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FINAL REPORT

SOCIOECONOMIC ASSESSMENT FOR
THE BELINA #2 MINE PERMIT
APPLICATION BY VALLEY CAMP
OF UTAH, INC.

Submitted to:
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SUMMARY

- The Valley Camp of Utah, Inc., a wholly-owned operation of the Quaker Oil Corporation, proposes to develop the Belina #2 mine in the Pleasant Valley area of northwestern Carbon County, Utah.
- Valley Camp currently operates the Belina #1 mine in the same area. Current operations also include administrative offices and a rail loadout facility.
- Development of Belina #2 would begin in 1981, with full production being reached in 1984. Peak annual production would be 840,000 tons. The aggregate annual production of both mines will be 1.84 million tons.
- A productive life of 25 years is anticipated for the Belina #2. Belina #1 has a remaining productive life of approximately the same duration.
- A maximum of 50 construction workers and 261 permanent production workers would be employed at the facility.
- The development of Belina #2 would impact the surrounding region comprised of Carbon, Sanpete, Emery, and Utah Counties. The primary impacts would be in Carbon and Sanpete Counties and the communities of Mt. Pleasant, Fairview and Helper.
- The potential exists for significant adverse impacts in the nearby town of Scofield. Due to its critical need for capital facility improvements, a moratorium is in place prohibiting new residential development.
- Belina #2 would result in a total population impact of 1,153 persons. Of these, 920 are expected to reside in Carbon and Sanpete Counties. Project-related population increases would account for approximately 8.5 percent of the total growth expected in Carbon and Sanpete Counties by 1990. Carbon County population will increase to 31,400 from 23,500, and Sanpete County population will grow to 20,950 from 14,900 by 1990.
- The most critical areas of impact associated with the project are in the area of housing, schools in Sanpete County, sewage treatment in Fairview, and transportation in the vicinity of the mine.
- The construction of a new connector through Eccles Canyon (west from the access road to the mine) will provide more direct access to the Pleasant Valley mining area from the Sanpete Valley. The applicant intends to expand the company's current busing program to help mitigate impacts on the highway transportation network due to increased volume.
- Local financial resources are already limited and may not be able to support the development of expanded public facilities and services to cope with the BASELINE growth.

- Participation by the applicant in an active mitigation program, such as it is doing with the busing program, could significantly reduce the adverse impacts generated by the additional development.

I. Description of the Proposed Action

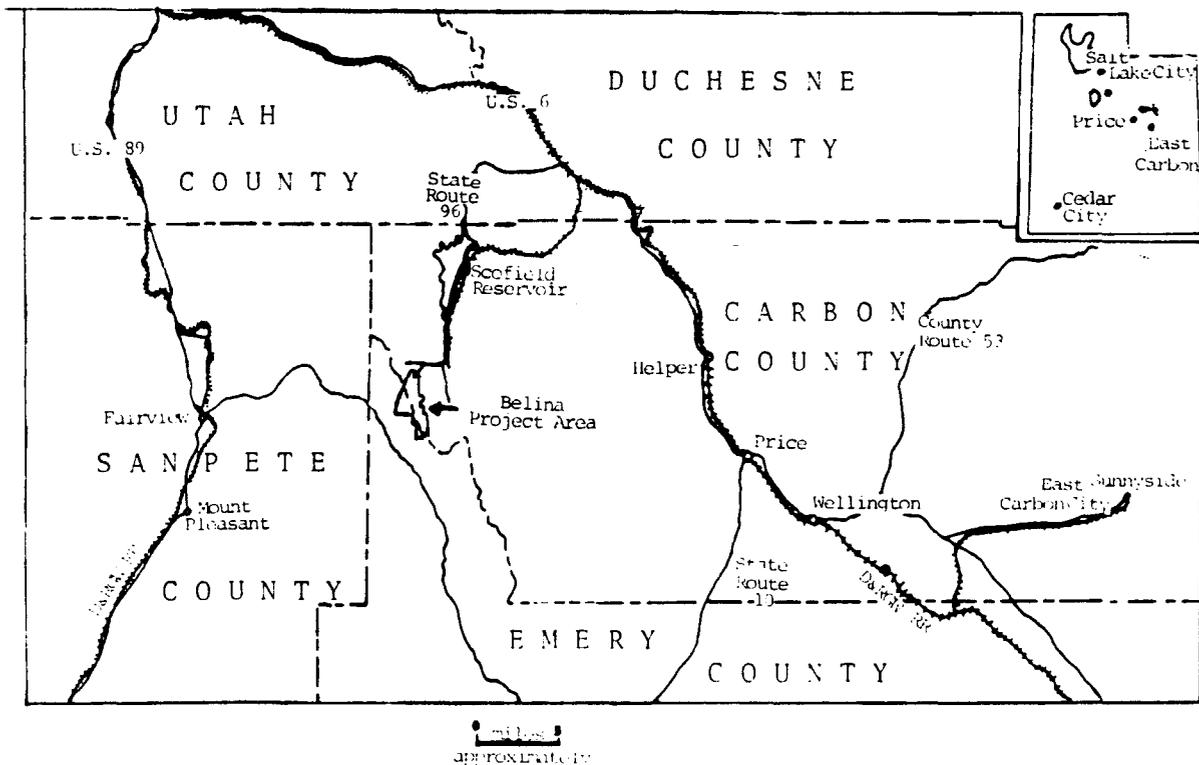
The Valley Camp of Utah, Inc. (Valley Camp) has submitted a plan to the U.S. Office of Surface Mining (OSM) to operate an underground coal mine near Scofield in the Pleasant Valley area of northwestern Carbon and Emery Counties, Utah. The permit area is located within the boundaries of the Manti-LaSal National Forest. The operation, named Belina #2, would be integrated into Valley Camp's existing operations in the area, which include the Belina #1 mine, administrative offices, and rail loadout facility. Valley Camp's plans for the future include the possible reopening of the O'Connor mine in the same area although no formal notice of intent or application has been received by the OSM. Valley Camp is a wholly-owned subsidiary of the Valley Camp Coal Company, a private corporation wholly-owned and operated by the Quaker State Oil Corporation.^{1a} The mining permit boundary encompasses over 2,700 acres concentrated in Sections 30 and 31, T. 13 S., R. 7 E., and Sections 25 and 36, T. 13 S., R 6 E.² The loadout facilities for the existing and proposed operations are located in Pleasant Valley approximately 3 miles northeast of the mining area (see Operations Map C, Volume IV of the application).^{1a}

