:
  - Canyon County
    - City of Caldwell
    - City of Greenleaf
    - City of Middleton
    - City of Melba
    - City of Nampa
    - City of Notus
    - City of Parma
    - City of Wilder
    - School Districts
    - Highway Districts
    - Irrigation Districts
    - Hospitals/Medical Centers
    - Others?

"Whole Community" Includes the Public

- Questionnaire
- Public Comments on Plan – through Website
- Newspaper Articles
- Targeted Participation
  - Homeowners Associations
  - Agricultural Interests
  - Others

"Whole Community" Includes YOU!!

- What is your perception of the hazards?



The AHMP/THIRA Committee

- Committee includes:
  - Members of the LEPC
  - Representatives of all participating jurisdictions
    - Elected Officials
    - Public Works
    - Planning and Zoning
    - Risk Management
    - Comptrollers
    - Transportation Coordinators
    - Road and Bridge Maintenance
  - State and Federal Partners
  - General Public

Committee Responsibilities

- Provide input into Risk Analysis
- Provide data for Vulnerability Analysis
- Set Goals and Objectives for each participating jurisdiction
- Update Status on Existing Projects
- Identify Potential Projects
- Assist with Project Estimates and Benefit Costs
- Review Plan for Technical Quality
- Assist in Plan Adoption and Implementation

Committee Assignments

- ***Ensure Sign in at all meetings***
- Improve and Expand Existing Goals and Objectives
  - Do they need updated? Revised? Added to? Deleted? Jurisdictional Specific
- Provide Status on Current Mitigation Projects
  - Review status sheet and provided updated information to Whisper Mountain – tracie@whispermountain.net
- Provide Hazard Identification – Historical Event Documentation - Risk Assessment Documentation to Whisper Mountain – derrick@whispermountain.net
- Questions Regarding Project – Contact Whisper Mountain – risk@whispermountain.net

Canyon County All-Hazards Multi-Jurisdiction Mitigation Plan Committee Meeting Minutes November 9, 2011

The first meeting to form the Canyon County All-Hazards Multi-Jurisdiction Mitigation Plan Committee was held in the South West Public Health Department building in Caldwell on November 9, 2011 as part of the Canyon County Emergency Services' LEPC meeting at 9:00 am. Todd Herrera, Canyon County Emergency Services Director, conducted the meeting. He welcomed everyone and briefed the committee on what the tasks for participation in the AHMP would be, and the tenets of Hazard Mitigation. Lt. Herrera reviewed some of the known existing hazards in Canyon County and encouraged those in attendance to take notice of their surroundings that they might be aware of any potential or existing problems, some which may not be identified at this time. He requested everyone sign an "in-kind" tracking sheet for Rick Fawcett, Whisper Mountain Professional Services, Inc., the consultant hired by the County to write the All-Hazards Mitigation Plan. The County must provide a 25% match for the grant to write the AhMP and meeting participation counts toward that match. He then turned the time over to Mr. Fawcett.

Mr. Fawcett welcomed everyone in attendance and invited open floor participation in the discussion and presentation. He explained the changes in the planning requirements from FEMA. The new Threat and Hazard Identification and Risk Assessment (THIRA) concept was explained, emphasizing that in the past, the way of doing business was to act upon an emergency event, where the new way is to identify problems and mitigate them as much as possible to prevent the loss of lives and reduce property damage. This is a prepared oriented vs. respond oriented process. Rick then gave a power-point presentation on how the process works, and what the steps would be in writing the plan. He emphasized that all of the projects identified in the process would be prioritized so they could be addressed for mitigation in that order. The presentation showed how the funds will be spent and how the area will be analyzed. Projects identified in the old Mitigation Plan would be evaluated for completion and/or status. Each municipality and County entity participating in the Plan will be required to set goals and for every goal set in the new Plan, there will be a project identified to mitigate that goal. The risk ranking model was explained as: **Frequency X Magnitude = Risk**

Examples were shown and questions were asked. A Risk assessment tool was handed out for completion by each individual in attendance. Mr. Fawcett also stated that a questionnaire would be sent to a sample of people in the County to evaluate their risk perception. A sample of the questionnaire was provided to each participant and they were invited to fill it out. None were returned. The questionnaire will go out to the County under Lt. Herrera's signature with permission from the County Commissioners.

Mr. Fawcett concluded the meeting by asking for suggestions of projects they may be aware of now. The identification of Emergency Shelters and Alternate Dispatch Sites was brought up. Notification of the next meeting will be announced and other entities invited to attend were named and all were encouraged to attend and invite those not in attendance, which should be, to come and participate. Mr. Fawcett thanked them for their time and the meeting was adjourned at 11:00 am.

Canyon County Multi-Jurisdiction All-Hazards Mitigation Plan Committee Meeting Agenda January 24, 2012 1:30 – 3:30 P.M.

Introductions: **Todd Herrera, Committee Chair**

- ❑ **Draft Risk Assessment** **Rick Fawcett**

Hazard Perception: **Rick Fawcett**

- ❑ **Committee Questionnaire**
- ❑ **Public Questionnaire Results**

Hazard Specific Mitigation Goals **Rick Fawcett**

- ❑ **Priority**
- ❑ **Linked to Projects**

Next Meeting

Thank you for your participation!

Canyon County
AHMP Committee Members
Attendance Roster
January 23, 2012

Agency	Representative	Position
South West District Health	Laurel Bennett	Liaison
Caldwell Fire	Mark Wendelsdorf	Fire Chief
Bureau of Homeland Security	Dale Nalder	Area Field Officer
Canyon County Sheriff's Department	Todd Herrera	Lieutenant
Idaho State Police	Jim Eavenson	CVS Lieutenant
Canyon County Ambulance District	Greg Owen	Director
St. Al's Medcal Center North	Teresa Pron	Emergency Preparedness Coordinator/RN
Canyon Highway District #4	Tim Richard	Engineer
Caldwell Police	Dave Wright	Lieutenant
Disaster Kleenup	Lyndsay Salb	Relationship Mgr
Nampa Hwy District #1	Casey Bequeath	Director
Middleton Fire	Marty Ogan	Deputy Chief
Canyon County Sheriff	Craig Hanson	Captain
Canyon County Mosquito Abatement District	Ed Burnett	District Director
Canyon County Mosquito Abatement	Teresa Babcock	Director's Assist
Idaho Transportation Dept	Dan Bryant	Dist. Mtng. Coord.
Idaho Transportation Dept	Ken Couch	Maint. Foreman
Middleton Fire District	Brad Trosky	Chief
Development Services (DSD)	Dan Hunter	
SW ID Juvenile Detention	Steve Jett	Director

Agency	Representative	Position
City of Greenleaf/Wilder Fire	Doug Amick	Public Srvs. Dir./Chief

Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

Committee Meeting
January 23, 2012
Derrick Sharp
Whisper Mountain Professional Services, Inc.

Committee Questionnaire

	What is the probability (%) that the hazard event will occur in the County in the next ten years? (Mark 1 for each hazard)									What would be the impact or Consequence if the hazard event did Occur? (Mark 1 for each hazard)				
	<10	20	30	40	50	60	70	80	90	100	Low		Med		High
Biological	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Dam failures	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Droughts	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Earthquakes	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Extreme heat	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Fires	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Floods	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Hazardous materials events	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Landslides/Mudslides	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Nuclear accidents	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rioting or Large demonstrations	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Sever winter storms	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Snow avalanches	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Terrorism	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Thunderstorms, Hailstorms, Lightening, High Winds and Tornadoes	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Volcanoes	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Wildland fires	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

[1] Low = Little or no impact to life or property. Med = Some property damage or impact to health. High = Significant property damage or loss of life.

Committee Questionnaire Results

Canyon County	
Hazard Type	**Probability of Occurrence**
Biological	Med
Dam Failure	Low
Droughts	High
Earthquakes	Med
Extreme Heat	Med
Fire (Structure)	High
Floods	High
Hazardous Materials Events	High
Landslides/Mudslides	Low
Nuclear Accidents	Low
Rioting or Large Demonstrations	Low
Severe Winter storm	High
Snow Avalanches	Low
Terrorism	Med
Thunderstorms, Hailstorms, Lightning High winds, Tornadoes	High
Volcanoes	Low
Wildland Fires	High

Committee Questionnaire Results

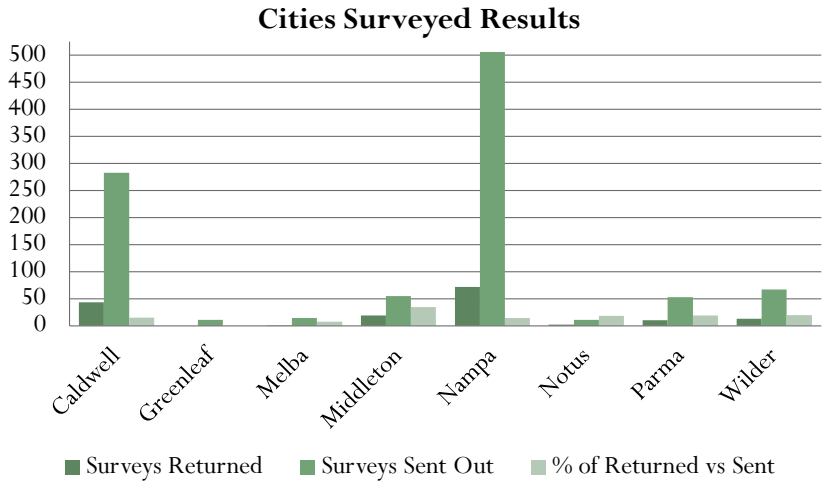
Level of Impact if Event Occurred					
Hazard Type	**low**	**low-med**	**med**	**med-high**	**high**
Biological				X	
Dam Failure					X
Droughts			X		
Earthquakes				X	
Extreme Heat			X		
Fire (Structure)			X		
Floods			X		
Hazardous Materials Events				X	
Landslides/Mudslides	X				
Nuclear Accidents					X
Rioting or Large Demonstrations			X		
Severe Winter storm			X		
Snow Avalanches	X				
Terrorism				X	
Thunderstorms, Hailstorms, Lightning, High winds, Tornadoes			X		
Volcanoes	X				
Wildland Fires			X		

Public Questionnaire

- Mailed out 1000 Copies in early December
- Using the Assessor's Property Data Base we randomly selected residences in each of the incorporated cities based on percentage of population
- 160 Completed Questionnaire Returned
- 23 Questionnaires were returned undelivered
- Return Rate of 16% - slightly lower than normal – typical return rate or 20% is expected based on our experience

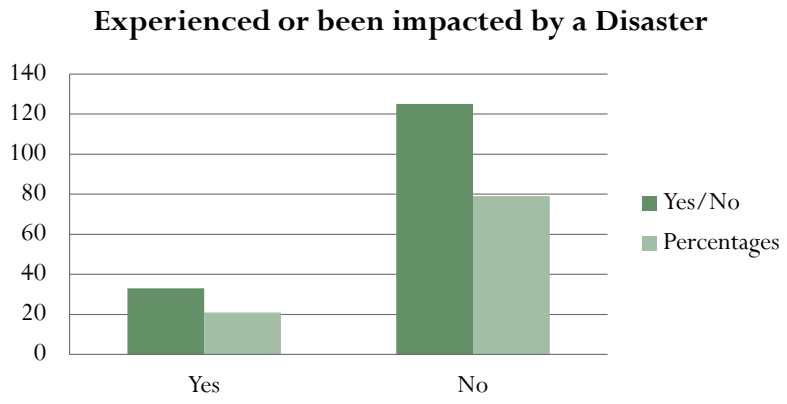
Public Questionnaire

- What town do you live in?



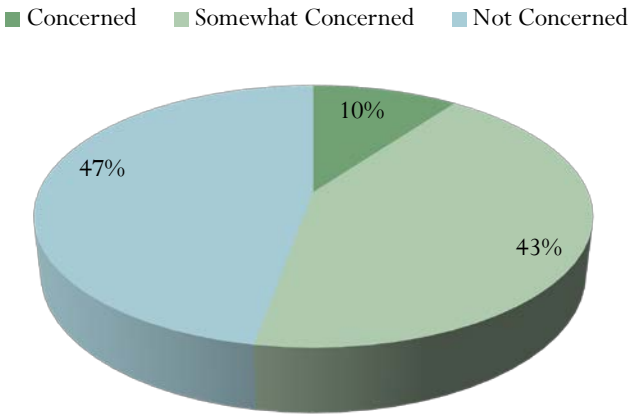
Public Questionnaire

- Have you ever experienced or been impacted by a disaster?



Public Questionnaire

- How concerned are you about the possibility of our community being impacted by a disaster?



Public Questionnaire

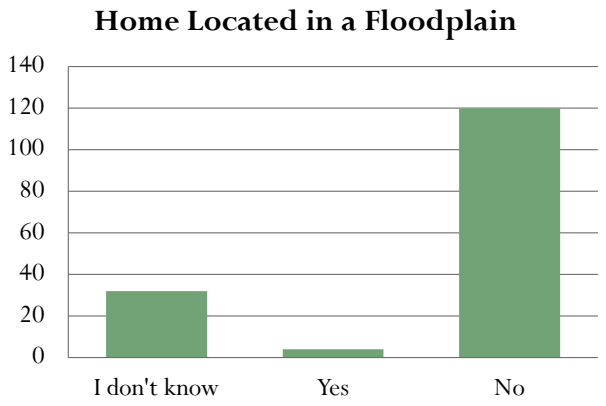
- Select the five (5) highest hazards you believe are facing your neighborhood.

Public Questionnaire

- Is there a Hazard not listed in this survey you think is a wide-scale threat to your neighborhood?
  - Electro Magnetic Pulse (EMP)
  - Railroad Spills
  - Ground Water Contamination for SSI Foods Processing
  - Gangs
  - Drugs
  - Air Quality
  - Long Term Loss of Electricity
  - Goat Heads (Herds?)
  - Farming Pesticides
  - Government (several references)

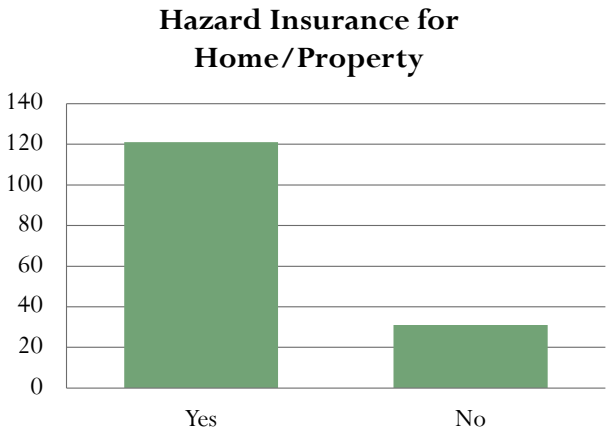
Public Questionnaire

- Is your home located in a floodplain as defined under the National Flood Insurance Program (NFIP)?



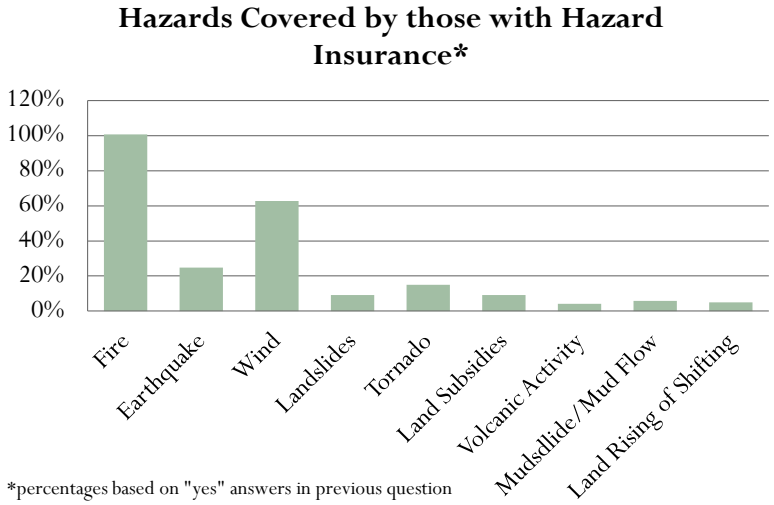
Public Questionnaire

- Do you carry hazard insurance for your property



Public Questionnaire

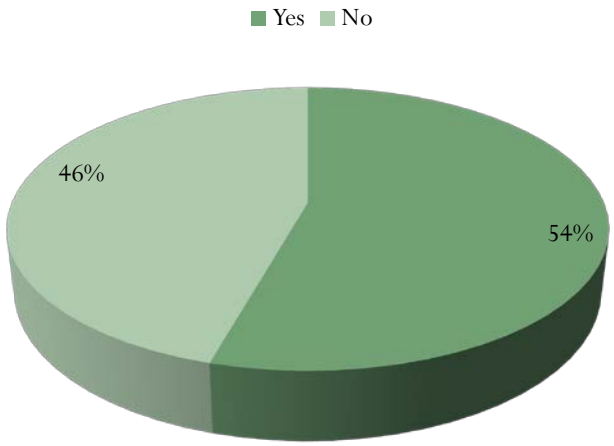
- What hazards does your insurance cover?



*percentages based on "yes" answers in previous question

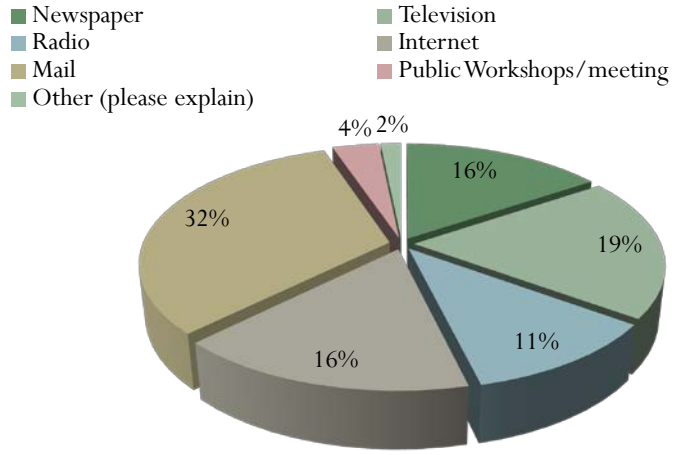
Public Questionnaire

- Are you interested in making your home or neighborhood more resistant to hazards?



Public Questionnaire

- What is the most effective way for you to receive information about how to make your home and neighborhood more resistant to hazards?



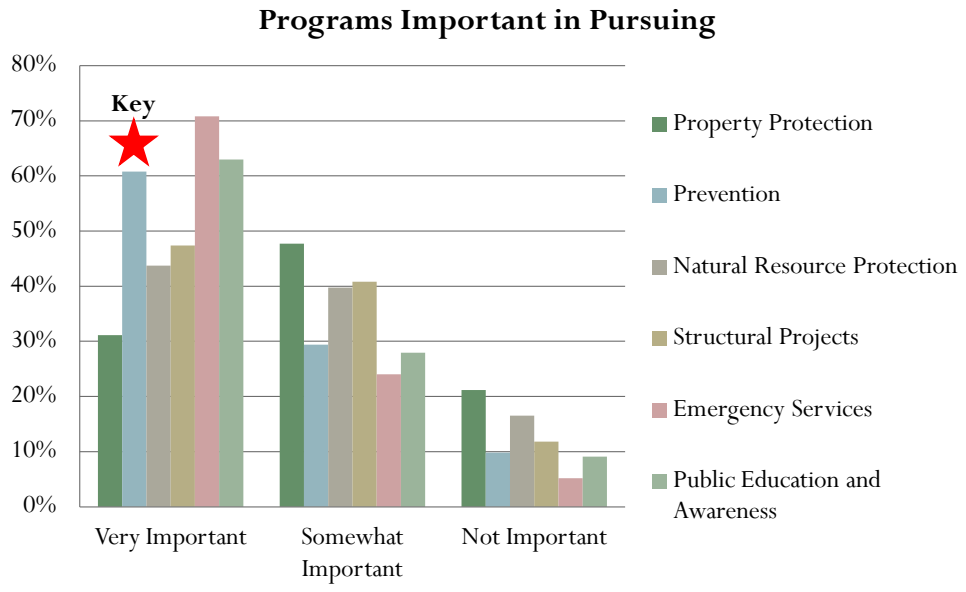
Public Questionnaire

- In your opinion, what are some steps your county or city governments could take to reduce or eliminate risk of future hazard damages in your neighborhood?
- Summary of Comments:
  - Conduct Workshops and Training
  - Public Education Forums
  - Public Meetings
  - Town Hall Meetings
  - Teach Response Techniques
  - Emergency Drills with Community Participation
  - Response Plans
  - Increase Responders
  - Ordinance Enforcement
  - Insect and Weed Control
  - Monitor Dairy Waste

Public Questionnaire

- A number of community-wide activities can reduce risk from hazards. In general these activities fall into one of the following six board categories. Please tell us how important you think each on is for your community to consider pursuing.
  - Prevention
  - Property Protection
  - Natural Resource Protection
  - Structural Projects
  - Emergency Services
  - Public Education and Awareness

Public Questionnaire



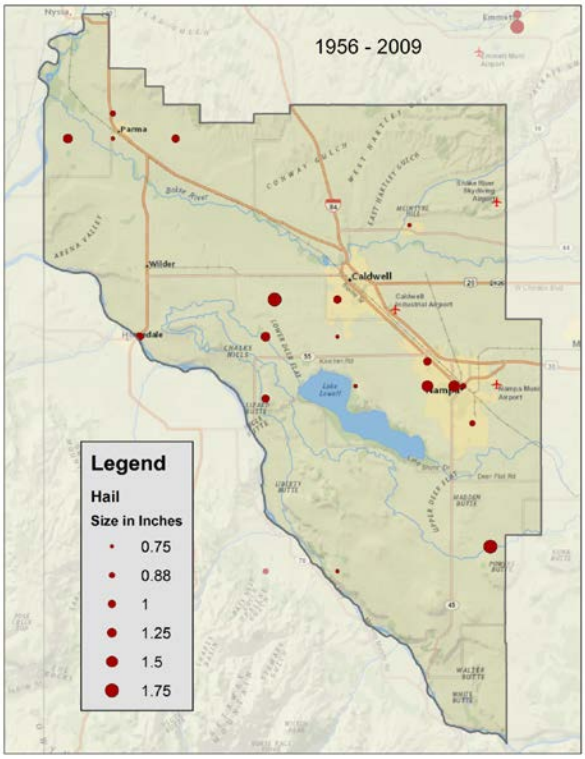
Hazard Ranking Committee vrs. Public

- Committee
  - Thunderstorms, Hailstorms, Lightning, High winds, Tornadoes
  - Hazardous Materials Events
  - Wildland Fires
  - Floods
  - Severe Winter Storms
  - Drought
  - Structural Fires
- Public
  - Thunderstorms, Hailstorms, Lightning, High winds, Tornadoes
  - Severe Winter Storms
  - Drought
  - Air Quality
  - Insect Infestation
  - Earthquake
  - Fires

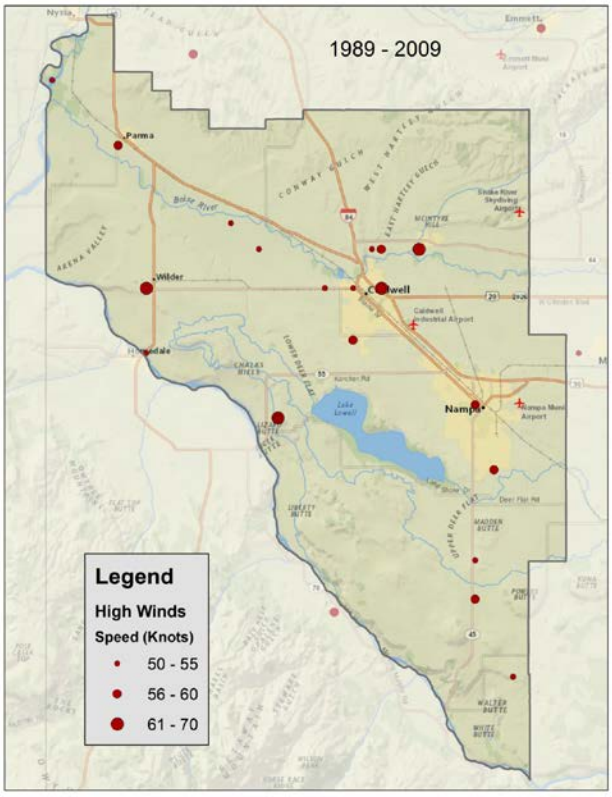
Risk Assessment Discussion

Risk = Frequency X Magnitude

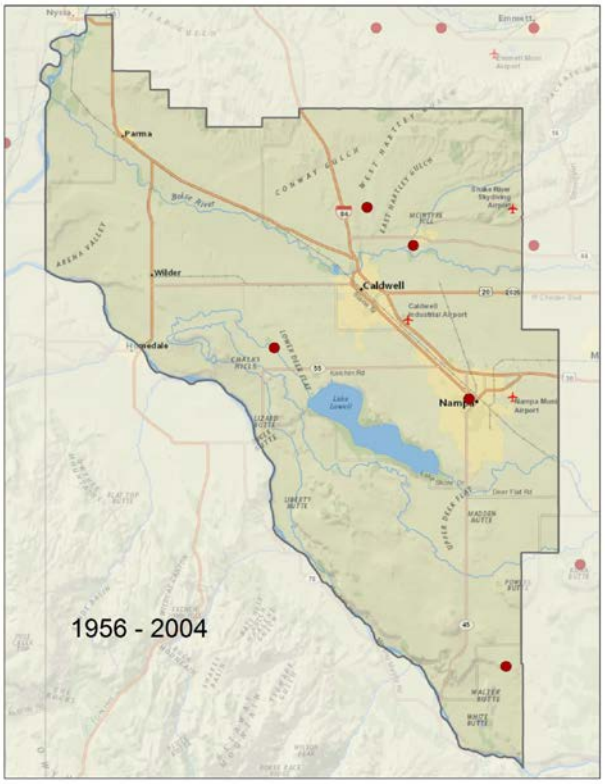
Hail


1956 - 2009
Parma
Wilder
Caldwell
Nampa
Legend
Hail
Size in Inches
0.75
0.88
1
1.25
1.5
1.75

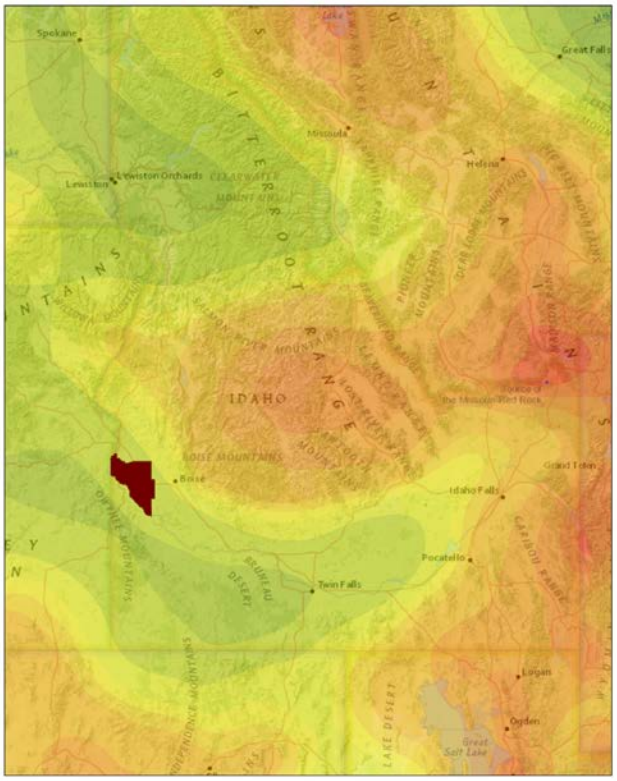
Wind


1989 - 2009
Parma
Wilder
Caldwell
Nampa
Legend
High Winds
Speed (Knots)
50 - 55
56 - 60
61 - 70

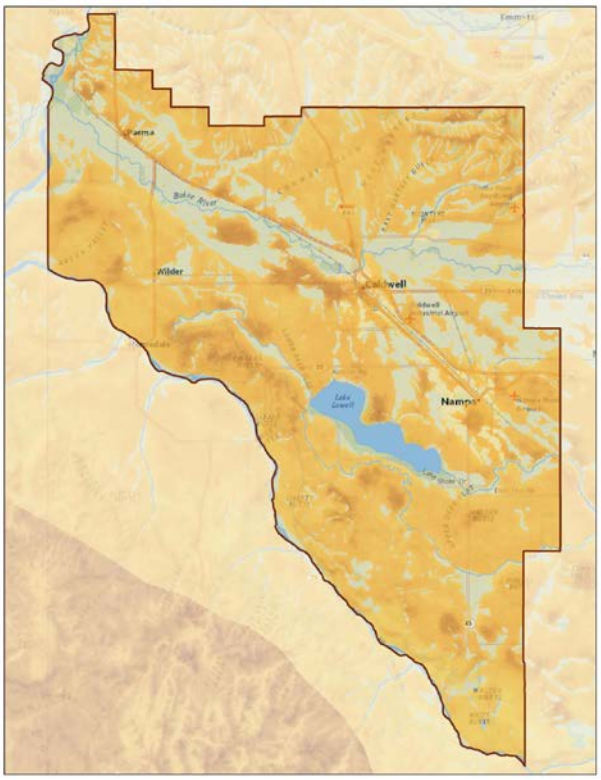
Tornadoes



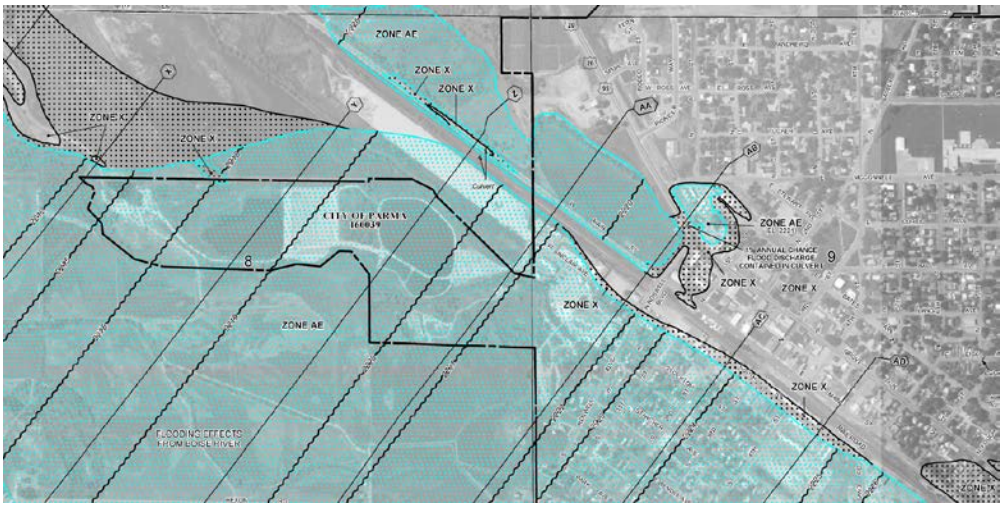
Earthquakes



Wildfire



Flood



Mitigation Project Roadmap

- Align Projects with Goals and Objectives
- Identify Funding Sources
- Define Funding Schedule
- Identify Responsible Entity

Hazard Specific Goals - Examples

- **Severe Weather**
  Canyon County will develop methods to mitigate the losses due to severe weather in the County.
- **Flooding**
  Canyon County will continue to participate in the National Flood Insurance Program and develop actions that will reduce the damage to County infrastructure due to flash and stream flooding.
- **Geological**
  Canyon County will reduce potential damage to County infrastructure and structures through implementation of earthquake mitigation techniques.
  Wildfire
  Canyon County will reduce the losses caused by wildfire by continuing the Wildland Urban Interface Mitigation Program.
- **Structural Fire**
  Canyon County will seek to reduce losses from Structure fires through working with private property owners.

