Elmore County
Ground Water Quality Improvement and Drinking Water Source Protection Plan

2014

Cover photograph: The Snake River South of Mountain Home, Idaho. Courtesy of Christopher Shawn Miller of Chattanooga, Tennessee.

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Ground Water Quality Improvement and Drinking Water Source Protection Plan

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2014

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Prepared by
State of Idaho, Department of Environmental Quality
Boise Regional Office
1410 North Hilton
Boise, ID 83706

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Idaho Public Health Districts

Idaho Soil and Water Conservation Commission

Idaho Association of Soil Conservation Districts

Natural Resources Conservation Service

University of Idaho Cooperative Extension

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Elmore County, Idaho

Public and local government representatives providing input.

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Acronyms and Abbreviations

APA	American Planning Association
BMP	best management practice
CAFO	confined animal feeding operation
CDHD	Central District Health Department
DEQ	Idaho Department of Environmental Quality
EPA	United States Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
GWQP	Ground Water Quality Plan
Home*A*Syst	Idaho Home Assessment System
HUC	hydrologic unit code
IASCD	Idaho Association of Soil Conservation Districts
IDAPA	Refers to citations of Idaho administrative rules
IDWR	Idaho Department of Water Resources
ISWC	Idaho Soil and Water Conservation Commission
ISDA	Idaho State Department of Agriculture
IWM	irrigation water management
IWRRI	Idaho Water Resources Research Institute
LUST	leaking underground storage tank
MCL	maximum contaminant level
mg/L	milligrams per liter
NMP	nutrient management plan
NPA	nitrate priority area
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PWS	public water system
RCRA	Resource Conservation and Recovery Act
SBA	subbasin assessment
SWA	source water assessment
TMDL	total maximum daily load
USGS	United States Geological Survey
UST	underground storage tank

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1 Introduction

Drinking water in Elmore County, Idaho, is supplied by ground water pumped from numerous public and private wells. In addition, the city of Atlanta drinking water system includes a surface water intake from the East Fork of Montezuma Creek, and the city of Glenns Ferry water system includes a surface water intake from the Snake River. Clean, safe water is a vital resource for the state's economy and human health. Ground water and surface water are commonly interconnected, and both are vulnerable to contamination from nonpoint source pollution due to land use activities (e.g., farming) and point sources (e.g., gas stations) nearby. However, contamination can be prevented through efforts such as education and the use of best management practices (BMPs) to avoid or minimize vulnerability from potential contaminant sources.

Ground water provides over 95% of the drinking water in Idaho and is often taken for granted since it is concealed underground. Although the quality of ground water in Idaho is generally good, water quality monitoring shows that Idaho's ground water has been significantly degraded in certain portions of the state. This localized degradation negatively impacts water quality and potentially threatens domestic water supplies and other ground water beneficial uses, such as aquaculture, agriculture, mining, and industrial uses.

Nitrate is one of the contaminants responsible for this degradation and is one of the most widespread ground water contaminants in Idaho. Precipitation, irrigation, and sandy soils allow nitrate to percolate through soil and into surface water and ground water. While nitrate is just one of the potential ground water contaminants in Idaho, more is known about nitrate in Idaho ground water than other contaminants. In addition, the presence of nitrate is a good indicator of aquifer vulnerability and the potential for other water quality problems. The Idaho Department of Environmental Quality (DEQ) has defined and prioritized areas with ground water degradation by nitrate to most effectively allocate resources for water quality improvement. These areas are known as nitrate priority areas (NPAs).

This binder serves as the *Elmore County Ground Water Quality Improvement and Drinking Water Source Protection Plan*. The information provided is an educational and informational resource for local governments and land-management entities. It is intended to provide background information for decision making and to help prioritize and coordinate water quality-related activities throughout Elmore County. The information in this binder addresses the following:

- Discusses why nitrates are a concern and describes potential nitrate sources to ground water, as well as the risks associated with high levels of nitrate in ground water.
- Provides statewide NPA maps and rankings and Elmore County maps identifying current NPAs within Elmore County.
- Recognizes activities and accomplishments made to improve ground water quality throughout Elmore County.
- Outlines the general strategies that will be implemented to reduce nitrate contamination in ground water and protect public water supplies.

- Presents information for protecting sources of public drinking water systems to be used during the decision-making process.
- Offers a summary of information relating to surface water quality and impaired streams in Elmore County.
- Provides a list of agency contacts, regulatory directories, and website resources for technical assistance and resource information.
- Assembles sources of funding for BMP implementation.
- Provides multiple public outreach and technical resources for use in strategic planning.

Idaho's Ground Water Quality Protection Act of 1989 (Idaho Code §39-1) authorized a comprehensive approach for maintaining and improving Idaho's ground water quality. The 1996 *Idaho Ground Water Quality Plan* (GWQP) was written as a result of the act and outlines the various state and local responsibilities for protecting Idaho's ground water quality (Ground Water Quality Council 1996). DEQ is designated as the primary agency to coordinate and administer ground water quality protection programs for the state. The GWQP is available on DEQ's website at *www.deq.idaho.gov/media/462972-idaho_gw_quality_plan_final_entire.pdf.*

The GWQP, Idaho Ground Water Protection Interagency Cooperative Agreement (January 2008), and DEQ Policy Memorandum PM00-004, Policy for Addressing Degraded Ground Water Quality Areas, provide guidance and direction in identifying, delineating, and prioritizing areas where ground water is significantly degraded.

As the primary agency responsible for ground water quality protection, DEQ chairs the Ground Water Monitoring Technical Committee. This committee meets periodically throughout the year to coordinate monitoring projects, share results and protocols, and develop evaluation criteria. The committee representatives from other agencies include the following:

- Idaho Department of Water Resources (IDWR)
- Idaho State Department of Agriculture (ISDA)
- Idaho Soil and Water Conservation Commission (ISWC)
- Idaho Association of Soil Conservation Districts (IASCD)
- Idaho public health districts
- Idaho Water Resources Research Institute (IWRRI)
- Idaho's universities
- Federal agencies (such as the United States Geological Survey [USGS])

DEQ helped develop the *Elmore County Ground Water Quality Improvement and Drinking Water Protection Plan* in a collaborative effort with IDWR, ISDA, ISWC, IASCD, Central District Health Department (CDHD), University of Idaho Extension, and Natural Resources Conservation Service (NRCS).

2 Geologic Setting and Ground Water Conditions

2.1 Physical Setting

Elmore County is located in southwestern Idaho, approximately 53 miles north of Nevada and 53 miles east of Oregon. It is surrounded by Owyhee County to the south, Ada County to the west, Boise County to the north, and Camas, Gooding, and Twin Falls Counties to the east. Major drainages include the Middle and South Forks of the Boise River in the north and central areas of the county, respectively, and the Snake River along the county's southern border. The Snake River bounds much of the county on its southern edge, and the North Fork of the Boise River bounds much of the county on its northwestern edge.

Elmore County can be divided into two general topographic regions: a northern half consisting of mountainous and forested terrain; and a southern half consisting of sagebrush-covered hills and south to southwest sloping plains (Figure 2-1). The northeastern boundary follows topographic features in the mountains; the rest of the county boundaries appear to be surveyed straight lines. Elevations range from approximately 9,700 feet in the northern mountains to approximately 2,300 feet along the Snake River.

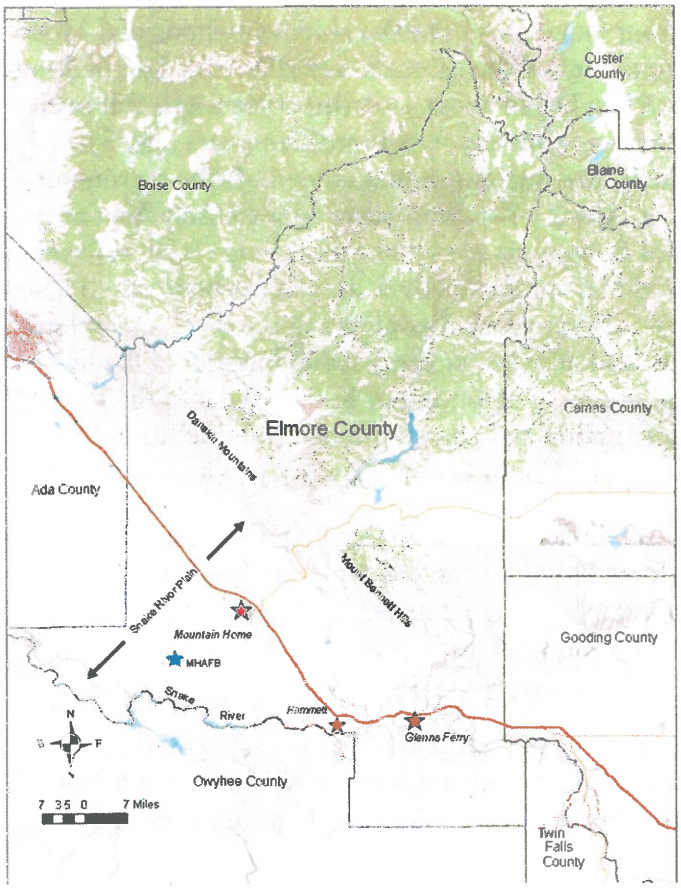


Figure 2-1. Topographic map of Elmore County, Idaho, and vicinity.

2.2 Regional Geology[1]

Elmore County primarily consists of two geologic provinces: the Idaho Batholith in the north and the Snake River Plain in the south. The Idaho Batholith consists primarily of crystalline granitic rocks that are 65 to 95 million years old. The Snake River Plain generally consists of volcanic and sedimentary rocks that are less than 11 million years old. Figure 2-2 shows the approximate locations of the two geologic provinces.

The granitic rocks in north and central areas of Elmore County are part of the Atlanta Batholith, the southern section of the Idaho Batholith, which formed between 70 and 90 million years ago. The typical granite of the Idaho Batholith is pale gray on fresh or broken surfaces, becoming a pinkish brown color on weathered surfaces. The general topography of the Atlanta Batholith in Elmore County in is mountains in the north transitioning to hills in the central portion of the county, with streams and rivers generally contained in steep-walled canyons. In west and central areas of the county (Danskin Mountains and West Bennett Hills), the southern edge of the Batholith borders thick sections of rhyolite composed of welded ash flows generated during volcanic activity in the Snake River Plain..

The Snake River Plain province is divided into two general sections: the eastern and western Snake River Plain. Elmore County is located in the northeast margin of the western Snake River Plain. The Snake River Plain in Elmore County is bounded by major faults along its northeastern and southwestern edges. Based on results from deep oil and gas exploration wells drilled in the area in 1973, displacement across the range front faults along the Danskin Mountains and Mount Bennett Hills northeast of Mountain Home are thought to be as much as 9,000 feet. The faulting along the margins of the western Snake River Plain began about 11 million years ago followed by rapid subsidence (settling), forming a basin approximately 9 to 10 million years ago. The basin is filled with rhyolite ash, basalt lava flows, and sediments that eroded off the surrounding hills or were deposited by streams or into lakes. About 10 million years ago, a basalt flow near the Oregon-Idaho border blocked the westward flowing river systems and a huge lake, referred to as Lake Idaho, formed. Lake Idaho expanded and contracted over time but is believed to have been present in the Treasure Valley for some 4 million years. Variations in the level and extent of Lake Idaho resulted in both lacustrine (lake) and alluvial (stream) sedimentation in the basin that included volcanic ash, clay, silt, sand, and gravel. Outpouring of basalt lava into the lake combined with fine-grained lake bottom sedimentation and coarse-grained river deltas form the bulk of the stratigraphic column in the Snake River Plain of Elmore County.

About 6 million years ago, the water levels in the lake rose so high that a spillway north of Weiser was crested and a path formed through the basalt layers to drain Lake Idaho through Hells Canyon. This resulted in the incision of the basin and deposition of coarse-grained river gravels over the finer-grained lake sediments. Eruption of basalt over and into the clastic sediments continued during this process.

There are 15 identifiable volcanic vents in the area around Mountain Home. The youngest volcanic features in the Mountain Home area are cinder cone vents that have 150 to 300 feet of relief and are located just northeast of Mountain Home. The cinder cones are considered to be less than 300,000 years old.

1. Most of the geology described in this section was taken from Alt and Hyndman (1995)

A general map of the geology at the earth's surface is provided as Figure 2-2. It shows the crystalline granitic rocks in the mountains northeast of the Snake River Plain (red and pink colors), the very earliest silicic volcanic rocks on the northeastern side of the range front faults (Tmf in maroon) and a combination of basalt volcanic rocks and stream and lake deposits (in the yellow, tan, and brown colors) to the southwest of the mountains across the Snake River Plain.

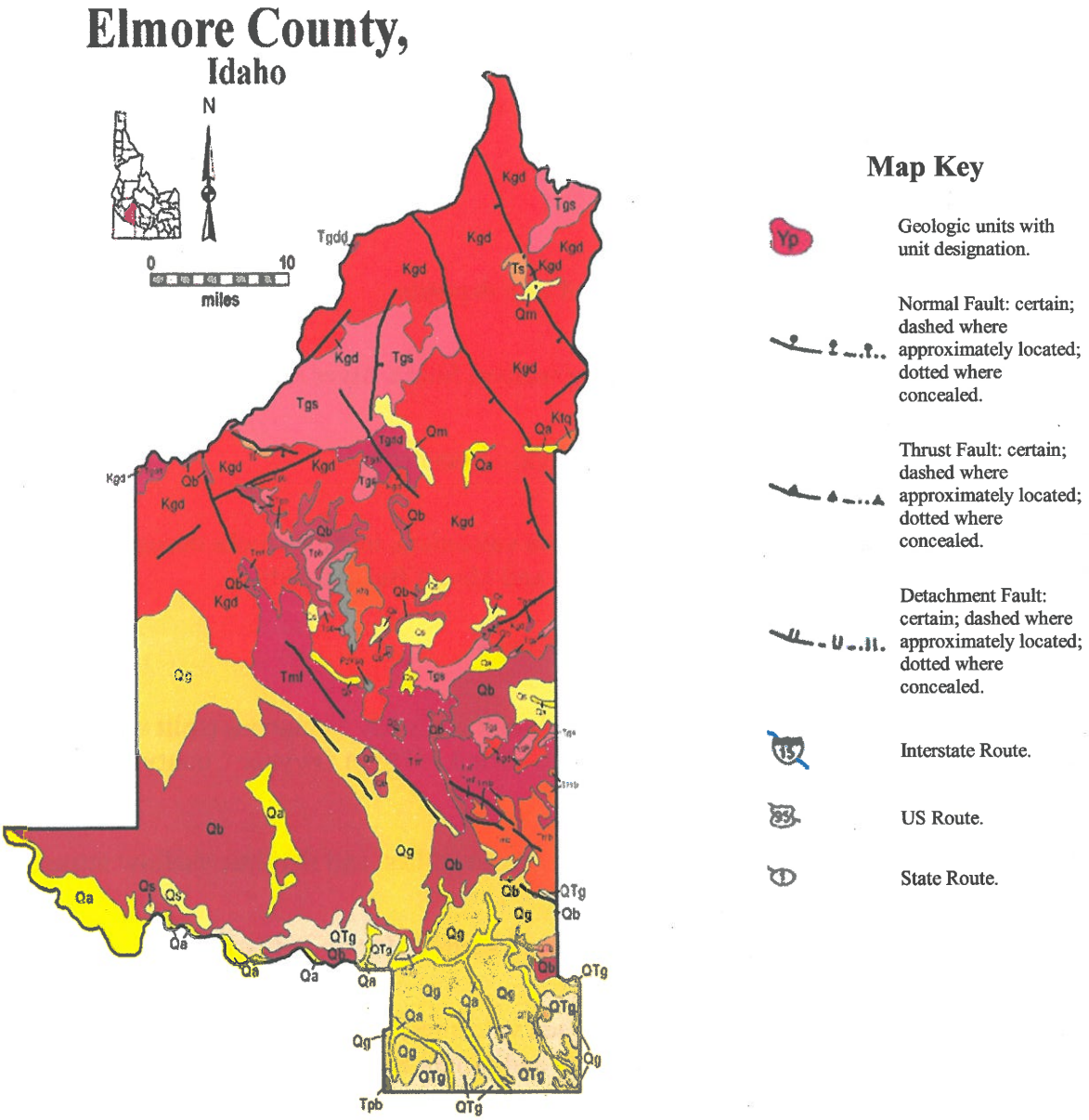


Figure 2-2. Geologic map of Elmore County (map legend on the next page).

Geologic Units

Qa	Quaternary alluvial deposits
Qm	Quaternary moraine and glaciofluvial outwash
Qg	Gravels and terraces on western Snake River Plain
Qs	Quaternary surficial cover, fluveolian cover on Snake River Plain, alluvial fans (Snake River Group)
Qb	Pleistocene basalt lava
QTs	Pleistocene and Pliocene stream and lake deposits
QTg	Pleistocene and Pliocene gravels on western Snake River Plain
QTb	Pleistocene and Pliocene basalt lava and associated tuff
Tmf	Miocene felsic volcanic rocks (Idavada volcanics), includes rocks designated as Tmf (Bond 1968) in Owyhee County and Mount Bennett Hills
Ts	Tertiary sedimentary rocks, undifferentiated
Tmb	Miocene basalt (basalt of Weiser and basalt of Cuddy Mountain) (split with Tpb is at 5 Ma) (includes rocks shown as Tpb (Bond 1978) in Owyhee County and Mount Bennett Hills
Tgs	Eocene granite, pink granite, syenite, rhyolite dikes, and rhyolitic shallow intrusive
Tgdd	Eocene granodiorite, granite, diorite, and shallow dacitic intrusive
Tmf	Miocene felsic volcanic rocks (Idavada volcanics), includes rocks designated as Tmf (Bond 1968) in Owyhee County and Mount Bennett Hills
Kgd	Cretaceous granite and granodiorite of the 2-mica suite (Idaho batholith)
Ktg	Cretaceous tonalite and quartz diorite
PzYsq	Paleozoic/Mesoproterozoic schist and quartzite

2.3 Ground Water Presence and Flow

In the northeastern mountains, ground water occurs within fractures in the crystalline rocks and in valley fill sediments. In the southwestern area (beneath the Snake River Plain), ground water occurs primarily in interflow zones in the basalt that are fractured and/or contain cinders, and in local sands and gravels. Recharge to the aquifers in the western Snake River Plain is from precipitation, underflow (deep ground water flow) across the boundaries of the plain, and infiltration of surface water from irrigation (Newton 1991, USGS 1994). Ground water flow in the mountains and hills in northern Elmore County likely follows the general surface topography; flowing from areas of higher elevations to lower elevations and surface drainage features. In the regional aquifer of western Snake River Plain, the mapped ground water flow direction is towards the south and southwest towards the Snake River in areas north of the Snake River, and to the north in areas south of the Snake River (Newton 1991). Figure 2-3 shows the general ground water flow directions in the regional aquifer.

There are two types of aquifers in the volcanic and sedimentary rocks of the Snake River Plain: perched aquifers and a regional aquifer. Perched aquifers form when water from precipitation; irrigation and septic tank discharge; and leakage from creeks, irrigation canals, and the Mountain Home Reservoir gets trapped in porous sediments that overlie hard impermeable sediments and rocks that are not saturated. In perched aquifers, the rate of recharge from the various sources of water at the surface is greater than the rate of percolation from the perched zone into the deeper layers (and the regional aquifer) so the local and isolated sediments of the *perched zone* hold water. Depth to perched aquifers varies across the region and ranges from a few feet to hundreds of feet below the ground surface. The regional aquifer is the zone within which all layers are saturated. Water in the regional aquifer occurs at depths of about 500 feet beneath the ground surface in the general vicinity of Mountain Home. Water flows in the fractured interflow and cinder layers within the basalt in southerly and southwesterly directions north of the Snake River and in a northerly direction south of the river (Figure 2-3).

Near Mountain Home, fine-grained sediments above layers of basalt impede downward water movement and form perched aquifers; the water levels in perched aquifers are as much as 200 feet higher than water levels in the regional aquifer system. Water eventually moves downward from these perched aquifers into the regional system (Newton 1991). At Mountain Home, a local perched water body that is less than 100 feet thick in unconsolidated deposits supplies water to many domestic wells. A second perched water body of greater areal extent in basalt rock underlies the unconsolidated deposits.

To the south and west of Mountain Home, the confining unit that underlies the second perched aquifer pinches out, and ground water moves downward through sediments and younger basalt to the regional aquifer (USGS 1994). The regional aquifer in the Mountain Home area was declared a critical ground water area by IDWR in 1982 when regionally declining water levels in the regional aquifer were observed. A critical ground water area is all or part of a ground water basin that does not have sufficient ground water to provide a reasonably safe supply for irrigation or other uses at the current or projected rate of withdrawal.

The range front faults that bound the northeastern edge of the Snake River Plain northeast of Mountain Home have placed low permeability rhyolite in the foothills adjacent to more permeable basalt and sand and gravel beneath the plain. This faulting and displacement of rock

types has created a hydrologic boundary condition that limits recharge to the aquifer from the adjacent mountains and results in declining water levels in the Mountain Home area as more ground water is being withdrawn than is being recharged.

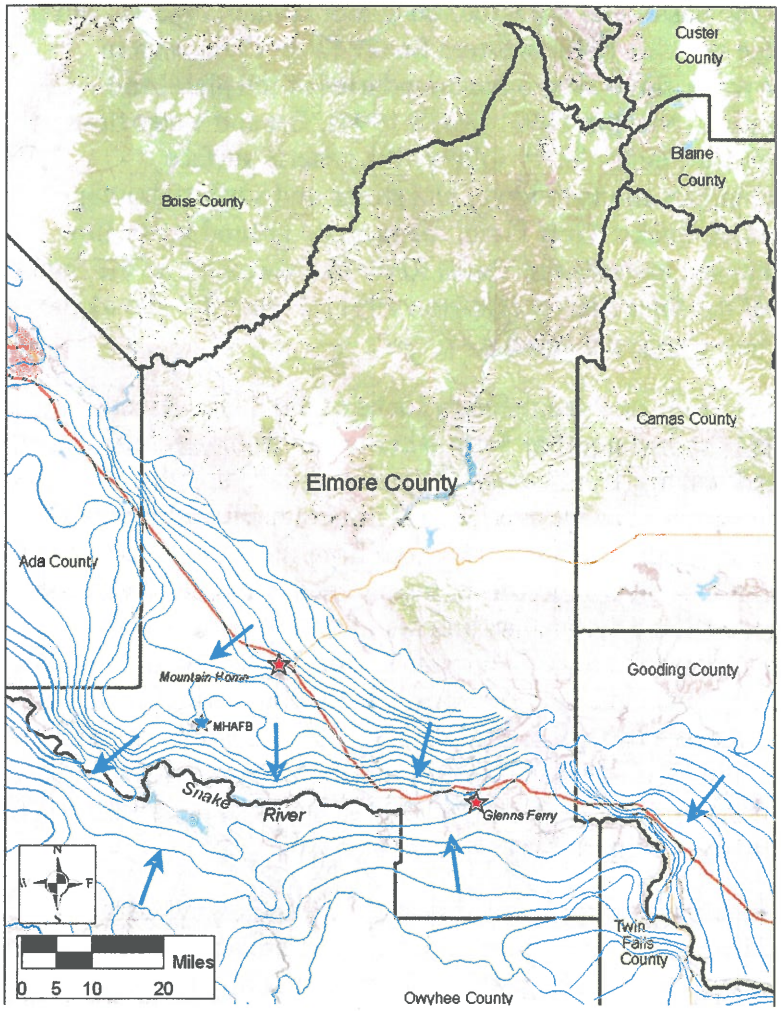


Figure 2-3. Ground water flow directions.

2.4 Ground Water Quality

Nitrate is present in shallow ground water beneath southern Elmore County at concentrations that occasionally exceed the drinking water standard of 10 milligrams per liter (mg/L). Arsenic has been detected in exceedance of the drinking water standard of 0.010 mg/L in ground water throughout Elmore County.

3 Statewide Nitrate Priority Areas and Rankings

As part of the goal to restore degraded ground water, DEQ has developed a list of NPAs throughout the state where ground water has been compromised due to nitrate contamination. The list ranks NPAs in the state based on severity of nitrate degradation; a ranking of 1 indicates the most severely impacted area in the state. A statewide map depicting current NPAs and rankings is provided in this section.

In 2001, DEQ, in consultation with the Ground Water Monitoring Technical Committee—comprised of staff from IDWR, ISDA, USGS, and the Idaho public health districts—delineated nitrate-degraded ground water areas using ground water quality monitoring analytical results combined with hydrogeologic and land use data. The first NPA delineation document was published in 2002. These initial NPAs can be viewed on DEQ's website at *www.deq.idaho.gov/media/472607-final_nitrate_priority_area_ranking_2002.pdf.*

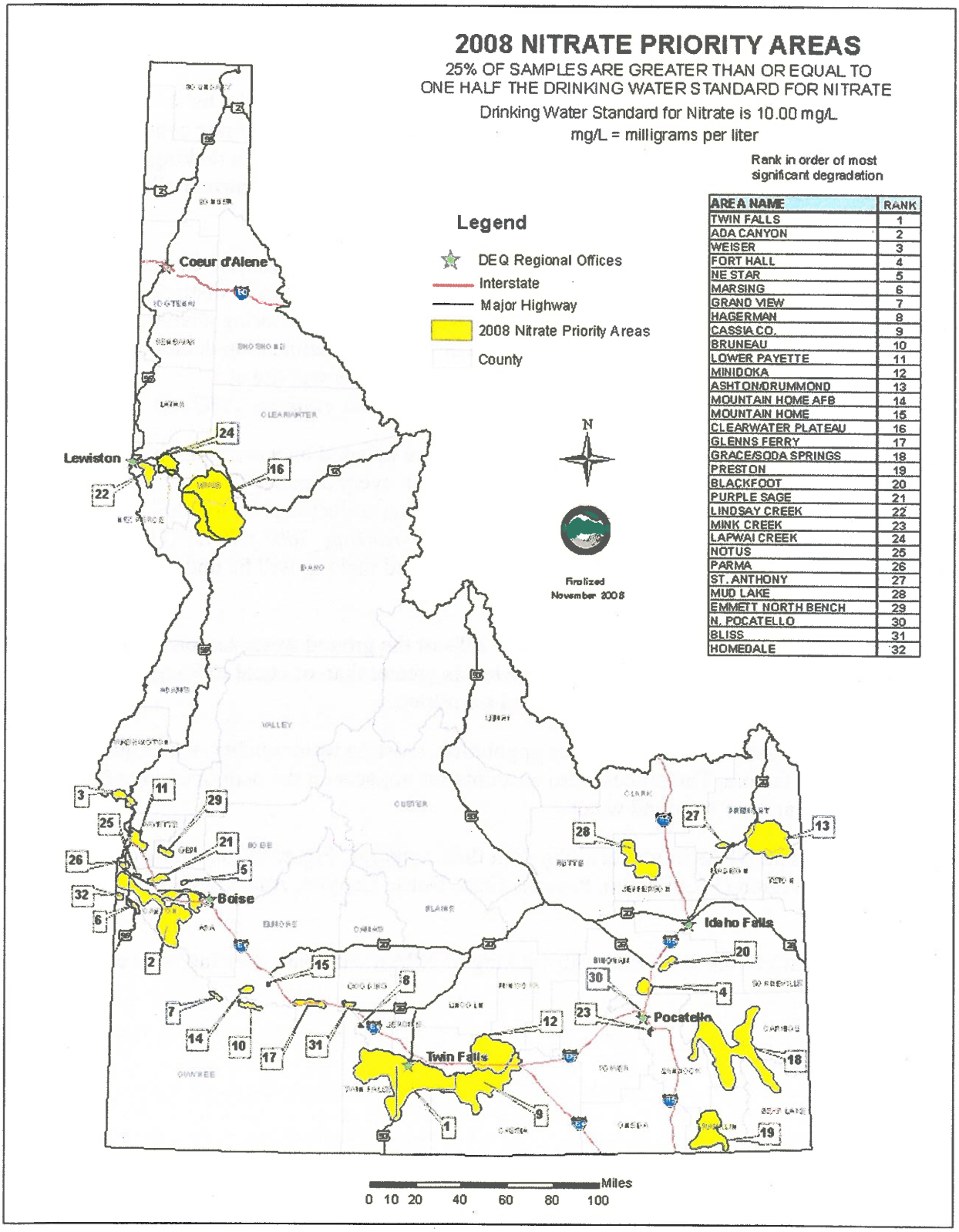
Data used to define and rank the priority of each area are updated on a continual basis. However, updated NPA delineations and rankings only occur about every 5 years. The most recent delineation document was published in 2008 based on data collected prior to 2007 and is located on DEQ's website at *www.deq.idaho.gov/media/471611-ranking_2008.pdf.* DEQ began reevaluating the NPAs in 2012. The areas, boundaries, and ranking will be updated by incorporating data collected from 2007–2011.

The main criteria in identifying a NPA requires 25% of the ground water samples collected, in a hydrogeologically similar area, contain nitrate levels greater than or equal to 5 mg/L or one-half of the 10 mg/L federal drinking water standard for nitrate.

Areas are ranked based on criteria such as population, existing water quality, water quality trends, and other factors. The process also accounts for impacts on the beneficial uses (other than water supply) of an area's ground water.

Figure 3-1 shows 32 NPAs in Idaho, along with their rankings. Figure 3-2 is a map of the NPAs in DEQ's Boise region (Washington, Payette, Gem, Boise, Canyon, Ada, Owyhee, and Elmore Counties).

Table 3-1 summarizes the 2008 statewide ranking of NPAs, with data showing nitrate levels in each area.



AREA NAME	RANK
TWIN FALLS	1
ADA CANYON	2
WEISER	3
FORT HALL	4
NE STAR	5
MARSING	6
GRAND VIEW	7
HAGERMAN	8
CASSIA CO.	9
BRUNEAU	10
LOWER PAYETTE	11
MINIDOKA	12
ASHTON/DRUMMOND	13
MOUNTAIN HOME AFB	14
MOUNTAIN HOME	15
CLEARWATER PLATEAU	16
GLENNS FERRY	17
GRACE/SODA SPRINGS	18
PRESTON	19
BLACKFOOT	20
PURPLE SAGE	21
LINDSAY CREEK	22
MINK CREEK	23
LAPWAI CREEK	24
NOTUS	25
PARMA	26
ST. ANTHONY	27
MUD LAKE	28
EMMETT NORTH BENCH	29
N. POCATELLO	30
BLISS	31
HOMEDALE	32

Figure 3-1. Map of 32 nitrate priority areas designated in Idaho, 2008.

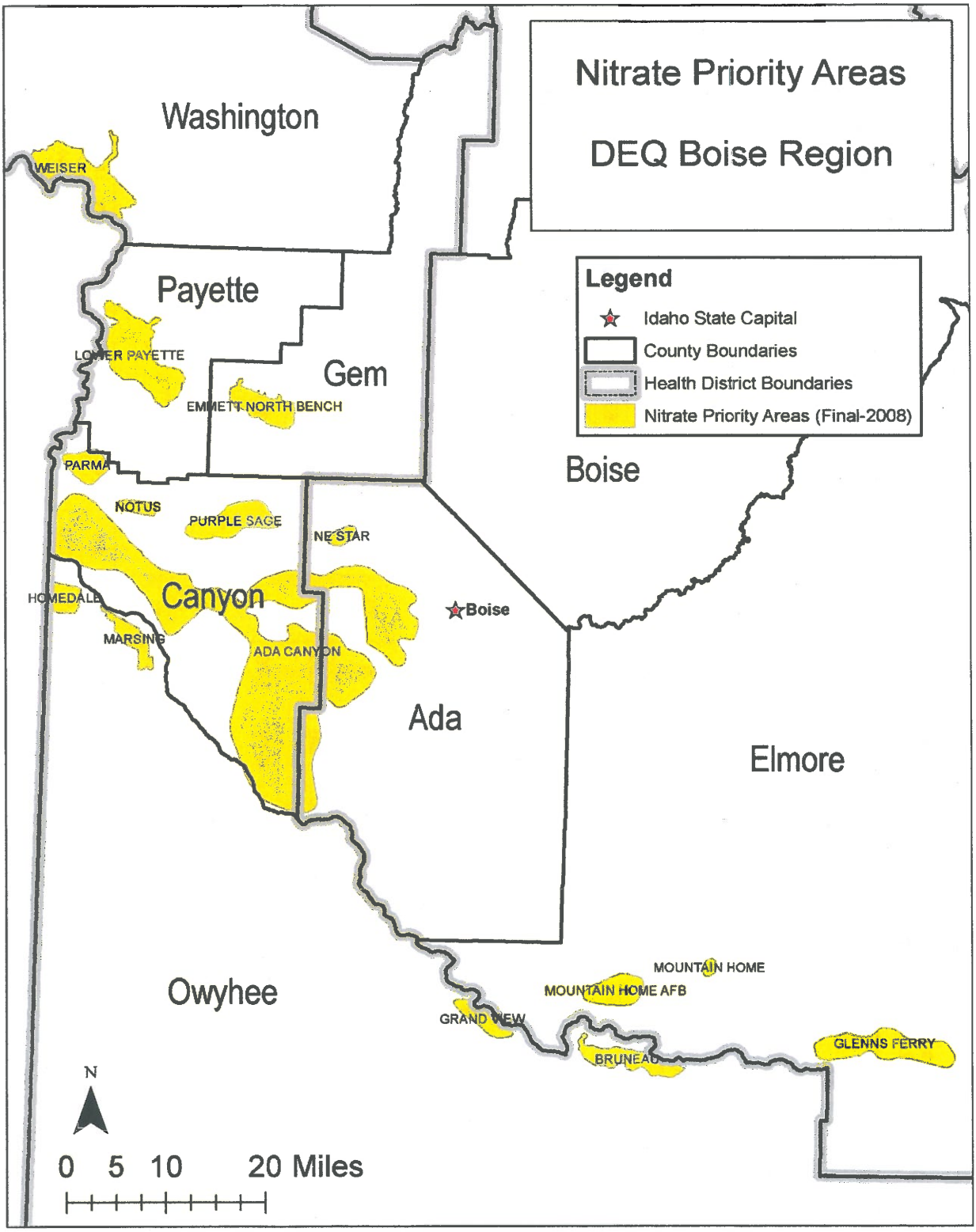


Figure 3-2. Nitrate priority areas in the Idaho Department of Environmental Quality's Boise region.

Table 3-1. Statewide nitrate priority area 2008 ranking summary sheet.

Area Name	DEQ Region[a]	Acres	Miles (mi^2)	Popu-lation	Total Samples[b]	Max NO_3	Mean NO_3	Media NO_3	# ≥ 2.0 mg/L	% ≥ 2.0 mg/L	# ≥ 5.0 mg/L	% ≥ 5.0 mg/L	# ≥ 10.0 mg/L	% ≥ 10.0 mg/L	# PWS/ SWA[c]	Trend	Score	Rank
Twin Falls	TFRO	379,520	593	63,354	605	41.0	5.20	4.90	536	89	288	48	34	6	88	Increase	24.78	1
Ada Canyon	**BRO**	**211,200**	**330**	**121,063**	**933**	**55.9**	**5.27**	**4.10**	**701**	**75**	**383**	**41**	**108**	**12**	**213**	**Increase**	**24.75**	**2**
Weiser	BRO	25,600	40	7,258	99	43.5	12.26	12.00	86	87	78	79	58	59	25	No change	24.59	3
Fort Hall	PRO	23,680	37	1,763	8	24.1	14.79	14.80	8	100	7	88	7	88	7	No change	24.20	4
NE Star	BRO	2,560	4	166	63	48.0	11.14	7.68	42	67	35	56	27	43	1	Increase	23.44	5
Marsing	BRO	5,760	9	521	33	37.0	9.57	7.90	21	64	19	56	13	39	12	Increase	21.98	6
Grand View	BRO	5,760	9	510	22	121.0	15.33	9.60	22	100	20	91	11	50	2	No change	20.55	7
Hagerman	TFRO	1,280	2	877	8	19.6	9.92	11.00	8	100	5	63	5	63	4	Insufficient	20.45	8
Cassia Co.	TFRO	193,280	302	17,525	384	40.0	6.34	5.74	331	86	224	58	65	17	48	No change	20.32	9
Bruneau	BRO	11,520	18	23	4	110.0	43.40	31.70	3	75	3	75	3	75	0	Insufficient	19.80	10
Lower Elmore	BRO	26,880	42	6,718	119	28.0	6.05	4.74	83	70	57	48	22	19	25	No change	17.70	11
Minidoka	TFRO	147,200	230	18,395	319	83.0	5.35	4.32	224	70	131	41	27	8	56	No change	17.25	12
Ashton/ Drummond	IFRO	162,560	254	2,484	179	48.0	7.03	6.00	159	89	124	69	28	16	18	No change	16.83	13
Mountain Home AFB	BRO	8,960	14	8,903	36	28.9	7.00	5.41	29	81	20	56	8	22	8	No change	16.62	14
Mountain Home	BRO	1,280	2	100	35	40.0	9.96	5.80	29	83	19	54	10	29	4	No change	16.26	15
Clearwater Plateau	LRO	359,040	561	4,236	183	77.1	6.79	3.70	119	65	68	37	39	21	22	No change	16.25	16
Glenns Ferry	BRO	20,480	32	1,868	11	32.2	9.07	5.72	9	82	8	73	3	27	4	No change	15.99	17
Grace/Soda Springs	PRO	317,440	496	8,042	96	37.2	4.62	3.21	64	67	28	29	8	8	45	No change	15.59	18
Preston	PRO	106,880	167	8,178	59	30.8	5.15	4.19	40	68	24	41	6	10	23	No change	15.41	19
Blackfoot	PRO	15,360	24	1,100	15	16.0	6.98	5.64	15	100	9	60	3	20	13	No change	15.00	20

Area Name	DEQ Region[a]	Acres	Miles (mi^2)	Popu-lation	Total Samples[b]	Max NO_3	Mean NO_3	Media NO_3	# ≥ 2.0 mg/L	% ≥ 2.0 mg/L	# ≥ 5.0 mg/L	% ≥ 5.0 mg/L	# ≥ 10.0 mg/L	% ≥ 10.0 mg/L	# PWS/ SWA[c]	Trend	Score	Rank
Purple Sage	BRO	14,080	22	2,835	87	22.7	5.26	4.61	66	76	38	44	9	10	25	No change	14.72	21
Lindsay Creek	LRO	28,160	44	1,273	45	18.6	4.74	3.80	25	56	18	40	9	20	16	No change	14.12	22
Mink Creek	PRO	1,920	3	1,478	40	21.0	4.57	2.42	24	60	13	33	8	20	11	No change	13.85	23
Lapwai Creek	LRO	33,920	53	1,026	16	18.7	5.63	5.19	13	81	9	56	2	13	8	No change	13.72	24
Notus	BRO	2,560	4	135	6	10.2	5.76	6.93	5	83	4	67	1	17	0	Insufficient	13.71	25
Parma	BRO	7,040	11	890	17	15.0	4.83	5.36	10	59	9	53	3	18	3	No change	13.63	26
St. Anthony	IFRO	7,680	12	666	14	42.6	9.46	3.29	9	64	5	36	3	21	5	No change	13.18	27
Mud Lake	IFRO	81,280	127	1,309	52	20.0	3.90	2.89	33	63	14	27	4	8	11	No change	12.41	28
Emmett North Bench	BRO	10,880	17	887	27	17.0	4.65	3.69	19	70	9	33	3	11	3	No change	12.15	29
North Pocatello	PRO	1,920	3	4,464	11	8.9	4.62	3.80	11	100	3	27	0	0	11	No change	10.35	30
Bliss	TFRO	7,040	11	76	24	8.6	3.19	3.11	16	67	7	29	0	0	0	No change	8.79	31
Homedale	BRO	5,760	9	387	24	16.0	4.67	1.54	12	50	9	38	5	20	1	Decrease	7.90	32
Total	—	2,228,480	3,482	288,510	3,574	—	—	—	2,772		1,688	—	532	—	712	—	—	—

Notes: square miles (mi^2); milligram per liter (mg/L): nitrate (NO_3)
a. BRO = Boise Regional Office, IFRO = Idaho Falls Regional Office, LRO = Lewiston Regional Office, PRO = Pocatello Regional Office, TFRO = Twin Falls Regional Office
b. Number of sample sites within nitrate priority area
c. Number of public water systems (PWS) or source water assessments (SWA) within a nitrate priority area

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4 Elmore County Nitrate Priority Area Maps

The maps in Figure 4-1, Figure 4-2, and Figure 4-3 show the current NPAs identified for Elmore County. The NPA boundaries depicted on these maps are approximate, and the boundaries will change following the 2012 delineation process.

If you own a well and live in one of the NPAs, it is particularly important to test your well water on a regular basis. If your well is not in an NPA, this does not rule out the potential for nitrate contamination, so testing your well water regularly is still recommended. See Tab 14, Public Information and Outreach Materials, for private well owner information and analytical laboratory contacts.

More information is provided about nitrates in ground water on DEQ's website at *www.deq.idaho.gov/water-quality/ground-water/nitrate.aspx.*

An interactive map-based source of information on ground water quality areas where nitrate concentrations potentially degrade drinking water quality is found at *mapcase.deq.idaho.gov/npa.* If 25% of ground water samples collected in an area contain nitrate levels greater than or equal to one-half the federal drinking water standard (i.e., greater than or equal to 5 mg/L), the area qualifies as an NPA. The federal drinking water standard for nitrate, as set by the United States Environmental Protection Agency (EPA), is 10 mg/L.

To view an interactive map-based source of information on ground water quality analytical data collected by DEQ (or DEQ contractors), go to *mapcase.deq.idaho.gov/gwq/.*

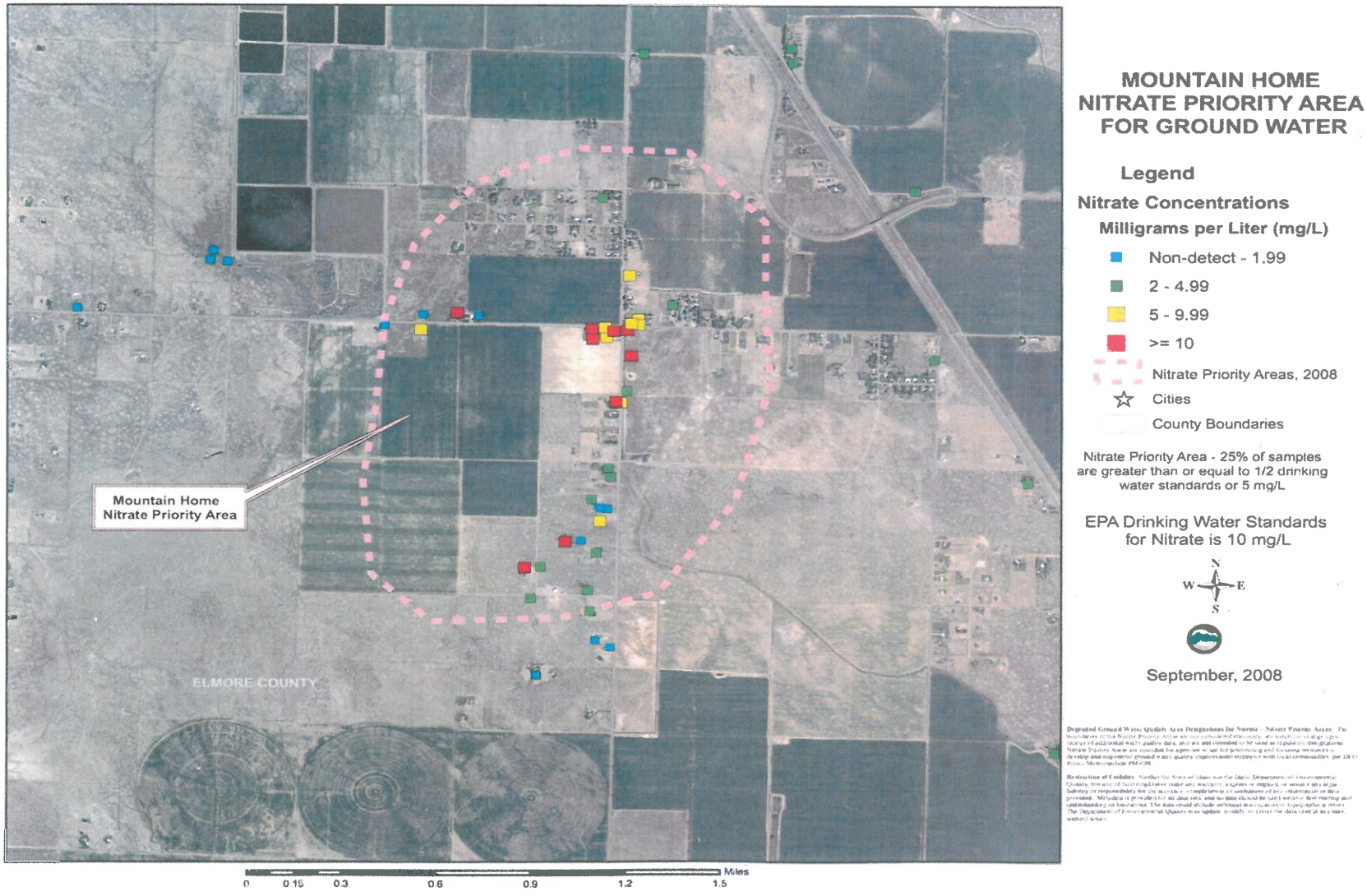

Figure 4-1. Mountain Home nitrate priority area for ground water.

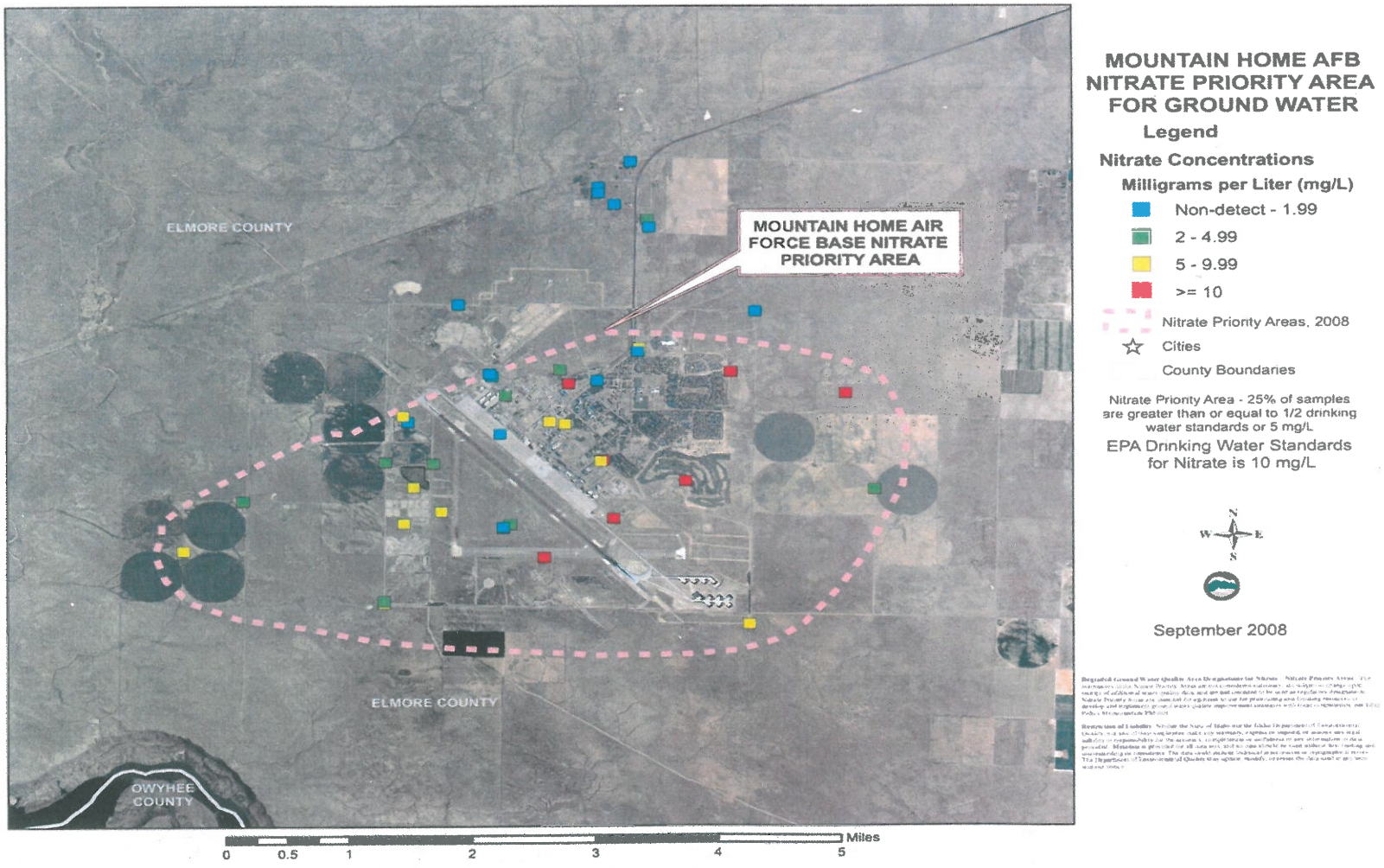

Figure 4-2. Mountain Home Air Force Base nitrate priority area for ground water.

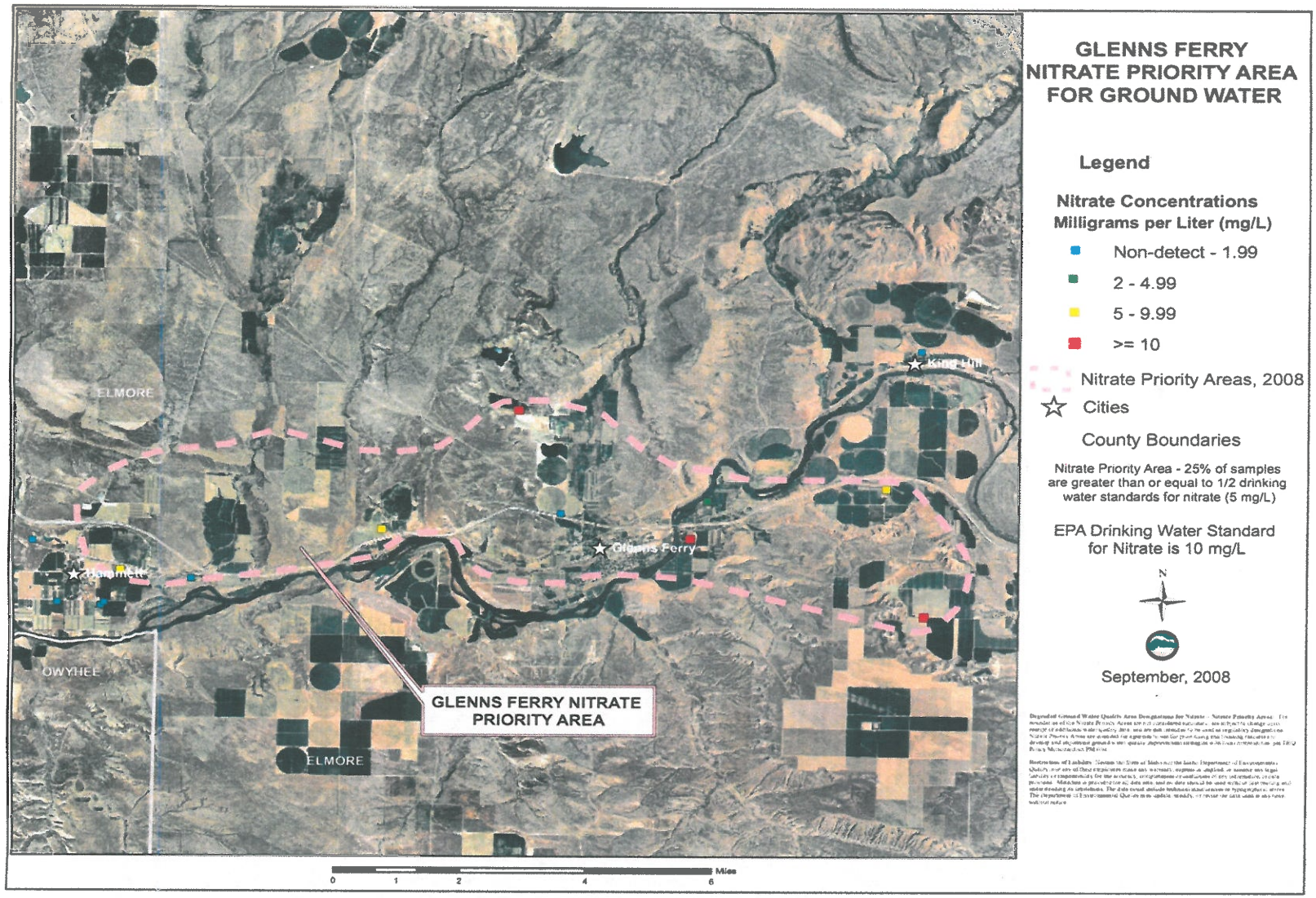

Figure 4-3. Glenns Ferry nitrate priority area for ground water.

5 Nitrate, Potential Nitrate Sources, and Other Ground Water Contaminants

5.1 Why is Nitrate a Concern?

Ground water supplies 95% of the water used in Idaho households and provides drinking water to more than 200 Idaho cities and towns. High levels of nitrate in drinking water are associated with adverse health effects. Therefore, strategies aimed at eliminating or minimizing nitrate contamination in the environment are critical.

Nitrate is a form of nitrogen. Nitrogen is an essential nutrient for plant growth; its compounds are vital components of plant foods and fertilizers. A variety of sources generate nitrate, such as precipitation, septic sewer systems, plants, waste from animals, nitrogen-based fertilizers, and other organic matter that returns nitrate to the soil as it decomposes.

Nitrate is the most widespread contaminant in Idaho's ground water; it is also the most preventable. In fact, it is "the most widespread contaminant found in Idaho ground water and the most common contaminant identified in public water drinking systems" (DEQ 2001). Nitrate levels in ground water serve as an indicator of the likelihood that other contaminants will reach the aquifer. While many other contaminants have been identified in Idaho ground water, nitrate's abundance, chemical mobility, and clear association with widespread land uses establishes it as a priority contaminant.

Ground water quality monitoring data collected by DEQ, IDWR, ISDA, and USGS revealed nitrate concentrations, in some areas of Idaho, above or near the maximum contaminant level (MCL) for drinking water established by EPA.