Of the lands involved, approximately 76 percent is on Federal leases, 8 percent is part of a Federal coal exchange program, and 16 percent is either private land or is leased from the county.² The permit area is located approximately 20 miles west of Price and Helper, 4 miles southwest of Scofield, and 110 miles southeast of Salt Lake City (see Figure 1).^{1a}

Valley Camp proposes to develop the Belina #2 at the same location as the Belina #1. Belina #2 would make use of most of the same surface

facilities as Belina #1, but would mine a lower coal seam. Valley Camp proposes to undertake the development of the Belina #2 in 1981. While the application for the mining permit requests a 5-year permit period, the anticipated life of the Belina #2 mine is 25 years. This production schedule coincides closely with the expected mine life for the Belina #1 mine.

Figure 1
Location Map
Belina Mine Project Area



Full production of approximately 840,000 tons annually from the Belina #2 mine would be reached in 1985 and would continue over most of the productive life of the mine. Total annual production of the complex would be 1.84 million tons when coupled with the 1,000,000 tons of produced yearly at the Belina #1 mine. 1a,1b

The development of the Belina #2 is expected to involve only limited construction, since the Belina #2 mine is to be located at the site of an existing operation. The only significant construction employment is expected to occur in 1984, when construction of a conveyor system to transport coal to the loadout facility occurs. Although these workers are expected to be employed by a contractor, they will be considered as part of the project-related work force (see Figure 2 for project-related employment levels through the year 1990). The operations labor requirements for the Belina #2 mine would require the employment of an additional 249 persons beyond the existing work force of 327 persons. The additional employees would be hired between 1982 and 1984, in approximately equal increments.^{1c,2}

Figure 2
Belina #1 and #2 Employment Levels

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Construction	0	0	0	50	0	0	0	0	0	0
Total Valley Camp										
Permanent	327	410	493	576	576	576	576	576	576	576*
Belina #1 Only	315	315	315	315	315	315	315	315	315	315
Belina #2 Only	12	95	178	261	261	261	261	261	261	261

*Employment would be maintained at this level throughout the life of the mines.

Information supplied by the applicant indicates that 85 percent of their current work force reside in Carbon (50 percent), Sanpete (13 percent), and Utah (22 percent) counties. Valley Camp operates a bus service from Price/Helper and Orem/Provo to ease the commuting burden. Valley Camp intends to expand the busing program into Sanpete County, i.e., into Mt. Pleasant/Fairview when Belina #2 developed. This will tend to increase

the share of new employees coming from Sanpete County while reducing the number of workers coming from Carbon and Utah Counties.

In addition to opening the new mine, the application includes the construction of several conveyors to transport the coal from the mines to the loadout facility, a task currently accomplished using trucks. Construction of the conveyors would not be expected to occur before 1984.^{1a,1c} Several roads and powerlines will also be built or improved.

Access to the area is via U.S. 6 from Price or Salt Lake City, to County Road 96, through Scofield, both of which are improved surface roads. From County Road 96, access is via a dirt and graveled road up Eccles Canyon and then via Whiskey Gulch to the Belina #1 portal. Eccles Canyon is also the site of Coastal State Energy's Skyline Mine. Thus, the Eccles Canyon road is being widened and improved. Ultimately, it will be extended through Eccles Canyon to join an existing road behind Electric Lake, west of the permit area, to connect with S.R 31. When completed, it will provide access over the Wasatch Plateau to communities in Sanpete County, e.g., Mt. Pleasant.^{1a,3}

II. Description of Site Influence and the Existing Socioeconomic Environment

Straddling the Carbon-Emery county line, Valley Camp's Belina #2 site sits in the midst of an area alternately referred to as "Coal Country" and "Castle Country." Not only is the area rich in energy deposits, but it is famous for its unusual natural rock formations with the steep cliffs of the Wasatch Plateau rising above the valley floors. As a result, the area's land has been put to a variety of uses from mining to wilderness.⁴

Not surprisingly, mining provides central Utah with a significant portion of its employment. In Carbon and Emery counties for example, mining accounted for 18 percent of total county employment in 1970. By 1978, the share of total employment accounted for by Mining had increased to 20 and 27 percent, respectively (see Figure 3), as a result of increased coal development. Government and trade also figured highly in employment contributions for Carbon County. This reflects Price's role as a regional trade and service center in central Utah. While Government was also a major employer in Emery County, the Construction and Transportation, Public Utilities, and Communications industries were the other predominant sectors. The construction and operation of two major electrical generating stations in Emery County are responsible for these employment patterns. As the construction activities decline, construction employment would be expected to decline. Either increased mining employment would offset the reduction or total employment would also decline.

