THE FEASIBILITY FOR THE ESTABLISHMENT OF A POTATO PROCESSING FACILITY IN SOUTHERN COLORADO'S SAN LUIS VALLEY

COMPILED BY

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The enclosed publication "The Feasibility for the Establishment of a Potato Processing Facility in Southern Colorado's San Luis Valley", is a joint effort of the Colorado State University Cooperative Extension, individual residents of the San Luis Valley, commodity groups, small businesses, and government officials. Funding for the study, $10,000, was provided by The Department of Local Affairs and The Department of Agriculture, State of Colorado. Additional resources were provided by Colorado State Cooperative Extension through the various on-campus departments and the San Luis Valley Area Extension Office.

A major objective of the study was to evaluate an economic development opportunity for the residents of the San Luis Valley. Through commodity meetings and local study groups, the local opportunity was identified as a potato processing plant.

The process of evaluation was one that effectively utilized the resources of the University and involved local people, agencies and institutions. The local San Luis Valley Extension office provided the organizational coordination of all individuals providing information for the study as well as the link for the on-campus extension resource specialist. The area director provided liason with appropriate Colorado State government agencies; he managed the budget; and he assumed responsibility for the completion of the final written document.

Sincerely,

K. R. Bolen

Kenneth R. Bolen
Director

ACKNOWLEDGEMENTS

The following document was designed to answer questions about the possibility and desirability of the development of a San Luis Valley Potato Processing facility.

Data for the compilation of this report were obtained through the cooperation of a number of individuals. The study was completed under an agreement with Colorado State University through the Colorado State University-San Luis Valley Area Cooperative Extension.

The following individuals were instrumental in the completion of the final document.

- Richard D. Williams, San Luis Valley Area Extension director, Colorado State University
- William P. Spencer, Colorado State University Extension economist and associate professor of Agricultural and Resource Economics, campus coordinator for the Feasibility Study.
- David G. Holm, Colorado State University-San Luis Valley Research Center superintendent
- Tim Larson, State Department of Agriculture, Denver, Colorado
- John R. McKean, Colorado State University, professor of Agricultural and Resource Economics
- Dale Sowards, Conejos County Commissioners, Manassa, Colorado
- John S. Stump, San Luis Valley Regional Development and Planning Commission director
- Wayne D. Thompson, San Luis Valley Potato Administrative Committee manager
- Gene Williams, San Luis Valley Area Vocational School - Agricultural Management instructor.
- Wendell D. Winger, consultant to Colorado Cooperative Extension
- J. Hugh Winn, Colorado State University, professor of Agricultural and Resource Economics, advisor to the Feasibility Study.
- Adams State College School of Business
- American Enterprises, P.O. Box 161, La Jara, Colorado 81140; Mr. Max Lara, president

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EXECUTIVE SUMMARY

*An analysis of this feasibility study shows that a potato processing facility is feasible within the San Luis Valley (SLV) of Southern Colorado.

*A wide variety of crops are grown in the SLV, potatoes being the main commercial crop because of the nature of the climate.

*Transportation is available either by railroad or commercial motor carrier. The rates are competitive for southwestern markets.

*Waste treatment for the proposed potato processing facility is not a problem. Utilizing proper waste treatment procedures will result in minimal or no water quality problems.

*The majority of local potato producers (82.8 percent) support a potato processing venture. Eight thousand seven hundred eighty-five (8,785) acres are available for growing potatoes.

*The SLV has a sizable labor pool from which to draw. Occupational skills are adequate and educational and training resources exist within the valley.

*The valley has the lowest per capita income in the state. This results in a lower cost of living and a need for additional wage earning opportunities. Valley workers are generally willing to travel long distances for employment. The workers are productive, adaptable and stable.

*Economic impact on the SLV from such an operation would include estimated new business income of $9,088,953. New employment in the SLV as a result of a plant is estimated at 109.5 F.T.E. jobs.

*The SLV produces a potato high in solids. Throughout the years the SLV has produced a potato as good as or better than other western areas. Fry color for the SLV Russet Burbank averaged a 4.0 (5 being best on a 1 to 5 point scale).

INTRODUCTION

INTRODUCTION

Purpose

Primarily, this report provides information to interested parties on the feasibility of the development of a potato processing facility in the San Luis Valley. To generate information for this study intensive secondary and primary data were gathered. All data were compiled and pertinent information for the establishment of a facility is contained in this volume.

In order to assist the reader, the study has been broken down into various chapters that are subdivided. Figures and tables are used to help simplify the information and to show graphical and comparative information. These tables and graphs are also indexed to provide ease of readability.

The Honorable Roy Romer, governor of the state of Colorado, has defined agriculture enhancement as a major rural issue and has given it much support. In a statement issued by the Governor's Task Force on Rural Economic Development (1987) it was stated that enhancement to the SLV's economy could be achieved through the processing of locally produced agricultural products, a major agricultural product being the SLV potato.

Reference Sources

Sources of information and data have been compiled and inserted at the end of this document. Source documents may be referred to for a more in-depth understanding of this document.

The following individuals may be contacted to clarify information or to reply to questions you may have:

- Mr. Richard D. Williams, SLV Area Extension Director, Colorado State University Cooperative Extension, P.O. Box 329, Alamosa, Colorado 81101, (303) 589-2271
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GEOGRAPHIC AND

CLIMATIC DATA

GEOGRAPHIC AND CLIMATIC DATA

Alamosa is geographically located in South-Central Colorado. Alamosa is the hub of the SLV. Colorado's SLV is approximately the size of the state of Connecticut yet is a valley with a population near 40,000 people. Surrounding the SLV are mountain ranges with altitudes up to, and over, 14,000 feet. The valley floor has an altitude from 7,500 to 8,000 feet but is flat. The valley floor rises steeply to the east but more gently to the west (3 to 6 feet to the mile). To the south there is a range of low hills (National Oceanic and Atmospheric Administration, 1985).

"The average annual precipitation is below 10 inches throughout the valley, dropping to near 6 inches in the central part" (IBID.). All agriculture in the valley is dependent on irrigation, using water supplied by the more abundant precipitation in the surrounding mountains. Summer grazing of cattle and sheep on nearby mountain ranges and smaller valleys is extensive. A wide variety of vegetables, grains and feed crops are grown locally, with potatoes being the main commercial crop.

The climate of the SLV is marked by cold winters and moderate summers, light precipitation and much sunshine. At Alamosa about 80 percent of the annual precipitation occurs from April to October, most of it in the form of scattered light showers and thunderstorms that develop over the mountains and move into the valley during the afternoon. More than half of these thunderstorms occur during July and August. Hail frequently falls in some parts of the valley during their movement. Winter snows occur mainly in frequent light falls, with occasional falls as early as September or as late as May. A good snow cover will remain on the ground for several weeks during the coldest months (IBID.).

Maximum summer temperatures are in the middle 80s and minimum temperatures in the low 40s. Relative humidity ranges from about 76 percent in the early mornings to around 40 percent during the afternoons. Winds are light during the coldest weather, but are strong with occasional blowing dust during the spring and early summer months.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is September 8 and the average last occurrence in the spring is June 8.

Table I provides meteorological data for Alamosa (IBID. 1985). Table 2 gives normals, means and extremes for Alamosa (IBID. , 1985). Precipitation and average temperatures are shown in Table 3. Table 4 shows heating degree days (1956 to 1986) and cooling days (1969 through 1985). Snow fall (in inches) is in Table 5 (1956 to 1986) Please refer to the reference notes immediately following the tables for clarifications and source data.

Table 1

METEOROLOGICAL DATA FOR 1985

ALAMOSA, COLORADO

LATITUDE: 37°27' N LONGITUDE: 105°52' W ELEVATION: FT. GRND 7536 BARO 07546 TIME ZONE: MOUNTAIN WBAN: 23061

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F:													
Averages													
-Daily Maximum	33.5	39.1	48.5	61.1	67.6	78.6	81.9	80.4	69.1	61.5	43.3	35.5	58.3
-Daily Minimum	1.8	4.1	20.5	26.7	35.1	41.9	48.6	45.5	35.3	27.0	16.6	-0.7	25.2
-Monthly	17.7	21.6	34.5	43.9	51.4	60.3	65.3	63.0	52.2	44.3	30.0	17.4	41.8
-Monthly Dewpt.													
Extremes													
-Highest	47	54	61	71	78	88	90	88	84	74	62	49	90
-Date	18	15	25	16	28	8	7	26	1	6	5	30	JUL 7
-Lowest	-13	-18	3	13	22	32	39	37	15	18	-13	-25	-25
-Date	14	2	31	1	14	27	3	16	30	15	15	13	DEC 13
DEGREE DAYS BASE 65 °F:													
Heating	1462	1209	937	625	415	146	30	66	378	636	1045	1473	8422
Cooling	0	0	0	0	0	9	47	9	0	0	0	0	65
% OF POSSIBLE SUNSHINE													
AVG. SKY COVER (tenths)													
Sunrise - Sunset													
Midnight - Mianight													
NUMBER OF DAYS:													
Sunrise to Sunset													
-Clear													
-Partly Cloudy													
-Cloudy													
Precipitation .01 inches or more	4	2	4	7	6	7	10	4	8	7	7	4	70
Snow, Ice pellets 1.0 inches or more	1	2	1	0	1	0	0	0	0	1	2	1	9
Thunderstorms	0	0	0	3	3	9	9	5	5	0	0	0	34
Heavy Fog, visibility 1/4 mile or less	2	2	0	2	2	1	1	1	1	2	6	6	26
Temperature °F													
-Maximum													
90° and above	0	0	0	0	0	0	3	0	0	0	0	0	3
32° and below	12	9	0	0	0	0	0	0	0	0	5	9	35
-Minimum													
32° and below	31	28	28	23	6	1	0	0	11	24	27	31	210
0° and below	15	12	0	0	0	0	0	0	0	0	5	18	50
AVG. STATION PRESS. (mb)	770.4	768.9	768.0	770.1	771.8	774.5	777.7	776.8	773.8	772.8	767.4	773.1	772.1
RELATIVE HUMIDITY (%)													
Hour 05													
Hour 11 (Local Time)	59	46	41	33	33	31	40	38	45	41	54	63	44
Hour 17													
Hour 23													
PRECIPITATION (inches):													
Water Equivalent													
-Total	0.28	0.28	0.44	0.97	0.37	0.47	1.68	0.91	1.33	2.02	0.68	0.37	9.80
-Greatest (24 hrs)	0.13	0.28	0.27	0.52	0.25	0.23	0.67	0.58	0.43	0.92	0.78	0.35	0.92
-Date	8- 9	22-23	29-30	28-29	13	18-19	28-29	8- 9	20	10-11	PM- 1	9-10	OCT 10-11
Snow, Ice pellets													
-Total	2.8	2.8	6.1	0.8	1.2	0.0	0.0	0.0	0.0	6.0	9.7	6.7	36.1
-Greatest (24 hrs)	1.3	2.8	6.0	0.8	1.2	0.0	0.0	0.0	0.0	6.0	9.2	6.2	9.2
-Date	8- 9	22-23	29-30	26-27	13					31	13-14	9-10	NOV 13-14
WIND:													
Resultant													
-Direction (!!)													
-Speed (mph)													
Average Speed (mph)													
Fastest Obs. 1 Min.													
-Direction (!!)													
-Speed (mph)													
-Date													
Peak Gust													
-Direction (!!)	SW	NW	SW	NW	SW	NW	NE	S	SW	W	SW	SW	W
-Speed (mph)	30	43	47	47	49	51	40	41	43	62	49	37	62
-Date	30	10	27	4	10	13	10	14	17	7	9	8	OCT 7

See Reference Notes on Page 10

Table 2

NORMALS, MEANS, AND EXTREMES

ALAMOSA, COLORADO

LATITUDE: 37°27'N LONGITUDE: 105°52' W ELEVATION: FT. GRND 7536 BARO 07546 TIME ZONE: MOUNTAIN WBAN: 23061

	(a)	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F:														
Normals														
-Daily Maximum		34.2	40.1	48.0	57.8	67.7	78.1	82.0	79.3	73.6	62.9	47.1	36.1	58.9
-Daily Minimum		-2.3	5.4	15.1	23.5	33.1	41.4	48.0	45.4	36.1	24.6	11.3	-0.3	23.4
-Monthly		15.9	22.8	31.6	40.7	50.4	59.8	65.0	62.4	54.9	43.8	29.2	17.9	41.2
Extremes														
-Record Highest	40	62	64	73	79	85	91	93	90	87	81	71	61	93
-Year		1971	1951	1971	1981	1984	1954	1971	1977	1977	1979	1980	1958	JUL 1971
-Record Lowest	40	-50	-35	-20	-6	11	25	34	29	15	-10	-30	-42	-50
-Year		1948	1948	1964	1973	1967	1974	1968	1964	1985	1945	1952	1978	JAN 1948
NORMAL DEGREE DAYS:														
Heating (base 65°F)		1519	1182	1035	732	453	165	40	100	303	657	1074	1457	8717
Cooling (base 65°F)		0	0	0	0	0	9	40	20	0	0	0	0	69
% OF POSSIBLE SUNSHINE														
MEAN SKY COVER (tenths)														
Sunrise - Sunset	33	4.7	4.7	5.1	5.1	5.3	3.9	5.1	4.8	3.8	3.7	4.2	4.4	4.6
MEAN NUMBER OF DAYS:														
Sunrise to Sunset														
-Clear	33	12.8	11.3	10.5	9.8	9.1	13.8	8.8	10.9	15.5	16.7	14.4	14.0	147.6
-Partly Cloudy	33	10.1	9.7	11.4	12.5	14.2	12.2	16.7	13.6	9.6	8.2	9.0	9.7	137.0
-Cloudy	33	8.0	7.2	9.1	7.7	7.7	4.0	5.5	6.5	4.9	6.1	6.6	7.3	80.6
Precipitation														
.01 inches or more	40	4.0	4.2	5.1	4.9	6.1	5.2	9.5	10.3	5.9	4.6	3.8	3.9	67.5
Snow, Ice pellets														
1.0 inches or more	40	1.7	1.7	2.2	1.5	0.5	0.0	0.0	0.0	0.1	0.9	1.4	1.8	11.9
Thunderstorms	20	0.0	0.2	0.2	1.2	6.3	5.8	12.2	12.4	5.0	1.1	0.1	0.0	44.3
Heavy Fog Visibility														
1/4 mile or less	20	3.2	1.8	1.3	0.6	0.6	0.4	0.5	0.9	1.3	0.6	1.6	3.2	16.1
Temperature °F														
-Maximum														
90° and above	40	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.4	0.0	0.0	0.0	0.0	0.9
32° and below	40	12.3	6.3	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.1	3.0	10.5	34.2
-Minimum														
32° and below	40	30.9	28.3	30.6	26.5	13.6	2.0	0.0	0.2	7.9	26.0	29.6	31.0	225.6
0° and below	40	18.1	9.4	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.1	3.8	15.3	48.5
AVG. STATION PRESS.(mb)	6	770.9	769.9	766.5	767.8	771.2	773.6	776.9	777.3	775.2	773.1	770.8	771.0	772.0
RELATIVE HUMIDITY (%)														
Hour 05	35	78	78	74	71	73	75	84	85	81	76	78	77	78
Hour 11	40	60	54	43	33	30	29	39	42	38	38	48	57	43
Hour 17 (Local Time)	35	59	50	37	30	28	25	36	38	33	34	48	58	42
Hour 23	9	82	78	69	59	58	56	68	70	67	65	78	82	69
PRECIPITATION (inches):														
Water Equivalent														
-Normal		0.27	0.26	0.36	0.50	0.70	0.55	1.23	1.13	0.74	0.68	0.35	0.36	7.13
-Maximum Monthly	40	0.75	1.42	1.42	1.60	1.35	2.58	3.50	3.28	1.94	2.37	1.21	1.52	3.50
-Year		1979	1963	1973	1947	1973	1969	1968	1967	1959	1969	1957	1964	JUL 1968
-Minimum Monthly	40	T	T	T	T	0.01	T	0.19	0.21	T	T	T	T	T
-Year		1981	1954	1955	1972	1975	1980	1979	1980	1956	1983	1950	1980	OCT 1983
-Maximum in 24 hrs	40	0.47	1.15	1.05	1.33	0.86	1.04	1.57	0.95	1.82	1.27	0.78	0.93	1.82
-Year		1956	1963	1962	1952	1967	1969	1971	1981	1959	1969	1985	1964	SEP 1959
Snow, Ice pellets														
-Maximum Monthly	40	13.8	16.0	29.2	16.4	13.5	0.2	T		4.2	20.3	19.8	27.7	29.2
-Year		1979	1963	1973	1947	1978	1983	1981		1961	1969	1972	1967	MAR 1973
-Maximum in 24 hrs	40	7.6	11.5	14.0	10.0	8.4	0.2	T		4.2	15.5	9.2	15.8	15.8
-Year		1960	1963	1962	1957	1973	1983	1981		1961	1969	1985	1967	DEC 1967
WIND:														
Mean Speed (mph)	1	6.3	6.1	10.2	11.9	12.1	10.2	8.6	8.1	8.2	7.7	7.1	5.9	8.5
Prevailing Direction														
Fastest Obs. 1 Min.														
-Direction (!!)														
-Speed (MPH)														
-Year														
Peak Gust														
-Direction (!!)	1	SW	NW	E	SW	SW	NW	N	S	NW	W	SW	SW	W
-Speed (mph)	2	30	43	48	62	58	51	51	41	46	52	49	37	62
-Date		1985	1985	1984	1984	1984	1985	1984	1985	1984	1985	1985	1985	OCT 1985