5.2 Drinking Water Maximum Contaminant Level

The drinking water MCL is the highest permissible level of contaminant in drinking water for it to be deemed suitable for human consumption. EPA has established federal drinking water standards, called MCLs, for many contaminants; the MCL for nitrate is 10 mg/L. The Idaho ground water quality standard for nitrate in drinking water is also 10 mg/L. Nitrate concentrations of 2 mg/L or greater generally indicate an anthropogenic (human-caused) impact to ground water.

People who rely on private wells for their drinking water supply are particularly at risk of exposure to high levels of nitrate and other contaminants. Private well owners are not required to test their water on a regular basis and may not be aware a problem exists. See Tab 14, Public Information and Outreach Materials, for private well owner information and analytical laboratory contacts. Public water systems (PWSs) are subject to the Safe Drinking Water Act and are required to test regularly. Nitrate levels in public drinking water must be below 10 mg/L MCL.

5.3 Health Effects

Elevated nitrate levels can pose a health threat for both humans and animals and can be an indicator of other water quality problems. The MCL of 10 mg/L is based on studies assessing the risk of developing methemoglobinemia (also known as blue baby syndrome) in infants as a result of exposure to nitrates. Methemoglobinemia is the inability to absorb oxygen in the blood system. Nitrate levels above the regulatory level have been associated with methemoglobinemia. The condition typically affects newborns and infants up to 6 months of age and occurs when nitrate is converted to nitrite in a child's body. Nitrite reduces oxygen in the child's blood, leading to shortness of breath and blueness of skin. This condition can be serious, causing the child's health to deteriorate rapidly over a period of days, and can result in death. Other populations potentially vulnerable to methemoglobinemia include pregnant women, adults with reduced stomach acidity, adults who lack a hereditary enzyme needed to combat effects of nitrate in their body, and dialysis patients (Cohen and Wiles 1996). Healthy adults are typically not affected short-term by elevated nitrate in water. However, long-term effects for consuming high-nitrate water are uncertain (Mahler et al. 2007).

High-nitrate water is generally a health hazard to animals only when used with high-nitrate feed. Short-term use of water with nitrate levels up to 40 mg/L is generally considered acceptable for animals. Water with nitrate levels greater than 100 mg/L is not recommended for livestock (Mahler et al. 2007). For more information about how water quality can affect animals, visit Washington State University's College of Veterinary Medicine website at *www.vetmed.wsu.edu/rdvm/links.aspx* or the University of Idaho's College of Agricultural and Life Sciences website at *www.avs.uidaho.edu/.*

5.4 Nitrate in Ground Water

Nitrate is soluble in water and can easily pass through soil to ground water supplies. Ground water is the primary source for drinking water in the Elmore County area; therefore, ground water with high nitrate levels can potentially impact drinking water reserves. Nitrate can persist in ground water for decades and accumulate at high levels as more nitrogen is added to the soil every year and leaches into the ground water. High levels of nitrate in soil, ground water, and drinking water can originate from the application of nitrogen in the form of commercial fertilizer and animal waste, legume crop plow-down, and septic tank failures. Shallow wells, wells in sandy soil, or wells that are improperly constructed or maintained are more likely to have nitrate contamination than deeper wells with protective casings and effective well seals. Nitrate in ground water is often an indicator of aquifer vulnerability and may suggest the presence of other contaminants. The presence of higher concentrations of nitrate in ground water is generally associated with certain land use activities (Tab 6). Whenever nitrogen-containing compounds come into contact with soil, a potential for nitrate leaching into ground water exists. Nitrate is highly soluble and will stay as a solution in percolation water after leaving the root zone until it reaches ground water. Nitrate is difficult to remove from water; it cannot be removed from water by boiling, filtration, disinfection, or water softening. Water treatment that is effective in removing nitrate includes distillation, reverse osmosis, and ion exchange.

6 Potential Nitrate Sources

"It's not a matter of who is most responsible.
What's important is that you do what you can in the hope that
what you do matters."—unknown

Sources of nitrate include both point and nonpoint sources. A point source is a distinct and mappable supply of contamination. Nonpoint source pollution occurs with no visible or obvious point from which the contamination originates. Identified below are land use practices often serving as both point and nonpoint sources associated with nitrate contamination. When these land use practices are managed appropriately, they do not result in the degradation of water quality. However, poor management or inadequate control over such land use activities can lead to decreased water quality.

6.1 Well Construction

Older well construction standards did not offer the level of protection to ground water that more current standards require. Older well seals can allow contaminants from the land surface to move down along the outside casing of the well toward ground water. A well with multiple-screened intervals may create cross-contamination between aquifers. Also, improperly abandoned wells provide a direct connection between the land surface and the aquifer, allowing surface contaminants an easy path to ground water. Each circumstance or combination of issues can increase the probability of developing a nitrate contamination problem within an aquifer.

6.2 Residential Land Uses

6.2.1 Fertilizer Application, Irrigation Practices, and Other Residential Activities

The following activities associated with residential development are possible contributors to nitrate problems in residential areas:

- Excessive use of fertilizer on lawns, gardens, and other landscaping
- Excessive use of water on lawns, gardens, and landscaping
- Animal waste management (pastures and kennels)
- Septic system discharge

The combination of these activities may be a potential source of nitrate contamination in ground water.

Pastured animals on small acreages can also degrade ground water if not managed properly. According to Scott Jensen with the Canyon County Cooperative Extension Service, "Pasture management involves more than just grass care. It involves managing the interrelationships among animals, plants, and soil" (Jensen 2002).

Information for rural residential homeowners is currently available from the University of Idaho Extension and through the Homestead Assessment System (Home*A*Syst). Home*A*Syst helps

homeowners, farmers, or ranchers determine how safe their drinking water is, assess practices and activities that may potentially contaminate ground water, and take action. Worksheets and factsheets are available at *homeasyst.idahoag.us/* to assist with site evaluations, identify practices known to increase the risk of contaminated drinking water, and help develop an action plan for reducing risk.

6.2.2 Septic Systems

Domestic septic systems may contribute to elevated concentrations of nitrate in ground water. The standard household septic system is not designed to effectively treat wastewater for nitrates. Properly operating systems deliver a certain amount of nitrate to the ground water (an average of about 45 mg/L of nitrate [EPA 1978]). Generally, this source of nitrate is not a concern when the volume of wastewater is relatively small compared to the volume of ground water.

Ground water problems can occur in areas where high septic densities exist. Primarily, these sites are found within cities' urban growth boundaries or in more isolated subdivisions. Low-density settings have little impact as ground water dilutes the discharged wastewater and spreads pollutants over a large area. As densities increase, discharge volumes increase as well and may overcome the ground water's ability to dilute wastes, thereby increasing the potential for contamination.

Idaho's septic system regulations under the "Individual/Subsurface Sewage Disposal Rules" (IDAPA 58.01.03) and "Rules Governing the Cleaning of Septic Tanks" (IDAPA 58.01.15) are implemented through Idaho's public health districts, with technical assistance from DEQ. In cases where the concentration of nitrate entering ground water may be a problem, additional treatment systems can be placed on the septic tanks, reducing the effluent nitrate concentration to 27 mg/L or 16 mg/L.

In NPAs, local public health districts may require a ground water impact analysis to be conducted for all proposed subdivisions. This assessment determines the number of septic tanks permitted on a single subdivision site, avoiding any adverse impact on ground water quality. These analyses are referred to as nutrient-pathogen studies. DEQ reviews the nutrient-pathogen studies on behalf of each health district.

Additionally, health districts perform day-to-day activities to regulate septic systems. These tasks include conducting site evaluations and inspections, issuing system permits, and issuing septic tank pumper licenses. Health district programs have also been developed to address key issues, such as establishing design standards and acceptable waste management practices for private septic systems; establishing criteria under which sanitary permits are issued to build private septic systems discharging pollutants to waters in the state; and establishing site soil evaluation standards for placement of septic systems.

Other DEQ septic system regulation responsibilities include conducting plan and specification reviews for large soil absorption systems or drainfields with greater than 2,500 gallons per day effluent; reviewing nutrient-pathogen studies for large soil absorption systems; heading the technical guidance committee; reviewing new technologies; and providing training courses for installers and pumpers.

6.3 Agriculture

Agricultural activities generate sources of nitrate through all forms of fertilizers, legume crops, and organic matter. Nitrogen not used by plant growth is stored in the soil and can leach to ground water as nitrate if sufficient water is available to carry the compound through various layers of soil (known as the soil profile).

Several factors influence the degree of nitrogen leaching in agricultural areas. For instance, soil type, irrigation practices, and volume of water applied affect how quickly and easily nitrate leaches through the soil. The nitrogen source itself, application season, and application rate directly impact overall levels of nitrogen introduced. Overapplication of nitrogen can occur in several ways:

- Applying fertilizers at rates greater than what the crop needs or can use
- Failing to account for residual and organic nitrogen sources already present in the soil profile, especially in the form of nitrogen-fixing crops
- Inappropriately timing nutrient application with regard to crop needs
- Failing to account for other nitrogen sources such as irrigation water
- Failing to calibrate solid waste delivery systems to ensure uniform application over the entire land application area
- Failure to conduct nutrient analysis of solid waste and wastewater to determine the appropriate amount for land application

Irrigation systems may include gravity, solid set, hand line, wheel line, drip, surge, and center pivot. All systems have the potential to increase nitrate levels in ground water. Gravity or flood irrigation methods apply large volumes of water and are most effective in leaching nitrate through the soil profile and have the highest potential to degrade ground water quality.

A number of programs and activities address irrigation practices. The University of Idaho's Nutrient and Pest Management Program is an educational effort based on soil testing programs and soil fertility recommendations appropriate to soil type and crop. The NRCS, ISWC, and local soil and water conservation districts coordinate and implement a number of programs. Their focus is to use cost-sharing BMPs and educational outreach to reduce nutrient loads from agriculture and provide nutrient management planning and engineering technical support. These programs include the Environmental Quality Incentives Program (EQIP), Soil and Water Conservation Assistance Program, and State Water Quality Program for Agriculture. For additional program information, visit the NRCS website at *www.nrcs.usda.gov/wps/portal/nrcs/site/national/home/.*

6.4 Animal Feeding Operations and Dairies

An animal feeding operation is defined as holding or confining animals in buildings, pens, or lots. Sources of nitrate from such animal feeding operations are typically attributed to runoff, facility wastewater, and manure. To protect ground water, regulations regarding solid and liquid effluents are in place for outfits feeding more than 1,000 head of animals. Waste management for operations feeding less than 1,000 head of animals is voluntary.

The ISDA has the authority to promulgate and enforce rules for dairy operations. Noncompliance with the rules or discharge violations may result in revocation of authority to sell milk for human consumption. ISDA also conducts dairy waste inspections to prevent waste discharges and evaluate waste collection, treatment, handling, disposal, and management procedures for compliance with the federal Clean Water Act and ISDA regulations.

Additionally, ISDA collects ground water samples for nitrate analysis during annual inspections at all active dairies in Idaho. Every 5 years, ISDA will run nitrogen isotope tests on water samples from each dairy showing nitrate concentrations greater than 5 parts per million. ISDA also has authority to require further compliance and operation changes where evidence indicates a dairy is a nitrate source contributing to aquifer degradation. To date, follow-up has been restricted due to limited staff resources.

If a dairy or feedlot discharges into a surface water body, EPA issues a National Pollutant Discharge Elimination System (NPDES) permit.

Information on the location of dairies and feedlots with NPDES permits regulated and permitted by EPA can be found at *www.epa.gov/myenvironment/.* To access NPDES dairy and feedlot information for your area from this website, follow these steps:

- Enter your location, such as address, zip, city, county, water body, or park name.
- Select My Maps
- Select Water under the Map Contents box in the upper right corner of the map
- Select Water Dischargers.

6.5 Industrial and Municipal Wastewater Land Application Areas

Wastewater land application facilities generate nutrient-rich water called process water. Such facilities are among the few sources of nitrate regulated by DEQ. These facilities are required to obtain a wastewater reuse permit to apply wastewater to land. DEQ's regulatory waste discharge permit system requires land appliers to take the following steps:

- Schedule process water applications to meet crop nutrient and water needs.
- Develop management plans for irrigation and nutrient use.
- Develop water and nutrient budgets.
- Sample wastewater, ground water, soil, and crops as required by permit.
- Prepare reports on how activities are functioning and whether the process is meeting established goals.

6.6 Ground Water Recharge

Ground water recharge occurs naturally when standing water is allowed to seep into the ground. Depending on the specific conditions, recharge with contaminated water may adversely affect the ground water quality.

Managed ground water recharge takes place when water is pumped into a recharge basin or is injected into the ground in compliance with an IDWR permit.

6.7 Ground Water and Surface Water Interaction

The mutual influence and interaction between ground water and surface water quality are important considerations in evaluating sources of nitrate contamination. In some areas, ground water and surface water are hydraulically connected and combine to form a single water source. Thus, if degraded water quality exists in one, it may degrade the other as well.

6.8 Stormwater Disposal

As land development increases, so does the volume of concentrated stormwater runoff. A variety of contaminants, including nutrients, are contained in the runoff. However, nitrate is found in relatively low concentrations in most stormwater and has a low-to-moderate potential for contaminating ground water, either through surface percolation (the downward movement of water through soil and rocks) or through subsurface infiltration and injection practices (Pitt et al. 1994).

Stormwater management methods use ponds (retention, detention, evaporation, and infiltration), seepage beds, swales, or a combination. Practices infiltrating stormwater (i.e., allowing stormwater to enter the soil's surface) have the greatest potential to contribute nitrate to ground water.

Over the past 30 years, a number of local jurisdictions have implemented stormwater management functions at various levels of authority. These entities often require detention or retention of stormwater runoff during real estate development activities. In practice, jurisdictions requiring on-site control of stormwater flows after development activities are completed expect the runoff to be retained on site. This is due to few developments having access to drains, canals, or water bodies for off-site stormwater discharge.

In addition, federal stormwater regulations require some municipalities, construction sites greater than 1 acre, and certain types of industrial facilities to obtain permits from EPA to discharge stormwater. Even in some urban areas, NPDES permits are required for stormwater runoff. For more information on NPDES permit requirements, see EPA's website at *http://yosemite.epa.gov/r10/water.nsf/Stormwater/home*.

Federal regulations require municipalities to implement programs controlling runoff from new development and redevelopment areas.

6.9 Other Ground Water Contaminants

Although nitrate is a common and widespread contaminant in ground water within Elmore County, other potential and major contaminant sources exist and are briefly discussed in this section. Also note there are several naturally occurring contaminants (metals) present in ground water within Elmore County.

Regardless of the efforts operators and regulators undertake to protect human health and the environment, releases still occur. Accidental spillage, leaking underground pipes, or improper handling of waste materials can all lead to ground water contamination.

6.9.1 Petroleum Sources

Often businesses, such as gas stations, store large quantities of petroleum in underground storage tanks (USTs). Gas tanks and/or piping leaks have the potential to leak benzene, ethyl benzene, toluene, xylenes, and naphthalene that can impact shallow ground water. DEQ conducts inspections of UST facilities on a regular basis to confirm current standards are being met and tanks are not leaking.

DEQ inspectors are required to visit each facility at least once every 3 years; however, leaks may still occur even with prevention systems in place. DEQ oversees petroleum release investigation and cleanup under the leaking underground storage tank (LUST) program. An overview of USTs and LUSTs in Idaho is provided on DEQ's website at *www.deq.idaho.gov/waste-mgmt-remediation/storage-tanks.aspx*.

6.9.2 Hazardous Chemicals

Businesses in Elmore County often use chemicals as part of their function or process. There are several laws and regulations to govern the purchase, transport, storage, use, and handling of these chemicals. Inspectors at DEQ regularly examine businesses using and storing chemicals considered to be hazardous and operations generating hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Their purpose is to confirm materials are handled properly and facilities are in compliance with hazardous waste rules and regulations. Some of these chemicals do enter the environment and are present in ground water. DEQ oversees chemical release investigation and cleanup activities under its ground water program, RCRA program, and/or remediation program. An overview of hazardous waste management in Idaho is provided on the DEQ website at *www.deq.idaho.gov/waste-mgmt-remediation.aspx*.

6.9.3 Mapping Ground Water and Drinking Water Contaminant Sources

EPA offers an online mapping application for several of the federally regulated programs in Idaho affecting ground water and drinking water.

The EPA-managed MyEnvironment search application is designed to map a cross section of environmental information based on the user's location. Information includes but is not limited to the following:

- Toxic releases and hazardous waste sites (TOXMAP).
- Superfund information links.
- Brownfields Program information links.
- Hazardous waste information links.
- Cleanups in my community map.
- USGS streamflow levels data for stream gauges.
- Water conditions for local water bodies based on EPA Water Quality and Impaired Stream data.
- EPA local drinking water provider and community water system information from the Safe Drinking Water Information System.
- Water quality monitoring activities—Provides the ability to identify monitoring stations in your neighborhood by the pollutants they measure.

- New and expiring facility permits in my area—This feature reports new and expiring permits (from EPA's Integrated Compliance Information System database) given to facilities that emit pollutants to water in your neighborhood.
- Watershed—This feature shows your area's watershed and connects you to EPA's Surf Your Watershed website, which provides a variety of links to citizen-based groups at work in your watershed, water quality data, and more.
- Fish advisories per area.

To get started, visit *www.epa.gov/myenvironment/* and enter your location.

If you are interested in other online mapping tools, see Tab 4 and or Tab 9 for links to interactive map-based sources of information on ground water quality.

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7 Elmore County Water Quality Activity Overview and Accomplishments

Table 7-1 gives an overview of completed water quality activities and accomplishments in Elmore County.

Table 7-1. Overview of activities completed to improve ground water quality in Elmore County.

Drinking Water Systems and Wells	
Number of active public water systems in Elmore County as of 2009	46
Number of Elmore County well permits issued by Idaho Department of Water Resources since January 1950	3,162
Drinking Water Source Protection Plans	
Mountain Home Air Force Base	2003
King Hill Domestic Water and Sewer	2002
Elmore County Ground Water Quality Improvement and Drinking Water Source Protection Plan	2014
Elmore County Grant Awards for Water Quality Projects	
§319[a] Grant Awards: Nonpoint Source Implementation for Surface Water and Ground Water	
2005 S-168 Y-Drain and Y9 Drain Clover Creek	$110,000
2012 S458 Cold Springs Creek Riparian Restoration	$40,476
Total §319 funds since 2005	$150,476
Surface Water Pollutant Load Allocations (Total Maximum Daily Loads [TMDL])	
South Fork Boise River	2009
Upper Boise River Watershed	SBA 2000
Mores Creek	2010
Snake River–Hells Canyon	2004
Lower Boise River	TMDL 2000; TMDL addendum 2008; 5-year review 2009
Lake Lowell	2010
Lower Boise River Nutrient and Tributary Subbasin Assessment (SBA)	SBA 2001

a. Refers to §319 of the federal Clean Water Act.

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8 General Strategies For Improving Ground Water Quality

The general and regional management strategies provided in this section address nitrate in ground water and offer suggestions to maintain or improve ground water quality in each NPA. These same strategies will also serve to protect and preserve shared ground water and drinking water resources throughout Elmore County.

The implementation of these strategies is voluntary and based on the premise that citizens of Elmore County want to manage their activities to limit potential impacts on their ground water resource. Along with participating entities, state and federal agencies will periodically evaluate the progress and success of these strategies in reducing nitrate levels in each NPA.

The goals of these strategies are as follows:

- Reduce nitrate contamination in each NPA to protect public health.
- Improve ground water quality in Elmore County to an extent that warrants removing the NPAs from the statewide nitrate priority list.
- Protect and preserve the ground water and drinking water resources in the county.

The proposed objectives to support achieving these goals are as follows:

- Make resources available to local governments to assist their decision-making processes.
- Educate the public about health risks associated with drinking water containing high nitrate levels and promote testing of private wells for nitrate concentrations.
- Educate the public about sources of nitrate in ground water to promote prevention, protection, and remediation efforts in maintaining and improving water quality.
- Implement agricultural, industrial, and residential BMPs to reduce nitrate loading of the ground water, thereby improving ground water quality.

Plan development would include the following:

- Gather a team of government and local advocates.
- Seek opportunities to hold education and outreach events.
- Attain grant funding if local communities show interest.

For each implementing agency, there is a table of action items (Table 8-1 through Table 8-9) including general time frames for completing each item. Detailed information regarding the agencies and the resources they offer is found under Tab 11, Agencies, Regulatory Directories, and Website Resources.

Table 8-1. Idaho Department of Environmental Quality implementation tasks for Elmore County nitrate priority areas.

Action Item	Time Frame
Facilitation and Reporting	
Report implementation updates at Interagency Ground Water Protection Committee meetings (see the Idaho Ground Water Protection Interagency Cooperative Agreement [DEQ 2008])	As necessary
Post summary reports and revised plan on DEQ website.	As necessary
Work with county commissioners and other local officials to evaluate adequacy of local zoning and land use planning initiatives.	As requested
General Information and Education	
Provide copies of the final *Elmore County Ground Water Quality Improvement and Drinking Water Source Protection Plan* and any future updates to local decision makers, including Elmore County commissioners, the Elmore County growth and development office, city planning and zoning office, and Elmore Soil and Water Conservation District. Post plan and revisions on DEQ's website.	As needed
Work with communities to promote proper fertilizer application in parks, cemeteries, schools, and golf courses.	Ongoing
Make the final plan available to public via DEQ's website.	Ongoing
Grant Oversight	
Award and oversee §319 Clean Water Act grant project funding and source water protection grant projects.	Annually
Public Drinking Water Systems	
Review and approve all plan and specification submittals for engineering design of new public water supplies.	As needed
Prepare source water assessments for all new public water supplies.	As needed
Coauthor or write, review, and certify drinking water source protection plans for public water systems (PWSs).	As requested
Require and review PWS monitoring data to confirm drinking water complies with all state and federal maximum contaminant levels.	Frequencies vary

Action Item	Time Frame
Use sanitary survey inspections to familiarize PWSs with source delineation information, provide an opportunity for PWSs to update their potential contaminant inventory, disseminate relevant outreach and education materials, and solicit involvement in the state's drinking water protection certification program.	As needed
Monitoring	
Compile regional water quality data. With input from other agencies and the public, adjust boundaries of the Elmore County nitrate priority area as appropriate.	2008; approximately every 5 years thereafter
Conduct coordinated ground water monitoring as needed to better characterize nitrate concentrations and trends, identify the vertical extent of contamination, and/or identify the presence of nitrate contamination within and outside of the nitrate priority area boundaries.	Regularly
Within a regional context, assess whether a ground water quality monitoring project is warranted and whether funding is available.	Second quarter of each year

Table 8-2. Central District Health Department implementation tasks for Elmore County nitrate priority areas.

Action Item	Time Frame
Septic Systems	
Provide information about treatment system options and septic system maintenance at public locations in cities that are in or near nitrate priority areas and at the Elmore County courthouse.	Ongoing
Continue with the review and permitting of all new, expanded, and replacement septic systems.	As requested
Inspect existing septic systems when new homes or home extensions are added.	As needed
Private Water Supply Wells and Public Health	
Provide information regarding the responsibilities of being a private well owner/user at public locations in cities in or near nitrate priority areas and at Elmore County offices. Include information and resources for understanding proper well location with respect to potential sources of contamination, installation procedures, and wellhead maintenance.	Ongoing
Provide information about the health effects of nitrate at public locations in cities that are in or near nitrate priority areas and at Elmore County offices.	Ongoing
Promote regular testing of private wells to determine if any contamination is present.	Ongoing
Provide sample bottles and information about analytical laboratories for testing of private wells.	As requested

Table 8-3. Idaho Association of Soil Conservation Districts and Idaho Soil and Water Conservation Commission implementation tasks for Elmore County nitrate priority areas.

Action Item	Time Frame
Public Awareness, Education, and Outreach	
Prepare an information and education plan that includes timelines, public service announcements, brochures, mailings, demonstrations, and tours.	Ongoing
Contact producers to inform them of the following: –Water quality goals and objectives for projects implemented –Potential agricultural impacts of nitrate contamination in ground water –Benefits of proper nutrient management plan (NMP) –Irrigation water management (IWM) benefits –Details on incentive programs –Information and education programs	Ongoing
Conduct IWM outreach: –Conduct irrigation workshops. –Make soil moisture monitoring equipment available to producers interested in optimizing their irrigation applications. –Encourage sprinkler irrigators to take advantage of the Idaho Power Energy Efficiency for Agricultural Irrigation program.	As requested Ongoing
Identify additional high-priority landowners and offer them information on the benefits of implementing NMP and IWM, using data and outputs compiled over the course of the project.	Ongoing
Work with communities to promote proper fertilizer application in parks, cemeteries, schools, and golf courses.	Ongoing
Work with county commissioners and other local officials to evaluate adequacy of local zoning and land use planning initiatives.	As requested
Provide information and training to private landowners who accept manure or compost from animal feeding operations for use as fertilizer. Develop and distribute the following information and training: –Identify target audience. –Create informational brochures, flyers, or pamphlets as guidance for proper storage and application methods. –In coordination with the University of Idaho Extension and other interested groups, develop seminar and presentation materials for workshops. –Disseminate information to the target audience through mailings, workshops, or other means as appropriate.	Ongoing

Action Item	Time Frame
Best Management Practices—Program Planning	
Submit a §319 Clean Water Act grant application to fund implementation of best management practices (BMPs) as outlined in the district's 5-year plan.	2012
Establish a steering committee of Elmore Soil and Water Conservation District members and staff from IASCD, ISWC, DEQ, ISDA, and NRCS to develop a project plan that will include the following: –Criteria for prioritizing activities in the nitrate priority areas for NMP, IWM, and total maximum daily loads (TMDLs) –Contracting procedures for NMP –Estimating incentives to be offered and methods of distribution –Monitoring and evaluation of BMP effectiveness –Information and education outreach options and methods to be used	2012
Prepare a work plan that includes the following components: –Develop a producer contact list for project information and education. –Prepare a written conservation plan and contract for NMP development and implementation (NMP services to include soil sampling, analysis, and planning for crops with cost share). –Educate landowners on IWM and installation and monitoring of water sensors. –Track load reductions. –Deliver project findings reports to DEQ biannually. –Provide an educational campaign to major producers and other landowners. –Evaluate unregulated manure storage sites to identify risk to ground water supplies. –Develop remediation plans and implement BMPs, including evaluation of agronomic application rates.	2001–2014
NMP, IWM, and BMP Implementation and Evaluation	
Implement NMPs: –Identify and focus on high-priority or critical areas. –Review water quality monitoring reports and data from other agencies. –Contact critical landowners. –Develop and conduct NMPs. –Follow-up with producers to review and evaluate NMPs. –Compile general (nonproducer-specific) information in report to DEQ.	Ongoing
IWM evaluations: –Identify fields to evaluate. –Install soil moisture equipment. –Analyze data. –Report findings to producers. –Compile general (nonproducer-specific) information in report to DEQ.	Ongoing

Action Item	Time Frame
Implement BMP effectiveness evaluation program: –Analyze soil sampling data and fertilizer receipts to determine compliance with NMPs. –Analyze soil moisture sensor data to evaluate irrigation management recommendations. –Review ground water quality results for samples collected within all nitrate priority areas identified in Elmore County.	Fourth quarter of each year
Perform Biannual Reviews and Prepare §319 Clean Water Act Grant Report for DEQ	
Conduct status review with each participant.	Annually
Prepare report with general information about activities and results conducted and submit to DEQ in a time frame that coincides with the invoice period (as required by DEQ).	As required
Prepare a work plan that includes the following components: –Develop a producer contact list for project information and education. –Prepare a written conservation plan and contract for NMP development and implementation (NMP services to include soil sampling, analysis, and planning for managing the amount, source, placement, form, and timing of the land application of nutrients and soil amendments for plant production).	Implementation schedule to be set after funding is obtained.

Notes: Idaho Association of Soil Conservation Districts (IASCD), Idaho Soil and Water Conservation Commission (ISWC), Idaho Department of Environmental Quality (DEQ), Idaho State Department of Agriculture (ISDA), and Natural Resources Conservation Service (NRCS)

Table 8-4. United States Department of Agriculture, Natural Resources Conservation Service implementation tasks for Elmore County nitrate priority areas.

Action Item	Time Frame
Public Awareness, Education, and Outreach	
Coordinate with and support the Elmore Soil and Water Conservation District information and education plan.	Ongoing
Provide timely announcements of all Farm Bill sign-ups and other funding opportunities for implementation of best management practices (BMPs) to address resource concerns.	Ongoing
Work with producers involved in Natural Resources Conservation Service (NRCS) programs and provide information on the following: –Water quality resource concerns on their lands –Potential impacts of nitrate contamination to ground water quality –Proper nutrient management –Irrigation water management (IWM) and the benefits of high-level IWM implementation –Use of conservation crop rotation and other practices to mitigate ground water quality impacts	Ongoing
Participate in community activities and meetings, providing technical assistance and information on BMPs to address ground water and surface water quality concerns.	Ongoing
Coordination with Conservation Partners	
Inform all conservation partners of the availability of special Environmental Quality Incentives Program (EQIP) funding (Agricultural Water Enhancing Program and Cooperative Conservation Partnership Initiative) to target specific resource concerns and areas of concern.	Ongoing
Work with the NRCS, State Ground Water Monitoring Technical Committee and the soil and water conservation districts to use ranking and other processes to help target special resource concerns (e.g., nitrate priority areas).	Ongoing
Participate in and coordinate with any special projects (e.g., §319 Clean Water Act projects) active in the county to help implement BMPs. Assist ISWC and soil and water conservation district, when requested, in evaluating program success through water quality modeling of estimated load reductions.	Depends on active projects
Participate as a member of the Idaho State Department of Agriculture, Agricultural Ground Water Committee and the Idaho Department of Environmental Quality, Ground Water Monitoring Technical Committee to stay abreast of current issues and inform partners of NRCS activities.	Ongoing

Action Item	Time Frame
Implementation of Conservation Practices	
Use the existing field office work plan to accomplish the following: –Provide information to producers on incentive programs, such as EQIP to implement BMPs. –Develop contracts with producers and assist with the implementing needed conservation practices that address resource concerns. –Use NRCS tools to track progress and results.	Ongoing
Contract with interested producers and provide technical assistance to implement conservation practices that address ground water and surface water quality protection and/or mitigation. Include the following management practices: –Irrigation water management –Nutrient management –Pest management –Conservation crop rotation –Residue management –Prescribed grazing Include the following structural practices and improved technologies: –Upgrade irrigation systems and technologies to improve efficiency –Filter strips and riparian buffers –Sediment basins and pump-back systems –Waste management systems and manure management on animal feeding operations	Ongoing

Table 8-5. Idaho State Department of Agriculture implementation tasks for Elmore County nitrate priority areas.

Action Item	Time Frame
Education and Outreach	
Through the Idaho State Department of Agriculture, Agriculture Ground Water Coordination Committee, complete the following: –Request that University of Idaho fertilizer application guides are reviewed and updated as needed. –Promote education and outreach regarding potential sources of nitrate. –Promote voluntary implementation of best management practices (BMPs).	Ongoing
Work with communities to promote proper fertilizer application in parks, cemeteries, schools, and golf courses.	Ongoing
Work with county commissioners and other local officials to evaluate adequacy of local zoning and land use planning initiatives.	As requested
Water Supply Wells	
Promote use of Home*A*Syst as a tool to assess and change homeowner and farmstead activities that have the potential to contaminate drinking water wells.	Ongoing
Livestock Facility Waste Management	
Continue to require nutrient management plans (NMPs) at every licensed dairy and beef cattle feeding operation designated as a confined animal feeding operation (CAFO) (> 1,000 head of animals) to help control runoff and infiltration of animal waste.	Ongoing
Identify all beef cattle feeding operations (< 1,000 head of animals) that could be considered significant contributors of contaminants to waters of the state and work with the operators to properly manage waste and develop NMPs for their facilities.	Ongoing
Manure Storage and Application	
Continue to aid owners and operators in developing the required manure storage and application procedures in beef and dairy facility NMPs.	Ongoing
Develop information and training for private landowners who accept manure or compost from animal feeding operations for use as fertilizer. Develop the following components: –Identify target audience. –Create informational brochures, flyers, or pamphlets as guidance for proper storage and application methods. –In coordination with the University of Idaho Extension and other interested groups, develop seminar and presentation materials for workshops. –Disseminate information to the target audience through mailings, workshops, or other means, as appropriate.	Ongoing

Action Item	Time Frame
Monitoring	
Collect samples annually for coliform bacteria and nitrate at licensed dairies.	Ongoing
Every 5 years, monitor dairy wells that have nitrate levels greater than 5 parts per million for nitrogen isotopes.	
Conduct ground water monitoring for pesticides in accordance with the Idaho Pesticide Management Plan and federal Insecticide, Fungicide and Rodenticide Act grant while coordinating with the Idaho Department of Environmental Quality and Idaho Department of Water Resources.	

Table 8-6. Idaho Department of Water Resources implementation tasks for Elmore County nitrate priority areas.

Action Item	Time Frame
Information and Education	
Using the well permitting process, provide information to homeowners concerning the potential presence of nitrate in drinking water supplies.	Ongoing
Work with county commissioners and other local officials to evaluate the adequacy of local zoning and land use planning initiatives if requested.	As requested
Monitoring	
Through the Statewide Ambient Ground Water Quality Monitoring Program, conduct ground water monitoring to better characterize nitrate contamination, determine nitrate concentration trends, and identify the presence of nitrate contamination inside and outside the nitrate priority area boundaries.	Ongoing

Table 8-7. Confined animal feeding operation siting team implementation tasks for Elmore County nitrate priority areas.

Action Item	Time Frame
The Idaho State Department of Agriculture (as team lead of Idaho's confined animal feeding operation [CAFOs] site advisory team), Idaho Department of Environmental Quality, and Idaho Department of Water Resources will continue to review sites proposed for CAFOs, determine environmental risks, and submit site-suitability determinations to counties.	As requested

Table 8-8. University of Idaho Extension implementation tasks for Elmore County nitrate priority areas.

Action Item	Time Frame
Information and Education	
Provide education to all fertilizer users through University of Idaho Extension educators, workshops, website, and materials, such as newsletters and factsheets. Information should address proper irrigation and fertilizer application procedures, rates (based on University of Idaho Extension guidance), and timing, with consideration for crop up-take, migration of excess nitrates, and impacts to ground water.	Ongoing
Encourage ongoing outreach and provision of information by the University of Idaho Extension to small acreage operations and part-time agricultural operations (hobby farms).	Ongoing
Distribute University of Idaho Extension publications to homeowners in priority areas through mass mailings or through distribution by local retailers and develop new publications as needed. Educational materials should address fertilizer and pesticide application rates and impacts to ground water.	Ongoing
Promote demonstration projects and disseminate results.	Ongoing

Table 8-9. Municipalities implementation tasks for Elmore County nitrate priority areas.

Action Item	Time Frame
Ground Water Quality Protection	
"Environmental Quality—Health" (Idaho Code §39-1) states, "Cities, counties and other political subdivisions of the state shall incorporate the ground water quality protection plan in their programs and are also authorized and encouraged to implement ground water quality protection policies within their respective jurisdictions..." (Idaho Code §39-126, available on the Internet at *legislature.idaho.gov/idstat/Title39/T39CH1SECT39-126.htm*).	As appropriate
Education and Outreach	
Work with residents, landscape contractors, cemeteries, and schools within jurisdiction to promote proper fertilizer application.	Ongoing
Work with DEQ, ISDA, IDWR, IASCD, ISWC, other agencies, and local governments to gather their input on local zoning, plans, and ordinances.	As needed
Comprehensive Planning	
"Local Land Use Planning" (Idaho Code §67-65) states that "When considering amending, repealing, or adopting a comprehensive plan, the local governing board shall consider the effect the proposed amendment, repeal, or adoption of the comprehensive plan would have on the source, quantity and quality of ground water in the area" (Idaho Code §67-6537, available on the Internet at *legislature.idaho.gov/idstat/Title67/T67CH65SECT67-6537.htm*). Review and consider maps of watersheds, aquifer recharge areas, ground water basins, and unique water resource conditions to accurately determine the potential impacts of development on water quality and water resources in areas of interest. Identify existing and potential water pollution sources (landfills; chemical storage sites; abandoned commercial, industrial, and mine properties; and agricultural nonpoint sources) when considering land use changes. Identify appropriate land uses in areas of sensitive water resources.	As appropriate
Ordinance Development	
Develop ordinances that support the comprehensive plan and ground water and drinking water resource protection. (Elmore County Zoning and Development Ordinance available on the Internet at *http://www.elmorecounty.org/Land%20Use/PDFs/Z&D%20Ordinance%202012-09-19/Chapter%2025%20Wellhead%20Protection.pdf* Consider a requirement for additional studies to assess impacts to ground water quantity and/or quality due to development activities and changes in land use.	As appropriate

Action Item	Time Frame
Planning and Zoning Decisions	
Consider potential impacts to water quality when evaluating land use changes. Use the confined animal feeding operation (CAFO) siting team to review sites proposed for CAFOs and determine environmental risks. Consider the harmful impacts that may occur to ground water resources before approving the following: –Fertilizer manufacturing and/or distribution centers –Commercial endeavors that use large volumes of liquids in aboveground and belowground tanks –Placement and/or expansion of CAFOs or animal feeding operations –Subdivision development; specifically residential densities using individual wells and septic systems	As appropriate
Work with the Association of Idaho Cities and Idaho Association of Counties as necessary and appropriate.	Ongoing and as appropriate

Notes: Idaho Department of Environmental Quality (DEQ), Idaho State Department of Agriculture (ISDA), Idaho Department of Water Resources (IDWR), Idaho Association of Soil Conservation Districts (IASCD), and Idaho Soil and Water Conservation Commission (ISWC)

9 Drinking Water Source Protection

PWSs can be publicly or privately owned and serve many Idahoans. A PWS is defined as an operation serving at least 25 people or 15 service connections for at least 60 days per year. Many citizens get their drinking water from private wells that are not regulated under the Safe Drinking Water Act. As such, private well owners are responsible for ensuring their water is safe to drink.

Over 95% of Idaho's drinking water comes from ground water. Protecting this resource is largely done through voluntary action where communities develop programs to help prevent drinking water supplies from being contaminated. These programs may involve creating a drinking water protection plan and implementing regulatory and/or nonregulatory management practices. Most human activities at the land surface cause some change in water quality in the aquifer below. Where ground water is the primary source of drinking water, a community should protect the physical area around the wellhead and the areas above which the well pumps water for drinking.

The maps in this section show Elmore County PWSs and their source areas, known as delineations, or the portions of the watershed or subsurface area contributing ground water to wells. Figure 9-1 depicts the delineations for all of Elmore County. Figure 9-2 and Figure 9-3 depict the individual nitrate priority areas in relation to city boundaries and local public water system sources. Figure 9-4 provides a county view of domestic and PWS wellheads. Each well can act as a conduit for ground water contamination. The maps in this section are provided as reference tool when making land use decisions that may affect ground water and/or drinking water quality in Elmore County.

Preventing ground water contamination requires thoughtful management and cooperation on the part of citizens and the various levels of government. In many cases, land use planning efforts by both city and county governments are the best instruments available for protecting aquifers. If potential contamination sources are prevented from being located over critical recharge areas, the risk of contamination can be greatly reduced.

DEQ sees great potential to protect public health and preserve and protect Idaho's drinking water by providing community leaders a county-wide mapping application that depict drinking water capture zones and delineations. These maps should be considered as land use decisions are made.

For interactive map-based sources of information on ground water quality and for areas where nitrate concentrations potentially degrade drinking water quality, visit *http://mapcase.deq.idaho.gov/npa/*.

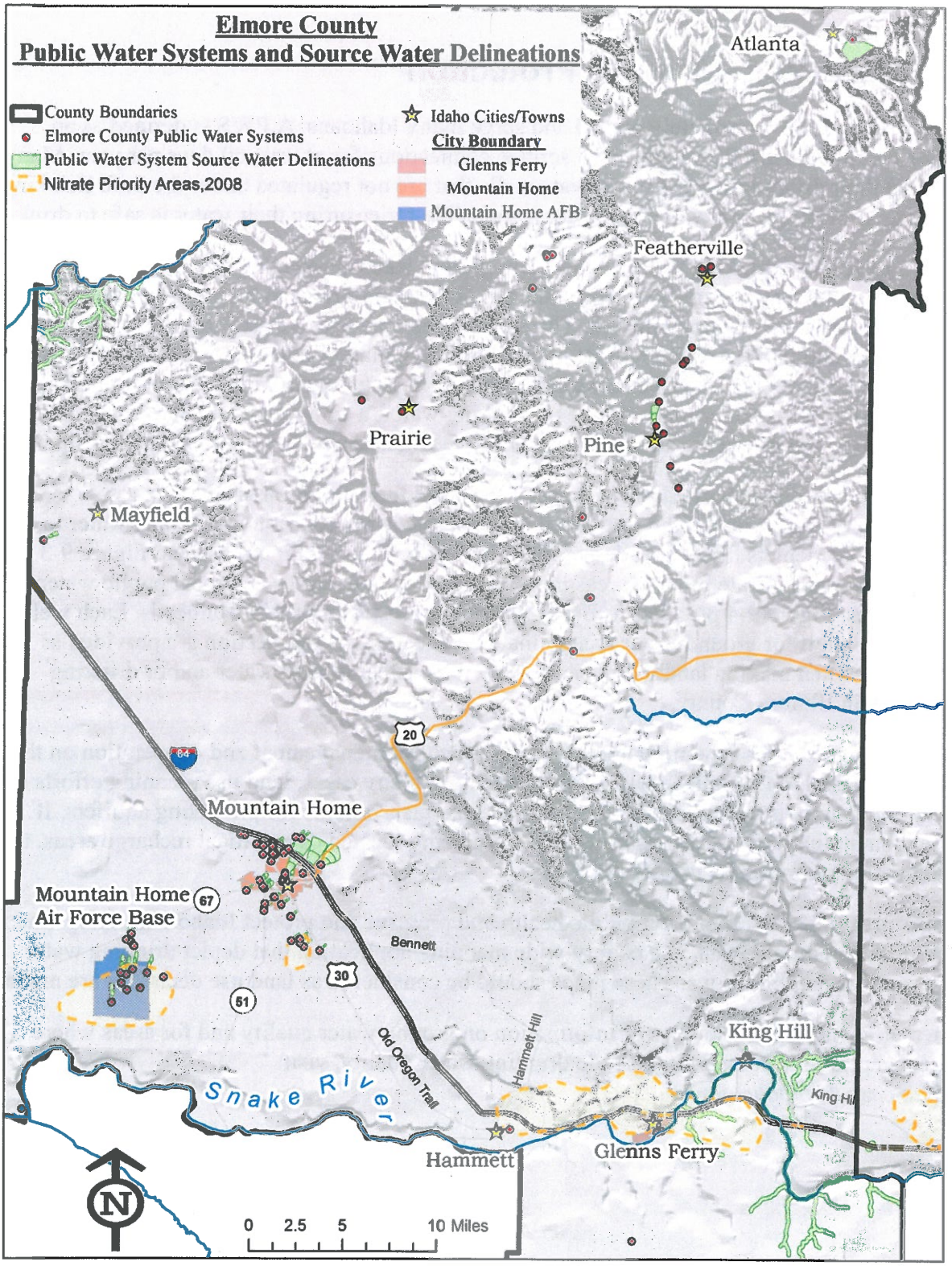

Figure 9-1. Public water system source areas relating to Elmore County nitrate priority area.

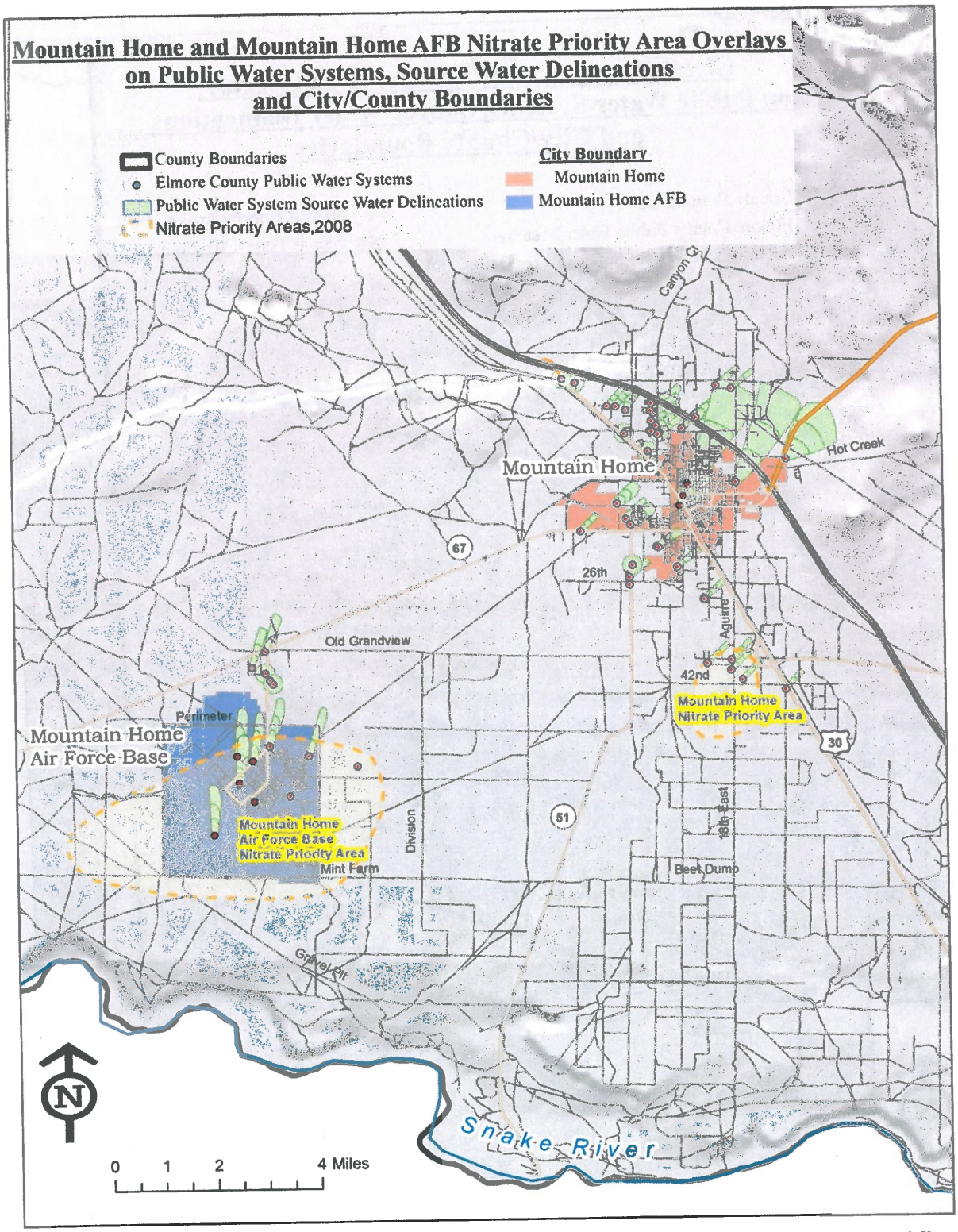

Figure 9-2. Mountain Home and Mountain Home AFB nitrate priority area overlays on public water systems and city/county boundaries.

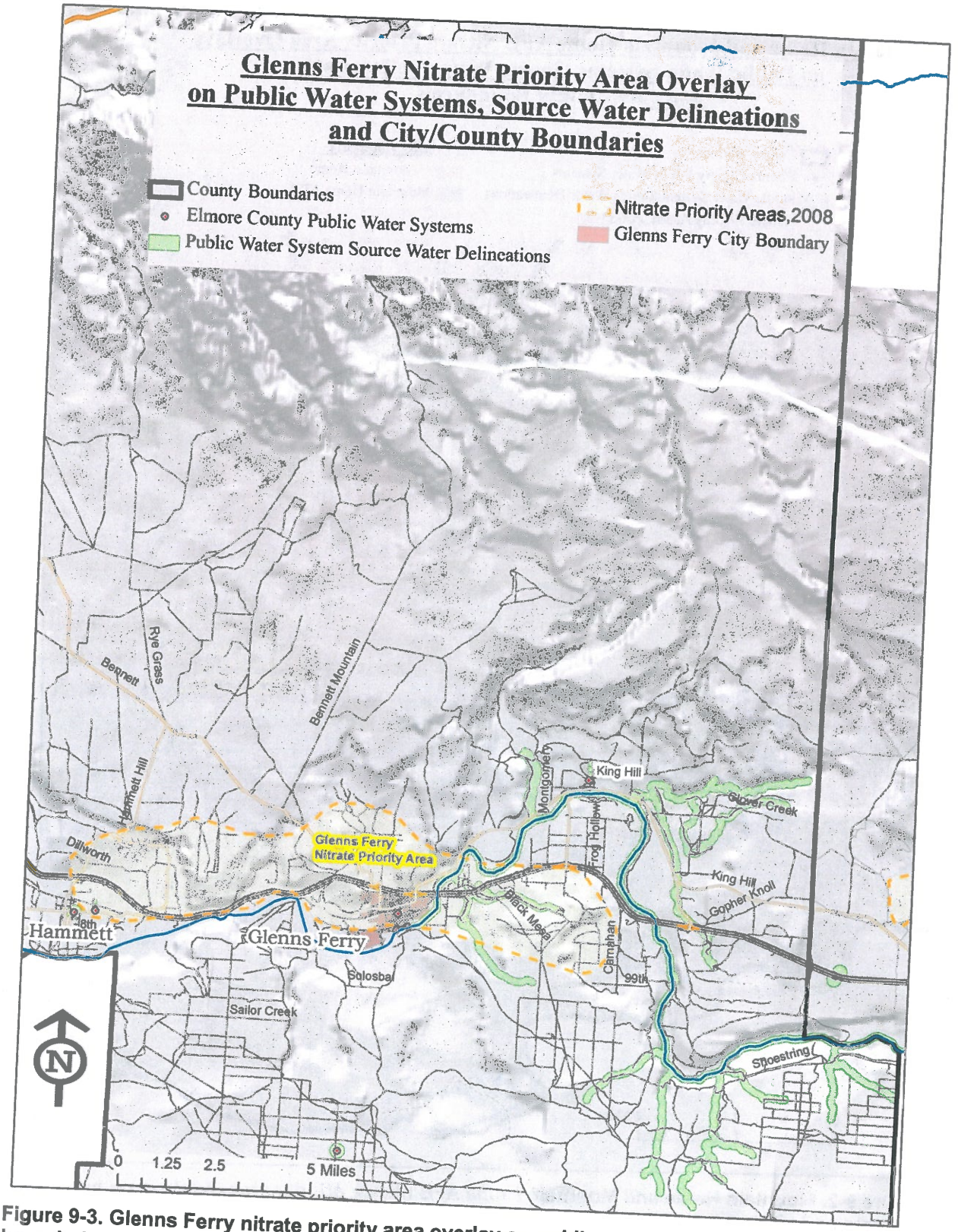

Figure 9-3. Glenns Ferry nitrate priority area overlay on public water systems and city/county boundaries.

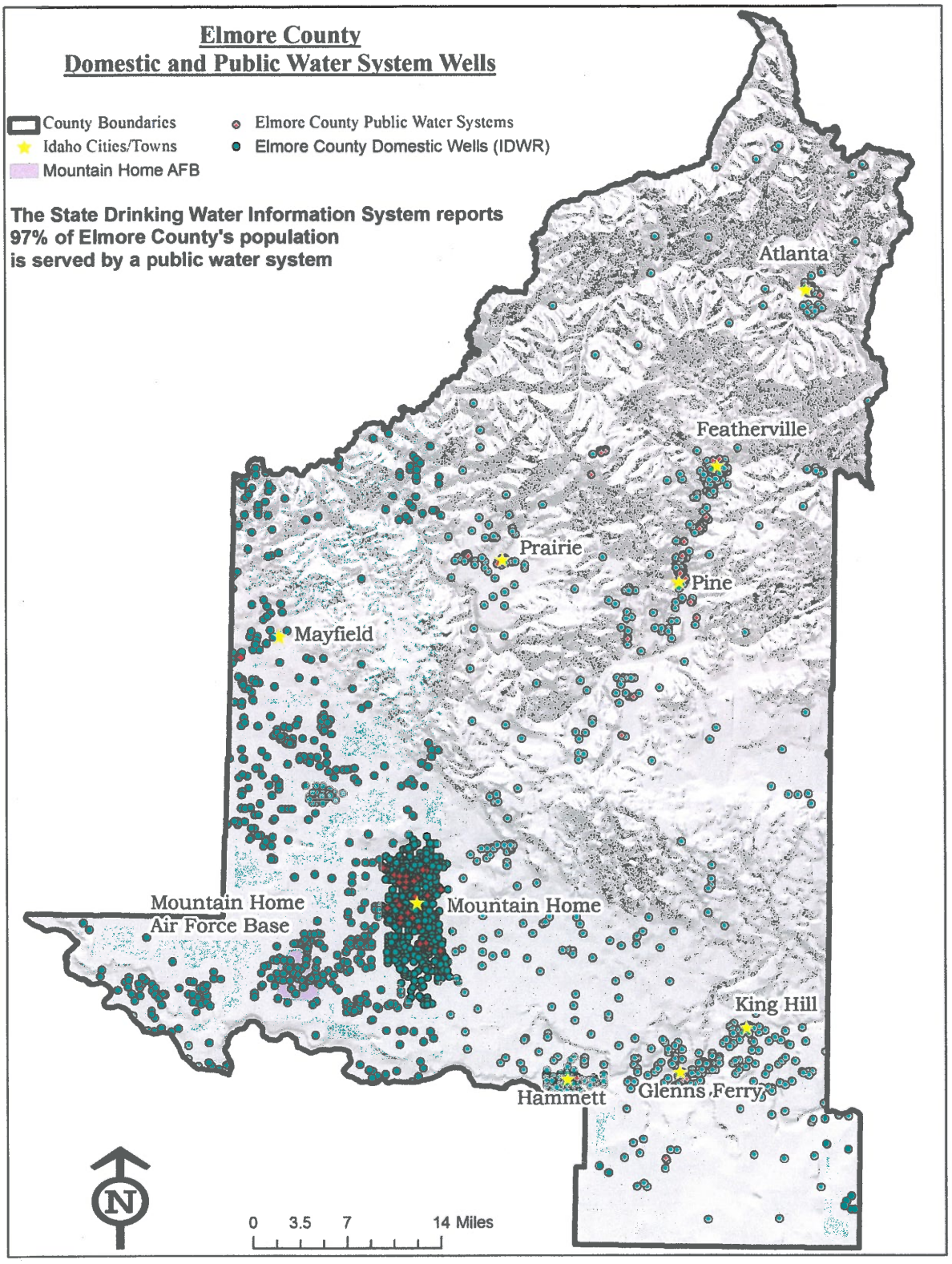

Figure 9-4. Elmore County domestic and public water system wells.