Nearby Sanpete County offers a significant contrast to Carbon and Emery Counties, relying on Manufacturing as the largest contributor of total employment, followed by Government. Agricultural employment, which is insignificant in Carbon and Emery Counties, accounts for approximately

10 percent of the total employment in Sanpete County. Mining also plays a significant role in Sanpete County's economic picture. The employment data do not reflect this as it is typically reported on a place of work, not a place of residence basis. In actuality, a large number of Sanpete residents are employed in the mines and at the generating stations in Carbon and Emery Counties. The number of workers commuting to the coal mines is expected to increase due to an increase in opportunities and the improved access. Also, a recent announcement by a local manufacturing firm in Sanpete County to cease operations could increase the number of persons seeking employment in nearby locations.⁵

Figure 3
Employment by Major Sector, 1970 & 1978
Carbon, Emery, and Sanpete Counties

	Carbon Cty.		Emery Cty.		Sanpete Cty.	
	<u>1970</u>	<u>1978</u>	<u>1970</u>	<u>1978</u>	<u>1970</u>	<u>1978</u>
Total Employment	5,386	8,406	2,012	5,119	4,558	4,839
Proprietors	604	746	585	710	1,377	1,341
Farm	83	46	57	46	440	387
Agriculture	9	20	0	0	1	58
Mining	990	1,668	367	1,378	11	3
Construction	132	322	139	1,303	221	148
Manufacturing	191	301	33	21	894	957
Trade	940	1,614	26	237	34	64
T.P.U.C. ^a	489	696	168	490	339	515
F.I.R.E. ^b	138	238	6	188	45	84
Services	405	991	117	254	307	317
Government	1,405	1,764	514	582	889	965

^aT.P.U.C. = Transportation, Public Utilities, and Communication

^bF.I.R.E. = Finance, Insurance, Real Estate

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, selected years.

Differences in the composition of the three county economies are reflected in local per capita personal income (PCPI) data (see Figure 4). Historically Carbon County has had the highest PCPI among the three

counties. In 1970, Sanpete had the second highest PCPI. However, by 1975, mining and construction employment was increasing significantly in Emery County, such that Emery County PCPI overtook Sanpete's, i.e., relative to manufacturing and agriculture, mining and construction wages and income are significantly higher. That trend is continuing with a growing gap between the two. Although the absolute and relative growth in local PCPI has been impressive, Emery and Sanpete still have PCPI figures below that of the Utah State average. Surprisingly, even Carbon County, which had the second highest PCPI in Utah in 1979, considerably above the state average, remains below the national PCPI of \$8,200 in 1979.⁶

Figure 4
Per Capita Personal Income
Selected Years

	<u>1970</u>	<u>1975</u>	<u>1979</u>
Carbon	3,038	5,176	7,813
Emery	2,135	5,475	6,037
Sanpete	2,767	4,045	4,373
Utah (State)	3,227	4,938	7,197

Source: U.S. Department of Commerce, Bureau of Economic Analysis,
Regional Economic Information System, 1981

The effects of increased energy development are also apparent in another indicator of economic health, the unemployment rate. Figure 5 presents comparative unemployment data for 1970, 1976, and 1980. In 1970, the unemployment rate in all three counties was significantly above the state and national averages. By 1976, coal had begun to regain its competitiveness with oil as U.S. oil prices began their ascent toward world

levels. The unemployment figures reflect this trend, as well as the national recessionary trend of the mid-70's. Local county unemployment rates fell over this time period, though Sanpete's manufacturing-oriented economy does not reach the low rates of the primary coal producing counties. In 1980, Carbon and Emery Counties' respective unemployment rates of 5.2 and 4.5 percent were below the national and state averages. Sanpete County's unemployment rate, which had fallen to 8.2 percent remained above the state and national averages.⁴ Furthermore, recent announcements of the closing of several manufacturing facilities will most likely lead to an increase in Sanpete unemployment. Local officials are attempting to offset these losses by attracting new firms to the region; apparently with some success.⁷

Figure 5
Comparative Unemployment Data
Selected Years

	<u>1970</u>	<u>1976</u>	<u>1980</u>
Carbon	10.0	6.2	5.2
Emery	9.5	4.3	4.5
Sanpete	12.4	9.8	8.2
Utah (State)	6.1	5.2	6.1
U.S.	4.9	7.7	7.1

Source: Utah Department of Employment Security, selected data, Salt Lake City, Utah.

Economic activity and natural scenic beauty attracted people of varying backgrounds to live and work in the central Utah area. Communities within approximately 1 hour's driving distance of Belina include Price, Helper, Scofield, and Wellington in Carbon County, Huntington in

Emery, and Fairview and Mt. Pleasant in Sanpete. These cities and towns are shown in Figure 1.

Significant population growth accompanied the increases in employment between 1970 and 1980. Emery County experienced the greatest population growth during the decade. Total population grew from 5,137 to 11,451 persons, a 123 percent increase. This was a dramatic reversal of the population declines which had occurred in all three counties between 1950 and 1970 due to reductions in mining activity and a general outmigration from rural areas. Figure 6 depicts the county population trends for the counties and the state.⁸ This is followed by community population data for 1970 and 1980.

