

U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

NUCLEAR WASTE TECHNICAL REVIEW BOARD
FULL BOARD MEETING

SUBJECT: OVERVIEW OF SOCIOECONOMICS

PRESENTER: WENDY R.DIXON *and*
John Carlson

**PRESENTER'S TITLE
AND ORGANIZATION:** ASSISTANT MANAGER FOR ENVIRONMENT, SAFETY & HEALTH
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
LAS VEGAS, NEVADA

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BEATTY, NEVADA
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Socioeconomic Program Presentation

- **Evolution of program**
- **Overview of Socioeconomic Plan**
- **Program Implementation**

Evolution of Socioeconomic Program

- **Nuclear Waste Policy Act (NWPA) of 1982**
 - **Minimize any significant adverse environmental impacts**
 - **Environmental Assessment (EA)**
 - **Socioeconomic Monitoring and Mitigation Plan (SMMP)**

Yucca Mountain Environmental Assessment

- **Description of Yucca Mountain Project**
- **Conclusions from Yucca Mountain EA**
 - **The social and economic impacts of site characterization - related population are expected to be small and insignificant**
 - **Assessment of economic, demographic, and social conditions provided evidence that Yucca Mountain is likely to meet qualifying conditions**
 - **Was not expected to be disqualified on the basis of affecting the regional ground water table or reduce water quality**

Evolution of Socioeconomic Program

- **Socioeconomic Monitoring and Mitigation Plan (1986 to 1988)**
 - **Compliance with Section 113(a) of the NWPA of 1982 (requirement to “minimize any significant adverse environmental impacts”)**
 - **Socioeconomic monitoring limited to “population growth and distribution” and “economic structure”**
 - **Mitigation program focused on avoiding impacts by changing site characterization activities and/or schedules**

Evolution of Socioeconomic Program

(Continued)

- **Nuclear Waste Policy Amendments Act (NWPAA) of 1987**
 - **One site**
 - **Participation of State of Nevada and Affected Counties**
 - **Section 175 Report (December 1988)**
 - » **Nevada legislature suggested language regarding fourteen categories to be addressed**
 - **Development of Yucca Mountain Project Socioeconomic Plan**

Nuclear Waste Policy Amendments Act of 1987: Section 175

- **Required report to congress on fourteen categories
of potential socioeconomic impacts**

- **Education**
- **Public Health**
- **Law Enforcement**
- **Fire Protection**
- **Medical Care**
- **Cultural & Recreational needs**
- **Tourism & Economic Development**
- **Other Needs of State/Local Governments**
- **Vocational Training**
- **Social Services**
- **Transportation**
- **Accident Management**
- **Availability of Energy**
- **Distribution of Public Lands**

Nuclear Waste Policy Amendments Act of 1987: Section 175

(Continued)

- **Areas of study State of Nevada Clark, Esmeralda, Lincoln, and Nye counties**
- **Concluded that there was a potential that socioeconomic impacts might occur, particularly in the communities closest to the site**
 - **Amargosa Valley**
 - **Beatty**
 - **Indian Springs**
 - **Pahrump**
- **Commitment to determine if there is a trend indicating a socioeconomic impact**

Socioeconomic Conditions in Siting Guidelines (10 CFR 960)

- **Favorable conditions**
 - **Absorb project-related population without significant disturbance**
 - **Available labor force**
 - **Projected increases in employment, sales, government revenues, and improved community services**

Socioeconomic Conditions in Siting Guidelines (10 CFR 960)

- **Potentially adverse conditions**
 - **Potential for significant impacts on community service, housing supply and demand, and government finances**
 - **Lack of adequate labor force**
 - **Acquisition of water rights impacts development of affected areas**
- **Disqualifying condition**
 - **Site shall be disqualified if it significantly degrades the quality or quantity of water from major sources of off-site supply**

Socioeconomic Plan

- **Commitment to interactive process**
- **Expansion of technical scope**
- **Cooperative process for impact assessment and mitigation**

Overview of Socioeconomic Plan (Rev 0, May 1991)

- **Objective - identify potential effects of project activities on socioeconomic characteristics of Nevada communities, counties and the State of Nevada**
- **Consultation, communication, coordination**
- **Consultation Draft distributed April 1990**
- **Comments received August 1990**

Implementation of Socioeconomic Plan

Characteristics of the Study Area

- **Socioeconomic Profiles**
 - Socioeconomic (demographics)
 - Housing (county)
 - Housing (community)
 - Rural Employment/Industry
 - Urban Economics
 - Land Use
 - Hotel, Gaming, and Recreation

Characteristics of the YMP

- **Socioeconomic Monitoring**
 - Quarterly Employment
 - Semi-Annual Procurement
 - Annual YMP Employee Survey

Empirical Work To Date

By:
John Carlson

- **Socioeconomic Profiles**
- **Socioeconomic Monitoring**
- **Findings to Date**
- **Model Development**

Socioeconomic Profiles

- **General**
- **County**
- **Sub-County**

General Socioeconomic Profiles

- **Fiscal - description of the budgetary characteristics of Clark and Nye counties and particular communities and special districts within each county**
 - Examines local revenue and expenditure patterns
 - Describes the time frames and processes used by local government in establishing budgets
 - Identifies organization and components of local government budgets
- **Service and facilities - description of the capacity and utilization of public services and facilities by county and community**
 - Determines existing staffing patterns and services capacity
 - Establishes existing utilization rates
 - Identifies sources of revenue and expenditure levels

Profiles Developed for Refinement of the County Level Model

- **Socioeconomic - description of selected demographic characteristics from the 1960, 1970, and 1980 decennial censuses**
 - **Area of study includes State of Nevada and Clark, Lincoln, and Nye counties**
 - **Includes information regarding population, income and housing**
- **Housing (County) - description of housing characteristics for Southern Nevada from the 1970, 1980 and 1990 decennial censuses**
 - **Area of study includes Clark, Lincoln, and Nye counties**
 - **Includes information regarding total housing stock, occupancy rates, housing values, housing types, etc.**

Profiles Developed for Refinement of the County Level Model

(Continued)

- **Urban Economic Base - description of some key economic characteristics of Clark County, Nevada**
 - **An evaluation of various data sources describing particular economic indicators for Clark County**
 - **Information evaluated includes population and labor force, employment and earnings by SIC**
- **Hotel, Gaming and Recreation (H,G,R) - description of a subcomponent of the service industry in Clark County**
 - **Service sector is 47 percent of the total employment in Clark County**
 - **H,G,R is 61 percent of the Clark County service sector**
 - **H,G,R focuses on revenue, taxation, public policy, and development activities**

Profiles Developed for Refinement of the Sub-County Allocation Process

- **Housing (community level) - description of the housing characteristics for the southern Nevada communities**
 - Includes information regarding total housing stock, occupancy rates, housing values, housing types, etc. as reported in the 1990 census
 - Areas of study include census designated places in Clark, Lincoln, and Nye counties
- **Rural Employment and Industry - description of employment characteristics in Lincoln and Nye counties**
 - Information evaluated includes employment by SIC, annual changes in employment
 - Temporal scope of analysis was 1970 to 1990

Profiles Developed for Refinement of the Sub-County Allocation Process

(Continued)

- **Land Use - will describe the land use and land ownership in southern Nevada**
 - **Detailed GIS analysis of Las Vegas Valley**
 - **Analysis of rural Southern Nevada focuses on land use, land ownership and transferability of land in the communities**

Overview of the Socioeconomic Monitoring Program

Quarterly Employment Monitoring (June 1986 to September 1994)

Employment Monitoring Database

Database Element	Definition
Total Employment	The total number of employees engaged in YMP activities.
Employment Status	The number of YMP workers by employment status within their organization (full-time, part-time and temporary).
Full-time Equivalent (FTE) Positions	One FTE represents one full-time employee working 8 hours per day.
New Hires	Those persons hired to work on the YMP who were not already employed by a participant engaged in other DOE/Nevada Test Site related activities.
Transfers	Workers who are transferred to work on the YMP from within their own organization.
Labor Organization Status	Union status of YMP workers.