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10 Surface Water Total Maximum Daily Loads

This section is provided as a resource for making land use decisions to protect surface water quality and to use as supporting documentation for funding requests about projects related to ground water and surface water quality.

Ground water and surface water are interrelated (Figure 10-1). Ground water is surface water (i.e., lakes, rivers, streams, or overland flow) that has percolated into and through the ground to an aquifer (the porous sediment or fractured rock below the water table). Ground water may move back into surface water bodies through seeps, springs, or base flow into a river or lake, depending on the geology of an area.

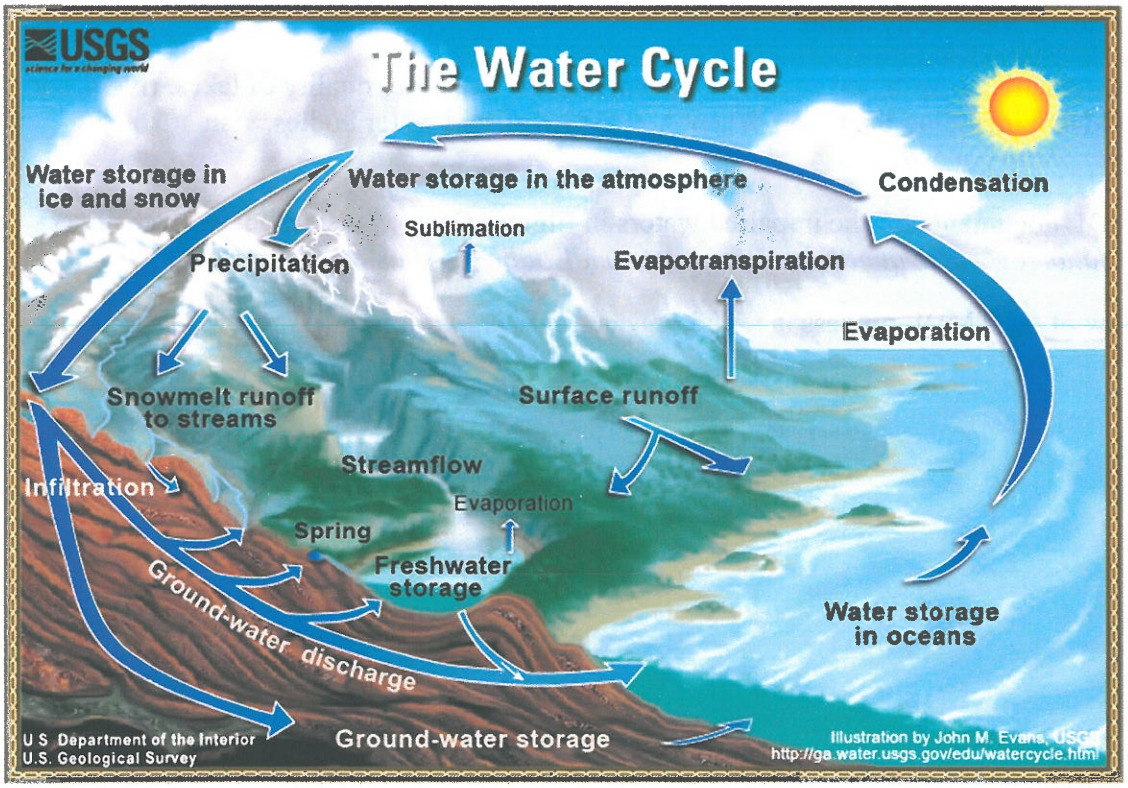

Figure 10-1. Interaction between ground water and surface water.

Many management practices known to protect ground water quality are also used to prevent nonpoint source surface water pollution. Unlike point sources, which are directly related to a specific source or facility, nonpoint sources are generally related to activities taking place at multiple locations throughout a watershed or large-scale activities. Nonpoint source pollution is the cumulative effect of activities such as fertilizer use, pesticide use whether for home or agriculture, oil disposed down storm drains, and various land use practices including urban development, agriculture, mining, and forestry. For these reasons, modifying land use activities can reduce and control nonpoint source pollution. Due to Idaho's rural nature, most water pollution in the state is related to nonpoint sources.

To restore degraded surface waters in the state, Idaho (DEQ specifically) must develop water quality management plans for its various water bodies. These are called subbasin assessments and total maximum daily loads (TMDLs). The TMDL provides a pollution budget written for point and nonpoint sources of pollution for that surface water body. It includes a calculation of the maximum amount of a pollutant a water body can receive from human-caused sources and still meet water quality standards. The pollution budget is expressed in terms of load: the amount of pollutant added to a water body during a given time or per a given volume of water.

There are a number of watersheds (drainage areas) within the county boundary. Each watershed is a basin or subbasin, depending on scale, and each may be subject to a TMDL.

To learn more about the quality of the surface water bodies in Elmore County, Figure 10-2 provides a point of reference. Information regarding the beneficial use support status and causes of impairment to a surface water can be found using the hydrologic unit code (HUC) number/name, or water body name.

To see an interactive, map-based source of information on the water quality of lakes, rivers, and streams in Idaho, including the Clean Water Act §303(d)-listed water bodies, visit *mapcase.deq.idaho.gov/wq2010/.*

To see TMDL documents for the impaired waters in Elmore County, visit the DEQ website at *www.deq.idaho.gov/water-quality/surface-water/tmdls/table-of-sbas-tmdls.aspx.*

An overview of the TMDL process is found *at www.deq.idaho.gov/water-quality/surface-water/tmdls.aspx*.

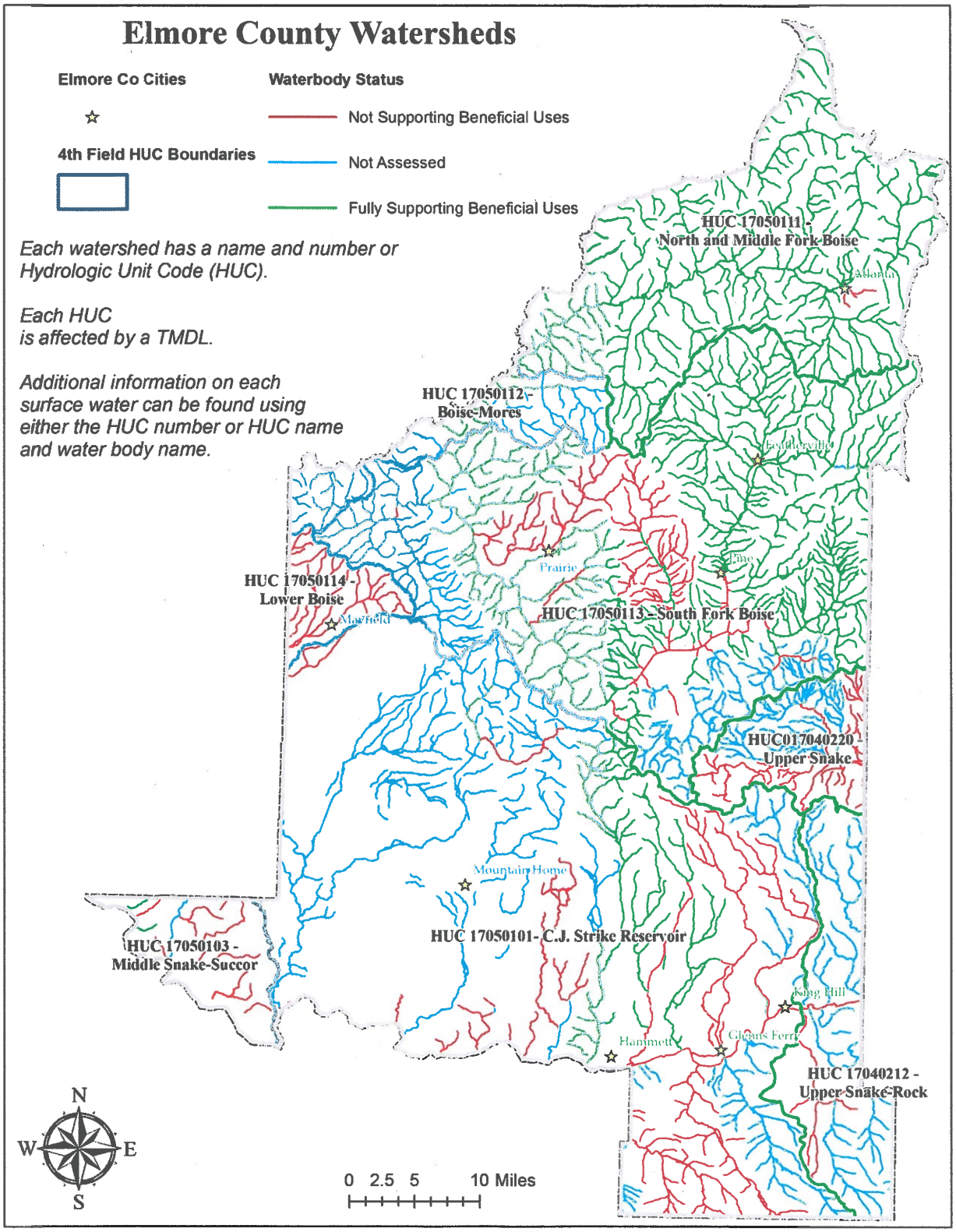

Figure 10-2. Elmore County watersheds.

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11 Agencies, Directories, and Website Resources

Table 11-1 lists entities that can assist in ground water quality management and/or drinking water protection. Additional information and resources can be found in section 11.1.

Table 11-1. Resources and authorities for ground water quality management in Idaho.

Resource	Phone Number and Website
Elmore Soil and Water Conservation District –Nutrient and irrigation water management plans –Grant opportunities –Technical assistance –Restoration and urban conservation	(208) 587-3616 *www.swc.idaho.gov*
Idaho Soil and Water Conservation Commission –Technical assistance to owners/operators of private lands for planning, implementing, and evaluating agricultural best management practices –Nutrient and irrigation water management plans	(208) 332-1790 *www.swc.idaho.gov*
Idaho State Department of Agriculture –Beef and dairy animal feeding operations –Confined animal feeding operation (CAFO) siting team –Pesticides	(208) 332-8500 *www.agri.idaho.gov*
Idaho Home Assessment System –Fertilizer storage, application, and handling –Animal waste –Lawn and garden management –Well condition assessment tools	(208) 332-8603 *homeasyst.idahoag.us/*
Idaho Department of Water Resources –Well construction, permits, underground injection –Water rights –Hydrogeologic studies	(208) 287-4800 *www.idwr.idaho.gov*
Natural Resources Conservation Service Technical assistance to implement conservation practices for erosion control and water quality	(208) 378-5700 *www.id.nrcs.usda.gov/*
Idaho Department of Environmental Quality –Ground water quality –Nutrient-pathogen studies –Public drinking water systems –Source water protection –CAFO siting team –CAFOs for swine, poultry, horses, sheep, mink, and deer –Wastewater permitting, large soil absorption systems, land application	(208) 373-0550 *www.deq.idaho.gov*

Resource	Phone Number and Website
Central District Health Department –Septic tanks and drainfields –Subdivision sanitary restrictions –Noncommunity drinking water systems –Smaller community drinking water systems –Private well owner assistance with water quality sampling	(208) 587-4407 (Health District 4 office) *www.cdhd.idaho.gov*
Idaho Water Resources Research Institute –Project WET –Outreach and training materials on water issues for teachers	(208) 332-4422 *www.uidaho.edu/research/iwrri/outreach/teachereducation* *www.projectwet.org*
University of Idaho Extension—Elmore County –Agricultural research results –Education and outreach for the general public	(208) 587-2136 ext. 509 *www.extension.uidaho.edu/elmore/*
University of Idaho Animal and Veterinary Science Department Water quality effects on animal health	(208) 885-6345 *www.uidaho.edu/cals/avs*
Idaho Rural Water Training and technical assistance for water and wastewater systems	(800) 962-3257 or (208) 343-7001 *https://irwa.sharepoint.com/Pages/training.aspx*
Association of Idaho Cities Ordinance development assistance	(208) 344-8594 *www.idahocities.org*

11.1 Regulatory Directory and Website Resources

The following is not intended as a source of regulatory guidance but is provided to direct readers to proper agencies.

11.1.1 Idaho Department of Environmental Quality

DEQ is responsible for protecting the quality of ground water in Idaho and relies on a combination of programs to protect ground water from pollution, clean up degraded ground water, and monitor and assess ground water quality. DEQ's ground water policy is to maintain and protect the existing high quality of Idaho's ground water and restore degraded ground water, where feasible. DEQ has identified areas, known as NPAs, where ground water quality has been degraded. DEQ conducts source water assessments to help PWSs understand potential threats to their public water supplies, and approves and regulates PWSs and wastewater systems. DEQ Ground Water Program staff in the state office can be contacted at (208) 373-0502. Ground Water Program staff in DEQ's Boise Regional Office can be contacted at (208) 373-0550.

See the DEQ web pages listed below for more information:

- Ground water information specific to nitrate contamination
  www.deq.idaho.gov/water-quality/ground-water/nitrate.aspx
- Information on private, domestic drinking water
  www.deq.idaho.gov/water-quality/ground-water/private-wells.aspx
- Drinking water protection information
  www.deq.idaho.gov/water-quality/source-water/protection.aspx
- Information regarding source water assessments of public drinking water systems
  www.deq.idaho.gov/water-quality/source-water/assessments.aspx
- Information on source water protection grants (when available)
  www.deq.idaho.gov/water-quality/grants-loans/source-water-protection-grants.aspx
- Information regarding the operation of swine and poultry facilities
  www.deq.idaho.gov/water-quality/wastewater/cafos.aspx
- Information on nutrient-pathogen studies for septic tank effluent evaluations
  www.deq.idaho.gov/water-quality/wastewater/septic-systems/nutrient-pathogen-evaluations.aspx
- Information on design of septic systems
  www.deq.idaho.gov/water-quality/wastewater/septic-systems/technical-guidance-manual.aspx
- 2010 interactive map of §305(b) Integrated Report
  mapcase.deq.idaho.gov/wq2010/

11.1.2 Idaho State Department of Agriculture

ISDA serves the agriculture industry and consumers through regulatory and service activities. ISDA safeguards the public, plants, animals, and environment through promotion, education, and regulation. ISDA is responsible for dairy and feedlot permitting and monitoring, pesticide management and monitoring, agricultural chemical regulation, and nutrient management. ISDA staff can be contacted at (208) 332-8500.

ISDA programs affecting ground water quality are described below:

- The Nutrient Management Program is designed to minimize adverse impacts on surface or ground water. Managing nutrients is a priority to protect agriculture's economic viability and the environment. For more information, visit *www.idahoag.us/Categories/Environment/nmp/indexnmp.php.* The ISDA Division of Animal Industries can be reached at (208) 332-8540. Additional CAFO information can be found at *www.idahoag.us/Categories/Animals/cattleFeedlots/indexcattlefeedlots.php.*
- Authority to regulate siting of CAFOs in Idaho rests with the counties. County ordinances can regulate CAFO zoning and contain environmental protection clauses and rules about waste removal. Counties can request an environmental risk assessment for site suitability. CAFO siting information is available at *www.idahoag.us/Categories/Environment/cafoSiting/indexsitingTeam.php.* ISDA Dairy & Eggs can be reached at (208) 332-8550. Additional dairy information can be found at *www.idahoag.us/Categories/Animals/Dairy/indexdairyMain.php.*
- The Agricultural Water Quality Program implements monitoring and protection programs related to pesticides with public and private partners to protect ground and surface water

quality. The ISDA Water Quality Program staff can be reached at (208) 332-8597. For more information, visit *www.idahoag.us/Categories/Environment/water/indexwater.php.*

- The Division of Agricultural Resources works to promote, direct, and ensure safe agricultural and environmental practices. Through education and enforcement, the division ensures compliance with federal and state rules and laws governing pesticide use in Idaho. The ISDA Agricultural Resources program can be reached at (208) 332-8605. For more information, visit *www.idahoag.us/Categories/Pesticides/indexPesticides.php.*

11.1.3 Idaho Soil and Water Conservation Commission

ISWC's purpose is to provide support and service to Idaho's 51 soil and water conservation districts, encouraging the wise use and enhancement of soil, water, and related resources. Responsibilities of the ISWC include the following:

- Administer general funds appropriated by the Idaho Legislature to the districts for implementing resource conservation practices.
- Provide technical assistance personnel to the districts to administer water quality projects and conduct soil surveys.
- Participate in the National Cooperative Soil Survey program, a comprehensive effort to provide modern soil survey information on all nonfederal lands.
- Administer the Conservation Improvement Grants program.

IWSC staff can be contacted at (208) 332-1790. For more information, visit *www.swc.idaho.gov.*

11.1.4 Soil Conservation Districts

Soil conservation districts provide action at the local level to promote the wise and beneficial conservation of natural resources, with emphasis on soil and water. Idaho's soil conservation districts, ISWC, and NRCS have forged a unique local, state, and federal partnership to promote soil conservation. Water quality projects are administered locally by soil and water conservation districts. These projects address nonpoint source water quality problems coming from agricultural activities and encourage voluntary use of BMPs.

Soil conservation district offices and contact information are found at *iascd.org/.* TMDL field staff and field office locations are found at *http://storage.cloversites.com/idahoassociationofsoilconservationdistricts/documents/2011-12%20DistrictsWithChairman.pdf.*

Soil and water conservation district programs relating to ground water quality are described below:

- The Idaho Home Assessment System (Home*A*Syst) provides information on protecting drinking water. It is a cooperative project developed, coordinated, and supported by several state and federal agencies and organizations. The contact for Home*A*Syst can be reached at (208) 332-8603. Additional information about Home*A*Syst can be found at *homeasyst.idahoag.us/.*
- Idaho OnePlan (IASCD) provides data and tools to help growers develop a single conservation farm plan that can be preendorsed by various agencies, streamlining and simplifying the regulatory process that farmers face. Idaho OnePlan is a multiagency

project to combine government regulations and current BMPs for agriculture into a single plan. OnePlan integrates federal, state, and local regulations for nutrient, pest, and waste management; water quality and wetlands; air quality; financial assistance; endangered species; and petroleum storage tanks. The contact for Idaho OnePlan at the IASCD can be reached at (208) 888-1890 x102. Additional information about Idaho OnePlan can be found at *www.oneplan.org*.

11.1.5 Central District Health Department

The mission of Idaho's seven Public Health Districts is to prevent disease, disability, and premature death; promote healthy lifestyles; and protect the health and quality of the environment. Central and Southwest District Health Departments are responsible for small public water systems, nonpublic water systems, septic tank and sewage disposal rules for nonmunicipal systems, and approving permits for new and replacement septic systems.

CDHD is responsible for Ada, Boise, Elmore, and Valley Counties. Additional information can be found at *www.cdhd.idaho.gov*. Some of CDHD's responsibilities are described below:

- CDHD Environmental Health Services regulates subsurface sewage disposal systems in cooperation with DEQ. Developers/homeowners should contact CDHD to discuss applications and permitting requirements for subsurface sewage disposal system. Note that a subsurface sewage permit is usually a prerequisite to obtaining a building permit from the county. CDHD Environmental Health Services can be contacted at (208) 375-5211. Additional septic tank information can be found at *www.cdhd.idaho.gov/EH/water/septic.htm.*
- CDHD Environmental Health Services is responsible for maintaining and releasing sanitary restrictions in force on all platted subdivisions (see Idaho Code §50-13 at *legislature.idaho.gov/idstat/Title50/T50CH13.htm*). CDHD may require a nutrient-pathogen study, depending on the location of the subdivision, size of the lots, and density of dwellings. CDHD Environmental Health Services can be contacted at (208) 375-5211. Additional land development information can be found at *www.cdhd.idaho.gov/EH/water/land.htm.*
- Owners of private water supplies have the sole responsibility to maintain them and ensure safe potable water. The Private Water Program that CDHD administers provides education, technical assistance, and water sampling, for a nominal fee. Private residents can choose to collect their own water samples as well. CDHD can provide guidance on what tests would be beneficial and what the results mean to public health. For more information, contact the CDHD Public Drinking Water Coordinator at (208) 375-5211, or visit their website at *www.cdhd.idaho.gov/EH/water/waterquality_index.htm.*
- CDHD has developed the following brochures related to ground water issues:
  - *Nitrate-Nitrite in Drinking Water*, available at *www.cdhd.idaho.gov/pdfs/eh/land_nitrate.pdf.*
  - *Is My Well Water Safe?,* available at *www.cdhd.idaho.gov/pdfs/eh/HDwellbrochure_.pdf.*
  - *Arsenic in Your Well Wate*r, available at *www.cdhd.idaho.gov/pdfs/eh/ArsenicPW.pdf.*
  - *Standards for Land Development*, available at *www.cdhd.idaho.gov/pdfs/eh/land_standards_development.pdf.*

- The Idaho Department of Health and Welfare has a brochure for private well owners available at *www.publichealthidaho.com/pdf/Idaho-Private-Well-Owner-Brochure.pdf.*

11.1.6 Idaho Department of Water Resources

IDWR serves the people of Idaho and protects their welfare by ensuring water is conserved and available to sustain Idaho's economy, ecosystem, and the resulting quality of life. IDWR provides a variety of services for the public, such as water rights research, historical record reproduction of water rights, driller's reports, and dam safety inspections. IDWR issues permits for water wells and develops rules for well construction. IDWR is also responsible for the statewide monitoring of ground water quality. The IDWR State Office can be contacted at (208) 287-4800. The IDWR Western Regional Office, in Boise, can be contacted at (208) 334-2190. More information is available on the web pages listed below.

- Most private water supplies consist of a single well serving a single residence. IDWR regulates and permits all wells in Idaho. Well construction standards and permit applications are located at *www.idwr.idaho.gov/watermanagement/wellinformation/default.htm.*
- Water resource information can be found at *www.idwr.idaho.gov/.*
- IDWR maintains an interactive mapping website with well construction and water quality information at *www.idwr.idaho.gov/geographicinfo/mapserver/mapserver.htm.*
- Statewide ground water quality data can be found at *http://maps.idwr.idaho.gov/gwqm/.* Note: this site is periodically offline for data management.
- IDWR injection well information and requirements are at *www.idwr.idaho.gov/watermanagement/wellinformation/injection/injection.htm.*

11.1.7 Natural Resources Conservation Service

NRCS provides technical assistance to farmers, ranchers, and other private landowners, helping them implement conservation practices on their land. This includes providing information on soils, forestry management, pasture and hayland management, erosion control, and water quality. For NRCS field office programs and technical resources, contact (208) 378-5700. NRCS field office contact information by county and conservation district are available at *http://storage.cloversites.com/idahoassociationofsoilconservationdistricts/documents/2013%20Directory%20%28Web%20Version%29_2.pdf.*

NRCS programs can be generally divided between financial assistance and technical assistance. Information about NRCS programs can be accessed at *www.id.nrcs.usda.gov/programs/.* More information on specific programs is given below:

- EQIP) is a voluntary conservation program that allows some farmers to receive financial and technical assistance for conservation practices on agricultural land. For more information, visit *www.nrcs.usda.gov/wps/portal/nrcs/main/id/programs/financial/eqip/*
- The Conservation Innovation Grants program is voluntary and is intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging federal investment in environmental enhancement and protection, in conjunction with agricultural production. For more information, visit *www.id.nrcs.usda.gov/programs/cig/index.html.*

- The Cooperative Conservation Partnership Initiative provides financial and technical assistance for conservation practices on agricultural land. For more information, visit *http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/ccpi/*.
- The Conservation Reserve Program provides financial and technical assistance to eligible farmers and ranchers to address soil, water, and natural resource concerns. For more information, visit *http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=crp*.
- The Conservation Technical Assistance Program provides technical assistance supported by science-based technology and tools to help people conserve, maintain, and improve their natural resources. For more information, visit *www.nrcs.usda.gov/programs/cta/*.
- Ecological Sciences/Technical Resources for water quality include the following:
  - Idaho Nutrient Transport Risk Assessment, a water quality risk assessment tool for conservation planning (2006), available at *www.nrcs.usda.gov/wps/portal/nrcs/detail/id/technical/?cid=nrcs144p2_046692.*
  - Nitrogen Transport Risk Assessment (August 2005), available at *www.nrcs.usda.gov/wps/portal/nrcs/detail/id/technical/?cid=nrcs144p2_046692.*
  - Nutrient management can be found at *www.id.nrcs.usda.gov/technical/nutrient_management.html.*
  - Agronomy can be found at *www.id.nrcs.usda.gov/technical/agronomy.html.*
  - Idaho soils program technical resources can be found at *www.id.nrcs.usda.gov/technical/soils/index.html.*

11.1.8 University of Idaho Extension

Professionals with the University of Idaho Extension work with Idahoans to address agricultural, natural resource, youth, family, community, and environmental issues. Collaborative relationships with countless agencies, groups, and individuals make a vast array of innovative educational programs available to the state. Extension faculty are joined by several thousand volunteers and dozens of cooperating agencies, organizations, and businesses, both public and private, on local, state, and national levels.

In keeping with the land-grant mission, the University of Idaho Extension, Southern District provides lifelong education and serves the needs of adults and youth in the district The. Southern District encompasses 18 counties of southwestern and south-central Idaho. Agricultural enterprises include farming, ranching, and dairy. Tree fruit, seed, row crops, and forages are the main crops spanning the Boise, Elmore, and Weiser River valleys. Cow-calf operations center in the rangeland areas of Owyhee, Washington, and Adams Counties. Dairies are located primarily in Ada and Canyon Counties. Extension education covers production, management, and marketing of these agricultural commodities, as well as natural resource conservation and development. The Southern District can be contacted at (208) 454-7674. A list of extension offices by county is available at *www.extension.uidaho.edu/find.asp*.

Dairy and beef producers can draw on University of Idaho Extension expertise to protect herds and operate more efficiently. The extension provides research-based, local information to help producers protect the environment and manage their animals. More information can be found at *www.extension.uidaho.edu/animals.asp.*

The University of Idaho Extension provides timely and local research-based information to help growers control pests, market products, and find new varieties. More information can be obtained at *www.extension.uidaho.edu/crops.asp*.

11.1.9 Idaho Water Resource Research Institute, Project WET

IWRRI's Project WET provides educational materials, lesson plans for watershed protection, and teacher workshops to reach children and their parents. The program is implemented by the IWWRI. More information can be obtained at *www.uidaho.edu/research/iwrri/outreach/teachereducation* or *www.projectwet.org.*

11.1.10 General State of Idaho Contacts

For information about other state resources not found in this section, see Idaho's official website at *www.accessidaho.org*.

11.1.11 Idaho's Geospatial Data Clearinghouse

Downloadable geographic information systems data allow efficient processing of geospatial data into deliverable data and maps. Idaho's Geospatial Data Clearinghouse is available at *http://inside.uidaho.edu/.*

11.1.12 United States Environmental Protection Agency

EPA's MyEnvironment is a search application that allows the user to find environmental data for their area. It is available at *www.epa.gov/myenvironment/.*

12 Funding Sources

12.1 Section 104(b)(3) Tribal and State Wetland Protection Grant, United States Environmental Protection Agency

The Tribal and State Wetland Protection program, created by EPA in 1990 under the Clean Water Act §104(b)(3), provides financial assistance to state, tribal, and local government agencies to develop new wetland protection programs, or refine and improve existing programs. All projects must clearly demonstrate a direct link to improving an applicant's ability to protect, restore, or manage its wetland resources. More information is available at *www.epa.gov/owow/wetlands/initiative/.*

12.2 Section 319 (h) Nonpoint Source Grants, United States Environmental Protection Agency/Idaho Department of Environmental Quality

The Nonpoint Source Management program provides financial assistance for implementing BMPs to abate nonpoint source pollution. DEQ manages the nonpoint source program. All projects must demonstrate the applicant's ability to abate nonpoint source pollution through the implementation of BMPs. More information is available at *www.deq.idaho.gov/water-quality/grants-loans/nps-§319-subgrants.aspx.*

12.3 Conservation Operations Program, Natural Resources Conservation Service

The Conservation Operations Program (CO-01) provides technical assistance to individuals and groups of landowners to establish a link between water quality and implementation of conservation practices. The NRCS technical assistance program provides farmers and ranchers with information and detailed plans needed to conserve their natural resources and improve water quality. More information on NRCS is available at *www.nrcs.usda.gov/programs.*

12.4 Conservation Technical Assistance, Natural Resources Conservation Service

The NRCS provides conservation technical assistance to private landowners, conservation districts, tribes, and other organizations. Conservation plan preparation and BMP implementation is the main form of technical assistance. Assistance includes interpreting soil, plant, water, and other physical conditions needed to determine the proper BMPs. The Conservation Technical Assistance program provides financial assistance in implementing BMPs described in the conservation plan. More information on NRCS is available at *www.nrcs.usda.gov/programs.*

12.5 Environmental Quality Incentives Program, Natural Resources Conservation Service

EQIP offers technical assistance and cost-share monies to landowners for establishing a 5- to 10-year conservation agreement for activities such as manure management, pest management, and erosion control. The program gives special consideration to contracts in those areas where agricultural improvements will help meet water quality objectives. More information is available at *www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip.*

12.6 Conservation Programs, Natural Resources Conservation Service

NRCS's natural resources conservation programs help people reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damage caused by floods and other natural disasters. Public benefits include enhanced natural resources that help sustain agricultural productivity and environmental quality while supporting continued economic development, recreation, and scenic beauty. More information is available at *www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs.*

Programs include but are not limited to the following:

- Conservation Technical Assistance Program and activities
- Environmental Improvement Programs
  - Agricultural Management Assistance
  - Cooperative Conservation Partnership Incentive
  - Environmental Quality Incentives Program (EQIP)
  - National Water Quality Initiative (NWQI)
  - Conservation Innovation Grants (CIG)
  - Wildlife Habitat Incentive Program (WHIP)

More information for programs specific to Idaho is available at *www.id.nrcs.usda.gov/programs/.*

12.7 Source Water Protection Grants, Idaho Department of Environmental Quality

DEQ's Source Water Protection Grants provide funding for projects to protect sources of public drinking water. Projects can take either a local or regional approach. Local projects will concentrate on protecting a specific community public water supply system, while regional protection activities will cover multiple systems and communities. Water treatment and water system operations and maintenance are not eligible activities. More information is available at *www.deq.idaho.gov/water-quality/grants-loans/source-water-protection-grants.aspx.*

12.8 Resource Conservation and Rangeland Loan Development Program, Idaho Soil and Water Conservation Commission

The Resource Conservation and Rangeland Loan Development Program provides grants for improving rangeland and riparian areas and loans for developing and implementing conservation improvements. More information is available at *swc.idaho.gov/programs_services/rcrdp.html.*

12.9 Financial Programs, Idaho Water Resource Board

The Idaho Water Resource Board Financial Program assists local governments, water and homeowner associations, nonprofit water companies, and canal and irrigation companies with funding for water system infrastructure projects. The types of projects that can be funded include public drinking water systems; irrigation systems; drainage or flood control; ground water recharge; and water project engineering, planning, and design. Funds are made available through loans, grants, bonds, and a revolving development account. More information is available at *www.idwr.idaho.gov/waterboard/Financial%20program/financial.htm.*

12.10 Aquifer Protection District, Local Initiative

"Aquifer Protection Districts" (Idaho Code §39-5) provides a mechanism for counties overlying sensitive resource aquifers to form an aquifer protection district. The purpose of such a district is to protect existing and potential ground water supplies and recharge areas, particularly those areas contributing to public water supplies. An aquifer protection district is created through an election. Once established, the district can raise revenue through fees charged to landowners benefitted by the availability of water from the aquifer protected by the district. This revenue ensures an area can pay for ongoing programs and services needed to protect the aquifer. The revenue can be used as matching funds to receive additional resources. Unfortunately, this legislation would need to be amended to include general resource aquifers before a county could pursue this option.

In 2006, Kootenai County voters approved the formation of the state's first aquifer protection district established to ensure the county can continue to pay for services and programs necessary to prevent the contamination of drinking water. Those services include protecting source water, preventing spills by secondary containment and proper handling of hazardous materials, minimizing septic discharges, managing stormwater, monitoring ground water quality, and conducting education and outreach activities. More information on the Kootenai County Aquifer Protection District is available at *www.phd1.idaho.gov/environmental/rathdrum/protectionprogram.cfm.*

12.11 Embrace-A-Stream Program, Trout Unlimited

Trout Unlimited provides funding to landowners for small-scale stream restoration projects. These projects have significant involvement from Trout Unlimited volunteers. For more information, see *www.tu.org*.

12.12 Fish America Foundation

The Fish America Foundation provides matching funds for restoration projects entailing the improvement of sport fisheries. For more information, see *www.fishamerica.org.*

12.13 Pheasants Forever

Pheasants Forever can provide up to 100% cost-share for projects establishing, maintaining, or enhancing wildlife habitat for pheasant and other upland game. For more information, see *www.pheasantsforever.org.*

13 Planning Tools for Local Governments

The information presented in this section is specific to local government planning for protecting ground water and source water within their jurisdiction.

13.1 Planning Tools

Local governments are encouraged to use the following tools during the planning, zoning, and permitting process to protect and improve ground water and source water in Elmore County.

1. Review *Environmental Planning Tools and Techniques*.
   - This document is useful in protecting ground water by linking land use to water quality and available on DEQ's website at *www.deq.idaho.gov/media/458914-env_planning_tools_entire.pdf.*
2. Review *Idaho Land Use Handbook: The Law of Planning, Zoning, and Property Rights in Idaho*.

   This free handbook is available from Givens Pursley LLP. You must provide an e-mail address *www.givenspursley.com/Publications.aspx.*
3. Use the checklists included at the end of this section.
   - Use the Local Government Checklist for Individual Project Proposals when evaluating land use decisions and approving proposed projects within your jurisdiction.
   - Use the Local Government Checklist for Addressing Source Water in Comprehensive Plan when reviewing county and municipal comprehensive plans to ensure source water protection has been addressed.
4. Consider using BMPs for projects that may affect ground water. BMP information is available from the following websites:

   www.deq.idaho.gov/media/458917-compendium_report_2003_entire.pdf
   www.oneplan.org/BMPs.asp.
5. Use American Planning Association (APA) Policy Guides provided at the end of this section.
   - APA Policy Guide for Water Resources Management, available at *www.planning.org/policy/guides/adopted/waterresources.htm*
   - APA Policy Guide for Solid and Hazardous Waste Management, available at *www.planning.org/policy/guides/adopted/wastemgmt.htm*
   - Additional APA policy guides available at *www.planning.org/policy/guides/index.htm*
6. Review the following information and resources provided at the end of this section.
   - *Advice Worth Drinking* brochure, available at *http://wiki.epa.gov/watershed2/index.php/Source_Water_Collaborative*
   - *Your Water. Your Decision.* brochure, available at *www.yourwateryourdecision.org/media/download/OfficialsGuideV14.pdf*

7. Use geospatial and interactive mapping tools.

   There are many sites for downloading and viewing geospatial information. Much of the available and downloadable data about other potential ground water contaminant sources is available through INSIDE Idaho. INSIDE Idaho is the official geospatial data clearinghouse for the state. It serves as a comprehensive geospatial data digital library, providing access to, and a context within which to use, geospatial data and information by, for, and about Idaho.

   INSIDE Idaho and other data providers use a set of services allowing efficient processing of geospatial data into deliverable data and maps.

   - These services are based on a number of web service models and protocols including REST, SOAP, KML, and OGC W*S and are broadly supported by a large number of products, including desktop geographic information system.
   - These services directly access data and map products without downloading individual data files.

   There are a variety of ways to search the available data, but general categories include the following:

   - Biota
   - Climatology/meteorology/atmosphere
   - Elevation
   - Farming
   - Health
   - Inland waters
   - Oceans
   - Structure
   - Boundaries
   - Economy
   - Environment
   - Geoscientific information
   - Imagery/base maps/earth cover
   - Location
   - Society
   - Transportation

   To get started, visit *www.insideidaho.org/index.html.* This website provides access to DEQ, IDWR, and state agency map products.

Local Government Checklist for Individual Project Proposals

- ☐ Does the project deplete ground water supplies or interfere substantially with ground water recharge so that there would be a net deficit in aquifer volume or a lowering of the local ground water level? For example, would the production rate of preexisting nearby wells drop to a level that would not support existing land uses or planned uses for which permits have been granted?

- ☐ Does the project discharge into the ground water?

- ☐ Does the project discharge any waste material into the ground from septic tanks or other sources, if any (for example: domestic sewage, industrial, agricultural, etc.)?

- ☐ Does the proposed project discharge any waste materials to surface waters?

- ☐ Does the project alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on site or off site?

- ☐ Does the project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

- ☐ Does the project include measures to reduce or control surface, ground, and runoff water?

Local Government Checklist for Addressing Source Water in Comprehensive Plan

Water, General

☐ Make an inventory of water resources

☐ Map watersheds, aquifer recharge areas, ground water basins, unique water resources

☐ Analyze institutional arrangements and responsibilities for water management

☐ Assess adequacy of existing regulations to address water resources

Water Quality

☐ Assess the current and future quality of water resources

- ☐ Perform ground water tests in the vicinity of landfills and hazardous materials dumps, ponds, tanks, and storage areas

☐ Assess the current and future quantity of water resources

- ☐ Analysis of current and future water consumption

☐ Identify existing and potential water pollution sources

- ☐ Inventory hazardous materials dumps, ponds, and storage sites
- ☐ Identify proposed, existing, and abandoned sources of pollution
- ☐ Identify existing nonpoint sources of contaminants
- ☐ Identify existing contaminated sites
- ☐ Identify existing ground water contamination

☐ Assess adequacy of regulations for

- ☐ Use, storage, and disposal of hazardous materials
- ☐ Control of point and nonpoint sources
- ☐ Stormwater runoff

Assess Policy Direction Concerning

- ☐ Protection, use, and development of water resources
- ☐ Protection of watersheds and aquifer recharge areas
- ☐ Preservation of wetlands, wild rivers, and watersheds
- ☐ Prevention of contamination
- ☐ Identification of appropriate land uses in areas of sensitive water resources
- ☐ Actions necessary to maintain or improve water quantity and quality to meet projected needs
- ☐ Water conservation (ground and surface) and reuse
- ☐ Drought management and emergency contingency plans
- ☐ Direction for the establishment of local development standards that
    - ☐ Incorporate better site design
    - ☐ Use best management practices for managing impacts on water resources
    - ☐ Address the on-site prevention, retention, and treatment of stormwater runoff
- ☐ Financing strategies for needed improvements
- ☐ Private, nongovernment-owned/-operated water systems
- ☐ Implementation of policy direction

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American Planning Association

Making Great Communities Happen

Policy Guide on Water Resources Management

Adopted by Chapter Delegate Assembly, April 14, 2002
Ratified by Board of Directors, April 15, 2002
Chicago, IL

Introduction and Findings

Water is a finite resource. Although three-quarters of the earth is covered with water, 97.6 percent our water is salty and 1.9 percent is frozen into the polar ice caps. This means that only about half a percent of our planet's water resources is fresh water. Of these fresh water resources, 0.02 percent is found in rivers, lakes and streams while the rest, 0.48 percent, is ground water. These water resources are used for water supply, ecological, recreational, navigational, and waste disposal purposes and these diverse uses are currently managed under a large number of federal, state and local laws.

The U.S. Geological Survey (USGS) — in its report, *Estimated Use of Water in the United States in 1995* (Circular 1200, 1998) — estimates that the total use of water (both fresh and saline) in the U. S. was around 402,000 mgd in 1995, about 2 percent less than the Survey's 1990 water use estimate and 10 percent less than its 1980 estimate. This decline in water use occurred even though the nation's population increased 16 percent from 1980-95. Much of this water is used for thermoelectric power generation, which had declined from its 1980 peak use of 210,000 mgd to 190,000 mgd in 1995. Industrial water use (29.1 mgd in 1995) also declined 3 percent from 1990-95, a trend the USGS attributes to the more efficient production technologies used by new industries, more industrial water recycling, and changes in pollution laws.

Total irrigation withdrawals (134,000 mgd in 1995) increased from 1965 to 1980, but then gradually declined from 1980 to 1995, dropping two percent from 1990-95. Although the number of irrigated acres (around 58 million) remained fairly constant in the U.S. from 1980-95, irrigated acreage during this period declined in the 19 western states at the same time it increased in the more humid eastern states. On a per-acreage basis, average irrigation water use in 1995 was about 2.1 acre-feet, less than the 2.2 acre-feet average in 1985 and well below the 1975 and 1980 average of 2.5 acre-feet. Irrigation withdrawals vary not only by such factors as the amount of rainfall, energy costs, farm commodity prices, application technologies and conservation practices, but they also vary by region.

The USGS notes that only two water uses showing continual increases from 1950 to 1995 were the "Public Supply" and "Rural Domestic and Livestock" water use categories. Although public supply withdrawals (40.2 mgd in 1995) increased 4 percent from 1990-95, the nation's population increased by 7 percent during this same five year span, so per capita public supply water use actually declined from 184 gpd in 1990 to 179 gpd in 1995 (a trend that the USGS attributes to increased water conservation). The 13 percent increase in rural water use (8.89 mgd in 1995) is attributed to increases in livestock withdrawals; rural (self-supplied) domestic withdrawals were about the same in 1995 as they were in 1990.

It is often difficult to accurately assess and forecast the complex interrelationships between ground and surface water. This means the impacts that development will have on the quantity or quality of one water resource cannot be assessed without also assessing its impacts on all other water resources. For example, increased water demand may force aquifers to be over-pumped, an action that not only leads to the drilling of deeper wells but one that may also impair ground water quality (by increasing dissolved mineral concentrations when water is drawn deeper from the aquifer or by

disrupting ground water flow patterns and inducing saline or polluted surface water or brackish water from another aquifer to flow into the freshwater aquifer). The over-pumping of alluvial or surficial aquifers may also reduce their base flow discharges to surface water bodies, thereby reducing stream flows and also indirectly affecting stream quality (as ambient pollutant concentrations increase).

Both ground and surface water resources can be disrupted by contamination. Pathogens, minerals, and organic and inorganic chemicals polluting the ground water can cause surface water to become polluted and vice versa due to the interconnections between the two. Significant contaminant sources include agricultural chemical use, wastewater discharges from public sewer and on-site wastewater disposal systems, solid and hazardous waste landfills, storage tanks, and industrial materials spills and waste impoundments. Impervious surfaces can not only reduce aquifer recharge but can also increase water pollution and flood hazards by increasing the amount of runoff. Aquifer penetrations — such as injection wells, oil and gas wells, or improperly abandoned wells — may also introduce contaminants directly into an aquifer. Atmospheric deposition of contaminants can also impair water quality. The minimal attenuation and the impracticality of remediation of contaminants in ground water, and the high cost of water treatment make prevention of contamination the only really effective means of protecting aquifers and the most efficient means of protecting surface water resources.

Jurisdictional complexity often makes it difficult to comprehensively manage and protect our water resources. For example, while state and federal environmental protection statutes set water quality standards for surface water and drinking water, other state laws may govern ground and surface water ownership and use, and still other state and local laws might regulate land use activities generating water demand or posing threats to water quality. The needs of non-consumptive instream uses of water — such as the protection of fish and wildlife habitats, the enhancement of recreational activities, the maintenance of navigation, and the need to maintain ambient water quality standards — are more and more coming into direct conflict with the needs of consumptive offstream uses for the same surface water. Large-scale diversions of surface water and excessive pumping of groundwater diminish stream flows, further aggravating intense surface water use conflicts. Greater coordination is clearly needed between the state agencies, between the state and local agencies, and between the local agencies responsible for different aspects of water resources use and management.

Water resources issues need to be integrated better into the comprehensive land use planning process. Urbanization increases runoff from impervious surfaces, causing stormwater flooding and nonpoint source pollution problems. As cities grow larger and water demand starts surpassing the amount of water found locally, people and businesses begin to look further and further from the community to meet their projected water needs — to drill wells in other aquifers, pipe water from large rivers and lakes hundreds of miles to their town, and to augmenting rainfall. As water supplies become even more constrained, even more complicated and expensive schemes to obtain adequate amounts of fresh water may be considered — such as desalination of seawater or brackish aquifers, towing large bladders of fresh water through the ocean to dry port cities, or hauling icebergs to coastal areas. These escalating water supply schemes represent the direct costs to a region of "mining" its water resources at unsustainable rates. But there are also indirect costs, in lost potential for development and in the potential disruption of the existing economic and social order in the receiving areas if they don't have the additional water and in the donating areas from loss of their water resource. Futhermore, dependency upon water resources derived from non-sustainable sources can create long-term economic uncertainty and instability for the dependent communities.

Conservation, each user using less water, is one way to create "new" and perhaps more sustainable sources of water. Water reuse is important. Returning treated effluent to a river where the next town takes out water for its potable supply has been going on for years. Wastewater can be treated and reused for irrigating golf courses, agriculture, parks and gardens, treated and released to surface waters for recreational, navigational, and ecological purposes, or even cleaned to drinking water standards and reused for aquifer recharge or water supply purposes. Similar strategies could also be used to manage stormwater.

Requiring water conservation, as the federal government did when it mandated water-conserving fixtures in the 1992 Energy Policy Act, is one approach to better managing our water resources.

But, other strategies can also be employed — the conjunctive use of both ground and surface water resources, reducing water demand through Smart Growth initiatives and more sustainable land use planning

General Policy

Water should be treated as a collective public resource and managed in a sustainable manner.

1. Water should not be consumed to such an extent so as to:

- interfere with its reasonable use by others;
- impair the ability of a water resource to be naturally replenished;
- impair its ecological, recreational or navigational functions.

2. Water should not be discharged in such a manner so as to:

- interfere with its reasonable use by others;
- create hazardous conditions (e.g., erosion, sedimentation, flooding and subsidence);
- impair its ecological, recreational or navigational functions.

3. Pollution and other manmade threats to water resources should be minimized.

Reason to Support Specific Policy: This general policy is intended to articulate a "Golden Rule" of water resources management. By considering water both a "collective" and " public" resource, APA recognizes that, despite differing state water laws, any private or individual "right" to use water remains only contingent and is therefore always subject to whatever governmental oversight as may be necessary to protect and further the greater general welfare. By requiring that water resources be used "sustainably," APA recognizes that there is a duty to manage water resources in such a way so as not to impair their present and future utility and value. Sound water policy must address the contemporary and long-term needs of humans as well as the ecological community. These management responsibilities, which become an ethical obligation because of the centrality of water to life itself, are expressed in greater detail in the specific policies listed below.

Specific Policies for Water Use

POLICY 1. The American Planning Association and its Chapters support legislation and funding to establish state comprehensive water resource and supply planning (conducted cooperatively with appropriate federal agencies, states, appropriate regional authorities, water utilities, and local governments), based upon watersheds and other natural hydrological boundaries (such as aquifer recharge and discharge areas). Ideally, such water resources planning should be undertaken within the context of comprehensive state planning.

The water resource and supply plans should include at least:

- 20-year projection of water supply needs and service areas based on sound comprehensive planning principles;
- Sources of surface and groundwater supply to meet needs;
- Protection of watershed and evaluation of surface and ground water resource impacts, and actions necessary to maintain or improve water quantity and quality to meet projected needs and to maintain the ecological, recreation, and navigational functions of the water resources;
- Plan for water conservation and reuse, and, as appropriate, drought management and emergency contingency plans;

- A stormwater and flood plain management element addressing the on-site prevention, retention and treatment of stormwater runoff;
- Policies for resource and habitat restoration;
- Environmental impacts and mitigating factors;
- Analysis of existing and required legal and institutional arrangements, and roles and responsibilities of appropriate levels of government in carrying out the plan, including the use of intergovernmental or interstate agreements;
- A land use framework for land located near sensitive water resources; and
- Financing strategies for needed improvements, along with a system for monitoring or evaluating the attainment of plan objectives.

Reason to Support Specific Policy: Responsible water resource use and management requires careful planning. The first policy establishes a planning process that integrates projected water demand and resource characteristics with an impact assessment process, to ensure considerations of longer-term sustainability. This policy sets forth the specific elements of such a planning process that promote a more rigorous governmental consideration of water resource use and interaction. A minimum 20-year planning horizon is proposed to enable capital investments in water-related infrastructure to be recovered through financing mechanisms while ensuring a planning period that would allow for reasonably accurate demographic and other projections affecting water demand. The need for water users to repay bonds for water supply capital improvements or to repay state loans within a time period long enough to stabilize water utility rates suggests the need for longer-range rather than shorter-term water resource management planning. Although some states (e.g., Arizona, under its 1983 Water Use Act) may require that water for urban uses be secured for a century as a pre-condition of assessing water transfers, a 20-year planning horizon allows for more accurate longer-term need projections prior to making infrastructure investments.

POLICY 2. The American Planning Association and its Chapters support legislation to establish requirements for state comprehensive water use permits issued pursuant to policies and criteria set forth in state comprehensive water resources and supply plans. State (and/or regional, in those states where multijurisdictional water districts exist) permit reviews should incorporate thorough environmental and socio-economic review of applications for new or increased use of surface water and ground water resources for consumptive and non-consumptive uses prior to state approval or denial. State (and/or regional) requirements should be made pursuant to a public hearing process that involves all appropriate levels of government and allows public input the decision-making process.

Reason to Support Specific Policy: The withdrawal of waters for public, industrial, agricultural and power generation uses should not be undertaken without a full understanding of the impacts of such withdrawals upon the quantity and quality of ground and surface waters, and without regard to the interests of competing users. This analysis should also address ecological and recreational values of the water resources. State and/or regional overview is essential to the full consideration of the hydrological, ecological and growth impacts of interbasin transfers, downstream quality and quantity impacts of upstream users, and the ground water/surface water interrelationships of withdrawals and diversions. States need to consider comprehensively managing the consumptive use of all of their water resources — ground water as well as surface water withdrawals - through a comprehensive permit system administered at the state or the regional level. The permit process should be designed to maximize public participation to ensure that all interests are represented in water use permit decisions.

POLICY 3. The American Planning Association and Chapters support legislation requiring land use and health regulations for source water protection in order to protect the existing water quality and capacity of aquifers and surface water resources.

Reason to Support Specific Policy: Because of the high costs of water treatment and aquifer remediation, source water protection for drinking water supplies remains a policy priority.

POLICY 4. Water conservation must remain an important water resource and supply plan objective. The American Planning Association and its Chapters support state legislation requiring the metering

and leak detection of all significant private or public community drinking water system service connections as well as all major industrial, commercial or agricultural users to promote and monitor water conservation.

Reason to Support Specific Policy: Water conservation remains an important component of any water supply plan. Metering provides an incentive for users to conserve water and the evaluation of leakage and other unaccounted for flow is essential in promoting and monitoring the success of water conservation efforts. Other measures, such as using reclaimed water or higher-efficiency systems for irrigation or employing drought-resistent or natural landscaping, can also be effective in reducing water use.

POLICY 5. The American Planning Association and its Chapters support appropriate state legislation establishing standards and permits for construction, operation and abandonment of all wells. These standards should be based on the long-term sustainable yield of the water resources.

Reason to Support Specific Policy: Improperly constructed or abandoned wells can provide opportunities for water supply contamination and aquifer interconnection, especially for larger wells (10,000 gpd and larger) used for public water supply, industrial, and irrigation purposes. The impacts of all new major wells and existing wells that are abandoned should be assessed through a permit system requiring preconstruction and post-closure review. Well operation guidelines for major wells, including controls on pumping rates, can also help manage well interference problems and stream baseflow reductions, while backflow valve requirements can protect against ground water contamination by agricultural chemicals. Well permits issued by local permitting officers, boards of health or State environmental agencies should also be required for smaller non-community on-site domestic water supply wells.

POLICY 6. The American Planning Association and its Chapters support legislative action and policy to manage stormwater runoff and its attendant water pollution risks by encouraging appropriate land uses in areas of sensitive water resources, and supporting the establishment of local development standards that incorporate better site design and best management practices for managing impacts on surface- and ground-water resources.

Reason to Support Specific Policy: Approved Nonpoint Source Management Plans establish uniform, state-specific blueprints for the nationwide effort to remediate all nonpoint sources of ground and surface water pollution through state land use-related water quality management programs. Stormwater management remains a priority issue in many urban areas, where runoff and discharges from construction activity, small municipal separate stormwater systems, industrial stormwater systems, and combined sewer overflows threaten surface and ground water quality. Best management practices, many employing land use controls, offer an important strategy for controlling these risks. Stormwater should be considered a water resource instead of a waste product, with natural attenuation, infiltration, and recharge promoted over collection, transport, storage, treatment and discharge. This policy also encourages Smart Growth by promoting land use patterns that minimize the generation of nonpoint source pollution and site planning that utilizes established best management practices to control pollution, especially with respect to stormwater runoff that can be treated on-site.

POLICY 7. The American Planning Association and its Chapters should encourage legislation, with adequate federal funding, to require periodic comprehensive updating of Wastewater Facility Plans, consistent with local comprehensive plans, as a condition for receipt of state revolving loans or grants. APA and its chapters also support proper maintenance and management of individual and community waste water systems. The process for updating facility plans should be coordinated with revisions to community comprehensive plans and the integration of Smart Growth policies to focus new development in those areas served by existing wastewater infrastructure.

Reason to Support Specific Policy: The facility plans in the 1970s are approaching their design years. The current federal rules do not encourage comprehensive updating of these plans, but rather spot changes, often in conjunction with individual development proposals. Local plan consistency should be addressed as a requirement for the receipt of federal funds. Although this policy was initially adopted in APA's earlier Surface Water PIP, this is still an important policy to

promote, especially since some states using revolving loan funds may propose phasing out facility plan requirements in order to reduce their administrative burdens.

POLICY 8. The American Planning Association and its Chapters promote aquatic biodiversity and habitat recovery by supporting programs that reduce hydrological alterations, the deterioration of habitat quality, and the deterioration of water quality. APA and its Chapters should promote regulatory development that emulates the natural hydrologic and ecologic regimes in an increasingly robust fashion, including the restoration of degraded stream reaches and their riparian areas, including associated wetlands.