Figure 6
Historical County Population Trends
1940-1980

	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1980</u>	% Change 1970- 1980
Carbon	18,459	24,901	21,135	15,647	22,179	42.3
Emery	7,072	6,304	5,546	5,137	11,451	122.9
Sanpete	16,063	13,891	11,053	10,996	14,620	33.3
State of Utah	550,310	688,862	890,627	1,059,273	1,461,037	37.9

Community Populations
1970 and 1980

	<u>1970</u>	<u>1980</u>	<u>Percent Change</u>
Price	6,218	9,407	51.3
Helper	1,964	2,724	37.4
Scotfield	71	105	47.9
Wellington	922	1,406	52.5
Huntington	857	2,316	170.2
Fairview	696	916	31.6
Mt. Pleasant	1,516	2,049	35.2

Source: U.S. Department of Commerce, Bureau of the Census, selected years.

Racial and ethnic breakouts for Carbon, Emery and Sanpete show that white residents make up the majority of the population exceeding 95 percent of the total in each case.⁸

Price serves as a trade and services center for both Carbon and Emery Counties. Price offers a full range of shopping and service opportunities; a new 70 bed hospital with over 20 physicians; a two-year college, the College of Eastern Utah, which offers a variety of academic, vocational, and continuing education courses; and is the center of regional government activity. Not only is Price the Carbon County seat, but it is the location of a number of state offices serving southeastern Utah, including the Manti-LaSal National Forest Headquarters, a BLM district office, and the Southeastern Utah Association of Governments. Price can expect to maintain, if not expand its role as the major population and trade center in southeastern Utah.^{9,10}

Located 7 miles north of Price, Helper City is the second largest community in Carbon County. Helper's role in the local economy is as a residential center for miners and a transportation center. Helper is a crew change point on the Denver and Rio Grande Western Railroad's main line between Denver, Colorado and Ogden, Utah. There is limited rail passenger service available. General freight and coal are the major commodities transported on this line. While additional coal development in the future will maintain Helper as a transportation center, the surrounding topography severely limits the physical expansion capability of Helper. Any future population growth will thus occur either on the minimal vacant land in and near Helper or it will affect the Price area to the south.^{9,10}

Wellington City is a small community functioning primarily as a residential community for local mining and agricultural activity. Located approximately 6 miles east of Price, Wellington has limited commercial de-

velopment, relying instead on the variety of services available in Price. Wellington's location near the sites of proposed development and the availability of land suitable for residential development will probably lead to additional population growth in Wellington. However, in order for this to occur, Wellington must improve its public facilities and infrastructure if it wants to maintain or improve the level of service provided to its residents. Particularly critical are the community's water and wastewater systems and the public works department's inability to maintain and improve Wellington's street system. Improvement would be needed in these areas if future growth is to occur.^{9,10,11}

Scofield is a very small town located in the Pleasant Valley. Although it is the closest community to the mines in the valley, Scofield offers limited opportunities for significant growth. Scofield offers virtually no commercial services, has limited water supply capacity, no wastewater treatment facilities, inadequate solid waste disposal, and relies on the County Sheriff for law enforcement. The planner for the Southeastern Utah Association of Local Governments recently estimated a total population increase of over 7,000 persons could be associated with planned coal mines in the area. This includes employees, families, and associated service workers and families. The study concludes that over 4 million dollars of capital improvements would be needed to accommodate even 10 percent of the total. Scofield is unprepared to cope with such growth. Thus, the town recently imposed a moratorium on new construction in Scofield until it can adopt a planning and zoning ordinance. Progress must also be made to implement the Pleasant Valley Growth Management Plan and consider various means to finance the needed capital improvements.^{3,10,12}

Sanpete County, located to the west of Pleasant Valley, is the home of a significant number of miners in the coal operations in Emery and

Carbon Counties. This interaction is made possible by several highway links connecting the mining areas and the population centers in northern Sanpete County (see Figure 1). State Route 31 through Huntington Canyon and U.S. Routes 89 and 6 are the primary links providing relatively good access, without excessive travel. Unfortunately, State Route 31 does not provide reliable access during the winter months, forcing many miners to endure longer, more circuitous alternatives. Two events are currently occurring which will tend to increase the participation of Sanpete County residents in the coal mining operations. First, there is significant on-going and proposed coal development activity in the Pleasant Valley near Scofield. This area is the closest region of major activity to north Sanpete County and will provide additional employment opportunities. However, as discussed above, lack of direct year-around accessibility has acted to constrain Sanpete County worker participation in mining. The second major event, the construction of an all-weather road through Eccles Canyon, connecting the Pleasant Valley and State Route 31, is intended to address this problem. When completed in late 1982, or early 1983, it is hoped that it will provide year-around access. An increased number of Sanpete County residents would be expected to be employed in existing and future coal mines in the area. Mt. Pleasant and Fairview are the communities most likely to be effected, along with the surrounding rural areas of Sanpete County.^{3,12}