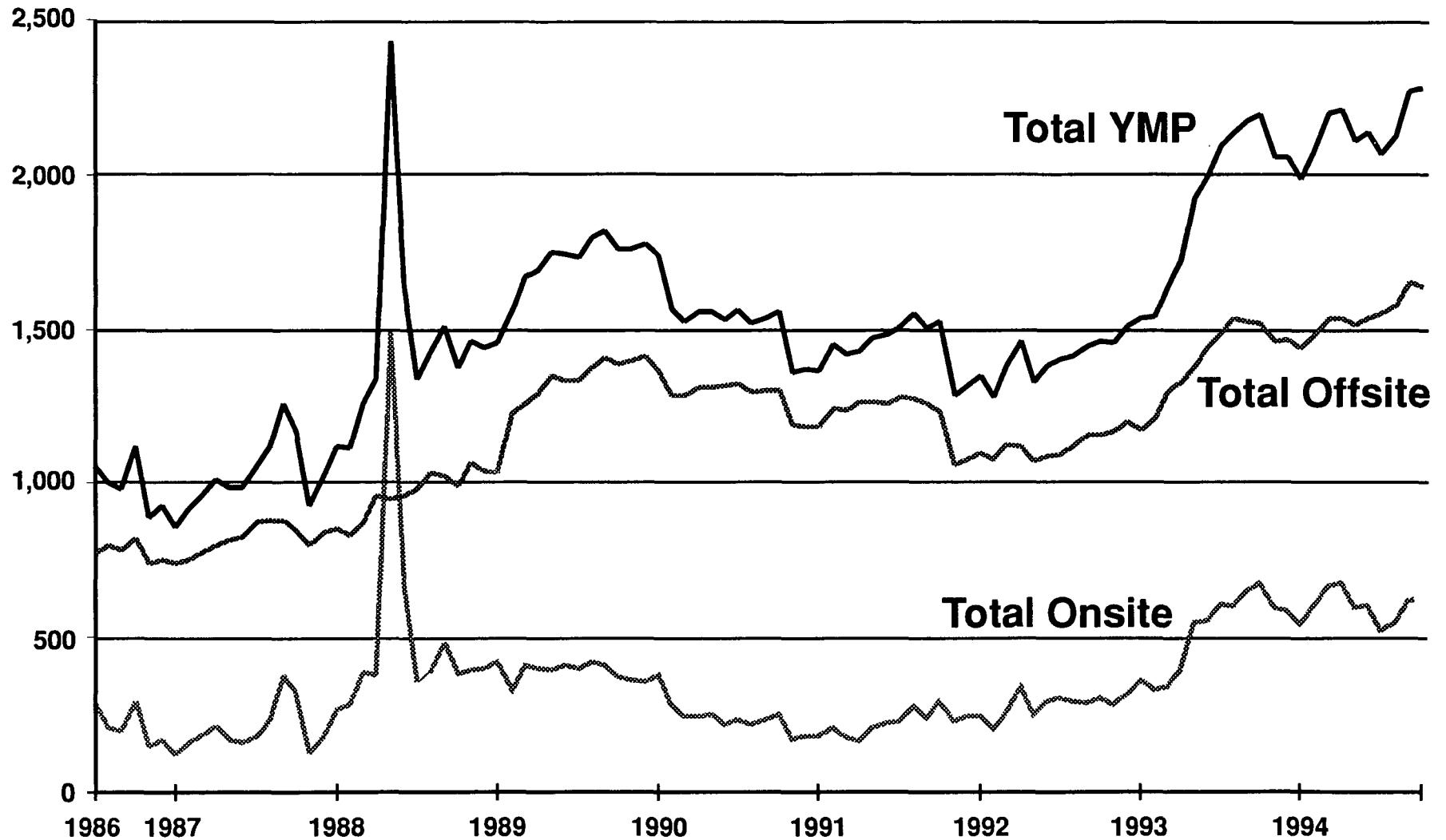
Employment Monitoring Database

(Continued)

Database Element	Definition
Occupational Distribution of Employees	YMP workers categorized by occupation.
Residential Distribution of YMP Workers in Nevada	The number of employees residing in Nevada and the county in which they reside.
Immigration to Nevada	YMP workers and their dependents who have moved to Nevada as a direct result of YMP employment.
Employees in Other States	YMP employees who reside in states other than Nevada.
Long-term Commuters	The number of employees who work in Nevada and reside in other states.

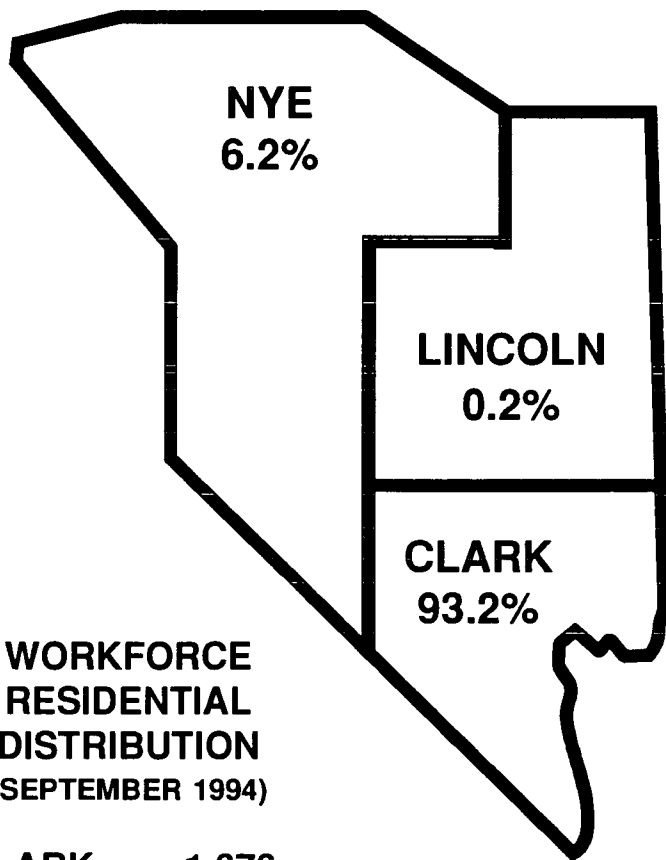
YMP: TOTAL EMPLOYMENT LEVEL

(JUNE 1986 TO SEPTEMBER 1994)



PROJECT WORKFORCE CHARACTERISTICS

(JULY 1994 TO SEPTEMBER 1994 EMPLOYMENT DATA REPORT)