Reason to Support Specific Policy: Waterways and their riparian areas are critical habitats for a variety of wildlife. Straightening, cementing over and otherwise altering stream channels and wetlands remove the opportunities for biodiversity and also impact important ecological processes that remove pollutants and improve water quality. Health of riparian areas is an important indicator of ecosystem health and consequently of the sustainability of human activities within a watershed.

POLICY 9. The American Planning Association and its Chapters should support federal and state environmental protection agencies in implementing the Total Maximum Daily Load (TMDL) program of the Clean Water Act and the development of baseline, reference TMDLs associated with specific land uses.

Reason to Support Specific Policy: The Total Maximum Daily Load (TMDL) program of the Clean Water Act requires a comprehensive inventory and assessment of impaired waters in order to determine the amounts of pollutants being discharged into a waterway from all potential sources. Without this information, it is impossible to take the next step, which is to devise a plan to allocate the amount of pollutants each source may discharge (through regulations or by market-based mechanisms) and thereby clean up the waterway to the point it meets the fishable and swimmable standard. Watershed plans that support agreements between local entities will be needed in order to achieve regional strategies that truly move towards meeting TMDL compliance.

POLICY 10. The American Planning Association and its Chapters should support legislation to reauthorize and expand federal funding under the Clean Water and Safe Drinking Water Acts for water infrastructure (including funding authorized to support State Revolving Loan Funds) and to reauthorize the Coastal Zone Management Act. These legislative initiatives would provide continuing funding for nationally important water quality, infrastructure and resource protection programs, while addressing the critical issues of controlling nonpoint sources, enhancing coastal resources, and protecting national estuaries and outstanding waters.

Reasons to Support Specific Policy: EPA and the federal government need to maintain and strengthen their partnership with state and local governments in funding water quality improvement and infrastructure programs. State revolving loan funds offer new opportunities to consider state land use and "smart growth" objectives within integrated priority ranking systems by incorporating such considerations into the ranking system in addition to the more traditional public health and environmental criteria. Infrastructure investments can also be tied better to land use by the use of various economic incentives (e.g., lower interest rates or alternative repayment structures) for projects supporting state and regional land use policies. Given the large population growth projected within our coastal areas, supporting the reauthorization of and expanded funding for the Coastal Zone Management Act remains a critical legislative priority for APA and its Chapters.

POLICY 11. The American Planning Association and its Chapters should support legislation establishing interstate or regional compacts to limit drawdowns of shared aquifers and the use of common surface waters. APA and its Chapters and key water policy decision makers should actively encourage states, tribes, and interstate and basin authorities to seek negotiated agreements, ratified by appropriate legislation, to resolve issues regarding water allocations and to develop water resource management systems on an aquifer or watershed basis, to the greatest extent possible.

Reason to Support Specific Policy: Adjudication can be an effective, but complex, lengthy and expensive means of resolving water rights. Adjudications can act to bring parties to the negotiating table, but negotiated settlements are far more likely to result in long-term, constructive

relationships — especially since the U.S. Supreme Court's ruling in *Kansas v. Colorado*, handed down in June 2001, allowed damages to be imposed on a state for violating the Arkansas River compact. In the wake of this decision, federal courts may be more willing to enforce interstate (and, by implication, state/tribal) water agreements and compacts and to both impose and uphold sanctions against entities violating these agreements.

POLICY 12. The American Planning Association and its Chapters support legislation providing opportunities for the integrated management of ground and surface water supplies, and funding for research on strategies for the integrated management, monitoring, and use of surface and groundwater. Whenever possible and appropriate, the planning area of such management programs should be based on natural hydrologic features, such as watersheds and aquifers. APA and its Chapters also support and encourage the development of land use variables within water resource models.

Reasons to Support Specific Policy: There is much we still need to learn about the interrelationships of surface and ground water. Monitoring of these resources is a complex and costly venture, but necessary if we are to assess their status and be alerted to new sources and instances of contamination. APA and its Chapters should support increased funding of federal and state programs that monitor, model, assess, and map our nation's ground and surface water resources.

American Planning Association

Making Great Communities Happen

Policy Guide on Solid and Hazardous Waste Management

Adopted by Chapter Delegate Assembly, April 14, 2002
Ratified by Board of Directors, April 15, 2002
Chicago, IL

Introduction

There will always be waste. The issue is how we manage that waste. Those that cause pollution as a result of improper waste disposal should pay to clean it, but responsible parties often cannot be identified or cannot afford clean-up costs. However, the current waste disposal policy is that the property owner pays. The unintended consequences of this policy are that in some instances it is more expensive to clean up a property than the property is worth, and so it is abandoned. These properties, known as brownfields, with actual or perceived contamination, exist throughout the country. The abandoned or underutilized land is a burden to communities from loss of tax revenue, unused infrastructure and the creation of blight.

Integrated waste management has laid out a hierarchy of techniques with the first one being the most desirable. This hierarchy provides many different strategies for handling waste, including seeing it as a resource. However, in certain cases one or the other may be better. It's important to quantify the options to determine which is best:

- Pollution Prevention
- Reduce/Waste minimization
- Reuse/Use it again
- Recycle/Resource recovery
- Waste to Energy/Incinerate to reduce bulk/sterilize
- Landfill
- Pollution Prevention

Some highly contaminated sites that threaten public health are put on the National Priorities List for clean up by the owner or Environmental Protection Agency, using money from the Superfund for clean up purposes as authorized by the Comprehension Environmental Response Compensation and Liability Act, when the owner or polluter cannot be found.

Siting landfills and other waste handling facilities has become increasingly difficult due to public opposition stemming from real and perceived health risks from waste management facilities such as incinerators, landfills, waste transfer stations, composting yards, or recycling facilities. The "not in my backyard" syndrome arises when efforts are made to designate certain areas for undesirable land use. In addition, some research has shown that to a certain degree, environmental racism exists with hazardous sites being built in close proximity to areas where lower socio-economic classes tend to congregate. The issue of environmental justice becomes an evaluation of who bears the costs of waste disposal and who gets the benefits.

The location of waste management facilities should be part of a comprehensive planning process that includes the opportunity for meaningful public participation and public consensus. The planning process and regulatory process should also address issues of Environmental Justice.

Transporting waste from state to state is protected from state regulation without Congressional authorization under the interstate commerce clause of the constitution. Some states are becoming the dumping grounds for other states because private companies have built large landfills and are actively seeking waste to bring to the sites. Counties that negotiated high royalty fees are making money hosting the sites, which allows them to build new schools and roads, and cut taxes. Local plans and state regulations should govern the siting of waste management facilities. New facilities should be consistent with local land use plans and meet the most rigorous standards to protect the environment. Proposals for large regional facilities should involve all affected communities, evaluate regional impacts, and include regional revenue sharing.

Findings

1. In recent years, financial and environmental costs to dispose of municipal solid waste are beginning to overwhelm North America's local and state governments. Public attitudes about garbage are also changing in response to new information about costs and practices of solid waste disposal. As our disposal sites are filled, new sites become harder to locate and standards for landfill design require modifications in facilities, resulting in disposal becoming more complex, controversial, and expensive.

2. Environmental concerns deal not only in locating new waste management facilities, but also in posing the question of who is at risk of being exposed to the waste.

3. Although federal and state laws distinguish between "non-hazardous" and hazardous waste, the lines between the two categories are sometimes blurred. Household waste may contain hazardous constituents that pose environmental and health impacts if not properly discarded.

4. Medical and nuclear wastes need to be dealt with in a responsible fashion that does not jeopardize human or ecosystem health.

General Policy

The American Planning Association and its Chapters support managing solid wastes (including hazardous and medical wastes) in accordance with the aforementioned hierarchy: reduce, reuse, recycle, waste to energy, incinerate, and landfill.

Reasons to Support Policy: Studies have shown that it is possible to significantly reduce the volumes of both solid and hazardous waste generated by the United States. Likewise, recycling shows promise as a means of reducing the amount of waste that might otherwise have to be disposed of in a landfill. Waste to energy, incineration, and gasification have proven to be effective as part of a larger waste disposal strategy. Land disposal is the least desirable means of managing solid and hazardous waste because the amount of space they require and the dangers associated with them create adverse effects to human and ecosystem health.

Specific Policies

POLICY 1. The American Planning Association and its Chapters support laws requiring: source reduction, the use of biodegradable products and packaging where composting is an established solid waste management method, incentives for the use of reusable products and refillable packaging, and the banning of non-recyclable products and packaging.

Reasons to Support Policy: One way to attack the problem of solid waste is to reduce the amount being thrown away. By requiring the use of refillable or recyclable containers, the amount of waste

being thrown away would be substantially reduced. Product redesign is another approach to fostering waste management/reduction.

POLICY 2. The American Planning Association and its Chapters support laws requiring recycling and reuse of materials in the waste stream through source-separated or co-mingled collection programs, manual or mechanical separation to provide recycling for metals, glass, paper, plastics, and the removal of common hazardous wastes, e.g., batteries, paints, and solvents. Procurement laws that encourage the use of recyclable materials should accompany these laws. In addition to these procurement incentives, there needs to be a re-examination of laws that provide incentives for the utilization of raw, natural materials that may provide a cost savings incentive to the manufacturer making tree cutting for paper fiber use actually cheaper than using collective recyclable paper fibers.

Reasons to Support Policy: We are asking manufacturers and producers to become more responsible for the management of their products at the end of their intended lives. We should expect no less from the consumer, who should be expected to sort waste into aluminum, glass, tin, paper, recyclable plastics, and yard clippings that can be either picked up separately, co-mingled at curbside, or taken to recycling centers in an efficient way to reduce the amount of solid waste going into landfills. Each of these materials can be reused or processed for reuse.

POLICY 3. The American Planning Association and its Chapters support resource recovery programs that produce soil additives, mulch, or compost from yard debris and organic waste.

Reasons to Support Policy: Garden clippings and leaves as well as the organic fraction of household and commercial waste can be composted and used or sold as mulch or soil conditioning humus. Larger branches can be chipped and used as mulch or backyard composting. Both of these actions reduce solid wastes going into landfills.

POLICY 4. The American Planning Association and its Chapters support recycling of contaminated demolition debris, volume reduction by removal of inert or demolition debris containing hazardous material, and use of technologies such as compaction or environmentally safe waste-to-energy.

Reasons to Support Policy: Some material that is put in landfills is bulky and consumes space rapidly, and some material left from construction and demolition sites is considered hazardous. To slow down the filling process, the volume can be reduced by removing the inert debris, compacting the trash first before landfilling or burning it in an incinerator, and the heat used to generate steam for generating electricity or warming buildings. If inert includes asphalt, brick and mortar, concrete and the like, these materials can be ground up and used as aggregate in other applications or as mulch, walkway materials or backfill.

POLICY 5. The American Planning Association and its Chapters support comprehensive education programs on waste minimization, reuse, recycling and resource recovery. Such education programs would involve the media, schools, industry, government, and academia.

Reasons to Support Policy: The saying "out of sight, out of mind" applies to garbage. People are often willing to change their habits if they are shown the consequences of thoughtless acts of improper refuse disposal. Education at all age levels will increase public involvement, so with schools, industry and government interaction as prominent as they are, educational messages can be more easily spread and solutions more clearly defined.

POLICY 6. The American Planning Association and its Chapters recommend that local and state ordinances should be reviewed to increase siting flexibility while ensuring environmental protection and environmental justice. To make siting feasible and predictable, standards by which siting decisions are made should be developed and applied, possibly through a conditional process. New facilities should be consistent with local land use plans based on community consensus and meet the most rigorous standards to protect the environment.

Reasons to Support Policy: As our knowledge increases, local governments will be faced with an increasing array of waste disposal and processing community impacts. Most local plans and

ordinances do not differentiate between types of solid waste management facilities. Because some communities are disproportionately burdened by environmental hazards such as excess air pollution, water pollution, hazardous waste and noise, communities should be empowered to direct their own environmental futures, and states should advocate programs to protect where people live, work, and recreate.

Solutions are increasingly complex and involve private sector time schedules and financing. Siting issues should not be the cause of delays in implementation. See also APA's Policy Guide on Locally Unwanted Land Uses.

POLICY 7. The American Planning Association and its Chapters support interstate and intrastate regional partnerships between governments at all levels to coordinate state, regional, and local planning efforts and to find the best practicable, environmentally safe, and equitable solutions to solid and hazardous waste management problems.

Reasons to Support Policy: Regional approaches can produce cost-effective and consistent plans for managing waste and complying with federal and state laws and regulations. In the absence of multi-jurisdictional alternatives, many communities will be forced to accept waste processing and disposal practices that are expensive and that degrade the environment.

Partnerships are preferred over adversarial relationships. Regional relationships are encouraged from metropolitan areas, as well as interstate areas.

A number of states are beginning to address siting and management issues in statewide solid waste plans that either require or encourage coordination and consistency at each level of government. This type of approach is needed to avoid developer-driven siting decisions without guidance from solid waste planning efforts.

POLICY 8. The American Planning Association and its Chapters support broad public involvement as well as participation by state, regional, and local authorities when siting solid waste management and recycling facilities, and planning for solid waste management. If consensus fails to produce a resolution, then negotiation and arbitration should be used to resolve conflicts.

Reasons to Support Policy: When sitting waste management facilities, involving the public, state, and regional entities can help ensure a timely response. Negotiations will be required if a proper facility is inconsistent with community plans or regulations.

POLICY 9. The American Planning Association and its Chapters support procedures that ensure when landfills are built or expanded in operation, they meet or exceed all existing and, where practical, new standards, and are operated in an environmentally safe way by certified operators.

Reasons to Support Policy: For some materials, such as incinerator ash, there are no other methods of disposal than to landfill it. Landfills need to be constructed in such a manner that they will not cause ground or surface water pollution, air pollution, or create nuisances. A certified operator will ensure that the person in responsible charge is knowledgeable of the laws and regulations concerning waste management.

Federal and state regulations will continue to evolve. Where existing facilities have been in operation for a number of years, they may no longer be "state of the art." While it may not always be practicable, existing facilities should still endeavor to upgrade their air emission control devices, groundwater monitoring programs, and leachate collection systems.

POLICY 10. The American Planning Association and its Chapters support actions that lead to the expansion and stabilization of the economic base for recycling in the local, regional, state, and national economy, including the support for existing and new laws designed to encourage the manufacture and purchase of products made from recycled materials.

Reason to Support Policy: Markets for recycled materials are uneven and tend to be volatile. This should not be interpreted as a restriction on recycling and reuse, but as a challenge to address problems of institutional constraints and artificial barriers such as tax laws that favor use of virgin materials. These barriers should be removed, and economic development planners should aggressively seek out opportunities and companies that can expand the market. For example, economic development incentives can be targeted at companies that use recycled materials in their businesses.

POLICY 11. The American Planning Association and its Chapters encourage the evaluation and use of public/private partnerships where appropriate to manage solid waste.

Reasons to Support Policy: As costs increase and are passed on to the citizens, public sector contracts with the private sector may be more cost-effective and efficient, and some degree of the liability for operations can be shifted with the private sector.

POLICY 12. The American Planning Association and its Chapters support the rapid assessment and cleanup of brownfields with appropriate assurances so that the site may be returned to productive use in the community.

Reasons to Support Policy: Brownfields represent unutilized and underutilized properties that do not make good use of existing infrastructure and location. The sites need to be assessed for the type and severity of contamination and then prepared for reuse by cleaning them to a standard appropriate to their type of reuse. It is important to give owners some type of assurance, either a "no further action" letter or a covenant not to sue, so that the owner starts the use with the knowledge that they may have to cleanup new contamination, but not previous contamination.

POLICY 13. The American Planning Association and its Chapters support the appropriate reuse (parks, open space) of closed landfills after methane gas has been recovered and leachate has been contained or after methane production has subsided, and where public health is not jeopardized by exposure to hazardous materials.

Reasons to Support Policy: While many landfills were built outside of the urban limits, urban development has moved up to and often passed by closed landfills. This area can be put to smart use such as in park or open space development, but the development must not penetrate the landfill cap, so excavation, trees with deep roots, and underground pipes are to be avoided. Landfills continue to produce methane gas as a natural process of decay for about 15 years after a landfill is closed. This gas migrates laterally, and in the right mixture with air, is explosive. Therefore, it is important to either wait until the gas production has subsided before the site is reused, direct ventilation underground, or to actively remove the gas as part of site reuse.

POLICY 14. The American Planning Association and its Chapters urge all agencies siting and reviewing siting of waste management facilities to assess the impact of the facility on the neighborhood and to ensure that waste management facilities are not being disproportionately placed in low income and minority communities. The location of waste management facilities should be part of a comprehensive planning process, which includes the opportunity for meaningful public participation and public consensus.

Reasons to Support Policy: Ethical planners will empower the entire community, including low income and minority populations, to participate in siting waste management facilities and will also look at the total array of waste management facilities and where they are sited when making recommendations for new sites.

Where to find out more

General Resources

- Resources, tools, case studies and links to practitioners assembled by the Source Water Collaborative **www.protectdrinkingwater.org**
- Information on source water assessments, protection efforts, partnerships, outreach, and other tools to protect sources of drinking water **www.epa.gov/safewater/protect.html**

Smart Growth

- Information on "smart growth" policies, funding sources, networking opportunities, technical tools and resources **www.epa.gov/smartgrowth**
- Smart Growth Network, a coalition of developers, planners, government officials, community groups and other stakeholders **www.smartgrowth.org**

Tools for Specific Situations

- Training module that describes eight tools to protect and restore water resources in urbanized or developing areas **www.epa.gov/watertrain/protection**
- Information on watershed protection, training, and low impact development techniques. Center for Watershed Protection, **www.cwp.org** Low Impact Development Center, **www.lowimpactdevelopment.org**
- Environmental management, planning, and federal and state regulatory information for local government officials, managers, and staff. Local Government Environmental Assistance Network (LGEAN), **www.lgean.org**
- Education for local officials on land use and natural resource protection. Nonpoint Education for Municipal Officials (NEMO), **www.nemo.uconn.edu**
- Technical assistance includes County Water Quality Issue Brief: Using GIS Tools to Link Land Use Decisions to Water Resource Protection. National Association of Counties (NACo), **www.naco.org/techassistance** under "Water Quality"
- Details on funding opportunities, partnerships, model ordinances, outreach and education, coastal zone programs & other tools to manage runoff **www.epa.gov/owow/ntps**
- Guidance on developing a Phase II stormwater program along with a list of best management practices to mitigate runoff pollution **www.epa.gov/npdes/menuofbmps**
- A Guidebook of Financial Tools. Environmental Finance Center Network, **www.efcnetwork.org**
- Assistance on planning for and financing land conservation, The Trust for Public Land **www.tpl.org/tier2_kad.cfm?folder_id=3129**

APA Planning Advisory Service Reports

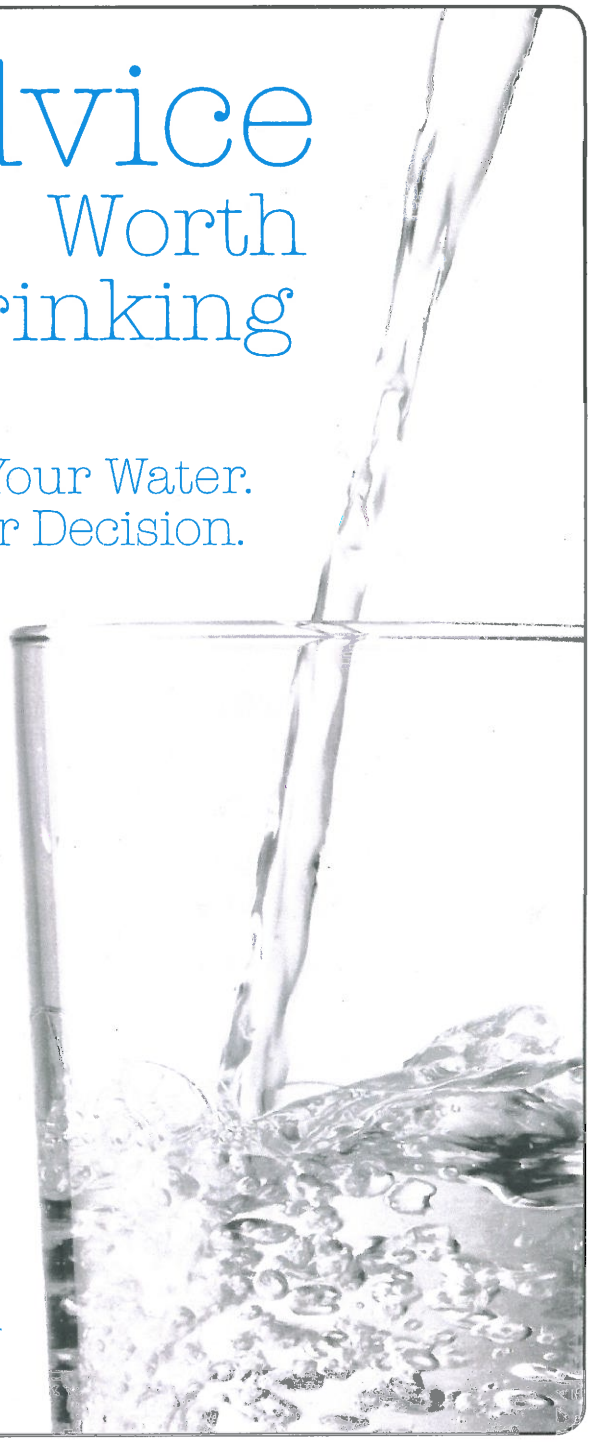
- *A Guide To Wellhead Protection*, No. 457/458 (August 1995)
- *Nonpoint Source Pollution: A Handbook for Local Governments*, No. 476 (Dec. 1997)

Who we are

The SOURCE WATER COLLABORATIVE is a coalition of 23 national organizations united to protect the lakes, rivers and aquifers supplying America's drinking water. Members include American Planning Association, American Water Works Association, Association of Metropolitan Water Agencies, Association of State and Interstate Water Pollution Control Administrators, Association of State and Territorial Health Officials, Association of State Drinking Water Administrators, Clean Water Fund, Environmental Finance Center, Farm Service Agency/U.S. Department of Agriculture, Groundwater Foundation, Ground Water Protection Council, National Association of Counties, National Environmental Services Center, National Ground Water Association, National Rural Water Association, North American Lake Management Society, River Network, Rural Community Assistance Partnership, Trust for Public Land, U.S. Environmental Protection Agency, U.S. Forest Service Northeastern Area, U.S. Geological Survey, and Water Systems Council.

Advice Worth Drinking

Your Water. Your Decision.



How today's land-use decisions can protect tomorrow's water supply

A Planner's Guide

Sourcewater COLLABORATIVE

FEBRUARY 2009

Putting drinking water into the planning process

Every day, land use decisions affect future drinking water supplies – either intentionally or inadvertently. To get control of the issue, you can integrate source water planning into your normal planning activities, from visioning to zoning, to provide sustainable sources of drinking water. To the right are some options localities have used to protect drinking water.

To get more information, go to **ProtectDrinkingWater.org**

Strategic point of intervention...	*A sampling of options to protect your drinking water supply...*
LONG RANGE VISIONING Goal-setting exercises (20-year + outlook)	• Include ground and surface water experts in the visioning exercise. • Include Source Water Assessments and water budget data in any build-out or alternative scenario analysis. • Link source water protection objective to other long-range goals, such as land conservation, habitat protection, compact development, stormwater and watershed management, water/waste water utility planning, and nonpoint source pollution reduction.
PLAN MAKING (a) Comprehensive (master or general) plans, (b) Sub-area plans (neighborhood plans, corridor plans, downtown plans, etc.), (c) Functional plans (stormwater plans, waste water management, water plans, open space plans, etc.)	• Include a critical and sensitive areas element with a strong source water component in the comprehensive plan (using up-to-date data about point and nonpoint threats). • Include maps and narrative describing the physical properties of aquifer and wellhead protection areas, (ground water contour, cones of depression, surface water contributors) as well as surface water resources important for current and future drinking water sources. • Include land use elements in plans that protect drinking water sources by limiting threats to rivers, streams, lakes, wetlands and ground water. • Develop stormwater management plans that keep pollutants out of drinking water sources.
REGULATIONS/INCENTIVES Carrots and sticks to implement plans (zoning ordinances, subdivision regulations, urban area boundaries, transfer of development rights, other incentives)	• Adopt ordinances and regulations such as wellhead protection overlay zones, riparian buffers, stormwater management ordinances, underground fuel storage tank regulations, land-use controls in flood plains, and nitrate loading regulations. • Encourage compact settlement patterns by allowing increased density and in-fill around existing urban areas; allowing or requiring cluster development; and adopting programs for transfer of development rights. • Use non-regulatory tools to spur smart growth such as permit streamlining, technical assistance, and the use of public-private partnerships for implementing best stormwater management practices.
DEVELOPMENT PROJECT REVIEW Review and approval of all aspects of the built environment being proposed (residential subdivisions, mixed use developments, commercial and industrial developments, transportation facilities, utilities, etc.)	• Require applicants for development projects to submit appropriate source water information on drinking water sources as part of their initial application submission. • Refer submitted plans to source water experts as part of the plan review process. • Require source water protection measures be incorporated into plans by private developers as a condition of approval; avoid bartering away good source water protection development practices in the development review process. • Encourage Low Impact Development practices and techniques that minimize impervious surfaces and runoff, and encourage on-site recharge.
PUBLIC INVESTMENT Capital projects undertaken by towns, cities, counties, states, and the federal government.	• Make sure that public investments in a capital improvements program adopted by a town, city, or county do not include measures that threaten source water supplies. • Be sure that the design and location of public investments such as roads, transit, buildings, and other public structures and facilities are sensitive to source water protection issues. • Pass bond issues to acquire fee and less-than-fee interest in conservation land and green infrastructure configured to protect source water resources. • Establish priorities for land acquisition; coordinate with water suppliers, land trusts and others to protect source waters through land acquisition, stormwater retrofits, other restoration projects.

FEBRUARY 2009

Where To Find Out More

Get information about protecting sources of drinking water and link to influential organizations. Source Water Collaborative, **www.protectdrinkingwater.org**

A Planner's Guide: How today's land-use decisions can protect tomorrow's water supply. Source Water Collaborative, **www.protectdrinkingwater.org**

Resource for source water assessments and other protection tools. Environmental Protection Agency, **www.epa.gov/safewater/protect.html**

Information on low impact development techniques and strategic planning, **www.lowimpactdevelopment.org**

Learn how to use GIS Tools to link land use decisions to water resource protection. A Brief from National Association of Counties, **www.naco.org/techassistance** under "Water Resources Management"

Education for local officials on land use and natural resource protection. Nonpoint Education for Municipal Officials (NEMO), **nemo.uconn.edu**

A Source Water Protection Tool for Municipal Officials. New England Interstate Water Pollution Control Commission, **www.neiwpcc.org/sourcewateroutreach**

Assistance on planning for and financing land conservation. The Trust for Public Land, **www.tpl.org/tier2_kad.cfm?folder_id=3129**

Sourcewater
COLLABORATIVE

American Planning Association - American Water Works Association - Association of Metropolitan Water Agencies - Association of State and Interstate Water Pollution Control Administrators - Association of State and Territorial Health Officials - Association of State Drinking Water Administrators - Clean Water Fund - Environmental Finance Center Network - Farm Service Agency/U.S. Department of Agriculture - Ground Water Protection Council - National Ground Water Association - National Rural Water Association - North American Lake Management Society - River Network - Rural Community Assistance Partnership - The Groundwater Foundation - The Trust for Public Land - U.S. Environmental Protection Agency - U.S. Forest Service, Northeastern Area - U.S. Geological Survey - Water Systems Council

Your Water. Your Decision.

A quick guide for community leaders committed to safe drinking water.

www.ProtectDrinkingWater.org

Your water. **Your decision.**

How you govern can determine what you drink. Consider your community's efforts in these key areas: development patterns, pricing options, and stewardship. Then get the details you need for action from the websites below.

Development Patterns

Planning land use at the watershed level protects sources of drinking water by conserving and protecting land where development would harm source water. Consider promoting development in already developed areas or in less environmentally sensitive areas. Consider:

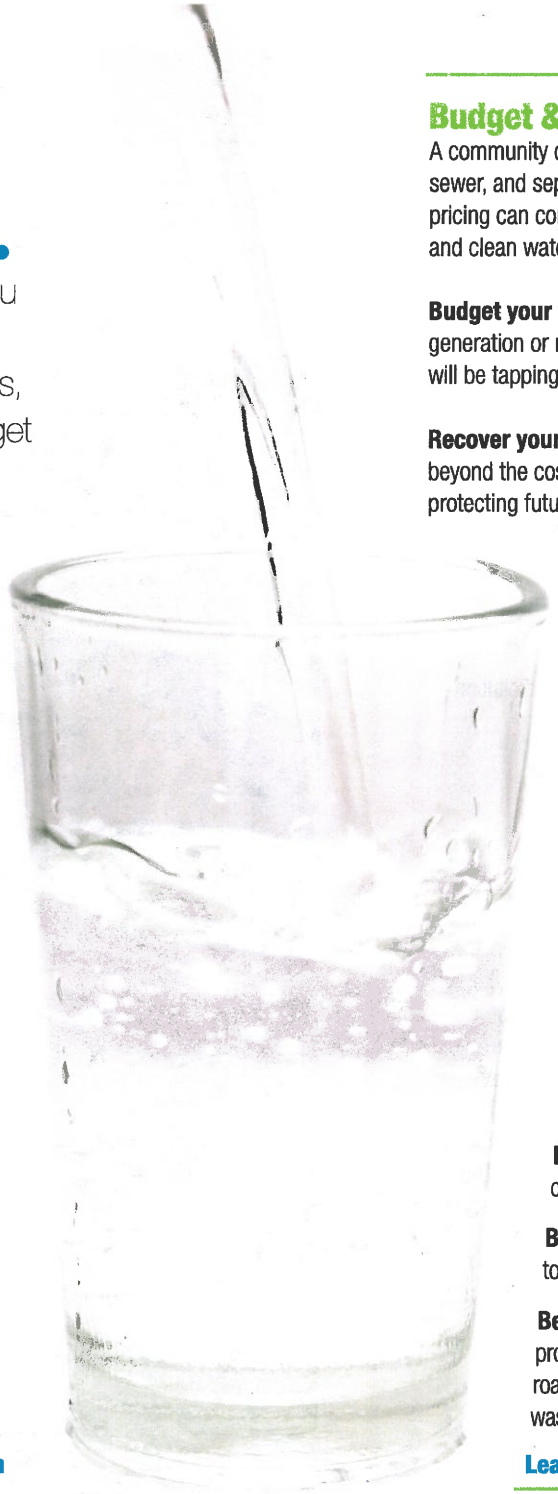
More green space. Preserving open space helps protect drinking water sources, especially contiguous areas such as stream corridors, wetlands and recharge areas. Redevelopment and compact development can help preserve critical open space.

More natural vegetation. Preserving natural vegetation - especially within green space areas and along rivers and lakes - lowers pollution. Planting new trees and vegetation also reduces runoff.

Less pavement. Reducing impervious surfaces, such as pavement and concrete, through pervious paving materials, narrower streets, and parking decks, decreases runoff and recharges the ground water supply. Development guidelines or incentives to promote green infrastructure can help.

Up-to-date local policies. Comprehensive plans, open space plans, low-impact development requirements, building permits and zoning tools can encourage development that protects drinking water supplies.

Learn more at www.ProtectDrinkingWater.org/Growth



Budget & Pricing

A community can help avoid over-use of valuable water resources and pollution by setting water, sewer, and septic utility rates to reflect the true costs of safe drinking water. Such full-cost pricing can consider lifecycle costs, environmental protection, and future investments to put safe and clean water policies on a more sustainable long term footing. Here's how it can happen:

Budget your water. Forecast the quantity and quality of drinking water you will be needing in a generation or more, and then budget the costs of protecting and treating the water sources you will be tapping and plan for how this limited resource might be protected and extended.

Recover your costs. When setting water, sewer, and septic utility rates, localities can think beyond the costs of pipes and chemical processes to include such expenses as securing and protecting future sources of tap water and system maintenence.

Determine lifecycle costs. Consider all the costs of water and wastewater treatment (including the delivery and collection systems, operation, and management), not just the initial investment. This will help you gauge the true cost of development.

Learn more at www.ProtectDrinkingWater.org/Costs

Stewardship

A local government's own actions can set the tone for source water protection. Here are steps some communities have taken:

Efficient infrastructure. Roads, water and sewer systems, and other public infrastructure can be designed and maintained to reduce runoff, pollution, and water loss.

Think regionally. Drinking water sources don't stop at political boundaries. Partnering with neighboring communities can help ensure your water sources stay clean and abundant.

Expand monitoring. Checking stream and ground water quality can give communities meaningful information about the state of their drinking water supply.

Behavior change. Some communities adjust services and reach out to citizens to influence individual behaviors that collectively have an impact on water use.

Be a role model. Local governments can demonstrate commitment to source water protection through actions such as recycling vehicle wash water, using alternative road treatments that reduce pollution, and supporting community household hazardous waste collection.

Learn more at www.ProtectDrinkingWater.org/Stewardship

January 2010

14 Public Information and Outreach Materials

The brochures listed below and provided in this section involve ground water quality and are designed for the general public. The developing agency for each brochure is included, along with the website address for the brochure, if available.

- *Arsenic in Your Well Water* (CDHD) *www.cdhd.idaho.gov/pdfs/eh/ArsenicPW.pdf h*
- Assistance adopting or updating zoning or subdivision ordinances (Association of Idaho Cities) *www.idahocities.org/*
- *Basic Information: Fluoride in Drinking Water* (Idaho Department of Health and Welfare) *www.deq.idaho.gov/media/520884-fluoride_brochure.pdf*
- *Fertilizer & Pesticide Use at Home* (DEQ) *www.deq.idaho.gov/media/522676-fertilizer_pesticide.pdf*
- *Homeowner's Guide to Septic Systems* (DEQ) *www.deq.idaho.gov/media/474190-septic_homeowners_guide.pdf*
- *Idaho Private Well Owner Brochure* (Idaho Department of Health and Welfare) *http://www.phd7.idaho.gov/EH/Water/Forms/IDHWwellownerbrochure.pdf*
- *Iron in Your Well Water* (CDHD) *cdhd.idaho.gov/pdfs/eh/Water%20Quality/Iron_Labs.pdf*
- *It Will Never Be This Obvious: Four Steps to Well Water Safety* (Idaho Department of Health and Welfare) *www.healthandwelfare.idaho.gov/LinkClick.aspx?fileticket=VSJEz0yl5ck%3D&tabid=95&mid=948*
- Laboratories certified for drinking water analyses (Idaho Department of Health and Welfare) *healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx*
- *Standards for Land Developments* (CDHD) *www.cdhd.idaho.gov/pdfs/eh/land_standards_development.pdf*
- Nitrates
  - *Nitrates/Nitrites in Ground Water* (CDHD) *www.cdhd.idaho.gov/pdfs/eh/land_nitrate.pdf.*
  - *Nitrate in Idaho's Ground Water* (DEQ) *www.deq.idaho.gov/media/473065-nitrate_in_idahos_gw_english.pdf*
  - *Nitrate in Idaho's Ground Water*–Spanish (DEQ) *www.deq.idaho.gov/media/473068-nitrate_in_idahos_gw__spanish.pdf*
- *OnePlan: For Your Place, on Your Time* (IASCD) *www.oneplan.org/*
- *Septic Systems and Drainfields: What You Need to Know* *www.deq.idaho.gov/media/657502-septic_systems_and_drainfields.pdf*
- Subsurface Sewage Disposal Application—Statewide (CDHD) *http://cdhd.idaho.gov/pdfs/eh/Sewage%20Forms%202012/Application%20Valley%207-2012_2.pdf*

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HEALTH DISTRICT CONTACT INFORMATION

Panhandle Health District
208-415-5200
www.phd1.idaho.gov
(serving Benewah, Bonner, Boundary, Kootenai, and Shoshone counties)

North Central Health District
208-799-3100
www.idahopublichealth.com
(serving Clearwater, Idaho, Latah, Lewis, and Nez Perce counties)

Southwest District Health
208-455-5400
www.publichealthidaho.com
(serving Adams, Canyon, Gem, Owyhee, Payette, and Washington counties)

Central District Health
208-375-5211
www.cdhd.idaho.gov
(serving Ada, Boise, Elmore and Valley counties)

South Central Public Health District
208-737-5900
www.phd5.idaho.gov
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties)

Southeastern District Health
208-233-9080
www.sdhdidaho.org
(serving Bannock, Bear Lake, Bingham, Butte, Caribou, Franklin, Oneida, and Power counties)

Eastern Idaho Public Health District
208-522-0310
www2.state.id.us/phd7
(serving Bonneville, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, and Teton counties)

IDAHO DEPARTMENT OF HEALTH AND WELFARE
Bureau of Community and Environmental Health
1-866-240-3553
bceh@dhw.idaho.gov

IDAHO BUREAU OF LABORATORIES
208-334-2235
statelab@dhw.idaho.gov
www.statelab.idaho.gov

NSF INTERNATIONAL
Consumer Hotline 1-800-673-8010
www.nsf.org

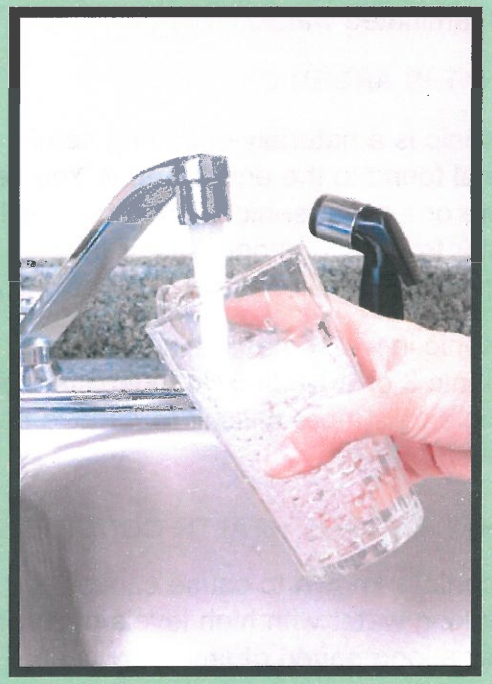
SUGGESTED TESTING SCHEDULE

The table below shows how often you should test your well for contaminants.

Contaminants	How often should I test?
Arsenic Uranium Fluoride	Once every 3 to 5 years
Bacteria Nitrates	Once a Year

ARSENIC

IN YOUR WELL WATER



IDAHO DEPARTMENT OF HEALTH & WELFARE

Private wells can provide a clean, safe source of water if they are properly located, built, and maintained. However, naturally occurring contaminants such as arsenic, fluoride, and uranium in the rocks and soil near your well can contaminate the well water. As a private well owner, it is your responsibility to make sure that your water is safe to use by testing for contaminants. This brochure provides information on arsenic and helps you understand the possible health effects of drinking arsenic contaminated water.

WHAT IS ARSENIC?

Arsenic is a naturally-occurring semi-metal found in the environment. You can't taste or smell arsenic. It can enter well water from natural deposits or from agricultural and industrial sources.

Arsenic in water may be in two forms: arsenic 3 or arsenic 5. Arsenic 3 is more toxic and is more difficult to remove from water.

WHAT ARE THE HEALTH CONCERNS?

Arsenic is known to cause cancer. Drinking water with high levels of arsenic over a long period of time may cause:

- Lung Cancer
- Bladder Cancer
- Skin Cancer
- Liver Cancer

People can also experience non-cancer health effects from drinking water with arsenic. The possible health effects of arsenic vary depending on the person, level of exposure, and amount of time exposed. Health effects of drinking low levels of arsenic in water may include:

- Upset stomach
- Decrease in white blood cells that help fight disease
- Abnormal heart rhythm
- A feeling of 'pins and needles' in the hands and feet
- Darkening of the skin and the appearance of corns or warts on the body

TESTING FREQUENCY AND TREATMENT LEVEL

Contaminant	When to Test	Treatment Level
Arsenic	Once every 3 to 5 years	0.01 mg/L or higher

mg/L = milligrams per liter of water

WHAT CAN I DO TO REMOVE ARSENIC FROM MY WATER?

NSF International certified treatment devices such as reverse osmosis, distillation, and carbon block filters can be used for removing arsenic. Arsenic levels at 0.01 mg/L or higher should be removed from your water as soon as possible. If your total arsenic test result is higher than 0.01 mg/L, ask the lab to determine the level of arsenic 3.The amount and type of arsenic in your water will determine the type of treatment you should use. To decide the best method of removing arsenic from your water call the NSF International Consumer Hotline at 1-800-673-8010.

Until you can install a treatment device, the EPA recommends using another source of water, such as bottled water, for drinking and cooking.
Note: Boiling water will not remove arsenic

WHAT CAN I DO TO MAINTAIN MY WATER SYSTEM?

If you install a treatment device, follow the manufacturer's suggested maintenance schedule to be sure your water is safe.

Also, your well should be maintained to keep it in good working order. To help keep track of well maintenance, it is recommended that you create and maintain a "system maintenance log." The log should include the location of the well, construction and contractor details, as well as results of any water tests. A copy of a log is available by calling the Idaho Department of Health and Welfare at 1-866-240-3553.

For questions about your well water, contact your local health district (numbers are located on the back of this brochure).

What is fluoride?

Fluoride is a naturally occurring compound derived from fluorine, the 13th most abundant element on Earth. It is found in many rocks and minerals in the soil and enters drinking water as water passes through these soils.

Fluoride is present naturally in almost all foods and beverages including water, but levels can vary widely. As fluoride can prevent tooth decay, it is sometimes added to drinking water in a process known as fluoridation. However, in Idaho, fluoridation is not common.

This brochure provides answers to some commonly asked questions about fluoride. For more information about fluoride, visit DEQ's website and other web resources listed inside this brochure.

For More Information

Idaho Department of Health and Welfare
Bureau of Community and Environmental Health
450 West State Street
Boise, ID 83720
(208) 334-5927

Public Health Districts

Panhandle Health District
8500 N. Atlas Road
Hayden, ID 83835
(208) 415-5100

North Central District Health
215 10th Street
Lewiston, ID 83501
(208) 799-3100

Central District Health
707 North Armstrong Place
Boise, ID 83704
(208) 375-5211

South Central District Health
1020 Washington Street N.
Twin Falls, ID 83301
(208) 734-5900

Southeastern District Health
1901 Alvin Ricken Drive
Pocatello, ID 83201
(208) 233-9080

Eastern Idaho Public Health District
1250 Hollipark Drive
Idaho Falls, ID 83401
(208) 522-0310

Southwest District Health
13307 Miami Lane
Caldwell, ID 83607
(208) 455-5300

Idaho Department of Environmental Quality

Boise
1445 N. Orchard
Boise, ID 83706
(208) 373-0550
toll-free: (888) 800-3480

Coeur d'Alene
2110 Ironwood Parkway
Coeur d'Alene, ID 83814
(208) 769-1422
toll-free: (877) 370-0017

Idaho Falls
900 N. Skyline, Suite B
Idaho Falls, ID 83402
(208) 528-2650
toll-free: (800) 232-4635

Lewiston
1118 F Street
Lewiston, ID 83501
(208) 799-4370
toll-free: (877) 541-3304

Pocatello
444 Hospital Way #300
Pocatello, ID 83201
(208) 236-6160
toll-free: (888) 655-6160

Twin Falls
650 Addison Ave. W,
Suite 110
Twin Falls, ID 83301
(208) 736-2190
toll-free: (800) 270-1663

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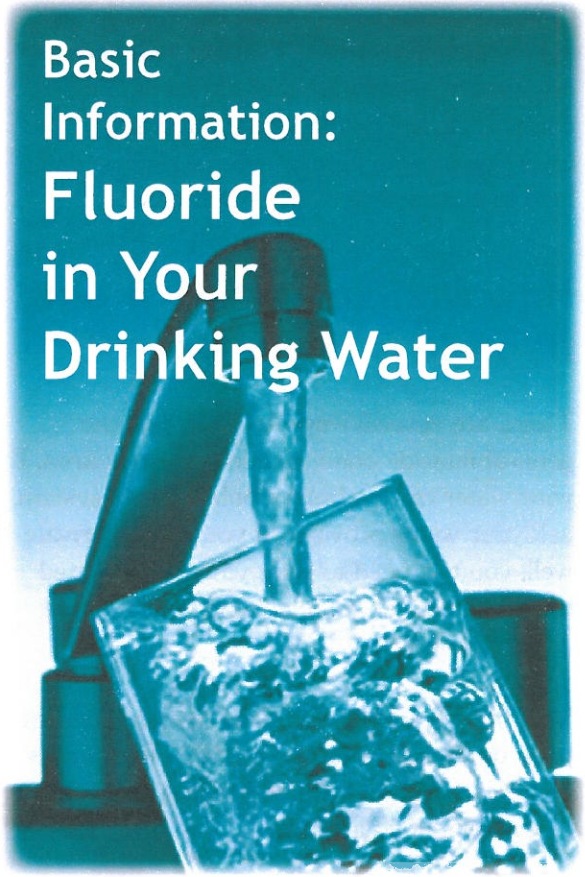
Drinking Water in Idaho

Basic Information: Fluoride in Your Drinking Water



Idaho Department of Environmental Quality
www.deq.idaho.gov

Why is fluoride in drinking water regulated?

Fluoride has been shown to prevent tooth decay, but too much fluoride at an early age, while the teeth are forming, can cause discoloration and pitting of the teeth. This condition is known as dental fluorosis. Overexposure to fluoride over a lifetime can lead to certain types of bone disease.

How do I know how much fluoride is in my water?

There are several ways to determine the general fluoride concentrations in your area. If your water comes from a public water system, ask your water provider. If you have a private well, you will need to have your water tested by a qualified lab to determine your fluoride concentrations.

Visit the *Fluoride in Drinking Water* program page on DEQ's website (see Web Resources at right) to link to an online listing of the latest test results in your area.

What if I have too much fluoride in my drinking water?

If you have been advised by a professional that the concentration of fluoride in your drinking water is too high, it may be necessary to drink only bottled or properly treated water. (See DEQ's fluoride webpage for treatment options.)

Does bottled water contain fluoride?

Bottled water is regulated by the U.S. Food and Drug Administration and must meet federal drinking water standards for regulated contaminants.

Some bottled water contains natural levels of fluoride from the location where it was collected. Some companies add fluoride to their bottled water, and must say so on the label. Consumers who purchase bottled water should carefully read the label or contact the bottler to understand what they are buying, such as the source of water, the method of treatment, and the fluoride level.

How do I test my drinking water?

Your local health department can assist you in testing your drinking water (see office locations on back). Generally, you will need to follow some simple instructions and take a sample of water to a qualified lab for testing. Discuss any concerns you have regarding the results with your dentist, physician, or health department.

For a list of certified labs in your area, visit the Bureau of Laboratories website at *www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx*.

Who can I contact for more information?

For questions about regulated contaminants in public water systems, contact DEQ (see office locations on back).

For oral health questions, your dentist or physician is an excellent place to start. These medical professionals can help you decide what your fluoride needs are. Children and adults have very different fluoride needs, so be sure to discuss the needs of all family members. Your local health department and the Idaho Department of Health and Welfare can also help you decide what steps, if any, you need to take.

Web Resources

Fluoride in Drinking Water
DEQ Website: *www.deq.idaho.gov/fluoride*

Idaho Department of Health and Welfare Oral Health Program
www.healthandwelfare.idaho.gov/Health/OralHealth/tabid/106/Default.aspx

List of Idaho Health Districts and their Websites
www.healthandwelfare.idaho.gov/Health/HealthDistrict/tabid/97/default.aspx

Center for Disease Control and Prevention
www.cdc.gov/fluoridation/

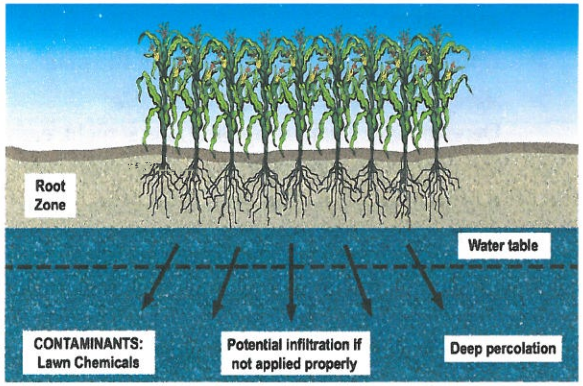
American Dental Association Fluoride and Fluoridation Information
www.ada.org/fluoride.aspx

American Dental Association Bottled Water Information
www.ada.org/3048.aspx?currentTab=1

Why does it matter how much fertilizer and pesticide I add to my lawn? How much effect can one home have on the environment?

Your lawn probably covers a small piece of land. Combined with other homeowners, however, the environmental contamination can present a major problem.

Because the majority of Idaho's drinking water supply comes from ground water, over-application of fertilizers and pesticides can move hazardous chemicals through the soil and into drinking water, adversely affecting human health. Over-application of fertilizers and pesticides can also harm surface waters if chemicals run off into lakes and streams and can damage your lawn as well.



Properly using home lawn chemicals can make a difference and set an example for homeowners around you. This list of tips and facts will help you attain a beautiful *and* environmentally friendly lawn.

For More Information

Idaho Department of Environmental Quality

State Office
Water Quality Division
1410 N. Hilton
Boise, ID 83706
(208) 373-0502

Regional Offices

Boise
1445 N. Orchard
Boise, ID 83706
(208) 373-0550
toll-free: (888) 800-3480

Lewiston
1118 F Street
Lewiston, ID 83501
(208) 799-4370
toll-free: (877) 541-3304

Coeur d'Alene
2110 Ironwood Parkway
Coeur d'Alene, ID 83814
(208) 769-1422
toll-free: (877) 370-0017

Pocatello
444 Hospital Way #300
Pocatello, ID 83201
(208) 236-6160
toll-free: (888) 655-6160

Idaho Falls
900 N. Skyline, Suite B
Idaho Falls, ID 83402
(208) 528-2650
toll-free: (800) 232-4635

Twin Falls
650 Addison Ave. W,
Suite 110
Twin Falls, ID 83301
(208) 736-2190
toll-free: (800) 270-1663

Web Resources

Idaho Department of Environmental Quality
Pollution Prevention for Citizens
www.deq.idaho.gov/pollution-prevention-for-citizens

U.S. Environmental Protection Agency
Beneficial Landscaping
www.epa.gov/greenkit/landscap.htm

University of Idaho Extension Service
Homes and Garden
www.extension.uidaho.edu/homegard.asp

Idaho Association of Soil Conservation Districts
www.iascd.org

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Water in Idaho

Fertilizer & Pesticide Use at Home

How to have a beautiful lawn *and* protect the environment

Idaho Department of Environmental Quality
www.deq.idaho.gov

Fertilizer Use

Fertilizer provides nutrients—usually nitrogen, phosphorus, and potassium—to lawns and gardens. In the proper quantity and proportion, these nutrients can help produce a healthy lawn and plants. If fertilizer is over-applied or the wrong combination of nutrients is added, plants may not fully absorb all of the nutrients. These excess nutrients can build up in the soil or filter into ground and surface waters, adversely impacting water quality.

Here's how you can help

- ***Fertilize your lawn...not your driveway.*** Apply fertilizer so that it lands on your lawn or garden, not on adjacent pavement. Fertilizer that lands on paved surfaces wastes money and can end up in Idaho's waterways. If fertilizer lands on the pavement, sweep it onto the lawn.
- ***Pick a product with appropriate proportions of the nutrients*** your lawn needs. Fertilizers are labeled according to the percentage of each nutrient.
- ***Minimize nitrogen use.*** Excess nitrogen can contaminate ground water and harm animals and humans, particularly small children.
- ***Choose slow-release fertilizers*** to minimize chemical loss through the soil and promote uptake by the plant.
- ***Look on the back of the bag*** for terms such as controlled-release, slow-release, slowly available, or water-insoluble nitrogen.
- ***Ask about proper fertilizer application methods.*** Make sure your investment is used efficiently. Don't over-apply so that your lawn is not harmed.
- ***Plant native grasses and plants*** that tend to be adapted to the local environment and may not need supplemental nutrients.
- ***Test your lawn's soil.*** By determining the characteristics of the soil, you can tell which nutrients are lacking and apply fertilizer more efficiently.

Remember, proper fertilization not only protects Idaho's water, but can reduce money spent on lawn care products and time devoted to lawn care.

A Healthy Lawn

Maintaining a healthy carpet of grass may involve use of fertilizers and pesticides. With proper care, you can maximize the benefits of these products while minimizing their adverse effects on the environment.

Disposal

Proper waste disposal is a critical final measure toward protecting Idaho's water from lawn care products. To minimize impact from extra product and waste containers:

- ✓ Buy ***the least amount*** of product needed.
- ✓ ***Rinse containers*** and use the rinsate as you would the product.
- ✓ ***Properly dispose of the container.*** Do not use it to store another liquid. Contact your local landfill, waste hauler, or public works department for disposal and recycling options in your area.

Pesticide Use

A pesticide is any substance or mixture of substances intended to prevent, repel, mitigate, or kill any pest. Pests can be insects, mice and other animals, unwanted plants (weeds), fungi, or microorganisms like bacteria and viruses.

Here's how to use pesticides wisely

- ***Identify the problem.*** Different pests require different controls. Using the wrong pesticide could damage the plant or surrounding garden without solving the problem.
- ***Try non-toxic controls first.*** Many common pests can be cured with non-toxic alternatives. Beer can be used to capture slugs, for example, and soapy water can eliminate many garden pests. Some pests can simply be removed by hand. Refer to an organic gardening book for suggestions.
- If pesticides must be used, ***limit application*** to the rates specified on the label to prevent over-application.
- Apply ***only to the affected part*** of the plant.
- ***Apply when pests are most vulnerable.*** Depending on the pest, applications at night, early morning, or after watering may be most effective.
- ***Make a habit of inspecting your lawn for pests.*** Catching a problem early reduces the amount of pesticide needed and prevents storage and disposal problems.
- If using a pest control service, ensure it follows ***best management practices***.
- ***Read product label and follow instructions.*** The label tells you how to use the product safely and effectively. Use of any pesticide in any way that is not consistent with label directions and precautions is illegal. It can also be ineffective, harmful to the environment, and potentially dangerous.

