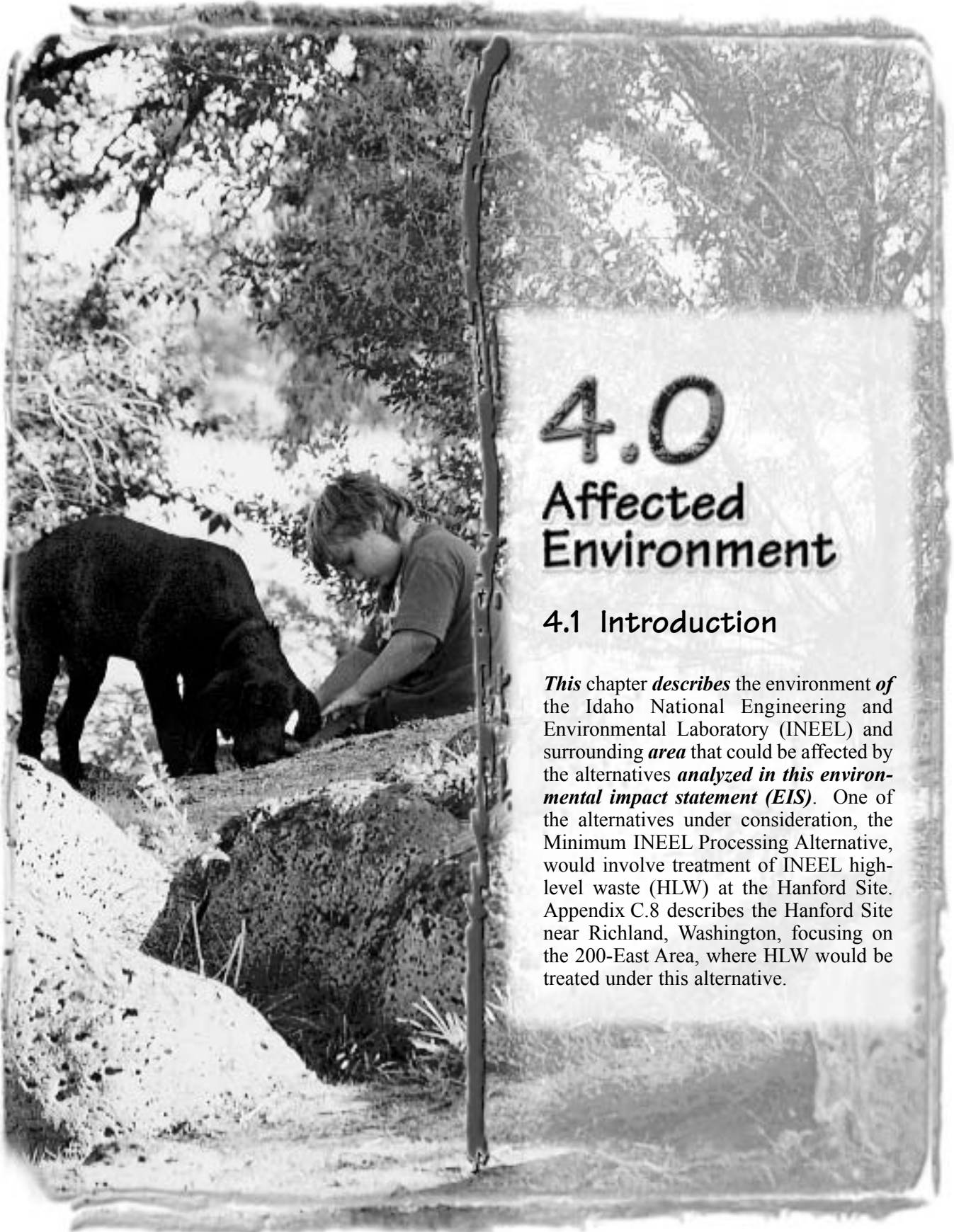


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Affected Environment

4.1 Introduction

This chapter *describes* the environment of the Idaho National Engineering and Environmental Laboratory (INEEL) and surrounding *area* that could be affected by the alternatives *analyzed in this environmental impact statement (EIS)*. One of the alternatives under consideration, the Minimum INEEL Processing Alternative, would involve treatment of INEEL high-level waste (HLW) at the Hanford Site. Appendix C.8 describes the Hanford Site near Richland, Washington, focusing on the 200-East Area, where HLW would be treated under this alternative.