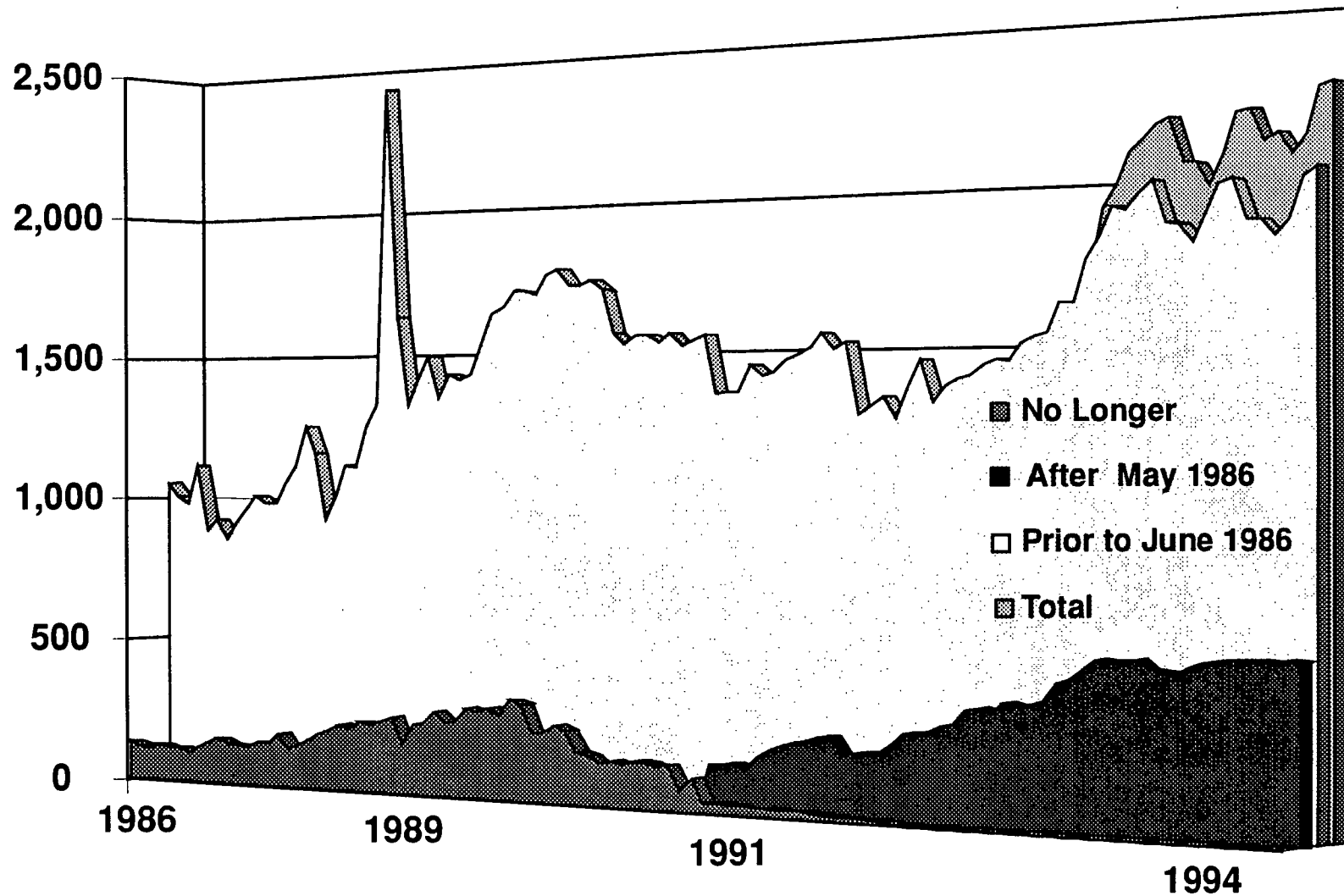
**WORKFORCE
RESIDENTIAL
DISTRIBUTION
(SEPTEMBER 1994)**

CLARK	1,676
NYE	111
LINCOLN	3
OTHER	8
NEVADA	1,798

CUMULATIVE INMIGRATION (JUNE 1986 - SEPTEMBER 1994)

	WORKERS	POPULATION
CLARK	753	1,772
NYE	18	34
LINCOLN	0	0
OTHER	1	2
NEVADA	772	1,808

Organizational Changes of YMP Participants



Relative YMP Employment and Population

	Total YMP Employment	Total Employment	Relative Percentage
YMP/NV	1,678	712,300	0.2%
Clark	1,579	443,800	0.4%
Nye	93	8,200	1.1%

	Total YMP Population	Total Population	Relative Percentage
YMP/NV	4,245	1,493,000	0.3%
Clark	4,011	971,680	0.4%
Nye	233	19,560	1.2%
Lincoln	3	4,340	0.1%

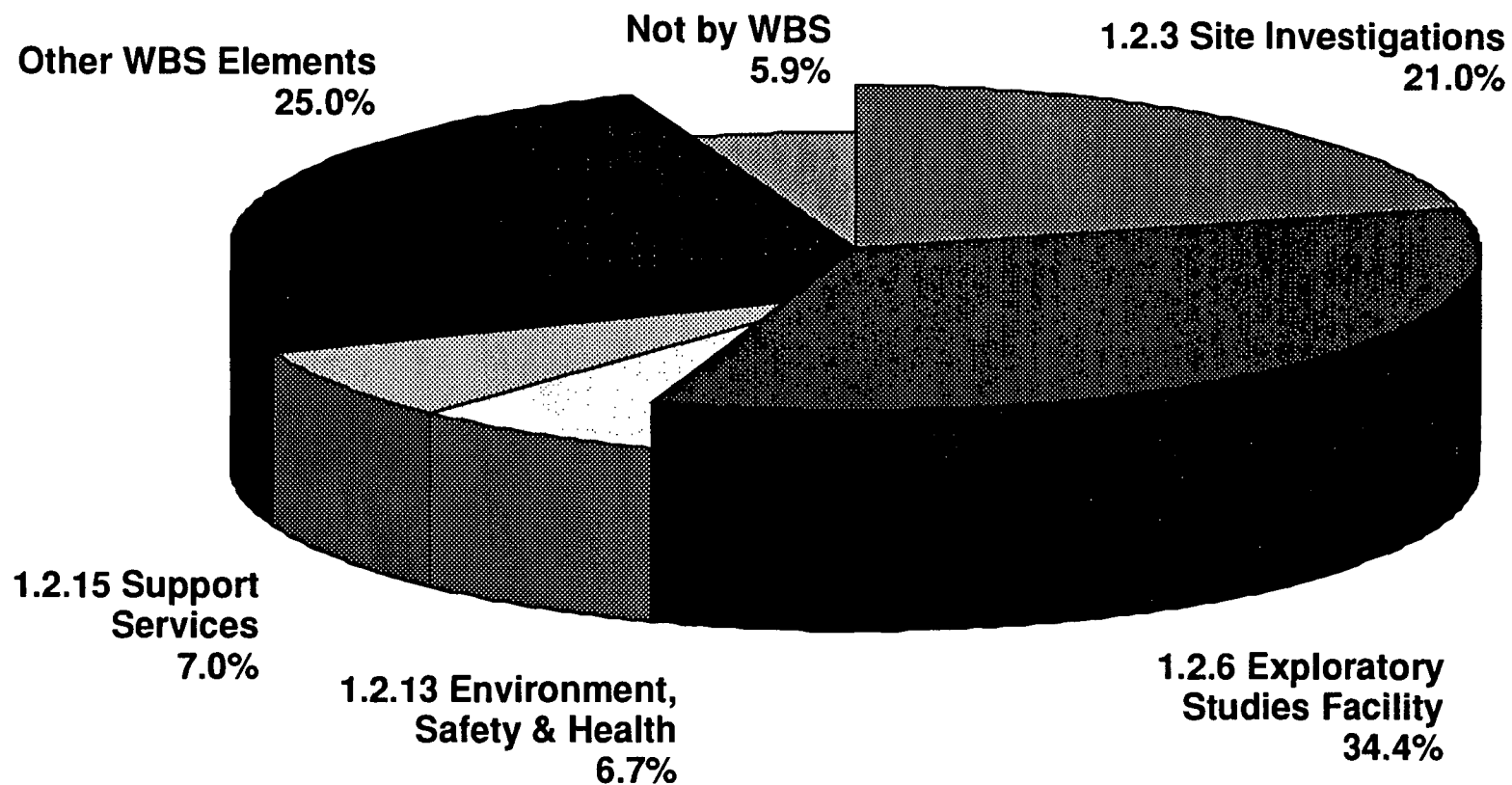
**Semi-Annual
Procurement Monitoring
(April 1, 1992 to September 30, 1994)**

Procurement Monitoring Database

Database Element	Definition
WBS	The Work Breakdown Structure (WBS) numeric identifier assigned to each work element of the project as defined in the WBS Dictionary for the YMP.
Amount	The dollar amount recorded on the check which covers the cost of the procurement.
Standard Industrial Classification (SIC)	The two-digit numeric classification of industries found in the Standard Industrial Classification Manual (Executive Office of the President, 1987).
Destination of Payment	The destination of the payment check, otherwise referred to as the "remit to" location. Destination of payment is indicated by zip code only.
Vendor Location	The physical location of the vendor. The vendor location is indicated by zip code only.