A Homeowner's Guide to Septic Systems

Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706

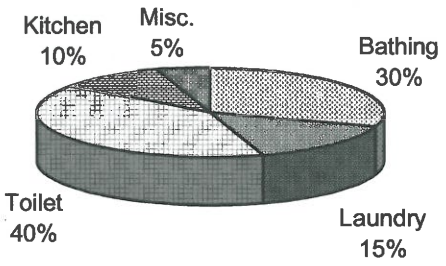
January 2001

Do you have a home septic system? As an Idaho resident, there is a good chance you do—thirty-six percent of Idaho's homes, or about 210,000 residences, use septic systems to treat their sewage. These systems discharge more than 53 million gallons of wastewater into Idaho's soils annually, and this figure grows each year. In 1999, Idaho's seven health districts issued over 6,100 permits for new septic systems.

Septic systems dispose of household sewage, or wastewater, generated from toilet use, bathing, laundry, and kitchen and cleaning activities. Because septic systems are underground and seldom require daily care, many homeowners rarely think about routine operations and maintenance. However, if a septic system is not properly designed, located, constructed, and maintained, groundwater may become contaminated.

Household Wastewater

Households that are not served by public sewers depend on septic tank systems to treat and dispose of wastewater. Household wastewater carries with it all wastes that go down the drains in our homes, including human waste, dirt, food, toilet paper, soap, detergents, and cleaning products. It contains dissolved nutrients, household chemicals, grease, oil, microorganisms (including some that cause disease), and solid particles. If not properly treated by your septic system, chemicals and microorganisms in wastewater can travel through the soil to groundwater and pose a health hazard.



The average person uses between 50 and 75 gallons of water per day; mostly in the bathroom. Reducing your water use will help your septic system to work more efficiently.

Your Septic System

A conventional septic system has three working parts: a septic tank, a drainfield, and surrounding soil.

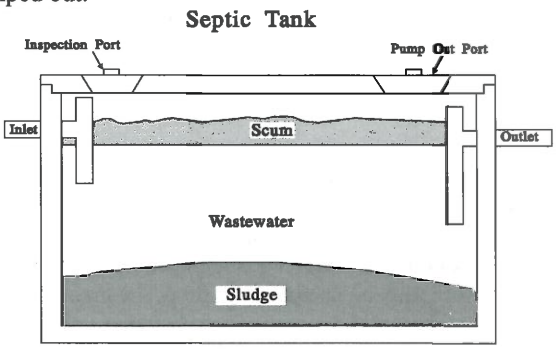
Septic Tank

Septic tanks can be made of concrete, fiberglass, or plastic and must be approved by the state. Minimum sizes of tanks have been established for residences based on the number of bedrooms in the dwelling. In Idaho, a 1,000-gallon septic tank is required for homes with three or four bedrooms. Larger tanks are required for larger homes. Local district health departments issue permits for septic systems and specify the minimum size tank. Some systems installed before the current rules and regulations may have smaller septic tanks.

A septic tank has three main functions:

- to remove as many solids as possible from household wastewater before sending the liquid, called "effluent," to a drainfield;
- to decompose solids in the tank; and
- to store solids that do not decompose.

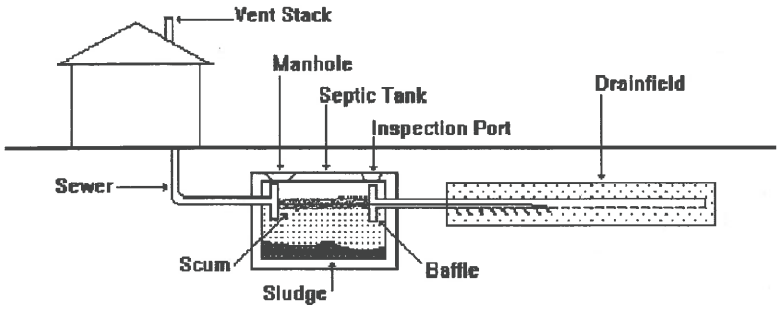
When raw wastewater enters the tank, heavy solids sink to the bottom of the tank as sludge. Light solids, such as grease and paper, float to the surface as scum. During the wastewater storage period, bacteria digest organic material in the wastewater. During this process, the solid material is reduced in volume and composition. Solids that do not decompose accumulate in the tank and eventually must be pumped out.



Tees, or baffles, are provided at the tank's inlet and outlet pipes. The inlet tee slows the incoming wastes and reduces disturbance of the settled sludge. The outlet tee keeps the solids and scum in the tank. As new wastewater enters the tank through the inlet tee, an equal amount of wastewater is pushed out of the tank through the outlet tee. The effluent that leaves the tank has been partially treated but still contains disease-causing bacteria and other pollutants.

Drainfield

Each time raw wastewater enters the tank it forces an equal amount of effluent into a drainfield. A standard drainfield is composed of a series of perforated pipes buried in gravel-filled trenches in the soil. The effluent seeps out of the perforated pipes and percolates through the gravel to the soil.



Soil

The soil below the drainfield provides the final treatment and disposal of the septic tank effluent. After the effluent has passed into the soil, most of it percolates downward and outward, eventually entering the groundwater. Soils are critical to the treatment of septic tank wastewater.

A system that is not functioning properly will release nutrient-rich and bacterial-laden wastewater into the groundwater and/or surface water. These contaminated waters pose a significant public health threat to people that come into contact with them. Wastewater that moves with groundwater can transport bacteria considerable distances. This can result in a threat to public health and adversely affect the quality of ground and surface waters.

Caring for Your Septic System

Installing Your System

In order to have a septic system installed on your property, you must first obtain a permit. Permit applications are available from your local district health department. Next, you must have a site evaluation performed. Make arrangements for this with your district health department and with a licensed septic system installer. Note that not all property is suitable for septic systems, so some permits may be denied. It is recommended that you have a site evaluation performed before you purchase property. Finally, have your system installed by a licensed installer and inspected by your local health district. Provide regular, preventative, maintenance to keep your system running smoothly.

Inspecting Your System

When too much sludge and scum are allowed to accumulate in your tank, the incoming sewage will not have enough time in the septic tank for solids to settle. Solids may flow to the drainfield and clog the pipes, causing the sewage to overflow to the ground surface, where it exposes humans and animals to disease-causing organisms. To prevent this from happening, it is very important to inspect your tank regularly and have it serviced when needed. All tanks have accessible manholes for inspecting and pumping. Some excavation work may be needed to uncover the manhole.

Properly designed tanks should have enough capacity for three to eight years of use before needing service. This is dependent upon the amount of wastewater generated. It is recommended that an average family of four have its septic tank pumped out every three to five years. Don't wait for signs of system failure to have your tank pumped. Your tank should be checked annually to measure sludge and scum levels. A licensed septic tank pumper can provide a septic tank inspection and recommend when the tank should be pumped. A tank inspection should include measuring the depth of scum and sludge and inspecting the tees in the septic tank.

If you do the inspection yourself, it is important to understand that septic tanks always appear full because both the inlet and the outlet are at the top of the tank. What you will need to know is how much of the tank's volume is being taken up by scum and sludge. When sludge and scum take up more than 35 percent of the tank volume, these solids need to be removed by pumping. A pole wrapped in a course weave cloth can be used to check the sludge depth. An extension on the pole can be used to measure the scum depth. Record these measurements as part of your pumping records. To check the tees, uncover the inspection ports.

Never allow anyone to enter your septic tank. Dangerous gases and the lack of oxygen can kill in minutes.

While it is impractical to inspect the pipes in your drainfield, it is important to watch for drainfield failure or overuse. See "Warning Signs of System Failure" in this booklet for information.

Maintaining Your System

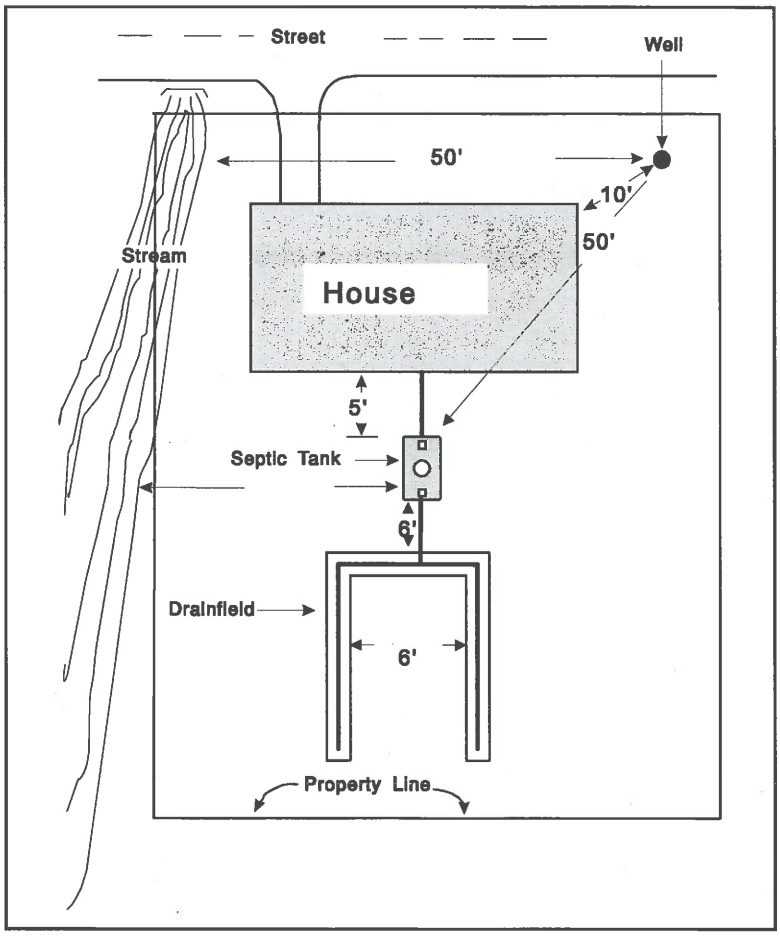
Pumping your septic tank every three years (or as determined by your inspections) will remove accumulations of solids, help keep the drainfield from becoming clogged, and help prevent you from experiencing sewage backups or septic system failure. An accumulation of sludge exceeding 35% of the total water depth in the septic tank could cause solids to enter the drainfield and clog the system. Hire a licensed septic tank pumper to pump your tank for you.

Mapping Your System

In order to take proper care of your septic system, you must know the location of the septic tank and drainfield. The location of your septic tank can be determined from plot plans, septic system inspection records, architectural or landscape drawings, or from observations of the house plumbing. If you do not have access to drawings, find where the sewer pipe leaves your house. Some installers mark the location where the waste pipe comes out of the house with an "S" on the foundation. You may want to do this as well. Probe in the ground 10 to 15 feet directly out from the location where the pipe leaves your house to find your tank.

Once the septic tank has been located, make several plot plan diagrams (with measurements) that include a rough sketch of your house, septic tank cover, drainfield area, well, and any other permanent reference points (such as trees or large rocks) and place them with your important papers. You'll find a sample system diagram on the next page, and a place to draw your own inside the front cover of this booklet. You may also want to hang a diagram in your garage and provide one to your local district health office.

Maintain a permanent record of any septic system maintenance, repair, sludge and scum levels, pumping, drainfield condition, household backups, and operations notes.



Create a septic system diagram, similar to this one, for your system.

Warning Signs of System Failure

While proper use, inspections, and maintenance should prevent most septic tank problems, it is still important to be aware of changes in your septic system and to act immediately if you suspect a system failure. There are many signs of septic system failure:

- surfacing sewage or wet spots in the drainfield area;
- plumbing or septic tank backups;
- slow draining fixtures;
- gurgling sounds in the plumbing system;
- sewage odors in the house or yard (note that the house plumbing vent on the roof will emit sewage odors and this is normal); and
- tests showing the presence of bacteria in well water.

If you notice any of these signs, or if you suspect your septic tank system may be having problems, contact a licensed septic system professional or your local district health agency for assistance.

Septic System Dos and Don'ts

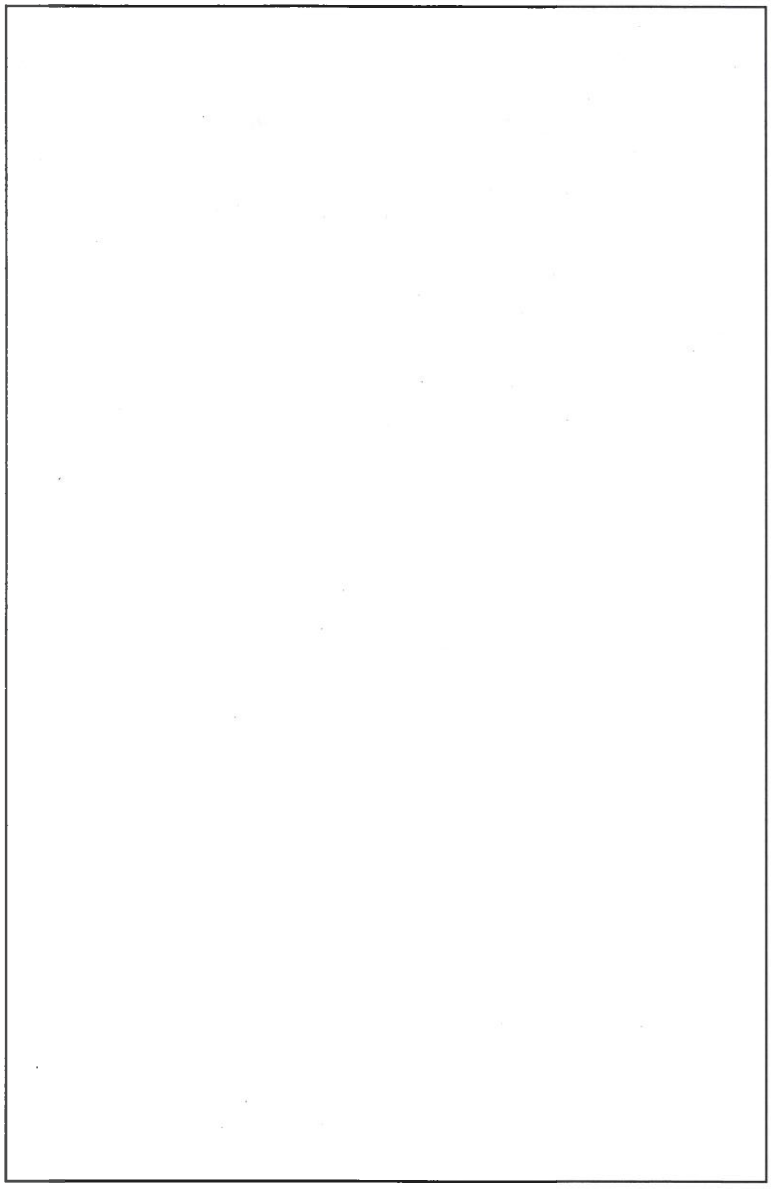
Proper operation of a septic system can prevent costly repairs or replacement. Observing the following guidelines will help to keep your system running efficiently.

Do

- …practice water conservation. The more wastewater you produce, the more wastewater your system must treat and dispose. By reducing and balancing your use, you can extend the life of your system and avoid costly repairs.
    - Use water saving devices such as low flow showerheads.
    - Repair leaky faucets and plumbing fixtures immediately.
    - Reduce toilet reservoir volume or flow.
    - Take short showers.
    - Take baths with a partially filled tub.
    - Wash only full loads of dishes and laundry.
    - Shut off the water while shaving or brushing your teeth.
    - Balance your water use (e.g., avoid washing several loads of laundry in one day).
- …keep accurate records. Know where your septic tank is, keep a diagram of its location using the space provided in this booklet, and keep a record of system maintenance.
- …inspect your system annually. Check the sludge and scum levels inside the tank and periodically check the drainfield for odors, wet spots, or surfacing sewage.
- …pump your system routinely. Pumping your septic tank is probably the single most important thing you can do to protect your system.
- …keep all runoff away from your system. Water from roofs and driveways should be diverted away from the septic tank and drainfield area. Soil over your system should be mounded slightly to encourage runoff.
- …protect your system from damage. Keep vehicles and livestock off your drainfield. The pressure can compact the soil or damage the pipes. Before you dig for any reason, check the location of your system and drainfield area.
- …landscape your system properly. Plant grass over the drainfield area. Don't plant trees or shrubs or place impermeable materials, such as concrete or plastic, over the drainfield.
- …use cleaning chemicals in moderation and only according to manufacturer's directions.

Don't

- …flood irrigate over your system or drainfield area. The best way to irrigate these areas is with sprinklers.
- …use caustic drain openers for clogged drains. Use boiling water or a drain snake to clean out clogs.
- …enter a septic tank. Poisonous gases or a lack of oxygen can be fatal.
- …use septic tank additives. They are not necessary for the proper functioning of your tank and they do not reduce the need for pumping. In fact, some additives can even harm your system.
- …flush harmful materials into your tank. Grease, cooking oil, coffee grounds, sanitary napkins, and cigarettes do not easily decompose in septic tanks. Chemicals, such as solvents, oils, paints, and pesticides, are harmful to your systems operation and may pollute groundwater.
- …use a garbage disposal. Using a garbage disposal will increase the amount of solids entering the septic tank and will result in the need for more frequent pumping.



Map your septic system here

For More Information

If you need to obtain a permit for a new or replacement septic system, or if you have questions about septic systems and their operation and maintenance, please contact your local health district.

Panhandle District Health Department
8500 N. Atlas Road
Hayden, ID 83835
208-415-5100

North Central District Health Department
215 10th Street
Lewiston, ID 83501
208-799-0353

Southwest District Health Department
920 Main Street
Caldwell, ID 83605
208-455-5400

Central District Health Department
707 N. Armstrong Place
Boise, ID 83704
208-327-7499

South Central District Health Department
1020 Washington Street North
Twin Falls, ID 83303
208-734-5900

Southeastern District Health Department
1901 Alvin Ricken Drive
Pocatello, ID 83201
208-239-5270

District 7 Health Department
254 "E" Street
Idaho Falls, ID 83402
208-523-5382

For a copy of the Home*A*Syst packet, call the Idaho Association of Soil Conservation Districts at 208-338-5900 or download a packet at the following website: www.idahoag.us/gw/homeasyst.htm.

Additional Resources

You can find additional information about private wells at the following links:

The EPA publication, *Drinking Water from Household Wells,* answers questions about drinking water from household wells, lists activities that may affect your water supply, describes problems to look for, and provides maintenance recommendations; www.epa.gov/safewater/privatewells/pdfs/household_wells.pdf.

Wellowner.org provides consumer information about ground water and private wells at www.wellowner.org.

NSF International, a not-for-profit organization that develops standards, product testing procedures, and certification services for products including water treatment devices. Call 1-877-867-3435 or visit its web site at www.nsfconsumer.org.

Contact Information

Idaho District health offices

District 1 Coeur d'Alene office, 208- 667-3481
www2.state.id.us/phd1/
(serving Benewah, Bonner, Boundary, Kootenai and Shoshone counties)
District 2 Lewiston office, 208-799-3100
www2.state.id.us/phd2/
(serving Clearwater, Idaho, Latah, Lewis and Nez Perce counties)
District 3 Caldwell office, 208- 455-5300,
www.publichealthidaho.com
(serving Adams, Canyon, Gem, Owyhee, Payette and Washington counties)
District 4 Boise office, 208-375-5211
www.phd4.state.id.us/
(serving Ada, Boise, Elmore and Valley counties)
District 5 Twin Falls office, 208-734-5900
www.state.id.us/phd5/
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka and Twin Falls counties)
District 6 Pocatello office, 208-233-9080
www2.state.id.us/phd6/
(serving Bannock, Bear Lake, Bingham, Caribou, Franklin, Oneida and Power counties)
District 7 Idaho Falls office, 208-522-0310
www2.state.id.us/phd7/
(serving Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, Madison and Teton counties)

Idaho Department of Environmental Quality offices

State office, Boise, 208-373-0502, www.deq.state.id.us/

Coeur d'Alene regional office, 208-769-1422
(serving Benewah, Bonner, Boundary, Kootenai and Shoshone counties)
Lewiston regional office, 208-799-4370 or toll free, 1-877-541-3304
(serving Clearwater, Idaho, Latah, Lewis and Nez Perce counties)
Boise regional office, 208-373-0550
(serving Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley and Washington counties)
Twin Falls regional office, 208-736-2190
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka and Twin Falls counties)
Pocatello regional office, 208-236-6160
(serving Bannock, Bear Lake, Bingham, Caribou, Franklin, Oneida and Power counties)
Idaho Falls regional office, 208-528-2650
(serving Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, Madison and Teton counties)

Idaho Department of Water Resources

Ground water Protection Section, Boise office: 208-327-7900
www.idwr.state.id.us/

Northern Region, Coeur d'Alene office: 208-769-1450
Eastern Region, Idaho Falls office: 208-525-7161
Southern Region, Twin Falls office: 208-736-3033
Western Region, Boise office: 208-334-2190

Idaho State Department of Agriculture

Water Program, Boise office: 208-332-8500
www.agri.state.id.us/

Idaho Department of Health and Welfare

Bureau of Community and Environmental Health, 1-208-334-6584, Toll Free 1-866-240-3553

September 2003

IDAHO DEPARTMENT OF HEALTH & WELFARE

Environmental Health Education and Assessment Program
Bureau of Community and Environmental Health
Division of Health

Idaho Private Well Owner Brochure

What are the responsibilities of owning a private well?

Your drinking water is delivered to your faucet either through a public water system or from a private well or spring. Both public and private water systems tap into ground water and surface water sources through wells, springs, and intakes from streams or rivers.

In order to protect their consumers, public water suppliers are required by law to test their drinking water regularly and make these tests results available to the public. Unlike public water supplies, these drinking water regulations do not apply to private wells. As a private well owner, it is your responsibility alone to make sure that your water is safe to drink.

Private wells can provide a clean, safe source of drinking water if they are properly located, constructed and maintained. However, natural and man-made contaminants can get into ground water and into your drinking water. At high enough levels, these contaminants can put your family and animals' health at risk.

If you own your own well, you should periodically test your water, make sure your well system is in good working order, and know how to protect your wellhead. By following the advice in this brochure, you can help insure that your well remains a safe source of drinking water for you and your family.

This brochure contains information to help you find answers to questions about drinking water testing, well construction and maintenance, and basic wellhead protection.

What drinking water contaminants should I be concerned about?

If you find a contaminant in your drinking water, it does not always mean that your water is unhealthy to drink. Some contaminants can occur at low levels and not cause health problems. However, the higher the concentration of a contaminant in your water, the greater the chance it may make you sick.

The Environmental Protection Agency (EPA) has set drinking water regulations for public water supplies to protect public health. Although these regulations do not apply to private wells, they can be used as guides to help you determine if your water is safe to drink.

For a list of drinking water contaminants, potential health effects, and sources of drinking water contaminants contact the EPA safe drinking water hotline toll-free at 1-800-426-4791, or visit www.epa.gov/safewater/mcl.html#mcls.

What are some contaminants found in Idaho ground water?

Idaho ground water may contain infectious microorganisms (such as

harmful bacteria and viruses), nitrates, arsenic, lead, fluoride and organic compounds including oil products, solvents and pesticides. Depending on where your well is located, the depth and condition of your well, and possible contaminant sources, you may want to test for one, some or all of these contaminants.

It is important to realize that the shallower the well, the more vulnerable it may be to contaminants from septic systems, agriculture, industry and other human activities.

Before testing your drinking water, find out what types of contaminants are a concern in your area for your water system.

You can find out about arsenic and nitrates in Idaho ground water and view county ground water reports online at the Idaho Department of Environmental Quality (IDEQ) website, www.deq.state.id.us/water/water1.htm, or call your regional IDEQ office listed on the back page of this brochure.

If you have water quality questions regarding pesticides, fertilizers, animal waste and other potential agricultural contaminants, contact the Idaho State Department of Agriculture (ISDA) Water Quality Program at 208-332-8500 or visit their website at www.idahoag.us/gw/.

When should I test my drinking water?

It is generally a good idea to test well water annually, before purchasing a home, or after installing a new well. You may also want to test if your water is cloudy, has a strange color, odor, taste, or appearance, or if you have recently repaired or had a problem with your home's plumbing, connections, or treatment system.

The Idaho Department of Health and Welfare's Bureau of Community and Environmental Health (BCEH) also can provide you with a private well water testing schedule and a guide for troubleshooting well water problems. Contact BCEH at 866-240-3553.

If your water has a funny taste, appearance or smell, you can identify the cause by using the interactive database, "Diagnose Your Drinking Water" at the Water Quality Association's website, www.wqa.org *(click on "Diagnose Your Drinking Water" listed under "Consumer's Corner" on the site's front page).*

This database will help you narrow down causes of drinking water problems by choosing from a list of water symptoms. Once narrowed down, you can also find potential treatments and solutions. To request more information, contact the association by phone, 630-505-0160, or by email, info@wqa.org.

How do I get my drinking water tested?

Once you have decided to test your drinking water, talk to an environmental health specialist at your local health district. These professionals can help you figure out what tests you may want to have done. They can also instruct you on how, when and where to collect your water sample and where to get the appropriate sample bottles.

You should have your water tested at a certified analytical lab. Lab staff can also answer questions about how to collect your water sample.

For a list of certified drinking water analyses labs in your area contact your regional IDEQ office. You can also find a list of labs at: www.deq.state.id.us/water/dw/water_analyses_labs.htm.

What should I do if a test result comes back positive?

As mentioned before, the presence of a contaminant is not always a sign of a health hazard. However, if your well water tests positive for a contaminant, discuss your test results with an environmental health specialist at your local health district. These professionals can help you determine if you and your family's health is at risk.

If your drinking water tests positive for a contaminant at levels that may harm your health, fix the problem as soon as possible. You may need to disinfect your well, repair your system, find an alternative drinking water source, or install a water treatment device to remove contaminants.

There are many different treatment devices available. Different types remove different contaminants. There is no one device that does it all. It is important to research possible treatment devices carefully to find the best solution for your problem. You must also maintain your water treatment device once it is installed so that it works properly to keep your drinking water safe.

For additional information about drinking water contaminants, testing, and treatment systems contact the National Sanitation Foundation (NSF) Consumer Affairs Office. Call NSF toll-free at 1-877-867-3435 or visit www.nsfconsumer.org/water/drinking_water.asp. You can also search treatment device product listings online at: www.nsf.org/certified/dwtu/.

The Water Systems Council provides information sheets on drinking water testing, treatment, and maintenance for private wells online at www.wellcarehotline.org/wellcare/infosheets.cfm, or you can speak with a technician by calling the well care hotline toll-free at 1-888-395-1033.

To request a free pamphlet about home water treatment units, contact the EPA safe drinking water hotline at 1-800-426-4791.

What do I need to know about well construction and maintenance?

Proper well design, construction and maintenance can reduce the chance that contaminants will get into your well water. To insure proper well construction when installing a well, current Idaho law requires all well drillers to be licensed. Some older wells drilled prior to this ruling may not be constructed to current standards and may need to be updated.

Annual well maintenance is also essential to keep your drinking water safe. Well owners are encouraged to perform an annual water test, periodically check to make sure their well is functioning properly, and repair their system as needed.

For information on well construction, to request a list of licensed well drillers, or to contact a well drilling specialist call the Idaho Department of Water Resources (IDWR) at 208-327-7900 or visit their website at www.idwr.state.id.us/water/well/default.htm.

You can also search for information (including well location, ownership, construction details and underlying strata) about a preexisting well on the IDWR well information search page, www.idwr.state.id.us/water/well/search.htm. Information on older wells may not be available online. However, many older reports are maintained in microfilm files. If you cannot find a well report online, contact your regional IDWR office listed on the back page of this brochure.

The Idaho Home*A*Syst project provides in-depth information on proper well location, Construction, and maintenance and can help you identify homestead activities that may affect your drinking water.

HEALTH DISTRICT CONTACT INFORMATION

Panhandle Health District
208-415-5200
www.phd1.idaho.gov
(serving Benewah, Bonner, Boundary, Kootenai, and Shoshone counties)

North Central Health District
208-799-3100
www.idahopublichealth.com
(serving Clearwater, Idaho, Latah, Lewis, and Nez Perce counties)

Southwest District Health
208-455-5400
www.publichealthidaho.com
(serving Adams, Canyon, Gem, Owyhee, Payette, and Washington counties)

Central District Health
208-375-5211
www.cdhd.idaho.gov
(serving Ada, Boise, Elmore and Valley counties)

South Central Public Health District
208-737-5900
www.phd5.idaho.gov
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties)

Southeastern District Health
208-233-9080
www.sdhdidaho.org
(serving Bannock, Bear Lake, Bingham, Butte, Caribou, Franklin, Oneida, and Power counties)

Eastern Idaho Public Health District
208-522-0310
www2.state.id.us/phd7
(serving Bonneville, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, and Teton counties)

IDAHO DEPARTMENT OF HEALTH AND WELFARE
Bureau of Community and Environmental Health
1-866-240-3553
bceh@dhw.idaho.gov

Idaho Bureau of Laboratories
208-334-2235
statelab@dhw.idaho.gov
www.statelab.idaho.gov

NSF INTERNATIONAL
Consumer Hotline 1-800-673-8010
www.nsf.org

SUGGESTED TESTING SCHEDULE

The table below shows how often you should test your well for contaminants.

Contaminants	How often should I test?
Arsenic Uranium Fluoride	Once every 3 to 5 years
Bacteria Nitrate	Once a Year

IRON
IN YOUR
WELL WATER

IDAHO DEPARTMENT OF HEALTH & WELFARE

Private wells can provide a clean, safe source of water if they are properly located, built, and maintained. As a private well owner, it is your responsibility to make sure that your water is safe to use by testing for contaminants. This brochure provides information on iron and helps you understand the possible problems you may encounter with high levels of iron in your drinking water.

WHAT IS IRON?

Iron is a mineral that is naturally-occurring. Our bodies need iron for many bodily functions. For example iron is needed in blood to carry oxygen from our lungs to the rest of the body.

WHAT ARE THE HEALTH CONCERNS?

Iron in well water is usually not a health concern. However, iron can cause other problems such as leaving stains on laundry and dishes. Iron can also give water a metallic taste or a bad smell.

HOW MUCH IRON CAUSES A PROBLEM?

The Environmental Protection Agency (EPA) set a secondary maximum contaminant level (SMCL) for iron at 0.3 milligrams per liter of water (mg/L). The SMCL is used as a guideline to assist the public in determining the level that may cause problems such as a rusty color and/or metallic taste in water, or reddish or orange staining.

WHAT ARE THE FORMS OF IRON?

The forms of iron are soluble, insoluble, and organic. **Soluble iron**, also known as "clear water," causes reddish brown particles that will settle at the bottom of a glass of water. **Insoluble iron**, also known as "red water," gives water a rusty, red or yellow color. **Organic iron** is formed from organic acid and iron and is typically yellow or brown in color, but it can be clear. There are also organisms that eat iron known as iron bacteria. **Iron bacteria** create a "biofilm" that is a red or brown slime (typically the slime is in the toilet tank and in plumbing materials) and can make an iron problem even worse.

WHAT CAN I DO TO REMOVE IRON FROM MY WATER?

The form of iron you have will determine the type of treatment that you use. Currently, there are no NSF International certified treatment devices for iron; however, there are methods than can be used to reduce the amount of iron in your water. Soluble and organic iron can be treated with methods such as a water softener, ozonation or various types of filtration. Methods such as oxidation and filtration can be used to remove insoluble iron from water. Iron bacteria is typically treated by shock chlorination. To determine the best method for removing iron from your well, call the NSF International Consumer Hotline at 1-800-673-8010.

WHAT CAN I DO TO MAINTAIN MY WATER SYSTEM?

If you install a treatment device, follow the manufacturer's suggested maintenance schedule to be sure your water is safe.

Also, your well should be maintained to keep it in good working order. To help keep track of well maintenance, it is recommended that you create and maintain a "system maintenance log." The log should include the location of the well, construction and contractor details, as well as results of any water tests. A copy of a log is available by calling the Idaho Department of Health and Welfare at 1-866-240-3553.

For questions about your well water, contact your local public health district (numbers are located on the back of this brochure).

Health Department Contact Information

Coeur d'Alene 415-5200
www2.state.id.us/phd1
(serving Benewah, Bonner, Boundary, Kootenai and Shoshone counties)

Lewiston 799-3100
www.ncdhd.us/
(serving Clearwater, Idaho, Latah, Lewis, and Nez Perce counties)

Caldwell 459-0744
www.publichealthidaho.com/
(serving Adams, Canyon, Gem, Owyhee, Payette and Washington counties)

Boise 375-5211
www.cdhd.idaho.gov/
(serving Ada, Boise, Elmore and Valley counties)

Twin Falls 734-5900
www.phd5.idaho.gov/
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties)

Pocatello 233-9080
www.sdhdidaho.org/
(serving Bannock, Bear Lake, Bingham, Caribou, Franklin, Oneida, and Power counties)

Idaho Falls 522-0310
www.idaho.gov/phd7
(serving Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, and Teton counties)

Idaho Department of Health and Welfare

Bureau of Community and Environmental Health
1-866-240-3553
bceh@dhw.idaho.gov

IDAHO DEPARTMENT OF HEALTH & WELFARE

Idaho Department of Environmental Quality offices

State office, Boise, 373-0502, www.deq.idaho.gov/

Coeur d'Alene regional office, 769-1422
(serving Benewah, Bonner, Boundary, Kootenai, and Shoshone counties)

Lewiston regional office, 799-4370
(serving Clearwater, Idaho, Latah, Lewis, and Nez Perce counties)

Boise regional office, 373-0550
(serving Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley, and Washington counties)

Twin Falls regional office, 736-2190
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties)

Pocatello regional office, 236-6160
(serving Bannock, Bear Lake, Bingham, Caribou, Franklin, Oneida, and Power counties)

Idaho Falls regional office, 528-2650
(serving Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, Madison and Teton counties)

Idaho Department of Water Resources

Ground Water Protection Section, Boise: 287-4800
www.idwr.idaho.gov

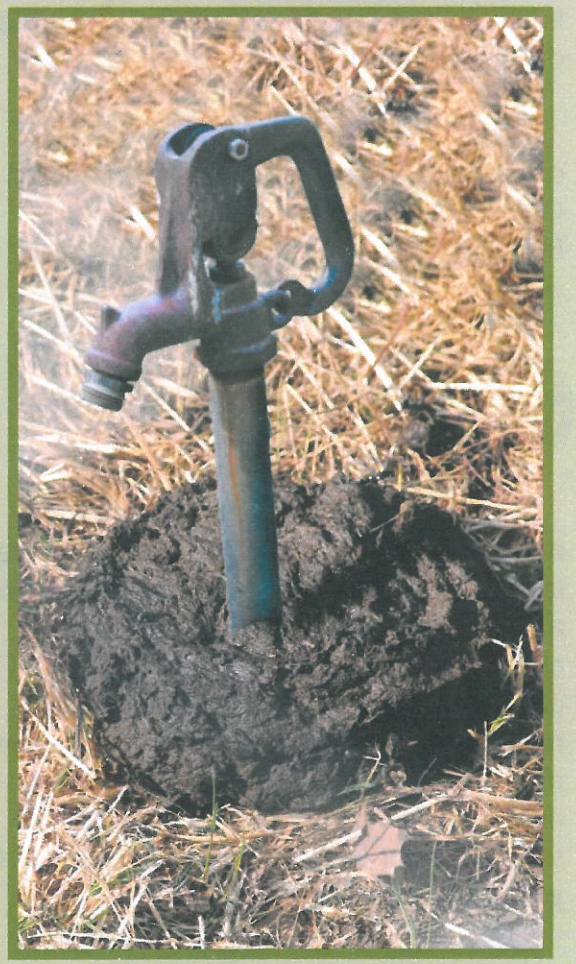
Northern Region, Coeur d'Alene: 769-1450
Eastern Region, Idaho Falls: 525-7161
Southern Region, Twin Falls: 736-3033
Western Region, Boise: 334-2190

Idaho Department of Agriculture

Water Program
Boise Office 332-8597
www.agri.idaho.gov

Some text supplied by the U.S. Environmental Protection Agency Web site.

It will never be this obvious



Four Steps to Well Water Safety

Private wells can provide a clean, safe source of water if they are properly located, built, and maintained. The location and installation of a well is crucial to protecting water from contamination. Because many factors determine the best place to locate a well, it is recommended that a certified well water driller perform the job.

To find certified local water-well contractors in your area, call the national Ground Water Association at 800-551-7379 or visit their website at www.ngwa.org.

1 Have Your Water Tested

As a private well owner, it is your responsibility to make sure that your water is safe to use. Pollution from sources such as septic systems, farm animals, farm chemicals and naturally occurring chemicals can contaminate your well. At high levels, pollution in your well water can put your family's and animals' health at risk. If you have any question about the safety of your well water, you should have your well water tested.

You can have your well water tested at a certified lab. Lab staff will tell you when and how to collect your water sample. For a list of labs, contact your regional Idaho Department of Environmental Quality office (numbers are on back of this brochure).

2 Understand the Results of the Testing

Once you have had your well water tested and received the results, you will need to understand the results. Many times the lab that does the testing will explain if your well water poses any health concerns. If you still have questions after speaking to the lab, you can contact your local health department who should be able to help you interpret well testing results and assist you with any additional questions you may have (local health department numbers are on back of this brochure).

3 Fix Any Problems

If you learn your well water is polluted, fix the problem as soon as possible. You may need to disinfect your water, have a new well drilled, replumb or repair your system. Consult a certified well water driller for help. You might consider installing a water treatment device to remove pollutants. There are many home water treatment devices. Different types remove different pollutants. No one device does it all. Get a copy of the Environmental Protection Agency's "Home Water Treatment Units" pamphlet by calling (800) 426-4791.

4 Maintain Your Well

Annual well maintenance is essential to keep your water safe. Well owners are encouraged to perform an annual water test, periodically check to make sure their well is functioning properly, and repair their system as soon as a problem is discovered. Proper well maintenance should include checking the well covering, casing, and well cap for cracks and other entry points for potential pollutants. Every 10 years have the pump, storage tank, pipes and valves, and water flow inspected by a certified well water driller. When the well is no longer in use, make sure to properly close the old well to help prevent the contamination of the water table.

To help keep track of maintenance, it is recommended that you create and maintain a "well maintenance log." The log should include the location of the well, construction and contractor details, as well as results of any water tests.

Standards For Land Developments

Sewage Disposal • Water Supply • Solid Waste Disposal & The Preservation of Environmental Quality

- A minimum of ten (10) working days shall be required for review upon receipt of these reports.
- The Health Department shall be provided an opportunuity to observe any or all test holes and/or soil tests.
- Engineer please note: It is necessary for your report to cover every item listed herein, making reference to same. Please be concise to eliminate any confusion. Failure to complete all information as requested will be considered cause to withhold approval.
- Environmental Reports are to be submitted and certified by an Idaho Licensed Professional Engineer (Idaho Code 54-1202 (B)).

FORWARD

These guidelines are intended to be used as a guide for land development and represent a compilation of various statutory and regulatory requirements. For the exact requirement, please refer to the applicable statute or regulation.

The furnishing of Central District Health Department of any and all data needed to satisfy the content and intent of Idaho Code Title 50 Chapter 13 is the responsibility of the land developer and his technical consultants.

It is to be noted that certain county ordinances may require additional information beyond the scope of this guide.

Any aspect of the design of the a proposed development which, in the opinion of the Central District Health Department, is likely to cause serious public health problems or degradation of the environmental quaility shall be cause for a recommendation from the Health Authority for the sanitary restrictions to not have been satisfied under Idaho Code Title 50 Chapter 13 sections 1325 to 1360.

Central District Health Department activites in this regard will be coordinated with appropriate State Agencies having regulatory control over professional services (I.C. Title 54, Chapter 12 and 20.)

The following information may be required for subdivision plats when they are received for review. The information shall be submitted in a report form along with a copy of a map of the proposed subdivision.

I. DESCRIPTION OF PROJECT

A. Name of subdivision
B. Location of subdivision
C. Legal description of subdivision
D. Owner, address, and telephone number
E. Engineer
   1. Engineering Firm
   2. Engineer's address and telephone number
   3. Engineer's licensed number (registered and licensed with the State of Idaho under Idaho Code Title 54 Chapter 12
F. Area of subdivision (total size in acres).
   1. Number of lots
   2. Area of lots.
   3. Minimum lot size.
   4. Type of development proposed.

II. SUBDIVISION PLAT MAP

Requirements as per I.C. Title 50, Chapter 13; Title 39, Chapter 1; Title 39, Chapter 36; Idaho Department of Environmental Quality Rules and Regulations, Title 1, Chapter 3, Individual and Subsurface Sewage Disposal Regulations.

A. Topographic map with five (5) foot contours (when required).
B. Show rock out crops.
C. Show proposed lot lines.
D. Show all easements and proposed encroachments.
E. If underground irrigation lines or other pipe lines and utilities are present, indicate their location on the tentative map.
F. Show 100 year flood plain. (Below-a-dam 100-year flood plain is the area impacted if all water was to be released as a result of an emergency.
G. State or show drainage and run-off on streets and roads and any other drainage problem areas.
H. Show existing wells within 150 feet of the development.
I. Color code all areas in the proposed development which exceed a twenty (20) percent natural slope.
J. Lots with individual septic tanks and individual water should be at least one (1) acre in size.
K. Spring discharges.
L. Show all surface water systems (i.e., rivers, streams, lakes, ponds, ditches, drains, etc.) within 300 feet of the proposed development.

CENTRAL DISTRICT HEALTH DEPARTMENT
707 N. Armstrong Pl. • Boise, ID 83704 • (208) 375-5211

III. SEWAGE DISPOSAL SYSTEM

Requirements as per Title 39, Chapter 1, Title 39, Chapter 36, Idaho Department of Environmental Quality Rules and Regulations, Title 1, Chapter 3, Individual and Subsurface Sewage Disposal Regulations.

A. Individual Sewage Disposal Systems.

1. Submit a report of the soils profiles and analysis to a depth of at least six (6) feet below the bottom of the proposed absorption systems or at a depth specified by the Health Authority.
   a. Include soil profile log as evidence of soils using the Technical Guidance Manual for Individual and Subsurface Sewage Disposal.
2. Provide soils testing data as required by the Health Authority.
3. Furnish a signed statement as to whether or not the soils on each lot in the development are capable of satisfactorily treating and disposing of sewage effluent.
4. Submit documents that demonstrate that all lots can comply with the applicable rules and regulations.
5. Determine the high normal ground water level, when it occurs, and the duration. High water shall be determined during the season of highest ground water.
6. Provide a geological or hydrological hazard report (when required).
7. State the maximum application rates as per the Technical Guidance Manual.

B. Central Subsurface Systems.

Requirements as per Title 39, Chapter 1; Title 39, Chapter 36; Idaho Department of Environmental Quality Rules and Regulations, Title 1, Chapter 3, Individual and Subsurface Sewage Disposal Regulations and Central District Health Department's Community Sewage System.

1. Provide all information as per the Central District Health Department's Community Subsurface Sewage Disposal Systems Regulations and Individual Sewage Regulations.

C. Public Sewage Disposal System.

Requirements as per Idaho Code 39-118; Title 50, Chapter 13.

1. State the type of system.
2. Provide a letter of approval of plans by the Idaho Department of Environmental Quality or Qualified Licensed Professional Engineer representing the City, County, Quasi Municipal Corporation, or Regulated Public Utility.
3. Provide a letter from the entity receiving the sewage stating that they will service the development.
4. Provide a copy of the as-built plan certification (when required).

IV. WATER SYSTEMS

Requirements as per Idaho Code Title 37, Chapter 21; Title 39, Chapter 1; Title 50, Chapter 13 and the Idaho Department of Environmental Quality Regulations, Title 1, Chapter 8, Idaho Regulations for Public Drinking Water Systems.

General Requirements:

1. Provide a statement and documentation of the availability and source(s) of water to meet the demands of the parcels in the development.
2. Furnish a statement that abandoned water wells have been sealed to prevent contamination of the aquifer.

A. Individual Water

1. Verify that each lot meets the recommended setback standards for individual water supplies.

B. Public Water (Community and Non-Community)

1. Provide a letter of approval of plans by the Idaho Department of Environmental Quality or Qualified Licensed Professional Engineer representing the City, County, Quasi Municipal Corporation, or Regulated Public Utility.
2. State how a copy of the Homeowner's Corporation and the Water System Operation and Maintenance Manual is to be provided to the parcel buyer.
3. Provide a letter from the purveyor providing water to the development stating that they will service the development.
4. Provide a copy of the as-built plan certification (when required).

V. SOLID WASTE

Requirements as per Idaho Code Title 39, Chapter 1; Title 67, Chapter 52; Chapter 87 Idaho Session Laws 1973 and the Idaho Solid Waste Management Regulations and Standards.

A. State the method proposed to manage solid waste.

B. Note if there are any transfer stations or sanitary landfills within ten (10) miles of the development.

1. If there are none, indicate that area in the development which will be deeded to the county as a solid waste transfer site.

VI. AIR QUALITY

Requirements as per Idaho Code Title 39, Chapter 1 and the Idaho Air Quality Regulations.

A. Provide a statement of the existing ambient air quality in the immediate vicinity.

B. Furnish a statement as to the effect of the development on the existing ambient air quality.

VII. WATER QUALITY

Requirements as per Idaho Code 39, Chapter 1 and 36 and the Idaho Water Quality Regulations.

A. Provide cross section of final disposal for stormwater, complete drainage plan and depth of ground water.

VIII. HAZARDS TO SAFETY

Requirements as per Idaho Code 52-101.

A. Submit a statement that safety hazards (i.e. abandoned mine shafts, etc.) have been corrected and are not present.

IX. NOISE POLLUTION

Requirements as per Idaho Code 52-101.

A. Submit an evaluation of the existing and projected noise pollution in the immediate and surrounding area.

X. OTHER

Requirements as per Idaho Department of Environmental Quality Rules and Regulations, Title 1, Chapter 3, Individual and Subsurface Sewage Disposal Regulations.

A. Provide copies of approvals from applicable jurisdictions, to include cities, counties, planning and zoning commissions, area of impact and others.

XI. FINAL PLAT

Requirements as per Idaho Code Title 50, Chapter 13.

A. The first sheet of the plat shall make reference to any restrictions on file with the County Recorder as set by the Health Authority. The following statements should also appear on the first page of the plat.

1. "Lots shall not be reduced in size without prior approval from the Health Authority."
2. "No additional domestic water supplies shall be installed beyond the water system approved in sanitary restriction release."
3. "Reference is made to public health letter on file regarding additonal restrictions."
4. "Central District Health Department requires nutrient reducing systems capable of achieving___mg/L Total Nitrogen on lots___through___." CDHD requests this information be disclosed to any potential buyer.

B. The second sheet (signature page) of the plat shall say:

1. Sanitary restrictions as required by Idaho Code, Title 50, Chapter 13 have been satisfied according to the letter to be read on file with the County Recorder or his agent listing the conditions of approval. Sanitary restrictions may be re-imposed, in accordance with Section 50-1326, Idaho Code, by the issuance of a certificate of disapproval.

ADDITIONAL INFORMATION

Environmental impact reports may be required from the developer when it appears the development may have a significant environmental impact. This report could require analysis of the effect, if any upon the following:

1. Existing ambient air quality.
2. Existing water quality.
3. Existing water courses (any adverse effect to road cuts or lot improvements).
4. Nutrient Pathogen Fate Transport

ADDENDUM

SUBDIVISION GUIDELINES

I. AUTHORITY

Idaho Code 39:408 and 409-39:414 and 415 and Memorandum of Understanding between the Department of Environmental Quality and the District Health Departments, Idaho Code 50:1326-29.

II. DEFINITION

Subdivisions, as defined in State Code Title 50, Chapter 13 and Opinions by James C. Weaver 6-7-74 and 9-173 and Mathew J. Mullaney 12-12-72

ADA and BOISE County Office
707 N. Armstrong Place
Boise, ID 83704
375-5211

ELMORE County Office
of
Environmental Health
520 E. 8th St. North
Mountain Home, ID 83647
587-4407

VALLEY County Office
703 N. 1st St.
McCall, ID 83638
634-7194

CENTRAL DISTRICT HEALTH DEPARTMENT

3/5/09 lkc
prepared by Central District Health Department

NITRATES/NITRITES IN GROUNDWATER

This is a fact-sheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

What are Nitrates/Nitrites and how are they used?

Nitrates and nitrites are a nitrogen-oxygen chemical unit that combines with various organic and inorganic compounds that are commonly used in lawn treatments and fertilizers, and have been for many years. Nitrogen compounds are essential nutrients for plants, which take them from the soil. Crops may eventually deplete these nitrogen compounds from the soil, making it harder to grow additional crops in the future. The soil is treated with nitrogen-based fertilizers, and plants may continue to grow vigorously in this enriched environment. The use of fertilizers and lawn treatments can invade wells, and contaminate the well water. Nitrate and nitrite in the soils, not surprisingly, also seep into groundwater supplies, with shallow wells and groundwater containing much higher levels than deeper water that are not in contact with the surface soils.

Why are Nitrates/Nitrites being regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water, which may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals (MCLG).

The MCLG for nitrates has been set at 10 parts per million (ppm), and 1 ppm for nitrites at, because EPA believes this level of protection would not cause any of the potential health problems described below. Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). The MCL are set as close to the MCLG as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL for nitrates has been set at 10 ppm, and 1 ppm for nitrites, because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

What are the health effects?

Nitrites can cause problems in young children and farm animals, as they bind very strongly to hemoglobin, and can affect the blood's ability to carry and release oxygen. Nitrates are ingested - through water, or food - and nitrate-reducing bacteria in an infant's digestive tract convert these nitrates to nitrites. These nitrites find their way to the circulatory system, and bind very tightly with hemoglobin, which is the component of the blood that attaches to oxygen in the lungs, and releases oxygen to the body tissues that need it. If the nitrites bind to hemoglobin, it is practically useless for oxygen transfer; causing shortness of breath, increased susceptibility to illness, heart attacks, and even death by asphyxiation in extreme cases. As a child develops, the acidity of the stomach becomes stronger, and the nitrate-reducing bacteria are killed. Nitrates are not usually a problem for older children and adults.

Short-term: Excessive levels of nitrate in drinking water have caused serious illness and sometimes death. The serious illness in infants is due to the conversion of nitrate to nitrite by the body, which can interfere with the oxygen-carrying capacity of the child's blood. This can be an acute condition in which health deteriorates rapidly over a period of days. Symptoms include shortness of breath and blueness of the skin.

Long-term: Nitrates and nitrites have the potential to cause the following effect; diuresis, increased starchy deposits and hemorrhaging of the spleen, from a lifetime exposure at levels above the MCL.

How much Nitrates/Nitrites are produced and released to the environment?

Most nitrogenous materials in natural waters tend to be converted to nitrate, so all sources of combined nitrogen, particularly organic nitrogen and ammonia, should be considered as potential nitrate sources. Primary sources of organic nitrates include human sewage and livestock manure, especially from feedlots. The primary inorganic nitrates, which may contaminate drinking water, are potassium nitrate and ammonium nitrate both of which are widely used as fertilizers.

According to the Toxics Release Inventory, releases to water and land totaled over 112 million pounds from 1991 through 1993. The largest releases of inorganic nitrates occurred in Georgia and California.

What happens to Nitrates/Nitrites when they are released to the environment?

Since they are very soluble and do not bind to soils, nitrates have a high potential to migrate to ground water. Because they do not evaporate, nitrates/nitrites are likely to remain in water until consumed by plants or other organisms.

What can I do if Nitrates/Nitrites are in my drinking water?

Water found to contain excessive nitrates could be treated by a variety of methods. Point-of-Use systems reduce the levels by Reverse Osmosis filtration, Distillation, or a disposable mixed-bed deionizer - and can remove the nitrates (and other contaminants) for water specifically to be used for drinking and cooking. Another option is a system very much like a water softening system, using a strong base anionic exchange resin bed rather than the cationic exchange resin bed commonly used for water softening. It is regenerated in a similar way to conventional softeners. This system is most effective in tandem with a water softening system, and provides a whole-house removal solution.

Many communities with a municipal water treatment system split off a portion of the water, and treat it to remove nitrates. This purified water is blended into the general water supply, effectively diluting the nitrate levels to below standards. Consumers especially concerned with nitrate levels may still prefer to use a Point-of-Use system to remove remaining nitrates. These add-on systems may be purchase at your local hardware and building supply stores.

Community water systems must monitor annually for nitrates/nitrites if they use groundwater sources and quarterly if they use surface water sources. It is recommended that personal drinking water supplies be sampled and monitored every year.

Drinking Water Standards (ppm): MCLG/ MCL

Nitrate:	**10**	**10**
Nitrite:	**1**	**1**

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book government listings are a good starting point. Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

The Department of Environmental Quality (208) 373-0550 or the Environmental Health office at Central District Health Department (208) 327-7499 can be a valuable source of information. For information on drinking water and drinking water standards in general, call the EPA's Safe Drinking Water Hotline (800) 426-4791. Contact the Community Right-to-Know Hotline: (800) 424-9346 for information on the uses and releases of chemicals in your state.