Reduce Risk – Potential Projects

Highway District #4 Examples

- Shop Building Upgrades (Earthquake)
- Boise River Bank Stabilization on River Road (Flooding)
- Boise River Gravel Bar Removal for Flood Control (Flooding)
- Old Hwy 30/Plymouth Street Bridge Replacement (Earthquake, Flooding?)
- Lansing Lane Hill Regrade (Severe Winter Storm)
- Mason Creek Culvert Upgrade at Midland Road (Flooding)
- West Hartley Gulch & East Hartley Gulch Culverts (Flooding) – Detailed study has not been done on these crossings to determine specific crossing locations that maybe inadequate.

Canyon County All-Hazards Multi-Jurisdiction Mitigation Plan
LEPC Meeting
Minutes
January 23, 2011

The January 23, 2012 Canyon County LEPC meeting was held in the South West Public Health Department building in Caldwell. Todd Herrera, Canyon County Emergency Services Director, conducted the meeting. He began by asking each of the attendees to introduce themselves, and their respective departments. After introductions, Lt. Herrera briefly discussed the All-Hazards Mitigation Plan and how it benefits the County. He then introduced, and turned the remainder of the time over to Derrick Sharp with Whisper Mountain Professional Services, Inc.

Mr. Sharp welcomed everyone, and discussed the results of the Committee Questionnaire, given at the November 9, 2011 LEPC meeting, and a Public Questionnaire that was sent out in mid-December. This questionnaire consisted of 1000 surveys that were sent to statistically random residents. Out of the surveys sent, 160 completed questionnaires were returned. The data from these surveys is included in Section 3 and Attachment 2 of the Canyon County All-Hazards Multi-Jurisdiction Mitigation Plan.

After discussing the survey results, Mr. Sharp showed the audience maps of major hail, wind, tornado, earthquake, wildfire, and flood events. With each map, the audience was asked about the frequency, the locations, and the damage that occurred with each event. The audience discussed several frequent problem areas and possible mitigation.

Mr. Sharp concluded his presentation by asking the audience for some County Hazard Mitigation goals. Members of the audience mentioned the Linden St culvert upsize, and then asked Whisper Mountain for further samples of goals. It was decided that after receiving these samples, audience members would submit their ideas for goals to Mr. Sharp to be presented at the next meeting.

The meeting was then adjourned at 3:00 p.m.

Canyon County
AHMP Committee Members
Attendance Roster
June 6, 2012

Agency	Representative	Position
South West District Health	Doug Clegg	Health Educator
Vallivue School District	Susan James	Safety Coordinator
City of Caldwell	Lee J Van De Bogart	Project Engineer
City of Nampa	Lynn Thompson	Risk Manager
Canyon County CERT	Fred Mould	Member
Canyon County Sheriff's Department	Todd Herrera	Lieutenant
Idaho Power	Paul Walz	DGM Safety Engineer
Notus Parma Hwy District	Von Bowman	Work Director
Notus Parma Hwy District	Gary Hickman	Foreman
Northwest Nazarene University	Dave Jacobsen	Safety Specialist
City of Caldwell	Rob Oates	Airport Manager
City of Nampa	Kim Lord	Water/Sewer Superintendant
City of Caldwell Police Department	Dave Wright	Lieutenant

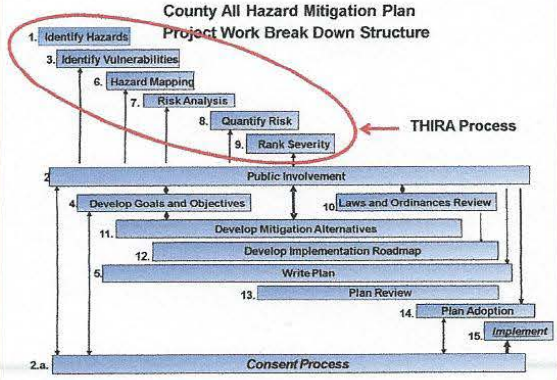
Canyon County Multi-Jurisdiction All Hazard Mitigation Plan

AHMP Committee Briefing
June 6, 2012

Using the ***"Whole Community"*** Planning Approach

- Hazard mitigation is defined as any sustained action taken to reduce or eliminate long-term risk to life and property from a hazardous event. Hazard mitigation results in long-term, cost-effective, and environmentally-conscious reduction of hazard vulnerability. ***The goal of hazard mitigation is to save lives and reduce property damage.*** This, in turn, can reduce the enormous cost of disasters to property owners and all levels of government. In addition, hazard mitigation can protect critical community facilities, reduce exposure to risk, and minimize community disruption.

Hazard Mitigation



- **Natural Hazards**
  - Weather:
    - Drought
    - Extreme Heat
    - Extreme Cold
    - Severe Winter Storm
    - Lightning
    - Hail
    - Tornado
    - Straight Line Wind
  - Flooding:
    - Flash Flood
    - River Flooding
    - Dam Failure
    - Canal/Drainage
  - Geologic:
    - Earthquake
    - Landslide/Mudslide
  - Other:
    - Wildfire
    - Rodents (Burrowing)
    - Communicable Disease
      - Bird Flu
      - West Nile
- **Technological (Manmade) Hazards**
  - Structural Fire
  - Hazardous Material Event
  - Riot/Demonstration/Civil Disorder
  - Terrorism
    - Chemical
    - Radiological
    - Nuclear
    - Biological
    - Explosive

Hazard Examined

Magnitude of Natural Disasters

Value	Reconstruction Assistance From	Geography (Area) Affected	Expected Bodily Harm	Loss Estimate Range	Population Sheltering Required	Warning Lead Times
1	Family	Parcel	Little to No Injury / No Death	$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	$10,000s	Little Sheltering	Weeks
3	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	$100,000s	Sheltering Requiring Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	$1,000,000s	Long Term Sheltering Effort	Hours
5	Federal	County Wide	Massive Casualties / Catastrophic	$10,000,000s	Relocation Required	Minutes

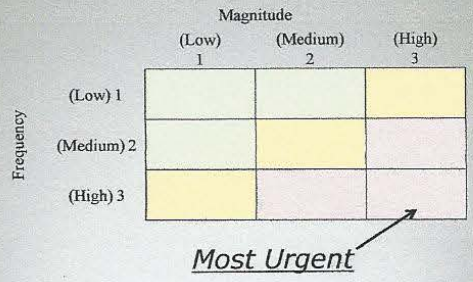
Impact

How Often

Location	No. of Years	No. of Events	Reoccurrence Interval
County	23	17	1.35

Frequency	
Ranking	Description
HIGH	Multiple Times a Year to 5 Years
MEDIUM	5 to 25 Years
LOW	25 Years to Hasn't Happened

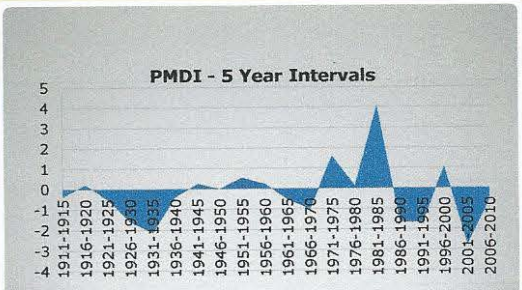
Hazard Profile = Impacts of Hazards on Vulnerabilities



Risk Ranking

- Jurisdictions Included:
  - Canyon County
    - City of Caldwell
    - City of Greenleaf
    - City of Middleton
    - City of Melba
    - City of Nampa
    - City of Notus
    - City of Parma
    - City of Wilder
  - Nampa Highway District #1
  - Notus Parma Highway District #2
  - Golden Gate Highway District #3
  - Canyon County Highway District #4

"Whole Community" Means Multi-Jurisdictional



Drought

Return Period (years)	Probability (%)	Maximum Temperature
1.05	95.2	99
1.11	90.1	100
1.25	80	101
2	50	103
5	20	105
10	10	107
25	4	108
50	2	109
100	1	110
200	0.5	111

Extreme Heat

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Min. Temp (F) 35 Years	22	25	31	36	44	51	57	55	46	36	28	21	38

For the study period the lowest daily minimum temperature is -26 degrees with three of thirty-five years recording a minimum temperature at -20 degrees or below. The average yearly minimum temperature is 0 degrees. The return interval for extreme cold events exceeding -19 degrees is 11.6 years.

Extreme Cold

- January – February 1916: A severe winter storm occurred resulting in 20" of snow in 3 weeks
- November 1948 – February 1949: November 1948 – February 1949 saw weekly snow storms in the valley' 14.5" of snow was dumped in one night. There was so much snow that roofs collapsed; Morrison-Knudsen used front-end loaders to haul snow to the Boise River.
- December 1987 – January 1988: During this storm hundreds of head of livestock froze; people froze to death; blocks of ice floated in rivers. Subsequent flooding along river bottoms followed the thaw. Temperatures of -28 F were felt.

Severe Winter Storms

- Property loss estimates for 22 severe hail events are recorded in the SHELDUS historic hazard database. These events occurred between the years of 1962 and 1998. The total property damage for the period is $5,530,741, averaging over $250,000 per event. The annualized loss for hail events according to the data is $149,479.

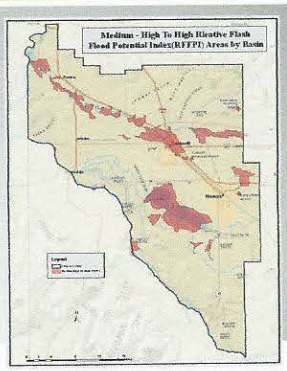
Hail

Location	Date	Magnitude	Property Damage	Description
Canyon	9/26/1986	F0	0K	
Canyon	7/30/1990	F0	3K	
Canyon	4/24/1991	F0	25K	
Parma	5/17/1996	F1	50K	
Nampa	12/14/2000	F0	0	A strong frontal system moved through southeast Oregon and southwest Idaho during the late evening/early morning hours of December 14th and 15th. A weak tornado formed on the leading edge of the gust front and touched down in a largely rural area of Nampa. A National Weather Service storm survey found evidence that suggested the tornado touched down intermittently over a period of approximately 3 minutes and traveled approximately one mile through a rural area scattered with a few subdivisions. At its widest path the width was estimated at 30 yards. Damage along the path was confined to shingle damage to a number of homes, a power pole snapped off at it's base and a 3 foot diameter tree uprooted.
Nampa	4/6/2003	F0	0	A low pressure system with an associated cold front was moving through the area.

Tornado

- Documented losses from straight line wind over a 55 year period from 1956 to 2010 exceed $230,000. The annualized loss for straight line wind in Canyon County is $4,327. There have also been 4 recorded injuries during the same period.

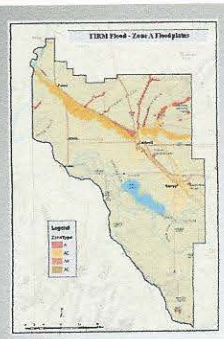
Straight Line Wind

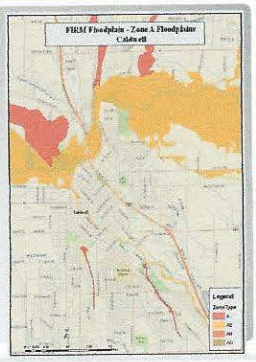


Flash Flood

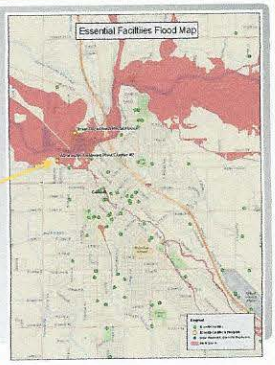
- There are 4,216 structures within the medium-high to high flash flood potential areas in Canyon County, with a total structural exposure of $528.7 million.
  - Flood Depth – one foot average
  - Structures impacted – 4,216
  - Maximum value of an individual structure in flash flood prone areas - $9,227,000
  - Total valuation of all Structures in flood plain - $528,704,200
  - Total Potential Building Loss - $55,513,941
  - Total Potential Contents Loss - $74,018,588
  - Functional down time for each damaged structure – 23 days

Flash Flood Loss Estimates





Stream Flooding

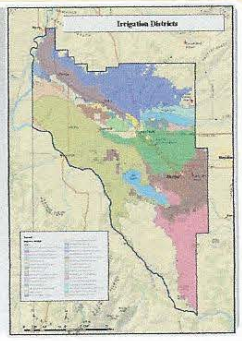


Vulnerabilities

- Flood depth of two feet average
- Total structures impacted – 137
- Total valuation of all structures in Flood Plain - $21,714,100
- Total potential building loss – $4,342,820
- Total potential content loss - $5,537,096
- Functional down time for each damaged structure – 30 days

Loss Estimates – City of Caldwell


Dam Failure

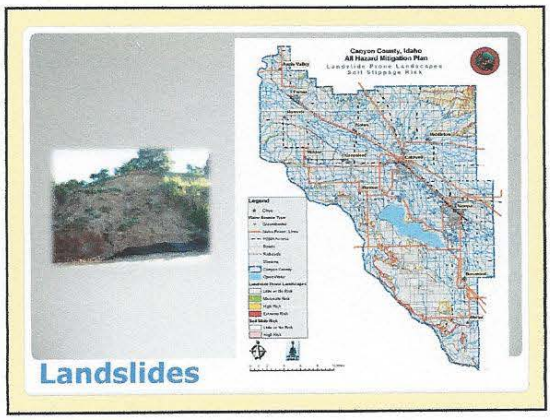
Canal/ Drainage Failure

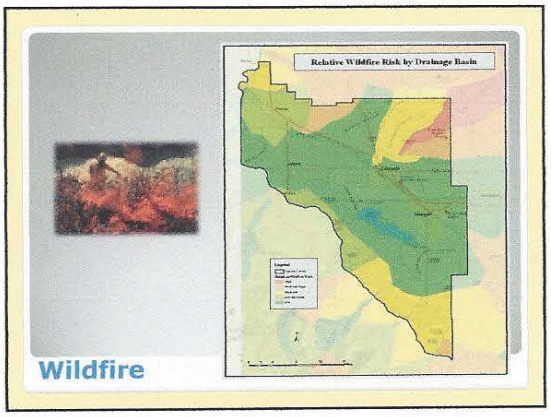

Canal Failure Damage

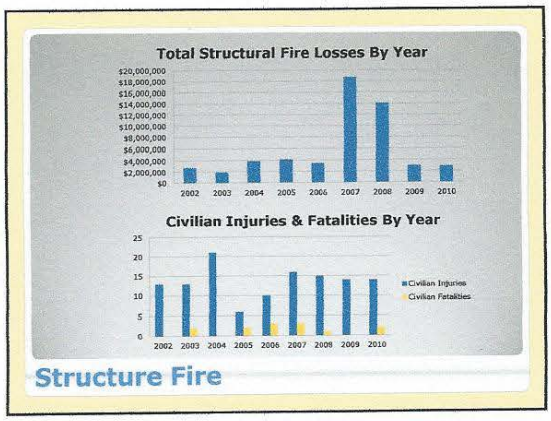
Drainage Issues

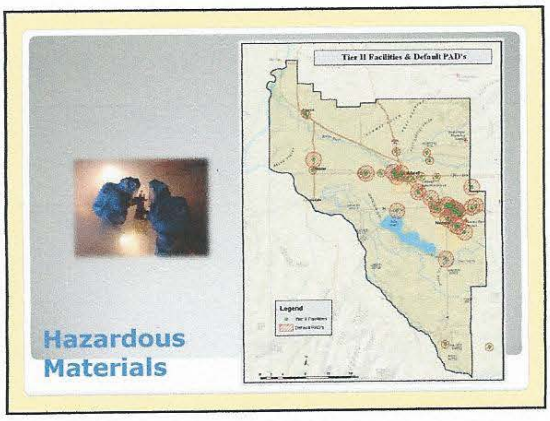
- The total economic loss estimated for the earthquake is $3.43M for the entire county which includes building and lifeline related losses based on the region's available inventory.
- The total building-related losses were $2.94M 25 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 61 % of the total loss.

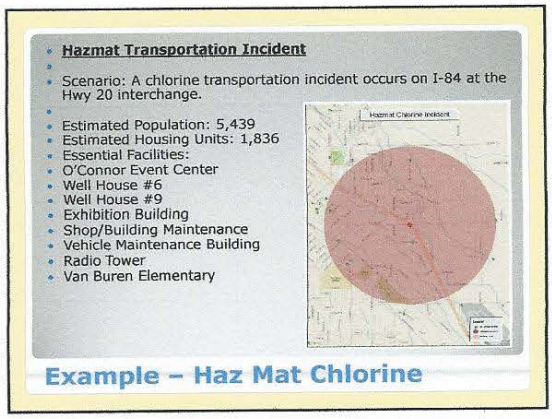
Earthquake

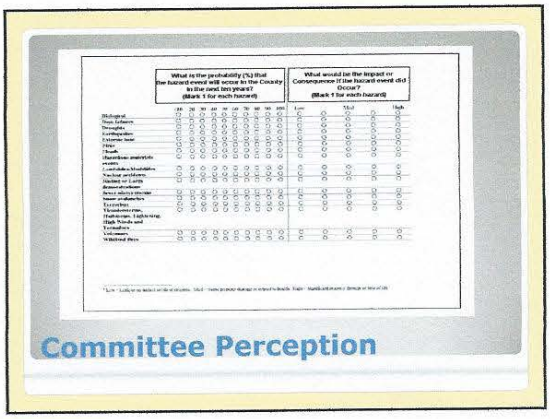

Canyon County, Idaho
All Hazard Mitigation Plan
Landslides
Landslide Prone Landscapes
Soil Slippage Risk
Legend
Landslides
Soil Slippage Risk
Landslides

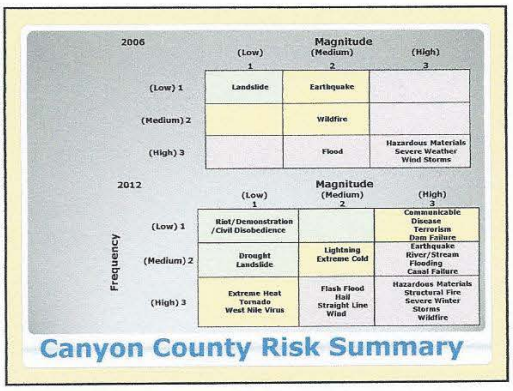

Relative Wildfire Risk by Drainage Basin
Legend
Wildfire

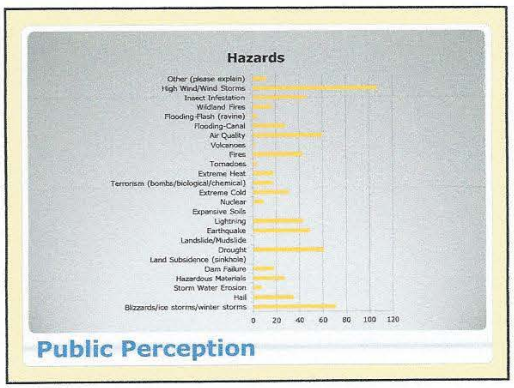

Total Structural Fire Losses By Year
$20,000,000
$18,000,000
$16,000,000
$14,000,000
$12,000,000
$10,000,000
$8,000,000
$6,000,000
$4,000,000
$2,000,000
$0
2002 2003 2004 2005 2006 2007 2008 2009 2010
Civilian Injuries & Fatalities By Year
25
20
15
10
5
0
2002 2003 2004 2005 2006 2007 2008 2009 2010
Civilian Injuries
Civilian Fatalities
Structure Fire

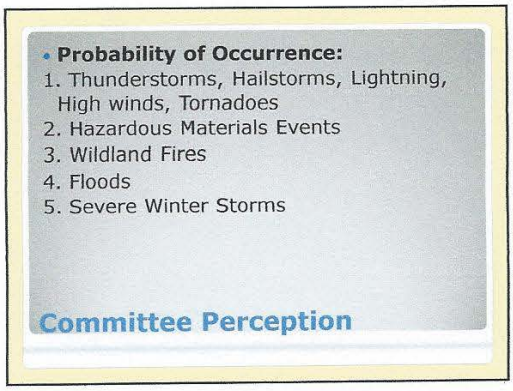

Tier II Facilities & Default PAD's
Legend
Hazardous Materials

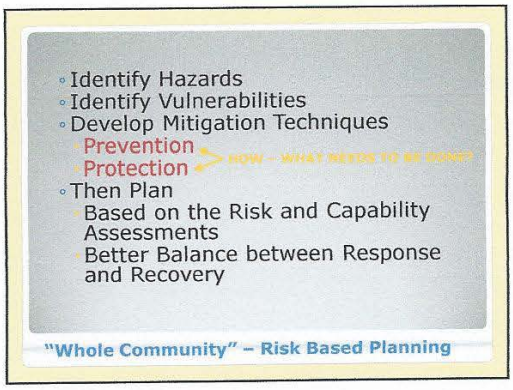

Hazmat Transportation Incident
Scenario: A chlorine transportation incident occurs on I-84 at the Hwy 20 interchange.
Estimated Population: 5,439
Estimated Housing Units: 1,836
Essential Facilities:
O'Connor Event Center
Well House #6
Well House #9
Exhibition Building
Shop/Building Maintenance
Vehicle Maintenance Building
Radio Tower
Van Buren Elementary
Hazmat Chlorine Incident
Example – Haz Mat Chlorine


What is the probability (%) that the hazard event will occur in the County in the next ten years?
(Mark 1 for each hazard)
What would be the impact or consequence if the hazard event did occur?
(Mark 1 for each hazard)
Committee Perception


2006
Magnitude
(Low) 1
(Medium) 2
(High) 3
Landslide
Earthquake
Wildfire
Flood
Hazardous Materials
Severe Weather
Wind Storms
2012
Frequency
Riot/Demonstration /Civil Disobedience
Communicable Disease
Terrorism
Dam Failure
Drought
Landslide
Lightning
Extreme Cold
Earthquake
River/Stream Flooding
Canal Failure
Extreme Heat
Tornado
West Nile Virus
Flash Flood
Hail
Straight Line Wind
Hazardous Materials
Structural Fire
Severe Winter Storms
Wildfire
Canyon County Risk Summary


Hazards
Other (please explain)
High Wind/Wind Storms
Insect Infestation
Wildland Fires
Flooding-Flash (ravine)
Flooding-Canal
Air Quality
Volcanoes
Fires
Tornadoes
Extreme Heat
Terrorism (bombs/biological/chemical)
Extreme Cold
Nuclear
Expansive Soils
Lightning
Earthquake
Landslide/Mudslide
Drought
Land Subsidence (sinkhole)
Dam Failure
Hazardous Materials
Storm Water Erosion
Hail
Blizzards/ice storms/winter storms
0 20 40 60 80 100 120
Public Perception


• Probability of Occurrence:
1. Thunderstorms, Hailstorms, Lightning, High winds, Tornadoes
2. Hazardous Materials Events
3. Wildland Fires
4. Floods
5. Severe Winter Storms
Committee Perception


◦ Identify Hazards
◦ Identify Vulnerabilities
◦ Develop Mitigation Techniques
◦ Prevention
◦ Protection
HOW – WHAT NEEDS TO BE DONE?
◦ Then Plan
◦ Based on the Risk and Capability Assessments
◦ Better Balance between Response and Recovery
"Whole Community" – Risk Based Planning

Meeting Minutes
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan
Canyon County Commissioners Public Meeting
June 5, 2012

The Canyon County Commissioner's public meeting was held in the Caldwell Court House at 4:00 pm. The purpose of Whisper Mountain's attendance at the meeting was to inform Canyon County's elected officials and members of the public of the AHMP being written in Canyon County and their part in participation and contribution to the plan.

Canyon County's Emergency Management Coordinator, Lt. Todd Herrera introduced the AHMP and its purpose briefly, and then introduced Rick Fawcett, consultant from Whisper Mountain Professional Services, Inc., who has been hired by Canyon County to write the AHMP. He first emphasized that the purpose of the plan is to save lives and reduce the loss of property to the County, and individuals within the County. He then gave a power-point presentation showing the hazards and potential hazards identified in the Canyon County. He emphasized that the AHMP is different from the EOP in that the AHMP tries to prevent or lessen risks in the County, where the EOP is a response to those hazards when they become an emergency. He indicated Canyon County is a relatively safe County with the highest threat coming from Canal/Drainage Failure, as there are so many canals and systems in the County, and this year there is an infestation of pocket gophers which are eroding the canal banks and causing them to fail and flood.

The Council wanted to move Lightning's ranking to a 3-2 position and switch Severe Winter Storms (to 3-2) with Straight Line Wind (to 3-3), because they said it was both more severe and more frequent. They also wished to move Lightning to a 3-2 rank and move Wildfire to a less 2-3 ranking. They felt these were a more accurate assignment of the hazards.

Rick explained that through participation in the AHMP the County would be eligible for pre-disaster mitigation grant applications and post-disaster help from the State if a disaster was declared.

Rick thanked the Commission for their time and input and encouraged further participation in the AHMP.

Canyon County Commissioners
Multi-Jurisdiction AHMP Elected Officials Public Meeting
Attendance Roster
June 5, 2012

Agency	Representative	Position
Canyon County	Kathy Alder	Commissioner
Canyon County	Steven Rule	Commissioner
Canyon County Emergency Management	Todd Herrera	Lieutenant
Canyon County DSD	Kevin LoPiccolo	Director
Canyon County DSD	Dan Hunter	Building Official
Canyon County Facilities Management	Paul Navarro	Facility Manager

Meeting Minutes
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan
City of Caldwell Public Meeting
May 7, 2012

The Public Meeting for the AHMP was held in the Caldwell City Council Chambers at 5:30 pm. The purpose of the meeting was to inform the City of Caldwell's Mayor, City Council, and members of the public of the AHMP being written in Canyon County and their part in participation and input for the plan.

Rick Fawcett, consultant from Whisper Mountain Professional Services, Inc., who has been hired by Canyon County to write the AHMP, addressed the Council. He first emphasized that the purpose of the plan is to save lives and reduce the loss of property to the City, County, and individuals within the County.

Rick gave a power-point presentation on the existing identified hazards and potential hazards in the County and their severity. He explained how the hazards are ranked in severity according to potential property loss and historical occurrence and potential occurrence.

The Council voiced that they feel irrigation canal failure is the biggest problem within Canyon County and the City of Caldwell. River and stream flooding have been mitigated within the City of Caldwell, with only minimal threat of hazard now with the Boise River, and so should be moved to a 2-2 ranking on the chart. They did feel the Phillips Canal above the Manchester Subdivision need cemented sides for protection (this is on the north side for ¾ to 1 mile long) as the canals transport water but do not service the City area. The Council also felt they should look at the Canyon Hill Canal, and the Notus Canal with Planning and Zoning to see what hazards might exist around them.

There is a canal going over Mason Road that needs a better culvert. The Winden and Northside Irrigation Districts will be brought in for discussion on this issue.

The City of Caldwell has a good storm water policy in place for new construction areas. They will check on the drainage districts to look at mitigation and mitigation needs.

Rick thanked the Mayor and Council for their time and input, and invited them to submit any comments or suggestions for projects at any time. He said Canyon County is generally a very safe County, but there are always ways to improve and prevent loss of lives and property.

City of Caldwell
Multi-Jurisdiction AHMP Elected Officials Public Meeting
Attendance Roster
May 7, 2012

Agency	Representative	Position
City of Caldwell	Jim Blacker	City Council
City of Caldwell	Dennis Callsen	City Council
City of Caldwell	Debbie Geyer	City Clerk
City of Caldwell	Karl Baker	GIS Analyst
City of Caldwell	Mike Pollard	City Council
City of Caldwell	Garret Nancolas	Mayor
City of Caldwell	Mark Wendelsdorf	Fire Chief
City of Caldwell	Dave Weight	LJ
City of Caldwell	Robb MacDonald	Engineering
City of Caldwell	Brent Orton	Public Works Director

Meeting Minutes
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan
City of Nampa Public Meeting
May 8, 2012

The City of Nampa Public Meeting for the AHMP was held in the Nampa City Council Chambers at 9:00 am. The purpose of the meeting was to inform the City of Nampa's Mayor, City Council, and members of the public of the AHMP being written in Canyon County and their part in participation and input for the plan.

Rick Fawcett, consultant from Whisper Mountain Professional Services, Inc., who has been hired by Canyon County to write the AHMP, addressed the Council. He first emphasized that the purpose of the plan is to save lives and reduce the loss of property to the City, County, and individuals within the County.

Rick gave a power-point presentation on the existing identified hazards and potential hazards in the City and their severity. He explained how the hazards are ranked in severity according to potential property loss and historical occurrence and potential occurrence.