Affected Environment

This chapter tiers from the U.S. Department of Energy (DOE) *Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final Environmental Impact Statement* or SNF & INEL EIS (DOE 1995). **Information has been updated where necessary.** The sections in this chapter support the analysis of potential environmental consequences in Chapter 5.

4.2 Land Use

This section contains a brief description of existing and planned land uses at INEEL and the surrounding area, focusing on the Idaho Nuclear Technology and Engineering Center (INTEC), the proposed site of HLW management activities. Current and projected land uses are described extensively in the SNF & INEL EIS, Volume 2, Part A, Section 4.2 (DOE 1995) and the *Idaho National Engineering and Environmental Laboratory Comprehensive Facility and Land Use Plan* (DOE 1997).

4.2.1 EXISTING AND PLANNED LAND USES AT INEEL

INEEL occupies approximately 890 square miles (570,000 acres) of land in Bingham, Bonneville, Butte, Clark, and Jefferson counties in southeastern Idaho. Approximately 2 percent of this land (11,400 acres) has been developed to support INEEL facility and program operations associated with energy research and waste management activities (DOE 1995). **DOE is the designated federal agency with the responsibility and authority for effectively managing the INEEL lands in accordance with a series of Land Withdrawal Public Land Orders (PLO), PLO 318, PLO 545, PLO 637, and PLO 691 that include approximately 506,000 acres. In addition, approximately 21,000 acres of state land and 43,000 acres of private land were transferred to DOE ownership and management, for a total of approximately 570,000 acres (Peterson 1995). DOE will continue to ensure that the future use and management of these lands are in accordance with the PLOs.** INEEL operations are performed within the site's primary facility areas (i.e., Central Facilities Area, Test Reactor Area, INTEC, etc.),

which occupy 2,032 acres. A 345,000-acre security and safety buffer zone **surrounds** the developed area. Approximately 6 percent of INEEL (34,000 acres) is devoted to utility rights-of-way and public roads, including Highway 20 that runs east and west and crosses the southern portion of INEEL, Highway 26 that runs southeast and northwest intersecting Highway 20, and Idaho State Highways 22, 28, and 33 that cross the northeastern part of INEEL (DOE 1995).

Up to 340,000 acres of INEEL are leased for cattle and sheep grazing (DOE 1995); grazing permits are administered by the Bureau of Land Management. However, grazing of livestock is prohibited within one-half mile of any primary facility boundary and within 2 miles of any nuclear facility. In addition, 900 acres located at the junction of Idaho State Highways 28 and 33 are used by the U.S. Sheep Experiment Station as a winter feedlot for sheep (DOE 1997). Figure 2-3 shows **selected** land uses in the vicinity of the INEEL.

On July 17, 1999, the Secretary of Energy and representatives of the U.S. Fish & Wildlife Service, Bureau of Land Management, and Idaho State Fish & Game Department designated 73,263 acres of the INEEL as the Sagebrush Steppe Ecosystem Reserve. The sagebrush steppe ecosystem was **identified** as critically endangered across its entire range by the National Biological Service in 1995. The INEEL Sagebrush Steppe Ecosystem Reserve was designated to ensure this portion of the ecosystem receives special consideration. The designated INEEL Sagebrush Ecosystem Reserve is located in the northwest portion of the area. The southern boundary of the reserve, which runs east and west along section lines, is about eleven miles north of INTEC at the closest point. **A natural resources management plan is being developed for the reserve.**

Land use at INEEL is in a state of transition. Emphasis is moving toward radioactive and hazardous waste management, environmental restoration and remedial technologies, and technology transfer, resulting in more development of INEEL within some facility areas and less development in others. DOE projected land use scenarios at INEEL for the next 25, 50, 75, and 100 years. Future industrial development is projected to take place in the central portion of

INEEL within existing major facility areas. For further review, see the *Idaho National Engineering Laboratory Long-Term Land Use Future Scenarios* (DOE 1993) and the *Idaho National Engineering and Environmental Laboratory Comprehensive Facility and Land Use Plan* (DOE 1997).