Contact Information

Idaho Public Health Districts

Panhandle Health District
8500 N. Atlas Road
Hayden, ID 83835
(208) 415-5100
www.phd1.idaho.gov

North Central Health District
215 10th Street
Lewiston, ID 83501
(208) 799-3100
idahopublichealth.com

Southwest District Health
13307 Miami Lane
Caldwell, ID 83607
(208) 454-7722
www.publichealthidaho.com

Central District Health Department
707 North Armstrong Place
Boise, ID 83704
(208) 375-5211
www.cdhd.idaho.gov

South Central Public Health District
1020 Washington Street North
Twin Falls, ID 83301
(208) 734-5900
www.phd5.idaho.gov

Southeastern Idaho Public Health
1901 Alvin Ricken Drive
Pocatello, ID 83201
(208) 233-9080
www.sdhdidaho.org

Eastern Idaho Public Health District
1250 Hollipark Drive
Idaho Falls, ID 83401
(208) 522-0310
www.phd7.idaho.gov

Idaho Department of Health and Welfare

Bureau of Community and Environmental Health
1-800-926-2588
www.healthandwelfare.idaho.gov

Idaho Department of Agriculture

State Office - (208) 332-8500
www.agri.idaho.gov

Contact Information

Idaho Department of Environmental Quality

State Office, Boise
(208) 373-0502
www.deq.idaho.gov

Coeur d'Alene Regional Office
(208) 769-1422 or toll-free: (877) 370-0017
(serving Benewah, Bonner, Boundary, Kootenai, and Shoshone counties)

Lewiston Regional Office
(208) 799-4370 or toll-free: (877) 541-3304
(serving Clearwater, Idaho, Latah, Lewis, and Nez Perce counties)

Boise Regional Office
(208) 373-0550 or toll-free: (888) 800-3480
(serving Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley, and Washington counties)

Twin Falls Regional Office
(208) 736-2190 or toll-free: (800) 270-1663
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties)

Pocatello Regional Office
(208) 236-6160 or toll-free: (888) 655-6160
(serving Bannock, Bear Lake, Bingham, Butte, Caribou, Franklin, Oneida, and Power counties)

Idaho Falls Regional Office
(208) 528-2650 or toll-free: (800) 232-4635
(serving Bonneville, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, and Teton counties)

Idaho Department of Water Resources

State Office, Boise
(208) 287-4800
www.idwr.idaho.gov

Northern Region, Coeur d'Alene
(208) 762-2800

Western Region, Boise
(208) 334-2190

Southern Region, Twin Falls
(208) 736-3033

Eastern Region, Idaho Falls
(208) 525-7177

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Nitrate in Idaho's Ground Water

Information on how to protect your family and Idaho's drinking water

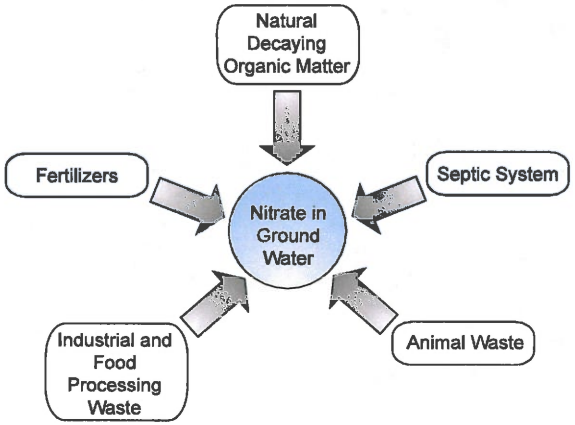
Idaho Department of Environmental Quality
www.deq.idaho.gov

What Is Nitrate?

Nitrate is a form of nitrogen that is essential for plant growth. It is widely used throughout Idaho, mostly as a fertilizer to promote plant growth. If too much fertilizer is applied, the excess that is not used up by crops, lawns, plants, and trees can be washed down through the soils by irrigation or precipitation and eventually reach ground water.

Where Does Nitrate Come From?

Nitrate is the most widespread contaminant in Idaho's ground water, and also the most preventable. **In addition to fertilizers,** other sources of nitrate include **septic systems, animal waste, and industrial and food processing waste.**



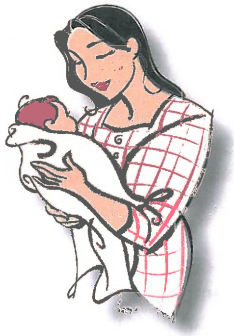
Improperly **abandoned wells** or **older wells** not meeting current well construction standards can act as a direct pathway for contaminants at the land surface to reach ground water. This is a concern because ground water supplies most of Idaho's drinking water.

Nitrate and Your Health

The U.S. Environmental Protection Agency safe drinking water standard and the Idaho Ground Water Quality Standard for nitrate is 10 milligrams per liter (mg/L). The standards are set to ensure that drinking water is safe for human consumption.

In the human digestive system, nitrate is converted to nitrite, which can interfere with the ability of red blood cells to carry oxygen to tissues in the body. The resulting oxygen deficiency can cause illness in infants under six months of age and under extremely rare instances, possibly death.

How Do I Know if My Water Is Safe for My Family?



Public water systems are required to test water for contaminants and remove them with a treatment process before the water is delivered to customers. Private well owners however, are not required to test or treat water to remove contaminants.

It is extremely important to have private well water tested, particularly if infants, pregnant or nursing mothers, or adults with chronic health problems will be drinking the water.

Your local district health department can provide you with sampling instructions, sample bottles, and assistance in locating a certified laboratory in your area. District health departments are listed on the back of this brochure.

Information for private well owners:
www.wellowner.org
Information on water treatment:
www.nsf.org
www.wqa.org

What if Nitrate Is Found in My Water?

If test results show nitrate at a level greater than 10 mg/L (the safe drinking water standard), do not give the water to infants under six months old, either directly or mixed in formula. Use commercially bottled water.

Boiling will not remove nitrate, and in fact will concentrate the nitrate through evaporation. Contact your local district health department or the Idaho Department of Environmental Quality for information about treatment options to remove nitrate from your well water.

You Can Protect Idaho's Ground Water

Ground water supplies drinking water to 95% of Idaho's population, so it must be protected from contamination. Nitrate contamination is preventable.

Here are several simple things you can do:

- Inspect the area near your wellhead and remove any waste or debris.
- Contact your district health department for information on septic system maintenance.
- Use only the recommended amounts of fertilizer and water in your yard or garden.
- Contact an Idaho well drilling professional to inspect your well seal to see if it meets new safety standards.
- Share your knowledge with your neighbors, friends, and family to prevent further contamination.
- Contact DEQ to find out about ground water protection and improvement efforts in your area.

Información de Contacto

Idaho Public Health Districts

Panhandle Health District
8500 N. Atlas Road
Hayden, ID 83835
(208) 415-5100
www.phd1.idaho.gov

North Central Health District
215 10th Street
Lewiston, ID 83501
(208) 799-3100
idahopublichealth.com

Southwest District Health
13307 Miami Lane
Caldwell, ID 83607
(208) 454-7722
www.publichealthidaho.com

Central District Health Department
707 North Armstrong Place
Boise, ID 83704
(208) 375-5211
www.cdhd.idaho.gov

South Central Public Health District
1020 Washington Street North
Twin Falls, ID 83301
(208) 734-5900
www.phd5.idaho.gov

Southeastern Idaho Public Health
1901 Alvin Ricken Drive
Pocatello, ID 83201
(208) 233-9080
www.sdhdidaho.org

Eastern Idaho Public Health District
1250 Hollipark Drive
Idaho Falls, ID 83401
(208) 522-0310
www.phd7.idaho.gov

Idaho Department of Health and Welfare

Bureau of Community and Environmental Health
1-800-926-2588
www.healthandwelfare.idaho.gov

Idaho Department of Agriculture

State Office - (208) 332-8500
www.agri.idaho.gov

Información de Contacto

Idaho Department of Environmental Quality

State Office, Boise
(208) 373-0502
www.deq.idaho.gov

Coeur d'Alene Regional Office
(208) 769-1422 or toll-free: (877) 370-0017
(serving Benewah, Bonner, Boundary, Kootenai, and Shoshone counties)

Lewiston Regional Office
(208) 799-4370 or toll-free: (877) 541-3304
(serving Clearwater, Idaho, Latah, Lewis, and Nez Perce counties)

Boise Regional Office
(208) 373-0550 or toll-free: (888) 800-3480
(serving Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley, and Washington counties)

Twin Falls Regional Office
(208) 736-2190 or toll-free: (800) 270-1663
(serving Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties)

Pocatello Regional Office
(208) 236-6160 or toll-free: (888) 655-6160
(serving Bannock, Bear Lake, Bingham, Butte, Caribou, Franklin, Oneida, and Power counties)

Idaho Falls Regional Office
(208) 528-2650 or toll-free: (800) 232-4635
(serving Bonneville, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, and Teton counties)

Idaho Department of Water Resources

State Office, Boise
(208) 287-4800
www.idwr.idaho.gov

Northern Region, Coeur d'Alene
(208) 762-2800

Western Region, Boise
(208) 334-2190

Southern Region, Twin Falls
(208) 736-3033

Eastern Region, Idaho Falls
(208) 525-7177

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Nitrato en el agua subterránea de Idaho

Información para proteger su familia y el agua potable de Idaho

Idaho Department of Environmental Quality
www.deq.idaho.gov

¿Qué es Nitrato?

Nitrato es una forma de nitrógeno que es esencial para el crecimiento de plantas. Es ampliamente usado a través de todo el estado, especialmente como fertilizante para promover el crecimiento de plantas. Si el fertilizante es aplicado en exceso y no es absorbado por la cosecha, el jardín, las plantas y arboles el fertilizante sera transportado por la lluvia o por el agua de riego a través de la tierra y el agua subterránea.

¿De Donde Viene el Nitrato?

Nitrato es el más común y extendido contaminante en el agua subterránea de Idaho y tambien el más prevenible. Otras fuentes de nitrato ademas de fertilizantes, incluyen tanques sépticos, el abono (estiércol), y los residuos resultado en las fabricas industriales.

Pozos abandonados incorrectamente o pozos viejos que no cumple con las reglas pueden servir como vías directas para transportar contaminantes a través de la tierra al agua subterránea. Esta es una preocupación porque el agua subterránea provee la mayoría del agua potable de Idaho.

¿Su Salud y Nitrato?

El estándar para nitrato es 10 miligramas por litro según las reglas para agua potable sana de la Agencia de Protección Ambiental de Estados Unidos (EPA) y el estándar de agua subterránea de Idaho. Los estándars sirven para asegurar el agua potable es sana para el consumo humano.

Nitrato es convertido a nitrito en el sistema digestivo. Esto puede afectar los glóbulos rojos que transportan oxigeno a los tejido en el cuerpo. La falta de oxigeno puede causar enfermedad en niños menores de sies meses y en muy raras ocasiones, posible muerte.

¿Cómo Sobre Si el Agua en Mi Casa es Sana para Mi Familia?

Sistemas públicos de agua potable requieren análisis del agua en busqueda de contaminantes que deben ser eliminandos con un proceso de tratamiento antes que sea distribuida a sus clientes. Dueños de pozos privados no tienen que analizar el agua o tratar el agua para eliminar contaminantes. Es extremamente importante que dueños de pozos privados analizen su agua, especialmente si bebes, mujeres embarazadas, madres lactantes, o adultos con problemas crónicas de salud estarán tomando el agua potable en su casa.

El Districto de Salud local puede proveer instrucciones de muestreo, botellas para muestrar, y ayuda en encontrar un laboratorio certificado en su área local. Información sobre los Districtos de Salud en Idaho esta localizada en la parte posterior del folleto.

Información para dueños de pozos privados:
www.wellowner.org
Información sobre el tratamiento del agua:
www.nsf.org
www.wqa.org

¿Qué Hace Si Encuentra Nitrato en Su Agua (potable)?

No le de agua potable a bebes meños de sies meses si los resultados del análisis de nitrato en su agua potable es más de 10 mg/l.

Hirviendo agua no elimina el nitrato, sino se concentra durante la evaporación del agua. Para más información sobre las opciones de tratamiento para eliminar el nitrato de su agua potable comuníquese con su Districto de Salud local o el Departamento de Qualidad Ambiental de Idaho (DEQ).

¡Usted Puede Proteger el Agua Subterránea de Idaho!

Aproximadamente 95% de la población en Idaho recibe su agua potable de agua subterránea cual debe ser protegida contra la contaminación. La contaminación de nitrato puede ser prevenida.

Cosas Que Usted Puede Ser

- Examine la área alrededor de su pozo y elimine basura de la área.
- Comuníquese con el Districto de Salud para información sobre el mantienemiento de tanques sépticos.
- Solamente utilize la cantidad de fertilizante y agua recomendada para su jardín.
- Comuníquese con un perforador de pozos profesional en Idaho para que inspeccione su guarda sello y vea si cumple con las nuevas reglas de seguridad.
- Comparta su conocimiento con sus vecinos, amistades, y familia para prevenir más contaminación.
- Comuníquese con DEQ para informarse de esfuerzos para proteger y mejorar el agua subterránea en su área.

Questions to Ask When Planning a Septic System

If you are planning a home that will use a septic system, now is the perfect time to ask questions that can head off costly modifications and repairs later:

- **Is the system appropriately sized?** The tank should be large enough to hold at least two days of waste flow—at least 1,000 gallons for a three-bedroom with four occupants.
- **Is the lot appropriate for a septic system?** Sufficient room should be available for a septic tank, drainfield, and one replacement drainfield area. Evaluate the site for the following:
  - Topography—properties with ridges, knolls, and numerous slopes may not be suitable.
  - Soils—soil must have the capacity to accept and treat the volume of wastes anticipated.
  - Ground water—areas with high ground water may not be suitable.
- **What will it cost to add a second drainfield?** State regulations require a reserve area for a future drainfield when the first drainfield reaches the end of its useful life. Adding a replacement drainfield during initial construction may only cost a fraction of installing one later. Plus, having the capability to switch the drainfields annually ensures that the resting drainfield is dry and ready to receive wastewater.

For More Information

Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706
(208) 373-0502
http://www.deq.idaho.gov/septic_systems
http://www.deq.idaho.gov/technical-guidance-manual

US Environmental Protection Agency
http://water.epa.gov/infrastructure/septic/septicsmart.cfm
http://www.epa.gov/owm/septic/pubs/homeowner_guide_long.pdf

Idaho Public Health Districts

Panhandle Health District
8500 N. Atlas Road
Hayden, ID 83835
(208) 415-5100
www.phd1.idaho.gov

North Central Health District
215 10th Street
Lewiston, ID 83501
(208) 799-3100
idahopublichealth.com

Southwest District Health
13307 Miami Lane
Caldwell, ID 83607
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Central District Health Department
707 North Armstrong Place
Boise, ID 83704
(208) 375-5211
www.cdhd.idaho.gov

South Central Public Health District
1020 Washington Street North
Twin Falls, ID 83301
(208) 734-5900
www.phd5.idaho.gov

Southeastern Idaho Public Health
1901 Alvin Ricken Drive
Pocatello, ID 83201
(208) 233-9080
www.sdhdidaho.org

Eastern Idaho Public Health District
1250 Hollipark Drive
Idaho Falls, ID 83401
(208) 522-0310
www.phd7.idaho.gov

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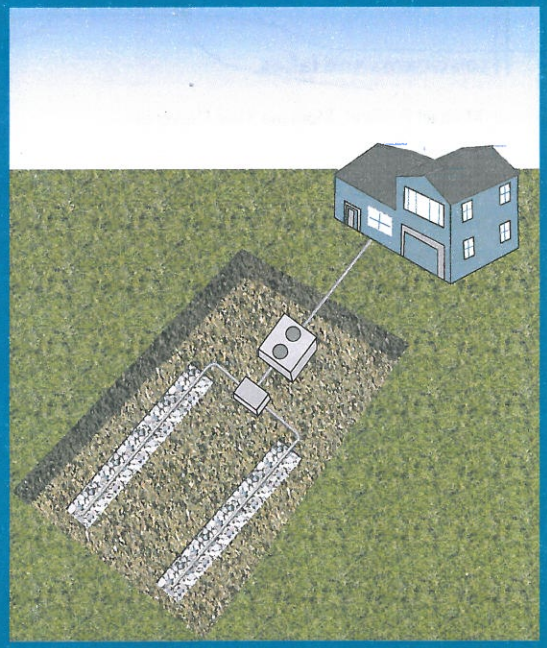
Septic Systems and Drainfields:

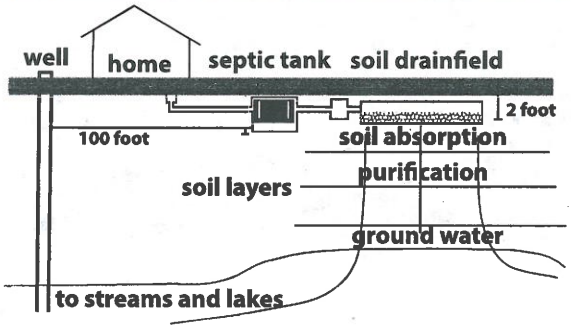
What You Need to Know



For homeowners, real estate professionals, and developers

Idaho Department of Environmental Quality
www.deq.idaho.gov

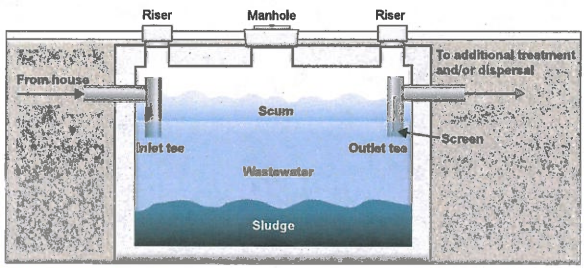
What is a Septic System?



Source: Michael P. Vogel, Montana State University

A septic system is a form of wastewater treatment commonly used in areas where connection to a municipal wastewater system is not practical. The system consists of piping, a septic tank, a drainfield, and the soil.

The septic tank holds the wastewater long enough for solids to settle into a sludge at the bottom of the tank, while oils and greases float to the top, forming a scum. Bacteria in the tank consume a small amount of waste as nutrients.

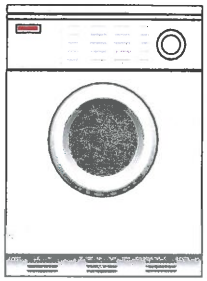


Tank effluent flows to a drainfield where pipes below the surface distribute the wastewater throughout the drainfield. The wastewater then percolates through the soil. As the wastewater moves through the soil, some waste products adsorb to soil particles, while microorganisms in the soil ingest other waste products, providing final treatment of the wastewater.

Caring for Your Septic System

Properly designed and constructed, your septic system can greatly reduce the environmental impacts of household wastewater, but proper system operation requires some routine maintenance and care:

- **Have your septic system inspected** by a qualified professional at least every 3 years—every year if your system has electrical components—and have the tank pumped when necessary.
- **Pump a septic tank** at least every 3–5 years (recommended) depending on use and sludge depth within the septic tank.
- **Use water efficiently.** Excessive flows can overload the septic system, causing wastewater to back up into the house or yard.



  - Use the proper load size when washing clothes, and avoid doing all the laundry in one day.
  - Do not empty your hot tub into the septic system.
  - Consider replacing older toilets and inefficient showerheads with more efficient models.
- **Do not flush materials** that can clog your septic system, such as diapers, cat litter, cigarette filters, coffee grounds, feminine hygiene products, cotton swabs, dental floss, and paper towels.
- **Do not pour toxic chemicals down the drain.** Household chemicals, paints, gasoline, and pesticides can harm or kill the bacteria that digest and treat waste.
- **Minimize using (or eliminate) your garbage disposal.** Kitchen scraps significantly increase sludge and scum in your septic tank, requiring more frequent pumping. Compost these wastes instead.
- **Dispose of old medicines,** such as antibiotics in the trash; medicines may kill the bacteria in your septic tank if flushed and result in ground water contamination.

Giving Your Septic System More Life

The typical functioning life of a septic system is 20 years. To enhance the life of your system,

- **Add an effluent filter.** An effluent filter, placed in the septic tank outlet baffle or tee, prevents excess solids from flowing to and clogging the drainfield.
- **Protect your system's drainfield.** Plant only grass on top, never drive or park vehicles on the drainfield, and direct roof drains, basement sump pump flows, and other drainage systems away from the drainfield.
- **Add a washing machine filter.** Washing machine filters trap lint and fibers that may accumulate in the septic tank and drainfield. If these fibers discharge to the drainfield, they will cause premature failure.

APPLICATION - Subsurface Sewage Disposal

Public Health
Prevent. Promote. Protect.
Idaho Public Health Districts

Central District Health Department
Valley County
703 North 1st
McCall, ID 83638
(208) 634-7194

Site Fee: _____ Date: _____

Permit Fee: _____ File #: _____

Receipt #: _____ (Official Use Only)

Property Address (If Available):

County Parcel ID# _____ Acres: _____

Legal Description ¼ ¼	Section:	Township:	Range:
Subdivision:	Lot:	Block:	

Directions (nearest crossroad): _____

_____

_____

Applicant's Name: _____

Mailing Address: _____ Phone #: _____

City: _____ State: _____ Zip Code: _____

Applicant is: ☐ Landowner ☐ Contractor ☐ Installer ☐ Other _____

Owner's Name: _____

Mailing Address: _____ Phone #: _____

City: _____ State: _____ Zip Code: _____

Type of Septic installation: ☐ New ☐ Upgrade/Enlargement ☐ Replacement ☐ Tank Only

Proposed Usage: ☐ Residential ☐ Non-Residential ☐ Other (i.e. barn, shop, etc.)

☐ Central (more than two dwellings) ☐ Large Soil Absorption (2,500 gal/day or ten or more dwellings) # of Units: _____

Is there an existing structure on this parcel? ☐ Yes ☐ No Year Built: _____

Number of Bedrooms (residential only): _____ Number of Bathrooms: _____

Number of People: _____ Square Footage: _____ Garbage Disposal? ☐ Yes ☐ No

Speculative Site Evaluation: ☐ Yes ☐ No

Foundation Type: ☐ Basement ☐ Crawl Space ☐ Split Level ☐ Slab

Property is Located: ☐ Inside City ☐ Inside County

Zoning certificate or other county documentation submitted? ☐ Yes ☐ No ☐ N/A

City sewer or central wasterwater collection system 200 feet or less to structure? ☐ Yes ☐ No

Water Supply: ☐ Private Well ☐ Shared Well ☐ PWS, Number: _____ ☐ Other: _____

Signature: _____ Date: _____

By my signature above, I certify that all answers and statements on this application are true and complete to the best of my knowledge. I understand that should evaluation disclose untruthful or misleading answers, my application may be rejected or my permit canceled. I accept the responsibility to notify the Health District of any changes to the above information if performed prior to completion of the permitted system. I hearby authorize the Health District to have access to this property for the purpose of conducting a site-evaluation. I understand that this application and the subsequent permit is non-transferable between property owners and/or project sites. I understand that the application will expire one (1) year from date of purchase. The permit, may be renewed if the renewal is applied for on or before the expiration date.

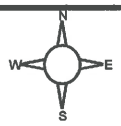
Revision Date: 7/2012 df

Public Health
Prevent. Promote. Protect.
Idaho Public Health Districts

Please draw an aerial view of the property showing the outline of buildings, property lines, well location(s), water lines, location of septic tank and drainfields, location of drainfield replacement area, ditches and streams, easements and right of ways, driveway and parking area, cut banks, and location of street or road. Indicate dimenions and separation distances of each from septic tank and drainfield.

Plot Plan

Scale: 1" = _____'



Signature: _____ Date: _____

By my signature above, I certify that all answers and statements on this application are true and complete to the best of my knowledge. I understand that should evaluation disclose untruthful or misleading answers, my application may be rejected or my permit canceled. I understnd that any deviation from the plans, conditions, and specifications, is prohibited unless it is approved in advance by the Director or his designee. I hearby authorize the Health District to have access to this property for the purpose of conducting a site-evaluation.

(Official Use Only)

Plot Plan Approval Date:_____ EHS Name:_____EHS #: _____

Revision Date: 7/2012 df

15 Idaho Environmental Guide: A Resource for Local Governments

The *Idaho Environmental Guide* is a resource for local government officials to assist in managing a community's environmental responsibilities. Local government officials should consult this guide before approving projects to understand and consider impacts to air, water, and/or land potentially affecting the health, welfare, and sustainability of communities within their jurisdiction. The *Idaho Environmental Guide* is informational and should be used in strategic planning for environmental issues. This guide is not an all-encompassing summary of state and federal rules and regulations. The *Idaho Environmental Guide* can be accessed through DEQ's website at *www.deq.idaho.gov/media/654730-ieg-2012.pdf.*

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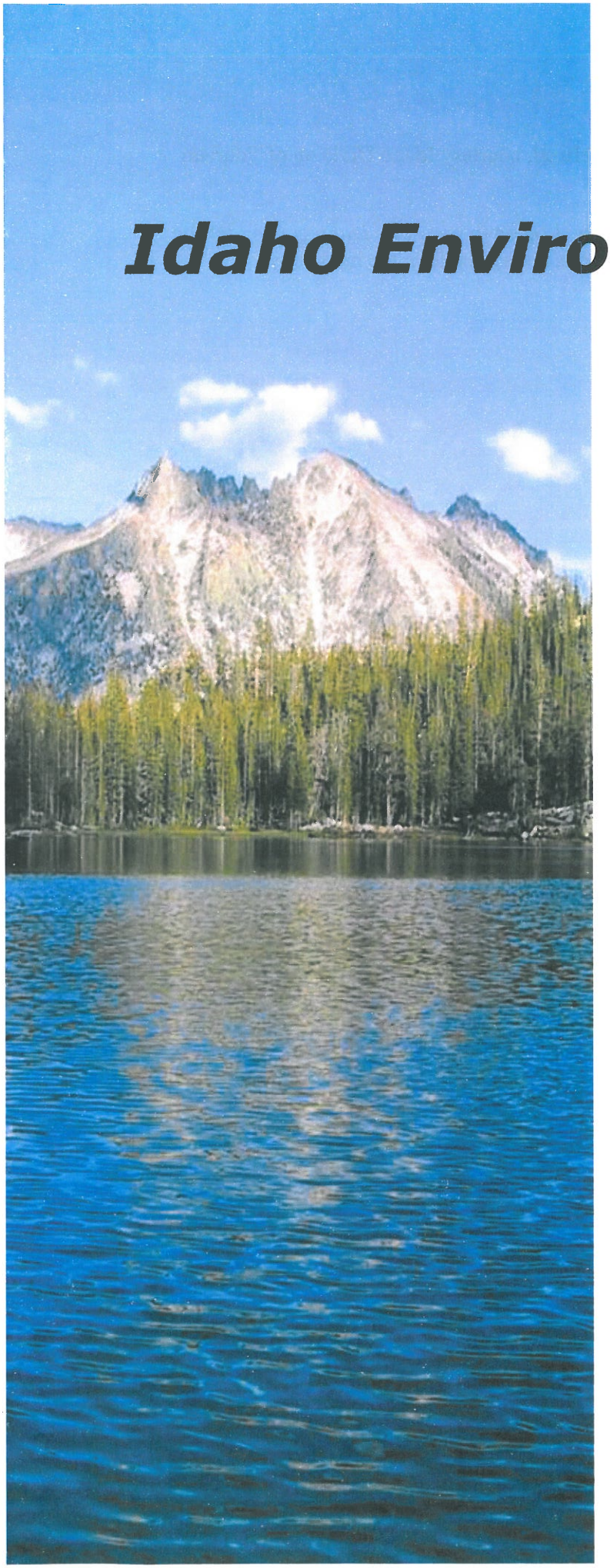

Idaho Environmental Guide

A Resource for Local Governments

Idaho Department of Environmental Quality

Updated August 2011

Cover photo: Sawtooth Mountain Lake, Paul Frantellizzi, courtesy Idaho Division of Tourism Development.

The *Idaho Environmental Guide* is updated annually. Log on to *www.deq.idaho.gov/ieg* for the most current version and additional information that is not available in the hard copy.

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CHAPTER 1. INTRODUCTION

About This Guide

The Idaho Environmental Guide is a resource for local government officials to assist in managing a community's environmental responsibilities. It should be consulted before approving projects to understand the impacts to air, water, and/or land that could affect the health, welfare, and sustainability of your community.

Local government entities often own and have primary responsibility for wastewater and storm water systems, drinking water systems, and solid waste disposal services and systems, among other areas of environmental concern. Through planning and zoning actions, operational ordinances, and inspections, local governments also directly influence business development in their boundaries. Local governments share a mutual responsibility toward sustainable development and protection of air, land, and water.

Purpose

The purpose of the Idaho Environmental Guide is informational, and the guide is meant to be applied to environmental issues for strategic planning. It is not an all-encompassing summary of state and federal rules and regulations.

Coordination Between Local Governments and DEQ

Local government entities can implement rules, regulations, or ordinances in addition to the federal and state laws, rules, and regulations mentioned herein, but local government entities cannot enact regulations and ordinances that are inconsistent with state or federal rules, statutes, regulations, or permits. For this reason, it is advisable for local officials to be aware of the requirements that state and federal rules, statutes, and regulations impose.

Opportunities for Local Government Input

Should a local government entity desire to change or comment on a state and/or federal permit, rule, regulation, or statute that impacts projects in Idaho, the local government entity may provide comments and suggestions during the public comment period before the rule, statute, regulation, or permit is issued.

Planning and Zoning

Planning and zoning is a local authority that DEQ does not address. DEQ plays a complimentary role, but does not make land use decisions. Note that DEQ's approvals of activities under its regulatory authority are still subject to local planning and zoning restrictions, which may be more or less limiting.

When projects overlap local boundaries or affect areas outside of your jurisdiction, coordination with the corresponding local government is encouraged. Reference the Idaho *Local Land Use Planning Act (I.C. § 67-6537)*, which outlines requirements for local governing boards to collaborate and cooperate on projects.

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CHAPTER 2. AIR

This chapter covers the following topics:

- Air permits to construct
- Air toxics
- Burning and smoke management
- Fugitive dust
- Greenhouse gases
- Nonattainment and air quality alerts
- Odor control

Air Permit to Construct

What is it?

An air quality permit to construct (PTC) is required before constructing or modifying buildings, structures, or installations that emit or may emit pollutants into the air.

Why should our community care?

According to the *Rules for the Control of Air Pollution in Idaho (Section 201)*, "No owner or operator may commence construction or modification of any stationary source, facility, major facility, or major modification without first obtaining a permit to construct from the Department…"

When scheduling timelines for project development, cities and counties should keep in mind that a PTC may be required for certain projects.

What can we do?

1. Prior to project approval, request that project information specify which requirements under *IDAPA 58.01.01.201* apply and whether the project requires a PTC.
2. DEQ recommends that, as a condition of project approval, cities and counties require applicants to contact DEQ for an applicability determination on any proposal to ensure compliance with the rules.
3. Plan ahead by understanding the type and amount of pollutants that will be emitted into the air from a project. Local governments should have an understanding of the pollutants and processes that are not regulated or exempted under the *rules*.
4. Local governments have the authority to implement ordinances that help prevent air pollutants beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.

Resources

Need a permit?

Have a question?

For more information on PTCs, visit DEQ's *PTC Web page*.

Air Toxics

What is it?

Air toxics are a group of air pollutants known or suspected to cause serious health problems such as cancer, birth defects, lung damage, and nerve damage. Examples of air toxics include asbestos, benzene, chloroform, formaldehyde, lead, mercury, nickel compounds, and perchloroethylene.

Why should our community care, and what can we do?

1. Local governments should have an understanding of the following so that long-term strategic decisions can be made about projects and how they may impact a community:
   - The types of air toxics associated with a project
   - How the air toxics are regulated by local, state, and federal agencies
   - Any air toxic exemptions a project may have from state and federal regulations
2. Prior to approval, projects should be assessed for potential issues with air toxics, which may include the following:
   - *Hazardous Air Pollutants*
   - *Asbestos*
   - *Mercury*
   - *Lead*

   After project assessment, evaluate the potential impact to your community and develop management plans.
3. Plan ahead. These activities can reduce emissions of air pollutants, including air toxics:
   - Encourage employees and citizens to drive less. Many air toxics, like benzene, come from motor vehicle exhaust. Encourage carpooling, use public transportation, combine trips, avoid drive-throughs, drive the speed limit, and keep your vehicle well tuned and in proper working condition.
   - Provide alternatives to open burning of trash, leaves, or other yard wastes by implementing a community compost or wood recycling program. Provide alternatives to burning of plastics by offering a community recycling program.
   - Avoid using products containing toxic compounds and encourage community members to do the same.
4. Local governments have the authority to implement ordinances that help prevent the release of air toxics beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.

Resources

Need a permit?

Have a question?

For more information on air toxics, visit DEQ's *Air Toxics Web page*.

EPA Asbestos Web page

Idaho Chemical Roundup Program

National Lead Free Wheel Weight Initiative

Burning and Smoke Management

What is it?

Cities and counties need to be aware of the following seven burning and smoke management issues:

Burn Bans

Crop Residue Burning

Residential "Backyard" Burning

Business Waste

Wildland/Prescribed Fires

Wood Stoves

Why should our community care?

Restrictions may exist on what can be burned and when, and an *air permit* may be required as outlined in the *Open Burning and Burn Ban Rules (Sections 550-562 and 600-623).*

Burning of most processed or manufactured materials is prohibited (exemptions may apply), including:

- garbage from food preparation
- dead animals or animal waste
- junk motor vehicles or parts
- tires or other rubber materials
- plastics
- asphalt
- tar and petroleum materials
- paints
- preservative-treated wood
- trade waste (commercial, industrial, or construction)
- insulated wire
- pathogenic (disease-causing) waste
- *hazardous waste*

Unless a *burn ban* is in effect:

- residents who have house-to-house garbage collection may burn tree leaves, gardening waste, and yard trimmings if allowed by local government ordinances during certain periods of the year.
- residents who do not have house-to-house garbage collection may burn rubbish (such as paper and cardboard), tree leaves, gardening waste, and yard trimmings if burning is conducted on the property where the waste was generated.

Smoke generated by burning can contribute to poor air quality and impact human health. Smoke contains small airborne particles that can become lodged in our lungs, making breathing difficult and leading to more serious short-term and chronic health problems for certain sensitive populations, such as small children, pregnant women, older adults, and people with asthma or other respiratory ailments.

What can we do?

1. Prior to project approval, request that project information specify which requirements under the *Open Burning and Burn Ban Rules (Sections 550-562 and 600-623)* apply.
2. Assess projects for burning and smoke issues, evaluate the possible impact to your community, and develop management plans for this potential pollution.
3. Plan ahead by providing alternatives to burning activities that generate air pollution, including a community *compost* or *wood recycling* program.
4. Local ordinances may further restrict or prohibit burning to help prevent emissions from burning and smoke beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.
5. Contact your *local DEQ office* for assistance with open burning and burn ban rules.

Resources

Need a permit?

Have a question?

For more information on burning and smoke management, visit DEQ's *Burning and Smoke Management webpage*.

Light it Right Brochure

Burn Clean, Burn Smart Brochure

Outdoor Burning Poster

Fugitive Dust

What is it?

Dust is *particulate matter* consisting of very small particles. Fugitive dust is particulate matter suspended in the air.

Why should our community care?

According to the *Rules for the Control of Air Pollution in Idaho (Section 651)*, "All reasonable precautions shall be taken to prevent particulate matter from becoming airborne."

Communities experiencing population growth may experience a rise in fugitive dust emissions as parcels of land are cleared of vegetation for development, construction and excavation activities increase, and dirt and gravel roads are constructed. These activities expose and disturb soil and cause fugitive dust to become airborne, which can contribute to health problems and affect visibility on local roads.

Cities and counties are responsible for dust suppression on city and county property. Suppression can include paving high-traffic dirt roads, sweeping roadways often, or using wind erosion controls such as planting bushes or trees or constructing wood or rock walls in dusty areas.

What can we do?

1. Prior to project approval, request that project information specify which requirements under *IDAPA 58.01.01.651* apply.
2. Plan ahead by incorporating dust management into your comprehensive plan. Keeping potential fugitive dust problems under control is an everyday job.
3. Understand how a project may emit dust and consider requiring such projects within your jurisdiction to develop a *dust prevention and control plan* prior to project approval. Dust prevention and control plans incorporate appropriate best management practices to control fugitive dust that may be generated at a site.
4. Local governments have the authority to implement ordinances that help prevent fugitive dust emissions beyond state and federal laws and regulations (such as requiring open-bodied haul trucks transporting dusty material to be covered). Determine what is best for the health and welfare of your community.

Resources

Need a permit?

Have a question?

For more information on fugitive dust , visit DEQ's *Fugitive Dust webpage*.

Greenhouse Gases

What is it?

Gases that trap heat in the atmosphere are often called greenhouse gases. Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere both through natural processes and human activities. Other greenhouse gases (such as fluorinated gases) are created and emitted solely through human activities. The following are the principal greenhouse gases that enter the atmosphere because of human activities:

- Carbon dioxide (CO2)
- Methane (CH4)
- Nitrous oxide (N2O)
- Fluorinated gases

Why should our community care?

Reasons why local governments care about climate change include:

- **Cost savings.** Taking action to reduce greenhouse gas emissions has many co-benefits including reducing costs through energy and process efficiency, conserving resources, and reducing waste.
- **Energy security.** A finite amount of resources such as oil are available and future prices of such resources remain unpredictable, therefore, utilizing alternative energy sources and reducing energy consumption can limit the vulnerability of local government operations and reduce the volatility of overhead costs.
- **Job creation.** Efforts to reduce greenhouse gas emissions can have a positive impact on job growth as local government initiatives such as supporting an alternative transportation program, green building, renewable energy, etc. can directly and indirectly promote the growth of these industries.
- **Leadership.** Local governments can directly effect change through policy or program decisions, and doing so can promote change from businesses and organizations within the community.
- **Human health and the environment.** Climate change affects people, plants, and animals. Observed effects include sea level rise, shrinking glaciers, changes in the range and distribution of plants and animals, earlier-blooming trees, longer growing seasons, late freezes and early thaws of ice on rivers and lakes, and thawing of permafrost. Human health can be affected directly and indirectly by climate change in part through extreme periods of heat and cold, storms, increase in climate-sensitive diseases, and smog episodes. Specifically, local governments may be faced with challenges such as the following:
  - Considering development of land in flood-risk areas
  - Ensuring building standards are adequate to withstand changes in weather events
  - Weighing the adequacy of emergency procedures

- Addressing public health and welfare effects from uncharacteristic events triggered by climate change

– **Improving air quality.** Many of the actions that reduce greenhouse gas emissions are ones that can be taken to improve air quality, such as using alternative transportation, driving less, using renewable energy.

What can we do?

1. *Understand* the quantity of greenhouse gases emitted from each project, *evaluate* the impact to your community, and *develop* management plans for this potential pollution. Consider requiring that each project develop a *greenhouse gas inventory* and associated action plan.
3. Develop a city or county inventory of greenhouse gas emissions to quantify emissions from municipal buildings, fleets and equipment, solid waste, and landfills. Develop an action plan establishing programs and goals to reduce greenhouse gas emissions.

4. Plan ahead. These activities can reduce emissions of greenhouse gases:

   - Reduce Consumption
     - *Free or Low Cost*
     - *Capital Required*
   - *Switch to Renewable Energy*
   - *Offset Emissions*
   - *Promote Alternative Transportation*
   - *Promote Waste Reduction and Recycling*
   - *Other Local Best Practices*

Reduce Consumption - Free or Low Cost

Lighting

- Turn off lights when not in use or install occupancy sensors in hallways, bathrooms, meeting rooms, kitchens, storage rooms, and other areas where lights can be shut off for blocks of time.
- Install photocells in outdoor entryway(s) and security lighting to automatically sense outdoor lighting levels.
- Install light emitting diode (LED) exit signs in place of incandescent signs. LED signs last up to 15 times longer, and use less energy.
- Reduce overhead lighting near day lit areas, over lit areas, or areas not requiring light
- Install fluorescent or LED light bulbs

- If a janitorial service comes in after hours, request that they only use lights in areas they are cleaning. Have them turn all lights off when they are finished for the night.

Water

- Install low flow fixtures on showers, sinks, and toilets.
- Insulate hot water heaters.
- Lower the temperature on water heaters.
- Implement a water conservation program and post water conservation stickers, signs and posters in bathrooms, kitchens, cafeterias, conference rooms and other places where employees congregate.
- Minimize lawns. Lawns use more water than any other landscape plants.
- Use drip and other low-flow irrigation devices.

Fleets

- Implement a no-idling policy for vehicle fleets and customers (See Sample Policies *Appendix G*).
- Implement a vehicle maintenance policy for vehicle fleets to maximize vehicle efficiency.

Heating and Cooling

- Adjust air conditioning in the summer and heat in the winter.
- Install automatic, programmable, set-back thermostats to control heating and cooling.
- Set thermostats and lights to correspond with shifts.
- Open blinds in the winter and close them in the summer.
- Restrict the use of space heaters, consider heating pads or blankets instead.
- Clean all filters in your heating and cooling system monthly.
- Limit open doors when picking up or delivering material.
- Schedule HVAC tune-ups once or twice a year. Clean coils, check and correct refrigerant charge, clean and lubricate the fan motor, check for proper airflow, adjust the pulley settings and fan belts, replace air handling unit filters, and do routine checks to ensure proper performance.
- When the building is unoccupied, make sure outside air dampers are closed. This includes morning warm-up periods.
- Seal ducts that run through unconditioned spaces. Leaking ductwork can lose 20 percent or more of the conditioned air in a supply duct run.
- When scheduling group activities and meetings after hours, use rooms and areas that can be heated and cooled individually, so you don't have to heat or cool a whole floor.

Purchasing (see Sample Policies *Appendix G*)

- When buying new equipment, appliances, or fixtures look for ENERGY STAR or WaterSense certified.
- Purchase products with recycled content or that are recyclable.
- Purchase only what is needed, bulk is not necessarily better if it has an expiration date.
- Purchase Forest Stewardship Council certified paper and wood products.
- Purchase local and/or organic food.

Transportation (see Sample Policies, *Appendix G*)

- Start an alternative transportation program for employees and consider making a vehicle available to employees with emergencies who used an alternative mode of transportation to get to work.
- Consider allowing employees to telecommute or work an alternative schedule to limit driving to work.
- Educate drivers to be more efficient on the road and drive fewer miles. Speeding and rapid acceleration and deceleration can increase fuel consumption.
- Schedule travel so that multiple tasks can be accomplished with one trip.
- Remove excess weight from your trunk, and if you have a removable roof rack and aren't using it, take it off.
- Replace your air filter regularly. A clogged air filter can significantly reduce fuel economy.
- Keep your tires properly inflated. Maintaining correct tire pressure and a tuned engine can save over a ton of greenhouse gases per year.
- Change the oil according to the manufacturer's recommendations.

Waste

- Start a *recycling* program.
- Start an on-site *compost* pile.

Equipment and Electronics

- Install motion sensors on vending machines and remove or minimize light bulb use.
- Power down machines when not in use.
- Turn off air compressors when not in use.
- Turn computers and other equipment off at night.
- Use surge protectors for plug in devices and turn them off at the end of the day. Even when electronics or machines are not on they still consume energy. Surge protectors can eliminate the power consumed when turned off.
- Limit printing and print double sided.

- Engage energy saving features on equipment and electronics.
- Check and regularly clean filters if you use exhaust fans.
- Practice routine maintenance.
- Regularly clean and maintain food refrigeration equipment where applicable.
- Stage turn-on of continuous motor loads with 1/2 hour intervals between loads. This prevents spikes in demand use and associated charges due to higher-than normal start-up power.

Employee Involvement

- Start a green team.
- Seek employee suggestions on ideas for reducing greenhouse gas emissions.

Reduce Consumption – Capital Required

Building Envelope

- Conduct an energy audit.
  Energy Assessment Technical Assistance:
  - *U.S. Department of Energy Industrial Technologies Program*
  - *Idaho Office of Energy Resources Industrial Efficiency Program*
  - *Idaho Office of Energy Resources Building Efficiency Program*
  - *Avista Utility Tools*
  - *Idaho Power Energy Efficiency for Your Business*
- Re-insulate the roof, walls, and foundation.
- Seal cracks and leaks to prevent air flow loss with caulk, spray foam, or weather stripping.
- Install double pane windows.
- Create a separation between delivery areas and work areas to reduce heat or cool air loss.
- Install sky lights or enhance day lighting.
- Install highly reflective roofs to reduce air-conditioning loads and save money. Highly reflective roofs and surfaces can reduce air-conditioning bills by 10 to 50 percent.

Building Design

- If conducting renovation, designing a new building, or looking for a new space to lease consider *LEED criteria*.
- *Highly reflective roofs* help make cities cooler, reduce the formation of smog, reduce air-conditioning loads, and save money. Highly reflective roofs and surfaces can reduce air-conditioning bills by 10 to 50 percent.

Water

- Install a tankless hot water system.

- Plant a xeriscape garden or a garden that requires no or limited irrigation.
- Reuse wastewater or reclaimed water for other industrial uses, landscape irrigation, agricultural irrigation, aesthetic uses such as fountains, and fire protection, and other non potable uses.
- Recycle water for the same application for which it was originally used.
- Collect rainwater or irrigation runoff for reuse, called water harvesting.
- Use the same water to perform several cooling procedures.

Transportation

- Invest in video conference technology to reduce traveling
- Purchase fuel efficient vehicles for company fleets
- Plan routes to maximize efficiency and prevent duplication for delivery or pick up services.

Heating and Cooling

- During occupied hours, make sure the amount of outside air matches load. Adding CO2 monitors, coupled with outside air controls, will only allow as much outside air as is necessary to enter the building in the heating season.

Switch to Renewable Energy

An opportunity for reducing or maintaining greenhouse gas emissions is to switch the type of energy used. Consider switching to renewable energy or electricity supplied from energy sources, such as wind, solar, geothermal, hydro, and biomass, by:

- Purchasing green power from your utility
- Increasing on-site renewable energy generation by installing solar panels or wind turbines
- Considering using biofuels. Biomass can be converted directly into liquid fuels, called biofuels, to help meet transportation fuel needs. Ethanol and biodiesel are the two most common types of biofuels. Think about investing in alternative fuel and flex-fuel vehicles for your business transportation needs.
- Purchasing electric or hybrid vehicles

Renewable Energy Resources

- *ENERGY STAR's Guide for Small Businesses and Using Renewable Energy*
  Provides business-oriented links related to renewable energy and green power.
- *National Renewable Energy Laboratory - Renewable Energy for Small Business Owners*
  Provides information on biofuels, geothermal heat pumps, passive solar heating, photovoltaic (solar cell) systems, solar hot water heaters, and wind energy.
- *U.S. Department of Energy Consumer's Guide: Renewable Energy*
  Features comprehensive basic information and resources suitable for small businesses as well as consumers.

- *Green Power Network*
  Provides news and information on green power markets and related activities and summarizes green power products available in Idaho and nationally available renewable energy certificate products.
- *U.S. Department of Energy Alternative Fuels and Advanced Vehicles Data Center*
  Provides a wide range of information and resources to enable the use of alternative fuels, in addition to other petroleum reduction options such as advanced vehicles, fuel blends, idle reduction, and fuel economy.

Offset

What is an Offset?

An offset is a reduction of greenhouse gases from the atmosphere due to a project intended to compensate for emissions occurring elsewhere. Carbon offset project types generally fall into three categories: 1) renewable energy, 2) energy efficiency projects, 3) land use/land change projects like reforestation and avoided deforestation, and 4) landfill gas destruction and agricultural methane destruction.

There are five main types of offset sellers: 1) project developers 2) retailers/wholesalers, 3) brokers, 4) aggregators, and 5) utility companies. Each type offers different value-added services, from providing messaging plans and outreach services, to facilitating faster, larger scale transactions.

Why Purchase Offsets?

Carbon offsets can:

- Help reduce greenhouse gas emissions to zero in addition to reducing use and switching energy sources.
- Immediately and cost effectively reduce greenhouse gas emissions.

Criteria for Quality Offsets

- The offset is additional, meaning the project associated with the offset would not have been completed otherwise or under a business as usual scenario.
- The project associated with the offset is completed in a reasonable time frame and has not yet been completed.
- Projects should produce permanent reductions.
- A local project is preferable to a long distance project.
- Offset projects are monitored and verified.
- Offsets are not re-sold and are retired after purchased.
- Projects have benefits to the environment as well as health and the community.
- Specific projects with a beginning and ending are better than long term programs.
- Offsets should be registered with a public registry, which prevents double counting.

Offset Resources

Carbon Concierge

Carbon Concierge engages businesses at prominent environmental and sustainability related conferences, around the country, to engage in climate reduction strategies. Additionally, the Carbon Concierge assesses offset providers in the voluntary carbon market.

Offset Consumer

Ranks carbon offset providers.

Promote Alternative Transportation

- *Effective public transportation systems* can significantly reduce greenhouse gas emissions and air pollution while at the same time reducing congestion.
- Local governments can buy fuel-efficient or alternative-fuel vehicles for their fleets, including buses, passenger vehicles, etc.
- By creating *pedestrian- and biker-friendly travel routes*, cities and towns can often decrease the number of vehicles on the road, leading to less congestion, air pollution, and greenhouse gas emissions.

Promote Waste Reduction and Recycling

Reduce waste and recycle. Charging residents for the collection of household trash based on the amount they throw away creates a direct economic incentive to recycle more and waste less. Reducing the amount of trash sent to landfills can lower greenhouse gas emissions. Recycling reduces the amount of energy needed to produce products.

Other Local Best Practices

Best practices for local government climate and energy programs include strategies that deliver clean, reliable, and low-cost ways to meet energy demand while reducing peak electricity system loads and the environmental impacts of energy use. Find more information at *EPA's Local Best Practices Web site*.

Resources

Cities for Climate Protection Program

Mayors Climate Protection Center

Energy Policy Act (EPAct)

ENERGY STAR for Local Government

EPA Green Vehicle Guide

EPA - Climate Change and Waste

U.S. Department of Energy: Idaho State Incentive and Resource Programs

EPA Local Climate and Energy Program

See also *Chapter 6, Resources*

Nonattainment and Air Quality Alerts

What is it?

The U.S. Environmental Protection Agency (EPA) has set limits on the amounts of certain pollutants that can safely be in our air. These limits are called the *National Ambient Air Quality Standards (NAAQS).*

EPA considers any geographic area that meets or has pollutant levels below the NAAQS to be an attainment area. An area with persistent air quality problems is designated a *nonattainment area*. This means that the area has violated federal health-based standards for outdoor air pollution. Each nonattainment area is declared for a specific pollutant. Nonattainment areas for different pollutants may overlap or share common boundaries.

Why should our community care?

Failure to act on nonattainment status can result in a potential loss of federal highway funding for areas in nonattainment. If an area exceeds EPA's NAAQS for *ground level ozone* or *fine particulate matter* (see also the *fugitive dust section*), local governments may be directly affected or have specific responsibilities such as implementing an emissions testing program.

When a project has the potential to contribute to poor air quality either directly (from facility emissions) or indirectly (from traffic) to air quality, your community should understand those impacts for strategic planning.

What can we do?

1. Understand criteria pollutants affecting your area and assess projects for air pollutant issues prior to approval. EPA sets standards for six air pollutants called "*criteria pollutants*." Currently, two of these—ozone and particulate matter—could trigger nonattainment status in certain areas of Idaho.
2. Plan ahead. These activities can reduce emissions of air toxics:
   - Consider bike/walking paths, commuter lanes, public transportation, traffic light synchronization, limitations on sprawl, public bike racks, etc. when planning.
   - Join the *Idaho Clean Air Zone* program and develop an anti-idling policy for community buildings and grounds.
   - Consider using electric or manual lawn care equipment when caring for public grounds.
   - Reduce grass areas by landscaping with native and water-tolerant plants.
   - Check to see if it's a good air quality day before mowing, mow less often, and encourage community members to do the same.
   - Use products that are free of or low in *volatile organic compounds (VOCs).*

- If you contract with a company for ground or building maintenance, consider including requirements in the contract about mowing less often, using less-polluting equipment, and using green products.
- Develop a policy that encourages employees to use alternative transportation, provide incentives if possible, allow employees to work alternative shifts, provide bike racks and locker rooms, and encourage employees not to idle in the parking lot.
- Keep vehicle fleets well-maintained and consider fuel economy when purchasing new fleet vehicles.
- Remind employees to avoid "topping off" the tank when fueling.
- Encourage employees to meet by conference calls, carpool, and drive efficiently.

3. Local governments have the authority to implement ordinances that help prevent the release of pollutants such as ozone and particulate matter beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.

What are air quality alerts?

For areas with populations over 350,000, DEQ publishes an Air Quality Index at least once per day on its *website*. DEQ publishes this information for certain areas with lower populations as well.

Resources

Need a permit?

Have a question?

Sample Policies

Odor Control

What is it?

Odor is defined in DEQ's air pollution control rules as "the sensation resulting from stimulation of the human sense of smell" (IDAPA 58.01.01.775-776) . Odor is a sensitive subject because perception of odors is subjective. What smells bad to one person may not offend another. Our sensitivities and reactions to odors are influenced by personal preferences, opinions, experiences, and the varying sensitivities of our olfactory systems.

Why should our community care?

The *Rules for the Control of Air Pollution in Idaho (Section 776)* state in part that "No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids into the atmosphere in such quantities as to cause air pollution."

Odors are a concern for Idahoans and a frequent source of citizen complaints to state and local government agencies. A wide range of operations, including livestock feedlots, wastewater treatment plants, and various other industries may generate odors.

Cities and counties are responsible for addressing odor problems caused by pets or the presence of other livestock in residential areas.

What can we do?

1. Prior to project approval, request that project information specify which requirements under *IDAPA 58.01.01.776* apply.
2. Plan ahead by incorporating odor management into your comprehensive plan and zoning issues. Industrial and agricultural areas should be properly zoned so the public is not affected by odorous industries.
3. Understand how a project may create odor and consider requiring such projects within your jurisdiction to develop an odor management plan prior to project approval. Odor management plans can include using appropriate best management practices that detail how the applicant will manage odors occurring from the proposed operation.
4. Local governments have the authority to implement ordinances that help prevent odors beyond state and federal laws and regulations. Determine what is best for the health and welfare of your community.

State and local regulatory responsibilities

In general…

…if the odor is created by a business or industry regulated by DEQ, in most cases, DEQ will investigate and work to resolve the odor complaint through development, modification, and/or enforcement of an odor management plan.

…if the odor is created by an agricultural operation, it is the Idaho State Department of Agriculture's responsibility to address the problem.

…if the odor is created by a solid waste facility, it is the responsibility of the Public Health District in which the source is located to resolve the situation.

…if the odor is created by pets or the presence of other livestock in residential areas, the complaint is referred to the appropriate city or county authority for regulation under local zoning regulations.

Resources

Need a permit?

Have a question?

For more information on odor, visit DEQ's *Odor webpage*.

CHAPTER 3. WATER

This chapter covers the following topics:

- Drinking water
- Fire protection
- Ground water quality protection
- Source water assessment and protection
- Surface water
- Wastewater

Drinking Water

What is it?

DEQ's Drinking Water Program protects public health by requiring drinking water from public water systems to meet all health-based water quality standards and other requirements of the Safe Drinking Water Act (SDW). Almost 2,000 regulated public drinking water systems operate in Idaho. *Public drinking water systems* (publicly or privately owned) serve at least 25 people 60 days out of the year, or have at least 15 service connections. Many other Idaho citizens get their drinking water from private wells. These private wells are not regulated under the SDWA; well owners are personally responsible for ensuring their water is safe.

Why should our community care?

If a city, district, or other entity owns and operates a public drinking water system, it is responsible for producing safe drinking water, thereby protecting the health of its citizens and fulfilling the requirements set forth by SDWA and other state and federal rules and requirements.