Table 3: Precipitation and Average Temperature

PRECIPITATION (inches) — ALAMOSA, COLORADO

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1956	0.58	0.06	0.19	0.58	0.19	0.16	0.19	1.18	T	0.18	0.09	T	3.40
1957	0.52	0.08	0.26	1.38	1.64	0.21	2.45	0.63	0.01	0.26	1.21	0.01	8.66
1958	0.30	0.15	0.32	0.81	0.38	0.20	0.72	0.72	0.48	0.65	0.26	0.02	5.01
1959	0.24	0.31	0.42	0.58	1.15	0.18	1.09	1.53	1.94	1.78	0.07	0.26	9.55
1960	0.33	0.56	0.10	0.39	0.15	0.65	0.55	0.71	0.26	1.28	0.29	0.58	5.85
1961	0.09	0.23	0.62	1.02	0.70	0.51	0.89	2.03	1.38	1.55	0.60	0.57	10.19
1962	0.08	0.21	1.16	0.11	0.15	0.52	0.49	0.22	0.81	0.32	0.52	0.15	4.74
1963	0.42	1.42	0.25	0.13	0.13	0.69	1.10	1.87	0.15	0.27	0.06	0.04	6.55
1964	0.26	0.27	0.41	0.22	0.50	0.39	0.91	0.73	1.06	T	0.80	1.52	7.07
1965	0.28	0.37	0.52	0.36	0.59	1.77	1.52	0.95	1.59	1.08	0.05	0.76	9.84
1966	0.28	0.23	0.11	0.15	0.30	0.72	0.78	1.42	0.03	0.49	0.10	0.35	4.96
1967	0.07	0.78	0.15	0.58	1.22	0.84	1.78	3.28	0.53	0.42	0.01	1.20	10.86
1968	0.04	0.42	0.21	0.27	0.20	0.06	3.50	2.22	0.41	0.11	0.28	0.38	8.10
1969	0.16	0.12	0.47	0.32	0.49	2.58	1.92	1.31	1.29	2.37	0.11	0.41	11.55
1970	0.06	0.03	0.85	0.54	0.86	0.38	1.35	1.30	1.53	1.09	0.06	0.03	8.08
1971	0.15	0.26	0.03	0.33	1.07	0.08	2.59	1.21	1.45	0.71	0.44	0.45	8.77
1972	0.24	0.09	0.12	T	0.07	0.60	0.80	1.16	1.00	2.16	1.00	0.46	7.70
1973	0.16	0.12	1.42	0.41	1.85	0.69	1.09	0.65	1.06	0.64	0.11	0.19	8.39
1974	0.70	0.08	0.24	0.18	0.09	0.69	1.78	0.72	0.62	0.74	0.15	0.74	6.73
1975	0.38	0.22	0.50	0.33	0.01	0.65	0.51	0.90	1.47	0.78	0.43	0.04	6.22
1976	0.05	0.33	0.39	0.50	0.77	0.07	1.43	1.22	0.67	0.51	0.20	0.07	6.21
1977	0.25	0.27	0.14	0.82	0.35	1.17	2.20	0.63	1.15	0.08	0.63	0.17	7.86
1978	0.33	0.07	0.13	0.20	1.59	1.23	1.04	0.27	0.19	0.51	0.90	0.81	7.27
1979	0.75	0.09	0.29	0.42	0.94	0.72	0.19	1.61	0.22	0.19	0.50	0.55	6.47
1980	0.32	0.31	0.65	1.48	1.21	T	0.54	0.21	0.46	0.52	0.01	T	5.71
1981	T	0.13	0.62	0.01	0.99	0.95	1.43	1.94	1.40	0.34	0.78	0.33	8.92
1982	0.07	0.49	0.40	0.37	0.57	0.22	0.51	0.58	1.85	0.19	0.25	0.49	5.99
1983	0.21	0.25	0.85	0.32	0.87	1.23	0.50	0.87	0.38	T	0.78	0.99	7.25
1984	0.14	0.28	1.12	0.49	0.18	0.55	0.74	1.07	0.36	1.48	0.10	0.59	7.10
1985	0.28	0.28	0.44	0.97	0.37	0.47	1.68	0.91	1.33	2.02	0.68	0.37	9.80
Record Mean	0.25	0.25	0.39	0.50	0.67	0.59	1.16	1.13	0.76	0.69	0.34	0.37	7.10

AVERAGE TEMPERATURE (deg. F) — ALAMOSA, COLORADO

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1956	23.0	20.2	32.4	39.9	53.3	63.1	63.8	60.2	56.9	44.1	25.2	20.1	41.9
1957	22.2	32.2	32.9	39.0	47.1	59.8	65.1	62.9	53.5	43.6	21.7	19.9	41.7
1958	16.8	28.6	30.6	38.0	53.8	62.4	64.4	64.9	56.6	44.0	29.7	26.3	43.0
1959	17.2	23.1	30.1	41.4	50.7	62.3	64.5	63.6	54.0	42.8	30.5	24.0	42.0
1960	9.4	11.9	33.5	42.9	49.2	61.0	64.2	63.6	56.4	43.6	32.7	14.6	40.2
1961	12.9	25.2	32.6	40.6	51.6	60.8	63.8	63.5	53.0	42.8	28.7	11.9	40.6
1962	15.2	30.2	26.8	44.4	50.2	59.0	63.0	61.8	54.9	45.7	33.6	25.2	42.5
1963	12.5	21.9	32.3	42.3	53.4	58.7	66.5	63.7	57.8	48.9	31.0	18.4	42.3
1964	13.2	16.0	25.0	38.2	51.5	58.8	66.8	61.9	55.2	44.9	25.9	6.7	38.7
1965	16.6	18.4	28.1	41.8	49.1	57.5	65.0	60.7	53.2	45.2	34.8	22.4	41.1
1966	13.0	16.0	33.2	41.4	52.5	59.1	67.5	62.6	55.2	43.8	34.5	20.9	41.7
1967	18.9	23.0	37.2	41.8	48.7	57.6	65.2	60.7	54.3	43.4	32.5	11.6	41.2
1968	7.9	22.6	33.3	37.3	48.7	60.1	63.6	60.6	52.5	44.9	28.5	16.2	39.7
1969	24.0	23.5	27.9	43.2	53.2	56.8	66.4	65.9	54.9	38.6	30.3	19.6	42.0
1970	17.0	28.6	28.6	36.2	51.4	57.5	65.8	64.5	52.5	39.5	31.3	22.9	41.3
1971	19.1	22.3	31.1	40.1	47.3	59.2	63.8	63.0	52.7	42.2	28.1	15.8	40.4
1972	17.4	27.9	37.3	42.7	49.9	61.0	64.1	62.2	56.0	46.6	18.6	10.2	41.2
1973	5.6	16.2	31.6	36.2	50.2	59.0	63.4	62.1	53.4	44.3	33.5	20.7	39.7
1974	11.2	14.9	37.7	38.8	53.2	60.1	63.9	59.3	53.5	45.5	29.2	13.2	40.0
1975	6.8	22.0	31.8	37.3	47.4	57.7	64.7	61.6	54.2	42.4	26.3	16.9	39.1
1976	13.8	29.8	32.3	42.4	50.8	57.9	64.9	60.5	54.3	39.7	28.0	13.3	40.6
1977	13.2	23.5	29.3	43.0	50.6	61.4	65.3	63.9	56.7	44.8	33.0	24.5	42.4
1978	22.8	25.3	35.9	43.3	48.1	60.8	65.4	60.2	55.5	44.4	32.6	8.0	41.8
1979	6.0	10.6	30.4	41.4	50.7	58.0	63.6	61.1	55.9	45.7	21.0	18.5	38.6
1980	20.8	29.4	30.2	38.2	48.5	61.9	67.0	61.9	56.0	40.4	30.4	28.1	42.7
1981	23.7	25.6	33.2	45.5	50.1	62.6	65.9	61.9	56.2	43.6	34.6	20.7	43.7
1982	17.8	22.2	33.2	40.2	48.5	57.2	64.1	64.2	55.6	41.4	30.8	20.9	41.4
1983	20.3	26.2	34.2	36.3	46.8	56.5	65.3	64.7	57.7	43.2	27.7	13.8	41.0
1984	1.6	10.8	27.1	38.1	55.2	58.6	65.9	63.2	56.3	40.7	29.9	20.1	39.0
1985	17.7	21.6	34.5	43.9	51.4	60.3	65.3	63.0	52.2	44.3	30.0	17.4	41.8
Record Mean	16.1	22.5	31.6	40.9	50.3	59.6	65.0	62.4	55.1	43.7	29.4	18.4	41.3
Max	34.3	40.3	47.9	58.2	67.6	77.9	81.9	79.3	73.7	62.6	47.2	36.6	59.0
Min	-2.1	4.8	15.3	23.6	33.1	41.3	48.0	45.5	36.5	24.7	11.5	0.3	23.5

Table 4: Heating and Cooling Degree Days

HEATING DEGREE DAYS Base 65 deg. F   ALAMOSA, COLORADO

SEASON	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956-57	38	143	236	641	1185	1364	1316	910	990	771	549	161	8324
1957-58	21	72	339	655	1291	1393	1490	1012	1060	801	341	80	8555
1958-59	33	37	245	643	1053	1193	1475	1167	1077	703	437	91	8154
1959-60	29	51	325	680	1028	1265	1719	1533	968	657	484	124	8863
1960-61	41	56	254	657	964	1554	1607	1106	996	728	407	120	8490
1961-62	57	53	354	680	1080	1644	1539	969	1178	614	452	182	8802
1962-63	67	101	299	591	938	1228	1625	1205	1011	673	353	166	8277
1963-64	11	53	209	493	1014	1437	1601	1413	1234	800	412	180	8857
1964-65	8	107	289	621	1166	1807	1495	1299	1136	689	484	219	9320
1965-66	31	128	348	607	899	1316	1604	1364	983	700	383	171	8534
1966-67	8	86	286	651	910	1362	1423	1172	855	690	498	217	8158
1967-68	23	135	313	663	970	1651	1768	1227	975	823	499	147	9194
1968-69	49	134	370	616	1087	1509	1263	1155	1144	648	361	240	8576
1969-70	9	25	295	812	1036	1402	1485	1013	1123	857	414	236	8707
1970-71	11	40	368	783	1002	1298	1417	1188	1042	738	543	170	8600
1971-72	64	63	361	698	1098	1518	1467	1071	855	666	462	111	8434
1972-73	55	97	267	561	1384	1695	1839	1360	1028	859	449	188	9782
1973-74	74	91	342	633	937	1366	1662	1394	839	778	359	173	8648
1974-75	41	170	339	595	1067	1601	1802	1198	1023	826	537	212	9411
1975-76	26	102	319	695	1157	1485	1579	1014	1010	672	432	208	8699
1976-77	24	132	314	779	1104	1596	1598	1155	1097	655	440	104	8998
1977-78	19	51	246	621	951	1252	1302	1103	900	647	516	126	7734
1978-79	18	141	278	632	966	1762	1827	1518	1069	704	438	203	9556
1979-80	57	127	267	590	1312	1438	1363	1029	1071	798	504	107	8663
1980-81	5	102	263	757	1031	1136	1274	1097	979	576	458	102	7780
1981-82	14	108	256	656	904	1366	1457	1192	977	736	508	230	8404
1982-83	59	47	275	724	1016	1361	1380	1080	946	855	555	249	8549
1983-84	28	35	213	674	[illegible]	1582	1954	1587	1166	799	[illegible]	198	9625
1984-85	[illegible]	56	252	748	1051	1384	1462	1209	937	625	415	146	8296
1985-86	30	66	378	635	1045	1473							

COOLING DEGREE DAYS Base 65 deg. F   ALAMOSA, COLORADO

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
1969	0	0	0	0	0	1	58	58	0	0	0	0	117
1970	0	0	0	0	0	18	45	32	0	0	0	0	95
1971	0	0	0	0	0	3	35	8	0	0	0	0	46
1972	0	0	0	0	0	1	36	18	0	0	0	0	55
1973	0	0	0	0	0	14	30	8	0	0	0	0	52
1974	0	0	0	0	0	31	13	0	0	0	0	0	44
1975	0	0	0	0	0	0	24	4	0	0	0	0	28
1976	0	0	0	0	0	1	25	0	0	0	0	0	26
1977	0	0	0	0	0	2	36	25	2	0	0	0	65
1978	0	0	0	0	0	8	39	0	0	0	0	0	47
1979	0	0	0	0	0	0	21	13	0	0	0	0	34
1980	0	0	0	0	0	22	76	12	0	0	0	0	110
1981	0	0	0	0	0	35	47	19	0	0	0	0	101
1982	0	0	0	0	0	0	38	27	0	0	0	0	65
1983	0	0	0	0	0	4	43	30	1	0	0	0	78
1984	0	0	0	0	2	1	45	8	0	0	0	0	56
1985	0	0	0	0	0	9	47	9	0	0	0	0	65

Table 5: Snowfall

SNOWFALL (inches) ALAMOSA, COLORADO

SEASON	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956-57	0.0	0.0	0.0	0.0	3.0	0.4	3.6	0.8	4.0	14.2	0.3	0.0	26.3
1957-58	0.0	0.0	0.0	T	16.5	0.3	6.0	1.5	3.3	8.5	0.0	0.0	36.1
1958-59	0.0	0.0	0.0	0.2	4.3	0.4	5.7	6.9	10.2	10.0	1.3	0.0	39.0
1959-60	0.0	0.0	2.2	12.8	2.4	6.3	9.8	11.3	1.7	3.6	T	0.0	50.1
1960-61	0.0	0.0	0.0	6.1	0.3	8.4	2.1	6.0	12.5	14.2	1.0	0.0	50.6
1961-62	0.0	0.0	4.2	13.3	6.4	8.8	1.6	4.7	16.1	T	T	0.0	55.1
1962-63	0.0	0.0	0.0	0.2	6.7	1.6	4.2	16.0	3.6	2.3	0.0	0.0	34.6
1963-64	0.0	0.0	0.0	0.7	1.2	0.9	5.4	6.3	8.6	1.5	0.0	0.0	24.6
1964-65	0.0	0.0	0.0	0.0	13.6	27.0	2.7	8.4	9.1	4.5	0.5	0.0	65.8
1965-66	0.0	0.0	0.0	0.5	0.3	10.8	4.7	5.8	3.3	3.6	0.0	0.0	29.0
1966-67	0.0	0.0	0.0	4.8	0.3	4.9	1.2	12.4	4.0	6.4	1.2	T	35.2
1967-68	0.0	0.0	0.0	4.3	0.3	27.7	1.3	6.4	4.8	5.0	T	0.0	49.8
1968-69	0.0	0.0	0.0	0.2	2.8	6.3	3.5	2.4	12.5	0.9	0.9	0.0	29.5
1969-70	0.0	0.0	0.0	20.3	1.7	7.6	1.5	1.0	19.1	8.7	0.8	0.0	60.7
1970-71	0.0	0.0	1.8	14.2	0.8	1.2	3.1	7.7	0.8	4.1	7.4	0.0	41.1
1971-72	0.0	0.0	1.2	T	7.7	11.0	6.9	2.0	4.4	T	T	0.0	33.2
1972-73	0.0	0.0	0.0	14.3	19.8	7.6	3.9	3.6	29.2	6.9	12.2	0.0	97.5
1973-74	0.0	0.0	1.0	8.1	1.1	3.1	12.4	1.9	4.3	5.5	0.0	0.0	37.4
1974-75	0.0	0.0	T	0.2	3.3	10.0	7.0	4.2	6.5	4.3	T	T	35.5
1975-76	0.0	0.0	0.0	0.5	5.9	0.8	0.8	3.4	6.4	2.1	0.0	0.0	19.9
1976-77	0.0	0.0	T	6.5	2.6	2.1	3.4	5.7	2.5	7.1	T	0.0	29.9
1977-78	0.0	0.0	0.0	0.0	0.4	3.9	4.4	0.9	1.0	0.1	13.5	0.0	24.2
1978-79	0.0	0.0	0.0	0.2	4.1	12.1	13.8	0.9	3.0	1.8	2.4	T	38.3
1979-80	0.0	0.0	0.0	1.1	5.3	6.8	5.0	2.1	6.3	8.3	2.3	0.0	37.2
1980-81	0.0	0.0	0.0	2.2	0.1	T	T	1.6	6.0	0.0	T	0.0	10.1
1981-82	T	0.0	0.0	T	5.4	4.9	1.2	6.9	2.9	1.4	2.1	0.0	24.8
1982-83	0.0	0.0	0.0	2.1	2.2	6.0	3.4	5.1	10.2	3.5	0.5	0.2	33.2
1983-84	0.0	0.0	0.0	0.0	8.1	11.2	1.4	2.8	10.6	2.8	T	0.0	36.9
1984-85	0.0	0.0	0.0	6.7	0.9	5.6	2.8	2.8	6.1	0.8	1.2	0.0	26.9
1985-86	0.0	0.0	0.0	6.0	9.7	6.7							
Record Mean	T	0.0	0.3	3.2	4.1	5.8	4.3	4.4	6.3	4.5	1.7	T	34.6

REFERENCE NOTES FOR TABLES 1-5

GENERAL
T - Trace Amount
Blank entries denote missing/unreported data
# indicates a station or instrument relocation.