After hearing how the hazards are ranked in the plan, Councilman White asked for a clarification of "high temperature" classification as a hazard. Rick explained that with high temperatures a drought usually occurs and then loss of crops and/or cattle, and the financial stability of the County can be at risk. Mitigation is not possible for all weather types, but Councilman Kren pointed out that crop insurance is available for hail mitigation and flood mitigation.

Mayor Dale asked if micro-bursts count as straight-line wind episodes. According to the National Weather Service they are categorized as straight-line wind.

Councilman White asked, "Who maintains cemented canals?" Mayor Dale said the irrigation district owns the canals and the land they are built on.

Indian Creek and Mason Creek flow through the City of Nampa and could be a potential hazard.

The Council asked "Where is the source of the 1% flooding for the City?" That information will be provided to the Council at the next meeting.

Councilman Thorne wanted to know if the City was still in a discussion with FEMA about the flood mitigation. Mayor Dale said the flooding issues are mostly resolved with the exception of need for some new more adequate culverts and gates, but they are very expensive. He would like the name of the flood plain administrator's name.

Councilman White asked if "sink holes" are in the landslide category and Rick told her they are in a category by themselves.

The Council agreed to move straight line winds on the ranking chart to a 3-3 high category as the damage could be great and it occurs quite frequently in the City and County.

Rick thanked the Mayor and Council for their time and input, and invited them to submit any comments or suggestions for projects at any time. He said Canyon County is generally a very safe County but there are always ways to improve and prevent loss of lives and property.

City of Nampa
Multi-Jurisdiction AHMP Elected Officials Public Meeting
Attendance Roster
May 8, 2012

Agency	Representative	Position
City of Nampa	Lynn Thompson	Risk Manager
Idaho Press Tribune	Jona Funk	Reporter
KBOI 670AM	Ray Amaya	Reporter
City of Nampa	Robin Collins	CE Supervisor
City of Nampa	Martin Thorne	City Council
City of Nampa	Pam White	City Council
City of Nampa	Stephen Kren	City Council
City of Nampa	Bob Henry	City Council
City of Nampa	Tom Dale	Mayor

Meeting Minutes
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan
City of Greenleaf Public Meeting
May 22, 2012

The Public Meeting for the AHMP was held in the City of Greenleaf Council Chambers at 7:00 pm. The purpose of the meeting was to inform the City of Greenleaf's Mayor, City Council, and members of the public of the AHMP being written in Canyon County and their part in participation and input for the plan.

Rick Fawcett, consultant from Whisper Mountain Professional Services, Inc., who has been hired by Canyon County to write the AHMP, addressed the Council. He first emphasized that the purpose of the plan is to save lives and reduce the loss of property to the City, County, and individuals within the County.

Rick gave a presentation on the existing identified hazards and potential hazards in the City of Greenleaf, and their severity. He explained how the hazards are ranked in severity according to potential property loss and historical occurrence and potential occurrence. Greenleaf is one of the safest cities in the State as it has few natural hazards. The most threatening hazard is that of failed irrigation systems. Mayor Holton said the Upper Gulch Canal broke in 1968 due to drainage from the Lake Lowell Reservoir and flooded the Lower Gulch Canal, and its overflow flooded several homes. Rick emphasized that residents of the County can buy flood insurance even if they do not live in the floodplain, and it is relatively inexpensive.

Canyon County has a significant loss of life due to structure fires. Rick told the Mayor and Council about the Assistance to Firefighters Grant that provides smoke detectors and fire extinguishers to be distributed to homes built before 1970. Mr. Sali stated that one smoke detector in a home can reduce the chance of loss of life by more than 50%.

The City of Greenleaf has a mosquito abatement program that proves effective, as there have been no recent cases of West Nile Virus. The Mayor also stated that the City has no storm water drainage issues.

The Council did feel that lightning should be moved to a 2-3 on the risk scale. They also stated that Civil Disobedience should be changed to Gang Violence in Greenleaf as there is an identified problem with gangs. They stated that Gang Violence and Weapons Assault are three times higher in Canyon County than in Ada County. They asked Whisper Mountain to pull the data on weapons arrest and gang violence so it can be properly ranked.

The Council felt that the open irrigation systems in Greenleaf are a risk to the public. They said new families move into the area that are unfamiliar with the open boxes and there is a child drowned nearly every year because of them. They would like to see a better solution for the systems that would also protect the children. The City does not use the irrigation systems for drainage. They did say there are drainage ditches that are not maintained or managed by anyone, but small funds are being collected for that purpose. Rick suggested that all of the drainage ditches be combined under one jurisdiction so they can be maintained and at less cost. The County Attorney will check on the legality of combining.

The Council would like to see the history of mitigation for chemicals in the City and those that pass through the City. Rick told them that it is required by law for all Tier II spills and releases to be reported.

Rick thanked the Mayor and Council for their time and input and encouraged them to look at any other issues that may be a threat to their City and feel free to contact him with that information. He explained that after the AHMP is written, the City will be given an opportunity to endorse the plan making them eligible to apply for post-disaster funds and pre-disaster mitigation project grants.

City of Greenleaf Public Meeting
Attendance Roster
May 22, 2012

Agency	Representative	Position
Salvation Army	Silvia DeAvda	Office Manager
City of Greenleaf	Cherea McLain	Attorney
City of Greenleaf	Amy Woodruff	City Engineer
City of Greenleaf	Brad Holton	Mayor
City of Greenleaf	Kurt Kopadt	City Council
City of Greenleaf	Steve Jett	City Council
City of Greenleaf	Ryan Schnuerle	City Council
City of Greenleaf	Doug Amick	Public Services
City of Greenleaf	DeAngelo Enrico	City Council
City of Greenleaf	Bill Sali	Citizen

City of Greenleaf
20523 N. Whittier Drive
Greenleaf, Idaho 83626
208/454-0552
208/454-7994 (fax)
greenleafcity@cableone.net

CITY COUNCIL MEETING AGENDA

Special Session – 7:00p 22 May 2012 at Greenleaf City Hall *

1. Meeting called to order: **
2. Pledge of Allegiance:
3. Roll Call:

__ Seat 1: Ryan Schnuerle	__ Seat 2: Dee Enrico	__ Seat 3: Kurt Kopadt
__ Seat 4: Steve Jett	__ Mayor: Brad Holton	__ Impact Area: Liza Warner

Also Present:

__ City Clerk	__ Public Services Director	__ Police Chief
__ City Attorney	__ City Engineer	__ City Treasurer

4. Adjustments to meeting agenda

5. SPECIAL BUSINESS:

5.1 Discussion of a possible assistance program for City of Greenleaf utilities administered by the Caldwell Corps of the Salvation Army, modeled after the City of Caldwell's 'Caldwell Cares' program

5.2 Discussion of Draft Canyon County Multi-Jurisdictional All-Hazard Mitigation Plan (draft dated 25Apr2012) with Rick Fawcett, D.A. of Whisper Mountain Professional Services, Inc.

6. ORDINARY AND NECESSARY BUSINESS:

6.1 Consideration of ww1011 (waste-water treatment plant) Change Order #6
6.2 Consideration of engineering supplemental for ww1011 (waste-water treatment plant)
6.3 Any other outstanding business

7. Adjournment

Canyon County Multi-Jurisdiction AHMP
City of Parma Elected Officials Public Meeting
Minutes
May 29, 2012

The City of Parma Elected Officials and Public Meeting was held in the Parma City Hall at 7:00 pm. The purpose of Canyon County's Emergency Manager's attendance at the meeting was to inform the City of Parma's Mayor, City Council, and members of the public of the AHMP being written in Canyon County and their part in participation and input for the plan.

Lt Todd Herrera, Canyon County Emergency Manager addressed the Council. He first emphasized that the purpose of the plan is to save lives and reduce the loss of property to the City, County, and individuals within the County.

Lt. Herrera gave a presentation on the existing identified hazards and potential hazards in the County and City of Parma, and their severity. He explained how the hazards are ranked in severity according to potential property loss and historical occurrence and potential occurrence.

Lt Herrera asked for project suggestions needed in the City and the County; none were offered. Lt. Herrera thanked the Council for their time and interest and encouraged any further input they might offer to the AHMP.

Canyon County Multi-Jurisdiction AHMP
City of Parma Elected Officials Public Meeting
Attendance Roster
May 29, 2012

Agency	Representative	Position
Parma City Council	Thomas S. Smith	Councilman
Parma City Council	W. Keith Vickers	Councilman
Parma City	Craig Telford	Mayor
Parma City Council	Oney Eguia	Councilman
Parma City Council	Angie Lee	Councilwoman
Parma City	Teresa Phelps	Clerk
Parma City Council	Nathan Leigh	Councilman
City of Parma	Ken Steinhaus	Public Works
City of Parma	Brett Laird	Public Works
Canyon County	Lt. Todd Herrera	Emergency Manager

Meeting Minutes
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan
City of Melba Public Meeting
June 11, 2012

The City of Melba Council Public Meeting was held in the Melba City Hall at 8:00 pm. The purpose of Whisper Mountain's attendance at the meeting was to inform the City of Melba's Mayor, City Council, and members of the public of the AHMP being written in Canyon County and their part in participation and input for the plan.

Rick Fawcett, consultant from Whisper Mountain Professional Services, Inc., who has been hired by Canyon County to write the AHMP, addressed the Council. He first emphasized that the purpose of the plan is to save lives and reduce the loss of property to the City, County, and individuals within the County.

Mayor Sturges requested clarification of available funds through participation in the AHMP. Rick told the Mayor and Council that by participating in the AHMP they became eligible for post-disaster funds and pre-disaster mitigation grants. Rick explained the 25% grant match requirement for these projects and that the match can be a hard/soft combination.

Rick gave a presentation on the existing identified hazards and potential hazards in the County and City of Melba, and their severity. He explained how the hazards are ranked in severity according to potential property loss and historical occurrence and potential occurrence. The Council wanted to move Severe Winter Storms to a 3-2 ranking and Straight Line Winds to a 3-3 ranking. They also said Wildfire has a higher frequency than Hail and should be moved to a 3-3 rank. Lightning should be moved to a 3-2 rank. They felt that Wildfire and Canal/Drainage Failure were their two biggest threats. The road superintendant felt that Canal/Drainage Failure should be ranked 3-3 due to the magnitude and frequency and repetitive loss to the roads.

Rick asked for project suggestions needed in the City and the Council said the current water supply and system are not adequate for emergency (fire suppression) use. They need a reservoir and booster pump and a back-up generator. The storage water is only 40% of what it should be.

Storm water and irrigation drainage wash out the roads in several locations. Rebecca's lodge gets flooded from storm-water drainage run-off with every big storm and they are continually asking the City for help.

Rick thanked the Council for their time and interest and encouraged any further input they might offer to the AHMP.

City of Melba
Multi-Jurisdiction AHMP Elected Officials Public Meeting
Attendance Roster
June 11, 2012

Agency	Representative	Position
City of Melba	Chris Hinderliter	Councilman
City of Melba	Hal Forsgreen	Councilman
City of Melba	Doug Sturges	Mayor
City of Melba	Parkie Stapleton	Councilman
City of Melba	Cory Dickard	Councilman
Nampa Highway District 1	Rick Farner	Commissioner
Citizen	Jerry Shaul	
Citizen	Kelly Shaul	
Melba Public Works	Dennis Rogers	Superintendant
White, Peterson	Mark Johnson	City of Melba Attorney

Meeting Minutes
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan
City of Wilder Public Meeting
June 12, 2012

The City of Wilder's AHMP Public Meeting was held in the Wilder City Hall at 6:00 pm. The purpose of Whisper Mountain's attendance at the meeting was to inform the City of Wilder's Mayor, City Council, and members of the general public of the AHMP being written in Canyon County and their part in participation and contribution in the plan.

Rick Fawcett, consultant from Whisper Mountain Professional Services, Inc., who has been hired by Canyon County to write the AHMP, addressed the Council. He first emphasized that the purpose of the plan is to save lives and reduce the loss of property to the City, County, and individuals within the County. He then gave a power-point presentation showing the hazards and potential hazards identified in the City. He indicated the City of Wilder is a relatively safe City with the highest threat coming from Canal/Drainage Failure, as there are so many canals and systems in the City and County, and this year there is an infestation of pocket gophers which are eroding the canal banks and causing them to fail and flood.

The Council wanted to move Lightning's ranking to a 3-2 position and switch Severe Winter Storms with Straight Line Wind because they said it was both more severe and more frequent.

Rick explained that through participation in the AHMP the City would be eligible for pre-disaster mitigation grant applications and post-disaster help from the State if a disaster was declared.

Rick thanked the Council for their time and input and encouraged further participation in the AHMP.

Canyon County Multi-Jurisdiction AHMP
City of Wilder Elected Officials Public Meeting
Attendance Roster
June 12, 2012

Agency	Representative	Position
City of Wilder	Luke McHenry	Superintendant Public Works
City of Wilder	Leonard Wilson	City Council
City of Wilder	Tila Godina	City Council
City of Wilder	Wendy Burrows-Johnson	City Clerk
City of Wilder	Roger G Howell	Council President
City of Wilder	Ed Dantt	Citizen
Western Canyon Chronicle	Karen Wagoner	Reporter
City of Wilder	Elizabeth Rusco	Volunteer
Wilder Economic Development Committee (WEDC)	David Lincoln	Chairman
White, Peterson	William F Gigray	Wilder City Attorney

Meeting Minutes
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan
City of Notus Public Meeting
June 18, 2012

The City of Notus Public Meeting was held in the Notus City Hall at 7:00 pm. The purpose of Whisper Mountain's attendance at the meeting was to inform the City of Notus's Mayor, City Council, and members of the public of the AHMP being written in Canyon County and their part in participation and input for the Plan.

Rick Fawcett, consultant from Whisper Mountain Professional Services, Inc., who has been hired by Canyon County to write the AHMP, addressed the Council. He first emphasized that the purpose of the plan is to save lives and reduce the loss of property to the City, County, and individuals within the County.

Rick gave a presentation on the existing identified hazards and potential hazards in the County and City of Notus, and their severity. He explained how the hazards are ranked in severity according to potential property loss and historical occurrence and potential occurrence. The City of Notus lies in the flood plain and the threat of canal failure and straight line winds are felt by the commission to be the greatest threats to the City. They requested that straight line winds be ranked a 3-3 and winter storms a 3-2. They also wished to move canal/drainage failure to 2-2 and lightning to 3-2 as it often accompanies straight line winds.

Rick asked for project suggestions needed in the City, and storm water drainage seemed to be the biggest concern next to the rodent problem destroying the irrigation systems' banks. The City has raised several manholes so they are higher than the storm water run-off, but there are several yet that need to be raised. The culvert on Conway and 1st Streets is one of the three inadequate culverts for the drainage run-off in the City. The traffic on Notus road is the only one with enough traffic to warrant replacing the culvert with a bridge.

The City's sewer treatment ponds are along the river and in a flood threatened area also which needs to be addressed.

Rick thanked the Council for their time and interest and encouraged any further input they might offer to the AHMP.

City of Notus
Canyon County Multi-Jurisdiction AHMP
Elected Officials Public Meeting
Attendance Roster
June 18, 2012

Agency	Representative	Position
City of Notus	Randall Taylor	Councilman
City of Notus	Michelle DeGiorgio	Councilwoman
City of Notus	David Porterfield	Councilman
City of Notus	Chris Collins	Mayor
Citizen	Gary Vezzoso	Library Building Owner
Citizen	Carol Vezzoso	Library Building Owner
City of Notus	Sally Wells	Library Board Chair
City of Notus	Nate Wells	Citizen
City of Notus	Ginny Linderman	Clerk

Meeting Minutes
Canyon County Multi-Jurisdiction
All Hazard Mitigation Plan Meeting
City of Middleton Public Meeting
June 20, 2012

The City of Middleton Public Meeting was held in the Middleton City Hall at 6:00 pm. The purpose of Whisper Mountain's attendance at the meeting was to inform the City of Middleton's Mayor, City Council, and general public of the AHMP being written in Canyon County and their part in participation and input for the plan.

Rick Fawcett, consultant from Whisper Mountain Professional Services, Inc., who has been hired by Canyon County to write the AHMP, addressed the Council. He first emphasized that the purpose of the plan is to save lives and reduce the loss of property to the City, County, and individuals within the County.

Rick gave a presentation on the existing identified hazards, and potential hazards in the County and City of Middleton, and their severity. He explained how the hazards are ranked in severity according to potential property loss, historical occurrence, and potential occurrence. The City Council requested that only the real risk occurrences be ranked and listed rather than looking at all risks, some that have never occurred in the City, even though there is a potential at some time that some of them may occur. The risks and their potential for a hazardous event were then discussed. Willow Creek flooding is a concern currently, and the City of Middleton lies in the flood plain, but has NFIP.

Discussion also included the need for lightning deterrents on towers 720' and higher as there are a lot of lightning strikes in the area.

Rick thanked the Council for their time and interest and encouraged any further input they might offer to the AHMP.

City of Middleton
Multi-Jurisdiction AHMP Elected Officials Public Meeting
Attendance Roster
June 20, 2012

Agency	Representative	Position
City of Middleton	Lenny Riccio	Council
City of Middleton	Brad Spencer	Council
City of Middleton	Darin Taylor	Mayor
City of Middleton	Carrie Huggins	Council
City of Middleton	Loni Parry	Council
City of Middleton	Cindy LoPiccolo	Clerk
City of Middleton	Chris Yorgason	Attorney
Citizen	Betty Mitchell	
Citizen	Randy Mitchell	
Citizen	Jeremy Fielding	
Citizen	Doug Anawalt	
City of Middleton	Becky Crofts	Administrator
Citizen	Mark Garnpois	

AGENDA

City of Middleton
City Council Regular Meeting

Date: Wednesday, June 20, 2012 Time: 6:30 p.m.
Location: Middleton City Hall, 6 N. Dewey Avenue

1) Call To Order-Roll Call

2) Pledge Of Allegiance-Invocation

3) Public Comments:

4) Administrative Action/Consent Agenda:

❖ Consent Agenda items are considered to be routine and are acted on with one motion without separate discussion unless the Mayor, a Council member, member of City staff, or a citizen requests an item to be removed from the Consent Agenda for discussion. Items removed from the Consent Agenda will be placed on the Regular Agenda.

a. Consider approving accounts payable in the amount of $85,108.91.
b. Consider approving invoice number 44 in the amount of $5,648.95, and invoice number 45 in the amount of $6,296.09, from Holladay Engineering for their work on the City of Middleton Transportation Plan, Key 9511.
c. Consider approving Beer and Wine applications for: Teresa A. Monjaraz, date of event June 24, 2012.
d. Consider approving Minutes of June 6, 2012.
e. Consider approving the resolution formalizing Council approval of vacation and sick leave provisions in the City's employee personnel policy and procedures handbook.
f. Consider approving Ewing Construction pay application 5 in the amount of $76,379.54, 2011 Middleton Wastewater Treatment System Improvement, Sequential Batch Reactor (SBR) Construction.
g. Application for Special Events Permit, Middleton 4th of July Celebration parade, applicant Middleton Chamber of Commerce; Hwy 44, 11:45 a.m. -1:15 pm

5) New Business:

a. Consider approving selection committee's recommendation for roster of firms for transportation and traffic related consulting services.
b. Consider approving City Engineer's recommendation for roster of firm for floodplain and FEMA related consulting services.
c. Consider approving payment of $5,524.00 to Western Alliance for Economic Development for community partnership dues 10/1/11 to 09/30/12.

d. Consider approving the Impact Fee Advisory Committee's findings and recommendations.
e. Consider endorsement of and participation in the Canyon County Idaho Multi-Jurisdiction All Hazard Mitigation Plan, Whisper Mountain Professional Services, Inc.
f. Information - Doug Anawalt presentation for future Minot trees.
g. Valley Regional Transit annual update and FY 2013 budget request, Kelli Fairless, Executive Director.
h. City Hall Accounting: 2012 Six Month Review

6) Unfinished Business:

a. Consider approving payment of $24,175.00 to Watershed Sciences, Inc. for LiDAR data collection and deliverables.

7) Mayor's Comments:

8) Council Comments:

9) Department Comments:

a. Public Works
b. City Attorney
c. City Engineer
d. Treasurer
e. Administrative

10) Executive Session – IC 67-2345 (1)

a. Performance evaluations for appointed officials
f. Potential litigation

11) Consider approving terms of service for appointed officials.

12) Adjourn

Posted by: Cindy LoPiccolo, City Clerk
Date: June 15, 2012
Time: 3:00 p.m.

If you have special needs or require assistance, please contact the City Clerk's Office at (208) 585-3133 ext. 5.

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Attachment 2: Public Questionnaire

Public Participation Questionnaire

December 2011

Dear Canyon County Resident,

We need your help! Canyon County is embarking on an initiative to assist communities in reducing risk from natural and man-made hazards. This questionnaire is designed to help us understand your perceptions of those hazards. We are developing a strategic plan to prioritize activities designed to assist County communities and residents to reduce their risk from natural and man-made disasters. The information you provide will help improve coordination of risk reduction activities within the County.

Your returned survey indicates your willingness to take part in the study. Your participation in this study is voluntary. All individual survey responses are strictly confidential, and are for research purposes only.

Your opinions are important to us. Please return your completed survey within 15 days or receipt to our technical consultant on this project Whisper Mountain Professional Services, Inc. at 224 Evans Lane Ste B, Chubbuck, Idaho 83202 in the stamped, addressed, return envelope provided.

If you have questions regarding the survey, feel free to contact Whisper Mountain Professional Service, Inc. at (208) 478-1099.

Thank you for your participation!

Sincerely,

Lt. Todd Herrera,
Emergency Management Coordinator,
Canyon County
Sheriff's Department

1. What town do you live in or near? _____

2. Have you ever experienced or been impacted by a disaster (a sudden event bringing severe damage, loss, or destruction)?

- ❑ Yes (please explain**):**_____
- ❑ No

3. How concerned are you about the possibility of our community being impacted by a disaster?

- ❑ Concerned
- ❑ Somewhat concerned
- ❑ Not concerned

4. Please select the five (5) highest that you believe are hazards facing your neighborhood.

- ❑ Blizzards/Ices Storms/Winter Storms
- ❑ Hail
- ❑ Storm Water Erosion
- ❑ Hazardous Materials

- ❑ Dam Failure
- ❑ Land Subsidence (e.g. sinkhole)
- ❑ Drought
- ❑ Landslide/Mudslide
- ❑ Earthquake
- ❑ Lightning
- ❑ Expansive Soils
- ❑ Nuclear
- ❑ Extreme Cold
- ❑ Terrorism (bombs/biological/chemical)
- ❑ Extreme Heat
- ❑ Tornadoes
- ❑ Fires
- ❑ Volcanoes
- ❑ Air Quality
- ❑ Flooding – Canal
- ❑ Flooding – Flash (Ravine)
- ❑ Wildland Fires
- ❑ Insect Infestations
- ❑ High Wind / Wind Storms
- ❑ Other (please explain)

5. Is there a hazard not listed in this survey that you think is a wide-scale threat to your neighborhood?

- ❑ Yes (please explain):_____
- ❑ No

Note: ***Please read before answering questions 6 and 7.***

A "flood" as defined by the National Flood Insurance Program is "a general and temporary condition of partial or complete inundation of two of more acres of normally dry land area or two or more properties". Flood zones are geographic areas that the Federal Emergency Management Agency (FEMA) has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Hazard Boundary Map or Flood Insurance Rate Map (FIRM). It's important to know that if you have a federally backed mortgage on a home located in a high-risk area, Federal law requires you to purchase flood insurance. Also, if you've received a Federal grant for previous flood losses, you must have a flood insurance policy to qualify for future aid.

6. Is your home located in a floodplain as defined under the National Flood Insurance Program (NFIP)?

- ❑ I don't know
- ❑ Yes
- ❑ No

7. Do you have flood insurance, if required, through a National Flood Insurance Program (NFIP) Carrier?

- ❑ I don't know
- ❑ Yes
- ❑ No

If "No", why not?

- ❑ Not located in a floodplain
- ❑ Too expensive
- ❑ Not necessary because it never floods
- ❑ Not necessary because I'm elevated or otherwise protected
- ❑ Never really considered it
- ❑ Other (please explain):

8. Do you carry hazard insurance for your home/property?

- ❑ Yes

❑ No

What Hazards does your insurance cover?

❑ Fire
❑ Earthquake
❑ Wind
❑ Landslides
❑ Tornado
❑ Land Subsidence
❑ Volcanic Activity
❑ Mudslide/Mud Flow
❑ Land Rising or Shifting

9. Have you taken any actions to make your home or neighborhood more resistant to hazards?

❑ Yes
❑ No

If "Yes", please explain:

_____
_____-
_____

10. Are you interested in making your home or neighborhood more resistant to hazards?

❑ Yes
❑ No

11. What is the most effective way for you to receive information about how to make your home and neighborhood more resistant to hazards?

❑ Newspaper
❑ Television
❑ Radio
❑ Internet
❑ Mail
❑ Public Workshops/meeting
❑ Other (please explain):

12. In your opinion, what are some steps your county or city governments could take to reduce or eliminate risk of future hazard damages in your neighborhood?

_____
_____
_____

12. Are there any other issues regarding the reduction of risk and loss associated with hazards or disasters in the community that you think are important?

_____
_____
_____

13. A number of community-wide activities can reduce our risk from hazards. In general, these activities fall into one of the following six broad categories. Please tell us how important you think each one is for your community to consider pursuing.

1. Prevention
Administrative or regulatory actions that influence the way land is developed and buildings are built. Examples include planning and zoning, building codes, open space preservation, and floodplain regulations.

- ❑ **Very Important**
- ❑ **Somewhat Important**
- ❑ **Not Important**

2. Property Protection
Actions involve the modification of existing buildings to protect them from a hazard or removal from the hazard area. Examples include acquisition, relocation, elevation, structural retrofits, and storm shutters.

- ❑ **Very Important**
- ❑ **Somewhat Important**
- ❑ **Not Important**

3. Natural Resource Protection
Actions that, in addition to minimizing hazard losses also preserve or restore the functions of natural systems. Examples include: floodplain protection, habitat preservation, slope stabilization, riparian buffers, and forest management.

- ❑ **Very Important**
- ❑ **Somewhat Important**
- ❑ **Not Important**

4. Structural Projects
Actions intended to lessen the impact of a hazard by modifying the natural progression of the hazard. Examples include dams, levees, canals, detention/retention basins, channel modification, retaining walls and storm sewers.

- ❑ **Very Important**
- ❑ **Somewhat Important**
- ❑ **Not Important**

5. Emergency Services
Actions that protect people and property during and immediately after a hazard event; examples include warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems.

- ❑ **Very Important**
- ❑ **Somewhat Important**
- ❑ **Not Important**

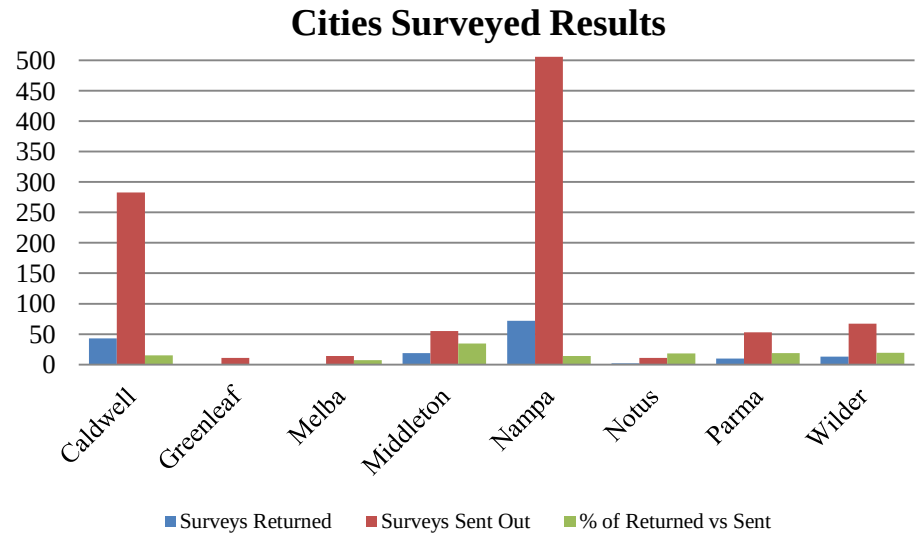
6. Public Education and Awareness
Actions to inform citizens about hazards and the techniques they can use to protect themselves and their property. Examples include outreach projects, school education programs, library materials and demonstration events.

- ❑ **Very Important**
- ❑ **Somewhat Important**
- ❑ **Not Important**

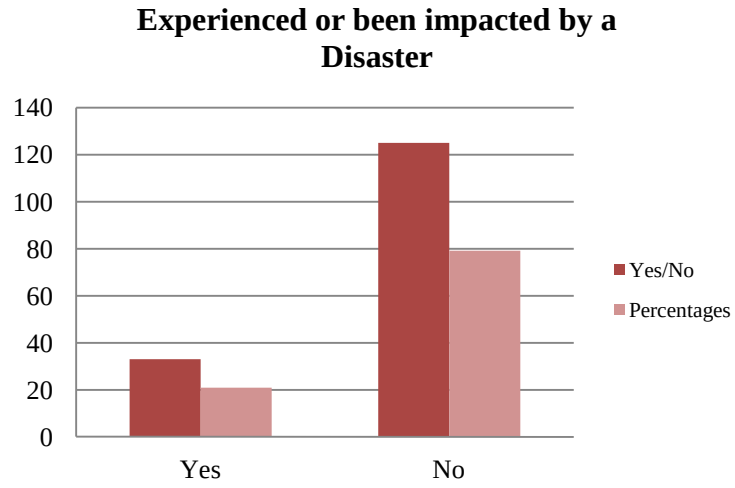
THANK YOU FOR YOUR PARTICIPATION

Public Questionnaire Results

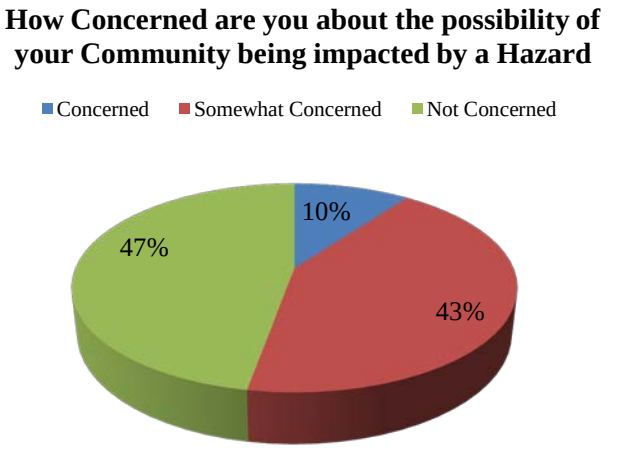
1. What town do you live in or near?