Mt. Pleasant is the principal community in northern Sanpete County. With a 1980 population of 2,049 residents, Mt. Pleasant was the third largest community in Sanpete County. Both Ephraim and Manti, the county seat, which had 1980 populations of 2,810 and 2,080, respectively, are located south of Mt. Pleasant. Mt. Pleasant's commercial retail and ser-

vice sector serves not only the local community, but also the three communities located within a 7 mile radius; Fairview, Moroni, and Spring City, and the surrounding predominantly agricultural, rural area. This commercial sector provides the residents with essential services and shopping opportunities, although the variety and selection is limited. Residents go to Ephraim, Nephi (25 miles northeast), and Orem-Provo for major purchases or increased selection. Mt. Pleasant is also the home of the Sanpete Valley Hospital, the Wasatch Academy (a private secondary school), and the North Sanpete School District. The school district has been involved in an on-going improvement program to provide adequate facilities in the district. The district has been able to eliminate expensive and unnecessary duplication of facilities by placing the high school in Mt. Pleasant, a middle school in Moroni, and elementary schools in each community. It can thus take maximum advantage of the communities' close proximity to one another. The school system thus has some excess capacity at the current time, but its ability to respond to future growth will depend on the level of growth and the school district's financial condition at the time. The majority of other public facilities and services currently have sufficient capacity to accommodate growth. Appendix 1 provides a brief summary of these services and their adequacy to meet future demand levels.^{9,13,14}

Located approximately 6 miles north of Mt. Pleasant, Fairview sits at the junction of State Routes 31 and 89, the primary access roads to the mining regions. It can thus be expected to be a primary residential center of future coal development related growth. Such growth would definitely change the character of the community. Historically, Fairview has been a small rural town, linked primarily to the agricultural base

of the county. It has also been an attractive retirement community for persons from the Wasatch Front to the north. Both of these factors, along with Mt. Pleasant's location to the south, led to a decline of Fairview's already limited commercial base. Growth was also limited, with much of the growth being older persons with few or no children. Thus, excess capacity existed in Fairview's elementary school, although the facility itself was in need of replacement. Then Fairview grew by over 30 percent between 1970 and 1980. Much of this growth was related to the mining development in Carbon and Emery Counties and involved younger couples in the child-bearing years. As a result, the school enrollment increased to the point that a new elementary school was built. New residential construction has increased the demand on the municipal water, and power systems. Future growth will require capital investment to expand or improve all of these systems (see Appendix 1). Historically, the community has relied on individual septic systems for sewage disposal. Additional growth is likely to require the construction of a central treatment facility. Another area of need is in the area of developable land. Due to the reliance on individual septic systems and their attendant land requirement, there is limited land available for residential development within the municipal boundaries. In order to plan for and control the pattern of future growth, Fairview will most likely have to annex additional land into the city.^{9,13,14}

Huntington is one of the smaller communities that are located within an hour's drive of the Belina #2 site. Situated at the junction of U.S. Routes 10 and 31, the town serves primarily as a residential community for local miners as well as those involved in either the nearby Huntington and Hunter power plants or agricultural activities. Huntington has a

limited commercial and service base and depends on Price and Castle Dale/ Emery County for most services, including health care, schooling, and police protection.^{9,10}

A final element of the existing socioeconomic environment is the local transportation network. As shown in Figure 1, the primary access to the Pleasant Valley is via State Route (S.R.) 96. State Route 96 connects to U.S. 6 approximately 14 miles northwest of Helper. U.S. 6 is the primary east-west highway in the region. It provides access to Provo and Salt Lake City to the west and Price, southern Utah, and Colorado to the east. Thirty miles west of the S.R. 96/ U.S. 6 junction is the junction of U.S. Routes 6 and 89. U.S. 89 provides access to Fairview, Mt. Pleasant communities in the Sanpete Valley. While U.S. 89 and 6 provide year around access to the coal mines for Sanpete County residents, there is an alternative route via S.R. 31 between Fairview and Huntington in Emery County. When open, an unimproved road connects S.R. 31 to the Pleasant Valley. There is currently a construction program underway to build an improved highway between S.R. 31 and Pleasant Valley through Eccles Canyon. Once completed, this road will provide year-round access while reducing the driving distance and time considerably.^{3,9,12}

The Denver and Rio Grande Western Railroad mainline (D&RGW) parallels U.S. 6 through this region. The D&RGW is the main transportation mode for coal out of the region. Limited passenger rail service is also offered by the D&RGW over the mainline. A spur line operates into the Pleasant Valley providing the primary means of transporting coal out of the area. Both the Valley Camp Belina and Coastal States Skyline operations are expected to ship their production via this spur. The D&RGW also operates a branch line south along U.S. 89 into the Sanpete Valley. This

is strictly a freight line with no passenger service offered.^{2,9,15}

Other transportation services available include daily bus service in communities along U.S. 6. Neither Mt. Pleasant nor Fairview have scheduled bus service. No communities in the region have scheduled air service although there is charter air service available in Price.⁹

III. Socioeconomic Impact of the Proposed Action

Valley Camp's proposed Belina #2 mine is only one of several proposed mines either under development or proposed for development in Pleasant Valley. One of these, Coastal State Energy Company's Skyline mine, currently under construction, will become one of the two largest coal mines in Utah, when measured in terms of direct employment. The employment generated by these operations, along with the induced growth in the trade, services and other residentiary sectors would create continued high population growth in the region. Due to Pleasant Valley's location in the northwest corner of Carbon County and the limited highway transportation access routes into the area, the impacts of the growth would be expected to effect Carbon and Sanpete Counties significantly. Utah, Emery, and other surrounding counties would also be affected, but the impacts would be much less severe.

The following section briefly describes the local changes in employment, population, and related socioeconomic variables which would be expected to be associated with the development of Belina #2. The effects are presented both in absolute terms and relative to an established projection of anticipated growth in the region, under a specified set of assumptions. This projection is the standard against which the relative significance of the effects of this particular project can be assessed.