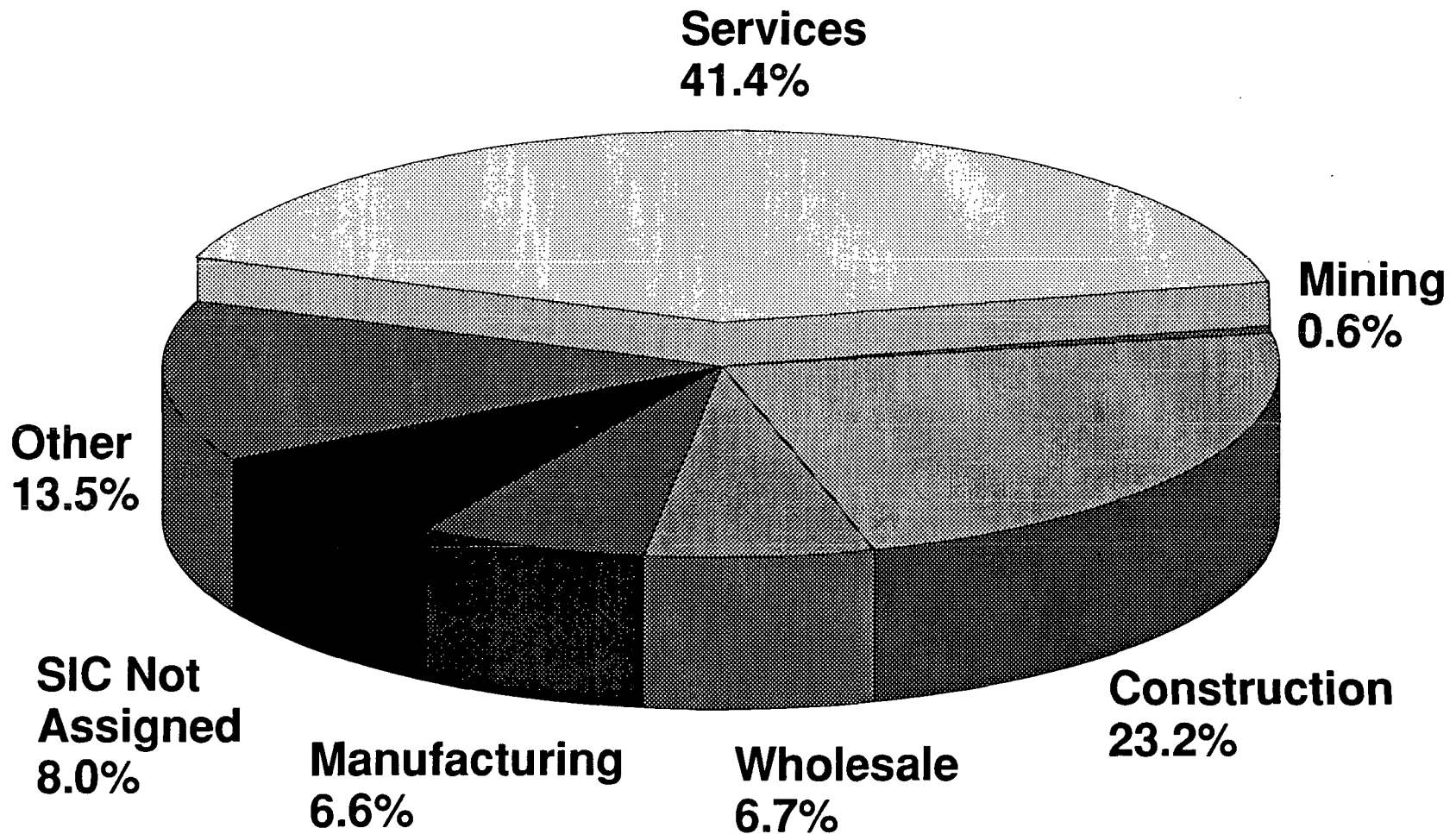
Distribution of YMP Procurements by WBS

(FY 1994: October 1, 1993 to September 30, 1994)



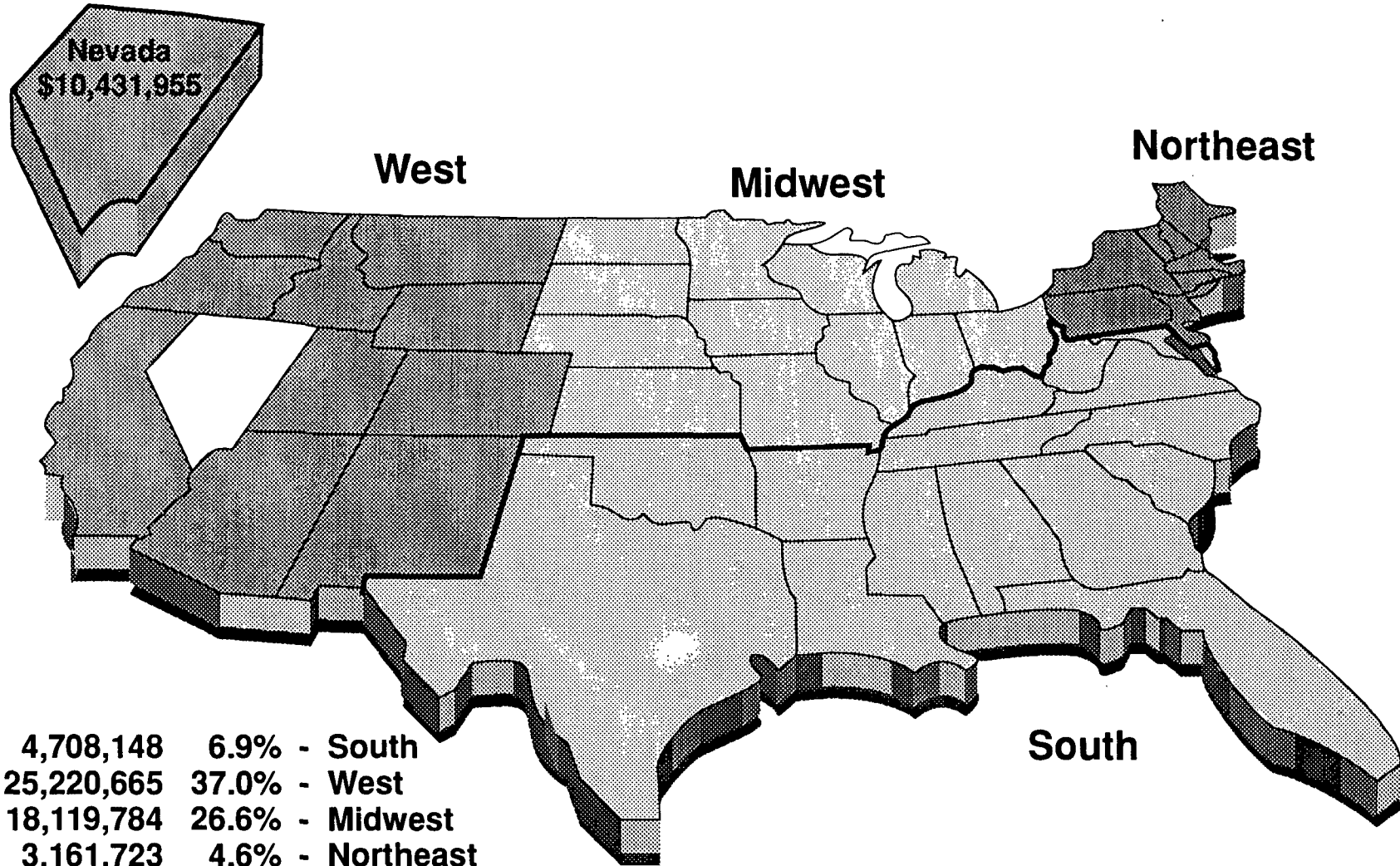
Distribution of YMP Procurements by SIC

(FY 1994: October 1, 1993 to September 30, 1994)