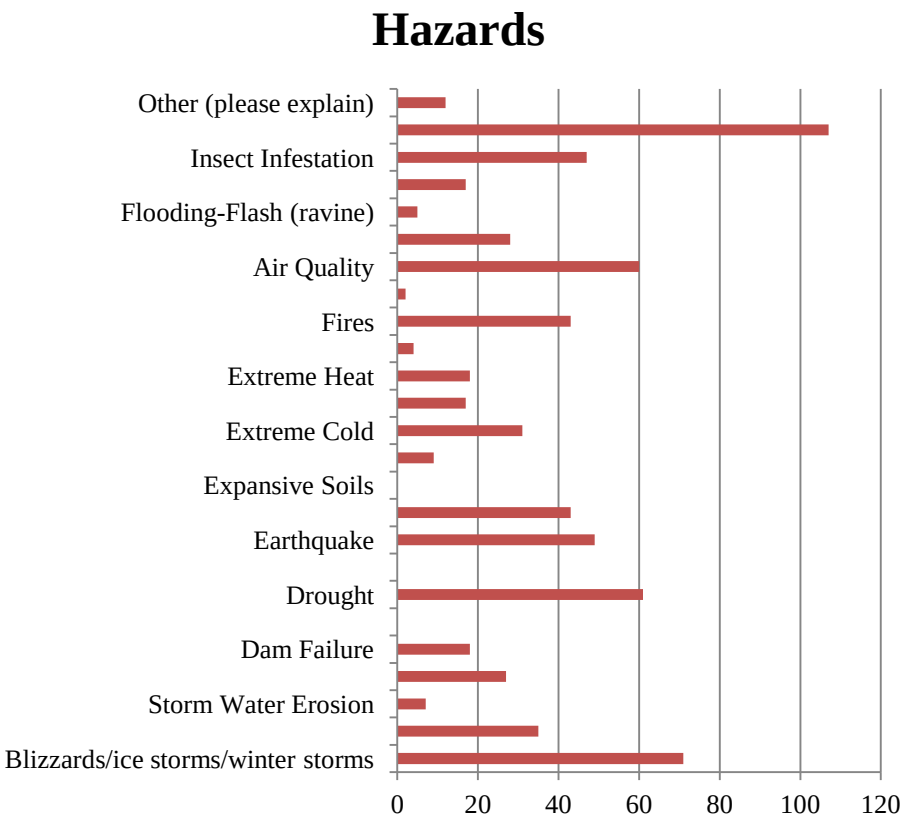
2. Have you ever experienced or been impacted by a disaster (a sudden event bringing severe damage, loss, or destruction)?



3. How concerned are you about the possibility of our community being impacted by a disaster?



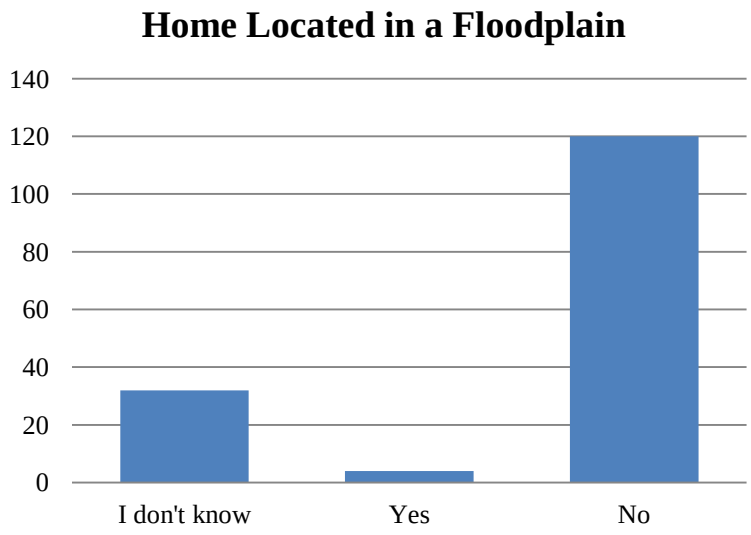
4. Please select the five (5) highest that you believe are hazards facing your neighborhood.



5. Is there a hazard not listed in this survey that you think is a wide-scale threat to your neighborhood?

Y/N	Number
Yes	32
No	113
Total:	145

6. Is your home located in a floodplain as defined under the National Flood Insurance Program (NFIP)?



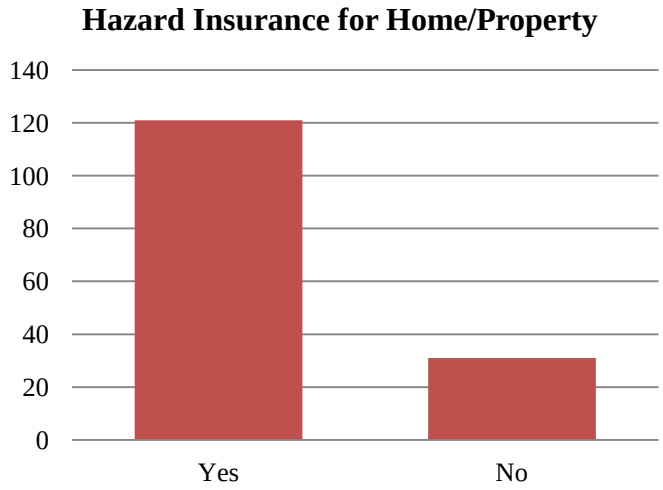
7. Do you have flood insurance, if required, through a National Flood Insurance Program (NFIP) Carrier?

Answer	Number
I don't know	16
Yes	10
No	127
Total:	153

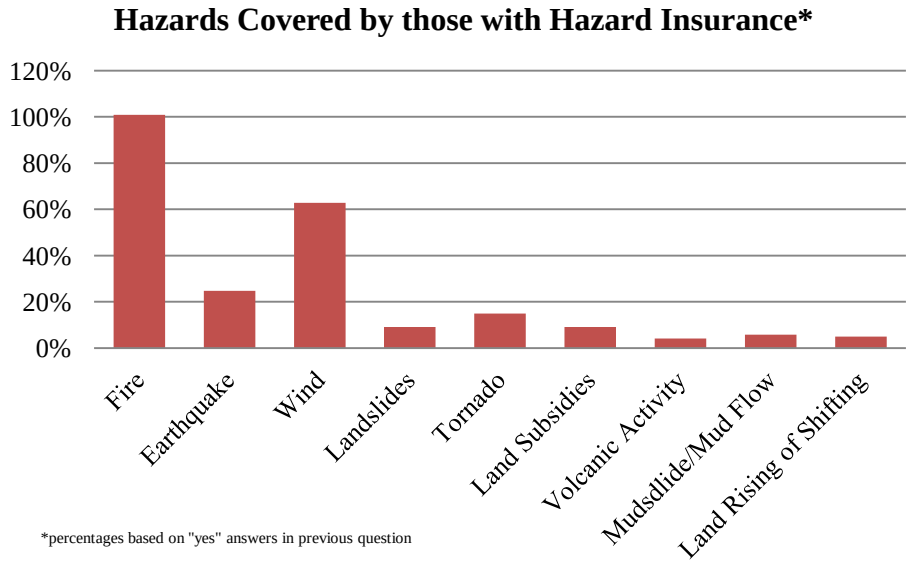
If 'no', why not?

Answer	Number
Not located in a floodplain	99
Too expensive	4
Not necessary because it never floods	11
Not necessary because I'm elevated or otherwise protected	20
Never really considered it	17
Other (please explain)	3
Total:	154

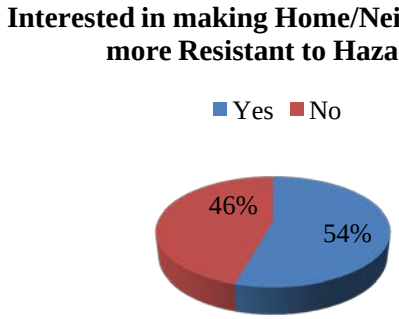
8. Do you carry hazard insurance for your home/property?



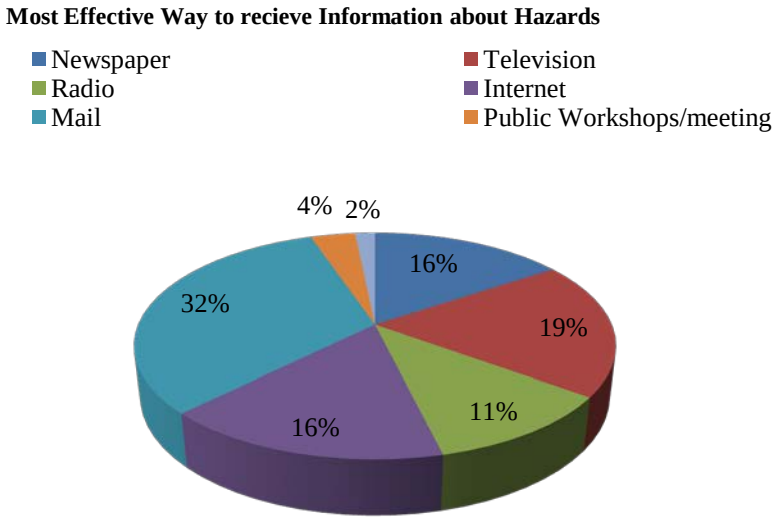
What hazards does your insurance cover?



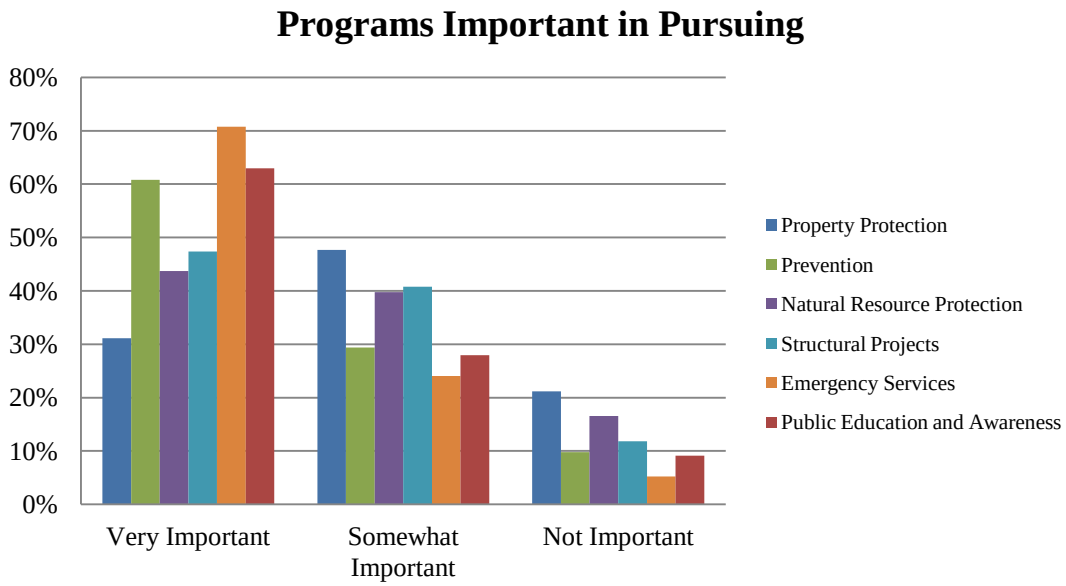
10. Are you interested in making your home or neighborhood more resistant to hazards?



11. What is the most effective way for you to receive information about how to make your home and neighborhood more resistant to hazards?



13. A number of community-wide Activities can reduce our risk from hazards. In general these activities fall into one of the following six broad categories; please tell us how important you think each one is for you community to consider pursuing.



Canyon County Survey Comments

Note: *These comments are transcribed exactly as received, there has been no editing by the authors of this Plan.*

2. Have you ever experienced or been impacted by a disaster (a sudden event bringing severe damage, loss, or destruction)?

Explain:

1. Government Taxes regulation and interference
2. 7.3 Earthquake-California
3. California Earthquakes
4. California Earthquake-No damage to us
5. Whittier Narrows Earthquake (California 86')
6. Loma Prieta Earthquake in California
7. ALASKA 1964 EARTHQuaKe Lived In FAIRbanks ALASKA
8. Hurricane Dean Jamaica 2006
9. WIND STORM SAUDI ARABIA 93
10. WIND DAMAGE-RIPPED PATIO COVER LOOSE, DAMAGED ROOF OF HOUSE
11. WIND STORM
12. wind storm-Blew over Gazebo
13. high wind blew off sheds and carport
14. wind storm
15. Teton Dam failure in 1976 with family living in that area
16. Water damage due to domestic water line failure
17. FLOOD WHEN VANDALS TURNED ON OUR IRRIGATION WATER IN THE MIDDLE OF THE NIGHT
18. IRRiGATiON DiTCH FLooDiNG
19. flood from creek
20. HousE FirE
21. Wildfire in July 2011-had to evacuate my horses
22. A huge neighborhood grass fires in which one life was lost. We have had 4 of them since 93
23. FIRE/WEATHER/Chemical
24. House fire
25. a barn burned down
26. Fire on Dry Land
27. EArthQuake, TorNedo
28. YES IN FLORIDA, A HURRICANE; HERE-HAIL & WIND! SOME FIRE & FLOOD & EXTREME COLD
29. micro burst damaging garage door
30. Micro-BursT- DesTroyed ouT BuildinG
31. SummER ThuNdERstoRms
32. Ice STORM, KNOCKed DOWN TRees TOOK OUT Power DAMaged Houses & PRoPeRTy
33. slick roads 7 car(s) slid off road & through my chain link fence
34. Rain 1 ½" in 20 mins
35. someone stold my car sterio

4. Please select the five (5) highest that you believe are hazards facing your neighborhood. ("Other" option)

1. EMP Strike
2. Rail Road disaster (near RR)
3. HIGHER PROPERTY TAXES
4. government
5. Gangs- drivebys, drugs
6. PLAGUE LIKE ILLNESS-POLICE OVER REACHING-CRIMINAL ANARCHY
7. WATER Quality
8. Low income/welfare neighbors
9. Ground water contamination
10. GROUND WATER CONTAMINATION-NITRATES
11. Summer Thunderstorms;
12. Flooding/Snake River
13. see # 5
14. Most of the above are going to happen with or without another government agency.

5. Is there a hazard not listed in this survey that you think is a wide-scale threat to your neighborhood?

Explain:

1. EMP Strike! Electro Magnetic Pulse It would devastate us as a Nation! NO WAY to protect ourselves against it! Our enemies are preparing at this time to carry this out!
2. Rail Road-live near RR line frequent exchange of trains
3. railroad spills
4. growth of govt
5. too many government regulations weighed against human needs and ability to pay such as impractical EPA laws
6. County Taxes
7. GROUND WATER CONTAMINATION FROM SSI FOODS PROCESSING CENTER/HW95
8. Farming pesticides & dairy drainoff (dairy Borders my land) High nitrates in well water
9. Contamination of ground water
   polution caused by animals
10. Inatentive drivers- text, cell-phone, etc.
11. Gangs/criminal activity
12. Neighborhood gangs
13. GANG & DRUG ACTIVITY
14. Gang Activity/Broken Window Syndrom
15. I worry about Drug trafficers
16. Drug Use
17. idiot neighbors who are entitled
18. Air Quality
19. Mexicans
20. Barack Obama
21. BARACK HUESSIEN OBAMA & ILLEgAL MEXICAN Immigration
22. GOAT HEADS ARE EVERY WHERE OUT HERE

23. LONG TERM LOSS OF ELECTRICITY
24. REGULATIONS/make RESPONSE TIME TO LONG
25. Greed
26. dangerous highway being the only route into subdivision without proper turn lanes. Improperly fixed entry texit way and too tall weeds in summer obstructing view of traffic
27. Weed control
28. Snake & Boise River Levels periodicalley
29. Loss of officials Spelling right

7. Do you have Flood Insurance, if required, through a National Flood Insurance Program (NFIP) Carrier?

If 'no', why not?

1. Told I was not in flood plain. But I would like to know for sure.
2. not required;
3. Lender didn't require it;
4. We're in a 100 year flood plain

9. Have you taken any actions to make your home or neighborhood more resistant to hazards?

If 'yes' please explain:

1. planted certain types of landscrape trees/scrubs
2. Planted zoo Poplars to contol/reduce North wind
3. Keep Property & improvements in good repair. Have planted Trees and vegitation to minimize any hazard
4. GREEN AREA AROUND HOME
5. landscape considerations
6. Keep lawn green around home & try to keep weeds down away from buildings
7. Keep Green area around House & No Bushes Next To House
8. put metal roof on house, installed Fire extinguishers
9. New Roof-wind damage
10. EXTRA INSULATION
11. Try to pick up trash
12. Trimmed trees to prevent wind damage. Remove/clean up dead weeds to prevent fire risk. defensible space around house
13. Trim/rEMovE DEAD LiMBS, EXT. LiGHTS
14. Keep PRopeRT cleaN oF DebRee-Leaves, TRee LiMbs, GARbAge eTc To pReveNT FiRe, 15. We Keep our land, 1.04 acres weed free
16. Keep down weeds. Not burn when windy
17. Keeping tall grass and weeds mowed.
18. We try to keep the weeds down-our horses help a lot!
19. Keep Weeds & combustables under control Irrigation Ditches cleaned
20. KEEP DRY BRUSH & WEEDS MOWED DOWN AND AWAY FROM THE HOUSE
21. weed control on area for wildfire prevention
22. cutting weeds, clearing debris to prevent fire
23. need Weed's naben Fild

24. Clear area around structures against Land fires, Keep trees trimmed-poss wind breakage damage
25. Emergency Preparedness plan water/Food storage 24 hr kit
26. WE STORE SOME WATER, FOOD, AND FUEL
27. LOCAL EMERGENCY PLAN IN EFFECT COVERING FOOD, SHELTER, H2O & TRANSPORTATION-72 HR. KITS-FOR SURVIVAL-PLOWED FIRE BREAK AROUND PROPERTY, HAND H2O PUMPS, SHORED UP WEAK BLDGS. EXTRA H2O & FUEL ON HAND-TRACTOR READY TO WORK-
28. Keep DRAiNs opeN To help with RaiN WAteR RuNoFF
29. Drainage away from Structures
30. CLEAN WATERWAYS
31. MAKeiNG Home OwNers CleAN THere CANAl & AwAre oF WHAT CAN HAPPen
32. Fire breaks
33. voted against over protective government rules
34. locked chemical storage-written plan for employee safety
35. called land management to take care of weeds that obstruct traffic views without getting results

11. What is the most effective way for you to receive information about how to make your home and neighborhood more resistant to hazards? Other (please explain):

1. we do not have a problem here
2. Email WORKS BEST
3. Block meeting
4. Possibly depeNds on whose iNvolved we doN't Need aNy More mandiry Laws Like emissions

12A. In your opinion, what are some steps your county or city governments could take to reduce or eliminate risk of future hazard damages in your neighborhood?

Relative Comments:

1. Have workshops & training that we could attend
2. public education forums
3. Public meeting awareness I work for Road Road for 27 years and know what rolls through our area
4. More public information
5. MAKE PUBLIC AWARE OF DANGERS MAKE SURE RISKS ARE WELL UNDERSTOOD
6. HAVE EMERGENCY RESPONDERS PARTICIPATE IN PRACTICE DRILLS. HAVE PREPAREDNESS BOOTHES AT THE INDIAN CREEK FESTIVAL. ENCOURAGE CITIZENS TO TAKE SOME PREPARDNESS STEPS LIKE STORING SOME FOOD & WATER.
7. Education-I understand the July wildfire was human cased. Kids playing?
8. Meetings
9. PuBlic MEEtiNGS
10. inform public what to do
11. Hold town meeting about what to do and where to go in case of an emergency

12. Teach people what to do when/if this happens & preventative measures
13. Educating the public via radio & tv what the top hazards are and the main things to prevent them
14. Provide money for first responders to be trained and equipped to handle as many hazards as possible
15. Prepare for and practice Emergency plan
15. create response plan identify potential hazards, rate according to likelihood educate citizens
16. disaster planning
17. General prepardness
18. one step is to logout a Plan for Communites in case of a natural disaster, a "step by step" maybe Disaster plan for its citizens
19. training-coordination of emergency service to eliminate redundancy
20. INCREASE 1ST RESPONDER NUMBERS
21. TELL PEOPLE TO PREPARE FOR THEMSELVES. YOU CAN'T PROTECT EVERYONE FROM ALL HAZARDS, THEY NEED TO BE MORE SELF RELIANT. NOT MORE GOVERNMENT RELIANT.
22. Have plans & resources ready & available
23. residents to improve civil emergency response teams
24. Education of homeowner
25. warning signals
26. MAKe suRe New Developments, Biulding & other projects aRe doNe pRopeRly & HazaRD Removal & PReventioN is paid foR by DevelopeRs instead of coNsumeRs & taxpayeRs
27. Ordinances & enforcement of: open burning; water pollution; industry air & water pollution; elimination of hazardous materials/property dumps- thay are everywhere in the county.
28. Start supporting and strengthening air and water pollution abatement policies and laws
29. Make all live by the laws and be enforced by the law. The way the law reads today is really DumB- It says the fire must be seen by the sheriff before he can do anything-That is rediculous. I am going to wait till the sheriff get here before I try to put the fire out! If we had done that this summer, our house would have burned & our neighbors. We lost one friend in this, but my husband saved our yard & house.
30. Change regulations for waterways
31. enforce weed control laws on properties to prevent fire hazards
32. Increase enforment of DEQ Regulations
33. LOCK UP THE ANARCHISTS, DECREASE THE NUMBER OF POLICE OFFICERS IN THE AREA
34. reduce the Police Force
35. more patrol, stiffer punishment for vandalism
36. Carpools, Go GrEEN
37. encourage landowners to keep down the flammable weeds
38. monitoring of dairy waste
39. Put electrical transmission lines underground Improve Hazmat information and control work w/

40. The mosquitos doN't seem to be a problem-keep up oN that. Reduce criminal activity-DoN't kNow if this applier
41. INSECT & Weed Control
42. Weed Control, Controlled burning
43. Better weed management in and around residential areas
44. Clear away Brush, keep storm drains clear, maintain abatement program and use property tax $ very, very wisely! fill potholes by communicating with city/county IDT so bickering as to who is responsible is put aside for community safety.
45. widen road, make another entry and exit make turn lanes and appropriately care for weeks that obstruct view of traffic
46. INSTALL WATER TREATMENT PLANT AT SSI-WILDER NO PONDS THAT HOLD BAD WATER-NITRATES NO FARM ANIMALS IN CANALS, DRAIN DITCHES & SNAKE RIVER COWS-HORSES
47. our ground water, more test our dumps check out the soil
48. BuilD A SAFE DiSTANCE FRom THE BOISE RiVER
49. Let the water out of Lake Lowell, I fear the dams will break
50. ck up stream high ddms carefully!
51. MAke Home OwNers MoRe AwAre OF WHAT CAN HAPPeN FRom OuR CANAl SYSTem
52. Fire TrAils
53. Keep Hzzmat TRucks off Neighborhood Rd (All Roads Except Freeways)-only allow them to drive between 4:pm-4A.M.
54. ONly hAzArd in this NEighbobhood ARE diEing TrEErs
55. Check sprays used on crops
56. Hot line for the elderly during a heat wave or during extreme winter weather;
57. INSURE POWER GRID IS RELIABLE
58. hARd To SEy-With budget REstRANts
59. More surveys would probably help
60. Pg 4 is good
61. BRING/KEEP JOBS IN CANYON COUNTY. DONT FARM STUFF LIKE THIS OUT TO EAST IDAHO

Non-Relative Comments:

1. do cost vs expense analysis on new laws
2. In our experience the risks of disasters is very low and perhaps not worth the effort to develop 3. new approaches to midigate actions not likely to occure.
4. NO MUCH AS THE HAZARDS ARE OF NATURE- NO WAY CAN YOU CONTROL NATURE
5. I live in a low risk area for Hazards
6. I Believe Canyon Co is in a very low Risk Category-
7. RISK OF Future HAzard DamaGE Can't BE Eliminated-IT's A RiSK! WE LIVE With iT EVERy DAy
8. No City-County GovT. is able to stop earthquakes Tornadoes VolcANic AcTiviYy, so they need to move to an area where these do take place and lower our taxes By not trying to make government jobs for someone.
9. I am 8 mi from town and have a very safe neighborhood

10. City Council Cannot Prevent hazards/Disasters that are not caused by man
11. See #4. All are acts of God. I don't think the government can do anything about those hazards.
12. None Needed
13. My neighborhood is great
14. Not in my area
15. QUITE FRANKLY I DON'T THINK THAT THE CITY OR COUNTY OR FIRE PROTECTION CAN DO VERY MUCH IN THIS REGARD. OUTSIDE OF SNOW REMOVAL AND ROAD OR BRIDGE MAINTENANCE, IT IS UP TO SMALL NEIGHBORHOOD GROUPS TO HELP EACH OTHER FEMA IS ONE BIG LAUGH! THAT HAS BEEN SHOWN RECENTLY BY THEIR INEPT AND LATE RESPONSE WARNING SYS
16. we do And will Not have Any Risk oTher Than LigaTais back or high winds, man CANNOT pRevenT NATURE from RUNNINg iTs COURSe
17. City woulD Just RAsE moRE TAX THEy NEED TO Do NotHiNG
18. None! We do not need, yet another, layer of government.
19. Quit trying to be everyting to everyone
20. NoT sure-don't Know what is already in place to pRovide pRoTecTioN FoR such ThiNgs
21. STAY OUT OF OUR LIVES
22. Doomsday Machine
23. Vote against Barack Obama
24. Teach people to spell
25. Get people off entitlement programs & teach them to be self sufficient as when there is a natural disaster more people are prepared to help themselves.

12B. Are there any other issues regarding the reduction of risk and loss associated with hazards or disasters in the community that you think are important?

Relative Comments:

1. Need a disaster response plan
2. just being prepared
3. Help the people be more informed as to who to call & where to go if/when this happens
4. make sure all agencies can communicate w/ one another
5. Learning how to protect ourselves against gang Violence in case of a national emergeny
5. Neighborhood gang activity
6. crime
7. Poor infastructure of safe roads, sidewalks, big truck & farm equipment by-ways (N to South); 8. new schools on roads that semis are running constantly-southside Blvd; loss of property value
9. reduce hazard insurance so people can afford it
10. Maintain streets in city & county areas particularly with those without paved curbs.
11. Cost is very important-requiring new construction to mitigate risks is much more cost effective than retrofiting
12. COST OF DEALING WITH RISK NEEDS TO BE BALANCED WITH ACTUAL POTENTIAL COST OF RISK

13. flood, EarthQuakes, checking our soil
14. Keeping hazardous materials contained at Land Fill. I have family below Pickles Butte and
15. most have died from cancer-migrating chemicals in their ground water?
16. Inspect canals regularly
17. there's a road "hazard" between Franklin & Cherry Lane on Can Ada-please have proper agency have it repared. (pretty please!);

Non-Relative Comments:

1. Don't get too INvolved with placing RestRictioNs IN the Name of Fighting "TeRRoRism"
2. A remote hazard may occure from marsinl rotation lecks from facilities up word from our community but that seems unlikely.
3. CanyoN county Needs to focus oN Jobs 1st and Foremost before any of this. Criminal activity is a concern for the public Lower taxes-I kNow that doesn't apply but DoN't raise Taxes to implement uNNeeded hazard programs.
4. Keep costs low!
5. Yes this is AMERICA PEOPLE should SPEAK AND WRITE ENGLISH/ALL PEOPLE SHOULD BE ABLE TO UNDERSTAND WARNINGS ect.
6. The biggest Hazard is not listed, thats Damage to my wallet. I'm tired of Gov't medeling in things they can't control
7. The biggest hAzArd is letting government hAndle the hAzArd
8. It would be an issue if the intent was to create another department & raise taxes.
9. How MuCH ARE THEy Paying For This QUESTIONAiRE
10. People just need to be responsible for themselves
11. EACH FAMILY MUST TAKE RESPONSIBILITY FOR ITS OWN SURVIVAL AND THEN HELP THOSE LESS FORTUNATE. BECAUSE OF THE DIVERSITY OF HOMES, A COUNTY-WIDE PROGRAM WOULD BE VERY HARD TO MANAGE IN MY OPINION
12. Dr. Strangelove

Comments on front of Survey:

1. WASTE OF TIME & TAX PAYERS MONEY!
2. Marsing-but own business & work in Caldwell
3. mosT surveys like This just use up paper, sTamps & public money. James L. Buxton
4. According to FEMA
5. Only because FEMA decided they Needed More $
6. Not much can be done about the 5 I've checked!

Comments on back of Survey:

1. I have no opinion on these issues-AM 75, live alone
2. CODES TO INFLEXIBLE
3. I THINK CANYON COUNTY SHOULD WORK WITH THE EMERGENCY AGENCIES THE NATIONAL GUARD ALREADY HAS RATHER THAN ADDING TO THE GOVERNMENT CONTROL.
4. If NecessARY RAISe TAXeS!

1. Prevention:

1. County & State not work as One
2. Poor planning & zoning in The past 50years
3. Too many Regulations alReady
4. IM VERY CONCERNED BY BUILDERS GOBBLING UP GOOD FARM LAND; IT IS A SHAME! BUT, $ TALKS!
5. PLaning & ZONING IS DRIVING BUSINESS TO OTHER TOWNS
6. Less Government interference we are already being charged for Rain water
7. but citizens DoN't want too much goverNmet iN their business
8. ABOLISH Planning & Zoning activities

2. Property Protection:

1. I think that the government is not responsible for protecting a person's property except for five.
2. RegulatioNs too strict
3. Sound like tax payers money though. Probably very expensive.