SPECIFIC
Page 5
PM - includes last day of previous month

Page 6
(a) - length of record in years, although individual months may be missing
* less than .05
Normals - based on the 1951-1980 record period
Extremes - dates are the most recent occurrence
Wind direction - numerals show tens of degrees clockwise from true north
"00" indicates calm
Resultant directions are given to whole degrees

EXCEPTIONS
Page 5
1. Thunderstorms and heavy fog are through 1953 and may be incomplete, due to part-time operations
2. Mean wind speed is for 1974
3. Mean sky cover, and days clear-partly cloudy=cloudy are through 1980

Pages 7 and 9
Record means are through the current year,
Beginning in 1946 for temperature
1946 for precipitation
1946 for snowfall

TRANSPORTATION COSTS

TRANSPORTATION COSTS

The SLV is serviced by both the railroad and commercial motor carrier. Additionally, the SLV is geographically situated within approximately 200 miles from both Albuquerque, New Mexico and Denver, Colorado, both major U.S. cities.

An analysis of transportation costs was undertaken as part of an earlier study (Stuart and Davis, 1986). In this study rates were compared between railroad and commercial motor carrier. Table 6 gives single car rates for both the Denver and Rio Grande Western and San Luis Valley Central Railroads. Table 7 includes data for the Burlington Northern railroad and commercial motor carriers. These data were used for comparison only by Stuart and Davis (pp. 17-19). These bids were accurate April 3, 1986 and require periodic updating.

In order to compare the rates Stuart and Davis define the following terms (IBID., pp. 17-18).

Railroad:

Rate Bids:

Rate bids are received from the railroad freight agent. These bids are generated by the local railroad agent who will contact the railroad agents from the area to be shipped to. These agents will give a bid of their revenue requirements that will then be added on to the written bid received by the consumer. This bid will include the mechanical protective service charge, which is a form of insurance for the consumer and his products. These bids are in effect for one year.

Car Lot:

A car lot is a weight measure equaling 48,000 pounds. The payload of a car load is 120,000 pounds. All cars will be refrigerated due to the nature of the product.

The railroad is restricted to a maximum of 25 cars to be coming out of the SLV at one time due to the 7 percent grade on La Veta Pass.
All bids received are on a single car basis due to the limited number of cars coming out of the SLV area.

Commercial Motor Carrier:

The bids received from the commercial motor carriers will be on a much more competitive basis and will be effective for a much shorter time span. They will be received from the carriers of the management's choice. The effective payload of the motor carriers will be 42,000 pounds.

Table 6

D&RGW and SLV Central Railroad Rates for Given Destinations

Denver and Rio Grande Western Railroad

City of Origin: Monte Vista, Colorado

Destination	Single Car Rate
Phoenix, Arizona	$ 1,900
Los Angeles, California	$ 1,900
Denver, Colorado	$ 1,000
Miami, Florida	$ 4,456
Atlanta, Georgia	$ 3,260
Albuquerque, New Mexico	(No rate published)
New Orleans, Louisiana	$ 3,300
Dallas, Texas	$ 1,830
El Paso, Texas	$ 1,600
Houston, Texas	$ 2,300
San Antonio, Texas	$ 2,115

San Luis Valley Central Railroad

City of Origin: Monte Vista, Colorado

Destination	Single Car Rate
Phoenix, Arizona	$ 1,900
Los Angeles, California	$ 2,000
Denver, Colorado	(No rate published)
Miami, Florida	$ 4,530
Atlanta, Georgia	$ 3,225
Albuquerque, New Mexico	(No rate published)
New Orleans, Louisiana	$ 3,156
Dallas, Texas	$ 1,800
El Paso, Texas	$ 1,821
Houston, Texas	$ 2,400
San Antonio, Texas	$ 2,175

Table 7

Burlington Northern Railroad and Commercial
Motor Carrier Rates for Given Destinations

Burlington Northern Railroad

City of Origin: Moscow< Idaho

Destination	Single Car Rate:
Phoenix, Arizona	$ 3,300
Los Angeles, California	(No rate published)
Denver, Colorado	$ 2,711
Miami, Florida	$ 5,350
	$ 6,072*
Atlanta, Georgia	$ 4,568
Albuquerque, New Mexico	$ 3,815
New Orleans, Louisiana	(No rate published)
Dallas, Texas	$ 3,444
El Paso, Texas	$ 4,016
Houston, Texas	$ 4,242
San Antonio, Texas	$ 4,622

NOTE: *denotes change in stated rate due to different routing of the rail cars

Commercial Motor Carrier

City of Origin: Monte Vista, Colorado

Destination City	Published Rate:
Phoenix, Arizona	$ 880.00
Los Angeles, California	$ 1,130.40
Denver, Colorado	$ 440.00
Miami, Florida	$ 2,404.80
Atlanta, Georgia	$ 1,686.00
Albuquerque, New Mexico	(No rate published)
New Orleans, Louisiana	$ 440.00
Dallas, Texas	$ 847.20
El Paso, Texas	$ 660.00
Houston, Texas	$ 1,132.80
San Antonio, Texas	$ 992.40

WATER QUALITY AND

WASTE TREATMENT

WATER QUALITY AND WASTE TREATMENT

Five major alternatives exist for handling potato processing waste (Loftis, 1986). These include:

"1. Discharge via sewer lines to municipal waste treatment.
2. Pre-treatment via aerated lagoon and discharge to municipal sewer.
3. Land application through an irrigation system.
4. Centrifuging to recover starch.
5. Enzymatic conversion of starch to sugars." (IBID., p. 1)

Alternatives 4 and 5 require additional capital investment and a market for the recovered product (IBID., p. 2). Alternatives 4 and 5 are recovery techniques.

Alternative 3, land application through sprinkler systems, is inexpensive, poses no health or odor problems, yet requires a disposal permit.

Alternative 2, pretreatment in aerobic lagoons is inexpensive and may be used to reduce the biochemical oxygen demand of the waste prior to the discharge into sanitary sewers. This would result in a lower municipal waste treatment cost (IBID., p. 2). Aeration in the lagoon(s) is required to reduce or avoid unwanted odor problems (IBID.).

Alternative 1 is preferred. With this alternative there are no additional investment costs. An approval from municipal waste treatment authorities would be required.

All the alternatives are viable. Overall the additional investment in waste treatment is minimal. No water quality problems are foreseen (IBID., p. 3).

SURVEY OF AREA

POTATO GROWERS

SURVEY OF AREA POTATO GROWERS

Two-hundred ninety-seven (297) potato growers were queried during the month of June 1986, in order to determine their support of a potato processing facility in the SLV. Twenty-two percent (22 percent) of the instruments were returned for analysis (N = 64).

A full 82.8 percent of the growers who responded (53 growers) indicated support for a potato processing facility. The growers said they would commit 6,755 existing potato acreage in support of a potato processing facility, and another 2,030 acres of new potato acreage. Based upon the survey, 8,785 acres are available to be used for the processing facility (Thompson, 1986).

It is the opinion of Mr. Wayne D. Thompson (manager, SLV Potato Administrative Committee) that "potato acreage required to support a processor is available" (IBID.). The survey results indicate concurrence with Mr. Thompson.

SAN LUIS VALLEY AREA

LABOR SUPPLY AND PROFILE

SAN LUIS VALLEY AREA LABOR SUPPLY AND PROFILE

A substantial labor potential exists for agricultural processing (Stump, 1987). The SLV has a sizable pool of labor that has occupational skills that are compatible with the potato processing industry (IBID).

Educational and Training Resources

Educational and training resources are available through a variety of institutions including the San Luis Valley Area Vocational School, Job Service recruitment assistance, subsidized training through the Job Training Partnership Act, Colorado FIRST payments for direct training costs and Adams State College (1986-1987 enrollment of 2,229). For a more in-depth analysis of resources for education, training and recruitment, refer to the San Luis Valley Report on Labor Resources (Stump, 1987, pp. 65-69).

Labor Force Estimates

The following section on labor force estimates is taken directly from the Stump Study (1987). Tables and figures are adapted and modified for the purpose of readability.

Valley Comparison to State and National Markets

County unemployment rates that double or triple those of the state and nation are the first indicator of labor surplus conditions and a competitive labor market in the SLV. Table 8 shows that county rates in 1986 averaged 14.3 percent, compared with 7.4 percent for Colorado and 7.0 percent for the nation. Conejos and Costilla counties exceeded 20 percent. Data in other tables will show that this worker surplus is persistent over time, and that the current availability of labor has increased still further.

Data arrangements in Table 8 also compare the size of the labor force relative to the number of persons in the total population and work-age population 16 or more years old. Total population for the valley in 1986 as estimated by the source was 40,894. Work-age population was estimated at 29,807, which would include youth attending school and retired persons. An estimated 16,824 residents in the work-age population, or 56.4 percent, participated in the labor force as workers or as unemployed persons.

Valley percentages of labor force participation lower than the state and nation is attributed to a relatively larger number of "discouraged workers", representing persons who have given up looking for work because they have not succeeded in finding jobs or believe no jobs are available. A sizable youth segment of the work-age population is also leaving the valley to join labor forces in other areas that have more job opportunities.

Sources of Labor Force Data

Labor force estimates for SLV counties used in this report were prepared by the state's Labor Market Information Section (LMIS), and were taken from its monthly Colorado Labor Force Review publication. These are the official labor force data for Colorado, and are a widely used first-reference source for studying the labor conditions

of an area from the standpoint of the total numbers of its persons who are employed and unemployed. They also provide an excellent source for making time comparisons and comparing county differences.

To prepare these estimates, LMIS uses raw data supplied through the Colorado Unemployment Insurance program, which includes information reported by covered establishments on the number of employees on their payrolls, and data on persons filing unemployment claims. The data collected from participating employers in the valley represents about 80 percent of the total employment,[1] and a standard methodology is used to estimate the balance of the non-covered segments.

Similar steps are required to develop an unemployment total built on the number of claims filed, which require estimates to be made of persons who don't file, persons who have exhausted compensation but are still unemployed, and other persons who are unemployed such as new and re-entrants to the labor force. An adjustment in the figures is made to show the labor force status of persons by their county of residence, rather than by their place of work.

Different data sources are required to obtain information about personal characteristics, occupational skills,and other details that are covered in other sections of this report.

Annual Average Labor Force Changes 1983-1986

In order to make a time comparison of major labor force components, annual average estimates for 1986 are presented again in Table 9 along with three past years of data. The valley as a whole is showing a slight increase in the labor force total since 1983, which reflects a net loss of 287 employed workers and an offsetting gain of 446 persons added to the unemployment rolls. The current unemployment rate of 14.3 percent is higher than the 11 percent rates of the three previous years, indicating a trend toward higher unemployment. The average unemployment number of 2,399 for 1986 stands 25.1 percent higher than 1985, and 22.8 percent higher than 1983. Colorado also experienced a large unemployment gain from 1985-1986.

Monthly Labor Force Estimates

Table 10 presents data for individual months in 1986 and three months of 1987 to compare seasonal changes and more recent developments. Starting with December 1986, extremely high rates are being shown as an extension of the high unemployment trend affecting the valley and Colorado. In March 1987 the valley's rate had climbed to 19.1 percent, indicating that almost one-fifth of its labor force was available for work. The single-month estimate for March numbered 3,213 persons, representing 911 more persons than March of last year, and 814 more than the 1986 unemployment average.

County Trends

A county-by-county view of the SLV brings out even higher rates of unemployment. In March 1987, Mineral, Costilla, Conejos and Saguache counties ranked as the top four in Colorado, with respective rates of 29.1 percent, 27.2 percent, 25.7 percent, and 22.4 percent. Rio Grande and Alamosa showed respective rates of

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[1]Labor Market Information Section, Colorado Labor Force Review, May 1987 release.

20.1 percent and 13.0 percent, which may be setting records for these counties. The average for the state's 63 counties was 9.8 percent on an unadjusted basis, and 9.1 percent seasonally adjusted.[2]

In March 1987, the county with the highest number of persons unemployed was Rio Grande (1,057), followed by Alamosa (816), Conejos (627), Saguache (339), Costilla (276), and Mineral (98). Annual average 1986 unemployment numbers were 691, 596, 518, 302, 250, and 42, in the same order of county ranking.

Table 9 shows Rio Grande County gaining employment while all the others lost workers. This is attributed to gold mining operations in the Summitville area, which hired large numbers of workers, and a generally sluggish or mixed economy in the other counties. Mineral County had the greatest percentage losses in both employment and labor force, reflecting an exit of workers following the silver mine layoffs in Creede. Alamosa County experienced minor employment losses, but had the largest percentage gains in the unemployment number. This may be indicating that unemployment filers who were former Valley residents are returning to the area after being laid off from jobs in other parts of the state.

Personal Characteristics

A different series of estimates prepared by the Labor Market Information Section are being presented in Table 11 to show current data on the number of males and females and ethnicity in the labor force. The labor force total for 1987 is projected to be 17,810, and is comprised of 61.7 percent males and 38.3 percent females.

According to the data source, Hispanics comprise 41.4 percent of the labor force, but are representing 56.4 percent of the unemployment pool and have unemployment rates significantly higher than other groups. No differences are shown between the two groups on the percentage of males and females in the labor force.

A review of untabulated data for Colorado as a whole [3] showed 41.6 percent females in the labor force, which may be reflecting a relatively greater number of job opportunities for women than exist in the valley.

Underemployment

The concept of underemployment is useful for estimating additional labor potential originating from employed workers in the labor force who are likely to be available for jobs providing higher than poverty level incomes for their families. Persons identified as underemployed in a 1976 study of the local labor force [4] included individuals and family members with income at or below poverty levels who were employed either full-time or part-time. Poverty was determined by official income thresholds that increased relative to the size of a worker's family.

The study found 1,419 persons underemployed, representing about 10 percent of employment which totalled 14,381 at that time. The 1986 employment total of 14,434

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[2] IBID.

[3] Labor Market Information Section, Colorado Annual Planning Information Report, Program Year 1987.

[4] San Luis Valley Council of Governments, San Luis Valley Labor Force Survey, October 1976.

ten years later is at the same level, suggesting that a similar number of underemployed persons might also hold true. Based on the assumption that the relationship between total workers and those who are underemployed has not changed significantly, we were able to approximate a current underemployment number of 1,443 by applying 10 percent to 1986 total employment.

Discouraged Workers

Discouraged workers are defined as persons not in the labor force who want a job but are not looking for work because they believe jobs are not available. We expect this number to be high in the valley due to the lack of job opportunities, but there are no official reports that provide this information. Nationwide, discouraged workers represented 1.7 percent of all persons 16+ who did not participate in the labor force in 1986.[5] The 1976 study for the SLV showed a higher percentage of 7 percent in this category. Current work-age population not in the labor force as calculated from Table 8 is 10,983. By assuming a similar percentage to 1976, we can conservatively approximate the number of discouraged workers in the valley at 769 by applying 7 percent to 1986 work-age population not in the labor force.

Labor Pools in Report Compared to Total Unemployment Number

The official estimates serve as a standard of comparison for the various labor pools and potential sources of labor that are examined in other parts of the report. Exhibit A summarizes in graphic form the estimates for each labor pool in order to compare them directly to the total unemployment number.[6]

In some instances these labor pools partially overlap with the official unemployment number; in other cases they represent mutually exclusive groups which the official methodology did not take into account. The following summarizes the extent of overlap in each labor pool:

- Total unemployment -- The average number of persons unemployed in any one month of 1986.
- Job Service labor pool -- Includes many persons who are filing claims and are being counted in the unemployed number.
- Farm family potential plant workers -- Survey results showed that 13 percent were registered with the Job Service. Most of the persons in this pool are working, and would not be counted as unemployed.
- JTPA trainees -- Most of these persons were unemployed prior to receiving training. While training is taking place, a fewer number are probably being counted.

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[5] U.S. Department of Labor, Bureau of Labor Statistics, Employment in Perspective: Minority Workers, Report 737, Fourth Quarter 1986.

[6] Data in the exhibit reflect a wide variety of data sources that are recent but may reflect different time frames.

- Annual outmigration, 20-29 age group -- Probably not counted in unemployment number.

- College and Vocational School students -- Partial accounting in unemployment number.

- High school seniors -- Partial accounting in unemployment number at the time of graduation.