Facilities at INTEC, where activities associated with the HLW projects would be conducted, occupy approximately 250 acres. INTEC consists of more than 150 buildings. Primary facilities include storage and treatment facilities for spent nuclear fuel, mixed HLW, and mixed transuranic waste/sodium bearing waste (SBW), and process development and robotics laboratories.

INTEC's original mission was to function as a one-of-a-kind processing facility for government-owned nuclear fuels from research and defense reactors. INTEC recovered uranium and rare gases from spent nuclear fuel so that these materials could be reused. Currently, INTEC operations include receipt and storage of DOE-assigned spent nuclear fuels; management of HLW prior to disposal in a repository; technology development for final disposition of spent nuclear fuel, mixed HLW, and mixed transuranic waste/SBW; and development of new waste management technologies.

Recreational uses of the INEEL include public tours of general facility areas and the Experimental Breeder Reactor-I, a National Historic Landmark. Controlled hunting is also permitted on INEEL but is restricted to *specific locations*. These restricted hunts are intended to assist the Idaho Department of Fish and Game in reducing crop damage on adjacent private agricultural lands caused by wild game. INEEL is a designated National Environmental Research Park, functioning as a field laboratory set aside for ecological research and evaluation of the environmental impacts from nuclear energy development.

INEEL does not lie within any of the land boundaries established by the Fort Bridger Treaty of 1868. The entire INEEL is land occupied by DOE; therefore, the provision in the Fort Bridger Treaty that allows the Shoshone-Bannock Tribes to hunt on unoccupied lands of the United States does not presently apply to any

land upon which the INEEL is located.

4.2.2 EXISTING AND PLANNED LAND USE IN THE SURROUNDING REGION

Approximately 75 percent of the land adjacent to the INEEL is *managed* by the Federal government and administered by the Bureau of Land Management. This federally-*managed* land *provides* wildlife *habitat and uses such as* mineral and energy production, grazing, and recreation. Approximately 1 percent of the adjacent land is owned by the State of Idaho *and* used for *the same purposes*. The remaining 24 percent of the land adjacent to INEEL is privately owned and is primarily used for grazing and crop production.

Small communities and towns near INEEL boundaries include Mud Lake and Terreton to the east; Arco, Butte City, and Howe to the west; and Atomic City to the south. The larger communities of Idaho Falls, Rexburg, Rigby, Blackfoot, and Pocatello, along with the Fort Hall Indian Reservation, are located to the east and southeast of INEEL. Recreation and tourist attractions in the surrounding region include Craters of the Moon National Monument and Wilderness Area, Hell's Half Acre Wilderness Study Area, Black Canyon Wilderness Study Area, Camas National Wildlife Refuge, Market Lake Wildlife Management Area, North Lake State Wildlife Management Area, Targhee and Challis National Forests, *and* the Snake River, as shown in Figure 2-1. Additional recreation and tourist attractions in the surrounding region include Yellowstone National Park, Grand Teton National Park, the Jackson Hole recreation complex, Sawtooth National Recreation Area, Sawtooth Wilderness Area, and Sawtooth National Forest.

On November 9, 2000, President Clinton signed a Presidential Proclamation that expanded the boundaries of Craters of the Moon National Monument (Clinton 2000). The expansion adds 661,000 acres to the existing 54,000-acre monument. The boundary enlargement (DOI 2000) is shown on Figure 2-1.