3. Natural Resource Protection:

1. From what I see in the news across the county I don't think the government has done a very good job. People should learn to protect their own property.
2. Too much goverNMent already.
3. Less Government interference we are already being charged for Rain water
4. To LATE BY 30 Yrs.
5. but again Not at the expense of closing DowN Jobs.
6. STOP TRYING TO CONTROL NATURAL PROCeSSES

4. Structural Projects

1. PEOPLE NEED TO QUIT BUILDING IN FLOOD AREAS

5. Emergency Services

1. hire more create more Jobs
2. WARN AS WELL AS POSSIBLE, THEN MAKE PEOPLE RESPONSIBLE FOR THEMSELVES

6. Public Education and Awareness:

1. This is ok as long as it doesn't try to inductuinate children with the idua that they need to be dependent on the government for their needs.
2. IF IT IS ACCURATE!
3. You cAN LEED A HorSE To WATEr

Attachment 3: Essential Facilities

The following table lists the title, address, and value of essential local government owned facilities in Canyon County. This information has been used as a basis for hazard and vulnerability analyses included in this Plan, and subsequent Threat and Hazard Identification and Risk Analyses (THIRA) which will be completed in the future by Canyon County.

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Caldwell	Airport Hanger	5017 Aviation	Caldwell	83605	$228,800
City of Caldwell	Airport Hanger/Maintenance Shop	4611 Aviation	Caldwell	83605	$85,280
City of Caldwell	Airport Rental House/Boyd Newhouse/West One Aircraft	4510 Aviation	Caldwell	83605	$62,400
City of Caldwell	Airport Terminal (New)	4814 Linden	Caldwell	83605	$1,573,308
City of Caldwell	Airport Terminal (Old)	4601 Aviation	Caldwell	83605	$241,481
City of Caldwell	Booster Station #1	703 N Indiana	Caldwell	83605	$100,000
City of Caldwell	Booster Station #2	1507 N Illinois	Caldwell	83605	$40,000
City of Caldwell	Booster Station #3	14092 Moss St	Caldwell	83607	$810,871
City of Caldwell	Booster Station #4	15633 S Indiana St	Caldwell	83607	$316,832
City of Caldwell	Brothers Park Restroom	Indiana and Ustick	Caldwell	83605	$80,000
City of Caldwell	Caldwell Train Depot/complete renovation 2006	701 Main Street	Caldwell	83605	$780,000
City of Caldwell	Cemetery Admin. Office/Canyon Hill	2024 N Illinois	Caldwell	83605	$175,000
City of Caldwell	Cemetery Rental House	2101 N Illinois	Caldwell	83605	$94,640
City of Caldwell	Cemetery Shop Bldg/Canyon Hill	1619 Savannah	Caldwell	83605	$116,250
City of Caldwell	City Development Services Bldg	621 Cleveland	Caldwell	83605	$1,374,688
City of Caldwell	City Hall/Mayor/Admin. Offices	411 Blaine St.	Caldwell	83605	$920,289
City of Caldwell	Fairview Golf Course Cart Barn	816 Grant St	Caldwell	83605	$135,000
City of Caldwell	Fairview Golf Course Club House	816 Grant St	Caldwell	83605	$124,800
City of Caldwell	Fire Dept Training Tower	21235 Chicago St	Caldwell	83605	$20,000
City of Caldwell	Fire Station #1	310 S 7th	Caldwell	83605	$1,330,863

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Caldwell	Fire Sub-Station #2	724 E Ustick Rd	Caldwell	83605	$911,756
City of Caldwell	Historical Cabin #1	Memorial Park	Caldwell	83605	$25,000
City of Caldwell	Historical Cabin #2	Memorial Park	Caldwell	83605	$25,000
City of Caldwell	Library	1010 Dearborn	Caldwell	83605	$2,470,735
City of Caldwell	Mallard Park Restroom	Orchard & 10th St	Caldwell	83607	$70,000
City of Caldwell	O'Connor Event Center	2207 Blaine St	Caldwell	83605	$2,513,722
City of Caldwell	Parks and Rec. Building/Admin. Office & Shop	618 Irving St	Caldwell	83605	$449,358
City of Caldwell	Police Dept. Annex Building	423 Blaine St	Caldwell	83605	$118,356
City of Caldwell	Police Station	110 S. 5th Ave	Caldwell	83605	$4,309,341
City of Caldwell	Pre School Class Room Bldg	Memorial Park	Caldwell	83605	$108,000
City of Caldwell	Purple Sage Golf /Maintenance Bldg	15192 Purple Sage Rd	Caldwell	83607	$250,000
City of Caldwell	Purple Sage Golf Club House	15192 Purple Sage Rd	Caldwell	83605	$1,368,217
City of Caldwell	Recreation Dept./Downtown Bldg	119 S Kimball	Caldwell	83605	$70,000
City of Caldwell	Restroom	Luby Park/Marble Front Rd	Caldwell	83605	$75,000
City of Caldwell	Restroom	Sebree Park/Everett	Caldwell	83605	$75,000
City of Caldwell	Restroom	Ustick Park/Ustick Rd	Caldwell	83605	$100,000
City of Caldwell	Restroom	Brothers Park/ Indiana Ave	Caldwell	83605	$100,000
City of Caldwell	Restroom	Griffiths Park	Caldwell	83605	$100,000
City of Caldwell	Restroom	Pipe Dream Park	Caldwell	83605	$100,000
City of Caldwell	Restroom	Jaycee Park	Caldwell	83605	$50,000
City of Caldwell	Restroom	821 Smeed Parkway	Caldwell	83607	$100,000
City of Caldwell	Restroom #1	Memorial Park/10th Ave	Caldwell	83605	$100,000
City of Caldwell	Restroom #2	Memorial Park/10th Ave	Caldwell	83605	$100,000
City of Caldwell	Restroom/ under construction	308 W Chicago	Caldwell	83605	$28,935
City of Caldwell	Senior Citizen Center	1009 Everett	Caldwell	83605	$1,252,563

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Caldwell	Street Department Maintenance Building #2	304 Madison	Caldwell	83605	$411,972
City of Caldwell	Street Department Maintenance Building #1	304 Madison	Caldwell	83605	$974,464
City of Caldwell	Street Dept. Rental House	21486 Pond Lane	Caldwell	83607	$75,000
City of Caldwell	Swimming Pool Storage Bldg	Memorial Park	Caldwell	83605	$30,000
City of Caldwell	TVCC Building	205 6th Ave	Caldwell	83605	$6,113,860
City of Caldwell	Swimming Pool Building	522 Harrison	Caldwell	83605	$924,169
City of Caldwell	Vehicle Wash Station/ under construction	308 W Chicago	Caldwell	83605	$17,028
City of Caldwell	Waste Water Treatment Headworks	504 Johnson Lane	Caldwell	83605	$2,172,278
City of Caldwell	Waste Water Treatment Plant/tanks, basins, pumps, wiring, controls, exposed piping, valves, stairs, walkways, retaining walls	504 Johnson Lane	Caldwell	83605	$0
City of Caldwell	Waste Water Treatment Plant Admin. Bldg	504 Johnson Lane	Caldwell	83605	$256,157
City of Caldwell	Waste Water Treatment Plant Aeration/Selector Basins	504 Johnson Lane	Caldwell	83605	$4,048,838
City of Caldwell	Waste Water Treatment Plant Blower/ DAF	504 Johnson Lane	Caldwell	83605	$2,736,110
City of Caldwell	Waste Water Treatment Plant Control, Digester #4	504 Johnson Lane	Caldwell	83605	$811,368
City of Caldwell	Waste Water Treatment Plant Digester #1 & #2 & Lab Control	504 Johnson Lane	Caldwell	83605	$1,945,532
City of Caldwell	Waste Water Treatment Plant Digester #3 & Control	504 Johnson Lane	Caldwell	83605	$1,286,323
City of Caldwell	Waste Water Treatment Plant Digester #4	504 Johnson Lane	Caldwell	83605	$1,507,588
City of Caldwell	Waste Water Treatment Plant Generator Bldg 1500 KW	504 Johnson Lane	Caldwell	83605	$1,303,680
City of Caldwell	Waste Water Treatment Plant Generator New, 400 KW	504 Johnson Lane	Caldwell	83605	$402,885
City of Caldwell	Waste Water Treatment Plant Intermediate Pump Station #2	504 Johnson Lane	Caldwell	83605	$1,077,242
City of Caldwell	Waste Water Treatment Plant Lagoon Pump	504 Johnson Lane	Caldwell	83605	$461,674

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Caldwell	Waste Water Treatment Plant Old Intermediate Pump	504 Johnson Lane	Caldwell	83605	$26,950
City of Caldwell	Waste Water Treatment Plant Primary Clarifier #1	504 Johnson Lane	Caldwell	83605	$802,026
City of Caldwell	Waste Water Treatment Plant Primary Clarifier #2	905 Johnson Lane	Caldwell	83605	$793,573
City of Caldwell	Waste Water Treatment Plant Secondary Clarifier #1	504 Johnson Lane	Caldwell	83605	$1,516,852
City of Caldwell	Waste Water Treatment Plant Secondary Clarifier #2	504 Johnson Lane	Caldwell	83605	$1,516,852
City of Caldwell	Waste Water Treatment Plant Secondary Clarifier #3	504 Johnson Lane	Caldwell	83605	$1,516,852
City of Caldwell	Waste Water Treatment Plant UV Building	504 Johnson Lane	Caldwell	83605	$994,468
City of Caldwell	Waste Water Treatment Plant, GBT Building	504 Johnson Lane	Caldwell	83605	$757,444
City of Caldwell	Waste Water Treatment Shop	504 Johnson Lane	Caldwell	83605	$167,686
City of Caldwell	Water Dept. Office/Breakroom	305 Chicago	Caldwell	83605	$284,519
City of Caldwell	Water Dept. Shop	305 Chicago	Caldwell	83605	$302,054
City of Caldwell	Well House #10	4044 Mead St	Caldwell	83605	$200,000
City of Caldwell	Well House #11	3923 Aviation Way	Caldwell	83605	$232,477
City of Caldwell	Well House #12	1209 E Spruce	Caldwell	83605	$200,000
City of Caldwell	Well House #13	6119 Timber Place	Caldwell	83605	$200,000
City of Caldwell	Well House #14	302 W Maple St	Caldwell	83605	$200,000
City of Caldwell	Well House #15 and Generator	3401 S 10th Ave	Caldwell	83605	$477,640
City of Caldwell	Well House #16	5219 S Montana Ave	Caldwell	83605	$200,000
City of Caldwell	Well House #17	14092 Moss St	Caldwell	83605	$1,000,000
City of Caldwell	Well House #18	10895 Ustick Rd	Caldwell	83607	$320,791
City of Caldwell	Well House #19	1501 S KCID Rd	Caldwell	83605	$100,000
City of Caldwell	Well House #1A	1111 N Kimball	Caldwell	83605	$200,000
City of Caldwell	Well House #21	Indiana & Orchard	Caldwell	83605	$320,000

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Caldwell	Well House #4	2024 N Illinois	Caldwell	83605	$200,000
City of Caldwell	Well House #6	104 N 18th Ave	Caldwell	83607	$195,548
City of Caldwell	Well House #7	300 S 34th Ave	Caldwell	83605	$324,831
City of Caldwell	Well House #8	624 Kit Ave	Caldwell	83605	$235,966
City of Caldwell	Well House #9	2920 Commercial Ave	Caldwell	83605	$200,000
City of Caldwell	Whittenberger Park Restroom	Centennial Dr & Chicago St	Caldwell	83605	$70,000
Canyon County	Court House & Jail/2412 Chicago Storage units contents/units 259,279,310,356,280,321,358,H311	115 Albany/ 219 N 12th Ave	Caldwell	83605	$26,910,083
Canyon County	County Election Building	1102 Chicago	Caldwell	83605	$466,388
Canyon County	Canyon County Annex	120 9th Ave	Nampa	83651	$1,167,643
Canyon County	Exhibition Bldg (Includes Fences)	111 22nd Ave	Caldwell	83605	$1,225,867
Canyon County	Juvenile Detention Center (Includes Fence)	1115 Albany	Caldwell	83605	$8,487,468
Canyon County	Pickle Butte Shop Include Fences	15500 Missouri Ave	Nampa	83607	$362,507
Canyon County	Pickle Butte (Scale House)	15500 Missouri Ave	Nampa	83651	$428,670
Canyon County	Pickle Butte Administration Office (Include Fencing)	15500 Missouri Ave	Nampa	83651	$148,970
Canyon County	Shop/Bldg. Maintenance	304 N 12th Ave	Caldwell	83605	$308,263
Canyon County	Animal Shelter & Fence	5801 Graye Lane	Caldwell	83605	$2,438,225
Canyon County	Vehicle Maintenance Building	1323 East Chicago	Caldwell	83605	$1,513,793
Canyon County	Work Release Building	304 N 12th Street	Caldwell	83605	$2,005,235
Canyon County	Shop/Storage/Office/Apartment	22108 Pond Lane	Caldwell	83605	$204,222
Canyon County	Crime Lab Building	1014 Belmont	Caldwell	83605	$1,474,240
Canyon County	DMV Building	6107 Graye Lane	Caldwell	83605	$1,598,232
Canyon County	2nd Scale House	15500 Missouri Ave	Nampa	83651	$317,275
Canyon County	Radio Towers (4)	1323 E Chicago Street	Caldwell	83605	$990,000
City of Greenleaf	Academy Well		Greenleaf	83626	$112,486
City of Greenleaf	Butler Well	Butler Court	Greenleaf	83626	$400,844
City of Greenleaf	City Hall/Solar Panel attached to roof	20523 N Whittier St.	Greenleaf	83626	$260,954

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Greenleaf	Eq Stg Bldg	Greenleaf	Greenleaf	83626	$6,141
City of Greenleaf	Friends Well	Friends RD	Greenleaf	83626	$112,486
City of Greenleaf	Harmony Well	Harmony Lane	Greenleaf	83626	$25,872
City of Greenleaf	Hill Crest Well	Hillcrest Dr	Greenleaf	83626	$22,497
City of Greenleaf	Butler Well/200,000 gal water tank	Butler Court	Greenleaf	83626	$179,000
City of Greenleaf	Chain link Fence-City Hall	20523 N Whittier St.	Greenleaf	83626	$5,000
City of Greenleaf	Pole and Sign		Greenleaf	83626	$3,150
City of Melba	Aerator Building #1	210 Charlotte	Melba	83641	$2,930
City of Melba	City Hall	401 Carrie Rex Ave	Melba	83641	$82,500
City of Melba	Charlotte Pump House #2	108 Charlotte	Melba	83641	$35,000
City of Melba	Family Dwelling	111 Charlotte	Melba	83641	$51,000
City of Melba	Loomis Pump House #1	530 Loomis	Melba	83641	$9,000
City of Melba	Water Tank-80k Hal	530 Loomis	Melba	83641	$163,910
City of Melba	Library Building	109 Charlotte	Melba	83641	$60,000
City of Melba	Concession Stank		Melba	83641	$5,000
City of Melba	Screen Building		Melba	83641	$150,000
Middleton Rural Fire District	Fire Station	26476 Harvey Road	Caldwell	83607	$484,000
Middleton Rural Fire District	Fire Station	302 Star Road	Middleton	83644	$2,048,000
City of Middleton	Back Barn-Farm Dept	824 Whiffin Lane	Middleton	83644	$11,130
City of Middleton	Blower Shed-Farm Dept	824 Whiffin Lane	Middleton	83644	$21,200
City of Middleton	Chemical Building-Farm Dept	824 Whiffin Lane	Middleton	83644	$15,900
City of Middleton	City Hall	6 North Dewey	Middleton	83644	$550,000
City of Middleton	Civic Center	Main Street	Middleton	83644	$100,000
City of Middleton	Comfort Station-Parks Dept	Roadside Park	Middleton	83644	$20,000
City of Middleton	Corner Hartley & Hwy 44	23100 Hartley Lane	Middleton	83644	$200,000
City of Middleton	Davis Park Shelter-Parks Dept	Davis Park	Middleton	83644	$2,500
City of Middleton	Fuel Station-Farm Dept	824 Whiffin Lane	Middleton	83644	$2,650
City of Middleton	Grange Hall/Trolley St	310 E Main St	Middleton	83644	$322,000
City of Middleton	Implement Shed-Parks Dept	Davis Park	Middleton	83644	$7,000

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Middleton	Library	307 E Main St	Middleton	83644	$480,000
City of Middleton	Lift Station Prospector-Sewer Dept	Prospector	Middleton	83644	$74,730
City of Middleton	Lift Station	Middleton Park	Middleton	83644	$80,030
City of Middleton	Lift Station-Sewer Dept	824 Whiffin Lane	Middleton	83644	$50,000
City of Middleton	Machine Shed-Farm Dept	824 Whiffin Lane	Middleton	83644	$55,000
City of Middleton	Middleton Lakes Lift Station-Sewer Dept		Middleton	83644	$75,000
City of Middleton	Park Shelter-Parks Dept	Middleton Park	Middleton	83644	$20,000
City of Middleton	Pipeshed-Farm Dept	824 Whiffin Lane	Middleton	83644	$3,180
City of Middleton	Powder River Booster Station-Sewer Dept		Middleton	83644	$125,000
City of Middleton	Pumphouse-Water Dept	N 1st Well #2	Middleton	83644	$20,000
City of Middleton	River Lift Station-Sewer Dept		Middleton	83644	$75,000
City of Middleton	Service Shed-Sewer Dept	824 Whiffin Lane	Middleton	83644	$30,740
City of Middleton	Shelter-Parks Dept	Roadside Park	Middleton	83644	$20,000
City of Middleton	Shelter-Middleton Place Park		Middleton	83644	$30,000
City of Middleton	Shelter-The Grove		Middleton	83644	$20,000
City of Middleton	Shop Building-Farm Dept	824 Whiffin Lane	Middleton	83644	$100,000
City of Middleton	Sign Shed	824 Whiffin Lane	Middleton	83644	$20,000
City of Middleton	UV Building-Sewer Dept	824 Whiffin Lane	Middleton	83644	$40,000
City of Middleton	Water Fill Station-Water Dept	824 Whiffin Lane	Middleton	83644	$45,000
City of Middleton	Water/Street Office Building	305 E Main St	Middleton	83644	$0
City of Middleton	Well #5-Water Dept	Cemetery Road Well #5	Middleton	83644	$125,000
City of Middleton	Well #6-Water Dept	2nd Ave Middleton Pl	Middleton	83644	$16,430
City of Middleton	Well #8-Water Dept		Middleton	83644	$100,000
City of Middleton	10,000 Gallon Tank	Willis Lane	Middleton	83644	$30,000
City of Middleton	Backstop	Middleton Park	Middleton	83644	$8,500
City of Middleton	Lagoon Ponds		Middleton	83644	$100,000

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Middleton	Misc Fences/Structures		Middleton	83644	$50,000
City of Middleton	Roadside Park Bridges		Middleton	83644	$50,000
City of Middleton	Tennis Courts	Middleton Park	Middleton	83644	$95,400
City of Middleton	Water Tank 2,000,000 Gallon	Willis Lane	Middleton	83644	$1,167,000
City of Middleton	Water Tower 15,000 Gallon	N 1st St W	Middleton	83644	$73,140
City of Wilder	Booster Station	501 6th St	Wilder	83676	$112,396.96
City of Wilder	Chlorinator Bldg.	420 Huff Road	Wilder	83676	$9,967.00
City of Wilder	City Hall	217 & 219 3rd St	Wilder	83676	$508,069.00
City of Wilder	Declorination Bldg	420 Huff Road	Wilder	83676	$11,672.96
City of Wilder	Equipment Shed	220 3rd St.	Wilder	83676	$43,056.00
City of Wilder	Headworks Building	420 Huff Road	Wilder	83676	$366,051.00
City of Wilder	Museum / Storage	403 B Ave	Wilder	83676	$79,263.00
City of Wilder	Pump House #1	219 4th St.	Wilder	83676	$33,569.12
City of Wilder	Pump House #2	826 5th St.	Wilder	83676	$58,115.20
City of Wilder	Pump House #3	200 Bechtel Lane	Wilder	83676	$244,999.04
City of Wilder	Restrooms	317 A Ave. East	Wilder	83676	$51,761.84
City of Wilder	Shop # 1 & Equipment	215 4th Street	Wilder	83676	$97,039.00
City of Wilder	Shop # 2 / Office	220 3rd St.	Wilder	83676	$95,663.36
City of Wilder	Water Dept. Filter Bldg.	120 Bechtel Lane	Wilder	83676	$283,068.00
City of Nampa	City Hall	411 3rd Street	Nampa	83687	$3,150,000
City of Nampa	Mangum Building	1303 3rd St S	Nampa	83687	$1,299,200
City of Nampa	Fire Station #1	923 1st St	Nampa	83687	$1,638,800
City of Nampa	Library	101 11th Ave S	Nampa	83687	$4,799,604
City of Nampa	Police Station	211 12rh Ave	Nampa	83687	$5,464,711
City of Nampa	Park & Rec Office	312 1st St s	Nampa	83687	$318,000
City of Nampa	Park & Rec Storage #7	312 1st St S	Nampa	83687	$344,250
City of Nampa	Veh Maintenance Office & Shop	100 W Railroad	Nampa	83687	$877,382
City of Nampa	Wastewater Treat Admin Z1-1	340 West Railroad	Nampa	83687	$1,005,480
City of Nampa	Hanger 035C-H	116 Municipal Dr	Nampa	83687	$208,950
City of Nampa	Hanger 034C-I	116 Municipal Dr	Nampa	83687	$288,960
City of Nampa	Hanger 033C-J	116 Municipal Dr	Nampa	83687	$288,000
City of Nampa	Hanger 032C-K	116 Municipal Dr	Nampa	83687	$288,000
City of Nampa	Hanger 031C-L	116 Municipal Dr	Nampa	83687	$288,000
City of Nampa	Hanger 051C-P	116 Municipal Dr	Nampa	83687	$388,800
City of Nampa	Hanger 053C-S	116 Municipal Dr	Nampa	83687	$288,000
City of Nampa	Hanger 052C-T	116 Municipal Dr	Nampa	83687	$243,200
City of Nampa	Air Terminal	101 Municipal Dr	Nampa	83687	$482,937
City of Nampa	Civic Center	324 3rd St S	Nampa	83687	$7,400,000
City of Nampa	Rec Center	131 Constitution Way	Nampa	83687	$15,516,765
City of Nampa	Hanger 0820-V	116 Municipal Dr	Nampa	83687	$576,000
City of Nampa	Hanger W	116 Municipal Dr	Nampa	83687	$576,000
City of Nampa	Fire Station #2	1001 Greenhurst	Nampa	83687	$1,638,800

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Nampa	Ridgecrest Club House	3730 Ridgecrest Dr	Nampa	83687	$1,244,488
City of Nampa	Fire Station #3	7935 Birch Lane	Nampa	83687	$900,000
City of Nampa	Lincoln Pool Bldg	508 Davis Ave	Nampa	83687	$105,000
City of Nampa	Lakeview Water Park	1304 7th St N	Nampa	83687	$210,000
City of Nampa	Public Safety Building	1103 2nd St S	Nampa	83687	$861,100
City of Nampa	Central Services	224 11th Ave South	Nampa	83687	$1,002,000
City of Nampa	Fire Station #4	2112 W Flamingo Dr	Nampa	83687	$1,193,018
City of Nampa	Ridgecrest Maint. Bldg	Ridgecrest Dr	Nampa	83687	$225,000
City of Nampa	Centennial Golf Course Clubhouse	2600 Centennial Dr	Nampa	83687	$1,359,000
City of Nampa	St. Dept. Truck Shed	104 W Railroad	Nampa	83687	$411,750
City of Nampa	St. Dept. Sign Shop	106 W Railroad	Nampa	83687	$235,000
City of Nampa	St. Dept. Equip Shed	102 W Railroad	Nampa	83687	$557,275
City of Nampa	St Dept Traffic Light Shop	212 W Railroad	Nampa	83687	$244,000
City of Nampa	Truck Shop Z2-6 (WWTP)	340 W Railroad	Nampa	83687	$475,200
City of Nampa	Stampede Park Green Barn	403 Calvary St	Nampa	83687	$702,500
City of Nampa	Water Dept Office/Shop	24 1st St S	Nampa	83687	$556,500
City of Nampa	Water Dept Maint. Bldg	24 1st St S	Nampa	83687	$268,000
City of Nampa	Idaho Ctr Horse Facility	18200 Idaho Center Blvd	Nampa	83687	$441,944
City of Nampa	Idaho Ctr Horse Stalls	18200 Idaho Center Blvd	Nampa	83687	$400,000
City of Nampa	Idaho Center	16200 Idaho Center Blvd	Nampa	83687	$25,882,472
City of Nampa	Idaho Center Sport Complex	16200 Idaho Center Blvd	Nampa	83687	$4,287,000
City of Nampa	Idaho Center Visitor Center	16114 Idaho Center Blvd	Nampa	83687	$662,919
City of Nampa	Optimist Park Concession Stand	16680 11th Ave N	Nampa	83687	$200,000
City of Nampa	Water Well #7 Pump House	1424 W Flamingo	Nampa	83687	$10,000
City of Nampa	Water Well #9	1710 N Middleton Rd	Nampa	83687	$10,000
City of Nampa	Water Dept Pump Bldg Id. Center	18200 Idaho Center Blvd	Nampa	83687	$11,186
City of Nampa	Water Well #5 Pump House	814 3rd St N	Nampa	83687	$10,000
City of Nampa	Airport Admin Office	116 Municipal Dr	Nampa	83687	$340,000
City of Nampa	Fire Training Bldg	300 W Railroad	Nampa	83687	$485,000
City of Nampa	Wastewater Treatment Plant	340 West Railroad	Nampa	83687	$27,960,000
City of Nampa	Police Training Building	9 12th Ave S	Nampa	83687	$624,000
City of Nampa	Fire Station #5	91 N Happy Valley Rd	Nampa	83687	$1,200,000
City of Nampa	Snake River Stampede Stall	18200 Idaho Center Rd	Nampa	83687	$115,000

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Nampa	Snake River Stampede	18200 Idaho Center Rd	Nampa	83687	$115,000
City of Nampa	Sports Center Entry Addition	18200 Idaho Center Rd	Nampa	83687	$1,060,000
City of Nampa	Rodeo Club Addition	18200 Idaho Center Rd	Nampa	83687	$377,097
City of Nampa	Water Well		Nampa	83687	$260,525
City of Nampa	Police SIU Building	2512 Railroad	Nampa	83687	$1,000,000
City of Nampa	Headworks, WWTP	340 W Railroad	Nampa	83687	$2,392,181
City of Nampa	Trickling Filter #1, WWTP	340 W Railroad	Nampa	83687	$1,504,908
City of Nampa	Trickling Filter #2, WWTP	340 W Railroad	Nampa	83687	$1,504,908
City of Nampa	Trickling Filter #3, WWTP	341 W Railroad	Nampa	83687	$1,504,908
City of Nampa	Effluent Pump, WWTP	340 W Railroad	Nampa	83687	$1,053,908
City of Nampa	Recirculation Pump, WWTP	340 W Railroad	Nampa	83687	$605,147
City of Nampa	Primary Clarifier #1, WWTP	340 W Railroad	Nampa	83687	$737,857
City of Nampa	Primary Clarifier #2, WWTP	340 W Railroad	Nampa	83687	$972,620
City of Nampa	Primary Clarifier #3, WWTP	340 W Railroad	Nampa	83687	$1,167,470
City of Nampa	Pump Station #1, WWTP	340 W Railroad	Nampa	83687	$581,403
City of Nampa	Pump Station #2, WWTP	340 W Railroad	Nampa	83687	$485,525
City of Nampa	Clarifier #1, WWTP	340 W Railroad	Nampa	83687	$737,857
City of Nampa	Clarifier #2, WWTP	340 W Railroad	Nampa	83687	$1,326,602
City of Nampa	Effluent Pump Station WWTP	340 W Railroad	Nampa	83687	$1,214,589
City of Nampa	Pump Station WWTP	340 W Railroad	Nampa	83687	$238,727
City of Nampa	Primary Digester #1 WWTP	340 W Railroad	Nampa	83687	$1,810,678
City of Nampa	Primary Digester #2 WWTP	340 W Railroad	Nampa	83687	$1,575,664
City of Nampa	Primary Digester #3 WWTP	340 W Railroad	Nampa	83687	$1,794,644
City of Nampa	Secondary Digester #1	340 W Railroad	Nampa	83687	$2,450,273
City of Nampa	Primary Digester Boiler, WWTP	340 W Railroad	Nampa	83687	$1,194,242
City of Nampa	Digester #3, WWTP	340 W Railroad	Nampa	83687	$36,403,413
City of Nampa	Building (new) WWTP	340 W Railroad	Nampa	83687	$1,238,237
City of Nampa	Blower/Filter Bldg, WWTP	340 W Railroad	Nampa	83687	$5,034,128
City of Nampa	Chlorine Contact Basin, WWTP	340 W Railroad	Nampa	83687	$904,486
City of Nampa	Chlorine Building WWTP	340 W Railroad	Nampa	83687	$424,079