- Migrant/seasonal farm workers -- Partial accounting in unemployment number.

- Underemployment -- Few of these persons are likely to be counted in the unemployment number. Some are probably registered with the Job Service.

- Discouraged workers -- Few of these persons are likely to be counted in the unemployment number.

While our research efforts succeeded in illuminating a much broader range of labor possibilities than the official estimates can provide, they are still not exhaustive of all the valley's labor potential for the processing industry. The list of labor pools in the graph represent only those for which we were able to find a reliable data source or an acceptable basis for making an approximation.

Table 8: Population and Labor Force Comparisons, 1986

(County, Region, Colorado, United States)

	1986 Total population[1]	Work-age pop. 16+[2]	1986 Annual average labor force[3] L.F. total	% pop. 16+	Employment	Unemployment Number	Unemployment %
Alamosa	12,730	9,242	5,956	64.4	5,369	596	10.0
Conejos	8,221	5,613	2,457	43.8	1,939	518	21.1
Costilla	3,347	2,562	1,041	40.6	791	250	24.0
Mineral	736	660	293	44.4	251	42	14.3
Rio Grande	11,811	8,607	5,473	63.6	4,782	691	12.6
Saguache	4,049	2,943	1,604	54.5	1,302	302	18.8
San Luis Valley	40,894	29,807	18,824	56.4	14,434	2,399	14.3
Colorado (thousands)	3,267.1	2,525.7[4]	1,694.0	67.7	1,568.0	126.0	7.4
United States (thousands)	236,009.0[5]	180,587.0[6]	117,834.0[6]	65.2	109,597.0[6]	8,237.0[6]	7.0

SOURCE: [1] County/State: Colorado Department of Local Affairs, Division of Local Government, Demographic Section, Conservation Trust Fund, Prelim. July 1, 1986 Population Estimates (released 4/22/87).

[2] County: See source listed in Table 7.

[3] County/State: Colorado Department of Labor and Employment, Office of Information Resources, Labor Market Information Section, Colorado Labor Force Review Supplement, 1987.

[4] Labor Market Information Section, Colorado Annual Planning Information Report, Program Year 1987.

[5] U.S. Bureau of Census, Population Profile of the United States, 1984-1985, Series P-23, No. 150. Represents total civilian population in 1985.

[6] U.S. Bureau of Labor Statistics, Employment and Earnings, January 1987. Household data annual averages for 1986.

Table 9: Annual Average Labor Force Changes, 1983-1986

(County, Region, and State Comparisons)

	1983	1984	1985	1986	1983-86 % change	1985-86 % change
Alamosa						
Total Labor Force	5,832	5,925	5,890	5,965	2.3	1.3
Employment	5,411	5,428	5,438	5,369	-0.8	-1.3
Unemployment	421	497	452	596	41.6	31.9
% Unemployment	7.2	8.4	7.7	10.0		
Conejos						
Total Labor Force	2,651	2,619	2,532	2,457	-7.3	-3.0
Employment	2,175	2,159	2,103	1,939	-10.9	-7.8
Unemployment	476	460	429	518	8.8	20.7
% Unemployment	18.0	17.6	16.9	21.1		
Costilla						
Total Labor Force	989	989	1,017	1,041	5.3	2.4
Employment	806	803	820	791	-1.9	-3.5
Unemployment	183	186	197	250	36.6	26.9
% Unemployment	18.5	18.8	19.4	24.0		
Mineral						
Total Labor Force	461	405	348	293	-36.4	-15.8
Employment	394	375	276	251	-36.3	-9.1
Unemployment	67	30	72	42	-37.3	-41.7
% Unemployment	14.5	7.4	20.7	14.3		
Rio Grande						
Total Labor Force	5,006	4,885	5,079	5,473	9.3	7.8
Employment	4,479	4,386	4,570	4,782	6.8	4.6
Unemployment	527	499	509	691	31.1	35.8
% Unemployment	10.5	10.2	10.0	12.6		
Saguache						
Total Labor Force	1,735	1,681	1,630	1,604	-7.6	-1.6
Employment	1,456	1,452	1,372	1,302	-10.6	-5.1
Unemployment	279	229	258	302	8.2	17.1
% Unemployment	16.1	13.6	15.8	18.8		
San Luis Valley						
Total Labor Force	16,674	16,504	16,496	16,833	1.0	2.0
Employment	14,721	14,603	14,547	14,431	-1.9	-0.8
Unemployment	1,953	1,901	1,917	2,399	22.8	25.1
% Unemployment	11.7	11.5	11.6	14.3		
Colorado (thousands)						
Total Labor Force	1,669.0	1,714.0	1,719.0	1,694.0	1.5	-1.5
Employment	1,558.0	1,617.0	1,618.0	1,568.0	0.6	-3.1
Unemployment	111.0	97.0	101.0	126.0	13.5	24.8
% Unemployment	6.7	5.6	5.9	7.4		

SOURCE: Labor Market Information Section, Colorado Labor Force Review Data Supplement, 1987.

Table 10: Monthly Labor Force Estimates, January 1986 - March 1987

(County and Region)

	1986												1987		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar*
Labor Force															
Alamosa	5,794	5,870	5,918	6,051	6,078	5,829	5,907	5,302	5,722	6,143	6,022	6,088	6,180	6,168	6,258
Conejos	2,486	2,498	2,488	2,453	2,442	2,544	2,605	2,674	2,545	2,464	2,383	2,373	2,440	2,443	2,443
Costilla	970	1,001	1,024	1,021	1,002	1,026	1,036	1,013	1,015	995	961	995	973	1,012	1,013
Mineral	357	342	339	363	360	363	363	350	335	343	334	278	306	318	337
Rio Grande	4,466	4,569	5,034	5,183	5,440	5,683	5,845	5,946	5,652	5,478	5,486	4,993	5,178	5,162	5,247
Saguache	1,383	1,418	1,467	1,516	1,575	1,763	1,886	1,930	1,575	1,506	1,489	1,477	1,465	1,491	1,515
San Luis V.	15,456	15,698	16,270	16,587	16,897	17,213	17,842	17,715	16,955	17,030	16,675	16,204	16,542	16,624	16,823
Employment															
Alamosa	5,229	5,274	5,336	5,457	5,468	5,274	5,335	5,251	5,251	5,652	5,461	5,447	5,390	5,396	5,452
Conejos	1,854	1,900	1,931	1,977	2,042	2,133	2,134	2,106	2,093	2,072	1,936	1,828	1,762	1,781	1,816
Costilla	738	746	755	779	793	814	809	798	801	802	754	746	713	716	737
Mineral	312	306	305	314	310	313	315	313	307	306	300	243	234	232	239
Rio Grande	3,887	4,026	4,471	4,629	4,906	5,055	5,049	5,061	4,970	4,932	4,768	4,287	4,157	4,166	4,190
Saguache	1,142	1,183	1,220	1,272	1,351	1,449	1,474	1,424	1,422	1,398	1,248	1,189	1,107	1,143	1,176
San Luis V.	13,161	13,435	13,968	14,428	14,890	15,038	15,116	14,953	14,844	15,162	14,467	13,740	13,363	13,434	13,610
Unemployment															
Alamosa	566	596	632	594	590	555	572	551	471	491	561	641	790	802	816
Conejos	632	598	557	476	400	411	471	568	452	392	447	545	678	662	627
Costilla	232	255	269	242	209	222	227	215	214	194	207	249	260	296	276
Mineral	45	36	34	49	50	50	48	37	29	37	34	35	72	86	98
Rio Grande	579	543	563	554	534	628	796	885	682	546	718	706	1,021	996	1,057
Saguache	241	235	247	244	224	314	412	506	253	208	241	288	358	348	339
San Luis V.	2,295	2,263	2,302	2,159	2,007	2,180	2,526	2,762	2,111	1,868	2,208	2,464	3,179	3,190	3,213
% Unemployment															
Alamosa	9.8	10.2	10.7	9.8	9.7	9.5	9.7	9.5	8.2	8.0	9.8	10.5	12.8	12.9	13.0
Conejos	25.4	23.9	22.4	19.4	16.4	16.2	18.1	21.2	17.8	15.9	18.8	23.0	27.8	27.1	25.7
Costilla	23.9	25.5	26.3	23.7	20.9	21.4	21.9	21.2	21.1	19.5	21.5	25.0	25.7	29.2	27.2
Mineral	12.6	10.5	10.0	13.5	13.9	13.8	13.2	10.6	8.6	10.8	10.2	12.6	22.5	27.0	29.1
Rio Grande	13.0	11.9	11.2	10.7	9.8	11.1	13.6	14.9	12.2	10.0	13.1	14.1	19.7	19.3	20.1
Saguache	17.4	16.6	16.8	16.1	14.2	17.8	21.8	26.2	16.1	13.0	16.2	19.5	24.4	23.3	22.4
San Luis V.	14.8	14.4	14.1	13.0	11.9	12.7	14.3	15.6	12.4	11.0	13.2	15.2	19.2	19.2	19.1

*Preliminary estimate (released May 1987).

SOURCE: Labor Market Information Section, Colorado Labor Force Review, various issues.

Table 11: Labor Force Estimates by Ethnicity and Sex, 1987

(San Luis Valley)

		Ethnic group									
	Total	%	Non-Hispanic[A]	%	% of total	Hispanic[B]	%	% of total	Other grps.[C]	%	% of total
Labor Force	17,810	100.0	10,030	100.0	56.3	7,370	100.0	41.4	410	100.0	2.3
Male	10,980	61.7	6,170	61.5	56.2	4,550	61.9	41.5	250	61.0	2.3
Female	6,830	38.3	3,860	38.5	56.5	2,810	38.1	41.1	160	39.0	2.4
Employed	15,130	100.0	8,920	100.0	59.0	5,860	100.0	38.7	350	100.0	2.3
Male	9,375	62.0	5,530	62.0	58.9	3,615	61.7	38.6	230	65.7	2.5
Female	5,755	38.0	3,390	38.0	58.9	2,245	38.3	39.0	120	34.3	2.1
Unemployed	2,680	100.0	1,110	100.0	41.4	1,510	100.0	56.4	60	100.0	2.2
Male	1,605	59.9	640	57.7	39.9	945	62.6	58.9	20	33.3	1.2
Female	1,075	40.1	470	42.3	42.3	565	37.4	52.6	40	66.7	3.7
% Unemployed	15.0		11.1			20.5			14.6		
Male	14.6		10.4			20.7			8.0		
Female	15.7		12.2			20.1			25.0		

NOTE: [A] Persons classified in Census terminology as "White, not of Spanish/Hispanic origin.

[B] Persons classified in Census terminology as having Spanish/Hispanic origin, regardless of race category. For fuller explanation, refer to 1980 Census of Population, General Social and Economic Characteristics, Vol. PC80-1-C7, Appendix B, pp. B-4, B-5.

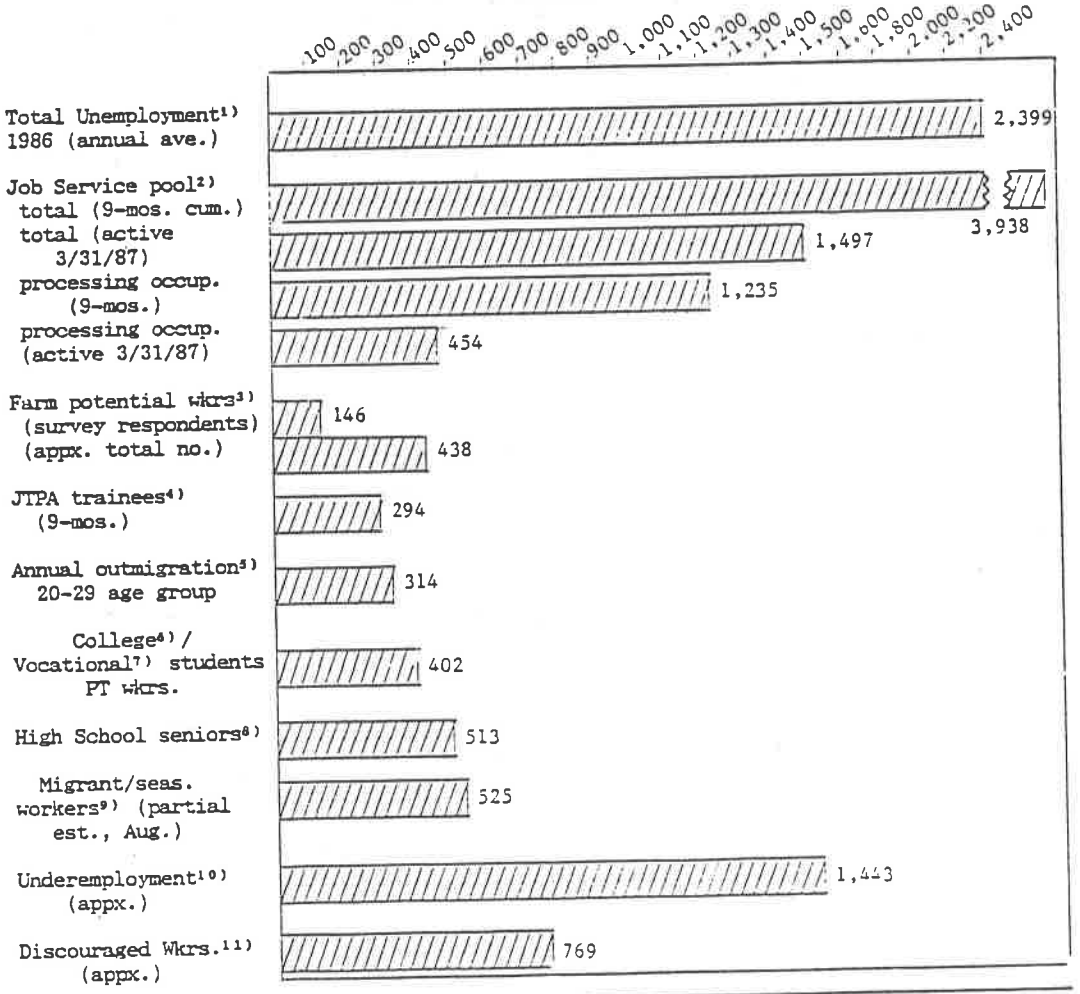
[C] Other groups include persons classified in Census terminology as Black, American Indian, Eskimo, Aleut, Asian and Pacific Islander, and Race, n.e.c. Most significant populations in the Valley include persons of Japanese descent.

SOURCE: Labor Market Information Section, Estimated Employment Status by Race/Ethnicity and Sex, FY 1987 Annual Average, (December 1986).

Exhibit A

Graphic Comparison of Labor Pools to Total Unemployment Number

(San Luis Valley)



SOURCE: 1)2)3)4) See Tables 1., 15., 22., and 33. 5) See Section II., Recent Trends.

6)7)8)9) See Tables 36., 37., 38., and 39. 10) See Section I., Underemployment.

11) See Section I., Discouraged Workers.

Industry Employment

SLV industry employment data were also generated through the San Luis Valley Regional Development and Planning Commission (Stump, 1987) and are outlined in the following section.

Major Employers

Table 12 lists most of the largest employers (at least 25 or more employees) for a quick sampling of the types of industry doing business in or serving the SLV.

Detailed Industry Employment Data

A look at where the employment is concentrated gives us a perspective of the industry sectors that are supporting the valley economy and shaping the labor market demands. In order to get the level of detail needed to fully understand the family of industries making up our area, we compiled data from unpublished listings[1] of employment covered by Colorado's Unemployment Insurance program which is recorded by place of work.

Results are presented in Table 13 which lists 268 4-digit Standard Industrial Classification (SIC) titles[2] representing every industry in the SLV that had U.I. covered employment in 1985. Processing companies reviewing the table should find a wide range of existing infrastructure and services needed for conducting their operations in the valley.

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[1] The release of information from unpublished data required approval of the Labor Market Information Section to ensure compliance with standards protecting against disclosure of individual establishments.

[2] The SIC manual and its codes are used as the official source of industry classification in the United States. There are 1,000 SIC titles corresponding codes listed in the manual under which all economic activity in the U.S. is classified. The valley represents about 27 percent of all those possible in an economy.

U.I. covered data content as explained in footnotes includes most types of employment, but excludes sole proprietorships, small farms and the railroad industry. In order to approximate employment in the largest of these segments, we included 1980 Census employment figures for agriculture and non-farm self-employed workers at the bottom of the table. When these figures are added in, U.I. covered represents about 80 percent of the total.

Our customized presentation cannot show employment for individual counties, because the number of establishments reporting at that level usually is too small to meet disclosure standards. We were unable to obtain data of equal detail or quality in order to make comparisons of industry changes over time.[3]

Services and Agriculture

Analysis of Table 13 indicates that services and agriculture vie as the valley's largest employment sectors. The Services industry division, which takes in 67 different titles covering everything from lodging to health, had 3,536 employees and 31.6 percent of the U.I. covered employment. Agriculture, which is the valley's largest export industry, is shown to have the third highest percentage of covered employment of 15.5 percent. When census figures are thrown in to approximate its non-covered small farms segment, employment rises to 3,568, making agriculture the valley's biggest employer in addition to its export value.