Lands surrounding INEEL are subject to Federal and State planning laws and regulations governed by Federal rules and regulations requiring

public involvement in their implementation. Land use planning in the State of Idaho is derived from the Local Planning Act of 1975. Currently, the State of Idaho does not have a land-use planning agency. Therefore, the Idaho legislature requires that each county adopt its own land use planning and zoning guidelines. All county plans and policies encourage development adjacent to previously developed areas in order to minimize the need to expand infrastructure and to avoid urban sprawl. Because INEEL is remotely located, adjacent areas are not likely to experience residential and commercial development, and no new development is planned. However, recreational and agricultural uses are expected to increase in the surrounding area in response to greater demand for recreational areas and the conversion of rangeland to crop land.

4.3 Socioeconomics

This section presents an overview of current socioeconomic conditions within a seven-county region of influence comprised of Bannock, Bingham, Bonneville, Butte, Clark, Jefferson, and Madison counties, and the Fort Hall Indian Reservation and Trust Lands (home of the Shoshone-Bannock Tribes). Figure 2-1 presents a map of the area showing towns and major

routes in the region of influence. This section discusses population, housing, employment, income, and community services. This section tiers from the SNF & INEL EIS, Volume 2, Part A, Section 4.13 (DOE 1995). *Since the publication of the Draft EIS, Census 2000 and related data have been incorporated into the socioeconomic analyses. Population figures, housing characteristics, labor information, and economic multipliers (such as employment and earnings multipliers) have been updated to reflect the most current socioeconomic environment in the region of influence.*

4.3.1 POPULATION AND HOUSING

4.3.1.1 Population

From 1960 to 1990, population growth in the region of influence paralleled statewide growth. During this period, the region of influence’s population increased an average rate of approximately 1.3 percent annually, while the annual growth rate for the State was 1.4 percent (BEA 1997). From 1990 to 2000, State population growth accelerated to 2.9 percent per year, and region of influence growth *increased to 1.4 percent* (DOC 1997a, 2000a). Population growth for both the region of influence and the State are projected to slow after the year 2000. Table 4-1 presents population estimates for the region of

Table 4-1. Population of the INEEL region of influence and Idaho: selected years 1980-2025.^a

County	1980	1990	1995	2000 ^b	2005	2010	2015	2020	2025
Bannock	65,421	66,026	72,043	75,565	81,303	84,474	90,894	96,802	102,710
Bingham	36,489	37,583	40,950	41,735	46,214	48,016	51,666	55,024	58,382
Bonneville	65,980	72,207	79,230	82,522	89,415	92,902	99,963	106,460	112,958
Butte	3,342	2,918	3,097	2,899	3,495	3,631	3,907	4,161	4,415
Clark	798	762	841	1,022	948	985	1,060	1,129	1,198
Jefferson	15,304	16,543	18,429	19,155	20,798	21,609	23,251	24,763	26,274
Madison	19,480	23,674	23,651	27,467	26,692	27,733	29,841	31,780	33,720
Region of influence	206,814	219,713	238,241	250,365	268,865	279,350	300,582	320,119	339,657
Idaho	944,127	1,006,749	1,164,887	1,293,953	1,277,000	1,335,000	1,395,000	1,514,000	1,725,000

a. Source: DOC (1997a,b); BEA (1997) *except as noted*.
 b. Source: DOC (2000a).

influence through **2000** and projections for **2005** through **2025**. Based on population trends, the region of influence population will reach almost **269,000** persons by **2005** and **339,700** by **2025** (BEA 1997). DOE recognizes that a degree of uncertainty exists in these population projections because of possible variability over time in birth rates, death rates, emigration/immigration rates, and other factors in the region of influence.

Bannock and Bonneville counties have the largest populations in the region of influence, and together they accounted for **63** percent of the total region of influence population in **2000**. Butte and Clark are the most sparsely populated counties and together contain only **1.6** percent of the total region of influence population. The largest cities in the region of influence are Pocatello (in Bannock County) and Idaho Falls (in Bonneville County), *each* with **2000** populations of approximately **51,000** (DOC **2000b**). During **2000**, employees and their families accounted for **17** percent of Bonneville County's population and composed almost **22** percent of Idaho Falls' population. INEEL employees and their families represent only **2** percent of the population of Bannock and Madison counties (DOE **2001**).