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Nampa	Nitrification Basin, WWTP	340 W Railroad	Nampa	83687	$5,617,105
City of Nampa	Old Admin Building WWTP	340 W Railroad	Nampa	83687	$149,237
City of Nampa	Final Clarifier #1 WWTP	340 W Railroad	Nampa	83687	$1,402,580
City of Nampa	Final Clarifier #2 WWTP	340 W Railroad	Nampa	83687	$1,402,580
City of Nampa	Final Clarifier #3 WWTP	340 W Railroad	Nampa	83687	$1,402,580
City of Nampa	RAS Building WWTP	340 W Railroad	Nampa	83687	$1,603,132
City of Nampa	Sludge Holding Tank WWTP	340 W Railroad	Nampa	83687	$786,373
City of Nampa	Sludge Tent WWTP	340 W Railroad	Nampa	83687	$251,750
City of Nampa	Flotation Thickener WWTP	340 W Railroad	Nampa	83687	$565,210
City of Nampa	Truck Shop #1 New WWTP	340 W Railroad	Nampa	83687	$506,443
City of Nampa	Gym/Storage	411 3rd Street S	Nampa	83687	$598,611
City of Nampa	Zatloukal Hangar	103 Municipal Dr	Nampa	83687	$390,221
City of Nampa	Equipment Shelter	16200 Idaho Center Blvd	Nampa	83687	$437,999
City of Nampa	Fire Dept Training Tower	411 Blaine St	Nampa	83687	$211,150
City of Nampa	Well #6	2016 6th St S	Nampa	83687	$239,012
City of Nampa	Well #10	315 E Greenhurst	Nampa	83687	$489,535
City of Nampa	Well #11	2401 E Greenhurst	Nampa	83687	$341,257
City of Nampa	Well #12	4243 E Flamingo Ave	Nampa	83687	$345,177
City of Nampa	Well #14	1885 W Roosevelt Ave	Nampa	83687	$453,939
City of Nampa	Well #17	12460 Landau Way	Nampa	83687	$200,885
City of Nampa	Booster South Tank	4621 S 1st Ave Road	Nampa	83687	$279,348
City of Nampa	Booster Midland	2316 S Midland Blvd	Nampa	83687	$245,482
City of Nampa	Booster 12th Ave	2901 12th Ave Rd	Nampa	83687	$147,560
City of Nampa	Booster, North Tower	1590 11th Ave N	Nampa	83687	$276,441
City of Nampa	South 3,000,000 Gallon	6421 S 12th Ave	Nampa	83687	$1,483,200
City of Nampa	Water Tower 500,000 Gallon	1590 11th Ave N	Nampa	83687	$1,188,900
City of Parma	Amimal Control/Old City Shop	320 Sinclair	Parma	83660	$83,200
City of Parma	Booster Station #9	West Main St	Parma	83660	$238,973
City of Parma	City Hall	305 N 3rd St	Parma	83660	$565,241
City of Parma	City Library	121 N 3rd St	Parma	83660	$1,105,718
City of Parma	City Park Restrooms	2nd St	Parma	83660	$62,400
City of Parma	Disinfection Bldg	Sand Hollow Creek Rd	Parma	83660	$185,007
City of Parma	Fort Boise Picnic Shelter	1008 N Stockton	Parma	83660	$19,242
City of Parma	Fort Boise Restrooms	1008 N Stockton	Parma	83660	$96,612

Owner Jurisdiction	Description	Address	City	Zip	Value
City of Parma	MH- Training Classroom/Police- by Gun Range	Happy Day Rd	Parma	83660	$8,436
City of Parma	New City Shop/Garage 2000	406 South St	Parma	83660	$282,996
City of Parma	Police Station	105 N 4th	Parma	83660	$38,938
City of Parma	Pool House, Bleachers	302 N 2nd St	Parma	83660	$515,771
City of Parma	Water-Pump St 7	205 N 1st St	Parma	83660	$17,650
City of Parma	Water-Pump St 8	900 Grove St	Parma	83660	$12,341
City of Parma	Water Pump St 10	609 Walker Rd	Parma	83660	$24,684
City of Parma	Water Pump St 6/Booster Pump Bldg/Tank/System	904 McConnell Ave	Parma	83660	$52,000
City of Parma	Water Pump St 9	904 McConnell Ave	Parma	83660	$260,000
Vallivue School District	Administration Building	5207 South Montana	Caldwell	83607	$1,376,220.00
Vallivue School District	Vallivue Middle School	16412 S 10th Ave	Caldwell	83607	$10,235,991
Vallivue School District	Art/Maintenance	16412 S 10th Ave	Caldwell	83607	$1,416,422
Vallivue School District	Gymnasium/Music Room	16412 S 10th Ave	Caldwell	83607	$3,469,936
Vallivue School District	Vo-Tech Building/Bus Shop	16412 S 10th Ave	Caldwell	83607	$955,363
Vallivue School District	Storage Building	16412 S 10th Ave	Caldwell	83607	$22,840
Vallivue School District	Equipment in Storage	16412 S 10th Ave	Caldwell	83607	$92,690
Vallivue School District	Modular Classroom Special Serv	16412 S 10th Ave	Caldwell	83607	$65,204
Vallivue School District	Block Pumphouse	16412 S 10th Ave	Caldwell	83607	$5,600
Vallivue School District	Old Pumphouse	16412 S 10th Ave	Caldwell	83607	$1,440
Vallivue School District	Gas Pump Building	16412 S 10th Ave	Caldwell	83607	$3,965
Vallivue School District	Baseball Dugout “A”	16412 S 10th Ave	Caldwell	83607	$6,960
Vallivue School District	Baseball Dugout “B”	16412 S 10th Ave	Caldwell	83607	$6,960
Vallivue School District	Equipment	16412 S 10th Ave	Caldwell	83607	$67,212
Vallivue School District	Announcer’s Booth	16412 S 10th Ave	Caldwell	83607	$8,142
Vallivue School District	Concession Building	16412 S 10th Ave	Caldwell	83607	$5,658
Vallivue School District	Ticket Booth	16412 S 10th Ave	Caldwell	83607	$440
Vallivue School District	Box Car Storage #1	16412 S 10th Ave	Caldwell	83607	$21,005

Owner Jurisdiction	Description	Address	City	Zip	Value
Vallivue School District	Box Car Storage #2	16412 S 10th Ave	Caldwell	83607	$12,600
Vallivue School District	Semi Trailer Storage Unit	16412 S 10th Ave	Caldwell	83607	$32,599
Vallivue School District	Modular Classroom S#2444A&B	16412 S 10th Ave	Caldwell	83607	$107,090
Vallivue School District	Vallivue 8th Grade School	16358 S 10th Ave	Caldwell	83607	$6,627,206
Vallivue School District	Central Canyon Elementary School	16437 Florida Avenue	Caldwell	83607	$7,877,509
Vallivue School District	Modular Classroom S#95041A&B	16437 Florida Avenue	Caldwell	83607	$103,259
Vallivue School District	Storage Building/Pumphouse	16437 Florida Avenue	Caldwell	83607	$93,002
Vallivue School District	Equipment	16437 Florida Avenue	Caldwell	83607	$41,522
Vallivue School District	Storage Shed	16437 Florida Avenue	Caldwell	83607	$8,976
Vallivue School District	Modular Classroom #2442AB	16437 Florida Avenue	Caldwell	83607	$1,313,617
Vallivue School District	Modular Classroom S#63803	16437 Florida Avenue	Caldwell	83607	$107,684
Vallivue School District	Modular Classroom S#93276A&B	16437 Florida Avenue	Caldwell	83607	$112,392
Vallivue School District	West Canyon Elementary School	19548 Ustick Road	Caldwell	83607	$8,287,422
Vallivue School District	Modular Classroom	19548 Ustick Road	Caldwell	83607	$123,421
Vallivue School District	Preschool Storage Shed	19548 Ustick Road	Caldwell	83607	$21,651
Vallivue School District	Storage Building/Pumphouse	19548 Ustick Road	Caldwell	83607	$15,617
Vallivue School District	Equipment	19548 Ustick Road	Caldwell	83607	$78,547
Vallivue School District	Art Storage Shed	19548 Ustick Road	Caldwell	83607	$1,200
Vallivue School District	Modular Classroom	19548 Ustick Road	Caldwell	83607	$103,500
Vallivue School District	Modular Classroom	19548 Ustick Road	Caldwell	83607	$103,500
Vallivue School District	East Canyon Elementary School	18408 Northside Blvd	Nampa	83687	$8,076,635
Vallivue School District	Modular Classroom	18408 Northside Blvd	Nampa	83687	$118,686
Vallivue School District	Central Modular Classroom S#95041	18408 Northside Blvd	Nampa	83687	$97,900
Vallivue School District	Storage Building/Pumphouse	18408 Northside Blvd	Nampa	83687	$4,059
Vallivue School District	Equipment	18408 Northside Blvd	Nampa	83687	$48,522
Vallivue School District	Pre-School Storage Shed	18408 Northside Blvd	Nampa	83687	$2,400

Owner Jurisdiction	Description	Address	City	Zip	Value
Vallivue School District	Modular Classroom S#AJAU28702672	18408 Northside Blvd	Nampa	83687	$98,907
Vallivue School District	Modular Classroom S#AJAU28702671	18408 Northside Blvd	Nampa	83687	$100,367
Vallivue School District	Vallivue High School/Gym	1407 Homedale	Caldwell	83607	$38,193,230
Vallivue School District	Equipment	1407 Homedale	Caldwell	83607	$17,501
Vallivue School District	Auxillary Gym/Classrooms Addition	1407 Homedale	Caldwell	83607	$4,046,500
Vallivue School District	Concession/Restroom/Tickets	1407 Homedale	Caldwell	83607	$49,049
Vallivue School District	Maintenance/Yard Building	1407 Homedale	Caldwell	83607	$96,595
Vallivue School District	Equipment	1407 Homedale	Caldwell	83607	$54,183
Vallivue School District	Announcer's Booth	1407 Homedale	Caldwell	83607	$18,039
Vallivue School District	Irrigation Pumphouse	1407 Homedale	Caldwell	83607	$50,700
Vallivue School District	Baseball Dugout North "A"	1407 Homedale	Caldwell	83607	$5,220
Vallivue School District	Baseball Dugout North "B"	1407 Homedale	Caldwell	83607	$5,220
Vallivue School District	Baseball Dugout South "A"	1407 Homedale	Caldwell	83607	$5,220
Vallivue School District	Baseball Dugout South "B"	1407 Homedale	Caldwell	83607	$5,220
Vallivue School District	Ag/Science Building	1407 Homedale	Caldwell	83607	$1,191,249
Vallivue School District	Athletic Storage Building	1407 Homedale	Caldwell	83607	$93,275
Vallivue School District	Greenhouse	1407 Homedale	Caldwell	83607	$23,901
Vallivue School District	Birch Elementary	6900 Birch Lane	Nampa	83687	$8,379,776
Vallivue School District	Equipment	6900 Birch Lane	Nampa	83687	$47,849
Vallivue School District	Modular Classroom S#63805	6900 Birch Lane	Nampa	83687	$102,701
Vallivue School District	Pumphouse	6900 Birch Lane	Nampa	83687	$11,325
Vallivue School District	Modula Classroom S#2445A&B	6900 Birch Lane	Nampa	83687	$112,217
Vallivue School District	Sage Valley Middle School	18070 Santa Ana	Nampa	83687	$26,196,383
Vallivue School District	Sage Valley Middle School	18070 Santa Ana	Nampa	83687	$25,000
Vallivue School District	Desert Springs Elementary	18178 Santa Ana	Nampa	83687	$8,910,320

Owner Jurisdiction	Description	Address	City	Zip	Value
Vallivue School District	Modular Classroom	18178 Santa Ana	Nampa	83687	$103,500
Vallivue School District	Modular Classroom	18178 Santa Ana	Nampa	83687	$103,500
Vallivue School District	Vallivue Academy	6123 Timbre Dr	Caldwell	83607	$1,073,750
Vallivue School District	Lakevue Elementary	12843 Cirrus Dr	Nampa	83651	$9,776,480
Vallivue School District	Rivervue Middle School	21985 Dixie River Road	Caldwell	83607	$100,000
Vallivue School District	Modular School Building	21985 Dixie River Road	Caldwell	83607	$111,000
Vallivue School District	Modular School Building	21985 Dixie River Road	Caldwell	83607	$111,000
Wilder School District	Wilder Elementary	210 A Avenue E	Wilder	83676	$4,190,000
Wilder School District	Modulars-Restroom	419 B/C/D/E Huff Road	Wilder	83676	$55,419
Wilder School District	Wilder Middle/High School 6-12	419 A Huff Road	Wilder	83676	$9,049,320
Wilder School District	Maintenance/Operations Bldg	419 F Huff Road	Wilder	83676	$397,020
Wilder School District	Dugouts-1st Base Side	East end of A Ave E	Wilder	83676	$6,240
Wilder School District	Athletic Storage Bldg	East end of A Ave E	Wilder	83676	$18,482
Wilder School District	Concession Stand/Ann Tower	East end of A Ave E	Wilder	83676	$21,440
Wilder School District	Mercer Gym/Cafeteria	310 A Ave E	Wilder	83676	$2,674,100
Wilder School District	Athletic Storage Dugout-3rd Base	East end of A Ave E	Wilder	83676	$28,320
Wilder School District	Modular 1/2	419 E Huff Road	Wilder	83676	$221,760
Wilder School District	Modular 3/4	419 D Huff Road	Wilder	83676	$221,760
Wilder School District	Modular 5/6	419 C Huff Road	Wilder	83676	$221,760
Wilder School District	Modular 7/8	419 B Huff Road	Wilder	83676	$221,760
Wilder School District	Post Office	311 D Ave E	Wilder	83676	$217,800
Wilder School District	Administration Office	218 Golden Gate E	Wilder	83676	$141,960
Wilder School District	Storage Bldg	East end of A Ave E	Wilder	83676	$8,300
Notus School District	Notus Elementary Building	20250 Purple Sage Road	Notus	83656	$4,710,792
Notus School District	Maintenance, old	20250 Purple Sage Road	Notus	83656	$403,696

Owner Jurisdiction	Description	Address	City	Zip	Value
Notus School District	Cafeteria	20250 Purple Sage Road	Notus	83656	$616,540
Notus School District	Music Building	20250 Purple Sage Road	Notus	83656	$175,423
Notus School District	Bus/Maintenance Garage	20250 Purple Sage Road	Notus	83656	$118,617
Notus School District	Box Car	20250 Purple Sage Road	Notus	83656	$16,807
Notus School District	Shed, Athletic Storage	20250 Purple Sage Road	Notus	83656	$1,667
Notus School District	Fuel Tank	20250 Purple Sage Road	Notus	83656	$25,340
Notus School District	Baseball Field	20250 Purple Sage Road	Notus	83656	$15,697
Notus School District	Dugouts	20250 Purple Sage Road	Notus	83656	$2,118
Notus School District	Football Field	20250 Purple Sage Road	Notus	83656	$77,160
Notus School District	Concession/Restrooms	20250 Purple Sage Road	Notus	83656	$48,111
Notus School District	Yard, School	20250 Purple Sage Road	Notus	83656	$35,237
Notus School District	Notus Junior/Senior High	25260 Notus Road	Notus	83656	$3,872,996
Notus School District	Gymnasium	25260 Notus Road	Notus	83656	$2,208,149
Notus School District	Professional Technology	25260 Notus Road	Notus	83656	$1,136,911
Notus School District	Greenhouse	25260 Notus Road	Notus	83656	$82,504
Notus School District	Yard	25260 Notus Road	Notus	83656	$4,345
Parma School District	Maxine Johnson Elementary	607 E McConnell	Parma	83660	$6,500,000
Parma School District	Elementary Gym	607 E McConnell	Parma	83660	$747,959
Parma School District	Drinking Fountain	607 E McConnell	Parma	83660	$0
Parma School District	Music Modular Classroom (vacant)	607 E McConnell	Parma	83660	$60,824
Parma School District	Moduler #2 (vacant)	607 E McConnell	Parma	83660	$75,000
Parma School District	Parma Middle School	905 E McConnell	Parma	83660	$5,401,274
Parma School District	Parma Intermediate School/Gym	908 N 8th Street	Parma	83660	$4,910,211
Parma School District	Concession Building	908 N 8th Street	Parma	83660	$76,910
Parma School District	Box Car Storage Building	908 N 8th Street	Parma	83660	$13,429
Parma School District	Shipping Storage Container	908 N 8th Street	Parma	83660	$2,896

Owner Jurisdiction	Description	Address	City	Zip	Value
Parma School District	Dugout #1 West	908 N 8th Street	Parma	83660	$10,788
Parma School District	Dugout #2 West	908 N 8th Street	Parma	83660	$10,788
Parma School District	Dugout #1 South	908 N 8th Street	Parma	83660	$5,035
Parma School District	Dugout #2 South	908 N 8th Street	Parma	83660	$5,035
Parma School District	Ticket Booth	908 N 8th Street	Parma	83660	$2,000
Parma School District	Grandstand	908 N 8th Street	Parma	83660	$66,174
Parma School District	High School/Cafeteria	137 Panther Way	Parma	83660	$6,868,949
Parma School District	Box Car Track Storage	137 Panther Way	Parma	83660	$3,044
Parma School District	Gymnasium	137 Panther Way	Parma	83660	$3,500,000
Parma School District	Vo-Ag Shop/Bus Garage	1105 E McConnell	Parma	83660	$663,009
Parma School District	Greenhouse Building	1105 E McConnell	Parma	83660	$36,026
Parma School District	Vehicle Storage Bldg	1105 E McConnell	Parma	83660	$10,000
Parma School District	Tractor/Mowers Storage Bldg	1105 E McConnell	Parma	83660	$11,175
Parma School District	Grainery Building	1105 E McConnell	Parma	83660	$4,410
Parma School District	Pumphouse	Valley Road	Parma	83660	$13,291
Caldwell School District	Maintenance Building	2716 S Montana	Caldwell	83607	$1,687,313
Caldwell School District	Maintenance Small Storage	2716 S Montana	Caldwell	83607	$13,585
Caldwell School District	Wilson Maintenance Shop	400 E Linden	Caldwell	83607	$84,061
Caldwell School District	Wilson Storage Bldg	400 E Linden	Caldwell	83607	$178,353
Caldwell School District	Wilson Storage Shed (grounds)	400 E Linden	Caldwell	83607	$4,482
Caldwell School District	Lewis & Clark Elementary	1102 E Laster	Caldwell	83607	$7,425,823
Caldwell School District	Gymnasium	1102 E Laster	Caldwell	83607	$1,144,122
Caldwell School District	Lincoln Elementary	1200 Grant St	Caldwell	83605	$4,922,207
Caldwell School District	Multi Purpose	1200 Grant St	Caldwell	83605	$430,190
Caldwell School District	Gymnasium	1200 Grant St	Caldwell	83605	$225,992
Caldwell School District	Library	1200 Grant St	Caldwell	83605	$433,550

Owner Jurisdiction	Description	Address	City	Zip	Value
Caldwell School District	Annex	1200 Grant St	Caldwell	83605	$834,960
Caldwell School District	P.E. Storage Shed	1200 Grant St	Caldwell	83605	$17,471
Caldwell School District	Sacajawea Elementary	1710 N Illinois	Caldwell	83605	$6,536,297
Caldwell School District	Gymnasium	1710 N Illinois	Caldwell	83605	$896,542
Caldwell School District	Van Buren Elementary	3115 Marble Front Rd	Caldwell	83605	$11,160,000
Caldwell School District	Gymnasium	3115 Marble Front Rd	Caldwell	83605	$840,000
Caldwell School District	Washington Elementary	2918 Washington Ave	Caldwell	83605	$11,160,000
Caldwell School District	Gymnasium	2918 Washington Ave	Caldwell	83605	$840,000
Caldwell School District	Woodrow Wilson Elementary	400 East Linden St	Caldwell	83605	$7,608,058
Caldwell School District	Gymnasium	400 East Linden St	Caldwell	83605	$636,711
Caldwell School District	Music Addition	400 East Linden St	Caldwell	83605	$290,326
Caldwell School District	Gymnasium Addition	400 East Linden St	Caldwell	83605	$498,189
Caldwell School District	Classroom Addition	400 East Linden St	Caldwell	83605	$406,939
Caldwell School District	Modular	400 East Linden St	Caldwell	83605	$136,346
Caldwell School District	Exterior Restrooms	400 East Linden St	Caldwell	83605	$53,560
Caldwell School District	Syringa Middle School	1100 Willow	Caldwell	83605	$5,953,672
Caldwell School District	Gymnasium	1100 Willow	Caldwell	83605	$2,243,384
Caldwell School District	Science Addition	1100 Willow	Caldwell	83605	$1,585,753
Caldwell School District	Music Addition	1100 Willow	Caldwell	83605	$598,222
Caldwell School District	Classroom Addition	1100 Willow	Caldwell	83605	$853,043
Caldwell School District	Art Building	1100 Willow	Caldwell	83605	$664,955
Caldwell School District	Tennis Courts	1100 Willow	Caldwell	83605	$295,460
Caldwell School District	Athletic Field	1100 Willow	Caldwell	83605	$7,644
Caldwell School District	Bleachers (85)	1100 Willow	Caldwell	83605	$48,285
Caldwell School District	Bleachers (78)	1100 Willow	Caldwell	83605	$41,765
Caldwell School District	Football Scoreboard	1100 Willow	Caldwell	83605	$8,945

Owner Jurisdiction	Description	Address	City	Zip	Value
Caldwell School District	Boxcar	1100 Willow	Caldwell	83605	$10,180
Caldwell School District	Athletic Storage Shed	1100 Willow	Caldwell	83605	$12,257
Caldwell School District	Ticket Booth	1100 Willow	Caldwell	83605	$3,392
Caldwell School District	Jefferson Middle School	3311 S 10th Ave	Caldwell	83605	$4,408,650
Caldwell School District	Multi purpose	3311 S 10th Ave	Caldwell	83605	$2,912,247
Caldwell School District	Gymnasium	3311 S 10th Ave	Caldwell	83605	$1,610,535
Caldwell School District	Modular	3311 S 10th Ave	Caldwell	83605	$120,923
Caldwell School District	Tennis Courts	3311 S 10th Ave	Caldwell	83605	$354,552
Caldwell School District	Athletic Field	3311 S 10th Ave	Caldwell	83605	$10,321
Caldwell School District	Backstop	3311 S 10th Ave	Caldwell	83605	$6,303
Caldwell School District	Boxcar	3311 S 10th Ave	Caldwell	83605	$10,008
Caldwell School District	Caldwell High School	3401 S Indiana	Caldwell	83605	$19,770,101
Caldwell School District	Gymnasium	3401 S Indiana	Caldwell	83605	$2,138,631
Caldwell School District	Classroom addition	3401 S Indiana	Caldwell	83605	$3,547,785
Caldwell School District	Gymnasium addition	3401 S Indiana	Caldwell	83605	$921,499
Caldwell School District	Auditorium	3401 S Indiana	Caldwell	83605	$1,242,698
Caldwell School District	Voc. Tech Building	3401 S Indiana	Caldwell	83605	$1,754,115
Caldwell School District	Art Shed	3401 S Indiana	Caldwell	83605	$13,101
Caldwell School District	Modular 1	3401 S Indiana	Caldwell	83605	$135,425
Caldwell School District	Modular 2	3401 S Indiana	Caldwell	83605	$135,425
Caldwell School District	Shipping Container	3401 S Indiana	Caldwell	83605	$3,040
Caldwell School District	Tennis Courts	3401 S Indiana	Caldwell	83605	$286,545
Caldwell School District	Baseball Field 1/dugouts	3401 S Indiana	Caldwell	83605	$49,348
Caldwell School District	Baseball Field 2/dugouts	3401 S Indiana	Caldwell	83605	$25,318
Caldwell School District	Baseball Announcer Booth	3401 S Indiana	Caldwell	83605	$10,734
Caldwell School District	Concession Stand	3401 S Indiana	Caldwell	83605	$11,064

Owner Jurisdiction	Description	Address	City	Zip	Value
Caldwell School District	Baseball Shed	3401 S Indiana	Caldwell	83605	$5,779
Caldwell School District	Softball Field 1/dugouts	3401 S Indiana	Caldwell	83605	$42,090
Caldwell School District	Softball Field 2/dugouts	3401 S Indiana	Caldwell	83605	$21,674
Caldwell School District	Softball Announcer Booth	3401 S Indiana	Caldwell	83605	$10,811
Caldwell School District	Football Field Scoreboard	3401 S Indiana	Caldwell	83605	$8,945
Caldwell School District	Football Field Goal Posts	3401 S Indiana	Caldwell	83605	$10,321
Caldwell School District	Football Field Light Poles	3401 S Indiana	Caldwell	83605	$61,396
Caldwell School District	Football Announcer Booth	3401 S Indiana	Caldwell	83605	$43,847
Caldwell School District	Football Grandstand Home	3401 S Indiana	Caldwell	83605	$275,850
Caldwell School District	Football Grandstand Visitor	3401 S Indiana	Caldwell	83605	$121,033
Caldwell School District	Large Concessions/Garage	3401 S Indiana	Caldwell	83605	$87,139
Caldwell School District	Football Ticket Booth 1	3401 S Indiana	Caldwell	83605	$3,806
Caldwell School District	Football Ticket Booth 2	3401 S Indiana	Caldwell	83605	$3,608
Caldwell School District	Athletic Garage	3401 S Indiana	Caldwell	83605	$19,099
Caldwell School District	Canyon Springs High School	516 N 11th Ave	Caldwell	83605	$3,764,336
Caldwell School District	Multi Purpose	516 N 11th Ave	Caldwell	83605	$524,990
Caldwell School District	Gymnasium	516 N 11th Ave	Caldwell	83605	$277,448
Caldwell School District	Library	516 N 11th Ave	Caldwell	83605	$296,871
Caldwell School District	Annex (attached)	516 N 11th Ave	Caldwell	83605	$1,203,464
Caldwell School District	Annex (not attached)	516 N 11th Ave	Caldwell	83605	$773,249
Caldwell School District	Modular	516 N 11th Ave	Caldwell	83605	$126,047
Caldwell School District	Caldwell Freshman Academy	1500 Fillmore St	Caldwell	83605	$1,722,034
Caldwell School District	Two Story Addition	1500 Fillmore St	Caldwell	83605	$1,421,750
Caldwell School District	Multi purpose	1500 Fillmore St	Caldwell	83605	$1,478,580
Caldwell School District	District Offices	1502 Fillmore St	Caldwell	83605	$2,416,888
Caldwell School District	District Offices Board Room	1502 Fillmore St	Caldwell	83605	$336,049

Owner Jurisdiction	Description	Address	City	Zip	Value
Nampa School District	Nampa High School	203 Lake Lowell Avenue	Nampa	83687	$3,620,100
Nampa School District	Sophomore	203 Lake Lowell Avenue	Nampa	83687	$1,623,050
Nampa School District	Building 250	203 Lake Lowell Avenue	Nampa	83687	$1,532,000
Nampa School District	Ag Shop	203 Lake Lowell Avenue	Nampa	83687	$1,461,240
Nampa School District	Voc Ed Building	203 Lake Lowell Avenue	Nampa	83687	$2,217,600
Nampa School District	Band/Theatre Building	203 Lake Lowell Avenue	Nampa	83687	$2,427,920
Nampa School District	Library Building	203 Lake Lowell Avenue	Nampa	83687	$4,135,120
Nampa School District	Administration Building	203 Lake Lowell Avenue	Nampa	83687	$2,574,550
Nampa School District	Gymnasium Building	203 Lake Lowell Avenue	Nampa	83687	$5,483,720
Nampa School District	Stadium	203 Lake Lowell Avenue	Nampa	83687	$1,836,450
Nampa School District	Heating Plant	203 Lake Lowell Avenue	Nampa	83687	$189,720
Nampa School District	Athletic Storage Building	203 Lake Lowell Avenue	Nampa	83687	$34,680
Nampa School District	Pumphouse	203 Lake Lowell Avenue	Nampa	83687	$81,600
Nampa School District	West Concession Building #2	203 Lake Lowell Avenue	Nampa	83687	$36,720
Nampa School District	Restroom	203 Lake Lowell Avenue	Nampa	83687	$50,830
Nampa School District	East Storehouse	203 Lake Lowell Avenue	Nampa	83687	$61,200
Nampa School District	Science Bldg Connected	203 Lake Lowell Avenue	Nampa	83687	$840,400
Nampa School District	Professional Tech Shop Bldg	203 Lake Lowell Avenue	Nampa	83687	$1,435,200
Nampa School District	South Middle Annex & Gym	229 West Greenhurst Road	Nampa	83651	$12,385,330
Nampa School District	Drivers Education Building	229 West Greenhurst Road	Nampa	83651	$229,500
Nampa School District	Modular Classroom #10	229 West Greenhurst Road	Nampa	83651	$50,640
Nampa School District	Modular Classroom #7	229 West Greenhurst Road	Nampa	83651	$50,640
Nampa School District	West Middle School/Gym	25 South Midland Blvd	Nampa	83651	$12,257,950
Nampa School District	Modular Classroom #19	25 South Midland Blvd	Nampa	83651	$73,920
Nampa School District	Modular Classroom #20	25 South Midland Blvd	Nampa	83651	$72,800
Nampa School District	Central Elementary School	1415 5th Street South	Nampa	83651	$6,309,050

Owner Jurisdiction	Description	Address	City	Zip	Value
Nampa School District	Modular Classroom #25	1415 5th Street South	Nampa	83651	$50,640
Nampa School District	Modular Classroom #24	1415 5th Street South	Nampa	83651	$73,920
Nampa School District	Ridgeline Alt/Gateways	212 Central Canyon Street	Nampa	83687	$3,730,430
Nampa School District	Alpha One Modular Classroom #22	212 Central Canyon Street	Nampa	83687	$80,640
Nampa School District	Centennial Elementary/Gym	522 Mason Lane	Nampa	83686	$5,730,120
Nampa School District	Sunny Ridge Elementary	506 Fletcher Drive	Nampa	83686	$6,394,060
Nampa School District	Scism Parent-Teen Program	609 15th Avenue North	Nampa	83686	$1,191,630
Nampa School District	Modular Classroom #3	609 15th Avenue North	Nampa	83686	$80,640
Nampa School District	Modular Classroom #26	609 15th Avenue North	Nampa	83686	$28,800
Nampa School District	Modular Classroom #16	609 15th Avenue North	Nampa	83686	$80,640
Nampa School District	Greenhurst Elementary	1701 Discovery Place	Nampa	83686	$6,559,740
Nampa School District	Modular Classroom #5	1701 Discovery Place	Nampa	83686	$80,640
Nampa School District	Dwelling	Lake Lowell Avenue	Nampa	83687	$121,000
Nampa School District	Administration Office Bldg	519 South Canyon	Nampa	83687	$2,095,720
Nampa School District	Storage shed	519 South Canyon	Nampa	83687	$3,300
Nampa School District	Warehouse	12 15th Avenue South	Nampa	83651	$3,383,050
Nampa School District	Warehouse Storage Building	12 15th Avenue South	Nampa	83651	$125,000
Nampa School District	Warehouse Custodial	1510 1st Street South	Nampa	83687	$250,000
Nampa School District	Warehouse Office (Vacant)	920 A Lake Lowell	Nampa	83687	$500,000
Nampa School District	Warehouse Annex (Vacant)	920 A Lake Lowell	Nampa	83687	$126,000
Nampa School District	Tech Center, Office Q Hut	1002 Front Street	Nampa	83687	$1,540,000
Nampa School District	Former Scism Bldg Vacant	8444 Dearborne Road	Nampa	83687	$294,100
Nampa School District	Scism Multi-Purpose Vacant	8444 Dearborne Road	Nampa	83687	$257,040
Nampa School District	Scism-Pumphouse	8444 Dearborne Road	Nampa	83687	$2,800
Nampa School District	Modular Classroom #13 Vacant	8444 Dearborne Road	Nampa	83687	$36,960
Nampa School District	Modular Classroom #14 Vacant	8444 Dearborne Road	Nampa	83687	$38,400