Distribution of YMP Procurements by Region

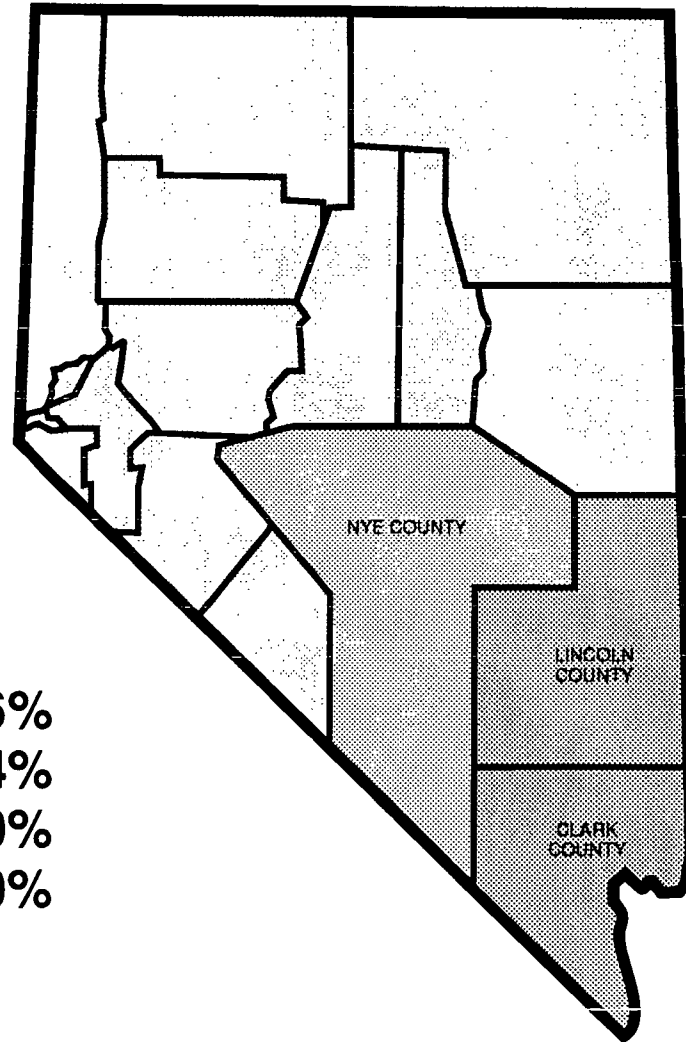
(FY 1994: October 1, 1993 - September 30, 1994)



\$ 4,708,148	6.9%	- South
\$ 25,220,665	37.0%	- West
\$ 18,119,784	26.6%	- Midwest
\$ 3,161,723	4.6%	- Northeast
51,210,320		Subtotal
\$ 16,979,186	24.9%	Location Not Reported
\$ 68,189,506		Total

Distribution of YMP Procurements in Nevada

(FY 1994: October 1, 1993 to September 30, 1994)



Clark County	9,449,357	90.6%
Nye County	357,829	3.4%
Lincoln County	16	0.0%
Other NV Counties	624,753	6.0%

\$ 10,431,955

Relative YMP Procurements

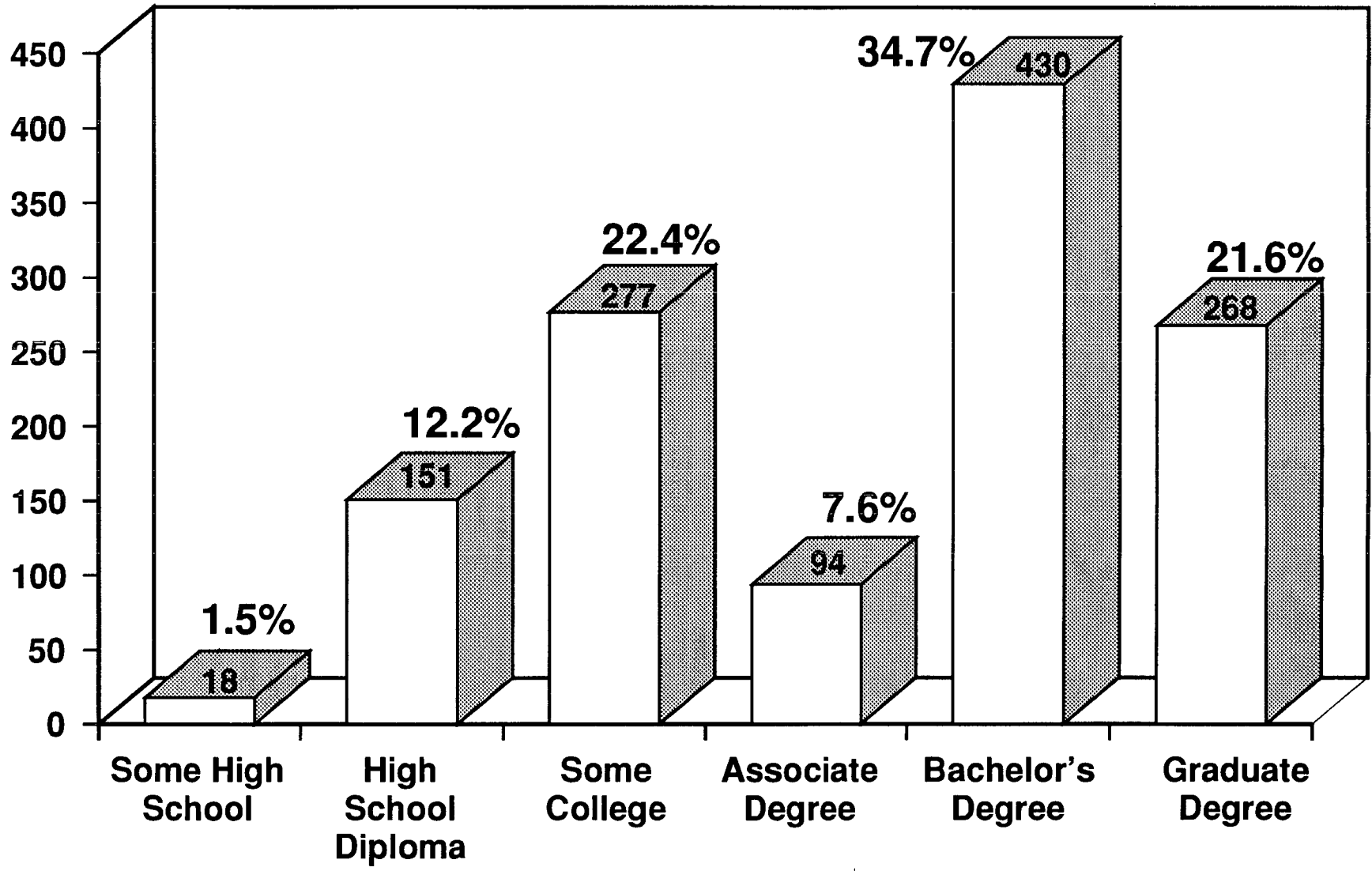
	Total YMP Procurement	Total NV Consumption	Relative Percentage
YMP/NV	10,431,955	16,543,200,000	0.1%
Clark	9,449,357	10,031,840,000	0.09%
Nye	357,829	218,700,000	0.2%