A review of the 4-digit titles within the Agriculture division helps to describe its major labor demand sectors. Data we were able to report, as shown in the table[4], includes potato production (295), vegetable growers (202), general crop farms (142), services for sorting and packing (506),[5] and timber tracts management (157). These represent mostly larger establishments that had U.I. coverage, and most non-covered smaller farms or sole proprietorships fitting these classifications were not included.

Services on a state and national basis is acknowledged as the largest and fastest growing employment sector of the economy. By examining its 4-digit contents, we find that elementary and secondary schools' employment of 1,304 is the largest within the services division, and the valley's largest single 4-digit employment category.

Hotel and motel covered employment of 343 is probably an understatement, due to the unknown extent of sole proprietorships doing business in this industry. This is also true of other types of small businesses dependent on tourism classified elsewhere in services and retail trade. Substantial employment in other services sectors includes hospitals (377), nursing care facilities (147), physicians' offices (149), child day care services (93), and amusement & recreation (91).

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[3] In spite of these limitations, the U.I. covered data are far more complete, accurate, and current than any of the sources we reviewed in our exhaustive research including County Business Patterns and others.

[4] Where permitted by disclosure standards, employment figures at the 4-digit level were entered in the table. When this was not possible, an asterisk (*) was entered and employment summed-in at the bottom of the 2-digit groupings.

[5] Similar types of functions to this industry (SIC 0723) are also performed under the Wholesale Trade--Nondurable Goods category.

Retail Trade

The second largest share of covered employment is held by the Retail Trade division which has 15.8 percent. Employment concentrations over 100 employees are shown for department stores (124), grocery stores (378), and eating places (446).

Public Administration

Under Public Administration, the SIC manual uses a narrowly defined set of classifications that include functions of government considered to be mainly of an administrative nature. Other functions of government, such as the educational parts, are considered a service or are included in the same classifications as their private industry counterparts. Public Administration's share of employment was 9.3 percent, but if all the scattered employment in government was aggregated under one industry division, a much larger share of covered employment would have been shown.

Other Industries

The balance of industries from which labor demand originates has been ranked in order of employment at the 2-digit level of SIC groupings. They are as follows: General Building Construction (500); Wholesale Trade -- Nondurable Goods (494); Manufacturing (432); Banking & related (342); Wholesale Trade -- Durable Goods (252); Special Trade Contractors (214); Insurance and Real Estate (208); Mining (196)[6] ; Electric, Gas, and Sanitary Services (154); Trucking and Warehousing (136); U.S. Postal Service (116); and a group combining airports, transportation services, telephone communications and radio broadcasting (91).

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[6] Gold mining industries using heap-leach extraction methods currently have much higher employment than this, but did not become fully operational until 1986.

Table 12: Major Employers by Industry, April 1987

(San Luis Valley Cities and Towns)

Industry	Name of business/ institution with appx. 25+ employees	City/town	Employment exceeds - 50	100	200
Potato farm	Pepper Potato Farms, Inc.	Center			
" "	Sanderson Farms, Inc.	Monte Vista			
" "	Three S Ranch	Blanca			
" "	V.W. Ellithorpe & Son	Center	X		
Vegetable farm	Power Produce Company, Inc.	Center	X		
" "	Charles Hayshida Farms, Inc.	Blanca	X		
Mushroom farm	Rakhra Mushroom Farms, Corp.	Alamosa			X
Agric. products pkg.	Tri Me Potato Company	Monte Vista			
" " "	William Bond	Monte Vista			
" " "	Center Potato Growers Coop	Center			
" " "	Del Norte Potato Growers Coop	Del Norte			
" " "	Grower Shipper Potato Co.	Monte Vista	X		
" " "	Helms Potato Co.	Alamosa			
" " "	L A W Potatoes, Inc.	Monte Vista	X		
" " "	La Jara Potato Growers Coop	La Jara	X		
" " "	Monte Vista Potato Grow. Coop	Monte Vista	X		
" " "	Marshall Produce Co., Inc.	Monte Vista	X		
" " "	Pinnacle Produce, Inc.	Monte Vista			
" " "	Skyview Cooling Co.	Alamosa			
" " "	Wright Brothers, Inc.	Alamosa			
Cattle ranch	BAR Cattle Co.	South Fork	X		
" "	Forbes Trinchera Ranch	Ft. Garland			
Gold & silver mining	Summitville Cons. Mining Co.	Creede			X
" " " "	Union Mines	Platoro			
Silver mining	Homestake Mining Co.	Creede			
Volcanic scoria mining	Colorado Aggregate Co., Inc.	Mesita	X		
Heavy Construction	Southway Construction Co.	Alamosa			
" "	Anderson Construction Co.	Alamosa	X		
" "	Industrial Construction Corp.	Summitville			X
Potato Starch Mfg.	A & E Staley Mfg. Co.	Monte Vista	X		
Sawmill	Stone Container Corp.	South Fork	X		
Newspaper	Courier Publishing Co.	Alamosa			
Perlite Mfg.	Grefco, Inc.	Antonito			
Turquoise Jewelry Mfg.	Silver Fox Jewelry Inc.	Romeo			
Trucking	Bill Clark Truck Line, Inc.	Alamosa			
"	Gibson Truck Lines	La Jara			
"	Ashton Trucking Co.	Monte Vista			
Farm prod. warehousing	Hi-Land Potato Co	Monte Vista			
Elect. power trans.	Public Service Co. of Colo.	Alamosa	X		
" " "	SLV Rural Electric Coop.	Monte Vista			
Whse. lumber & sawmill	Young Wholesale Lumber	Alamosa			
Whse. fresh vegetables	Alpine Potato Co., Inc.	Alamosa			
" " "	Blanfort Inc.	Blanca			
" " "	Canon Potato Co.	Center	X		
" " "	Sargent Produce Co.	Sargent	X		
" " "	Scoular Grain Co.	Monte Vista			
" " "	Ford Brothers, Inc.	Center			
Soft drink whse. dist.	Pepsi Cola Metro. Bottling Co.	Alamosa			
Gas whse./retail dist.	Wright Valley Oil	Alamosa			
" " " "	Winco, Inc.	Alamosa			
Farm supplies whse/ret.	Monte Vista Co-op	Monte Vista	X		
Whse./ret. bldg. materials	The Home Lumber Co. of Alamosa	Alamosa			

Table 12 (continued)

Industry	Name of business/ institution with appx. 25+ employees	City/town	Employment exceeds - 50	100	200
Department store	K-Mart Corp.	Alamosa	X		
" "	Walmart, Inc.	Alamosa		X	
Grocery store	City Market, Inc.	Alamosa	X		
" "	Safeway Stores, Inc.	Alamosa			
" "	Safeway Stores, Inc.	Monte Vista			
Fast food restaurant	Dairy Queen	Alamosa			
" " "	Dairy Queen	Monte Vista			
" " "	McDonald's Restaurant	Alamosa	X		
Other restaurant	Hungry Logger Restaurant	South Fork			
Financial institution	Alamosa National Bank	Alamosa			
" "	First Natl. Bank of Alamosa	Alamosa			
" "	First Natl. Bank of La Jara	La Jara			
" "	SLV Federal Savings & Loan	Alamosa			
" "	Rio Grande Savings & Loan	Monte Vista			
Group health program	Health System Management Ltd.	Alamosa			
Lodging place	Alamosa Inn	Alamosa	X		
" "	Holiday Inn	Alamosa	X		
" "	Kelloff Enterprises, Inc.	Monte Vista			
" "	Monte Villa Inn	Monte Vista			
Ski area	Wolf Creek Ski Corp.	South Fork	X		
Medical clinic	SLV Medical PC	Alamosa	X		
" "	Valley Health Serv.	Alamosa	X		
Nursing home	Evergreen Nursing Home	Alamosa	X		
" "	Mountain Meadows Nursing	Monte Vista	X		
" "	State Veterans Center	Monte Vista	X		
Hospital	Alamosa Community Hospital	Alamosa		X	
"	Conejos County Hospital	La Jara	X		
"	Monte Vista Community Hospital	Monte Vista	X		
"	St. Joseph Hospital	Del Norte		X	
Outpatient care	SLV Community Mental Health Ctr.	Alamosa	X		
Elem. & sec. school	Alamosa Schools	Alamosa			X
" " " "	Centennial Schools	San Luis	X		
" " " "	Center Cons. School Dist.	Center		X	
" " " "	Del Norte Cons. Sch. Dist.	Del Norte		X	
" " " "	Moffat School District	Moffat			
" " " "	Monte Vista Public Schools	Monte Vista		X	
" " " "	Mt. Valley School Dist.	Saguache			
" " " "	No. Conejos School Dist.	La Jara		X	
" " " "	No. Conejos School Dist.	La Jara			
" " " "	Sanford School District	Sanford			
" " " "	Sargent School District	Sargent	X		
" " " "	Sangre de Cristo School Dist.	Moca			
" " " "	So. Conejos School Dist.	Antonito	X		
" " " "	Sierra Grande School Dist.	Blanca			
Four year college	Adams State College	Alamosa			X
Child care center	Conejos-Costilla Head Start	La Jara			
Local government	Alamosa County	Alamosa		X	
" "	Conejos County	La Jara		X	
" "	Costilla County	San Luis		X	
" "	Mineral County	Creede			
" "	Rio Grande County	Del Norte		X	
" "	Saguache County	Saguache	X		
" "	City of Alamosa	Alamosa		X	
" "	City of Monte Vista	Monte Vista	X		
Educational/Serv. Agency	SLV Board of Coop Ed. Services	Alamosa	X		
Federal Government	Rio Grande Natl. Forest	Various	X		
" "	Bureau of Reclamation	Alamosa	X		

SOURCE: San Luis Valley Regional Development and Planning Commission. Listing compiled from various published and undocumented sources of information.

Annual Average U.I. Covered Employment[A]
by Detailed Industry, 1985

(San Luis Valley)

SIC Code[B]	Industry Division & Detailed Title	1985 Ave U.I. Covered Employment[1]		%
01-09	Agriculture, Forestry, and Fishing			
01-02	Agricultural Products, Crops and Livestock			
0111	Cash grains, wheat	*		
0119	Cash grains, other	*		
0134	Irish potatoes	295		
0139	Field crops, other	26		
0161	Vegetables & melons	202		
0181	Ornamental nursery products	*		
0182	Food crops grown under cover	*		
0191	General farms, primarily crops	142		
0211	Beef, cattle feed lots	*		
0212	Beef, cattle except feed lots	87		
0279	Animal specialties, other	*		
	Sum of employment not shown separately	248		
Subtotal in 01-02			1,000	8.9
07-08	Agricultural Services and Forestry			
0711	Soil preparation services	*		
0721	Crop planting & protection	*		
0723	Crop prep services for mkt, exc cotton ginning	508		
0740	Veterinary services	*		
0741	Veterinary services, farm livestock	*		
0742	Veterinary services, specialties	*		
0751	Livestock services, specialties	*		
0761	Farm labor contractor	*		
0783	Ornamental shrub & tree services	157		
0811	Timber Tracts	*		
0851	Forestry services	87		
	Sum of employment not shown separately			
Subtotal in 07-08			750	6.6
	Total Employment In 01-09		1,750	15.5
10-14	Mining			
10-14	Mining and Oil & Gas Extraction			
1011	Gold ores	*		
1014	Silver ores	*		
1081	Metal mining services	*		
1311	Crude petroleum & natural gas	*		
1381	Drilling oil & gas wells	*		
1382	Oil & gas field exploration services	*		
1389	Oil & gas field services, other	*		
1442	Construction sand & gravel	*		
1499	Miscellaneous nonmetallic minerals, other	*		
	Total Employment in 10-14		196	1.7
15-17	Construction			
15-16	General Bldg and Heavy Construction Contractor			
1520	Gen bldg contractors, residential buildings	*		
1521	Single family housing construction	36		
1522	Residential construction	*		
1531	Operative builders	*		
1540	General bldg contractors, nonresidential bldg	*		
1541	Industrial buildings & warehouses	*		
1542	Nonresidential construction	*		
1611	Highway & street Construction	20		
1623	Water, sewer, & utility lines	*		
1629	Heavy construction, other	330		
	Sum of employment not shown separately	114		
Subtotal in 15-16			600	4.4
17	Special Trade Contractors			
1711	Plumbing, heating (exc electrical), & air cond	48		
1721	Painting, paper hanging, & decorations	*		
1731	Electrical work	67		
1742	Plastering, Drywall, Insulation	*		
1751	Carpentering	6		
1752	Floor laying, floor work, other	*		
1761	Roofing, sheet metal work	*		
1771	Concrete work	36		
1781	Water well drilling	9		
1791	Structural steel erection	*		
1793	Glass, glazing work	*		
1794	Excavating & foundation work	12		
1799	Special trade contractors, other	8		
	Sum of employment not shown separately	28		
Subtotal in 17			214	1.9
	Total Employment in 15-17		714	6.3
20-39	Manufacturing			
20-24	Miscellaneous Manufactured Products			
2026	Fluid milk			
2046	Wet corn milling			
2051	Bread, cake, & related products			

SIC Code[a]	Industry Division & Detailed Title	1985 Ave U.I. Covered Employment[1]		%
2394	Canvas & related products	*		
2411	Logging camps & contractors	*		
2421	Sawmills & planing mills, general	55		
2448	Wood pallets & skids	*		
2711	Newspapers	*		
2721	Periodicals	*		
2752	Commercial lithographic printing	*		
2879	Agricultural chemicals, other	*		
3273	Concrete, ready-mixed	*		
3295	Minerals, ground or treated	*		
3433	Heating equipment, except electric	*		
3599	Machinery, except electrical, other	*		
3911	Jewelry, precious metals	*		
3961	Jewelry, costume	*		
	Sum of employment not shown separately	377		
	Total Employment in 20-39		432	3.8
40-49	Transportation, Communication, & Public Utilities			
42	Trucking & Warehousing			
4210	Trucking, local & long distance	*		
4212	Trucking without storage, local	62		
4213	Trucking, except local	*		
4221	Farm product warehousing & storage	*		
4231	Terminal facilities	*		
	Sum of employment not shown separately	74		
	Subtotal in 42		136	1.2
43	United States Postal Service		116	1.0
45-48	Transp by Air, Transp Services, & Communications			
4511	Air transportation, certified carriers	*		
4582	Airports & flying fields	*		
4722	Passenger transportation arrangement	*		
4723	Freight transportation arrangement	*		
4811	Telephone communications	42		
4832	Radio broadcasting	*		
	Sum of employment not shown separately	49		
	Subtotal in 45-48		91	0.8
49	Electric, Gas, & Sanitary Services			
4911	Electric services	*		
4923	Gas transmission & distribution	*		
4931	Electric & other services combined	*		
4939	Combination utilities, other	*		
4941	Water supply	9		
4952	Sewerage systems	*		
4959	Sanitary services, other	*		
4971	Irrigation systems	*		
	Sum of employment not shown separately	145		
	Subtotal in 49		151	1.4
	Total Employment in 40-49		497	4.4
50-51	Wholesale Trade			
50	Wholesale Trade - Durable Goods			
5013	Automotive parts & supplies	*		
5014	Tires & tubes	*		
5021	Furniture	*		
5031	Lumber, plywood, & millwork	*		
5039	Construction materials, other	*		
5063	Electrical apparatus & equipment	*		
5065	Electronic parts & equipment	*		
5083	Farm machinery & equipment	*		
5084	Industrial machinery & equipment	107		
5086	Professional equipment & supplies	*		
5087	Service establishment equipment	*		
5093	Scrap & waste materials	*		
	Sum of employment not shown separately	145		
	Subtotal in 50		252	2.2
51	Wholesale Trade - Nondurable Goods			
5122	Drugs, proprieties & sundries	*		
5141	Groceries, general line	*		
5145	Confectionery	*		
5147	Meat & meat products	*		
5148	Fresh fruit & vegetables	153		
5149	Groceries & related products, other	*		
5153	Grain	*		
5154	Livestock	*		
5159	Farm product raw materials, other	*		
5161	Chemicals & allied products	*		
5171	Petroleum bulk stations & terminals	*		
5172	Petroleum products, other	*		
5181	Beer & ale	*		
5191	Farm supplies	*		
5199	Nondurable goods, other	*		
	Sum of employment not shown separately	341		
	Subtotal in 51		491	4.1
	Total Employment in 50-51		746	6.6

Table 13 (continued)