4.3.1.2 Housing

There were **90,000** housing units in the region of influence during **2000**, the last year for which data are available. Approximately **6.6** percent of the housing units were vacant, although some vacant units were used for seasonal, recreational, or other occasional purposes. Rental vacancy rates ranged from **5.9** percent in *Bonneville* County to **14.7** percent in Butte County, while *owned housing* vacancy rates ranged from **1.6** percent in Madison *and Bonneville Counties* to **4.4** percent in Butte County (DOC **2000c**). The average rental vacancy rate in the state of Idaho was **7.6** percent, and the *owned housing* vacancy rate averaged **2.2** percent (DOC **2000d**). About **26** percent of the occupied housing units in the region of influence were rental units, and **74** percent were homeowner units. The majority of housing units (**66** percent) in the region of influence were located in Bonneville and Bannock counties, which include the cities of Idaho Falls and Pocatello (DOC **2000c**). Table

4-2 shows housing characteristics for the region of influence.

4.3.2 EMPLOYMENT AND INCOME

The region of influence experienced stable growth during the 1990s. The labor force grew from **105,837** in **1990** to **131,352** in **2000**, an average annual growth rate of almost **2.4** percent. Total region of influence employment grew from **100,074** in **1990** to **126,058** in **2000**, an average annual growth rate of approximately **2.6** percent (BLS 1997, **2002**). This growth rate was considerably higher than during the 1980s when region of influence employment grew at approximately **1.2** percent annually. Between **1990** and **2000**, the labor force in the state of Idaho grew at an annual rate of **3.4** percent, and employment grew **3.5** percent annually. Historical trends in labor force, employment, and unemployment are shown in Tables 4-3, 4-4, and 4-5, respectively.

The region of influence unemployment rate was **4.0** percent in **2000**, the lowest level in over a decade and lower than the average rate of **4.9** percent in Idaho. Unemployment rates within the region of influence ranged from **2.5** percent in Madison County to **5.0** percent in *Bannock* County (BLS 1997, **2002**). The INEEL region of influence is rural in character, with an economy that has historically been based on natural resources and agriculture. Consistent with most regions of the country, economic growth over the past several decades has been in nonagricultural sectors. Although farming and agricultural services remain important to the region of influence economy, these sectors provided less than **8** percent of jobs in the region of influence in **1995**. Three sectors - service, government, and retail and wholesale trade - are the largest sources of region of influence employment. Together, these sectors generated approximately **70** percent of the jobs in the region of influence in **1995**. Manufacturing and construction are also important sectors and together accounted for about **13** percent of the region of influence employment in **1995** (BEA 1997). Sector employment in the state of Idaho is similar. Overall in the state, three sectors - service, government, and retail and wholesale trade - are the largest employers, providing **62** percent of employment. Manufacturing and construction

Affected Environment

Table 4-2. Region of influence housing characteristics (2000).^a

County	Total housing units	Number of owner occupied units	Owned <i>housing</i> vacancy rates	Number of rental units	Rental vacancy rates
Bannock	29,102	19,628	2.1%	8,705	8.4%
Bingham	14,303	10,746	1.7%	3,038	9.4%
Bonneville	30,484	21,817	1.6%	7,739	5.9%
Butte	1,290	878	4.4%	293	14.7%
Clark	521	239	3.3%	127	14.2%
Jefferson	6,287	5,107	1.9%	960	7.0%
Madison	7,630	4,286	1.6%	3,133	7.0%
Region of influence	89,617	62,701	NA ^b	23,995	NA

a. Source: DOC (2000c); does not include housing used for seasonal, recreational, or other uses.

b. NA = Not applicable.

Table 4-3. Historical trends in region of influence labor force.^a

County	1980	1985	1990	1995	2000
Bannock	30,488	33,684	31,342	36,310	39,502
Bingham	15,582	16,892	18,383	20,507	21,908
Bonneville	26,966	35,103	38,632	43,422	46,479
Butte	1,862	1,579	1,447	1,542	1,596
Clark	325	538	549	623	577
Jefferson	4,865	7,131	8,078	9,158	10,269
Madison	9,103	7,802	7,406	9,695	11,021
Region of influence	89,191	102,729	105,837	121,257	131,352
Idaho	429,000	466,000	492,619	600,493	657,712

a. Source: BLS (1997, 2002).