The projections used as the standard for this analysis are the BASELINE series (hereafter simply BASELINE or UPED-BASELINE) for the period 1980-1990 from the Utah Process Economic and Demographic Impact Model, commonly referred to as UPED.¹⁶ UPED is maintained and operated by the Bureau of Business and Economic Research, College of Business,

University of Utah located in Salt Lake City. UPED produces alternative projection series for the Utah State Planning Coordinator's Office, the multi-county planning districts (MCD's) such as the Southeastern Utah Association of Governments, and for various state and federal planning agencies. For example, the U.S. Bureau of Land Management typically uses UPED projection data in its regional environmental statements on Utah development. The BASELINE series is used here because it reflects a consensus of likely future development activities put together as a result of its participation in all of these various programs and because it is generally accepted by local officials, planners, and other interested parties in the region. The selection of the BASELINE scenario, as opposed to one of the alternative runs, was done by Abt/west in consultation with the OSM Project Scientist.

The UPED-BASELINE represents a "best" approximation of future coal production in the region, along with estimates of expected uranium production, electric generation, and other activity in the region. These assumptions are then utilized by the UPED model to derive projections of total employment and employment by sector, total population, number of households, and population by age-cohort. Other projections are also produced, but the above outputs are the most significant for this analysis.¹⁶ Major BASELINE assumptions of future events in the Southeastern Utah MCD (Carbon, Emery, San Juan, and Grand Counties) include:

- 1) Construction of units 3 and 4 of the Hunter Power Plant in Emery County would commence in 1981.
- 2) Total Utah coal production would rise to 16.4 million tons per year by 1985 and 24.0 million tons per year by 1990. The majority of this would be from Carbon and Emery Counties.

- 3) White Mesa Uranium Mill would commence operations in 1980 (south San Juan County).

All of the events have occurred or are currently occurring.

Corresponding detailed BASELINE assumptions of future economic activity were not specifically defined for the Six-County MCD, which includes Sanpete County. In general, however, the UPED assumptions expected future growth in the region to be associated with the following trends:

- 1) North Sanpete County will continue to be attractive as an area for retired persons.
- 2) The number of Sanpete residents working in coal mines in Carbon and Emery Counties will increase over time.
- 3) Manufacturing employment will increase through 1990, along with increases in the services and local government.

Current observations support the occurrence of the first two of these assumptions, while several announcements of workforce reductions and plant closures indicate that the anticipated increase in manufacturing employment could either be delayed or less substantial than originally anticipated.¹⁸

The UPED model utilized these assumptions to produce the BASELINE projections of employment, population, and demographic data. Figure 7 presents the resulting projections for key socioeconomic variables. Also presented are projections of community population and housing needs which are based on the UPED-BASELINE, but which were not direct outputs of the model.¹⁹

Figure 7
 Summary of Key UPED-BASELINE Projections¹⁶
 1980-1990

	<u>1980</u>	<u>1985</u>	<u>1990</u>
<u>Population:</u>			
Southeastern Utah MCD (includes Carbon and Emery Counties)	58,200	73,500	80,500
Six-County MCD (includes Sanpete County)	49,500	63,600	71,300
Carbon County ^{20,21}	22,179	29,100	31,400
Emery County	11,451	15,750	18,400
Sanpete County	14,620	18,950	20,950
Price City	9,400	11,640	12,560
Helper City	2,724	4,074	4,396
Fairview City	916	1,520	1,890
Mt. Pleasant City	2,049	3,030	3,560
<u>Employment:</u>			
Total Southeastern MCD	21,900	28,114	30,518
Southeastern Mining	5,525	7,786	9,039
Total Six-County MCD	18,689	24,197	27,140
Six-County Mining	787	1,101	1,262
<u>Households:</u>			
Total Southeastern MCD	18,100	22,800	24,500
Average Size (persons)	3.22	3.22	3.29
Total Six-County MCD	15,900	20,100	21,900
Average Size (persons)	3.11	3.17	3.26
<u>Housing Needs:</u> ²²			
Carbon County	8,192	9,037	9,544
Emery County	3,703	4,891	5,593
Sanpete County	5,639	5,978	6,426

Local population and employment growth through 1990 will continue the trends observed between 1970 and 1980. Total population in the Southeastern MCD will be 80,500 by 1990, an increase of 22,300 persons, or 38 percent over 1980. Respective changes in the Six-County MCD will be 21,800 persons and 44 percent. Sanpete County's population growth of 6,050 persons over the same period will be nearly 28 percent of the total. While overall growth in employment in the Southeastern MCD will be nearly identical to that of population, mining employment is expected to increase by nearly 64 percent. Manufacturing, not mining, will be the major area of growth in the Six-County MCD, more than doubling to 5,667 jobs by 1990. Six-County mining employment will increase by 60 percent to 1,262 and total employment will increase 45 percent to 27,140.

Although the projections of the absolute number of mining employees provide insight into the role of the mining industry in the local economies, they may fail to disclose the entire story. For example, the level of mining employment in the Six-County MCD is estimated on a place-of-work basis. They do not reflect the Sanpete County residents who will be employed in Carbon and Emery Counties. Thus, mining will be more important to the Sanpete County economy than might be expected.

On the other hand, the BASELINE projects mining employment to account for nearly 30 percent of total employment in the Southeastern MCD by 1990. Over time, this means that the local economy will become increasingly dependent on the mining industry for its continued economic welfare. History has shown that too much reliance on a single industry can create problems should the industry suffer a decline or even a long work stoppage, e.g., Carbon County between the late 1950's and early 1970's, when coal production dropped, or Detroit and the auto industry.