Annual Employee Survey (1993 and 1994)

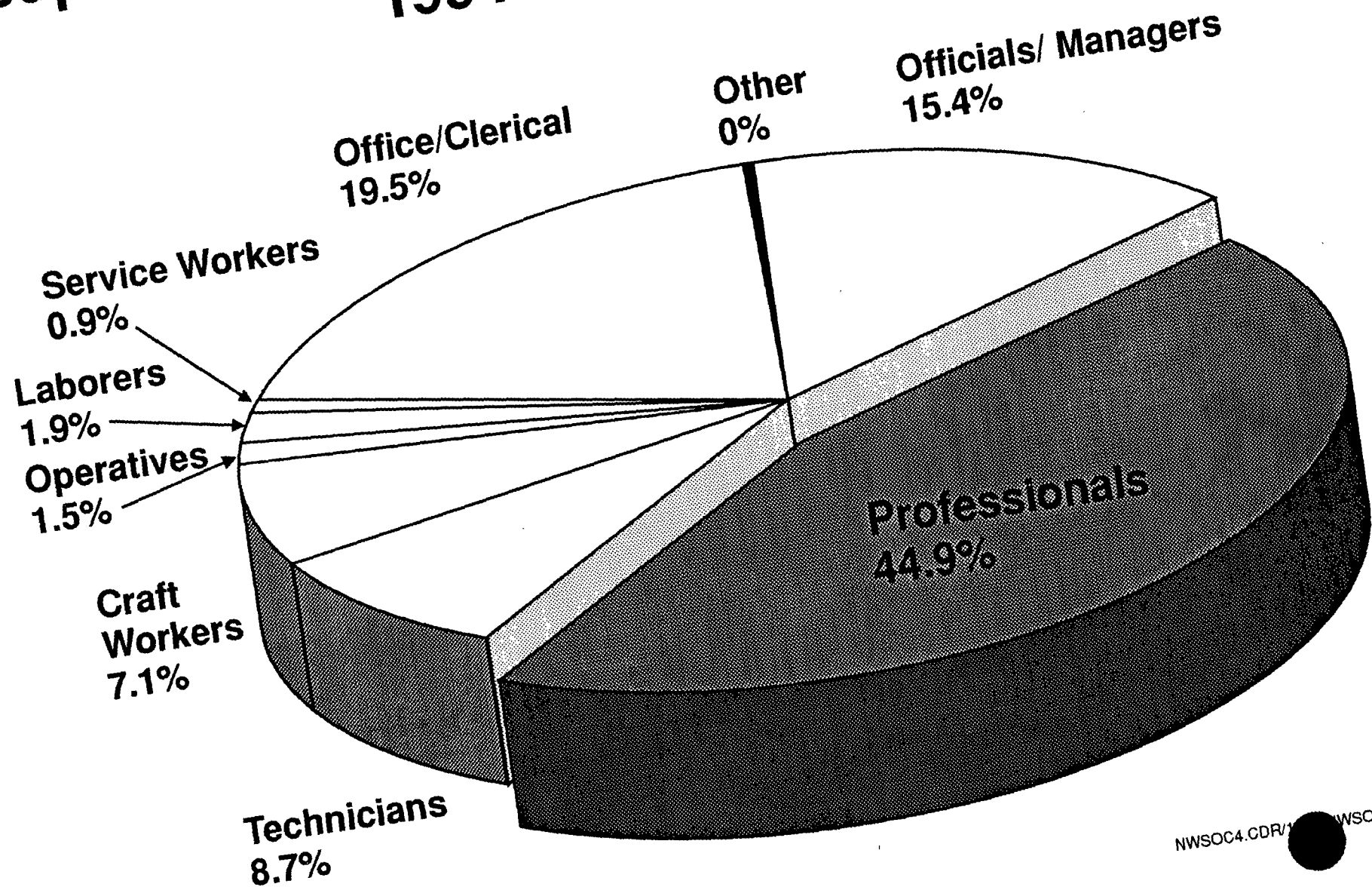
Employee Survey Database

Data Category	Data Item
Work Experience	Current employer by location Mode of transportation to and from work Labor organization status NTS worker transfers to YMP assignments
Attributes of the Worker	Level of education Occupational category Major area of study in a degree program
Place of Residence	Location of current residence Type of housing unit/ownership status Length of ownership of current residence
Composition of the Household	Total number of household members Age/Gender of each household member Employment status of each household member Income category for total household income