Table 4-4. Historical trends in region of influence employment.^a

County	1980	1985	1990	1995	2000
Bannock	28,207	31,064	29,051	34,183	37,533
Bingham	14,419	15,534	17,320	19,363	20,896
Bonneville	25,432	33,267	37,127	41,563	44,921
Butte	1,780	1,491	1,381	1,479	1,537
Clark	295	511	533	596	549
Jefferson	4,480	6,600	7,633	8,685	9,873
Madison	8,683	7,366	7,029	9,373	10,749
Region of influence	83,296	95,833	100,074	115,242	126,058
Idaho	395,000	429,000	463,484	568,138	625,798

a. Source: BLS (1997, 2002).

Table 4-5. Historical trends in region of influence unemployment rates.^a

County	1980	1985	1990	1995	2000
Bannock	7.5%	7.8%	7.3%	5.9%	5.0%
Bingham	7.5%	8.0%	5.8%	5.6%	4.6%
Bonneville	5.7%	5.2%	3.9%	4.3%	3.4%
Butte	4.4%	5.6%	4.6%	4.1%	3.7%
Clark	9.2%	5.0%	2.9%	4.3%	4.9%
Jefferson	7.9%	7.4%	5.5%	5.2%	3.9%
Madison	4.6%	5.6%	5.1%	3.3%	2.5%
Region of influence	6.6%	6.7%	5.4%	5.0%	4.0%
Idaho	7.9%	7.9%	5.9%	5.4%	4.9%

a. Source: BLS (1997, 2002).

together account for 19 percent of employment. Figure 4-1 presents employment levels for the major sectors for the region of influence.

INEEL exerts a major influence on the regional economy. *During Fiscal Year 2001*, INEEL provided an average of 8,100 jobs, *about 6 percent* of the total jobs in the region of influence (DOE 2001, BLS 2002). INEEL is the largest employer in Southeast Idaho and *ranks among the top five employers* in Idaho (the State government is the largest) (DOE 2001). The current workforce population, however, is much lower than the approximately 12,500 employees that worked at INEEL during 1991, the peak year of recent history (McCammon 1999). Much of the employment loss was due to consolidation of contracts and reduction in defense-related activities. Employment projections indicated a stabilization of the job force at about 8,000 *after* Fiscal Year 2000 (McCammon 1999). Other major employers in the region of influence include Idaho State University, American Microsystems, Inc., and local school districts.

Per capita income for the region of influence was \$16,550 in 1995, a 17 percent increase over the 1990 level of \$14,136. Income levels within the region of influence ranged from \$11,758 for Madison County to \$22,444 in Clark County. The per capita income for Idaho was \$18,895 in 1995 (BEA 1997).

The median household income in the region of influence ranged from \$23,000 in

Madison County to \$30,462 in Bonneville County. The median household income in Idaho