SIC Code[a]	Industry Division & Detailed Title	1985 Ave U.I. Covered Employment[1]		%
52-59	**Retail Trade**			
52-54	Bldg materials, garden sup, gen mdse, & food stores			
5211	Lumber & other building materials	83		
5231	Paint, glass, & wallpaper stores	*		
5251	Hardware stores	72		
5271	Mobile home dealers	*		
5311	Department stores	124		
5331	Variety stores	*		
5399	Misc and general merchandise stores	21		
5411	Grocery stores	378		
5423	Meat & fish (seafood) markets	*		
5462	Bakeries, baking & selling	*		
5499	Food stores, miscellaneous	*		
	Sum of employment not shown separately	37		
Subtotal in 52-54			715	6.3
55-56	Auto Dealers, Service Sta, & Appliance/Accessory Stores			
5511	Car dealers, new & used	99		
5531	Auto & home supply stores	64		
5541	Gasoline service stations	78		
5561	Recreation & utility trailer dealers	*		
5571	Motorcycle dealers	*		
5621	Womens' ready-to-wear stores	12		
5651	Family clothing stores	42		
5661	Shoe stores	*		
	Sum of employment not shown separately	25		
Subtotal in 55-56			320	2.8
57	Furniture & Home Furnishings Stores			
5712	Furniture stores	35		
5713	Floor covering stores	*		
5722	Household appliance stores	*		
5732	Radio & television stores	*		
5733	Music stores	*		
	Sum of employment not shown separately	28		
Subtotal in 57			63	0.5
58	Eating & Drinking Places			
5810	Eating & drinking places	46		
5812	Eating places	446		
5813	Drinking places	16		
Subtotal in 58			508	4.5
59	Miscellaneous Retail			
5912	Drug & propriety stores	58		
5921	Liquor stores	*		
5931	Used Merchandise stores	*		
5941	Sporting goods & bicycle shops	14		
5942	Book stores	*		
5943	Stationery stores	*		
5944	Jewelry stores	*		
5945	Hobby, toy, & game shops	*		
5947	Gifts, novelty, & souvenir shops	30		
5949	Sewing, needlework, & piece goods stores	*		
5961	Mail order houses	7		
5984	Liquified petroleum gas dealers	*		
5992	Florists	11		
5999	Miscellaneous retail stores, other	8		
	Sum of employment not shown separately	62		
Subtotal in 59			190	1.7
	Total Employment in 52-59		1,796	15.8
60-67	**Finance, Insurance, & Real Estate**			
60-62	Banking, Credit Agencies & Security Brokers			
6022	State banks, Federal Reserve	*		
6023	State banks, not Federal Reserve, FDIC	*		
6024	State banks, not Federal Reserve, not FDIC	*		
6025	National banks, Federal Reserve	151		
6122	Federal savings & loan associations	*		
6123	State savings & loan associations, insured	*		
6131	Agricultural credit institutions	32		
6143	State credit unions	*		
6145	Small loan lenders, licensed	*		
6211	Security brokers & dealers	*		
	Sum of employment not shown separately	159		
Subtotal in 60-62			342	3.0
63-67	Insurance, Real Estate, & Hldg/Other Invest Offices			
6311	Life insurance	*		
6321	Accident & health insurance	*		
6324	Hospital & medical service plans	*		
6361	Title insurance	*		
6411	Insurance agents, brokers and service	61		
6510	Real estate operators & lessors	*		
6512	Building operators, non residential	*		
6513	Apartment building operators	27		
6514	Dwelling operators, except apartments	*		
6515	Mobile home site operators	*		
6531	Real estate agents and managers	19		
6541	Title abstract offices	*		
6552	Subdividers, developers, except cemetries	*		
6553	Cemetry subdividers & developers	*		
6711	Holding offices	*		

SIC Code[a]	Industry Division & Detailed Title	1985 Ave U.I. Covered Employment[1]		%
	Sum of employment not shown separately	93		
Subtotal in 63-67			208	1.9
	Total Employment in 60-67		650	4.9
70-89	Services			
70-72	Hotels & Other Lodging Places and Personal Services			
7011	Hotels, motels, & tourist courts	343		
7032	Sports & recreational camps	26		
7033	Trailer parks for transients	*		
7210	Laundry, cleaning & garment services	24		
7211	Power laundries, family & commercial	*		
7215	Coin laundry & cleaning	*		
7216	Dry cleaning plants except rug	*		
7221	Photographic studios	*		
7231	Beauty shops	22		
7261	Funeral services & crematories	*		
7299	Personal services, misc	*		
	Sum of employment not shown separately	51		
Subtotal in 70-72			466	4.2
73	Business Services			
7321	Credit reporting & collection	*		
7333	Commercial photographic art	*		
7339	Stenographic & reproduction services, other	*		
7349	Building maintenance services, other	*		
7372	Computer programming & software	*		
7392	Management & public relations	15		
7394	Equipment rental & leasing	*		
7396	Trading stamp services	*		
7399	Business services, other	*		
	Sum of employment not shown separately	37		
Subtotal in 73			52	0.6
75	Auto Repair, Services & Garages			
7531	Top & body repair shops	*		
7534	Tire retreading & repair shops	*		
7535	Paint shops	*		
7538	Automotive repair shops, general	39		
7539	Automotive repair shops, other	*		
7542	Car washes	*		
	Sum of employment not shown separately	26		
Subtotal in 75			65	0.6
76	Miscellaneous Repair Services			
7622	Radio & television repair	9		
7629	Electrical & electronic repair shops, other	*		
7641	Reupholstery & furniture repair	*		
7692	Welding repair	*		
7694	Armature Rewinding shops	*		
7699	Repair services, other	*		
	Sum of employment not shown separately	21		
Subtotal in 76			30	0.3
78-79	Motion Pictures & Amusement and Recreation Services			
7829	Motion picture distribution services	*		
7832	Motion picture theatres	*		
7922	Theatrical producers & services	*		
7933	Bowling alleys	*		
7997	Membership sports & recreation clubs	*		
7999	Amusement & recreation, other	91		
	Sum of employment not shown separately	54		
Subtotal in 78-79			145	1.0
80-89	Health, Legal, Education, Pvt Household, & Misc. Services			
8011	Offices of physicians	149		
8021	Offices of dentists	53		
8041	Offices of chiropractors	*		
8042	Offices of optometrists	8		
8049	Offices of health practioners, other	*		
8051	Nursing care facilities	147		
8062	General medical & surgical hospitals	377		
8071	Medical laboratories	*		
8072	Dental laboratories	*		
8081	Outpatient care facilities	*		
8091	Health & allied services, other	*		
8111	Legal Services	53		
8211	Elementary & secondary schools	1,304		
8221	Colleges, universities & prof schools	*		
8222	Junior colleges & technical schools	*		
8231	Libraries & information centers	*		
8299	Schools & educational services, other	*		
8321	Individual & family services	*		
8331	Job training & related services	30		
8351	Child day care services	93		
8361	Residential care	48		
8399	Social services, other	*		
8611	Business associations	11		
8641	Civic & social associations	33		
8661	Religious organizations	*		
8811	Domestic help, private households	5		
8911	Engineering, architech, & surveying services	37		
8922	Noncommercial research organizations	*		
8931	Accounting, auditing, & bookeeping	56		
	Sum of employment not shown separately	374		

Table 13 (continued)

Table 13 (continued)

SIC Code[1]	Industry Division & Detailed Title	1985 Ave U.I. Covered Employment[1]	%
Subtotal in 80-89		2,778	24.7
Total Employment in 70-89		3,536	31.6
91-97	Public Administration		
91-92	Government & Justice, Public Order, & Safety	752	
9131	Executive & legislative combined	*	
9199	General government, other	7	
9211	Courts	8	
9221	Police protection	*	
9222	Legal council & protection	*	
9224	Fire protection	18	
	Sum of employment not shown separately		
Subtotal in 91-92		785	7.0
93-97	Other Public Administration	*	
9311	Finance, taxation, & monetary policy	*	
9411	Admin of educational Programs	*	
9441	Admin of Social manpower programs	*	
9511	Air, water, & solid waste management	75	
9512	Land, mineral, wildlife, & forest conservation	*	
9611	Admin of economic programs	*	
9621	Regulation, admin of transportation	*	
9641	Regulation of agricultural marketing	*	
9711	National securtity	188	
	Sum of employment not shown separately		
Subtotal in 93-97		263	2.3
Total Employment in 91-97		1,048	9.3
99	Non-Classifiable Establishments	7	0.1
TOTAL 1985 Annual Average U.I. Covered Employment		11,292	100.0
1980 Census Total Employment in the Agriculture Industry[1]		1,818	
1980 Census Self-Employed Workers in Non-Agricultural Industries[1]		1,078	

*Data cannot be released due to confidentiality standards.

NOTE: [1] Includes employment in establishments subject to insurance coverage under the Colorado Employment Security Act. Does not include sole proprietorships, small family farms, and the railroad industry. 1980 Census figures for nonfarm self-employed persons and employment in the agricultural industry were added at the bottom of the table to explain the difference between U.I. covered and the Labor Market Information Section published estimate of 14,135, representing the total number of area employed persons in 1985 on an annual average basis.

[1] U.S. Office of Management and Budget, Standard Industrial Classification Manual.

SOURCE: [1] Data for this table was compiled from a Labor Market Information Section ES-202 unpublished listing. Employment information which is displayed conforms with standards prescribed to protect against any possible disclosure of individual establishments.

[1] 1980 Census of Population, General Social and Economic Characteristics, Vol. I PC80-1-C7, Table 178.

[1] 1980 Census of Population, General Social and Economic Characteristics, Vol. I PC80-1-C7, Table 176.

Job Service Labor Pool

Data for the job service labor pool are presented in this section. Data are based upon information supplied by the San Luis Valley Regional Development and Planning Commission (Stump, 1987) and the Employment Service Automated Reporting System (ESARS).

Job Service Data

Reports generated by the Employment Service Automated Reporting System (ESARS) represent the best available source of hard data for analyzing current occupations, skills and wage rates paid for local jobseekers. Selections from the ESARS series as presented in tables for this section reflect the number of persons who registered with the Job Service Centers for assistance in finding work, and local industry demand for this labor pool. Information from ESARS also has the advantage of being updated on a frequent basis, and can be compared with similar data available for other Job Service locations.

Table 14 shows an unduplicated number of 3,938 persons who were registered with the Job Service over a 9-month period, representing about 23 percent of the SLV 1986 annual average labor force of 16,824. The 1,497 registrants still active at the end of March were 62 percent of the total unemployment figure of 2,399. While these comparisons show a substantial number of persons for whom documented data is available, a complete statement about the full range of skills and persons in the area who are potentially available to industry cannot be made solely from the Job Service data.

Definitions of Terms

- Applicants include persons who are looking for other work; unemployed persons who are not receiving Unemployment Insurance benefits; unemployed persons who are collecting benefits; unemployed persons who are job attached or on seasonal layoff who have elected to register for other work; students seeking part-time or seasonal work; and some food stamp and welfare recipients.

- The cumulative number of registered applicants is an unduplicated count of persons who registered at any time during the 9-month period covered in the report.

- Currently active applicants are the number of persons who were on-board at the end of the report period. If no service is rendered within 30 days on a given application, the application is filed in an inactive status (Veterans excepted).

- Job orders refer to requests from employers for JSC assistance in referring or screening applicants to fill job openings they have available.

- The cumulative number of job openings includes all job openings listed on job orders that were received during the report period.

- Nonagricultural job openings refer to those received from industries excluding agricultural crop or livestock production and are about 88 percent of the total openings received.

Occupational Categories

Occupations are arranged in the tables by Dictionary of Occupational Title (DOT) groupings to provide an overview of labor pool skills on a cumulative and currently active basis. The 9-digit occupations represent an attempt to match titles on the ESARS detailed list for the Monte Vista-Alamosa Job Service Centers with position titles included in job staffing patterns obtained from processing industry sources.

In reviewing the ESARS detailed breakouts, we found that the sum of applicants in the detailed report was only about 58 percent of the sum by broad occupational groupings. This implies that the detail in the tables is only a partial listing, and there is a strong likelihood that registered workers with other qualifications needed by the industry are also available in the local reserves. Even with this understatement, Table 14 shows a substantial number of 1,235 workers on a cumulative basis and 454 active which fit processing industry descriptions.

Registered Worker Characteristics

Table 15 provides an insight into the quality of the labor pool. Over 62 percent of the persons registered over the 9-month period were male. The smaller number of females seeking work is attributed to a general shortage of opportunities for women and secondary wage earners in the area. Approximately 45 percent of the labor pool are between the 20 to 39 years, representing a prime working age for stable, long-term employees. Over 70 percent have attained high school or higher education, indicating a potential receptiveness to training. One-fourth of the pool (or 1.045 persons) are economically disadvantaged and potentially available for JTPA subsidized training assistance.

Local Demand for Labor

A comparison of applicants and job openings from the ESARS reports provides an approximation of worker surplus or shortages. Comparisons for broad occupational groups are presented in Table 16, and the detailed set of processing industry surrogates in Table 17.

The detailed table shows that 948 workers (77 percent of the supply) did not find employment through the Job Service during the 9-month report period. The highest imbalance occurred in the "8" codes classified with structural work occupations.

While a substantial overall labor surplus is indicated, the available detail shows a combined surplus of only 84 for workers classified as agricultural produce sorters, hand packers, packagers and material handlers that relate closely to processing company trim and inspection line needs. This relatively small surplus reflects a heavy concentration of local industry users and a lively market for occupations of this type, but probably does not exhaust extensive supplies of workers in the area having similar levels of job qualifications. Based on past experience, an increase in the supply for these categories is likely to occur as job opportunities are announced.

Wage Rates

Bracketed hourly base wage rates for 1,006 job openings in broad occupational categories are presented in Table 18. Rates for detailed occupations were not available in the ESARS reports.

The table shows that 55 percent of the job openings listed with Monte Vista-Alamosa Job Service Centers are being offered in the $3.35 to $3.84 range, and the average for all occupations is $4.28/hour. According to other sections of the ESARS reports, about 97 percent of the openings are being filled at the various rates specified.

Most job openings in the processing group are being offered in the low wage range, but this is true of only 28 percent of those in the packaging and material handling category. Many of the openings which posted higher rates probably represent a subset of other occupations in the DOT "92" group used by the construction industry that did considerable hiring in the area during the period for developments in connection with above-ground mining operations.

Comparisons showing the competitiveness of SLV wage rates with statewide averages and selected Job Service locations in southern Colorado are presented in Table 19.

Job Service Coverage of the Labor Market

An examination of local employers using the Job Service to place job orders indicated a fairly high service penetration rate for the SLV counties. Table 20 shows a total of 298 employers placing orders during a 13-month period, representing 29 percent of all establishments and as high as 62 percent in those related to the processing industry. A canvas of selected processing-related establishments that did not place orders revealed that most had no hiring activity during the period.

Much additional information and data that are relevant to the San Luis Valley Area Labor Supply and Profile can be obtained through the SLV-RDPC (Stump, 1987).

Table 14: Job Service Labor Pool: Cumulative and Currently Active Registrants by Occupation, July 1, 1986 - March 31, 1987

(Monte Vista - Alamosa Job Service Centers)[A]

2-digit DOT groupings and selected processing industry occupations[B]		Cum. no. regis. apps.[C]	Currently active				
					% of active		
DOT title	DOT code		%	Total	total	Male	Female
Professonal, technical, mgr	01-19	333	8.4	119	7.9	64	55
Administrative Assistant	169.167-010	10		3		3	0
Clerical	20-24	715	18.2	239	16.0	42	197
Secretary (clerical)	201.362-030	83		17		0	17
Clerk typist	203.362-100	46		11		1	10
Clerk, general	209.562-010	86		31		6	25
Bookkeeper, full charge	210.382-014	72		27		0	27
Accounting clerk	216.482-010	3		2		0	2
Stock clerk	222.387-058	4		0		0	0
Receptionist	237.367-038	32		9		0	9
Sales	25-29	129	3.3	34	2.3	21	13
Domestic	30	51	1.3	17	1.1	4	13
Other services	31-38	586	14.9	227	15.2	88	139
Cleaner, commercial & indus	381.687-014	11		1		1	0
Farm, forestry & fishery	40-47	261	6.6	100	6.7	92	8
Processing	50-59	152	3.9	51	3.4	15	36
Sorter, agricultural produce	529.687-186	94		33		1	32
Machine trades	60-69	196	4.9	85	5.7	81	4
Diesel mechanic	625.281-010	26		12		12	0
Maintenance mech (any ind)	638.281-014	21		7		7	0
Bench work	70-79	55	1.4	27	1.8	14	13
Structural	80-89	696	17.7	315	21.0	307	8
Welder, combination	819.384-010	42		17		16	1
Electrician (any industry)	824.261-010	5		1		1	0
Painter (construction)	840.381-010	7		1		1	0
Oper eng (hvy equip oper)	859.683-010	88		56		55	1
Carpenter, (construction)	860.381-022	73		35		34	1
Construction worker I	869.664-014	136		55		52	3
Maint rep, factory & mill	899.281-014	1		0		0	0
Maint rep hlpr, fact & mill	899.684-022	1		0		0	0

Table 14 (continued)

2-digit DOT groupings and selected processing industry occupations[B]		Cum. no. regis. apps.[C]	Currently active				
					% of active		
DOT title*	DOT code		%	Total	total	Male	Female
Motor freight & transportation	90-91	226	5.7	99	6.6	93	6
Truck driver (heavy)	905.663-014	145		63		59	4
Truck driver (light)	906.683-022	26		7		7	0
Packaging & material handling	92	345	8.8	129	8.6	118	11
Packer, hand	920.587-018	19		9		3	6
Packager, ag produce	920.687-134	4		1		0	1
Material handler (any ind)	929.687-030	200		56		56	0
Other/misc	93-97	87	2.2	31	2.1	31	0
Not classified	xxx	106	2.7	24	1.6	13	11
Subtotal 9-digit processing industry occupations		1,235		454		315	139
Total		3,938	100.0	1,497	100.0	983	514

*U.S. Department of Labor, Dictionary of Occupational Titles.