Educational Attainment of YMP Nevada Workers 1994 Survey Data

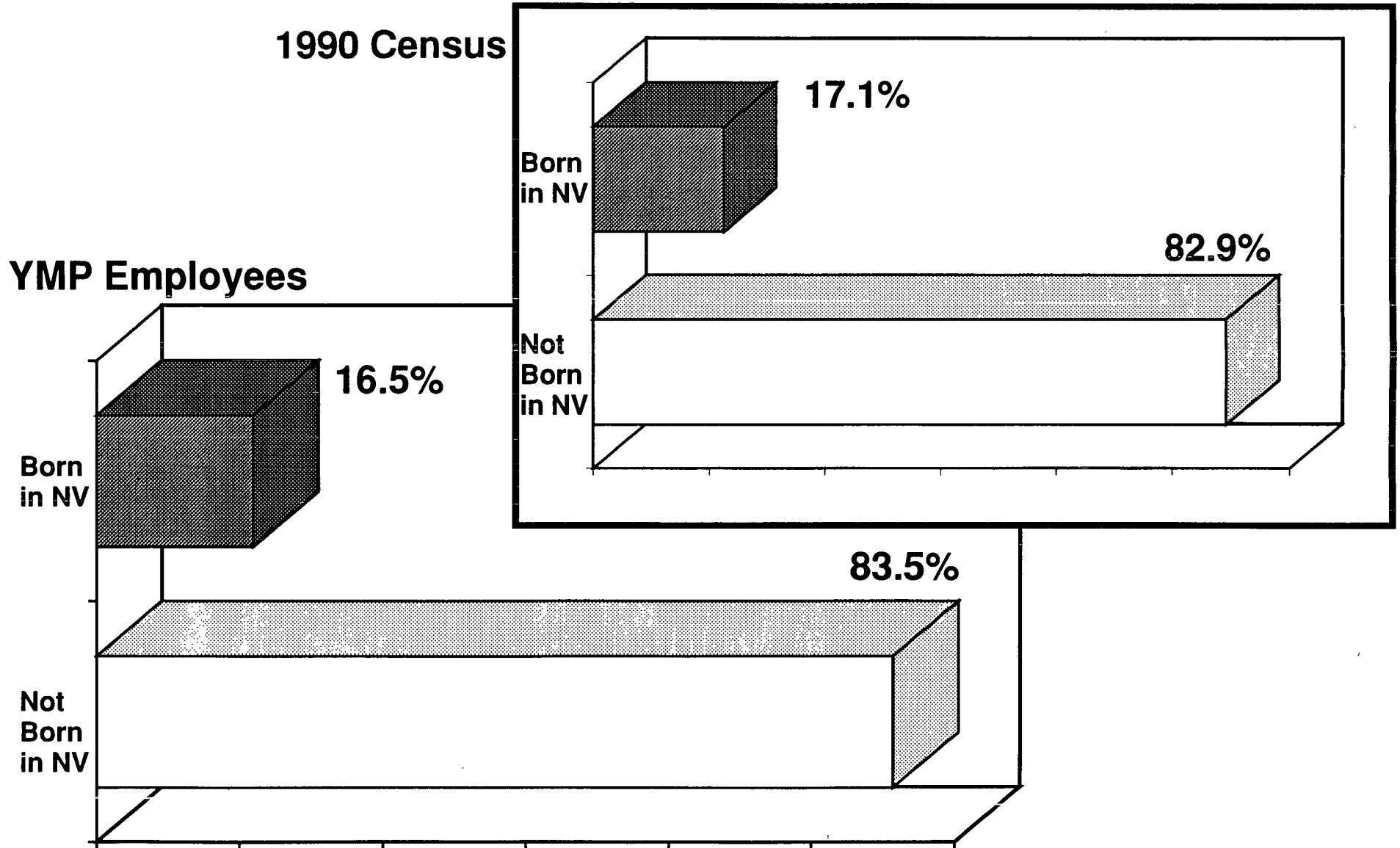


Occupational Distribution of YMP Nevada Workers 1994 Survey Data



Percentage of Residents Born in Nevada

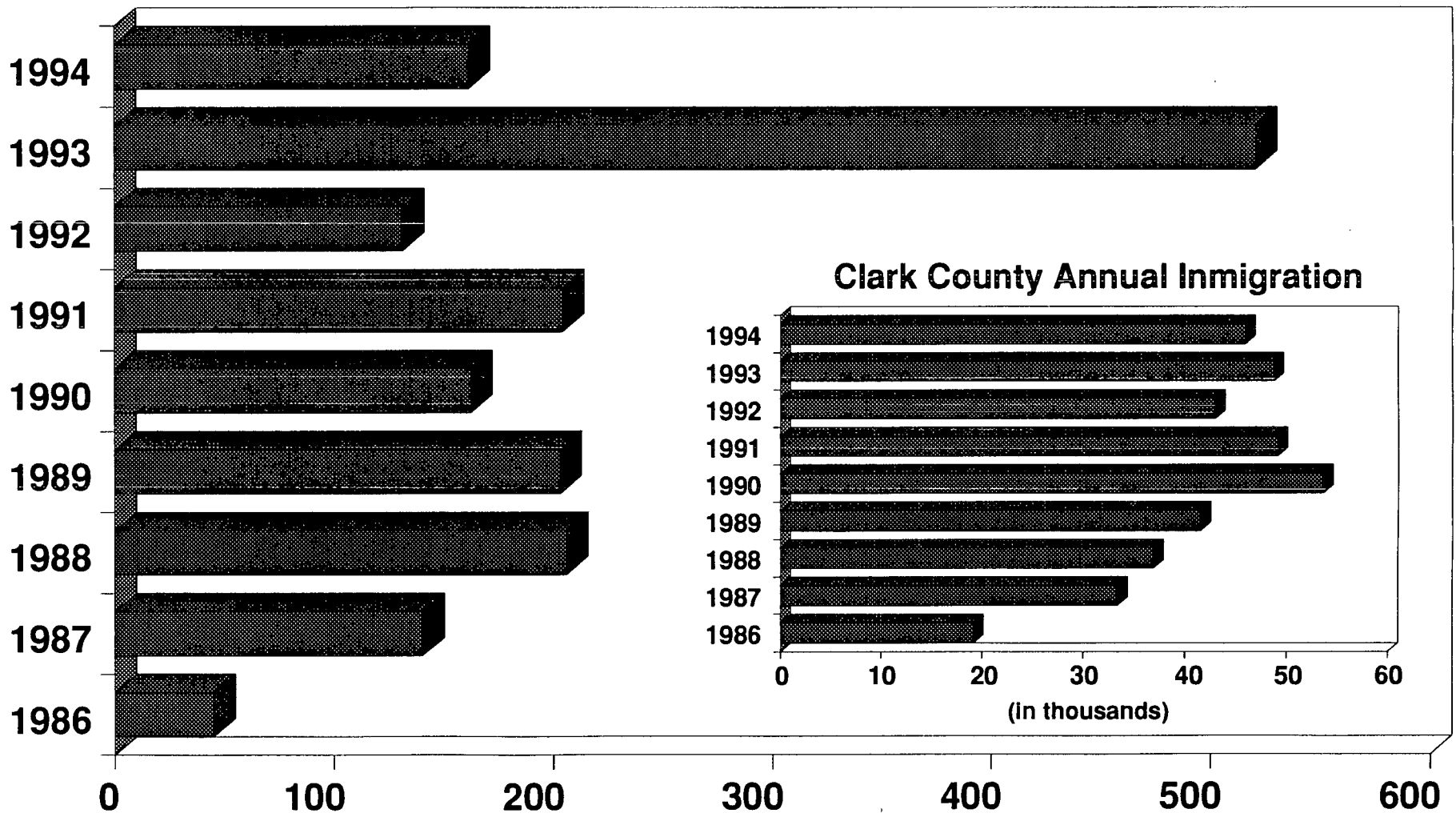
(1990 Census / 1994 YMP Employee Survey)



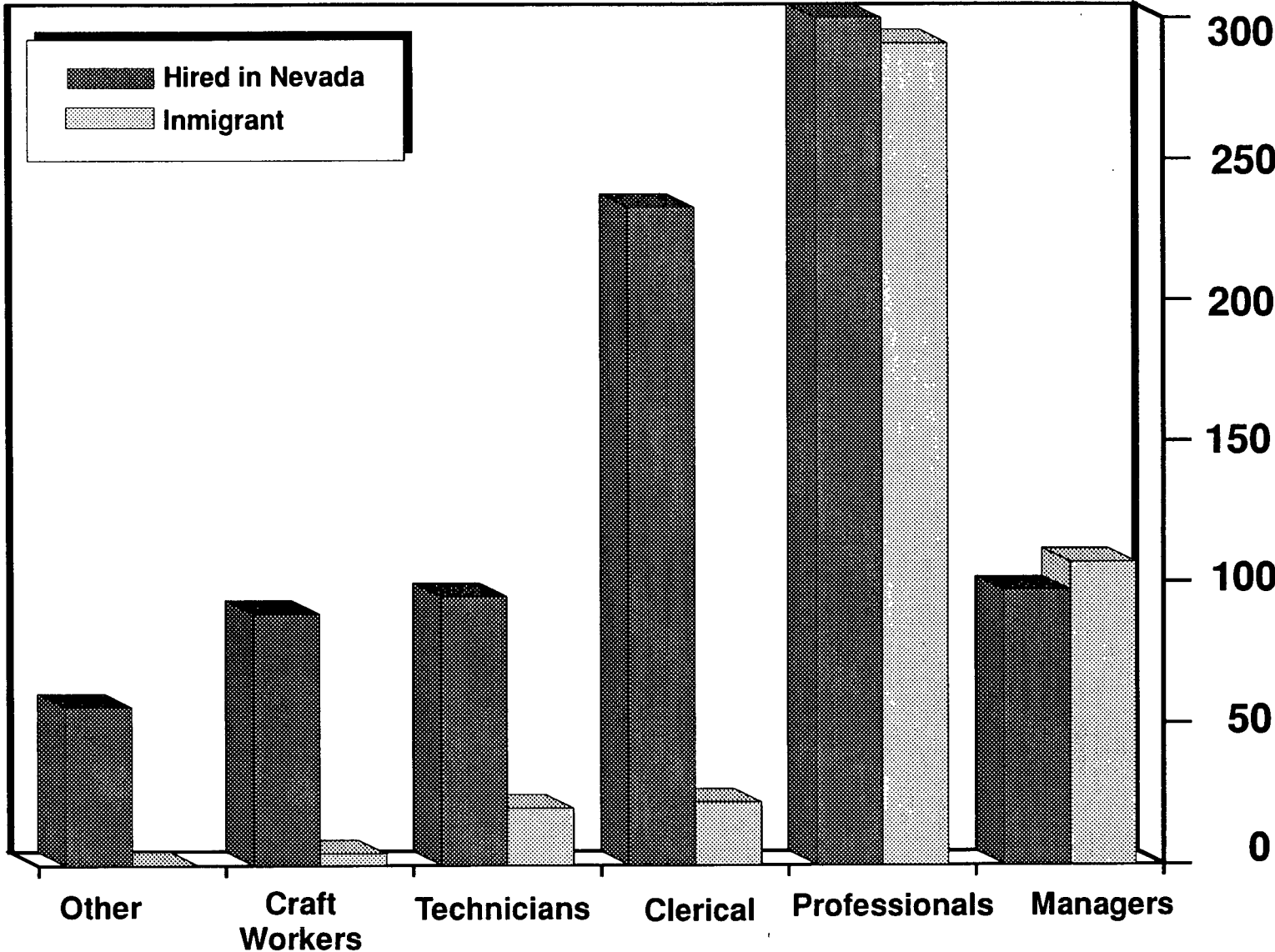
Annual Clark County Immigration of YMP Workers/Dependents and Clark County Totals