Owner Jurisdiction	Description	Address	City	Zip	Value
Nampa School District	Modular Classroom #15 Vacant	8444 Dearborne Road	Nampa	83687	$38,400
Nampa School District	Iowa Elementary/Gym/Multi-Purpose	626 West Iowa Avenue	Nampa	83686	$7,872,480
Nampa School District	Parkridge Elem./Gym/Multi-Purpose	3313 Park Ridge Drive	Nampa	83687	$7,872,480
Nampa School District	Modular Classroom #21	3313 Park Ridge Drive	Nampa	83687	$73,920
Nampa School District	Sherman Elementary/Gym/Multi-Purpose	1521 East Sherman Avenue	Nampa	83687	$7,872,480
Nampa School District	Skyview High School	1303 E Greenhurst Road	Nampa	83687	$21,470,130
Nampa School District	Modular Classroom #8	1303 E Greenhurst Road	Nampa	83687	$73,920
Nampa School District	Concession Stand	1303 E Greenhurst Road	Nampa	83687	$56,000
Nampa School District	Skyview Pro/Tech Bldg	1303 E Greenhurst Road	Nampa	83687	$3,584,520
Nampa School District	Snake River Elementary	500 Stampede Drive	Nampa	83687	$6,191,900
Nampa School District	Owyhee Elementary	2300 West Iowa	Nampa	83687	$7,256,370
Nampa School District	Modular Classroom #27`	2300 West Iowa	Nampa	83687	$99,500
Nampa School District	Modular Classroom #25	2300 West Iowa	Nampa	83687	$99,500
Nampa School District	Roosevelt Elementary	1901 West Roosevelt	Nampa	83687	$7,256,370
Nampa School District	Modular Classroom #2	1901 West Roosevelt	Nampa	83687	$80,640
Nampa School District	Ronald Reagan Elementary	3400 Southside Blvd	Nampa	83687	$7,256,370
Nampa School District	Modular Classroom #11	3400 Southside Blvd	Nampa	83687	$80,640
Nampa School District	Modular Classroom #12	3400 Southside Blvd	Nampa	83687	$80,640
Nampa School District	East Valley School	4065 E Greenhurst Road	Nampa	83687	$13,288,990
Nampa School District	Modular Classroom #1	4065 E Greenhurst Road	Nampa	83687	$80,640
Nampa School District	Modular Classroom #9	4065 E Greenhurst Road	Nampa	83687	$80,640
Nampa School District	Modular Classroom #23	4065 E Greenhurst Road	Nampa	83687	$67,200
Nampa School District	Modular Classroom #5	4065 E Greenhurst Road	Nampa	83687	$80,640
Nampa School District	Willow Creek Elementary	1580 Smith Avenue	Nampa	83687	$7,574,820

Owner Jurisdiction	Description	Address	City	Zip	Value
Nampa School District	Modular Classroom #4	1580 Smith Avenue	Nampa	83687	$99,500
Nampa School District	Modular Classroom #17	1580 Smith Avenue	Nampa	83687	$99,500
Nampa School District	Columbia High School	301 S Happy Valley	Nampa	83687	$28,160,000
Nampa School District	Professional Tech Bldg	301 S Happy Valley	Nampa	83687	$1,607,150
Nampa School District	Endeavor Elementary	2824 E Powerline Road	Nampa	83687	$7,574,620
Nampa School District	Lone Star Middle	11055 Lone Star Rd	Nampa	83687	$15,290,000
Nampa School District	Lake Ridge Elementary/Parkview Preschool	615 Burke Lane	Nampa	83687	$7,574,620
Nampa School District	Nutritional Services	6050 East Executive Avenue	Nampa	83687	$542,290
Nampa School District	Warehouse #1	6050 East Executive Avenue	Nampa	83687	$517,195
Nampa School District	Warehouse #2	6050 East Executive Avenue	Nampa	83687	$464,187
Nampa School District	New Horizons Elementary	5226 Southside Blvd	Nampa	83687	$7,575,700
Middleton School District	Fine Arts Building	115 West Main	Middleton	83644	$450,814
Middleton School District	Middleton Red Brick Bldg	115 West Main	Middleton	83644	$627,915
Middleton School District	Ag Building & Vocational Shop	115 West Main	Middleton	83644	$542,773
Middleton School District	Greenhouse	115 West Main	Middleton	83644	$12,336
Middleton School District	District Shop	115 West Main	Middleton	83644	$80,560
Middleton School District	Middleton High School	511 West Main Street	Middleton	83644	$11,807,194
Middleton School District	Athletic Field Building	511 West Main Street	Middleton	83644	$10,070
Middleton School District	Technology Modular	511 West Main Street	Middleton	83644	$158,004
Middleton School District	Gymnasium	511 West Main Street	Middleton	83644	$2,477,522
Middleton School District	Classroom Addition	511 West Main Street	Middleton	83644	$1,661,550
Middleton School District	Northwest Modular Classroom	511 West Main Street	Middleton	83644	$153,216
Middleton School District	Northwest Modular Classroom	511 West Main Street	Middleton	83644	$153,216
Middleton School District	Advanced Modular	511 West Main Street	Middleton	83644	$0
Middleton School District	Eagle Built Systems Modular	511 West Main Street	Middleton	83644	$75,411

Owner Jurisdiction	Description	Address	City	Zip	Value
Middleton School District	Modula Classroom Vo-Ag	511 West Main Street	Middleton	83644	$77,976
Middleton School District	Middleton Middle School	200 S 4th Avenue West	Middleton	83644	$4,807,885
Middleton School District	Classroom Addition	200 S 4th Avenue West	Middleton	83644	$1,363,365
Middleton School District	Middleton Heights Elementary	611 North Cemetery Road	Middleton	83644	$4,908,811
Middleton School District	Gymnasium	611 North Cemetery Road	Middleton	83644	$1,125,639
Middleton School District	Modular Classroom	611 North Cemetery Road	Middleton	83644	$153,216
Middleton School District	Mill Creek Elementary School	500 North Middleton Road	Middleton	83644	$6,660,217
Middleton School District	Modular Classroom	500 North Middleton Road	Middleton	83644	$0
Middleton School District	Rental Dwelling	13021 Willis Road	Middleton	83644	$135,000
Middleton School District	Metal Shop Building	13021 Willis Road	Middleton	83644	$50,000
Middleton School District	Transition Modular Classroom	19 S 3rd Avenue West	Middleton	83644	$0
Middleton School District	House For Special Services	19 S 3rd Avenue West	Middleton	83644	$51,558
Middleton School District	Administration Office	5 South 3rd Avenue West	Middleton	83644	$287,333
Middleton School District	Purple Sage Elementary	25709 El Paso Road	Middleton	83644	$7,049,836
Middleton School District	New High School	1538 Emmett Street	Middleton	83644	$37,400,000
Middleton School District	Vo-Ag Building	1538 Emmett Street	Middleton	83644	$2,950,000
Middleton School District	Greenhouse & Storage	1538 Emmett Street	Middleton	83644	$100,000
Middleton School District	Maintenance Building	1538 Emmett Street	Middleton	83644	$98,000
Middleton School District	Soccer Concession/Restroom	1538 Emmett Street	Middleton	83644	$150,000
Middleton School District	Soccer Press Box/Storage	1538 Emmett Street	Middleton	83644	$125,000
Middleton School District	Baseball Concession/Restroom	1538 Emmett Street	Middleton	83644	$150,000
Middleton School District	Softball Concession/Restroom	1538 Emmett Street	Middleton	83644	$150,000
Middleton School District	Football Home Press Box	1538 Emmett Street	Middleton	83644	$50,000
Middleton School District	Football Visitor Press Box	1538 Emmett Street	Middleton	83644	$25,000
Melba School District	Elementary School	520 Broadway	Melba	83641	$1,212,750

Owner Jurisdiction	Description	Address	City	Zip	Value
Melba School District	District Office	520 Broadway	Melba	83641	$192,000
Melba School District	Bus Office	601 Potato Lane	Melba	83641	$130,000
Melba School District	Transport Office-MH	520 Broadway	Melba	83641	$10,000
Melba School District	Storage Shed	520 Broadway	Melba	83641	$5,000
Melba School District	Football Scoreboard	520 Broadway	Melba	83641	$42,000
Melba School District	Football Concession	520 Broadway	Melba	83641	$175,000
Melba School District	BB Concession	520 Broadway	Melba	83641	$138,350
Melba School District	BB Scoreboard	520 Broadway	Melba	83641	$30,000
Melba School District	Portable Bleachers	520 Broadway	Melba	83641	$15,000
Melba School District	Tech Building	521 Broadway	Melba	83641	$630,720
Melba School District	Elementary School	521 Carrie Rex	Melba	83641	$1,140,000
Melba School District	Modular Classroom	521 Carrie Rex	Melba	83641	$108,000
Melba School District	Special Services Building	521 Carrie Rex	Melba	83641	$162,000
Melba School District	Pump House w/Pump	521 Carrie Rex	Melba	83641	$18,000
Melba School District	Fence	521 Carrie Rex	Melba	83641	$24,000
Melba School District	Popcorn Building	521 Carrie Rex	Melba	83641	$20,000
Melba School District	New Middle/High School	6870 Stokes Lane	Melba	83641	$14,928,370
Melba School District	Bleachers	6870 Stokes Lane	Melba	83641	$80,000
Melba School District	Maintenance Building	6870 Stokes Lane	Melba	83641	$551,200
Melba School District	Shop Building	6870 Stokes Lane	Melba	83641	$650,000
Melba School District	Storage Shed	6870 Stokes Lane	Melba	83641	$37,180
Melba School District	MH Rental	6870 Stokes Lane	Melba	83641	$82,800

Attachment 4: Canyon County Bridge Data

The following Table provides a listing of all bridges in Canyon County, their owner, condition, and value. This information will be used in conducting hazard analyses on bridges affected by both natural and man-made hazards.

ID	Name	Owner	YearBuilt	ScourIndex	Condition	Cost
ID000373	SH 19	State Highway Agency	1976	8	777	$5,101.38
ID000374	I 84B	State Highway Agency	1983	3	687	$35,898.39
ID000375	I 84B	State Highway Agency	1983	N	687	$28,586.52
ID000377	I 84B	State Highway Agency	1966	U	877	$4,703.83
ID000378	I 84B	State Highway Agency	1971	8	777	$9,009.47
ID000379	US 20	State Highway Agency	1964	8	756	$9,103.10
ID000380	US 20	State Highway Agency	1964	N	654	$9,941.94
ID000382	US 20 ;FRANKLIN RD	State Highway Agency	1966	N	675	$16,734.60
ID000384	US 20	State Highway Agency	1947	8	776	$2,178.58
ID000385	US 20	State Highway Agency	1947	8	666	$2,258.28
ID000386	US 20	State Highway Agency	1947	8	776	$1,780.06
ID000596	I 84B	State Highway Agency	1951	8	676	$2,969.14
ID000641	I 84B	State Highway Agency	1970	8	666	$3,647.43
ID000697	SH 44	State Highway Agency	1964	N	656	$11,453.40
ID000699	SH 44	State Highway Agency	1953	8	777	$1,945.30
ID000700	SH 44	State Highway Agency	1956	8	777	$2,311.42
ID000706	SH 45	State Highway Agency	1956	8	776	$2,290.03
ID000707	SH 45	State Highway Agency	1961	8	676	$3,429.22
ID000759	SH 55	State Highway Agency	1955	3	665	$44,330.33
ID000760	SH 55	State Highway Agency	1974	8	777	$2,833.38
ID000761	SH 55	State Highway Agency	1974	8	776	$5,857.92
ID000762	SH 55	State Highway Agency	1973	8	777	$1,868.51
ID000763	SH 55	State Highway Agency	1973	8	777	$1,638.14
ID000764	SH 55	State Highway Agency	1973	8	787	$3,737.02
ID000765	SH 55	State Highway Agency	1973	8	686	$4,223.34
ID000766	SH 55	State Highway Agency	1968	N	566	$48,210.71
ID000767	SH 55	State Highway Agency	1968	8	776	$2,897.37
ID000857	I 84 EBL	State Highway Agency	1962	N	666	$6,502.36
ID000859	I 84 WBL	State Highway Agency	1962	N	676	$6,502.36
ID000861	I 84 EBL	State Highway Agency	1964	8	NNN	$2,120.58
ID000862	I 84	State Highway Agency	1980	8	NNN	$9,631.06
ID000863	I 84;US 20-26	State Highway Agency	1983	5	686	$39,891.85
ID000864	I 84;US 20-26	State Highway Agency	1983	N	677	$42,789.38
ID000866	I 84 EBL	State Highway Agency	1966	N	566	$7,406.64
ID000868	I 84 WBL	State Highway Agency	1966	N	566	$7,406.64
ID000870	I 84 WBL	State Highway Agency	1966	8	NNN	$2,010.10
ID000871	I 84 EBL	State Highway Agency	1966	8	NNN	$2,010.10
ID000872	I 84 WBL	State Highway Agency	1966	N	867	$8,884.08
ID000874	I 84 EBL	State Highway Agency	1966	N	666	$8,884.08
ID000876	I 84 WBL	State Highway Agency	1966	9	566	$12,558.24
ID000877	I 84 EBL	State Highway Agency	1966	9	875	$13,918.72
ID000878	I 84 EBL	State Highway Agency	1966	8	686	$4,891.59
ID000879	I 84 WBL	State Highway Agency	1966	8	686	$3,306.91
ID000880	I 84 EBL	State Highway Agency	1966	N	576	$10,011.60
ID000881	I 84 WBL	State Highway Agency	1966	N	676	$10,011.60
ID000882	I 84 EBL	State Highway Agency	1965	N	676	$7,292.92
ID000884	I 84 WBL	State Highway Agency	1965	N	566	$7,292.92

ID001044	I 84RAMP	State Highway Agency	1980	5	686	$18,806.58
ID001045	I 84RAMP	State Highway Agency	1980	5	686	$18,898.92
ID001292	US 95	State Highway Agency	1969	3	566	$42,742.73
ID001293	US 95	State Highway Agency	1956	8	776	$2,648.38
ID001294	US 95	State Highway Agency	1964	8	777	$2,993.76
ID001295	US 95	State Highway Agency	1961	3	666	$20,979.00
ID001296	US 95	State Highway Agency	1964	8	776	$5,235.84
ID001297	US 95	State Highway Agency	1964	N	676	$15,893.66
ID001299	US 95	State Highway Agency	1992	8	667	$3,400.70
ID001546	STC 3720;MIDDLETON	County Highway Agency	1999	6	997	$3,095.82
ID001547	STC 3724	Other Local Agencies	1976	8	777	$1,534.46
ID001548	STC 3724	Other Local Agencies	1991	8	688	$3,855.60
ID001549	STC 3730	Other Local Agencies	1967	8	777	$1,158.95
ID001550	STC 3730	Other Local Agencies	1986	7	777	$1,439.86
ID001551	STC 3734;LAKE AVE	Other Local Agencies	1995	8	878	$1,281.42
ID001552	STC 3740	Other Local Agencies	1940	8	877	$1,170.77
ID001553	STC 3740	Other Local Agencies	1996	6	888	$25,475.80
ID001554	SMA 8213;MIDDLETON	State Highway Agency	1966	N	776	$16,993.80
ID001556	STC 3750	Other Local Agencies	1950	8	767	$1,300.86
ID001557	STC 3750	Other Local Agencies	1954	3	666	$3,713.53
ID001558	STC 3750	Other Local Agencies	1953	U	555	$16,113.82
ID001559	SMA 8523;CHERRY LN	Other Local Agencies	1976	8	765	$2,459.81
ID001920	STP 7713;FARMWAY R	Other Local Agencies	1967	8	777	$2,022.08
ID001922	STP 7773;10TH AVE	City Highway Agency	1956	N	545	$91,958.33
ID001923	STP 7773;10TH AVE	City Highway Agency	1956	U	667	$4,348.08
ID001924	CHICAGO ST.	City Highway Agency	1980	3	786	$13,660.16
ID001925	STP 7933	City Highway Agency	1965	8	767	$1,880.33
ID001926	STC7853;N.ILLINOIS	City Highway Agency	1977	8	667	$1,696.46
ID001927	STC 7913;S.FLORIDA	Other Local Agencies	1976	8	765	$1,397.09
ID001928	SMA 7923;LINDEN RD	City Highway Agency	1968	8	767	$1,111.32
ID001929	STP 7933;21ST AVE	City Highway Agency	1940	U	654	$2,238.19
ID001930	STP 7983;USTICK RD	City Highway Agency	1966	8	767	$3,521.23
ID001931	STP 7983;USTICK RD	State Highway Agency	1966	N	666	$15,249.71
ID001933	STC 8223;KARCHER R	State Highway Agency	1966	N	777	$17,949.11
ID001935	SMA 8233;MIDLAND B	City Highway Agency	1973	8	657	$2,170.80
ID001936	SMA8323;S.SIDE BLV	Other Local Agencies	1977	8	777	$5,700.13
ID001937	SMA8353;16TH AVE N	City Highway Agency	1969	N	766	$77,167.08
ID001939	SMA8353;16TH AVE N	City Highway Agency	1969	8	786	$3,045.92
ID001940	SMA 8383;LONE STAR	City Highway Agency	1973	8	777	$1,259.06
ID001941	STP8393;FRANKLIN B	City Highway Agency	1963	8	776	$2,963.14
ID001942	STP8393;FRANKLIN B	City Highway Agency	1963	8	776	$2,963.14
ID001943	STP8393;FRANKLIN B	City Highway Agency	1963	8	676	$2,963.14
ID001944	STP8393;FRANKLIN B	State Highway Agency	1966	N	676	$10,978.90
ID001946	STP8393;FRANKLIN B	State Highway Agency	2000	N	999	$11,668.86
ID001948	STC 8433;11TH AVE.	State Highway Agency	1965	N	676	$15,357.60
ID002649	CAN-ADA ROAD	County Highway Agency	1992	8	887	$1,956.64
ID002704	MCDERMOTT ROAD	County Highway Agency	1987	8	NNN	$1,533.17
ID002724	COLUMBIA ROAD	County Highway Agency	1967	8	767	$2,809.08
ID002759	MCDERMITT ROAD	County Highway Agency	1969	8	877	$922.59
ID002819	CO.RD;PLNG#280C	Other Local Agencies	1922	U	444	$13,606.87
ID002820	COUNTY ROAD	Other Local Agencies	2000	6	999	$1,194.43
ID002821	OPAL LANE	Other Local Agencies	1974	8	766	$1,429.97
ID002822	WALKER LAKE ROAD	Other Local Agencies	1967	8	767	$2,004.75
ID002823	STC 3717;USTICK RD	Other Local Agencies	1995	6	888	$3,284.39
ID002824	ROBINSON ROAD	Other Local Agencies	1984	8	778	$2,510.68
ID002825	CO.RD;PLNG#009E	Other Local Agencies	1955	8	778	$1,046.52

ID002826	STC 3725;PERCH RD	Other Local Agencies	1982	4	765	$1,679.94
ID002827	SHARP LANE	Other Local Agencies	1975	8	886	$1,158.95
ID002828	CO.RD;PLNG#028A	Other Local Agencies	1935	8	654	$806.27
ID002829	TOWN CIRCLE ROAD	Other Local Agencies	1980	8	877	$1,889.41
ID002830	COUNTY ROAD	Other Local Agencies	1956	8	676	$3,123.04
ID002831	ROSE GARDEN RD	City Highway Agency	1935	8	534	$3,167.42
ID002832	POWER LINE ROAD	Other Local Agencies	1987	8	887	$3,063.42
ID002833	GREEN ROAD	Other Local Agencies	1939	8	665	$2,003.45
ID002834	FARMER ROAD	Other Local Agencies	1980	8	777	$1,721.25
ID002835	COUNTY ROAD	Other Local Agencies	1950	8	667	$1,739.23
ID002836	STAFFORD ROAD	Other Local Agencies	1976	8	766	$1,651.10
ID002837	COUNTY ROAD	Other Local Agencies	1939	8	655	$863.30
ID002838	PLYMOUTH STREET	City Highway Agency	1930	8	655	$1,261.98
ID002839	EMERALD ROAD	Other Local Agencies	1988	8	667	$1,809.38
ID002840	DUCK LANE	Other Local Agencies	1983	8	767	$1,349.46
ID002841	DIXIE ROAD	Other Local Agencies	1970	8	778	$1,158.95
ID002842	HOT LINE ROAD	Other State Agencies	1996	8	NNN	$1,478.25
ID002843	STC3748;HWY 44 EXT	Other Local Agencies	1973	8	766	$1,158.95
ID002844	WAMSTAD ROAD	Other Local Agencies	1969	8	766	$1,555.85
ID002845	COUNTY ROAD	Other Local Agencies	1950	8	767	$1,992.28
ID002846	FARMWAY ROAD	Other Local Agencies	1999	6	999	$2,411.21
ID002847	DUFF LANE	Other Local Agencies	1983	8	876	$1,349.46
ID002848	JACKS ROAD	Other Local Agencies	1985	8	787	$1,208.84
ID002849	STC3762;GREENHURST	Other Local Agencies	1972	8	767	$3,074.92
ID002850	SOUTHSIDE ROAD	Other Local Agencies	1975	8	856	$3,691.17
ID002851	LAKE SHORE	Other Local Agencies	1980	8	667	$2,274.32
ID002852	LYNWOOD ROAD	Other Local Agencies	1974	8	877	$1,726.60
ID002853	CO.RD;PLNG#009E	Other Local Agencies	1967	4	886	$1,253.07
ID002854	TRACK ROAD	Other Local Agencies	1983	8	757	$2,548.26
ID002856	STC8513;CAN-ADA RD	Other Local Agencies	1987	8	655	$2,124.14
ID002857	CO.RD;PLNG#021C	Other Local Agencies	1990	8	677	$1,040.69
ID002858	COUNTY ROAD	Other Local Agencies	1999	6	999	$1,555.85
ID002859	BEET ROAD	Other Local Agencies	1992	8	777	$2,695.36
ID002860	SMA 8213;MIDDLETON	Other Local Agencies	1970	8	667	$3,646.46
ID002861	CAN-ADA ROAD	Other Local Agencies	1980	4	755	$1,859.76
ID002862	SAND HOLLOW ROAD	Other Local Agencies	1970	8	767	$1,206.58
ID002863	KNOT LANE	Other Local Agencies	1995	8	778	$1,555.85
ID002864	PEEBLES LANE	Other Local Agencies	1977	8	767	$1,397.09
ID002865	CO.RD;PLNG#0034	Other Local Agencies	1950	8	555	$1,300.86
ID002866	BURDEN ROAD	Other Local Agencies	1977	8	766	$1,397.09
ID002867	IVERSON ROAD	Other Local Agencies	1971	8	766	$1,211.76
ID002868	SMITH AVENUE	Other Local Agencies	1970	8	867	$1,300.86
ID002869	LANSING ROAD	Other Local Agencies	1960	8	544	$1,111.64
ID002870	SMITH AVE	Other Local Agencies	1970	8	787	$2,591.35
ID002871	SMITH AVENUE	Other Local Agencies	1971	8	766	$1,492.34
ID002872	MALT ROAD	Other Local Agencies	1998	6	888	$5,533.92
ID002873	ALLENDALE ROAD	Other Local Agencies	1998	6	888	$1,757.38
ID002874	DIP LANE	Other Local Agencies	1979	8	776	$1,444.72
ID002875	SABIN ROAD	Other Local Agencies	1985	8	886	$3,095.82
ID002876	CO RD;PLGN # 0034	Other Local Agencies	1989	8	668	$1,631.99
ID002877	SHELTON ROAD	Other Local Agencies	1975	8	767	$1,301.83
ID002878	CO.RD;PLNG#019D	Other Local Agencies	1992	8	878	$2,230.74
ID002879	STC3746;LABOR CAMP	Other Local Agencies	1985	8	777	$1,420.58
ID002880	UPPER PLEASANT RDG	Other Local Agencies	1997	6	888	$2,410.56
ID002881	COUNTY ROAD	Other Local Agencies	1969	8	778	$1,218.89

ID002882	STC3719;LANSING RD	Other Local Agencies	1995	8	888	$1,533.17
ID002883	STC 7743	Other Local Agencies	1993	8	777	$1,555.85
ID002884	CO.RD;PLNG#011B	Other Local Agencies	1991	8	888	$1,969.11
ID002885	STAFFORD ROAD	Other Local Agencies	1965	8	677	$898.78
ID002886	WALKER ROAD	Other Local Agencies	1969	7	766	$1,301.83
ID002887	PURPLE SAGE ROAD	Other Local Agencies	1982	7	776	$1,492.34
ID002888	GOTSCH ROAD	Other Local Agencies	1972	8	766	$1,860.41
ID002889	CO. RD.;PLNG #0009	Other Local Agencies	1993	8	878	$2,134.35
ID002890	MINK ROAD	Other Local Agencies	1975	8	766	$863.30
ID002891	COOL ROAD	Other Local Agencies	1995	8	878	$7,678.96
ID002892	STC3747;W LOCUST L	Other Local Agencies	1997	8	888	$1,723.68
ID002893	CO.RD;PLNG#009B	Other Local Agencies	1947	8	656	$1,203.01
ID002894	MARKET ROAD	Other Local Agencies	1990	8	876	$1,854.74
ID002895	PURPLE SAGE ROAD	Other Local Agencies	1965	8	767	$963.90
ID002896	CO.RD;PLNG#026D	Other Local Agencies	1970	8	776	$875.12
ID002897	STC 3717	Other Local Agencies	1961	8	777	$2,073.28
ID002898	FROST ROAD	Other Local Agencies	1990	8	778	$839.16
ID002899	STC 3725	Other Local Agencies	1950	8	767	$1,046.52
ID002900	COUNTY ROAD	Other Local Agencies	1985	8	667	$1,621.62
ID002901	MARSING ROAD	Other Local Agencies	1967	8	766	$1,211.76
ID002902	CO.RD;PLNG#015A	Other Local Agencies	1990	8	768	$1,574.32
ID002903	VAN SLYKE ROAD	Other Local Agencies	1994	8	877	$1,638.63
ID002904	LEWIS LANE	Other Local Agencies	1984	8	767	$3,239.19
ID002905	COUNTY ROAD	Other Local Agencies	1992	8	878	$1,349.46
ID002906	COUNTY ROAD	Other Local Agencies	1998	6	888	$1,554.39
ID002908	BOEHNER ROAD	Other Local Agencies	1993	8	777	$1,868.51
ID002910	STC3718;PRPLE SAGE	Other Local Agencies	1975	U	876	$1,087.83
ID002911	STC 3717	Other Local Agencies	1967	8	777	$2,125.76
ID002912	POWER LINE ROAD	Other Local Agencies	1919	8	777	$3,850.58
ID002913	COUNTY ROAD	Other Local Agencies	2000	6	999	$1,597.32
ID002914	STC 3725;MISSOURI	Other Local Agencies	1984	8	877	$2,253.74
ID002915	RODEO LANE	Other Local Agencies	1995	8	878	$1,603.48
ID002916	LEWIS LANE	Other Local Agencies	1970	8	777	$1,158.95
ID002917	BASE LINE ROAD	Other Local Agencies	1960	8	876	$1,102.57
ID002918	WAGNER ROAD	Other Local Agencies	1979	8	776	$1,555.85
ID002919	HOP ROAD	Other Local Agencies	1986	8	778	$1,603.48
ID002920	TUCKER ROAD	Other Local Agencies	1965	8	777	$1,845.18
ID002921	CONCORD STREET	City Highway Agency	1987	8	777	$1,126.22
ID002922	NORTHSIDE ROAD	Other Local Agencies	1970	8	766	$1,036.64
ID002923	LYNWOOD ROAD	Other Local Agencies	1998	6	888	$6,062.36
ID002924	S. DEWEY AVE	City Highway Agency	1980	4	776	$1,679.94
ID002925	HOLE LINE ROAD	Other Local Agencies	1984	7	766	$1,555.85
ID002926	NORTHSIDE ROAD	Other Local Agencies	1970	U	765	$2,073.28
ID002927	BOISE STREET	City Highway Agency	1930	8	776	$1,502.06
ID002928	STC3719;LANSING RD	Other Local Agencies	1989	8	678	$1,349.46
ID002929	COUNTY ROAD	Other Local Agencies	1962	8	777	$1,640.25
ID002930	STC 8433;11TH AVE	Other Local Agencies	1994	8	669	$2,726.46
ID002931	LONKEY LANE	Other Local Agencies	1996	6	888	$2,939.33
ID002932	CAN-ADA ROAD	Other Local Agencies	1980	8	655	$2,034.88
ID002933	TUCKER ROAD	Other Local Agencies	1997	6	878	$2,612.74
ID002934	STEPHEN LANE	Other Local Agencies	1983	8	766	$1,444.72
ID002935	MARSING ROAD	Other Local Agencies	1965	8	777	$1,063.69
ID002936	FOUNTAIN ROAD	Other Local Agencies	1994	8	778	$1,444.72
ID002937	JOPLIN ROAD	Other Local Agencies	1981	8	777	$1,407.78
ID002938	STC3705;HAPPY VALL	Other Local Agencies	1968	8	767	$4,447.71
ID002939	LOW PLEASANT RD	Other Local Agencies	1994	8	878	$2,437.29