NOTE: [A] The Monte Vista JSC office area includes Rio Grande, Saguache, and Mineral counties. The Alamosa JSC office area includes Alamosa, Conejos, and Costilla counties.

[B] Detailed occupational breakouts in Table B96 include only 58% of the total number of registered applicants, and as such represent only a partial listing of occupations of possible interest to a processing company.

[C] Does not include 474 partially registered applicants not coded for occupation who represent youth seeking summer employment and other persons without a work history.

SOURCE: Colorado Department of Labor and Employment, Office of Information Resources, Labor Market Information Section, ESARS activity reports, Tables A96 and B96, Applicants and Nonagricultural Job Openings by Occupation, 3/31/87 Program Year to date.

Table 15: Job Service Labor Pool: Selected Worker Characteristics, July 1, 1986 - March 31, 1987

(Monte Vista - Alamosa Job Service Centers)

Selected characteristics	Cumulative no. registered applicants	% of total	Selected characteristics	Cumulative no. registered applicants	% of total
Total	3,938	100.0	Ethnicity		
Male	2,461	62.5	White, non-Hispanic	1,626	41.3
Female	1,477	37.5	Hispanic	2,237	56.8
			Other groups	75	1.9
Age			Economically disadvantaged		
<16	20	0.0	Econ. disadvantaged	1,045	26.5
16-19	400	10.2	Not econ. disadvantaged	2,893	73.5
20-21	328	8.4			
22-39	2,231	36.7	U.I. claimant status		
40-54	703	18.0	Eligible claimants	1,884	47.8
55+	255	6.6	Non-claimants	2,024	51.4
Education (highest grade)			Misc. characteristics		
0-7	173	4.4	Migrant farmworker	26	0.7
8-11	990	25.1	Seasonal farmworker	24	0.7
12	2,173	55.2	Receiving welfare assistance	207	5.2
12+	602	15.3	Handicapped	56	1.4

SOURCE: Labor Market Information Section, ESARS activity reports, Table 06, Characteristics of Applicants, 3/31/87 Program Year to date.

Table 16: Job Service Labor Pool: Worker Supply Compared With Local Employer Demand, July 1, 1986 - March 31, 1987

(Monte Vista - Alamosa Job Service Centers)

Occupations DOT title*	2-digit DOT code	Cumulative no. registered applicants[1]	Cumulative no. job openings[2]	Net surplus/ shortage of workers
Professional, technical, mgr	01-19	333	8	325
Clerical	20-24	715	104	611
Sales	25-29	129	90	39
Domestic	30	51	45	6
Other services	31-38	586	168	418
Farm, forestry & fishery	40-47	261	79	182
Processing	50-59	152	153	-1
Machine trades	60-69	196	10	186
Bench work	70-79	55	6	49
Structural	80-89	696	65	631
Motor freight & transportation	90-91	226	28	198
Packaging & material handling	92	345	247	98
Other/misc.	93-97	87	3	84
Not Classified	xxx	106	0	106
Total		3,938	1,006	2,932

*U.S. Department of Labor, Dictionary of Occupational Titles.

SOURCE: [1] Labor Market Information Section, ESARS activity reports, Table A96, Applicants and Nonagricultural Job Openings By Occupation, 3/31/87 Program Year to date.

[2] Ibid., Table B07, Job Openings Received and Filled by Occupational Category and Hourly Wage Rate, 3/31/87 Program Year to date.

Table 17: Local Employer Demand for Workers Registered in Processing Industry Occupations, July 1, 1986 - March 31, 1987

(Monte Vista - Alamosa Job Service Centers)

Occupations		Cumulative no. registered applicants	Cumulative no. nonag job openings	Net surplus/ shortage of workers
DOT title*	9-digit DOT code			
Administrative assistant	169.167-010	10	0	10
Secretary (clerical)	201.362-030	83	7	76
Clerk typist	203.362-010	46	2	44
Clerk, general	209.562-010	86	3	83
Bookkeeper, full charge	210.382-014	72	7	65
Accounting clerk	216.482-010	3	0	3
Stock clerk	222.387-058	4	0	4
Receptionist	237.367-038	32	4	28
Cleaner, commercial & indus	381.687-014	11	10	1
Sorter, agricultural prod	529.687-186	94	102	-8
Diesel mechanic	625.281-010	26	0	26
Maintenance mechanic (any ind)	638.281-014	21	1	20
Welder, combination	819.384.010	42	1	41
Electrician (any industry)	824.261-010	5	0	5
Painter (construction)	840.381-010	7	1	6
Operating eng (hvy equip oper)	859.683-010	88	1	87
Carpenter, (construction)	860.381-022	73	3	70
Construction worker I	869.664-014	136	13	123
Maint repairer, factory & mill	899.281-014	1	0	1
Maint repair hlpr, fact & mill	899.684-022	1	0	1
Truck driver (heavy)	905.663-014	145	1	44
Truck driver (light)	906.683-022	26	0	26
Packer, hand	920.587-018	19	25	-6
Packager, ag produce	920.687-134	4	0	4
Material handler (any ind)	929.687-030	200	106	94
Total		1,235	287	948

*U.S. Department of Labor, Dictionary of Occupational Titles.

SOURCE: Labor Market Information Section, ESARS activity reports, Table B96, Applicants and Nonagricultural Job Openings by Occupation, 3/31/87 Program Year to date.

Table 18: Wage Rates Paid by Local Industry, July 1, 1986 - March 31, 1987

(Monte Vista - Alamosa Job Service Centers).

Occupations		$ Hourly wage rates and cumulative no. of openings listed on job orders [A]												
DOT title*	2-digit DOT code	Total nonag and ag	< 3.35	3.35 3.84	3.85 3.99	4.00 4.49	4.50 4.99	5.00 5.49	5.50 5.99	6.00 6.49	6.50 6.99	7.00 +	Ave. $	Other[B]
Prof/tech/mgr	01-19	8	0	0	0	0	0	2	2	1	0	1	$7.24	2
Clerical	20-24	104	0	69	0	6	3	13	6	6	0	0	4.01	1
Sales	25-29	90	0	85	0	0	0	0	0	2	0	1	3.33	2
Domestic	30	45	1	40	0	2	0	1	0	0	0	1	3.80	0
Other services	31-38	168	31	94	8	15	0	5	2	7	0	3	3.69	3
Farm/forest/fsh	40-47	79	0	39	0	18	2	15	0	3	0	0	4.23	2
Processing	50-59	153	0	120	0	17	0	1	0	8	0	0	3.91	7
Machine trades	60-69	10	0	8	0	0	0	0	1	0	0	1	4.13	0
Bench work	70-79	6	0	2	0	1	0	1	0	0	0	1	4.79	1
Structural	80-89	65	0	23	0	16	4	4	3	6	0	8	4.86	1
Mtr frgt/trans	90-91	28	0	2	0	8	3	5	2	0	2	6	5.96	0
Pkging/mat hndl	92	247	1	69	0	31	6	22	0	112	2	1	4.94	3
Other/misc	93-97	3	0	2	0	0	0	0	0	1	0	0	4.28	0
Total		1,006	33	553	8	114	18	69	16	146	4	23	$4.28	22

*U.S. Department of Labor, Dictionary of Occupational Titles.

NOTE: [A] The number of persons hired as reported on Table B07 was 980 (or 97%) of the total openings received.

[B] Other includes wages not paid on a time basis.

SOURCE: Labor Market Information Section, ESARS activity reports, Table B07, Job Openings Received and Filled by Occupational Category and Hourly Wage Rate, 3/31/87 Program Year to date.

Table 19: Monte Vista - Alamosa Wage Rates Compared With Job Service Centers in Other Areas, July 1, 1986 - March 31, 1987

Job Service Centers	Total nonag and ag	$ Hourly wage rates and cumulative no. of openings listed on job orders by number and percent[1)A)]											
		< 3.35	3.35 3.84	3.85 3.99	4.00 4.49	4.50 4.99	5.00 5.49	5.50 5.99	6.00 6.49	6.50 6.99	7.00 +	Ave. $	Other[B)]
Monte Vista-Alamosa	1,006	33	553	8	114	18	69	16	146	4	23	4.23	22
	100%	3%	55%	1%	11%	2%	7%	2%	15%	0%	2%		2%
Colorado Statewide[2)]	100%	2%	30%	1%	15%	7%	16%	2%	4%	1%	9%	4.70	13%
Colorado Springs	100%	1%	24%	0%	22%	7%	16%	2%	4%	1%	9%	5.17	14%
Durango	1,162	23	216	4	151	156	405	29	29	21	82	4.83	46
	100%	2%	19%	0%	13%	13%	35%	2%	2%	2%	7%		4%
Gunnison	1,267	6	282	1	159	271	199	46	52	8	71	4.71	172
	100%	0%	22%	0%	13%	21%	16%	4%	4%	1%	6%		14%
Pueblo	2,343	40	1,199	2	147	65	142	30	33	21	275	4.39	389
	100%	2%	51%	0%	6%	3%	6%	1%	1%	1%	12%		17%
Trinidad	335	8	197	0	38	7	27	5	9	3	14	4.01	27
	100%	2%	59%	0%	11%	2%	8%	1%	3%	1%	4%		8%
Walsenburg	55	1	28	0	7	0	8	1	1	1	6	4.85	2
	100%	2%	51%	0%	13%	0%	15%	2%	2%	2%	11%		4%

NOTE: A) For individual office areas, data in the table represents the total number of openings received from employers using the JSC. Statewide data represents persons hired.

B) Other includes wages not paid on a time basis.

SOURCE: 1) Labor Market Information Section, ESARS activity reports, Table B07, Job Openings Received and Filled by Occupational Category and Hourly Wage Rate, (selected JSC offices), 3/31/87 Program Year to date.

2) Ibid., Table 16, Placements by Wages, Industry, and Occupation, 3/31/87 Program Year to date. Statewide data includes all of the JSC offices in Colorado, including both rural and metro areas.

Table 20: Job Service Coverage of the San Luis Valley Labor Market, January 1986 - February 1987

(Alamosa - Monte Vista Job Service Centers)

SIC industry title*	Number of establishments Total	Placing job orders with JSC	Employer penetration rate
Agriculture, forestry, fisheries	87	54	62%
Manufacturing	36	12	33
Wholesale/retail trade	314	103	33
Subtotal	437	169	39
Mining/construction	133	36	27%
Transportation, public utilities	47	10	21
Finance, insurance, real estate	78	12	15
Lodging/business/personal/auto/services	135	37	27
Health/education/social services	162	13	26
Subtotal	605	129	21%
Total	1,042	298	29%

*U.S. Office of Management and Budget, Standard Industrial Classification Manual.

SOURCE: Information prepared by the Monte Vista Job Service Center using 2nd Quarter 1986 ES-202 employer listings and unpublished data.

POPULATION DATA

POPULATION DATA

The following tables represent area populations for the six-county San Luis Valley.

Table 21: Change in Population San Luis Valley, 1980-1986

	1980 Census[1]	%	1986 Estimate[2]	%	1980-86 % change
Alamosa	11,799	31.1	12,730	31.1	7.8
Conejos	7,794	20.6	8,221	20.1	5.4
Costilla	3,071	8.1	3,347	8.2	9.0
Mineral	804	2.1	736	1.8	-8.4
Rio Grande	10,511	27.7	11,811	28.9	12.4
Saguache	3,935	10.4	4,049	9.9	2.8
Total	37,914	100.0	40,894	100.0	7.8

SOURCE: 1) 1980 Census of Population and Housing, Summary Characteristics for Governmental Units and Standard Metropolitan Statistical Areas, (PHC80-3-7), Table 1.

2) Colorado Department of Local Affairs, Demographic Section, Conservation Trust Fund, Preliminary July 1, 1986 Population Estimates, (released 4/22/87).

Table 22: City Population Estimates 1986

	Total Population		Total Population		Total Population
Alamosa County		Costilla County		Rio Grande County	
Alamosa	7,059	Blanca	279	Del Norte	1,828
Hooper	79	San Luis	942	Monte Vista	4,360
Unincorporated	5,592	Unincorporated	2,126	Unincorporated	5,623
	12,730		3,347		11,811
Conejos County		Mineral County		Saguache County	
Antonito	1,147	Creede	553	Bonanza	8
La Jara	886	Unincorporated	183	Center	1,836
Manassa	889		736	Crestone	48
Romeo	435			Moffat	128
Sanford	717			Saguache	638
Unincorporated	4,179			Unincorporated	1,391
	8,221				4,049

SOURCE: Division of Local Government, Demographic Section, Conservation Trust Fund, Preliminary July 1, 1986 Population Estimates, released 4/22/87.

Table 23: Population Estimates by Age and Sex, 1987

	Total population	<16	Work-age pop. est.	Percent in age group 16-19	20-24	25-34	35-44	45-64	65+
Alamosa	12,770	26.2%	9,242	8.2%	10.3%	17.0%	13.7%	15.3%	9.2%
Male	6,310	27.9	4,550	7.8	10.4	17.0	14.1	14.6	8.2
Female	6,460	24.6	4,874	8.8	10.1	17.0	13.3	16.1	10.1
Conejos	8,170	31.3	5,613	7.4	5.9	13.7	12.5	18.4	10.8
Male	4,110	30.4	2,861	7.5	6.1	13.4	12.7	18.0	11.9
Female	4,060	32.3	2,752	7.4	5.7	14.0	12.3	18.7	9.6
Costilla	3,470	25.6	2,562	7.5	5.8	13.3	13.8	20.5	13.5
Male	1,720	25.6	1,280	7.6	5.2	14.5	13.9	19.8	13.4
Female	1,750	25.7	1,282	7.4	6.3	12.0	13.7	21.2	13.7
Mineral	850	22.4	660	7.1	5.9	18.8	21.2	17.6	7.0
Male	430	20.9	340	7.0	7.0	20.9	20.9	16.3	7.0
Female	420	23.8	320	7.1	4.8	16.7	21.4	19.1	7.1
Rio Grande	11,710	26.5	8,607	6.3	6.3	14.7	15.0	17.9	13.3
Male	5,770	27.4	4,179	6.4	6.4	15.2	14.0	17.9	12.7
Female	5,940	25.6	4,428	6.2	6.2	14.1	16.0	17.9	14.0
Saguache	4,030	27.2	2,943	6.5	6.2	15.4	13.1	19.4	12.2
Male	2,050	28.8	1,460	6.3	6.4	15.6	14.2	18.5	10.2
Female	1,980	25.8	1,483	6.6	6.1	15.1	12.1	20.2	14.1
San Luis Valley	41,000	27.3	29,807	7.3	7.4	15.2	14.0	17.5	11.3
Male	20,390	28.0	14,670	7.2	7.5	15.5	13.9	17.1	10.8
Female	20,610	26.6	15,137	7.4	7.2	15.0	14.0	18.0	11.7

SOURCE: Labor Market Information Section, Population by Age, Sex Race/Ethnicity, FY 1987, December 1986.

Table 24: Educational Attainment

	Alamosa	Conejos	Costilla	Mineral	Rio Grande	Saguache	Colorado %
Persons 25+	6,022	4,045	1,775	490	6,029	2,232	
% less than 5 yrs. elementary school	3.2	10.1	11.7	0.4	6.1	6.7	1.8
% high school graduates	70.9	52.0	45.9	83.5	62.0	59.3	78.6
% 4 or more years of college	20.6	9.7	10.1	22.9	15.3	11.2	23.0

SOURCE: 1980 Census of Population, General Social and Economic Characteristics, Vol. I. PC80-1-C7, Tables 175, 66.

ECONOMIC IMPACT ON THE AREA

ECONOMIC IMPACT ON THE AREA

The following information is abstracted from an ANRE report (Winger, 1987). These data and resulting information were developed specifically for this feasibility report. Data were generated through the use of modeling and computer simulation.

Total estimated new business generated in the SLV by the operation of the plant and the export of plant output is: $9,088,953. Estimated new employment in the SLV as a result of the operation of the plant and export of plant output is 109.5 full time equivalent jobs.[1] Distribution of this new business and employment amongst business sectors of the modeled economy are presented in the following tables and figures.

Table 25 shows the distribution of the estimated new business amongst sectors of the SLV economy. In addition to the impact of the proposed $4.2 million worth of business in the potato processing sector, impacts stimulated by the increase in exports generated in potato processing exceed $1.5 million in both the vegetable and household sectors. Estimated increases in each of the health services, insurance and real estate, retail, wholesale, and utility sectors exceed $100,000. The distribution of all $9,088,953 of estimated new business is depicted graphically in Figure 1.