Year	Clark County	YMP Workers/ Dependents	YMP/ Clark (%)
Jun-86	19,166	45	0.2%
1987	33,373	140	0.4%
1988	36,901	206	0.6%
1989	41,567	203	0.5%
1990	53,664	162	0.3%
1991	49,139	204	0.4%
1992	42,991	131	0.3%
1993	48,761	520	1.1%
1994	45,927	161	0.4%
Totals	371,489	1,772	0.5%

Annual Clark County Immigration of YMP Workers/Dependents and Clark County Totals



Distribution of YMP Inmigrant / Hired in Nevada by Occupation



Occupation of Immigrant/Hired in Nevada, DOE/YMP Nevada Workers*

Occupation	Responses**			Row Percentages		
	Immigrant	Hired in Nevada	Total Responses	Immigrant	Hired in Nevada	Total
Officials/Managers	107	97	204	52.5	47.5	100.0
Professionals	291	300	591	49.2	50.8	100.0
Technicians	20	95	115	17.4	82.6	100.0
Craft Workers	4	89	93	4.3	95.7	100.0
Operatives	0	20	20	0.0	100.0	100.0
Laborers	0	24	24	0.0	100.0	100.0
Service Workers	0	12	12	0.0	100.0	100.0
Office/Clerical	22	233	255	8.6	91.4	100.0
Total Responses	444	870	1,314	33.8	66.2	100.0

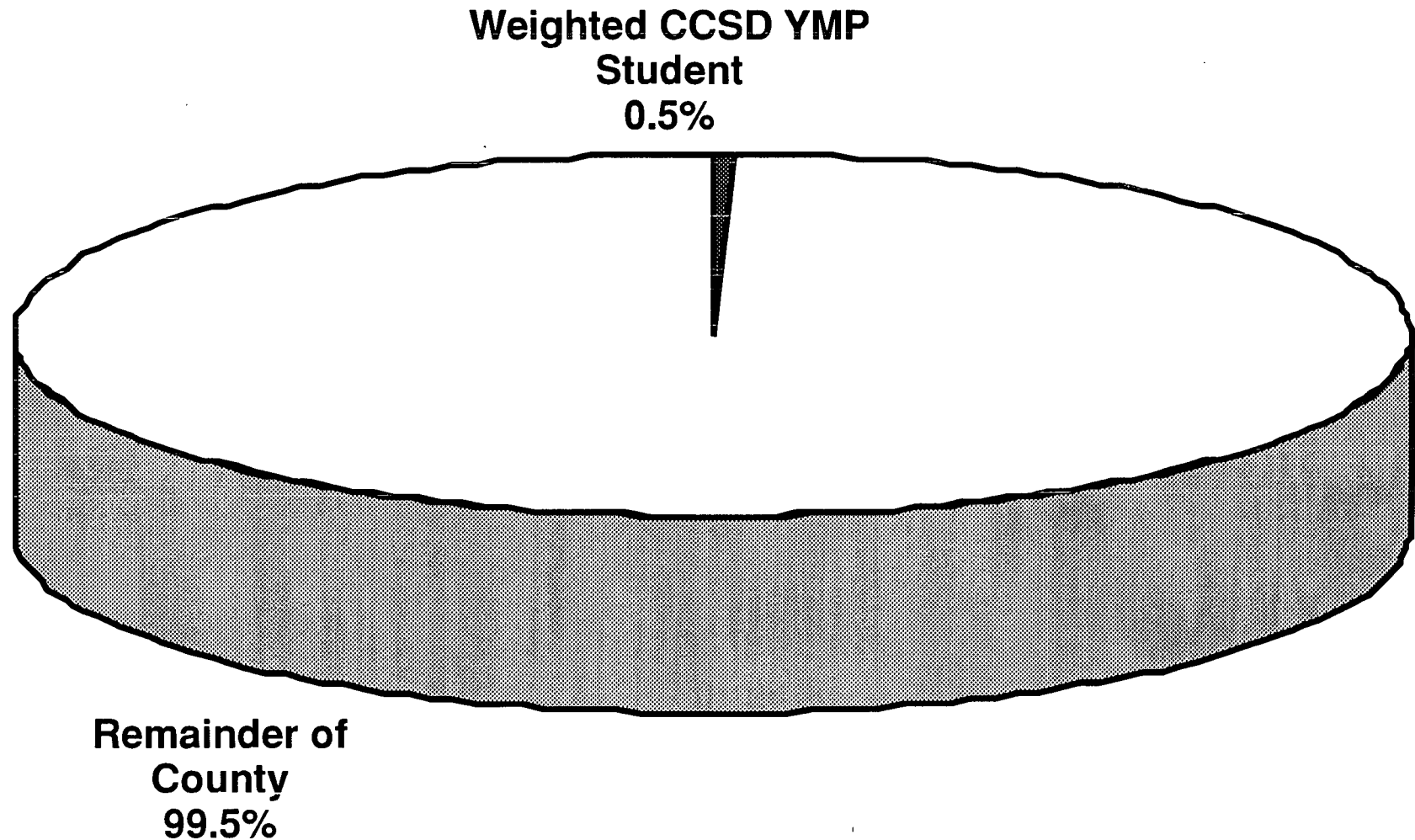
* DOE/YMP workers whose residence is in Nevada.

**Excludes 23 no responses.

YMP Related Children (5-18) Relative to Clark County School District (CCSD) 1994 YMP Employee Survey

Region	Public School Enrollment	YMP 66% Response Rate School Age Children	Weighted YMP Response Rate School Age Children	Weighted YMP Percent of Public School Enrollment
Las Vegas	111,461	400	606	0.5%
Henderson	20,035	58	88	0.4%
North Las Vegas	17,954	29	44	0.2%
Rural	4,239	0	0	0.0%
Boulder City	2,269	6	9	0.4%
Indian Springs	390	7	11	2.7%
Clark	156,348	500	758	0.5%
NEVADA	250,747	572	867	0.4%

1994 Clark County YMP Students As A Percent of Clark County School District (CCSD) Enrollment



Socioeconomic Modeling

- **Population and employment projections will be developed for the Nevada counties**
 - **Regional Economic Models Inc. (REMI)**
 - » Evaluation in 1987
 - » Usage
 - » Adapted demographically for Nevada
 - » Recalibrated (January 1995)
- **Sub-county allocation process (under development)**
 - **Ratio Correlation using Population change indicator**