UPED-BASELINE projections were converted into housing needs on the basis of one dwelling unit per household. By 1990, 4,029 additional dwellings will be needed in the three counties to meet demand for the increased population. When the replacement demand is included for inadequate dwellings in the current stock the total demand is even greater. Similar increases will occur in the associated demands for water, wastewater, solid waste disposal, schools, and other public services and facilities.

Using similar, but simplified coefficients to those in the UPED-BASELINE, estimates of the primary impacts of the Belina #2 mine were derived. The coefficients express the relationships between mining employment, total employment and population, and population and households. These estimates are presented in Figure 8 (see also Appendix II).²³

Figure 8
Estimated Population and Employment
Impacts of Belina #2, 1981-1990

	<u>1981</u>	<u>1985</u>	<u>1990</u>
<u>Population:</u>	52	1,154	1,154
<u>Employment:</u>			
Direct	12	261	261
Induced	8	183	183
Total	20	444	444
<u>Households:</u>	16	361	361

The population impacts of Belina #2 would range from a low of 52 persons in 1981 to a peak impact of 1,296 in 1984 (see Appendix II). Of the total, 142 persons are associated with the construction activity which is scheduled to occur in 1984. Following the completion of construction,

project-related population would decline and remain at 1,154 persons over the remaining productive life of the mine.²³

Project-related employment impacts would follow the same pattern. Currently, 12 employees of Valley Camp are associated with Belina #2. Direct employment would increase to 261 in 1984 and remain at that level. Induced employment in the trade, local government, and other service sectors would increase from a minimum 8 persons to a peak of 203 in 1984, before declining to 183 in 1985.

Permanent mine employment was distributed to the nearby communities using a gravity model approach, data on the residency patterns of current employees of Valley Camp, and the announced intentions of Valley Camp to recruit heavily outside of Carbon and Emery Counties. Induced employment and population were assumed to be distributed in the same pattern as direct employment. The resulting allocation of employment and population are shown below in Figure 9.^{24,25,26}

Figure 9
Assumed Allocation of Employment
and Population Growth Associated with Belina #2

	Percent of Total
Carbon County*	40
Price	15
Helper	20
Other	5
Sanpete County*	40
Fairview	15
Mt. Pleasant	15
Other	10
Other (Mostly Utah and Emery Counties)	20

*The high percentage allocation to Sanpete County assumes that
a) the Eccles Canyon access road will be completed by 1983;
b) it will provide year-around access; and c) Scofield will
continue to have a moratorium on new residential construction.

Estimated population impacts for specific communities were derived by combining the allocation coefficients and the total estimated project-related population. These are presented in Figure 10, along with BASELINE projections of community population for 1985 and 1990. As shown, the largest absolute impact would occur in Helper. The estimated impact of 231 persons would be approximately 14 percent of the total growth expected by 1990. On a relative basis, Fairview would be the most significantly impacted. Development of Belina #2 would increase Fairview's population by over 170 persons; the equivalent of 19 percent of the 1980 population and 18 percent of the additional growth projected by the BASELINE. Mt. Pleasant would also be significantly impacted by project-related growth, although not as severely as Fairview. Other communities which would be experience project-induced growth include Price, Wellington, Huntington, Castle Dale; smaller towns in Sanpete County, e.g., Spring City; and those within reasonable commuting distances, e.g., Orem-Provo. However, these impacts will be widely dispersed and relatively minor when compared to existing population and the overall projected growth.

Development of Valley Camp's Belina #2 would result in the need for approximately 360 dwelling units. These demands would be distributed according to the population. Thus, the largest number of dwellings, 72, would be needed in Helper. Fifty-four units would be required in each of the communities of Price, Fairview, and Mt. Pleasant. The overall demand was not disaggregated by type of dwelling. However, a recent study by the Southeastern Utah Association of Local Governments indicated that approximately 14 percent of the current housing stock are mobile homes. Given high mortgage interest costs and generally high housing costs, it is

likely that an increasing share of both the overall and project-related housing needs will be met with the mobile homes.⁷

Figure 10
Population Projections, 1980-1990
BASELINE and Belina #2

	<u>1980</u>	<u>1985</u>		<u>1990</u>	
	<u>BASELINE</u>	<u>BASELINE</u>	<u>Belina #2</u>	<u>BASELINE</u>	<u>Belina #2</u>
Carbon County	23,500	29,100	462	31,400	462
Price	9,400	11,640	173	12,560	173
Helper	2,724	4,074	231	4,396	231
Other/ Unincorporated*	10,810	13,386	58	14,444	58
Sanpete County	14,900	18,950	462	20,950	462
Fairview	916	1,520	173	1,890	173
Mt. Pleasant	2,049	3,030	173	3,560	173
Other/ Unincorporated	11,935	14,400	116	15,500	116
Other Counties	N.A.	N.A.	230	N.A.	230

*Approximately one-half of this population currently resides, or is expected to reside, in the unincorporated areas surrounding Price and between Price and the nearby communities of Helper and Wellington.