Table 26 shows the distribution of estimated new employment amongst sectors of the SLV economy. Distribution of jobs amongst sectors of the economy differs from the distribution of new business dollars (Table 25 and Figure 1), because of differences in the ratio of labor to other inputs necessary for production in each sector. In addition to the 45.4 full time equivalent new jobs in the proposed potato processing sector, the estimated new jobs would be: vegetable growing sector (21.2), retail trade sector (10.5), wholesale trade sector (5.3), school sector (4.1), health services sector (3.3), eating and drinking establishments (3.3), agricultural service sector (2.4), services sector (2.2), utility sector (1.6) and banking sector (1.0). The distribution of these new jobs, estimated impacts of the proposed potato processing plant, is shown graphically in Figure 2.

Please refer to Appendix A for the calculations to obtain the size and distribution of expenditures by the proposed potato processing plant.

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[1] A full time equivalent job is a job for one full time employee, two one-half time employees, three one-third time employees, etc.

Table 25: Direct and Indirect Impact
Monetary Impact by Sector

Cattle	$ 8,259
Feedlots	3,144
Sheep-Hogs	14,029
Grains	3,802
Hay	8,120
Seeds	106
Vegetables	1,641,129
Sugar	921
Greenhouse	42
Agricultural Services	62,565
Landscaping	772
Metal Mining	0
Ores N.E.C.	251
Mines N.E.C.	0
Gravel	614
Residential Construction	20,523
Construction N.E.C.	11,174
Food Processing	6,626
Ice Manufacturing	156
Food Manufacturing	2,562
Fiber Manufacturing	16,394
Logging	2,449
Printing and Publishing	13,227
Manufacturing N.E.C.	26,553
Jewelry Manufacturing	6,859
Railroads	14,961
Transportation	31,553
Communication	27,276
Radio and Television	5,925
Utilities	305,089
Wholesale	147,838
Retail	253,043
Banking	37,351
Insurance and Real Estate	216,289
Lodging	19,037
Services	93,234
Food and Drink	79,779
Automobile Servicing	46,545
Amusements	8,937
Health Services	115,995
Schools	4,333
Colleges	5,898
Other Associations	9,406
Post Office	7,972
Government N.E.C.	49,042
Potato Processing	4,200,000
Households	1,559,173
TOTAL	$9,088,953

Table 26: Direct and Indirect Impact
Employment Impact by Sector

Cattle	0.04
Feedlots	0.01
Sheep-Hogs	0.07
Grains	0.04
Hay	0.04
Seeds	0.01
Vegetables	21.22
Sugar	0.01
Greenhouse	0
Agricultural Services	2.48
Landscaping	0.02
Metal Mining	0
Ores N.E.C.	0
Mines N.E.C.	0
Gravel	0.01
Residential Construction	0.2
Construction N.E.C.	0.13
Food Processing	0.03
Ice Manufacturing	0
Food Manufacturing	0.02
Fiber Manufacturing	0.37
Logging	0.02
Printing and Publishing	0.3
Manufacturing N.E.C.	0.25
Jewelry Manufacturing	0.09
Railroads	0.2
Transportation	0.57
Communication	0.42
Radio and Television	0.07
Utilities	1.65
Wholesale	5.3
Retail	10.49
Banking	1.05
Insurance and Real Estate	0.87
Lodging	0.59
Services	2.21
Food and Drink	3.35
Automobile Servicing	0.44
Amusements	0.28
Health Services	3.31
Schools	4.11
Colleges	0.18
Other Associations	0.57
Post Office	0.26
Government N.E.C.	2.78
Potato Processing	45.44
TOTAL Full Time Equivalents	109.5

Figure 1: Direct and Indirect Impact
Monetary Impact by Sector

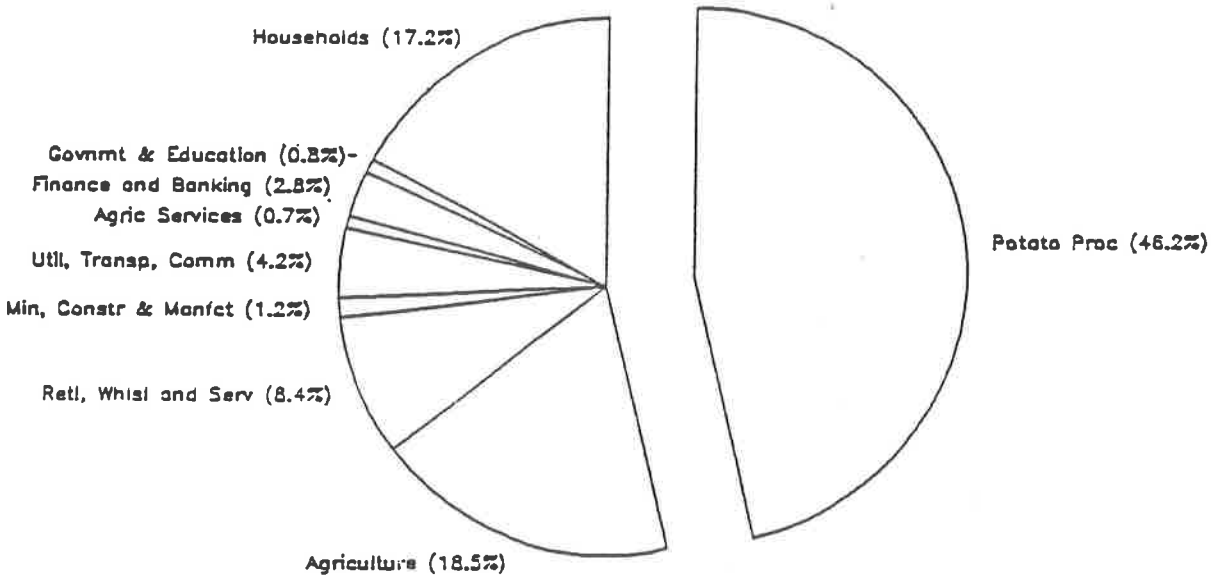
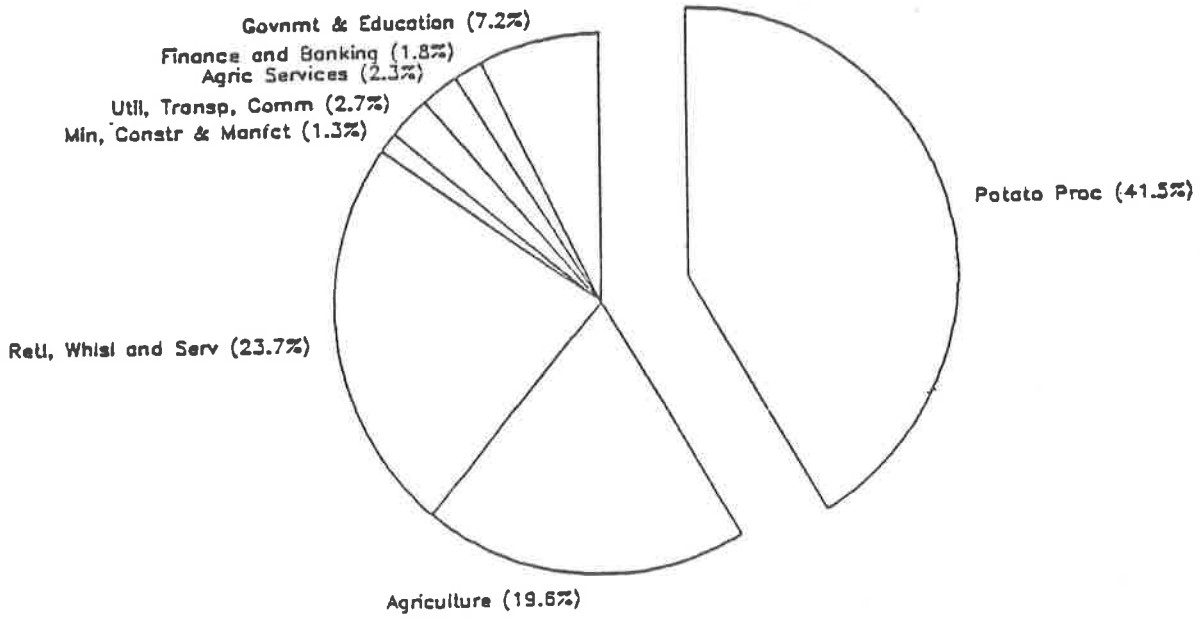


Figure 2: Direct and Indirect Impact
Employment Impact by Sector



PROCESSING QUALITY OF

SAN LUIS VALLEY POTATOES

PROCESSING QUALITY

The processing quality of SLV potatoes is shown in comparison to other western locations in Table 27. The SLV produces potatoes high in solids compared with other western areas (Holm, 1987). Some reasons for this type of production are "the high light intensity and moderate to cool air and soil temperatures (IBID.)

In a potato tuber the dry matter, or solids content, is one of the best indicators on internal quality. Specific gravity is used to estimate the solids content of tubers (IBID.).

Specific Gravities for the Russet Burbank are represented in Table 27, while Fry Color is represented in Table 28.

Table 27: Processing Quality Comparisons

Comparison of specific gravities for Russet Burbank grown at various locations in the West. Source of data: 1980-1986 WRCC-27 trials.

Year	Center, CO	Aberdeen, ID	Hermiston, OR	Othello, WA
1980	1.087	1.077	1.091	1.089
1981	1.096	1.091	1.084	1.081
1982	1.088	1.077	1.084	1.082
1983	1.089	1.086	1.084	1.090
1984	1.096	1.082	1.082	1.075
1985	1.090	1.077	1.077	1.074
1986	1.087	1.088	1.081	1.075
Average	1.090	1.083	1.083	1.081

Table 28: Fry Color

Clone	Fry Color*			
	1985		1986	
	6 wks/55F	6 wks/55F + 10wks/45F	6 wks/55F	6 wks/55F + 8 wks/45F
TC582-1	4.5	4.0	3.0	3.0
Centennial Russet	1.5	2.0	1.0	1.0
Nooksack	---	---	3.0	3.0
Russet Burbank	4.0	3.5	4.0	4.0

*Fry color is rated on a 1 to 5 scale, with 5 being the lightest or best color.

REFERENCES

REFERENCES

Governor's Task Force on Rural Economic Development, San Luis Valley Agricultural Subcommittee, Agriculture Development Stratison, Ag Processing, May 27, 1987.

Holm, David G., Superintendent, Agricultural Experiment Station, Colorado State University, San Luis Valley Research Center, 0249 East Road 9 North, Center, Colorado 81125, March 3, 1987.

Local Climatological Data Annual Summary With Comparative Data, Alamosa, Colorado. National Oceanic and Atmospheric Administration, Compiled from records on file at the National Climatic Data Center, Asheville, North Carolina 28801. United States Department of Commerce, 1985.

Loftis, Jim C. Summary of Water Quality and Waste Treatment Concerns, Colorado State University Extension Agricultural Engineer, Colorado State University, Fort Collins, Colorado 80825, November 21, 1986.

Stump, John S. San Luis Valley Report on Labor Resources, San Luis Valley Regional Development and Planning Commission, Box 28, Adams State College, Alamosa, Colorado 81102, May 1987.

Stuart, Robert Scott and Robert Mace Davis. Toward Determining the Feasibility of Potato Processing in the San Luis Valley. 2309 E.C.R. 36, Fort Collins, Colorado 80525, April 3, 1986

Thompson, Wayne D., Processing Potato Grower Survey, Potato Administrative Committee, P. O. Box 348, Monte Vista, Colorado 81144, September 23, 1986.

APPENDIX A

CALCULATIONS TO OBTAIN THE SIZE AND DISTRIBUTION OF EXPENDITURES BY THE PROPOSED POTATO PROCESSING FACILITY

Appendix A
Calculations to Obtain the Size and Distribution of Expenditures by the Proposed Potato Processing Plant

Size of Plant Calculation

The break even production of $3.9 million per year is identified in a December 5, 1985 letter from Glenn Kissinger to Robert Barela. Adding 7 percent[1] to this break even figure yields a plant with annual product of $4.2 million.

$$\$3.9 \text{ million} \times .07 = \$.3 \text{ million}$$

$$\$3.9 \text{ million} + \$.3 \text{ million} = \$4.2 \text{ million}$$

Calculations for Distribution of Expenditure by the Proposed Potato Processing Plant

A potato processing sector with a gross sales of $1000 is inserted into the transactions table of the inter-industry model of the SLV economy.[2] In order to construct the potato processing sector, expenditures by the proposed potato processing plant in other sectors of the SLV are estimated as follows. A distribution provided by Cothern[3] for a proposed potato processing plant in California is utilized. Profit in this distribution is adjusted to a 7 percent profit for the plant in the SLV. Calculations to compute the expenditures by the proposed plant are computed using the following formula.

$$\$C_S/\$SLV_S = \$16,663,280/\$1000$$

Where:

$C_S are expenditures in Cothern's budget in sectors(s) of the SLV inter-industry model;

$SLV are expenditures by the proposed plant in sectors(s) of the model;

$16,663,280 is the size of Cothern's plant adjusted for a 7 percent rate of profit; and,

$1000 is the size of the SLV plant (before expansion by designating $4.2 million of potato products from the SLV economy).

Assumptions about the percentage of spending by the proposed plant in each sector of the SLV economy are made with the advice of Wayne Thompson, SLV Potato

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1 Production 7 percent above breakeven production is assumed reasonable for a potato processing plant.

2 This sector is later expanded by designating an export of $4.2 million of processed potato products.

3 Cothern and Cothern, p. 96.

Administrative Committee. These assumed percentages are applied, by sector, to the vector of $\$SLV_s$ computed above to obtain the following set of expenditures per $1000 of output by the proposed processing plant within the economy of the SLV.

Vegetables	$381
Transportation	1
Communications	3
Utilities	63
Retail	22
Insurance	6
Services (Not Elsewhere Classified)	10
Auto Services	3
Local Government	4
Households	196
Total Expenditures in the SLV per $1000 Output Potato Processing Plant	$689

Expenditures outside the SLV including interest, depreciation and a profit total of $311. These data comprise the potato processing sector utilized in the inter-industry model.

APPENDIX B

AVAILABILITY OF
ENERGY AND WATER RESOURCES

The following is a statement by

Mr. Steven E. Vandiver
Division Engineer
Division III
Division of Water Resources
P.O. Box 269
Alamosa, Colorado 81101.

"This letter is in response to your request for information concerning the availability of well rights for a potato processing plant in the San Luis Valley. There are several methods for acquiring the kind of water right which would be required. Among the available options are:

1. Purchase an existing commercial/industrial facility which has an historical consumptive water use equal or greater than the proposed processing plant. Then convert the facility and if needed, change the use of water through Water Court.

2. Purchase an irrigation well right with an appropriate amount of historical consumptive use, then go through Water Court for a change of use.

3. Purchase a surface water right and with Court approval, convert the use to commercial/industrial.

4. Buy into one of the existing commercial augmentation plans. These plans allow the purchaser of these water rights to secure well permits.

Other methods of obtaining a water right also exist. In short, there are a number of ways of supplying sufficient water to develop a potato processing plant."

For specific information on augmentation plans in the SLV, contact the following:

T.M.W., Inc.
Regis Chefas
1401 First Street
Alamosa, CO 81101

San Luis Valley Water Conservancy District
Floyd Getz
P. O. Box 43
920 First Avenue
Monte Vista, CO 81144

The following letters concern the availability of water in general, and the availability of energy in the SLV area.

RIO GRANDE COUNTY
LAND USE ADMINISTRATION

P. O. Box 396
Del Norte, Colorado 81132
(303) 657-2745

July 30, 1987

TO WHOM IT MAY CONCERN:

Water, both domestic and commercial, is available for purchase from the San Luis Valley Water Conservancy District in Rio Grande County as long as the location is located in the Rio Grande River Drainage. The District is working on a storage unit and augmentation plan for the Pinus Creek Drainage at the present time.

Sincerely,

Kelly Yeager
Land Use Administrator

SAN LUIS VALLEY RURAL ELECTRIC COOPERATIVE, INC.

3625 WEST U.S. HWY. 160, MONTE VISTA, COLORADO 81144 – Tel. 303-852-3538

July 21, 1987

To Whom It May Concern:

Economic Development and the prospect of new industry seems to be on everyones mind these days, the San Luis Valley Rural Electric Cooperative included.

In order to create a strong, healthy and stable economy, the San Luis Valley must continue to grow. Processing of locally produced ag products provides jobs that greatly benefit the local economy. The San Luis Valley depends on the agricultural sector and the future of that sector hinges, in part, on our ability to identify markets for crops processed in our area.

As well as agriculture, the San Luis Valley is a great place for any business, your business. Wide open spaces, plenty of natural resources, labor and, of course, electricity.

The San Luis Valley Rural Electric Cooperative is proud of our area and would like to affirm our committment to the economic process with any industry and let you know we have the power to meet your needs if the facility is in our territory.

For the full story on a San Luis Valley business move and reliable, low cost electricity for running that business, call or write:

Dean Dennis
San Luis Valley Rural Electric Cooperative, Inc.
3625 West U. S. Hwy. 160
Monte Vista, Co 81144