Drinking water supplies are often vulnerable to contamination from land use practices (such as farming and urban development) and potential contaminant sources (such as gas stations) within the vicinity of drinking water wells and intakes, particularly surface water sources.

What can we do?

The information below covers four categories: 1) all projects, 2) projects that use an existing public drinking water system, 3) projects that propose a new public drinking water system, and 4) projects that use individual wells.

All projects

1. Prior to project approval, the applicant proposing to construct a new public drinking water system or expand an existing system must demonstrate an adequate water source for both quantity and quality.
2. Prior to project approval, verify that the project documents specify which requirements apply to the project. The U.S. Environmental Protection Agency (EPA) has delegated to DEQ primary enforcement authority for SWDA and under this authority DEQ promulgated the *Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08).*
3. Plan ahead by developing and using a comprehensive land use management plan that includes the impacts of present and future water management (for example, well construction, current and future water availability for an area, fire protection water) and addresses present and future needs of an area for adequate, safe, and sustainable drinking water. A meeting can be scheduled with DEQ for further discussion and recommendations for plan development and implementation.
4. DEQ recommends that all projects first connect to an existing approved public drinking water system whenever possible. If this is not possible, DEQ recommends

developing a new public drinking water system rather than the use of individual wells.

5. Local governments have the authority to help protect drinking water beyond what's required by state and federal laws and regulations. Determine what is best for the health and welfare of your community.

6. A county or city may want to understand the type of drinking water system needed for a project prior to project approval. The project will generally fall into one of these categories:

   - *Projects that use an existing public water system*
   - *Projects that propose a new public water system*
   - *Projects that use individual wells*

7. If you are an owner (city, district, or other entity) of an existing drinking water system, the following information applies when constructing new facilities or constructing improvements to existing facilities:

   - Understand your responsibilities. A city, district, or other entity that owns or operates a public water system (PWS) is responsible for protecting the health of its drinking water customers by monitoring the quality and available quantity of drinking water and fulfilling the requirements set forth by Idaho rules.
   - Different rules apply to different types of PWSs in Idaho. Determine which type of PWS you operate. Under *Idaho's Rules for Public Drinking Water Systems*, a PWS has four basic categories of requirements:
     - Construction and engineering
     - Ongoing monitoring
     - Reporting
     - Operation and maintenance
   - Understand your system by taking these steps:
     - Talk to the operator of the PWS to determine the status of the system as soon as possible.
     - Understand the drinking water operator certification requirements needed by your system's operator.
     - Consider having a city and county elected official attend on-site inspections. While not required, it is a good idea for them to participate to understand the requirements and be aware of deficiencies.
     - If you receive correspondence from state or federal agencies such as DEQ or EPA, contact the agency directly for questions.
     - Meet with regulating agencies, such as your *DEQ regional office*, to determine operating responsibilities, accountable parties, and the issues affecting your PWS.
     - Consider developing a facility plan for all drinking water systems, regardless of plans for growth. Doing so can help identify deficiencies in a system in advance

of new projects so ample time is available to address problems or issues. Public drinking water systems are responsible for continually ensuring adequate capacity.

- Identify and implement *pollution prevention measures*.

Projects that use an existing public drinking water system

1. DEQ requires verification that adequate water is available to serve projects. Prior to project approval, the city and county may want to contact the water provider for these items:

   - A capacity statement or declining balance report
   - The system's willingness to serve the project
   - The system's ability to serve the project

   Note: these items are required by DEQ for project review/approval.

2. If a project proposes modifications to an existing public drinking water system, per Idaho Code §39-118 and the associated *Idaho Rules for Public Drinking Water Systems*, all components of public drinking water system construction, including wells, must be designed by an Idaho registered professional engineer (An Idaho licensed professional geologist may design wells.) and must be approved by DEQ prior to construction. In some circumstances, a Qualified Licensed PE (QLPE) other than the design engineer may approve a project in place of DEQ. Refer to *Idaho Code §39-118* and Section 504 of *Idaho Rules for Public Drinking Water Systems* to determine design review authority.

3. DEQ does not review plans for individual service lines; these should be reviewed by the *State Plumbing Bureau* and/or the local building department as per the *Memorandum of Understanding* with DEQ. Contact *DEQ* to discuss requirements for other service lines that include mechanical components.

4. All projects require preconstruction approval by DEQ unless they meet the provisions of Idaho Code §39-118.2.d. For existing water systems with adequate capacity and pressure, the plans for simple drinking water main extensions may qualify to be reviewed and approved prior to initiation of construction by a QLPE. Refer to *Idaho Code §39-118* for applicability. These simple water main extensions are the only drinking water projects that require no plan review coordination with DEQ prior to approval. Additionally, at the discretion of any city, county, quasi-municipal corporation, or regulated public utility, these types of projects that fall under *Idaho Code §39-118.2.d* may be referred to DEQ for approval if desired.

Projects that propose a new public drinking water system

If a project will serve 25 or more people for 60 days per year or more, or if it will have 15 or more service connections, it will meet the definition for a public drinking water system and will be regulated under the Safe Drinking Water Act and *IDAPA 58.01.08*.

1. Plan ahead by understanding a water system's plans and your community's needs for growth. Doing so can help identify potential future deficiencies in a system in advance of adding more users that could, for instance, cause a system to qualify as a public water system and/or suffer pressure, flow, and supply limitations.
2. Prior to project approval, request that project information specify which requirements under *Idaho Code §39-118 and 39-103(12)* and the associated *Idaho Rules for Public Drinking Water Systems* apply. Generally, the following considerations apply:
   - DEQ recommends that the developer and engineer schedule a pre-design meeting with DEQ early in the conceptual design stage.
   - Projects that propose a new PWS are required to have a general facility plan that covers the system's conceptual design and a specific engineering report approved by DEQ before plans and specifications are submitted to DEQ for review and approval.
   - A project proposing a new PWS is required to demonstrate technical, financial, and managerial capacity. The capacity demonstration must be submitted to and approved by DEQ prior to or concurrent with proceeding or causing to proceed with construction of a new community or nontransient, noncommunity drinking water system. A transient system (one that does not regularly serve the same 25 people, e.g. a restaurant) does not need to demonstrate technical, financial, and managerial capacity.
   - If a PWS project involves a new well or surface water source, then the facility plan/preliminary engineering report must include documentation that the appropriate water right approval has been granted by the Idaho Department of Water Resources.
   - If the PWS will be used to provide water for fire suppression, contact local authorities for fire flow requirements. Any fire flow requirements are in addition to domestic requirements. (See *Fire Protection section*.)

Projects that use individual wells

Determine if the project will use a new or existing well.

1. If the project is using an existing individual well, prior to approval of a project, verify that the change in population size and type (such as employees, children in daycare, or students) does not change the status of the drinking water system. Contact the local *Public Health District* with the population type information for verification.
2. If a project proposes the use of individual wells for each residential domestic water supply, the local *Public Health District* has oversight of the systems.
3. Individual wells are private wells. Private well owners that serve less than 15 connections or do not serve 25 or more people more than 60 days out of the year are not regulated by the state for water quality. Owners of individual wells are responsible for monitoring the quality of their own drinking water. In addition, individual well construction in most cases is not equivalent to public drinking water system well construction. Therefore, DEQ recommends that private wells be tested

for total coliform bacteria, nitrate, and nitrite prior to use and be retested annually thereafter. *Nitrate* and *arsenic* are particularly important because they are the most widespread ground water contaminants in Idaho.

4. If a project will use individual wells, it is advisable to evaluate the potential to meet fire flow requirements.

Resources

Have a question?

For more information on drinking water, visit DEQ's *Drinking Water webpage.*

Resources for Engineers and Developers

Pollution Prevention for Public Water Systems

Public Water System Switchboard

Search for an Operator

Idaho Drinking Water Newsletter

Fire Protection

Why should our community care?

Since water is key to firefighting efforts, local governments should consider the benefits for enhanced public safety though fire protection and understand water resources and pressure requirements. Public water systems are the primary source of water for firefighting.

What can we do?

1. Prior to project approval, request that project information specify which requirements apply. Understand the fire code as it applies to each project and how it is enforced in your city or county. See *Idaho Code Section 41-253*.
2. Plan ahead. Fire departments are finding their resources spreading thin as more homes are being built outside of fire districts. To avoid exceeding available fire protection resources, cities and counties should review and understand the fire protection needs of their community.
3. Understand the fire department that services each project and its capacity to serve:
    - Does a project have fire protection?
    - Where is the nearest fire station located?
    - What is the average response time for the station?
    - Who funds the fire department, and are there volunteer or full-time employees?
    - What water resources are available to firefighters?
4. For all projects, it is recommended that the county or city:
    - contact and coordinate with the local *Fire Marshal and State Fire Marshal* for fire code requirements on all projects,
    - contact local county code enforcement and all local utilities to ensure that all requirements are met, and
    - contact the *Idaho Department of Water Resources* to understand water rights for each project and the circumstances in which available water can be used for fire protection and prevention.

Resources

Need a permit?

Have a question?

Ground Water Quality Protection

What is it?

Ground water is water that is found underground in the cracks and pre-spaces in sediments and rock. The layers that contain moving ground water are called aquifers. Aquifers typically consist of gravel, sand, sandstone, or fractured hard rock, like basalt.

Ground water is a key resource supporting many aspects of Idaho's way of life. It replenishes our streams and rivers and provides fresh water for irrigation, industry, and communities. In addition, ground water supplies 90% of the state's drinking water. As Idaho's population grows, so does the need for clean, usable ground water.

Why should our community care?

The water that flows from your tap likely comes from ground water, as it provides 90% of the state's drinking water. Ground water is a vital resource in Idaho. Around nine billion gallons of ground water are withdrawn every day for various uses in the state.

Agriculture uses approximately 60% of the total ground water withdrawn in the state for dairy production, feed lots, and for irrigation of such crops as potatoes, sugar beets, and barley. Aquaculture also relies on ground water, as do industrial processes that use ground water for food processing, fertilizer production, and high-tech manufacturing.

The *Idaho Environmental Protection and Health Act (I.C. § 39-126)* mandates that state and local governments incorporate policies from the *Idaho Ground Water Quality Plan* into their programs. The Environmental Protection Act also indicates that cities, counties, and other political subdivisions are also authorized and encouraged to implement ground water quality protection policies within their jurisdictions.

The Idaho *Local Land Use Planning Act (I.C. § 67-6537)* requires local governing boards to consider the impact on ground water quality when considering amending, repealing, or adopting a comprehensive plan.

What can we do?

1. Plan ahead. Local governments have the authority to manage potential sources of ground water contamination within their jurisdictions. *They can protect ground water quality by including ground water protection as a component in their comprehensive plans*. Local governments can also implement ordinances and regulations such as wellhead protection overlay zones, riparian buffers, storm water management ordinances, special use permits, and land-use controls to protect ground water quality.
2. Local governments have the authority to implement ordinances that restrict ground water contamination beyond state and federal laws and regulations. Many land uses that pose a potential threat to ground water quality are managed at the local level. Therefore, it is local government that can most efficiently administer and implement some provisions of the *Idaho Environmental Protection and Health Act (I.C. § 39-126)* and the *Idaho Ground Water Quality*

Plan, particularly when implementation can be incorporated into existing programs. Determine what is best for the health and welfare of your community.

3. Implement ground water quality protection policies within your jurisdiction. The *Idaho Ground Water Quality Plan* provides guidance on ground water policies and implementation strategies for local government management efforts.
4. Consult the *Idaho Ground Water Quality Plan* to evaluate city or county use and management of pesticides, chemicals, and hazardous waste.
5. Consider implementing:
   - Land use regulations, zoning, or ordinances, especially for activities located near sensitive drinking water areas, such as protecting water supplies at the source using buffers or land use restrictions (see *source water section*)
   - Homeowner and business education programs to provide information on topics such as how to properly apply fertilizer
   - Water conservation standards
   - Collection sites for used oil, pharmaceuticals, or *household hazardous waste*
   - Community and business stewardship programs
   - Ground water protection policies and ordinances
   - Best management practices to mitigate the risk of potential contamination
6. Reference federal and state regulations that you may want to apply to unregulated tanks (for instance, heating oil tanks), such as the *Idaho Underground Storage Tank Act* or the *Spill Prevention, Control, and Countermeasure (SPCC) Rule* (See also Chapter 5, *Petroleum Storage and Fueling*.). Develop and use best management practices for facilities and persons that store and use materials that have the potential to contaminate soil and ground water. This includes assistance with selecting, designing, installing, and maintaining secondary containment systems.
7. Consider a requirement that projects have pollution liability insurance.
8. Identify groups in the community working on water issues, such as utility companies, water quality agencies, or advocacy organizations, and explore ways to collaborate with them.
9. Contact DEQ for training and technical assistance in implementing ground water and drinking water protection.
10. Communities located within *Nitrate Priority Areas* can work with DEQ to form local ground water quality advisory committees to implement strategies and ground water quality improvement plans.
11. Research funding potential to replace septic systems with upgraded sewer systems.
12. Request CAFO (see also Chapter 5, *CAFOs*) siting evaluations.

Resources

Have a question?

For more information on ground water quality protection, visit DEQ's *Ground Water webpage*.

Source Water Assessment and Protection

What is it?

Source water is untreated water from streams, rivers, lakes, or aquifers (ground water) that is used to provide public drinking water and to supply private wells used for human consumption.

Source water *assessments* are reports written by DEQ that provide information on:

- the potential contaminant threats to public drinking water sources,
- the area that contributes to the source,
- and the likelihood of that source to become contaminated.

Communities can use source water assessments to implement drinking water source protection plans, programs, and activities.

Source water *protection* is a voluntary process that enables communities to protect ground water and surface water supplies that serve as a source for drinking water. Source water protection consists of voluntary or regulatory programs and activities that are typically implemented at the local level by a broad spectrum of community groups, including government, private entities, and individuals. A drinking water source protection plan is often developed by a community or a public water system to identify actions a community can implement to help prevent contamination of water that supplies its public water system.

Why should our community care?

Safe drinking water is fundamental for a healthy and economically vibrant community. Local governments play a primary role in the protection of a community's drinking water supply. The Idaho *Environmental Protection and Health Act (I.C. § 39-126)* mandates that state and local governments incorporate policies from the *Idaho Ground Water Quality Plan* into their programs and states that cities, counties, and other political subdivisions are also authorized and encouraged to implement ground water quality protection policies within their jurisdictions.

The Idaho *Local Land Use Planning Act (I.C. § 67-6537)* requires local governing boards to consider the impact on ground water quality when considering amending, repealing, or adopting a comprehensive plan. A comprehensive plan should consider protection of source water because a sustainable supply of clean and reliable drinking water is needed for the economic vitality of a community.

Preventing contaminants from entering the water that supplies a public water system minimizes potential problems, such as increased health risks, expanded drinking water monitoring requirements, additional water treatment requirements, or expensive environmental cleanup activities.

In many cases, public drinking water systems are not operated by local governments and do not have the authority needed to protect drinking water sources. Therefore, municipal and county governments have the responsibility and legal authority for enacting and enforcing drinking water source protection measures.

What can we do?

1. Prior to project approval, request that source water impacts from the project be determined and that the project specify whether any federal or state requirements apply.
2. Plan ahead. Local governments have the authority to manage potential sources of source water contamination within their jurisdictions. *They can therefore protect drinking water sources by including ground water and source water protection as a component in their comprehensive plans*. Local governments can also implement ordinances and regulations such as wellhead protection overlay zones, riparian buffers, storm water management ordinances, and land-use controls to protect delineated source water areas.
3. Use the *source water assessments* available from DEQ to:
   - implement broader drinking water source protection plans, programs, and activities to address current problems and prevent future threats to the quality of drinking water, and
   - manage development of high-risk activities to minimize threats to source water through planning, zoning, best management practices, and land use decisions.
4. Develop a *drinking water source protection plan* to guide protection activities your community will take and to inform and educate the public.
5. Consider implementing:
   - Land use regulations, zoning, or ordinances, especially for activities located near sensitive drinking water areas, such as protecting water supplies at the source using buffers or land use restrictions
   - Homeowner and business education programs to provide information on topics such as how to properly apply fertilizer
   - Water conservation standards
   - Collection sites for used oil, pharmaceuticals, or *household hazardous waste*
   - Community and business stewardship programs
   - Ground water protection policies and ordinances
   - Best management practices to mitigate the risk of potential contamination
6. Research funding potential to replace septic systems with upgraded sewer systems.
7. Request CAFO (see also Chapter 5, *CAFOs*) siting evaluations.
8. Identify groups in the community working on water issues, such as utility companies, water quality agencies, or advocacy organizations, and explore ways to collaborate with them.
9. Identify practices that threaten to pollute drinking water sources. Set up a task force of stakeholders, including citizens, to assess issues affecting drinking water source protection areas.
10. Local governments have the authority to protect source water beyond federal and state laws and regulations. Determine what is best for the health and welfare of your community.

Resources

Have a question?

Funding Opportunities:

- *Brownfields*
- *Source Water Protection Grants*
- *319 Grants*
- *EPA Funding*

For more information on source water protection and assessment, visit DEQ's *Source Water Assessments webpage*.

EPA Source Water Protection Local Government Resources

NACo County Code and Ordinances

Surface Water

What is it?

Surface water is all water that is naturally open to the atmosphere, such as lakes, rivers, streams, and reservoirs.

Why should our community care?

Under the Clean Water Act, DEQ establishes and the U.S. Environmental Protection Agency (EPA) approves total maximum daily loads for pollutants in impaired assessed water bodies. These loads become incorporated into federal discharge permits.

Under *Idaho's Water Quality Standards*, cities and counties cannot discharge materials to surface water or degrade surface water quality without first obtaining a permit, when required.

Surface water pollution can result from a number of sources, including dredging, storm water runoff, and industrial or municipal wastewater discharges.

Cities and counties are the government agencies that manage land use. They are responsible for determining how land is developed and zoned and for protecting the features of surface water through city and county ordinances.

What can we do?

1. Prior to project approval, request that project information specify which requirements under Idaho's *Water Quality Standards* apply.
2. Understand the proximity of all surface waters to a project and how the project could cause surface water pollution (due to dust, storm water runoff, etc.). Take surface water protection into consideration for all projects.
3. Make sure projects have acquired appropriate surface water permits prior to approval. Under the federal Clean Water Act, any in-water construction discharges of pollutants into surface waters must have an Army Corps Section 404 permit or a *National Pollutant Discharge Elimination System (NPDES) permit* from EPA.
4. Plan ahead by preventing storm water pollution.
    - Develop storm water ordinances.
    - When approving development plans, consider sustainability by taking into account water quality issues.
    - Participate in *watershed advisory groups* and the development of water quality improvement plans.
    - Implement land use regulations or ordinances, especially for activities located near surface water.
    - Incorporate pollution prevention strategies into the land use and planning process, such as protecting surface waters by using buffers or other protection measures.

- Support a used-oil or *household hazardous waste* collection program.
- Join the *Storm Drain Marking Program*.

5. Local governments have the authority to implement ordinances that help prevent storm water pollution beyond federal and state laws and regulations. Determine what is best for the health and welfare of your community.

Total Maximum Daily Load (TMDL)

Under the Clean Water Act, DEQ establishes and EPA approves TMDLs for pollutants in impaired water bodies. Simply put, a TMDL is a pollutant budget. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive from human-caused sources and still meet water quality standards.

1. Determine if a water body near a project has a *TMDL*; if so, additional considerations may be advisable for such projects. Please contact *DEQ* for more information.
2. Plan ahead by developing a *One Plan* or a Natural Resources Conservation Service conservation plan. Such a plan will include recommended practices for minimizing water quality impacts, based on the specific conditions in the area.

Resources

Need a permit?

Have a question?

For more information on storm water, visit DEQ's *Stormwater webpage*.

EPA Stormwater Program

Stormwater Management Techniques

Low Impact Development Center

Evaluating the Effectiveness of Municipal Stormwater Programs

Funding Stormwater Programs

Understanding Impaired Waters and TMDL Requirements for Municipal Stormwater Programs

Wastewater

What is it?

Wastewater is spent or used water, such as from households and businesses, that contains enough harmful material to damage the water's quality. Every building with running water generates some sort of wastewater.

Why should our community care?

If a city, district, or other entity owns and operates a wastewater collection or treatment system, it is responsible for protecting the health of its citizens and fulfilling the requirements set forth by state and federal rules and permits for collecting, treating, and disposing of the wastewater. Similarly, individuals with wastewater systems discharging to drainfields on their lots are responsible for all wastes entering their systems because these wastes ultimately enter the ground water below the drainfields. The ground water is Idaho's main source for individual and community drinking water. Please review this document's *Source Water Assessment and Protection* section for appropriate guidance.

Wastewater may contain contaminants such as oil, dirt, human waste, and chemicals. Untreated wastewater can cause serious harm to the environment and threaten human health. Proper management and disposal of wastewater is essential to protect public health and Idaho's water quality.

What can we do?

The information below covers four categories: 1) all projects, 2) projects that expand existing wastewater systems, 3) projects that propose new public wastewater systems, and 4) subsurface treatment and disposal systems.

All projects

1. Prior to project approval, request that project information specify which requirements under Idaho's *Wastewater Rules (IDAPA 58.01.16)*, *Recycled Water Rules (IDAPA 58.01.17),* and *Individual/Subsurface Sewage Disposal Rules (IDAPA 58.01.03)* apply.
2. Plan ahead by developing and using a comprehensive land use management plan, which includes the impacts of present and future wastewater management. Generally, DEQ recommends that all new projects be served by existing approved wastewater collection systems or centralized community wastewater systems whenever possible.
3. Local governments have the authority to implement ordinances that go beyond federal and state laws and regulations for management of wastewater. Determine what is best for the health and welfare of your community.
4. Understand the project's type of wastewater and its collection and treatment system prior to project approval. A project will generally fall under one of the following three categories:
    - *Projects that expand existing wastewater systems*

- *Projects that propose new wastewater systems*
- *Subsurface treatment and disposal system (SSDS)*
  - Community subsurface treatment and disposal systems
  - Individual on-site wastewater systems

5. If you are an owner (a city, district, or other entity) of an existing wastewater system, the following information applies:

   - Understand your responsibilities. If a city, district, or other entity owns and operates a wastewater collection or treatment system, it is responsible for protecting the health of its citizens and fulfilling the requirements set forth by state and federal rules and permits.
   - Different rules apply to different types of wastewater collection, treatment, and disposal systems in Idaho. Determine which type of system you operate. Wastewater collection, treatment, and disposal systems have four basic categories of requirements under Idaho's *Wastewater Rules (IDAPA 58.01.16)* and *Recycled Water Rules (IDAPA 58.01.17)*:
     - Engineering design and construction
     - Ongoing monitoring
     - Reporting
     - Operation and maintenance
   - Understand your system by taking these steps:
     - Talk to the operator of the wastewater system to determine the status of the system as soon as you take office.
     - Understand the certification requirements needed by your operator.
     - Consider having a city and county elected official attend on-site inspections. While not required, it is a good idea for them to participate to understand the requirements and be aware of deficiencies.
     - If you receive any correspondence from state or federal agencies such as DEQ or the U.S. Environmental Protection Agency (EPA), contact the agency directly with any questions.
     - Meet with regulating agencies, such as your *DEQ regional office* or your *local Health District*, to determine operating responsibilities, accountable parties, and the issues affecting your wastewater system.
     - Consider developing a facility plan for all wastewater systems, regardless of plans for growth. Doing so can help identify deficiencies in a system in advance of new projects so ample time is available to address problems or issues. Cities are responsible for continually ensuring adequate capacity.
     - Contact your *DEQ regional office* with any questions regarding expanding or modifying existing systems.
     - If your system has a lagoon, the *Wastewater Rules* require that all lagoons be tested for leakage prior to April 15, 2012. Plan ahead to meet this deadline.

- Identify and implement *pollution prevention measures.*
- Local governments have the authority to implement ordinances that go beyond state and federal laws and regulations for management of wastewater. Determine what is best for the health and welfare of your community. Educate yourself on each wastewater treatment method's benefits and drawbacks. DEQ's regional offices and State Program personnel can help you become informed so that applicable and effective ordinances can be proposed and enacted.

Projects that expand existing wastewater systems

1. DEQ recommends verifying that adequate sewer capacity is available to serve projects. Prior to project approval, the city and county may want to contact the sewer provider for three items:
   - A capacity statement or declining balance report
   - The system's willingness to serve the project
   - The system's ability to serve the project

   Note: These items are required by DEQ for project review/approval
2. All facilities should have a DEQ-approved facility plan that outlines current capacity and future expansions needed to expand capacity. If the existing facility plan is inadequate to cover new projects, a new facility plan must be prepared and submitted to DEQ unless the new project is classified as a simple wastewater main extension and capacity can be demonstrated without a new facility plan. Developing a facility plan can help identify deficiencies in a system in advance of new projects so ample time is available to address problems or issues.
3. According to Idaho's *Wastewater Rules*, all systems proposing major wastewater system collection projects, pump station projects, treatment plant designs or upgrades, or new septage transfer stations are required to submit a project-specific preliminary engineering report for DEQ review and approval prior to submitting project specific plans and specifications for the project.
4. All projects involving wastewater collection systems, wastewater treatment plants, or wastewater disposal systems must be designed by a professional engineer registered in Idaho. Plans and specifications need to be approved prior to construction. Refer to *Idaho Code §39-118* and Section 400.03 of the Wastewater Rules to determine design review authority.
5. For existing wastewater systems with adequate capacity, the plans for simple wastewater main extensions may qualify to be reviewed and approved by a Qualified Licensed Professional Engineer (QLPE) prior to initiation of construction. Refer to *Idaho Code §39-118* and Section 400.03 of the Wastewater Rules for applicability and requirements. These simple wastewater main extensions are the only wastewater projects that do not require DEQ plan review and approval. Additionally, at the discretion of any city, county, quasi-municipal corporation, or regulated public utility, projects that fall under Idaho Code §39-118 may be referred to DEQ for approval.

However, upon project completion project as-built drawings must be submitted to DEQ.

6. DEQ does not review plans for gravity service lines serving residences; these should be reviewed by the State Plumbing Bureau and/or the local building department. Contact *DEQ* to discuss requirements on any other service line that includes mechanical components.

Projects that propose new public wastewater systems

1. All projects involving new wastewater collection, treatment, or disposal systems must be designed by a professional engineer registered in Idaho. Refer to *Idaho Code §39-118* to determine applicability of DEQ design review.
2. According to Idaho's *Wastewater Rules*, DEQ recommends that a city or county consider the following when approving or constructing new public wastewater collection, treatment, or disposal systems:
    - Schedule a pre-design meeting with DEQ prior to preparing facility plans, engineering reports, or plans and specifications for a new public wastewater collection system.
    - Plans and specifications must be approved by DEQ prior to construction.
    - Before submitting plans and specifications for the wastewater collection, treatment, or disposal system for DEQ review and approval, all new systems must have a current facility plan, a Technical, Financial, and Managerial document, and a project-specific engineering report approved by DEQ.
        - The facility plan is a planning document that covers items such as the project's location, population, demographics, and the overall wastewater system configuration (collection, treatment, and disposal components). The facility plan should be prepared and submitted to DEQ prior to design of the wastewater infrastructure. Ideally, a facility plan would also be used to support and supplement planning and zoning requests. Facility plans are sometimes referred to as a Master Plan or Facilities Planning Study.
        - The TFM is a document that demonstrates a systems ability to construct, own, and operate a wastewater system, and documents the capabilities required of a wastewater system in order to achieve and maintain compliance with the Wastewater Rules.
        - The project-specific preliminary engineering reports are engineering documents that are used to establish the detailed design basis for individual wastewater components such as pumping stations and treatment works.
    - If a project includes a private municipal wastewater treatment plant, the minimum design capacity for such plants is 25,000 gallons per day based on average day flows.
    - Per the Idaho *Wastewater Rules*, owners of private municipal wastewater treatment plants must receive a

- draft National Pollutant Discharge Elimination System (NPDES) permit,
- draft wastewater reuse permit, or
- final subsurface treatment and disposal system (SSDS) permit before DEQ will approve plans and associated specifications for collection and treatment systems. Therefore, communities approving projects may want to consider this requirement when scheduling timelines and understand the wastewater treatment plant's effluent discharge proposed for a project.
    - **NPDES permit**. If wastewater treatment plant effluent will reach state waters, an *NPDES permit* issued by EPA will be required for the proposed discharge. Permits may be difficult and time-consuming to obtain.
    - **Wastewater reuse permit**. If a project proposes reuse of wastewater (for irrigation or land application, for instance), a *recycled water permit* is required from DEQ.
    - **Subsurface treatment and disposal system (SSDS)**. If effluent from the wastewater treatment plant will be discharged to ground water through a subsurface disposal system, a permit from the local health department will be required. DEQ review and approval may also be necessary.

Subsurface treatment and disposal system (SSDS)

Subsurface sewage disposal systems can service the needs of various wastewater generators ranging from individual homes to small communities. Where and how the wastewater is generated establishes the type of subsurface sewage system while the wastewater volume determines whether enhanced drainfield configurations are required or not.

There are two common types of subsurface treatment and disposal systems:

1. Individual on-site wastewater systems
2. Central subsurface treatment and disposal systems, commonly referred to as a Community SSDS.

Additionally, if wastewater volumes of 2,500 gallons per day (GPD) or more are received by the SSDS then the drainfield is classified as a large soil absorption system (LSAS) and must meet enhanced design, construction, monitoring and reporting requirements.

DEQ has established minimum standards, the *Individual/Subsurface Sewage Disposal Rules (IDAPA 58.01.03)*, for the design, construction, siting, and use of individual and subsurface sewage disposal systems. These rules also establish requirements for obtaining an installation permit and an installer's registration permit. These rules are administered by Idaho's seven local *Public Health Districts* through a *Memorandum of Understanding* with DEQ. Contact your local Public Health District during initial project planning efforts to understand site and wastewater system requirements.

- **Individual on-site wastewater systems**
  Individual septic systems are on-site wastewater systems that discharge wastewater into an underground tank, where solids are separated from the effluent, and the clarified water is dispersed into a subsurface drainfield located on the same

property where the wastewater is generated. These on-site systems predominantly service residences in areas without access to municipal wastewater treatment plants and have historically been known as septic systems.

- On-site SSDS have the potential to transport pollutants from sewage to ground water. To help prevent this, *nutrient-pathogen evaluations* (N-P evaluations) may be required for certain proposed on-site wastewater disposal systems. If an N-P evaluation is not required by the health department, the local government may decide to assess a project's impacts to groundwater and request an N-P evaluation. Requiring an N-P evaluation may be prudent, especially if the subsurface disposal of sewage is to occur in a Public Drinking Water System's source water recharge area. [**Note**: The term "N-P evaluation" will soon be replaced by "Water Quality Impact Analysis (WQIA)."]
- On-site SSDS may also service commercial, industrial and institutional facilities. Care must be taken in designing and constructing a SSDS that receives wastewater from these facilities due to the potential for chemical contamination of the ground water. SSDS serving these facilities are classified as Non-Domestic SSDS and must preprocess any wastewater generated to domestic wastewater strength prior to discharging to the drainfield. Furthermore, due to the potential for undesirable chemicals to enter these systems, the Idaho Department of Water Resources (IDWR) may have additional requirements as specified in the IDWR Rule and Minimum Standards for the Construction and Use of Injection Wells in the State of Idaho (IDAPA 37.03.03). The Public Health District coordinates system review with DEQ. DEQ will coordinate the jurisdictional issues with IDWR for permitting of these Non-Domestic on-site SSDS.

- **Central (Community) SSDS**

  A community SSDS is any wastewater treatment system that receives wastewater from more than two dwelling units or more than two buildings under separate ownership. These types of systems are analogous to more well known municipal wastewater collection and treatment systems, with which they share many characteristics, but they discharge the processed wastewater to a subsurface drainfield. If a project indicates that a community SSDS will be used, details on this system will need to be provided to your local *Public Health District*. The Public Health District will coordinate the review of all project submittals with DEQ so that the community SSDS meets all applicable Rules.

  - Since Community SSDS share multiple characteristics with municipal wastewater treatment systems they must also meet the regulatory requirements defined in the Wastewater Rules (IDAPA 58.01.16). Specifically, the project will need to submit technical, financial and managerial documentation (IDAPA 58.01.16.409), a Preliminary Engineering Report (IDAPA 58.01.16.411), and Plans and Specifications (IDAPA 58.01.16.420) that meet the minimum requirements specified in

subsections for Pipelines (IDAPA 58.01.16.430) and, if present, Pump Stations (IDAPA 58.01.16.440) and Private Wastewater Treatment Plants (IDAPA 58.01.16.455).

- Community SSDS may also service commercial, industrial and institutional facilities, and since the wastewater is coming from multiple sources the likelihood that some of these sources are commercial, industrial and institutional facilities is increased. Consequently, additional care must be taken in designing and constructing a Community SSDS that receives wastewater from these facilities due to the potential for chemical contamination of the ground water. DEQ recommends that Community SSDS receiving these mixed wastewater streams have the wastewater from these non-domestic sources evaluated prior to allowing them to connect to the collection system. DEQ and IDWR Rules may apply. Contact the DEQ Regional Office or IDWR for assistance.

- **LSAS.**
  Any individual or community SSDS that will receive wastewater volumes of 2,500 gallons per day or more must be designed and constructed to meet the additional configuration requirements specified in the *Individual/Subsurface Sewage Disposal Rules (IDAPA 58.01.03.013)* subsection on Large Soil Absorption System Design and Construction. The Public Health District will coordinate system review and approval with DEQ prior to the Health District's issuance of the necessary installation permits.

  - Due to the large wastewater volumes being discharged to the ground water at an LSAS, DEQ will require the developer to generate and submit a N-P evaluation. DEQ will evaluate the N-P study to verify that the proposed system will not significantly degrade the beneficial uses of the ground water. It is recommended that a N-P study be successfully performed and approved prior to any system design activity start.
  - All LSAS must be designed by an Idaho licensed professional engineer. Construction must be performed by a registered complex system installer or a licensed public works contractor who has experience in subsurface system installation and the installation must be performed under the direction of the licensed professional engineer.

Resources

Need a permit?

Have a question?

For more information on wastewater, visit DEQ's *Wastewater webpage*.

Resources for Engineers and Developers

Pollution Prevention in Wastewater Collection and Treatment

Pollution Prevention Handbook: Sewage and Wastewater Treatment Plants

CHAPTER 4. WASTE MANAGEMENT AND REMEDIATION

This chapter covers the following topics:

- Hazardous waste
- Household hazardous waste
- Medical and pharmaceutical waste
- Solid waste
- Waste tires

Hazardous Waste

What is it?

Hazardous waste is waste with characteristics that make it dangerous or potentially harmful to human health or the environment. Hazardous wastes can be liquids, solids, contained gases, or sludges. They can be the by-products of manufacturing processes or simply discarded commercial products. Examples include cleaning fluid; pesticides; paints; batteries; electronics; chemicals; and mercury-containing light bulbs, switches, thermometers, and other instruments.

Why should our community care?

Hazardous waste is dangerous or potentially harmful to human health and the environment and can harm drinking water, surface water, and ground water.

Idaho's *Ground Water Quality Rule, Section 400.01* (Releases Degrading Ground Water Quality), states that "No person shall cause or allow the release, spilling, leaking, emission, discharge, escape, leaching, or disposal of a contaminant into the environment in a manner that:

- Causes a ground water quality standard to be exceeded;
- Injures a beneficial use of ground water; or
- Is not in accordance with a permit, consent order or applicable best management practice, best available method or best practical method."

Currently, through exemptions in federal and state regulations, *conditionally exempt small quantity generators* (CESQGs) may, at the discretion of permitted solid waste landfill operators and permitted publicly owned wastewater treatment facilities operators, dispose of hazardous waste at these facilities. However, to divert CESQG waste from these facilities, DEQ encourages CESQGs to use best management practices to explore recycling or reusing this waste, to participate in city/county CESQG/HHW collection programs, or to dispose of this waste at a hazardous waste permitted treatment, storage or disposal facility.

Cities and counties are required to consider the impact on ground water quality when considering amending, repealing, or adopting a comprehensive plan and to incorporate policies from the *Idaho Ground Water Quality Plan* into their programs. Cities, counties, and other political subdivisions are also authorized and encouraged to implement ground water quality protection policies within their jurisdictions.

What can we do?

The information below applies to all projects.

1. Prior to project approval, request that project information specify which requirements under the federal *Resource Conservation and Recovery Act*, the Idaho *Hazardous Waste Management Act*, and the Idaho *Ground Water Quality Rule* apply.
2. Understand each project by reviewing its *generator status* and the chemicals, toxic materials, and hazardous waste associated with its operations. Review projects for the potential to use alternative materials that have less impact on the health and welfare of the community.

3. All businesses in Idaho, including city- and county-owned facilities, are required to determine if they *generate* hazardous waste and comply with various requirements. Note that *household hazardous waste* is a household waste and therefore allowed to go to a municipal solid waste landfill. *CESQG* waste is allowed to go to a municipal or non-municipal landfill through a conditional exemption in the hazardous waste regulations. However, CESQG waste may only be disposed of at a municipal or non-municipal landfill if authorized by the landfill and included in the landfill's operating plan. Diversion programs or local ordinances should be developed and implemented for both sources of hazardous waste to keep them out of landfills. Have an operating plan to address CESQGs and household hazardous waste.
4. Plan ahead for sites with tanks.
    - Require that project sites be evaluated for underground tanks and contamination prior to remodeling, as there may be potential contamination in subsurface soils. Disturbance of contaminated soils could allow harmful vapors to contaminate indoor air, among other problems.
    - Consider placement of *storage tanks* with regard to existing individual wells, public water system wells, and distribution lines to drinkable water to prevent contamination in the event of a release of material from the tanks.
    - Assure that drinking water and wastewater pipes are adequately separated and wastewater lines are down-gradient of public water system wells and their features.
5. Plan ahead for ground water protection.
    - Implement ground water quality protection policies within your jurisdiction. The *Idaho Ground Water Quality Plan* provides guidance on ground water policies and implementation strategies for local government management efforts.
    - Consult the *Idaho Ground Water Quality Plan* and evaluate city or county use and management of pesticides, chemicals, and hazardous waste.
    - Adopt land-use regulations or ordinances to protect ground water (especially for activities located near sensitive ground water areas). (See *source water section*.)
    - Develop and use best management practices for facilities and persons that store and use materials that have the potential to contaminate soil and ground water. This includes assistance with selecting, designing, installing, and maintaining secondary containment systems.
    - Consider a requirement that projects have pollution liability insurance.
    - Implement a household hazardous waste collection program for used oil, pharmaceuticals, and household hazardous waste. (See *household hazardous waste section*.)
    - Develop educational and voluntary programs to discourage the release of contaminants to ground water to reduce or eliminate contamination from these sources.
    - Identify groups in the community working on water issues, such as utility companies, water quality agencies, or advocacy organizations, and explore ways to collaborate with them.

- Implement homeowner and business education programs and community and business stewardship programs.
- Contact DEQ for training and technical assistance in implementing ground water and drinking water protection.

6. Assess proposed development projects or any abandoned or underutilized properties in your community for the potential to use brownfields funds or assistance.

   Brownfields are properties for which the expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Abandoned or underutilized properties result in wasted infrastructure, development of green space on the edge of town, and blight in urban and neighborhood areas. Communities may struggle to find new uses for brownfields, whether as a neighborhood park or as a new commercial or retail use, unless and until the environmental issues are resolved. Cleaning up and reinvesting in these properties increases local tax bases; facilitates job growth; utilizes existing infrastructure; takes development pressures off of undeveloped, open land; and both improves and protects the environment.

   Local governments can use the Brownfields Program to revitalize properties or buildings in their communities by requesting a brownfields assessment, applying for an assessment or clean-up grant, adding a property to DEQ's Brownfield Inventory, or proposing a brownfield site to DEQ. Local governments do not have to own the property in order to ask DEQ to conduct an assessment. For more information on this program, visit DEQ's *Brownfields webpage*.

7. Local governments have the authority to implement ordinances that help prevent ground water contamination. Many land uses that pose a potential threat to ground water quality are managed at the local level. Therefore, it is local government that can most efficiently administer and implement some provisions of the *Idaho Ground Water Quality Plan*, particularly when implementation can be incorporated into existing programs. Determine what is best for the health and welfare of your community.

Resources

Need a permit?

Have a question?

For more information on hazardous waste, visit DEQ's *Hazardous Waste webpage*.

DEQ's Compliance/Technical Assistance Program

Household Hazardous Waste

What is it?

Leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients are considered household hazardous waste. Products such as paints, cleaners, oils, batteries, mercury thermometers, *electronics*, and pesticides that contain potentially hazardous ingredients require special care when disposed of.

Why should our community care?

Improper disposal methods of household hazardous wastes, such as putting them out with the trash or pouring them down the drain, on the ground, or into storm sewers can pollute the environment and pose a threat to human health.

Currently, through exemptions in federal and state regulations, households may dispose of household hazardous waste in permitted municipal solid waste landfills and permitted publically owned wastewater treatment facilities. Therefore, household hazardous waste is often thrown away rather than recycled, reused, or safely treated. If it is not thrown away, it can be improperly stored and put households at risk for *spills* or accidents. For example, mercury thermometers or other mercury containing instruments can easily break and become very hazardous if not cleaned up properly. To divert HHW from these facilities, DEQ encourages best management practices such as reuse, recycling and HHW collections if possible. With an outlet to dispose of household hazardous wastes, households and public agencies can avoid the health and financial costs of a preventable spill.

What can we do?

With the following efforts, cities and counties can encourage safe disposal of household hazardous waste:

1. Provide a household hazardous waste collection program to assist households and *conditionally exempt small quantity generators* (CESGQs) in diverting such waste from the landfill or sewer. These programs also discourage illegal dumping.
2. Household hazardous waste programs can vary depending on the resources available to the city or county. Some collection options include permanent collection or exchange programs, special collection days, and local business collection sites. If your community has neither a permanent collection site nor a special collection day, local businesses may accept certain products for recycling or proper disposal.
3. Encourage citizens and businesses to use *environmentally preferable purchasing* practices. As consumers of hazardous products, cities and counties can institute environmentally preferable purchasing policies (see Sample Policies, *Appendix G*) to look for safer alternatives when purchasing potentially hazardous products. If potentially hazardous products must be purchased, buy only what is needed, to avoid storing excess.
4. Contact Ben Jarvis at 208-373-0146 or *Ben.Jarvis@deq.idaho.gov* for an HHW resource CD with sample advertising and education material, contracts and RFPs, surveys, volunteer and

sponsorship forms, and organizational material that can be easily modified and used for your program or event.

Resources

Need a permit?

Have a question?

Household Hazardous Waste Management: A Manual for One-Day Community Collection Programs

Household Hazardous Waste Poster

EPA Household Hazardous Waste Web page

There's Mercury in That? The Big Picture of Fluorescent Bulbs Brochure

Household Hazardous Waste: How to Organize an HHW Diversion Program or Event for Local Governments

Medical and Pharmaceutical Waste

What is it?

Medical waste is different from pharmaceutical waste. Medical waste includes all waste materials generated at health care facilities and waste that may be contaminated by blood, body fluids, or other potentially infectious materials. Pharmaceutical waste refers to discarded drugs, both prescription and over-the-counter.

Why should our community care?

The *Rules and Minimum Standards for Hospitals in Idaho* prescribe storage, handling, transport, and treatment requirements of medical waste for hospitals. Medical waste generated at clinics or at home is not required to be treated prior to being disposed of.

What can we do?

- Cities and counties may want to assess medical waste disposal for all projects prior to approval.
- Cities and counties may want to develop and implement *best management practices* for medical waste. DEQ recommends requiring infectious medical waste from all sources be disinfected, using effective treatments to assure the safety of operators and visitors at solid waste management sites.
- Owners and operators of solid waste management sites have the ultimate say over what they will and will not accept, including untreated medical waste, as long as it does not conflict with applicable state requirements.

Pharmaceutical waste

For information on pharmaceutical waste in Idaho, visit DEQ's *Safe Pharmaceuticals Disposal webpage*.

Resources

Need a permit?

Have a question?

For more information on pharmaceutical and medical waste, visit DEQ's *Safe Pharmaceuticals Disposal webpage*.

Solid Waste

What is it?

Solid waste is 1) any garbage or refuse; 2) sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility; or 3) other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. It does not include solid or dissolved materials in domestic sewage, irrigation return flows, or industrial discharges.

Why should our community care?

Counties are required to manage solid waste within their jurisdictions. A county's primary responsibility is to establish ordinances to ensure proper management of solid waste. Part of this involves determining if the county wants to manage its own waste using a landfill, incinerator, or other in-county waste management option, or use a transfer station to haul the waste to another county or state.

Every waste management facility has siting, design, operation, closure, and post-closure requirements. A county must obtain multiple approvals from *DEQ* or the *Public Health District* before a new municipal solid waste landfill can accept waste. Review and approval authority is delegated as follows:

DEQ review/approval authority
Location restrictions and site certification

Standards for design

Ground water monitoring

Financial assurance for closure/post-closure care and corrective action

Public Health District review/approval authority
Standards for operation

Standards for closure

Standards for post-closure care

What can we do?

1. Prior to project approval, request that project information specify which requirements under the *Idaho Solid Waste Facilities Act* and Idaho's *Solid Waste Management Rules* apply. Types of waste management facilities and associated rules that cities and counties should be aware of include the following:
   - *Conditionally Exempt Small Quantity Generator Management Facilities in Idaho*
   - *Hazardous Waste Treatment, Storage, and Disposal Facilities in Idaho*
   - *Incinerators in Idaho*

- *Landfills in Idaho*
- *Processing Facilities in Idaho*
- *Transfer Stations in Idaho*
- *Wood or Mill Yard Debris Facilities in Idaho*

2. Understand how waste will be managed prior to approving projects. No trash or other solid waste should be buried, burned, or otherwise disposed of at any site that is not permitted. Disposal methods are regulated by various state regulations. Note that solid waste management facilities or landfills can be privately or publicly owned. If a municipal solid waste landfill is privately owned, it is required to apply for review by a site review panel, receive a siting license from DEQ, and pay a site license fee to cover the cost of reviewing the site license application.
3. Plan ahead. With the following efforts, local governments can better manage waste:
   - Determine the capacity, life expectancy, and expansion limits of your landfill.
   - Reduce waste to increase the life expectancy of your landfill. This can be accomplished by reducing waste at the source, reusing waste, *composting,* and *recycling*.
   - Recycling, like garbage collection in Idaho, is an optional service provided at the discretion of local governments or by private recycling companies. The level of recycling service (curbside vs. self haul) and the number of commodities collected (paper, aluminum, etc.) differ depending on resources available and a community's geographical location to recycling markets (different commodities may have different markets). Because each community has unique resources, the recycling and diversion solutions for one community may differ from those of another. Determine what works best for your community. See also *Recycling in Idaho: Profiles of Community Recycling Programs.*
   - Develop a *"pay-as-you-throw"* program, where citizens pay for each can or bag of trash they set out for disposal rather than pay a flat fee. When households reduce waste at the source by consuming less, reusing waste, or recycling, they dispose of less trash and pay lower trash bills. This can help extend the life of landfills.
   - Implement a green purchasing policy (see Sample Policies, *Appendix G*) in city and county departments to reduce the toxicity and quantity of items purchased and increase the purchase of products with higher recycling content and durability.
   - Divert green waste from the landfill. Wood and yard waste, which includes lumber, pruned branches, shrubs or bushes, stumps, whole trees, leaves, and grass clippings, can come from construction, demolition, and maintenance of streets, yards, and parks. Such waste represents a significant part of the total amount of solid waste disposed of. *Recycling and reuse activities* for wood and yard waste include wood chipping to be used for fuel supplements at electricity co-generation plants; mulching to be used for landscaping, compost feedstock, and cattle bedding; and composting to be used as a soil amendment.
   - Develop a reuse and disposal program for *household hazardous wastes* such as latex and oil-based paint, stain and primer, wood care products, cleaning products, automotive products, and fertilizers.

4. Remember that owners and operators of solid waste management sites have the ultimate say in what they will and will not accept, as long as it does not conflict with applicable state requirements. Such sites may choose to reject, for instance, untreated medical waste, electronic waste, animal waste, and household hazardous waste. Alternative management options should be considered if certain waste streams are not accepted for disposal at the local landfill. Additionally, local governments have the authority to implement ordinances to better manage solid waste beyond federal and state regulations and laws. Determine what is best for the health and welfare of your community.

Resources

Need a permit?

Have a question?

For more information on solid waste, visit DEQ's *Solid Waste webpage.*

Recycling in Idaho: Profiles of Community Recycling Programs

DEQ's Online Recycling Directory

Green Purchasing Resources

Alternative Fuels and Vehicles

Biobased Products

Buy Recycled

Energy Star

Environmentally Preferable Purchasing

Priority Chemicals

National Institute of Government Purchasing

Center for a New American Dream

EPP Contracts Database

U.S. Communities

Responsible Purchasing Networks

Green Meeting Resources

Blue Green Meetings

EPA Green Meetings

Green Meeting Industry Council

Meeting Strategies Worldwide

Waste Tires

What is it?

Under the Idaho *Waste Tire Disposal Act*, municipal solid waste landfills are the only sites in Idaho where waste tires can be disposed of after demonstrating specified volume reduction. Disposal refers to tires at their end of life; storage of new or usable tires is regulated by the county or city.

Why should our community care?

Counties/cities are required to issue written approvals for waste tire storage sites and collect from them a financial assurance of $2.50 per tire authorized to be stored. Conditional use permit requirements or other processes where written approval is issued can be used for waste tire storage sites. If counties do not have the personnel or funding to oversee a waste tire program, they may ask DEQ to assume this responsibility.

Abandoned tire piles pose a serious fire threat that can result in air, surface water, and ground water impacts. Discarded tires are also a breeding ground for disease-carrying pests and rodents, including mosquitoes that carry the West Nile virus.

What can we do?

1. Prior to project approval, request that project information specify which requirements under Idaho's 2003 *Waste Tire Disposal Act* apply.
2. For all projects that include the transportation of waste tires, check with DEQ prior to approval. Waste tire transporters can only transport waste tires to an approved waste tire storage site.
3. Plan ahead by developing a waste tire recycling program. Recycling opportunities for tires include the following:
   - tire-derived fuel
   - embankment fill (tire shreds only) in accordance with generally accepted engineering practices
   - alternate daily cover at landfills (upon approval)
   - mulch (tire shreds only)

Resources

Need a permit?

Have a question?

For more information on waste tires, visit DEQ's *Waste Tire webpage*.

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CHAPTER 5. SPECIAL ENVIRONMENTAL CONCERNS

This chapter covers the following special environmental concerns:

- Brownfields
- Concentrated (or confined) animal feeding operations (CAFOs)
- Construction activities
- Emergency response
- Inactive or abandoned mining areas
- Pesticides
- Petroleum storage or fueling
- Ponds
- Salvage yards and vehicle/equipment storage
- Other projects

Brownfields

The Idaho Brownfields Program offers opportunities to provide cost free assessments for eligible applicants in order to address known or perceived contamination issues at proposed development projects or any abandoned or underutilized properties in your community for the potential to use Brownfields funds or assistance.

Brownfields are properties for which the expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Abandoned or underutilized properties result in wasted infrastructure, development of green space on the edge of town, and blight in urban and neighborhood areas. Communities may struggle to find new uses for brownfields, whether as a neighborhood park or as a new commercial or retail use, unless and until the environmental issues are resolved. Cleaning up and reinvesting in these properties increases local tax bases; facilitates job growth; utilizes existing infrastructure; takes development pressures off of undeveloped, open land; and both improves and protects the environment.

Local governments can use the Brownfields Program to revitalize properties or buildings in their communities by requesting a brownfields assessment, applying for an assessment or clean-up grant, adding a property to DEQ's Brownfield Inventory, or proposing a brownfield site to DEQ. Local governments do not have to own the property in order to ask DEQ to conduct an assessment.

For more information on this program, visit DEQ's *Brownfields webpage*.

Concentrated (or Confined) Animal Feeding Operations

The following information should be reviewed for projects that involve concentrated (or confined) animal feeding operations (CAFOs):

1. The *Idaho State Department of Agriculture* (ISDA) is the primary agency that regulates CAFOs. Prior to approving a CAFO, please contact ISDA.
2. A *CAFO siting* process conducted prior to approving a CAFO permit can help determine environmental risks. Projects may qualify for a state CAFO siting through ISDA. If a county requests a siting through ISDA, representatives from the Idaho Department of Water Resources, ISDA, and DEQ may review a site proposed for a CAFO, determine environmental risks, and submit a site-suitability determination.
3. For proposed CAFOs, consider a requirement for an odor management plan, as the development of such a plan is not included within the CAFO siting process. (See the *odor control section*.)
4. Contact *EPA* for more information on CAFOs.

Construction Activities

Disturbances of soil and rock during construction can create significant potential for erosion and sedimentation of nearby canals, streams, rivers, and lakes.

1. To protect surface water, consider requiring implementation of *best management practices* for projects that disturb soil or rock. The *Idaho Erosion and Sediment Control Field Guide* may be referenced to assist in developing these practices.
2. Construction sites are required to obtain *permit* coverage to discharge *stormwater* to a water body or to a municipal storm sewer from EPA. If a project involves de-watering of ground water during excavation, any discharges from this process will need treatment to prevent excessive sediment and turbidity from entering surface water. If the project disturbs more than one acre of land, a storm water permit from the U.S. Environmental Protection Agency (EPA) may also be needed.

   The Construction General Permit. If a construction project disturbs more than one acre of land (or is part of a larger common development that will disturb more than one acre), the operator is required to apply for permit coverage from EPA after developing a site-specific Storm Water Pollution Prevention Plan.

   Storm Water Pollution Prevention Plan. To obtain the *Construction General Permit*, operators must develop a site-specific *Storm Water Pollution Prevention Plan*. Operators must document the erosion, sediment, and pollution controls they intend to use, inspect the controls periodically, and maintain best management practices through the life of the project.