ID002940	CO.RD;PLNG#024D	Other Local Agencies	1950	8	666	$1,214.51
ID002941	STC 3720;MIDDLETON	Other Local Agencies	1978	4	775	$975.24
ID002942	DUFF LANE	Other Local Agencies	1956	8	677	$1,474.52
ID002943	DEER FLAT ROAD	Other Local Agencies	1990	8	778	$7,558.27
ID002944	STC 3723;ROBINSON	Other Local Agencies	1981	8	877	$3,411.72
ID002945	HEXON ROAD	Other Local Agencies	1954	U	776	$12,259.35
ID002946	HEXON ROAD	Other Local Agencies	1993	8	878	$1,254.20
ID002947	DUFF LANE	Other Local Agencies	1957	7	676	$1,461.24
ID002948	COUNTY ROAD	Other Local Agencies	1990	8	777	$1,120.39
ID002949	LOCUST ROAD	Other Local Agencies	1988	8	877	$4,801.68
ID002950	STC3742;WAMSTAD RD	Other Local Agencies	1975	5	876	$11,252.52
ID002951	BOEHNER ROAD	Other Local Agencies	1930	8	0	$1,719.47
ID002952	DEER FLAT ROAD	Other Local Agencies	1991	8	777	$13,887.94
ID002953	TEN DAVIS ROAD	Other Local Agencies	1954	8	767	$1,603.48
ID002954	LOCUST ROAD	Other Local Agencies	1973	8	876	$2,772.14
ID002955	EEL LANE	Other Local Agencies	1974	8	777	$1,076.17
ID002956	CHICKEN DINNER RD	Other Local Agencies	1965	8	767	$2,993.76
ID002957	BATT CORNER ROAD	Other Local Agencies	1997	6	888	$1,492.34
ID002958	DRY LAKE ROAD	Other Local Agencies	1987	8	777	$1,936.87
ID002959	DEER FLAT ROAD	Other Local Agencies	1970	8	767	$2,405.21
ID002960	PECAN LANE	Other Local Agencies	1990	8	878	$890.03
ID002961	STC 3799;USTICK RD	Other Local Agencies	1965	8	777	$2,063.88
ID002962	CONWAY ROAD	Other Local Agencies	1976	8	777	$1,698.73
ID002963	MALT RD	Other Local Agencies	1981	8	646	$1,240.27
ID002964	RIM ROAD	Other Local Agencies	1995	6	876	$3,004.13
ID002965	STC 3747;LAKESHORE	Other Local Agencies	1986	8	878	$4,715.17
ID002966	S. FLORIDA	Other Local Agencies	1975	8	654	$1,349.46
ID002967	LONE STAR ROAD	Other Local Agencies	1965	8	767	$1,005.21
ID002968	RIM ROAD	Other Local Agencies	1965	8	767	$1,753.33
ID002971	NORTHSIDE BLVD	City Highway Agency	1948	U	665	$881.28
ID002972	KIT AVENUE	City Highway Agency	1994	8	878	$1,555.85
ID002973	STP ROAD	City Highway Agency	1955	U	566	$1,632.96
ID002974	COUNTY ROAD	State Highway Agency	1962	N	666	$9,795.33
ID002976	AVEN STREET	City Highway Agency	1965	U	775	$2,341.87
ID002977	S. 4TH AVENUE	City Highway Agency	1935	U	547	$4,194.83
ID002978	STC 7863;S.5TH AVE	City Highway Agency	1935	U	776	$4,466.66
ID002979	ARTHUR STREET	City Highway Agency	1935	U	646	$7,470.79
ID002980	S. 6TH AVENUE	City Highway Agency	1967	U	767	$4,229.50
ID002981	STC 7733;KIMBALL A	City Highway Agency	1933	U	556	$6,670.19
ID002982	S. 9TH AVENUE	City Highway Agency	1968	U	577	$4,742.39
ID002983	COUNTY ROAD	State Highway Agency	1962	N	666	$9,414.79
ID002985	LINDEN ROAD	Other Local Agencies	1974	U	775	$1,444.72
ID002986	ROBINSON ROAD	State Highway Agency	1964	N	676	$10,918.80
ID002988	S. 11TH AVENUE	City Highway Agency	1935	U	646	$8,357.58
ID002989	S. 12TH AVENUE	City Highway Agency	1935	U	576	$4,822.42
ID002990	STC 8373;CANYON ST	City Highway Agency	1963	8	547	$3,041.06
ID002991	7TH AVE N.	City Highway Agency	1978	U	777	$2,571.91
ID002992	9TH AVE N.	City Highway Agency	1980	8	NNN	$2,178.58
ID002993	10TH AVE N.	City Highway Agency	1973	U	877	$2,134.35
ID002994	FRONT STREET	State Highway Agency	1936	N	666	$1,746.36
ID002996	STC 8453;1ST ST NO	City Highway Agency	1978	8	777	$2,072.30
ID002997	ROSWELL ROAD	Other Local Agencies	1985	8	766	$1,603.48
ID002998	W. PARK DRIVE	City Highway Agency	1977	8	777	$1,371.82
ID002999	4TH ROAD NORTH	City Highway Agency	1976	U	767	$1,710.07
ID003000	17TH AVE N.	City Highway Agency	1946	U	444	$1,040.69

ID003001	SUGAR AVENUE	City Highway Agency	1950	8	775	$934.25
ID003002	STC 8483;DAVIS AVE	City Highway Agency	1971	4	766	$2,592.00
ID003003	14TH AVE N.	City Highway Agency	1947	U	565	$2,280.96
ID003004	SUNNY LANE	City Highway Agency	1974	8	677	$1,484.57

Attachment 5 Mitigation Prioritization Worksheet

Denotes Priority Projects

Canyon County Mitigation Projects

Lancing Lane Hill Regrade

Objective: Standardizing codes for excavation, construction, and grading

Item	Criteria		Score
	Project Cost	$	650,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		3
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		2
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**20**
	Project Ranking Priority Score		**Low**

Middleton Hill Regrade

Objective: Standardizing codes for excavation, construction, and grading

Item	Criteria		Score
	Project Cost	$	750,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		3
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		2
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**20**
	Project Ranking Priority Score		**Low**

Blessinger Hill Regrade

Objective: Standardizing codes for excavation, construction, and grading

Item	Criteria		Score
	Project Cost	$	650,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		3
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5

6	Hazard Magnitude/Frequency		2
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**20**
	Project Ranking Priority Score		**Low**

Canyon Highway District #4 Back-Up Generator

Objective: Install Backup electrical generation in critical facilities

Item	Criteria		Score
	Project Cost	$	60,000
1	Benefit / Cost Score		2
2	Population Benefit		3
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		8
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**29**
	Project Ranking Priority Score		**Medium**

Boise River Bank Stabilization on River Road

Objective: Improve the Safety of County roads, bridges, and critical infrastructure

Item	Criteria		Score
	Project Cost	$	500,000
1	Benefit / Cost Score		5
2	Population Benefit		3
3	Property Benefit Score		5
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		3
9	Potential project effectiveness and sustainability		3
	Total		**37**
	Project Ranking Priority Score		**Medium**

Canyon County will develop a “storm water” master plan that addresses the management of the Drainage Districts

Objective: Improve the Safety of County roads, bridges, and critical infrastructure

Item	Criteria		Score
	Project Cost	$	10,000
1	Benefit / Cost Score		1
2	Population Benefit		5
3	Property Benefit Score		8
4	Economic Benefit		3

5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		8
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		5
	Total		**45**
	Project Ranking Priority Score		**High**

Boise River Gravel Bar Removal for Flood Control

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	**Criteria**		**Score**
	Project Cost	$	75,000
1	Benefit / Cost Score		5
2	Population Benefit		2
3	Property Benefit Score		2
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		3
9	Potential project effectiveness and sustainability		3
	Total		**31**
	Project Ranking Priority Score		**Medium**

Fifteen Mile Creek Culvert Upgrade at Madison Road

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	**Criteria**		**Score**
	Project Cost	$	300,000
1	Benefit / Cost Score		3
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		5
	Total		**25**
	Project Ranking Priority Score		**Low**

Madison Creek Culvert Upgrade at Marble Front Road

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	**Criteria**		**Score**
	Project Cost	$	300,000
1	Benefit / Cost Score		3

2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		5
	Total		**25**
	Project Ranking Priority Score		**Low**

Madison Creek Culvert Upgrade at Middleton Road

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	**Criteria**		**Score**
	Project Cost	$	300,000
1	Benefit / Cost Score		3
2	Population Benefit		4
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		6
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		5
	Total		**29**
	Project Ranking Priority Score		**Medium**

Madison Creek Culvert Upgrade at Midland Road

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	**Criteria**		**Score**
	Project Cost	$	500,000
1	Benefit / Cost Score		3
2	Population Benefit		4
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		4
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		5
	Total		**27**
	Project Ranking Priority Score		**Medium**

West Hartley Gulch & East Hartley Gulch Culvert Replacement Study

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	Criteria		Score
	Project Cost	$	144,000
			1
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		5
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**26**
	Project Ranking Priority Score		**Medium**

Willow Creek Bridges flood study

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	Criteria		Score
	Project Cost	$	56,000
1	Benefit / Cost Score		1
2	Population Benefit		2
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		7
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**26**
	Project Ranking Priority Score		**Medium**

Five Mile Drain Culvert @ Franklin Road

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	Criteria		Score
	Project Cost	$	139,000
1	Benefit / Cost Score		1
2	Population Benefit		3
3	Property Benefit Score		3
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		5

	Total		**27**
	Project Ranking Priority Score		**Medium**

Five Mile Drain Culverts @ Prescott, 11th Ave, and Dean Lane study.

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	**Criteria**		**Score**
	Project Cost	$	150,000
1	Benefit / Cost Score		3
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		5
	Total		**25**
	Project Ranking Priority Score		**Low**

Replace Failing Culverts where Middleton Road and Chacartegui Lane cross Indian Creek

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	**Criteria**		**Score**
	Project Cost	$	490,000
1	Benefit / Cost Score		3
2	Population Benefit		5
3	Property Benefit Score		2
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		8
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		3
9	Potential project effectiveness and sustainability		5
	Total		**37**
	Project Ranking Priority Score		**Medium**

Increase the size of the Linden Road culvert.

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	**Criteria**		**Score**
	Project Cost	$	150,000
1	Benefit / Cost Score		3
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5

6	Hazard Magnitude/Frequency	5
7	Potential for repetitive loss reduction	3
8	Potential to mitigate hazards to future development	1
9	Potential project effectiveness and sustainability	5
	Total	**25**
	Project Ranking Priority Score	**Low**

Conduct feasibility study to install debris catchment structures in the Boise River system upstream of critical access crossings, and develop program for maintaining these structures during flooding events with high debris flow.

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	Criteria	Score
	Project Cost	$ 150,000
1	Benefit / Cost Score	1
2	Population Benefit	4
3	Property Benefit Score	1
4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	5
6	Hazard Magnitude/Frequency	5
7	Potential for repetitive loss reduction	3
8	Potential to mitigate hazards to future development	5
9	Potential project effectiveness and sustainability	3
	Total	**30**
	Project Ranking Priority Score	**Medium**

Install diversion gate to redirect water from Boise River to the Dixie Slough near Caldwell during flood events.

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	Criteria	Score
	Project Cost	$ 500,000
1	Benefit / Cost Score	5
2	Population Benefit	4
3	Property Benefit Score	5
4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	3
6	Hazard Magnitude/Frequency	8
7	Potential for repetitive loss reduction	5
8	Potential to mitigate hazards to future development	3
9	Potential project effectiveness and sustainability	5
	Total	**41**
	Project Ranking Priority Score	**High**

Enforce a policy to engineer bridge and culvert crossings on canals with the same standards as river and stream bridges and culverts.

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	Criteria	Score
	Project Cost	No Cost

1	Benefit / Cost Score	1
2	Population Benefit	1
3	1	1
4	Economic Benefit	1
5	Project Feasibility (environmentally, politically, socially)	5
6	Hazard Magnitude/Frequency	5
7	Potential for repetitive loss reduction	3
8	Potential to mitigate hazards to future development	1
9	Potential project effectiveness and sustainability	3
	Total	**20**
	Project Ranking Priority Score	**Low**

Change the policy to give local officials the authority to open irrigation canal head gates during flood events

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

	Project Cost	$	50,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		5
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		2
7	Potential for repetitive loss reduction		2
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**23**
	Project Ranking Priority Score		**Low**

Develop methods to control surface-water and ground water drainage to improve slope-stabilization

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	**Criteria**		**Score**
	Project Cost	$	150,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		2
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		2
7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		3
	Total		**19**
	Project Ranking Priority Score		**Low**

Construct engineered levees around power lines substations within the floodplain.

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	Criteria		Score
	Project Cost	$	500,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		3
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		2
7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		1
	Total		**16**
	Project Ranking Priority Score		**Low**

Reinforce the 4 well intakes in the county which are within the flood zone

Objective: Reduce damage to County infrastructure due to flash and stream flooding, irrigation and drainage, and dam failures

Item	Criteria		Score
	Project Cost	$	500,000
1	Benefit / Cost Score		3
2	Population Benefit		2
3	Property Benefit Score		3
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		2
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**25**
	Project Ranking Priority Score		**Low**

Shop Building Upgrades

Objective: Implement retrofit, redevelopment, and/or abatement programs to strengthen existing structures; pay particular attention and priority to schools, public buildings, community evacuation and relocation sites

Item	Criteria		Score
	Project Cost	$	460,000
1	Benefit / Cost Score		1
2	Population Benefit		4
3	Property Benefit Score		5
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		1
	Total		**24**
	Project Ranking Priority Score		**Low**

Old Hwy 30/Plymouth Street Bridge Replacement

Objective: Implement retrofit, redevelopment, and/or abatement programs to strengthen existing structures; pay particular attention and priority to schools, public buildings, community evacuation and relocation sites

Item	Criteria	Score
	Project Cost (Balance of $6,800,000 project funded through Federal-Aid Bridge Replacement Program)	$ 1,650,000
1	Benefit / Cost Score	5
2	Population Benefit	5
3	Property Benefit Score	5
4	Economic Benefit	5
5	Project Feasibility (environmentally, politically, socially)	5
6	Hazard Magnitude/Frequency	5
7	Potential for repetitive loss reduction	1
8	Potential to mitigate hazards to future development	3
9	Potential project effectiveness and sustainability	5
	Total	**39**
	Project Ranking Priority Score	**Medium**

Initial Post-Event Bridge/Structure Evaluation Training

Objective: Implement retrofit, redevelopment, and/or abatement programs to strengthen existing structures; pay particular attention and priority to schools, public buildings, community evacuation and relocation sites

Item	Criteria	Score
	Project Cost	$ 5,000
1	Benefit / Cost Score	1
2	Population Benefit	1
3	Property Benefit Score	1
4	Economic Benefit	1
5	Project Feasibility (environmentally, politically, socially)	5
6	Hazard Magnitude/Frequency	8
7	Potential for repetitive loss reduction	1
8	Potential to mitigate hazards to future development	1
9	Potential project effectiveness and sustainability	1
	Total	**20**
	Project Ranking Priority Score	**Low**

Inspect buildings, particularly un-reinforced masonry, for hazard stability

Objective: Conduct assessment of seismic hazards to quantify and understand the threat

Item	Criteria	Score
	Project Cost	$ 100,000
1	Benefit / Cost Score	1
2	Population Benefit	2
3	Property Benefit Score	2
4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	5
6	Hazard Magnitude/Frequency	2

7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**20**
	Project Ranking Priority Score		**Low**

Publish a special section in your local newspaper with emergency information on earthquakes.

Objective: Conduct ongoing public-education efforts to raise awareness and build constituent support

Item	**Criteria**		**Score**
	Project Cost	$	2,500
1	Benefit / Cost Score		1
2	Population Benefit		6
3	Property Benefit Score		1
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		2
7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**23**
	Project Ranking Priority Score		**Low**

Develop a County-wide policy that directs the floodplain administrator to document all landslides, bank failures, "washouts", and manmade embankment failures

Objective: Establish a countywide landslide hazard identification program

Item	**Criteria**		**Score**
	Project Cost	$	5,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		2
8	Potential to mitigate hazards to future development		3
9	Potential project effectiveness and sustainability		3
	Total		**22**
	Project Ranking Priority Score		**Low**

Develop a Land Use Policy that promotes removing or converting existing development or discouraging or regulating new development in unstable areas.

Objective: Restricting development in landslide prone areas

Item	**Criteria**		**Score**
	Project Cost	$	5,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5

6	Hazard Magnitude/Frequency		2
7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		4
	Total		**23**
	Project Ranking Priority Score		**Low**

Develop a Land Use Policy that restricts construction in areas of known landslides, debris flows, steep slopes, streams and rivers, intermittent-stream channels, and the mouths of mountain channels.

Objective: Restricting development in landslide prone areas

Item	**Criteria**		**Score**
	Project Cost	$	5,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		2
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		4
	Total		**27**
	Project Ranking Priority Score		**Medium**

Range Land Access

Objective: Canyon County will reduce the losses caused by wildfire by continuing the Wildland Urban Interface Mitigation Program.

Item	**Criteria**	**Score**
	Project Cost	Unknown
1	Benefit / Cost Score	5
2	Population Benefit	2
3	Property Benefit Score	5
4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	5
6	Hazard Magnitude/Frequency	7
7	Potential for repetitive loss reduction	5
8	Potential to mitigate hazards to future development	1
9	Potential project effectiveness and sustainability	5
	Total	**38**
	Project Ranking Priority Score	**Medium**

Develop a policy that requires a Burned Area Recovery (BAER) Plan in the County

Objective: Enhance Wildfire Rehabilitation efforts in the ecological recovery of burned areas

Item	**Criteria**		**Score**
	Project Cost	$	5,000
1	Benefit / Cost Score		5
2	Population Benefit		1
3	Property Benefit Score		5

4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		7
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		5
	Total		**37**
	Project Ranking Priority Score		**Medium**

Installing Barn Owl houses on private property near areas of pocket gopher infestations

Objective: Reduce damage caused by burrowing rodents.

Item	**Criteria**		**Score**
	Project Cost	$	1,000
1	Benefit / Cost Score		8
2	Population Benefit		5
3	Property Benefit Score		5
4	Economic Benefit		5
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		8
7	Potential for repetitive loss reduction		8
8	Potential to mitigate hazards to future development		3
9	Potential project effectiveness and sustainability		5
	Total		**52**
	Project Ranking Priority Score		**High**

Develop a temporary traffic control equipment and response plan.

Objective: Develop a culture of preparedness for serve weather events through public education

Item	**Criteria**		**Score**
	Project Cost	$	15,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		1
	Total		**17**
	Project Ranking Priority Score		**Low**

Identify Ustick, Homedale, Notus, and Allendale Roads as critical evacuation routes

Objective: Provide information on personal and family preparedness for severe weather

Item	**Criteria**		**Score**
	Project Cost	$	1,000
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		1

4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	3
6	Hazard Magnitude/Frequency	3
7	Potential for repetitive loss reduction	1
8	Potential to mitigate hazards to future development	1
9	Potential project effectiveness and sustainability	2
	Total	**16**
	Project Ranking Priority Score	**Low**

Identification of Emergency Shelters and Alternate Dispatch sites.

Objective: Identify shelter locations with emergency power and heating, water supplies, and sanitary services

Item	**Criteria**		**Score**
	Project Cost	$	5,000
1	Benefit / Cost Score		1
2	Population Benefit		8
3	Property Benefit Score		3
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		3
7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		
	Project Ranking Priority Score		**Low**

City of Caldwell Mitigation Projects

Construct diversion gates to direct floodwaters from the Boise River to the Dixie Slough

Objective: Examine where the addition of berms of levees would reduce damage in the floodplain

Item	**Criteria**		**Score**
	Project Cost	$	500,000
1	Benefit / Cost Score		5
2	Population Benefit		4
3	Property Benefit Score		5
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		8
7	Potential for repetitive loss reduction		8
8	Potential to mitigate hazards to future development		3
9	Potential project effectiveness and sustainability		3
	Total		**42**
	Project Ranking Priority Score		**High**

Place Engineered dikes along the River channel through Caldwell

Objective: Examine where the addition of berms of levees would reduce damage in the floodplain

Item	**Criteria**	**Score**
	Project Cost	Unknown

1	Benefit / Cost Score	3
2	Population Benefit	2
3	Property Benefit Score	2
4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	3
6	Hazard Magnitude/Frequency	5
7	Potential for repetitive loss reduction	5
8	Potential to mitigate hazards to future development	1
9	Potential project effectiveness and sustainability	3
	Total	**27**
	Project Ranking Priority Score	**Medium**

Raise the banks on the larger canals that run through Caldwell

Objective: Examine where the addition of berms of levees would reduce damage in the floodplain

Item	Criteria	Score
	Project Cost	Unknown
1	Benefit / Cost Score	3
2	Population Benefit	2
3	Property Benefit Score	2
4	Economic Benefit	1
5	Project Feasibility (environmentally, politically, socially)	1
6	Hazard Magnitude/Frequency	2
7	Potential for repetitive loss reduction	1
8	Potential to mitigate hazards to future development	3
9	Potential project effectiveness and sustainability	3
	Total	**18**
	Project Ranking Priority Score	**Low**

Develop Policies that all local irrigation districts to open headgates or irrigation canals and ditches to divert floodwaters on to fields.

Objective: Examine where the addition of berms of levees would reduce damage in the floodplain

Item	Criteria	Score
	Project Cost	$ 50,000
1	Benefit / Cost Score	1
2	Population Benefit	2
3	Property Benefit Score	3
4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	3
6	Hazard Magnitude/Frequency	2
7	Potential for repetitive loss reduction	3
8	Potential to mitigate hazards to future development	3
9	Potential project effectiveness and sustainability	3
	Total	**23**
	Project Ranking Priority Score	**Low**

Cement the Banks on the Phillips Canal

Objective: Examine where the addition of berms of levees would reduce damage in the floodplain

Item	Criteria	Score

	Project Cost	Unknown
1	Benefit / Cost Score	3
2	Population Benefit	2
3	Property Benefit Score	2
4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	1
6	Hazard Magnitude/Frequency	3
7	Potential for repetitive loss reduction	1
8	Potential to mitigate hazards to future development	3
9	Potential project effectiveness and sustainability	3
	Total	**21**
	Project Ranking Priority Score	**Low**

Cement the Banks on the Canyon Hill Canal

Objective: Examine where the addition of berms of levees would reduce damage in the floodplain

Item	**Criteria**	**Score**
	Project Cost	Unknown
1	Benefit / Cost Score	3
2	Population Benefit	2
3	Property Benefit Score	2
4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	1
6	Hazard Magnitude/Frequency	3
7	Potential for repetitive loss reduction	1
8	Potential to mitigate hazards to future development	3
9	Potential project effectiveness and sustainability	3
	Total	**21**
	Project Ranking Priority Score	**Low**

Cement the Banks on the Notus Canal

Objective: Examine where the addition of berms of levees would reduce damage in the floodplain

Item	**Criteria**	**Score**
	Project Cost	Unknown
1	Benefit / Cost Score	3
2	Population Benefit	2
3	Property Benefit Score	2
4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	1
6	Hazard Magnitude/Frequency	3
7	Potential for repetitive loss reduction	1
8	Potential to mitigate hazards to future development	3
9	Potential project effectiveness and sustainability	3
	Total	**21**
	Project Ranking Priority Score	**Low**

Replace the culvert where the canal crosses Mason Road

Objective: Examine where the addition of berms of levees would reduce damage in the floodplain

Item	Criteria	Score
	Project Cost	Unknown
1	Benefit / Cost Score	3
2	Population Benefit	1
3	Property Benefit Score	1
4	Economic Benefit	1
5	Project Feasibility (environmentally, politically, socially)	3
6	Hazard Magnitude/Frequency	4
7	Potential for repetitive loss reduction	2
8	Potential to mitigate hazards to future development	1
9	Potential project effectiveness and sustainability	3
	Total	**19**
	Project Ranking Priority Score	**Low**

Protect the Waste Water System Clarifier #2 from Flooding

Objectives: Determine where elevating structures in the floodplain would be beneficial

Item	Criteria	Score
	Project Cost	$ 1,500,000
1	Benefit / Cost Score	5
2	Population Benefit	2
3	Property Benefit Score	9
4	Economic Benefit	4
5	Project Feasibility (environmentally, politically, socially)	5
6	Hazard Magnitude/Frequency	5
7	Potential for repetitive loss reduction	3
8	Potential to mitigate hazards to future development	3
9	Potential project effectiveness and sustainability	5
	Total	**41**
	Project Ranking Priority Score	**High**

City of Greenleaf Mitigation Projects

Improve Participation in the NFIP

Objectives: Ensure awareness of the availability of flood insurance

Item	Criteria	Score
	Project Cost	No Cost
1	Benefit / Cost Score	1
2	Population Benefit	1
3	Property Benefit Score	1
4	Economic Benefit	3
5	Project Feasibility (environmentally, politically, socially)	3
6	Hazard Magnitude/Frequency	2
7	Potential for repetitive loss reduction	1
8	Potential to mitigate hazards to future development	5
9	Potential project effectiveness and sustainability	5
	Total	**22**
	Project Ranking Priority Score	**Low**

Install safety barriers on the entrances to buried irrigation systems

Objectives: Improve safety of the entrances to buried irrigation systems

Item	Criteria		Score
	Project Cost	$	25,000
1	Benefit / Cost Score		3
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		3
7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**19**
	Project Ranking Priority Score		**Low**

City of Melba Mitigation Projects

Install a storm water collection/drainage system

Objectives: Protect the community from storm water and spring run off

Item	Criteria		Score
	Project Cost	$	1,000,000
1	Benefit / Cost Score		5
2	Population Benefit		4
3	Property Benefit Score		3
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		4
7	Potential for repetitive loss reduction		2
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		3
	Total		**34**
	Project Ranking Priority Score		**Medium**

Upgrade Fire Water Storage and delivery pressure system including adding emergency power

Objectives: Improve fire water supply

Item	Criteria		Score
	Project Cost	$	1,438,000
1	Benefit / Cost Score		5
2	Population Benefit		9
3	Property Benefit Score		5
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		6
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		4
	Total		**45**
	Project Ranking Priority Score		**High**

Install a culvert at 7420 Hove Road

Objectives: Protect the community from storm water and spring run off

Item	Criteria		Score
	Project Cost	$	25,000
1	Benefit / Cost Score		5
2	Population Benefit		1
3	Property Benefit Score		3
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		7
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		3
9	Potential project effectiveness and sustainability		3
	Total		**33**
	Project Ranking Priority Score		**Medium**

City of Middleton Mitigation Projects

Develop a culvert and storm water collection maintenance program

Objective: Maintain culverts in the floodplain

Item	Criteria		Score
	Project Cost	$	50,000
1	Benefit / Cost Score		5
2	Population Benefit		5
3	Property Benefit Score		5
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		7
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		5
	Total		**45**
	Project Ranking Priority Score		**High**

Conduct periodic cleaning of willows and other overgrowth from the streams that run through the City

Objective: Reduce flooding potential by removing willows and overgrowth along stream banks

Item	Criteria	Score	
	Project Cost	$	25,000
1	Benefit / Cost Score		5
2	Population Benefit		5
3	Property Benefit Score		5
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		7
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		5
	Total		**45**
	Project Ranking Priority Score		**High**

City of Nampa Mitigation Projects

Replace the Culvert at Kings Road

Objective: Maintain culverts in the floodplain

Item	Criteria		Score
	Project Cost	$	300,000
1	Benefit / Cost Score		3
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		4
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**20**
	Project Ranking Priority Score		**Low**

Replace the Culvert at Mason Creek

Objective: Maintain culverts in the floodplain

Item	Criteria		Score
	Project Cost	$	300,000
1	Benefit / Cost Score		3
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		4
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**20**
	Project Ranking Priority Score		**Low**

Develop a culvert and storm water collection maintenance program

Objective: Maintain culverts in the floodplain

Item	Criteria		Score
	Project Cost	$	50,000
1	Benefit / Cost Score		5
2	Population Benefit		5
3	Property Benefit Score		5
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		2
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		3
	Total		**32**
	Project Ranking Priority Score		**Medium**

City of Notus Mitigation Projects

Develop a culvert and storm water collection maintenance program

Objective: Maintain culverts in the floodplain

Item	Criteria		Score
	Project Cost	$	50,000
1	Benefit / Cost Score		5
2	Population Benefit		5
3	Property Benefit Score		5
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		5
	Total		**41**
	Project Ranking Priority Score		**High**

Replace the Conway Drain culvert on 1st Street

Objective: Maintain culverts in the floodplain

Item	Criteria		Score
	Project Cost	$	300,000
1	Benefit / Cost Score		3
2	Population Benefit		5
3	Property Benefit Score		5
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		4
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		3
9	Potential project effectiveness and sustainability		3
	Total		**30**
	Project Ranking Priority Score		**Medium**

Replace the Conway Drain Culvert with a bridge on Notus Road

Objective: Maintain culverts in the floodplain

Item	Criteria		Score
	Project Cost	$	300,000
1	Benefit / Cost Score		3
2	Population Benefit		5
3	Property Benefit Score		5
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		3
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		3
9	Potential project effectiveness and sustainability		3
	Total		**31**
	Project Ranking Priority Score		**Medium**

Raise manhole covers in areas prone to storm water run off

Objective: Maintain culverts in the floodplain

Item	Criteria		Score
	Project Cost	$	150,000
1	Benefit / Cost Score		1
2	Population Benefit		9
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		1
6	Hazard Magnitude/Frequency		3
7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		1
	Total		**19**
	Project Ranking Priority Score		**Low**

Protect the Sewer System Treatment Ponds located in the Floodplain

Objective: Determine where elevating structures in the floodplain would be beneficial

Item	Criteria		Score
	Project Cost	$	1,000,000
1	Benefit / Cost Score		5
2	Population Benefit		10
3	Property Benefit Score		5
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		3
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		5
	Total		**46**
	Project Ranking Priority Score		**High**

City of Parma Mitigation Projects

Install a pipeline and storm water inlets to convey storm water runoff to a natural drainage area owned by the City of Parma

Objective: Improve storm water collection

Item	Criteria		Score
	Project Cost	$	300,000
1	Benefit / Cost Score		5
2	Population Benefit		5
3	Property Benefit Score		6
4	Economic Benefit		3
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		5
7	Potential for repetitive loss reduction		5
8	Potential to mitigate hazards to future development		5
9	Potential project effectiveness and sustainability		5
	Total		**44**

	Project Ranking Priority Score		**High**

City of Wilder Mitigation Project

Develop relocation shelters for the City of Wilder

Item	Criteria		Score
	Project Cost	$	2,500
1	Benefit / Cost Score		1
2	Population Benefit		1
3	Property Benefit Score		1
4	Economic Benefit		1
5	Project Feasibility (environmentally, politically, socially)		5
6	Hazard Magnitude/Frequency		3
7	Potential for repetitive loss reduction		1
8	Potential to mitigate hazards to future development		1
9	Potential project effectiveness and sustainability		1
	Total		**15**
	Project Ranking Priority Score		**Low**