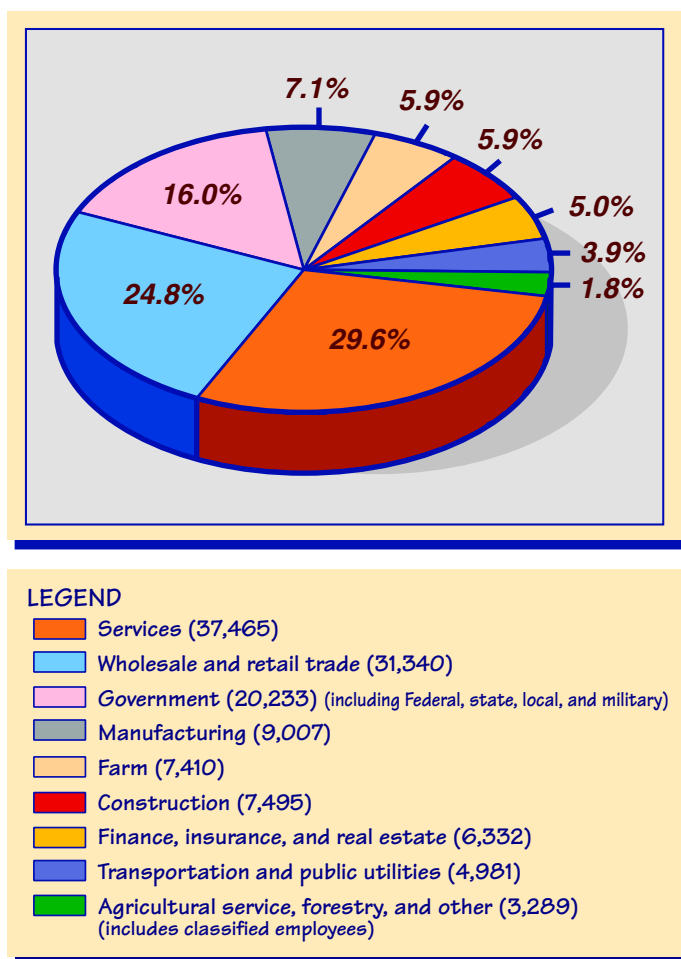


FIGURE 4-1.
1995 employment by sector.

Affected Environment

was \$25,257, and the national median household income was \$30,056.

4.3.3 COMMUNITY SERVICES

Public schools, law enforcement, fire protection, and medical services are important community services in the region of influence.

Seventeen public school districts and five private schools provide educational services for the approximately 57,000 school-aged children in the region of influence. Higher education in the region of influence is provided by the Idaho State University/University of Idaho Center for Higher Education, Ricks College, and the Eastern Idaho Technical College.

Law enforcement is provided by 15 county and municipal police departments that employed 373 sworn officers and 149 civilians in 1995. Idaho Falls and Pocatello supported the largest departments, each employing 82 police officers. Clark County and the Firth police department had the smallest departments, with two officers each (DOJ 1996).

The region of influence is served by 18 municipal fire districts with about 500 firefighters, of whom approximately 300 are volunteers (DOE 1995). In addition, the INEEL fire department provides **24-hour** coverage for the site. The staff includes 50 firefighters, with no less than 16 firefighters on each shift. Bingham, Bonneville, Butte, Clark, and Jefferson counties, which surround INEEL, have developed emergency plans to be implemented in the event of a radiological or hazardous materials emergency. Each emer-

gency plan identifies facilities, including those of the INEEL, that have extremely hazardous substances and defines routes for transportation of these substances. The emergency plans also include procedures for notification and response, listings of emergency equipment and facilities, evacuation routes, and training programs.

The region of influence contains seven hospitals with a capacity of 1,012 beds that average approximately 48 percent occupancy (AHA 1995). Over 65 percent of the hospital beds are in Bannock and Bonneville counties. No hospitals are located in either Clark or Jefferson counties. There are 283 physicians in the region of influence. No primary care physicians are located in Butte or Clark counties (AMA 1996).

4.3.4 PUBLIC FINANCE

INEEL families contribute to the tax base of each county within the region of influence. The tax contributions help pay for local services such as:

- Public schools
- Libraries
- Ambulance and other emergency services
- Road and bridge repairs
- Police
- Fire protection
- Recreational opportunities
- Waste disposal

Based on the latest information available, INEEL employees tax support to southeastern Idaho counties is presented on Table 4-6.

Table 4-6. INEEL tax support to southeastern Idaho counties (in millions of dollars).^a

Counties	Federal tax	State tax	Idaho sales tax	Property tax	Total
Bannock	5.8	2.4	1.2	0.7	10.2
Bingham	10.2	4.2	2.1	1.0	17.6
Bonneville	51.0	21.0	10.7	5.9	88.6
Butte	1.7	0.7	0.4	0.1	2.9
Custer	0.7	0.3	0.2	0.04	1.2
Jefferson	5.4	2.2	1.1	0.5	9.1
Madison	1.3	0.5	0.3	0.2	2.3

a. Source: DOE (1999).