Resources

Role of Local Governments in Implementing the NPDES Storm Water Program for Construction Sites

Emergency Response

Successful emergency response requires planning ahead for situations that may cause immediate and serious harm to people or the environment. Potential emergency response situations could include the following:

- *waste management and remediation*
- *air pollution*
- *drinking water security*

Waste Management and Remediation Emergencies

To report a spill or accident involving oil, gas, hazardous materials, anthrax, or explosives, contact the state Communications Center at 1 (800) 632-8000 or (208) 846-7610. The call will activate Idaho's Emergency Response Network, which consists of state and local agencies (including designated DEQ field personnel and four regional response teams), and, if necessary, federal agencies. The network will take the following steps:

- Coordinate state and federal emergency response, recovery, and mitigation operations during emergencies and disasters.
- Provide technical support to local jurisdictions involved in local emergencies and disasters that do not require human and material resources from the state.
- Ensure state and local preparedness, response, and recovery plans are consistent with the state's emergency management goals and procedures.
- Coordinate all requests from state and local governments for disaster emergency assistance.

For more information, visit DEQ's *Emergency Response webpage*.

Air Pollution Emergencies

Under the *Air Pollution Emergency Rule (Sections 550-562)*, DEQ is authorized to take appropriate action when levels of regulated air pollutants cause or are predicted to cause a health emergency. Table 1 below shows the four stages or levels of an emergency, with each stage addressing a progressively more serious air quality event.

Table 1. Stages of an Air Pollution Emergency

Stage	Title	Description
1	Forecast/Caution	The National Weather Service issues an Atmospheric Stagnation Advisory, or an equivalent local forecast is issued, triggering an internal watch by DEQ.
2	Alert	Air quality has degraded, requiring industrial sources to begin air pollution control actions.
3	Warning	Air quality has further degraded, requiring control actions to maintain or improve air quality.
4	Emergency	Air quality has degraded to a level that will substantially endanger public health, requiring implementation of the most stringent control actions.

For more information, visit DEQ's *Air Pollution Emergencies webpage*.

Drinking Water Security

Under the federal *Public Health Security and Bioterrorism Preparedness and Response Act* (known as the Bioterrorism Act), the *Safe Drinking Water Act* was amended to require community water systems that serve populations greater than 3,300 to implement new security measures. The measures are designed to help protect the supply of safe *drinking water* and maintain an adequate supply of water for firefighting (see *fire protection* section) in the event of natural disasters such as earthquakes and drought and disasters caused by humans, including vandalism and terrorist attacks.

Vulnerability Assessments

The federal Bioterrorism Act requires community water systems serving populations greater than 3,300 to conduct a vulnerability assessment (VA) to evaluate weaknesses to potential threats, identify steps that can reduce the risk of serious consequences from attack or acts of vandalism, and prepare an emergency response plan incorporating the results of the VA. Although smaller systems are not required to comply, DEQ urges all water systems to prepare these security aids for their own protection. A self-assessment guide to assist all water systems in completing a VA can be found on the *Association of State Drinking Water Administrators' website*. For more information, visit DEQ's *Drinking Water Security webpage*.

Idaho Water Area Response Network

Another resource is the Idaho Water Area Response Network (IDWARN), which all water systems can join. This network is modeled on the "utilities helping utilities" concept, which gives water/wastewater utilities the opportunity to be more resilient during disaster response and recovery. IDWARN is designed to provide quick and professional assistance in any situation that overwhelms the capabilities of a water/wastewater utility. No formal declaration of emergency is needed, and assistance can take the form of personnel, equipment, materials, or services. A member utility may request deployment of emergency

support to restore critical operations at the affected water/wastewater utility. Water systems are encouraged to participate in this networking resource. Additional information can be found at *www.IDWARN.org*.

Private Wells

Private well owners are responsible for the safety of their water. While not a requirement, it is recommended that private drinking water wells be tested for common contaminants at least once per year. Testing for bacteria and nitrate is common; however depending upon the area, land use activity, and well construction standards used, it may be reasonable to test for other potential contaminants. Questions regarding specifics related to private well testing should be directed to local *Public Health Districts*. (See *projects that use individual wells* for more information.)

Inactive or Abandoned Mining Areas

In February 2002, DEQ initiated a Preliminary Assessment Program to evaluate and prioritize assessment of potentially contaminated sites. Due to accessibility and funding considerations, priority is given to sites where potential contamination poses the most substantial threat to human health or the environment. Priority is also given on a watershed basis so that groups of mines or claims may be assessed together. Local governments may view reports about inactive and abandoned mines assessed by DEQ on *DEQ's website*.

The following information should be reviewed for projects that involve inactive or abandoned mining areas.

1. Cities and counties, especially those with a high occurrence of mining activities, are responsible for how development occurs in their jurisdictions and should take mining and mining waste issues into consideration when developing planning and zoning ordinances and/or promoting new development.
2. Local governments are responsible for public safety, so risk-based management decisions should be used to minimize the human health and ecological risks associated with new development in inactive or abandoned mining areas.
3. If cities or counties are purchasing or developing new property, it is important to conduct due diligence on the property to determine potential on-site contamination and the need for risk management.

The *Voluntary Cleanup Program* encourages innovation and cooperation among the state, communities, and private parties working to revitalize properties with hazardous substance or petroleum contamination.

Brownfields are abandoned or underutilized properties where the reuse is complicated by actual or perceived environmental contamination. The *Brownfields Revitalization Program* is a joint program between the U.S. Environmental Protection Agency and DEQ to help local governments redevelop brownfield sites in their communities by funding and conducting site assessments when a lack of environmental information is complicating site redevelopment or reuse.

Pesticides

Pesticide-laden water can travel through the soil to ground water or run off to surface water. To minimize pesticide pollution to water, the following are good practices:

- Develop and implement best management practices for pesticides.
- Assure that pesticide suppression activities acknowledge and incorporate the state and federal rules and regulations for air, water, waste, and the overall environment.
- Assure that streams and surface waters are avoided when pesticides are applied to the land.
- Review the suggestions in the *ponds section*.

Contact the *Idaho State Department of Agriculture* for more information; they are the state regulatory agency responsible for administering the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in Idaho and the *Pesticide Disposal Program*.

Petroleum Storage or Fueling

The following information should be reviewed for projects that involve petroleum storage or fueling.

1. Review projects for the potential to contaminate soil and ground water and consider requiring implementation of best management practices.
2. There are tanks that are not regulated. Develop and use best management practices for facilities and persons that store and use materials that have the potential to contaminate soil and ground water. This includes assistance with selecting, designing, installing, and maintaining secondary containment systems. Reference federal and state regulations that you may want to apply to unregulated tanks (for instance, heating oil tanks), such as the *Idaho Underground Storage Tank Act* or the *Spill Prevention, Control, and Countermeasure (SPCC) Rule*.
3. Consider the removal or replacement of any existing petroleum underground storage tank system installed prior to December 22, 1988, used to contain an accumulation of regulated substances, particularly unregulated tanks, including farm, ranch, home, and commercial heating oil tanks.
4. Operating a facility with fueling activities or operations may require the transportation, storage, use, and disposal of petrochemicals and other harmful materials. Implement best management practices to assure that such materials are handled and transported correctly to avoid discharges to surface or ground water. Note that Idaho's *Water Quality Standards* define a release as, "Any unauthorized spilling, leaking, emitting, discharging, escaping, leaching, or disposing into soil, ground water, or surface water" (IDAPA 58.01.02.10.76). Petroleum releases to the environment must be reported. *IDAPA 58.01.02 (Sections 850, 851, and 852)* discusses reporting and corrective actions.
5. Prior to project approval, request that project information specify:
   - If EPA oversight is required under the *Spill Prevention, Control, and Countermeasure (SPCC) Rule*.
   - If *DEQ* oversight or notification is required.
   - If any tanks will be reused, they must be registered and tested and meet federal and state guidelines. The city or county may want to confirm that the requirements have been met. DEQ discourages the use of removed underground storage tanks for above-ground storage of fuel. Contact DEQ to discuss these concerns.
6. Consider a requirement that petroleum storage tanks have pollution liability insurance. Idaho's *Petroleum Storage Tank Fund* provides insurance coverage to owners of all eligible unregulated tanks used to store petroleum either aboveground or underground, including farm, ranch, home, and commercial heating oil tanks.
7. Local governments have the authority to implement ordinances that help prevent ground water contamination and restrict hazardous waste management beyond federal or state laws or regulations. Determine what is best for the health and welfare of your community.

Resources

For more information, visit DEQ's *Underground Storage Tank webpage.*

DEQ's Stormwater Catalog

I Have a Home Heating Oil Tank—What Do I Need to Do?

Salvage Yard Compliance Checklist

A Summary of DEQ's Underground Storage Tank Rules

Ponds

Two types of ponds that local governments should be aware of include 1) gravel pit ponds, which have a high potential of affecting ground water quality because water can move rapidly through gravel and sand and thus carry pollutants to ground water, and 2) aesthetic water use ponds, which can include ponds located in golf courses or subdivisions.

1. Plan ahead by developing and using a comprehensive land use management plan that includes best management practices for ponds. Ponds can develop water quality problems that include algae, scum, stagnation, mosquitoes, and odor.
2. Determine the water source and water rights required for proposed ponds.
3. Pesticides and other contaminants can enter surface water through runoff, soil erosion, spray drift, misapplication, or spillage and infiltrate to ground water through the soil. DEQ encourages ponds to be constructed and maintained to comply with the *Ground Water Quality Rule (IDAPA 58.01.11)*.
4. Use best management practices to help maximize the protection of human health and the environment. Best management practices for ponds may include aeration, buffer strips, pesticide and fertilizer regulation, pond liners, or ground water monitoring.
5. Ponds can provide habitat for many animal species and insects. Contact *Idaho Fish and Game* and the *Public Health District* for recommendations.

Salvage Yards or Vehicle/Equipment Storage

The following information should be reviewed for projects that involve salvage yards or vehicle/equipment storage.

1. Review projects for the potential to contaminate soil and ground water and consider requiring implementation of best management practices.
2. Determine if there will be petroleum storage or fueling with a project. If so, reference the *petroleum storage or fueling section*.
3. Prior to project approval, request that project information specify which requirements apply. Reference the *Salvage Yard Compliance Checklist*. Note the limitations of state and federal rules and determine if additional requirements may be needed to protect the health and welfare of your community.
4. As in other facilities, it must be determined if any solid waste is hazardous waste. If so, the hazardous waste must be managed appropriately according to the *hazardous waste determination*. Salvage yards may generate solvents, paint, mercury switches, and other auto fluids. If used oil is generated and recycled or burned for energy recovery, consult Idaho's Rules and Standards for Hazardous Waste, *Standards for the Management of Used Oil (IDAPA 58.01.05.15)*.

Other Projects

See DEQ's webpage at *http://www.deq.idaho.gov/assistance-resources.aspx* to find out about environmental regulations impacting businesses and link to general and industry-specific assistance, forms, checklists, guidance documents, and other helpful information for small and large businesses.

CHAPTER 6. RESOURCES

Idaho Department of Environmental Quality Pollution Prevention (P2) Program
DEQ's P2 Program works with Idaho's businesses to prevent pollution and conserve resources. DEQ's P2 specialist can provide on-site or remote assistance on issues related to air, waste, water, conservation, and sustainability.

DEQ's Idaho Drinking Water Newsletter
Published quarterly by the Idaho Department of Environmental Quality.

DEQ's Online Recycling Directory
This online directory is designed to help residents and businesses identify safe recycling and management options for waste. It includes community and business facilities that recycle common waste products, analytical laboratories, waste transporters, and waste exchanges.

Local Government Environmental Assistance Network
The Local Government Environmental Assistance Network (LGEAN) is a "first-stop shop" providing environmental management, planning, funding, and regulatory information for elected and appointed local government officials, managers, and staff. LGEAN enables local officials to interact with their peers and others online. In an effort to reach all local governments, LGEAN also manages a toll-free telephone service (877/865-4326).

Cities Go Green Sustainability Magazine
A digital and print magazine focused on helping cities and other local governments become sustainable.

ICLEI – Local Governments for Sustainability
ICLEI is an international association of local governments as well as national and regional local government organizations that have made a commitment to sustainable development. ICLEI provides technical consulting, training, and information services to build capacity, share knowledge, and support local government in the implementation of sustainable development at the local level.

Mayors Climate Protection Center
Douglas H. Palmer, Mayor of Trenton, New Jersey and President of The U.S. Conference of Mayors, and Conference Executive Director Tom Cochran officially launched The U.S. Conference of Mayors Climate Protection Center on February 20, 2007, in recognition of an increasingly urgent need to provide mayors with guidance and assistance to lead their cities' efforts to reduce greenhouse gas emissions linked to climate change.

Sustainable Communities Network
This Web site links citizens to resources and to one another to create healthy, vital, and sustainable communities.

Institute for Local Self-Reliance
The Institute's mission is to provide innovative strategies, working models, and timely information to support environmentally sound and equitable community development.

EPA Local Government Resources Center
Local governments are on the front lines of environmental protection. This compendium is designed to help local government officials and other community leaders find online sources of information, tools, and other resources that can help them build greener communities.

Waste Reduction Resource Center: Resources for Local Governments
This Web site contains a list of case studies of local government pollution prevention projects and resources.

Smart Growth Resources

Smart Growth Network
The Smart Growth Network was formed in response to increasing community concerns about the need for new ways to grow that boost the economy, protect the environment, and enhance community vitality. The Network's partners include environmental groups, historic preservation organizations, professional organizations, developers, real estate interests, and local and state government entities. The Network works to encourage development that serves the economy, community, and the environment.

Smart Communities Network
This site offers resources, tools, links to articles and publications, and community success stories on a variety of topics from community energy to green development to sustainable business.

Planning Resources

Allen, Gary, Christopher Meyer, Deborah E. Nelson, and Franklin G. Lee. 2007. Idaho Land Use Handbook. Givens Pursley Attorneys at Law.

Arendt, Randall G. 1996. Best Development Practices. American Planning Association.

Arendt, Randall G. 1996. Conservation Design for Subdivisions. Island Press.

France, Robert L. 2002. Handbook of Water Sensitive Planning and Design. Lewis Publishers.

Witten, Jon and Scott Horsley. 1995. A Guide to Wellhead Protection. American Planning Association.

APPENDICES

The following appendices collect the Web links found throughout this guide.

- Appendix A. Introduction Links
- Appendix B. Air Links
- Appendix C. Water Links
- Appendix D. Waste Links
- Appendix E. Special Environmental Concerns Links
- Appendix F. Resource Links

Appendix A. Introduction Links

Local Land Use Planning Act (Idaho Code § 67-6537)
http://www.legislature.idaho.gov/idstat/Title67/T67CH65SECT67-6502.htm

Appendix B. Air Links

Air Quality Daily Reports and Forecasts webpage
http://www.deq.idaho.gov/air-quality/monitoring/daily-reports-and-forecasts.aspx

Air Toxics webpage
http://www.deq.idaho.gov/air-quality/air-pollutants/air-toxics.aspx

- **Asbestos**
  http://www.deq.idaho.gov/air-quality/air-pollutants/air-toxics/asbestos.aspx

- **Hazardous Air Pollutants**
  http://www.deq.idaho.gov/air-quality/regulatory-programs/neshaps-for-hazardous-air-pollutants.aspx

- **Lead**
  http://www.deq.idaho.gov/air-quality/air-pollutants/criteria-pollutants/lead.aspx

- **Mercury**
  http://www.deq.idaho.gov/air-quality/air-pollutants/criteria-pollutants/mercury.aspx

Avista Utility Tools
www.avistautilities.com/business/services/pages/default.aspx

Burn Bans
http://www.deq.idaho.gov/air-quality/burning/burn-restrictions-and-bans.aspx

Burn Clean, Burn Smart Brochure
http://www.deq.idaho.gov/media/349461-burn_clean_burn_smart_brochure.pdf

Burning and Smoke Management webpage
http://www.deq.idaho.gov/air-quality/burning.aspx

Carbon Concierge
www.carbonconcierge.com

Cities for Climate Change Protection Program
www.iclei.org/index.php?id=800

Compost
www.epa.gov/waste/conserve/rrr/composting/index.htm

Criteria Pollutants
www.epa.gov/air/urbanair/

Crop Residue Burning
http://www.deq.idaho.gov/air-quality/burning/crop-residue-burning.aspx

Database of State Incentives for Renewables and Efficiency
www.dsireusa.org/incentives/index.cfm?re=1&ee=1&spv=0&st=0&srp=1&state=ID

Dust Prevention and Control Plan
http://www.deq.idaho.gov/media/61833-dust_control_plan.pdf

Effective Public Transportation
http://www.epa.gov/otaq/stateresources/index.htm

Energy Policy Act (EPAct)
www1.eere.energy.gov/vehiclesandfuels/epact/index.html

ENERGY STAR
www.energystar.gov/

ENERGY STAR's Guide for Small Businesses and Using Renewable Energy
www.energystar.gov/index.cfm?c=sb_guidebook.sb_guidebook_renewable

ENERGY STAR for Local Government
www.energystar.gov/index.cfm?c=government.bus_government_local

EPA Asbestos Web page
www.epa.gov/asbestos/

EPA Climate Change and Waste
www.epa.gov/climatechange/wycd/waste/index.html

EPA Green Vehicle Guide
www.epa.gov/greenvehicles/Index.do;jsessionid=823083eef96b50427b7d

EPA Local Best Practices
www.epa.gov/statelocalclimate/local/index.html

EPA Local Climate and Energy Program
www.epa.gov/slclimat/

Fine Particulate Matter webpage
http://www.deq.idaho.gov/air-quality/air-pollutants/criteria-pollutants/particulate-matter.aspx

Fugitive Dust webpage
http://www.deq.idaho.gov/air-quality/air-pollutants/fugitive-dust.aspx

Green Power
www.epa.gov/greenpower/

Green Power Network
http://apps3.eere.energy.gov/greenpower/about/index.shtml

Greenhouse Gas Inventory
www.epa.gov/climateleaders/resources/inventory-guidance.html

Ground Level Ozone
http://www.deq.idaho.gov/air-quality/air-pollutants/criteria-pollutants/ozone.aspx

Have a Question?
http://www.deq.idaho.gov/contact-deq.aspx

Highly Reflective Roofs
www.epa.gov/heatisland/mitigation/coolroofs.htm

Idaho Chemical Roundup Program
http://www.deq.idaho.gov/pollution-prevention/p2-for-schools/chemical-roundup-program.aspx

Idaho Clean Air Zone
http://www.deq.idaho.gov/pollution-prevention/p2-for-citizens/clean-air-zone-program.aspx

Idaho Office of Energy Resources Industrial Efficiency Program
www.energy.idaho.gov/energyefficiency/industrial.htm

Idaho Office of Energy Resources Building Efficiency Program
www.energy.idaho.gov/energyefficiency/building.htm

Idaho Power Energy Efficiency for Your Business
www.idahopower.com/EnergyEfficiency/Business/default.cfm?tab=Business

IDAPA 58.01.01.201
http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf

IDAPA 58.01.01.550-562 and 600-617
http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf

IDAPA 58.01.01.651
http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf

IDAPA 58.01.01.776
http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf

LEED Criteria
www.usgbc.org/DisplayPage.aspx?CategoryID=19

Light it Right Brochure
http://www.deq.idaho.gov/media/347571-light_it_right_0610.pdf

Mayors Climate Protection Center
www.usmayors.org/climateprotection/

Municipal Buildings
www.energystar.gov/index.cfm?c=government.bus_government

National Ambient Air Quality Standards (NAAQS)
www.epa.gov/air/criteria.html

National Lead Free Wheel Weight Initiative
www.epa.gov/osw/hazard/wastemin/nlfwwi.htm

National Renewable Energy Laboratory
www.nrel.gov/learning/small_business.html

Need a Permit?
http://www.deq.idaho.gov/permitting/air-quality-permitting.aspx

Odor Web page
http://www.deq.idaho.gov/air-quality/air-pollutants/odors.aspx

Offset Consumer
www.offsetconsumer.org/providers/

Open Burning and Burn Ban Rules (Sections 550-562 and 600-623)
http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf

Particulate Matter
http://www.deq.idaho.gov/air-quality/air-pollutants/criteria-pollutants/particulate-matter.aspx

Pedestrian- and Biker-Friendly Travel Routes
http://www.epa.gov/smartgrowth/

PTC Web page
www.deq.idaho.gov/air/permits_forms/permitting/ptc.cfm

Residential "Backyard" Burning
http://www.deq.idaho.gov/air-quality/burning/residential-burning.aspx

Rules for the Control of Air Pollution in Idaho (Section 201)
http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf

Rules for the Control of Air Pollution in Idaho (Section 651)
http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf

Rules for the Control of Air Pollution in Idaho (Section 776)
http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf

Rules for the Control of Air Pollution in Idaho (Sections 600-617 and 550-562)
http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf

Trade Waste
http://www.deq.idaho.gov/air-quality/burning/trade-waste.aspx

U.S. Department of Energy Alternative Fuels and Advanced Vehicles Data Center
www.afdc.energy.gov/afdc/

U.S. Department of Energy Consumer's Guide: Renewable Energy
http://apps1.eere.energy.gov/consumer/renewable_energy/

U.S. Department of Energy Industrial Technologies Program
www1.eere.energy.gov\industry\saveenergynow

Volatile Organic Compounds (VOCs)
www.epa.gov/iaq/voc.html

Wildland Fires
http://www.deq.idaho.gov/air-quality/burning/wildland-fires.aspx

Wood Recycling
www.epa.gov/waste/conserve/materials/organics/woodwaste.htm

Wood Stoves
http://www.deq.idaho.gov/air-quality/burning/wood-stoves.aspx

Appendix C. Water Links

319 Grants
http://www.deq.idaho.gov/water-quality/grants-loans/nps-%C2%A7319-subgrants.aspx

Arsenic
http://www.deq.idaho.gov/water-quality/drinking-water/pws-monitoring-reporting/contaminants/arsenic.aspx

Brownfields
http://www.deq.idaho.gov/waste-mgmt-remediation/brownfields.aspx

DEQ Regional Offices
http://www.deq.idaho.gov/regional-offices-issues.aspx

Drinking Water and Wastewater in Idaho: Resources for Engineers and Developers
http://www.deq.idaho.gov/assistance-resources/for-engineers-developers.aspx

Drinking Water Source Protection Plan
http://www.deq.idaho.gov/water-quality/drinking-water/drinking-water-protection/source-water-assessments.aspx

Drinking Water Overview
http://www.deq.idaho.gov/water-quality/drinking-water.aspx

Environmental Protection and Health Act (I.C. § 39-126)
www.legislature.idaho.gov/idstat/Title39/T39CH1SECT39-126.htm

EPA Funding
http://cfpub.epa.gov/safewater/sourcewater/sourcewater.cfm?action=funding

EPA Source Water Protection Local Government Resources
http://permanent.access.gpo.gov/lps21800/www.epa.gov/safewater/protect/localgov.html

EPA Stormwater Program
http://cfpub1.epa.gov/npdes/home.cfm?program_id=6

Evaluating the Effectiveness of Municipal Stormwater Programs
www.epa.gov/npdes/pubs/region3_factsheet_swmp.pdf

Fire Marshall and State Fire Marshall
http://www.doi.idaho.gov/sfm/fm_directory.aspx

Funding Stormwater Programs
www.epa.gov/npdes/pubs/region3_factsheet_funding.pdf

Ground Water Quality Rule (IDAPA 58.01.11)
http://adm.idaho.gov/adminrules/rules/idapa58/0111.pdf

Ground Water Overview
http://www.deq.idaho.gov/water-quality/ground-water.aspx

Have a Question?
http://www.deq.idaho.gov/contact-deq.aspx

Idaho Code §39-118
http://legislature.idaho.gov/idstat/Title39/T39CH1SECT39-118.htm

Idaho Code §39-118 and 39-103(12)
http://legislature.idaho.gov/idstat/Title39/T39CH1SECT39-118.htm

Idaho Code §39-118.2.d
http://legislature.idaho.gov/idstat/Title39/T39CH1SECT39-118.htm

Idaho Code Section 41-253
http://legislature.idaho.gov/idstat/Title41/T41CH2SECT41-253.htm

Idaho Department of Water Resources
www.idwr.idaho.gov/

Idaho Drinking Water Newsletter
http://www.deq.idaho.gov/water-quality/drinking-water/pws-tips-guidance/newsletters.aspx

Idaho Ground Water Quality Plan
http://www.deq.idaho.gov/media/462972-idaho_gw_quality_plan_final_entire.pdf

Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08)
http://adm.idaho.gov/adminrules/rules/idapa58/0108.pdf

Idaho Rules for Public Drinking Water Systems
http://adm.idaho.gov/adminrules/rules/idapa58/0108.pdf

Idaho Underground Storage Act
www.legislature.idaho.gov/idstat/Title39/T39CH88.htm

Idaho Water Quality Standards
http://adm.idaho.gov/adminrules/rules/idapa58/0102.pdf

Idaho's Individual/Subsurface Sewage Disposal Rules
http://adm.idaho.gov/adminrules/rules/idapa58/0103.pdf

Idaho's Wastewater Rules
http://adm.idaho.gov/adminrules/rules/idapa58/0116.pdf

Local Land Use Planning Act (I.C. § 67-6537)
www.legislature.idaho.gov/idstat/Title67/T67CH65SECT67-6502.htm

Low Impact Development Center
www.lowimpactdevelopment.org/

Memorandum of Understanding (Public Health Districts)
http://www.deq.idaho.gov/media/581871-deq_phds.pdf

Memorandum of Understanding (State Plumbing Bureau)
http://www.deq.idaho.gov/media/565947-deq_plumbing_bureau.pdf

NACo County Code and Ordinances
www.naco.org/Template.cfm?Section=Codes_and_Ordinances&Template=/cffiles/counties/codes_srch.cfm

National Pollutant Discharge Elimination System (NPDES) permit
http://cfpub.epa.gov/npdes/index.cfm

Need a Permit?
http://www.deq.idaho.gov/permitting.aspx

Nitrate
http://www.deq.idaho.gov/water-quality/ground-water/nitrate.aspx

Nitrate Priority Areas
http://www.deq.idaho.gov/water-quality/ground-water/nitrate.aspx

NPDES Permit
http://cfpub.epa.gov/npdes/index.cfm

Nutrient-Pathogen Evaluations
http://www.deq.idaho.gov/water-quality/wastewater/septic-systems/nutrient-pathogen-evaluations.aspx

One Plan
www.oneplan.org/

Permit (Construction activities)
http://cfpub.epa.gov/npdes/stormwater/const.cfm

Pollution Prevention for Public Water Systems
http://www.deq.idaho.gov/water-quality/drinking-water/pws-tips-guidance/pollution-prevention.aspx

Pollution Prevention Handbook: Sewage and Wastewater Treatment Plants
www.p2pays.org/ref/07/06631.pdf

Pollution Prevention in Wastewater Collection and Treatment
http://epa.gov/tribalcompliance/wwater/wwwastedrill.html#prevention

Pollution Prevention Measures (Public Water System)
http://www.deq.idaho.gov/water-quality/drinking-water/pws-tips-guidance/pollution-prevention.aspx

Pollution Prevention Measures (Wastewater Treatment Plant)
http://epa.gov/tribalcompliance/wwater/wwwastedrill.html#prevention

Public Health Districts
http://www.healthandwelfare.idaho.gov/Health/HealthDistricts/tabid/97/Default.aspx

Public Water System Switchboard
http://www.deq.idaho.gov/water-quality/drinking-water/pws-switchboard.aspx

Recycled Water Permit
www.deq.idaho.gov/water/permits_forms/permitting/wlap.cfm

Recycled Water Rules (IDAPA 58.01.17)
http://adm.idaho.gov/adminrules/rules/idapa58/0117.pdf

Search for an Operator
http://www.deq.idaho.gov/Applications/WWDWOper/WWDWSearchContractOperatorInfo.cfm

Source Water Assessments
http://www.deq.idaho.gov/water-quality/drinking-water/drinking-water-protection/source-water-assessments.aspx

Source Water Protection Grants
http://www.deq.idaho.gov/water-quality/grants-loans/source-water-protection-grants.aspx

Spill Prevention, Control, and Countermeasure (SPCC) Rule
www.epa.gov/OEM/content/spcc/index.htm

State Plumbing Bureau
http://dbs.idaho.gov/plumbing

Storm Drain Marking Program
http://www.deq.idaho.gov/pollution-prevention/p2-for-local-govts/storm-drain-marking-toolkit.aspx

Stormwater Overview
http://www.deq.idaho.gov/water-quality/wastewater/stormwater.aspx

Stormwater Management Techniques
www.epa.gov/greeningepa/stormwater/stormwater_techniques.htm

Subsurface Treatment and Disposal System (SSDS)
http://www.deq.idaho.gov/water-quality/wastewater/septic-systems.aspx

TMDLs
http://www.deq.idaho.gov/water-quality/surface-water/tmdls.aspx

Understanding Impaired Waters and TMDL Requirements for Municipal Stormwater
http://palwv.org/wren/library/documents/TMDL-impairedwaters.pdf

Wastewater Overview
http://www.deq.idaho.gov/water-quality/wastewater.aspx

Watershed Advisory Groups
http://www.deq.idaho.gov/water-quality/surface-water/tmdls/watershed-advisory-groups.aspx

Appendix D. Waste Links

Alternative Fuels and Vehicles
www.eere.energy.gov/afdc/index.html

Best Management Practices (medical waste)
http://www.deq.idaho.gov/media/415248-med_waste_bmps_fs_0308.pdf

Biobased Products
www.biobased.oce.usda.gov/

Blue Green Meetings
www.bluegreenmeetings.com/

Brownfields Overview
http://www.deq.idaho.gov/waste-mgmt-remediation/brownfields.aspx

Buy Recycled
www.epa.gov/cpg

Center for a New American Dream
www.newdream.org

Compost
www.epa.gov/waste/conserve/rrr/composting/index.htm

Conditionally Exempt Small Quantity Generators (CESQG)
http://www.deq.idaho.gov/waste-mgmt-remediation/hazardous-waste/generator-status.aspx

Conditionally Exempt Small Quantity Generator Management Facilities in Idaho
www.deq.idaho.gov/waste/assist_business/solid_waste/cesqg_regulation.cfm

DEQ (contact information)
http://www.deq.idaho.gov/contact-deq.aspx

DEQ's Compliance/Technical Assistance Program
http://www.deq.idaho.gov/assistance-resources/compliance-enforcement.aspx

DEQ's Online Recycling Directory
http://www.deq.idaho.gov/waste-mgmt-remediation/recycling.aspx

Electronic Waste
http://www.deq.idaho.gov/waste-mgmt-remediation/hazardous-waste/electronic-waste.aspx

Energy Star
www.energystar.gov/

Environmentally Preferable Purchasing
www.epa.gov/epp/index.htm

EPA Green Meetings
www.epa.gov/oppt/greenmeetings

EPA Household Hazardous Waste Overview
www.epa.gov/osw/conserve/materials/hhw.htm

EPP Contracts Database
www.epa.gov/oppt/epp/database.htm

Generator Status
http://www.deq.idaho.gov/waste-mgmt-remediation/hazardous-waste/generator-status.aspx

Green Meeting Industry Council
www.greenmeetings.info/

Ground Water Contamination Rule, Section 400.01
http://adm.idaho.gov/adminrules/rules/idapa58/0111.pdf

Ground Water Quality Rule
http://adm.idaho.gov/adminrules/rules/idapa58/0111.pdf

Have a Question?
http://www.deq.idaho.gov/contact-deq.aspx

Hazardous Waste Overview
http://www.deq.idaho.gov/waste-mgmt-remediation/hazardous-waste.aspx

Hazardous Waste Treatment, Storage, and Disposal Facilities in Idaho
http://www.deq.idaho.gov/permitting/waste-management-permitting/tsd-facilities.aspx

Household Hazardous Waste: A Manual for One-Day Community Collection Programs
www.epa.gov/epawaste/conserve/materials/pubs/manual/index.htm

Household Hazardous Waste Poster
http://www.deq.idaho.gov/media/654998-hhw_poster.pdf

Idaho Ground Water Quality Plan
http://www.deq.idaho.gov/media/462972-idaho_gw_quality_plan_final_entire.pdf

Idaho Hazardous Waste Management Act
www.legislature.idaho.gov/idstat/Title39/T39CH44.htm

Idaho Rules and Minimum Standards for Hospitals
http://adm.idaho.gov/adminrules/rules/idapa16/0314.pdf

Idaho Solid Waste Facilities Act
www.legislature.idaho.gov/idstat/Title39/T39CH74.htm

Idaho's Solid Waste Management Rules
http://adm.idaho.gov/adminrules/rules/idapa58/0106.pdf

Idaho's 2003 Waste Tire Disposal statute
www3.state.id.us/idstat/TOC/39065KTOC.html

Incinerators in Idaho
http://www.deq.idaho.gov/waste-mgmt-remediation/solid-waste/incinerators.aspx

Landfills in Idaho
http://www.deq.idaho.gov/waste-mgmt-remediation/solid-waste/landfills.aspx

Meeting Strategies Worldwide
www.meetingstrategiesworldwide.com/

Spills, Mercury
http://www.deq.idaho.gov/waste-mgmt-remediation/hazardous-waste/mercury/what-to-do-if-you-have-a-spill.aspx

National Institute of Government Purchasing
www.nigp.org/

Need a Permit?
http://www.deq.idaho.gov/permitting/waste-management-permitting.aspx

"Pay-as-You-Throw"
www.epa.gov/payt/

Pesticide Disposal Program
www.agri.state.id.us/Categories/Pesticides/pdp/indexdisposalmain.php

Priority Chemicals
www.epa.gov/epawaste/hazard/wastemin/priority.htm

Processing Facilities in Idaho
http://www.deq.idaho.gov/waste-mgmt-remediation/solid-waste/processing-facilities.aspx

Public Health Districts in Idaho
http://www.healthandwelfare.idaho.gov/Health/HealthDistricts/tabid/97/Default.aspx

Recycling
http://www.deq.idaho.gov/waste-mgmt-remediation/recycling.aspx

Recycling and reuse activities
www.epa.gov/epawaste/conserve/materials/organics/woodwaste.htm

Recycling in Idaho: Profiles of Community Recycling Programs
http://www.deq.idaho.gov/waste-mgmt-remediation/recycling.aspx

Resource Conservation and Recovery Act
www.epa.gov/osw/inforesources/online/index.htm

Responsible Purchasing Networks
www.responsiblepurchasing.org/

Safe Pharmaceuticals Disposal
http://www.deq.idaho.gov/pollution-prevention/p2-for-citizens/safe-pharmaceuticals-disposal.aspx

Solid Waste Overview
http://www.deq.idaho.gov/waste-mgmt-remediation/solid-waste.aspx

Storage Tanks
http://www.deq.idaho.gov/waste-mgmt-remediation/storage-tanks.aspx

There's Mercury in That? The Big Picture of Fluorescent Bulbs Brochure
http://www.deq.idaho.gov/media/413449-fluorescent_bulb_disposal_0609.pdf

Transfer Stations in Idaho*http://www.deq.idaho.gov/waste-mgmt-remediation/solid-waste/transfer-stations.aspx*

U.S. Communities
www.uscommunities.org/

Waste Tire Disposal Act
www.legislature.idaho.gov/idstat/Title39/T39CH65.htm

Waste Tires Overview
http://www.deq.idaho.gov/waste-mgmt-remediation/solid-waste/waste-tires.aspx

Wood or Mill Yard Debris Facilities in Idaho
http://www.deq.idaho.gov/waste-mgmt-remediation/solid-waste/wood-or-mill-yard-debris-facilities.aspx

Appendix E. Special Environmental Concerns Links

A Summary of DEQ's Underground Storage Tank Rules
http://www.deq.idaho.gov/media/511534-_waste_prog_issues_ust_lust_ust_rules_state_fs.pdf

Air Pollution Emergencies Overview
http://www.deq.idaho.gov/air-quality/monitoring/air-pollution-emergencies.aspx

Air Pollution Emergency Rule
http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf

Above Ground Storage Tanks
http://www.deq.idaho.gov/waste-mgmt-remediation/storage-tanks.aspx

Association of State Drinking Water Administrators (vulnerability assessment)
www.asdwa.org/index.cfm?fuseaction=document.showDocumentByID&DocumentID=157&varuniqueuserid=95537258852

Best Management Practices (Construction activities)
http://www.deq.idaho.gov/assistance-resources/industry-specific-assistance/construction-industry.aspx

Brownfields Overview
http://www.deq.idaho.gov/waste-mgmt-remediation/brownfields.aspx

CAFO Siting
http://www.deq.idaho.gov/water-quality/wastewater/cafos.aspx

Construction General Permit
http://cfpub.epa.gov/npdes/stormwater/cgp.cfm

Construction Sites
www.epa.gov/npdes/pubs/local_federal_web.pdf

Drinking Water Emergency Preparedness
http://www.deq.idaho.gov/water-quality/drinking-water/drinking-water-protection/emergency-preparedness.aspx

Environmental Assistance for Businesses and Industry
http://www.deq.idaho.gov/assistance-resources.aspx

EPA (CAFO information)
http://cfpub.epa.gov/npdes/afo/cafofinalrule.cfm

Ground Water Quality Rule (IDAPA 58.01.11)
http://adm.idaho.gov/adminrules/rules/idapa58/0111.pdf

Hazardous Waste Determination
http://www.deq.idaho.gov/waste-mgmt-remediation/hazardous-waste.aspx

Home Heating Oil Tanks
http://www.deq.idaho.gov/waste-mgmt-remediation/storage-tanks/home-heating-oil-tanks.aspx

Idaho Erosion and Sediment Control Field Guide
www.idahosbdc.org/index.cfm?fuseaction=content.fieldguide

Idaho Fish and Game
http://fishandgame.idaho.gov/inc/contact.cfm

Idaho State Department of Agriculture
www.agri.state.id.us/Categories/ContactUs/indexContactUs.php

Idaho Underground Storage Act
www.legislature.idaho.gov/idstat/Title39/T39CH88.htm

IDAPA 58.01.02 (Sections 850, 851, and 852)
http://adm.idaho.gov/adminrules/rules/idapa58/0102.pdf

IDAPA 58.01.02.10.76
http://adm.idaho.gov/adminrules/rules/idapa58/0102.pdf

IDWARN
www.IDWARN.org

Pesticided Disposal Program
www.agri.state.id.us/Categories/Pesticides/pdp/indexdisposalmain.php

Petroleum Storage Tank Fund
www2.state.id.us/pstf/

Public Health Districts in Idaho
http://www.healthandwelfare.idaho.gov/Health/HealthDistricts/tabid/97/Default.aspx

Public Health Security and Bioterrorism Preparedness and Response Act
www.fda.gov/oc/bioterrorism/Bioact.html

Public Records Request
http://www.deq.idaho.gov/assistance-resources/public-records-requests.aspx

Role of Local Governments in Implementing the NPDES Storm Water Program for Construction Sites
www.epa.gov/npdes/pubs/local_federal_web.pdf

Safe Drinking Water Act
www.epa.gov/safewater/sdwa/index.html

Salvage Yard Compliance Checklist
http://www.deq.idaho.gov/media/420968-compliance_screening_checklist.pdf

Spill Prevention, Control, and Countermeasure (SPCC) Rule
www.epa.gov/OEM/content/spcc/index.htm

Standards for Used Oil Management
http://adm.idaho.gov/adminrules/rules/idapa58/0105.pdf

Stormwater
http://www.deq.idaho.gov/water-quality/wastewater/stormwater.aspx

Storm Water Pollution Prevention Plan (SWPPP)
http://cfpub.epa.gov/npdes/stormwater/swppp.cfm

Underground Storage Tank Overview
http://www.deq.idaho.gov/waste-mgmt-remediation/storage-tanks/underground-storage-tanks.aspx

Voluntary Cleanup Program
http://www.deq.idaho.gov/waste-mgmt-remediation/brownfields/voluntary-cleanup-program.aspx

Waste Management and Remediation Emergency Response Overview
http://www.deq.idaho.gov/about-deq/emergency-response-overview.aspx

Appendix F. Resource Links

Cities Go Green Sustainability Magazine
www.citiesgogreen.com/

DEQ's Online Recycling Directory
http://www.deq.idaho.gov/waste-mgmt-remediation/recycling.aspx

DEQ's Idaho Drinking Water Newsletter
http://www.deq.idaho.gov/water-quality/drinking-water/pws-tips-guidance/newsletters.aspx

DEQ's Pollution Prevention (P2) Program
http://www.deq.idaho.gov/pollution-prevention.aspx

EPA Local Government Resources Center
www.epa.gov/ocir/local-gov-res-center.htm

ICLEI – Local Governments for Sustainability
www.iclei.org/index.php?id=iclei-home&no_cache=1

Institute for Local Self-Reliance
www.ilsr.org/

Local Government Environmental Assistance Network (LGEAN)
www.lgean.org/

Mayors Climate Protection Center
www.usmayors.org/climateprotection/

Smart Communities Network
www.smartcommunities.ncat.org/municipal/financing.shtml

Smart Growth Network
www.smartgrowth.org/Default.asp?res=1024

Sustainable Communities Network
www.sustainable.org/

Waste Reduction Resource Center: Resources for Local Governments
http://wrrc.p2pays.org/indsectinfo.asp?INDSECT=23

Appendix G. Sample Policies

Sample Telecommuting Policy
Sample Alternative Transportation Policy
Sample Alternative Work Schedule Policy
Sample Green Purchasing Policy
Sample No Idling Policy on Company Property
Sample No Idling Policy

Sample Telecommuting Policy

Statement of Purpose
This policy is designed to assist in protecting Idaho's air quality through the use of telecommuting, while maintaining XXX's commitment to outstanding customer service and optimal productivity. When used properly, telecommuting programs can improve air quality, reduce traffic congestion, reduce commuting time and expenses for employees, extend hours of customer service, improve employee performance, and decrease overhead costs.

Definition
For the purposes of this policy, telecommuting is defined as a mutually agreed upon workplace option between XXX and the employee, which allows work to be done by an employee at an alternate work location for one or more days each week. In most cases, some work will continue to be done at the employee's usual work location.

Background
Air pollution, particularly ground-level ozone and fine particulate matter, is an immediate and on-going concern in Idaho. It impacts citizen health, economic growth, and quality of life. Vehicle exhaust contributes significantly to air pollution. Enabling employees to telecommute can have a positive impact on air quality by reducing vehicle emissions. Telecommuting can also provide a cost savings to both the employer and the employee, increase productivity and motivation, and provide flexibility for employees.

Statement of Policy
It is the policy of XXX to allow employees to work at alternate work locations for part or all of their work week when deemed appropriate for the employee and his/her job responsibilities.
When telecommuting, the following practices shall be observed:

Meetings: Supervisors may require employees to report to a central workplace as needed for work-related meetings or other events. In general, business meetings or visits should not be held at an alternate work location when it is in a home.

Use of Leave: Telecommuting is not intended to be used in place of sick leave, Family and Medical Leave, workers' compensation leave, or any other type of leave.

Dual Employment/Personal Business: Employees may not be employed by another entity nor operate a personal business during the hours agreed upon as work hours. Employees shall not perform personal business during the hours agreed upon as work hours.

Dependent Care: Telecommuting employees shall not act as primary care givers for dependents or others. If children or adults in need of primary care are in the alternate work location during an employee's work hours, another individual must be present to provide care.

Compliance: It is the employee's responsibility to ensure that he/she is in compliance with local zoning regulations if telecommuting from home. Telecommuters are advised to contact their insurance agent and tax consultant for information regarding alternate work locations in the home. The employee shall be responsible for tax and insurance consequences, if any, as a result of this arrangement.

Statement of Procedure

Not all employees or types of positions will be eligible for telecommuting. Employees wanting to telecommute shall submit a written request to their immediate supervisor. The supervisor will review the request according to this policy. The following factors will be considered when reviewing telecommuting requests:

- Operational needs including service to customers
- Productivity
- Costs
- Benefits
- Adaptability of job responsibilities
- Impact on other employees
- Employee's ability to work independently
- Technology, equipment, and information needs

If telecommuting is deemed appropriate for the employee submitting the request, the employee and his/her immediate supervisor shall enter into a written agreement to ensure both parties understand and agree to all job expectations during telecommuting. The agreement shall include the following:

- Duration of the agreement
- Telecommuting location
- Work schedule and how it can be changed
- How communications between the supervisor, employee, co-workers, and customers will be handled
- Any changes to the employee's performance plan and expectations because of telecommuting
- Equipment/supplies needed and who will be responsible for providing and maintaining them
- Applicable data security procedures
- Telecommuting location safety requirements
- Responsibility for utility costs
- Requirement for employees to comply with all of XXX's rules, policies, practices, and instruction
- Requirement that employees will notify their supervisor immediately of any situation which will interfere with their ability to perform their job

- Statement that the employee absolves XXX from liability for damages to real or personal property resulting from participation in the telecommuting program
- Provision for termination of telecommuting when requested by either XXX or the employee
- Provision for return of all XXX-owned equipment upon termination of the telecommuting period

Exemptions
Employees who telecommute may be required to work from the office to accommodate special events, cover work loads when other employees are out of the office, or to accommodate other special circumstances as needed.

Telecommuting privileges may be revoked at any time if it is determined the arrangement is no longer in the best interest of XXX.

Implementation
This policy shall be effective immediately from the date of signature.

Dated the XXX day of XXX, 20XX.

_____
Signature

Sample Alternative Transportation Policy

Statement of Purpose
This policy is designed to assist in protecting Idaho's air quality through encouraging employees to use alternative modes of transportation for their commutes. The use of alternative modes of transportation reduces commute-based traffic congestion and air pollution.

Definition
For the purpose of this policy, "alternative transportation" includes carpooling, vanpooling, using public transportation (e.g., a bus), bicycling, walking, and running.

Background
Air pollution, particularly ground-level ozone and fine particulate matter, is an immediate and on-going concern in Idaho. It impacts citizen health, economic growth, and quality of life. Vehicle exhaust contributes significantly to air pollution.

Statement of Policy
It is the policy of XXX that employees be encouraged to use alternative modes of transportation whenever possible. XXX's Alternative Transportation Coordinator [Employer: Consider appointing an employee to serve this role] is available to assist employees with their alternative transportation needs. In addition, XXX provides the following incentives to promote alternative transportation among employees: [Employer: Choose among these, add some of your own, or omit incentives altogether.]

- Secure bike racks
- Locker room and shower facilities
- Complimentary bus passes
- Complimentary Commuteride (vanpool) fares
- Preferred parking for carpoolers
- Guaranteed ride home

Implementation
This policy shall be effective immediately from the date of signature.

Dated the XXX day of XXX, 20XX.

_____
Signature

Sample Alternative Work Schedule Policy

Statement of Purpose
This policy is designed to assist in protecting Idaho's air quality while maintaining XXX's commitment to outstanding customer service and optimal productivity. Alternative work schedules offer the ability to develop working arrangements that will reduce commute-based traffic congestion and air pollution, contribute to higher productivity, enhance staff morale, and assist in recruitment and retention of employees.

Background
Air pollution, particularly ground-level ozone and fine particulate matter, is an immediate and on-going concern in Idaho. It impacts citizen health, economic growth, and quality of life. Vehicle exhaust contributes significantly to air pollution. Enabling employees to work alternative schedules can have a positive impact on air quality by reducing vehicle emissions.

Alternative work schedules also provide a means of responding to rapidly changing factors impacting today's workforce and enable staff and management to better serve customers, meet goals, and balance personal and professional responsibilities.

Statement of Policy
It is the policy of XXX to allow employees to work alternative work schedules. Alternative work schedules may include:

- Flexible Work Schedule – Flexible work schedules allow for flexible scheduling arrangements that permit variations in starting times, lunch, and departure times around set "core" hours (usually 7 a.m. – 6 p.m.).

- Compressed Work Schedule – Compressed work schedules involve a 40-hour work week shortened to fewer than 5, 8-hour days (e.g., 4, 10-hour days). Employees with compressed work schedules have set days and hours of work.

- All arrangements must be put in writing to ensure that management and employees have a mutual understanding of the specifics of the schedule.

- All alternative work arrangements must conform to the overtime, record keeping, and other provisions of the Fair Labor Standards Act (FLSA) and Idaho State labor law for staff covered by those provisions.

- Non-Exempt Employees: Non-exempt employees (those who accrue overtime at time and one-half) are covered by the requirements of the FLSA and are subject to overtime pay for time worked in excess of 40 hours in a week. Therefore, non-exempt employees may have an alternative work schedule as long as it does not alter the total number of hours worked in a normal work week.

- Exempt Employees: Exempt employees (those not covered by the time and one-half overtime requirements of the FLSA) have flexibility in scheduling their work weeks, as they are exempt from certain overtime and record keeping requirements.

Exemptions
Employees on alternative schedules may be required to return to a regular schedule to accommodate special events, cover work loads when other employees are out of the office, or to accommodate other special circumstances as needed.

Employees may be required to return to a regular schedule during weeks containing paid holidays if the combination of paid holiday time and paid work time would total more than that employee's allowable paid hours per week.

Implementation
This policy shall be effective immediately from the date of signature.

Dated the XXX day of XXX, 20XX.

_____
Signature

Sample Green Purchasing Policy

Statement of Purpose
This shall be known as the XXX Green Purchasing Policy. Its purpose is to ensure that XXX purchases recycled and other environmentally preferable products whenever they meet cost and performance requirements.

Definitions
"Environmentally Preferable Products" means products that have a lesser impact on human health and the environment when compared with competing products. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product.

"Recycled Products" are products manufactured with waste material that has been recovered or diverted from solid waste.

"Practicable" means sufficient in performance and available at a reasonable cost.

"Cost" means the total expense of the product including the initial price, lifecycle costs, and disposal costs.

"Price" means the initial expense to acquire the product.

Statement of Policy
XXX shall purchase recycled and other environmentally preferable products whenever practicable.

XXX shall require contractors and consultants to use recycled and other environmentally preferable products whenever practicable.

Statement of Procedure
XXX shall be responsible for coordinating implementation of this policy. XXX shall:

1. Assign appropriate personnel to fulfill the requirements of this policy.

2. Research opportunities for procurement of recycled and other environmentally preferable products and communicate these to purchasing decision makers for evaluation and purchase.

3. Collaborate with specifying agencies to prepare or revise bid documents and contract language where necessary to implement this chapter.

4. Collect data on purchases by XXX of recycled and other environmentally preferable products.

5. Prepare and submit an annual report to XXX by XXX of each year, describing the progress of XXX in implementation of the policy, including the following elements:

    a. Quantities, costs, and types of recycled and other environmentally preferable products purchased;
    b. A summary of savings achieved through the purchase of recycled and other environmentally preferable products;
    c. A summary of program promotional efforts;
    d. Recommendations for changes in procurement policy.

6. Promote the use of recycled and other environmentally preferable products by publicizing its environmental purchasing policy and its implementation.

7. Educating staff about the policy and listening to staff comments and suggestions.

Exemptions
Nothing in this policy shall be construed as requiring the purchase of products that do not perform adequately or are not available at a reasonable cost.

Implementation
This policy shall be effective immediately from the date of signature.

Dated the XXX day of XXX, 20XX.

_____
Signature

Sample No-Idle Policy on Company/Agency Property

Statement of Purpose
This policy seeks to reduce air pollution and individual exposure to vehicle exhaust by discouraging unnecessary idling of vehicles on property owned, operated, or managed by XXX.

Definitions
"Air pollution" is any substance in the air that can cause harm to humans or the environment. Pollutants may be natural or manmade and may take the form of solid particles, liquid droplets, or gases. Examples of air pollutants are ozone (a primary ingredient in urban smog), particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead.

"Idling" is leaving an engine running when the vehicle is not in gear.

Statement of Policy
Drivers are advised to turn off vehicles when parked on property owned, operated, or managed by XXX and not re-start vehicles until necessary to depart. This policy applies to all vehicles, including vehicles owned and operated by XXX, vehicles operated by employees of XXX, vehicles delivering goods and services to XXX, and vehicles operated by customers/visitors of/to XXX.

XXX shall notify its customers and visitors of this policy by:

1. Posting "Turn Off Your Engine/No Idle Zone" street signs where they can be easily seen by vehicles parked at XXX. (Available from DEQ)

2. Posting "Turn Off Your Engine/No Idle Zone" posters and window stickers, as appropriate, on the premises. (Available from DEQ)

3. Providing literature on the benefits of not idling. (Available from DEQ)

4. Including this message in mailings, newsletters, bill inserts, and other customary means of communicating with customers and visitors.

Exemptions
The request that a driver turn off a vehicle and refrain from idling does not apply for the period or periods during which idling is necessary under the following circumstances:

1. To provide for the safety of vehicle occupants, such as in cases of extreme hot or cold conditions (e.g., to run the air conditioner or heater under extreme heat or cold).
2. To use lift equipment or other equipment necessary to accommodate individuals with one or more disabilities.
3. When specific traffic, safety, or emergency situations arise.

In any of the above exemption cases, if equipment can be run from the battery, drivers should refrain from idling unless there is a significant concern of draining the battery.

Implementation
This policy shall be effective immediately from the date of signature.

Dated the XXX day of XXX, 20XX.

_____
Signature

Sample No Idling Policy

Statement of Purpose
This policy is designed to assist in protecting Idaho's air quality through the reduction of engine idling by vehicles operated as part of the vehicle fleet of XXX.

Definition
For the purpose of this policy, a "fleet" is defined as all vehicles owned, rented, or leased by XXX or operated for the purpose of conducting business on behalf of XXX.

Background
Air pollution, particularly ground-level ozone and fine particulate matter, is an immediate and on-going concern in Idaho. It impacts citizen health, economic growth, and quality of life. Vehicle exhaust contributes significantly to air pollution.

Statement of Policy

It is the policy of XXX that drivers of XXX fleet vehicles turn off vehicle engines (not idle) when a vehicle will be stopped for more than 30 seconds, except when in traffic. This policy applies, but is not limited, to the following situations:

- When loading or unloading goods or personnel
- When stopped for road construction
- When waiting at a drive-through window
- When stopped and waiting for any reason (except in traffic, such as when stopped at a traffic light)

Exemptions

The policy of turning off vehicles when stopped does not apply for the period or periods during which idling is necessary under the following circumstances:

1. To provide for the safety of vehicle occupants, such as in cases of extreme hot or cold conditions (e.g., to run the air conditioner or heater under extreme heat or cold).
2. To use lift equipment or other equipment necessary to accommodate individuals with one or more disabilities.
3. When stopped in traffic, such as when waiting at a traffic light.
4. When specific traffic, safety, or emergency situations arise. With the exception of Exemption Number 3, if in the above exemption cases equipment can be run from the battery alone, drivers should refrain from idling unless there is a significant concern of draining the battery.

Implementation

This policy shall be effective immediately from the date of signature.

Dated the XXX day of XXX, 20XX.

_____

Signature

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