One area of special concern to local planners is the housing needs of the construction work force. On-going construction activities in Pleasant Valley have resulted in problems with mini-construction camps of recreational vehicles, campers, and travel trailers. These cluster camps have no solid waste disposal, water or sewage systems. Besides creating potential health problems, the intensity of use and traffic on unimproved areas have been damaging the natural environment.²⁸ Due to the relatively small work force and short duration of construction activity, the Belina

#2 mine would not contribute significantly to these problems. This conclusion assumes that the company will actively discourage construction workers from parking campers and recreational vehicles in unimproved areas; will assist in finding temporary housing or improved campsites, and that some facility improvements will have been made in Scofield by the time that construction begins in 1984. Furthermore, construction would not occur until 1984, by which time the Eccles Canyon road should be completed allowing for quicker and easier access to communities with facilities to provide adequate service. Finally, local government, planning, and industry officials will have had several years to implement a comprehensive growth management plan and capital improvement program.

Of equal importance as the employment and population impacts of Belina #2 are the effects of these increases on the communities, their utility systems, schools, commercial districts, and housing stocks. Fairview, Mt. Pleasant, and Helper would be most significantly affected, with the growth occurring before 1985.

Fairview is expected to be the most significantly impacted community. Not only Valley Camp, but also Coastal States and other mine operators are looking to Sanpete County to supply a large portion of the required labor force for new mines. Fairview's location at the base of the Fairview Canyon on S.R. 31 makes it the nearest community with access via the Eccles Canyon connector. It will thus be a particularly attractive community of residence for new residents moving into the region.

Furthermore, it is anticipated that Valley Camp will operate a company bus service from North Sanpete County to the mines, similar to its current program to Price, Helper, and Orem. Such a program reduces the resistance to commuting and offers added incentive for Sanpete residents

to work in the Pleasant Valley mines.

Foremost among Fairview's needs to cope with the anticipated doubling of its population by 1990 are a centralized sewage disposal system and expanded water system. While individual septic systems can certainly be used in communities of 2,000 persons, their associated land requirements for drainage fields reduce the efficiency and increase cost for other public services, e.g., road maintenance, water distribution, storage systems, and higher housing costs. Approximately 300 new dwellings will be required in Fairview by 1990 to accommodate the BASELINE growth. Fifty-four of these dwellings would be project-related.

Other impacts on Fairview would include increased school enrollments and limited expansion of the local retail trade and service businesses. A new elementary school was recently opened in Fairview with adequate capacity to accommodate additional growth through the mid-1980's, including the 20-25 students associated with the proposed action.^{14,29} Beyond that time additional capacity will be required. However, the increased secondary-level students will create additional problems for the school district. Currently, all of Fairview's secondary-level students are bused to Moroni and Mt. Pleasant for junior high and high school, respectively. Projected growth of secondary-level enrollment in Fairview through 1990 would generate approximately 90 additional secondary-level students in the system. Providing additional capacity and transportation services would have an adverse effect on school district financial resources, some or all of which would be offset by increased property tax revenue collections.^{14,29}

Growth in the Fairview commercial base would be a positive impact of the BASELINE growth. The current base is very limited. The types of

growth to be expected include service stations, eating establishments, expanded retail grocery shopping, and possibly a recreation oriented business. Most of these opportunities are available in Mt. Pleasant, only 6 miles distant. This could limit the expansion below what it would otherwise be, but there should be sufficient local demand to support some development.

Mt. Pleasant would also experience significant growth from Belina #2. The project-related population, housing, and school enrollment impacts would be of the same magnitude as in Fairview. Mt. Pleasant, however, has adequate water and wastewater facilities. Its biggest concern lies in the area of securing an adequate water supply. A recent ruling by the courts over contested water rights between Sanpete and Carbon Counties went in favor of Sanpete County. It will take some time to develop this supply, but it should provide the needed water supply for Mt. Pleasant.³⁰

As in Fairview, the growth in school enrollments will become a major problem. A report from the North Sanpete School District projects total enrollments to increase by 1,000 students, to nearly 2,800 students by 1990. This would exceed existing capacity by 900 students. These projections include allowances for children of employees who are expected to be employed at the Valley Camp and Coastal States mines in Carbon County. The growth in Fairview will also affect Mt. Pleasant, the location of the district's only high school. Additional classroom and facility capacity, teachers, and programs will be needed at the high school level as a result of the increased enrollments.

Other impacts in Mt. Pleasant include probable expansion of its commercial sector. Already reasonably well developed and diversified, such growth should support several new establishments and competition

in existing areas. Mt. Pleasant's hospital and nursing center, which currently serves the northern portion of Sanpete County would experience a significant increase in its service area population and may require expansion and additional staffing.

Several other small communities, e.g., Spring City and Moroni, and the unincorporated rural areas of Sanpete County would also see some population growth following the completion of the Eccles Canyon road and the development of the new mines. This growth is expected to be limited and dispersed. Therefore, it would create significant impacts. However, it could contribute to the aggravation of any existing problems, such as inadequate facilities or fire protection.

In Carbon County, Helper would be the most significantly effected community. Helper's public facilities have adequate capacity to accommodate the additional growth. However, problems may arise in the area of residential development. The 230+ project-related residents would require more than 70 dwelling units. Helper's topography constrains the extent and pattern of residential development. Also, U.S. 6 separates Helper's historical commercial center and new residential developments. These problems require a sound growth management plan to accommodate the growth, continue to operate efficient public facilities and systems, and eliminate a fragmentation of the historical commerce center in Helper and the residential development. In general, Helper is in a reasonably good position to cope with both the project-related and total BASELINE growth. Limited commercial growth would also occur in Helper. This would most likely involve both an expansion and diversification of the existing businesses in the community. Such development would be considered a positive impact of the project.¹⁰

With the exception of Scofield, located in the heart of the Pleasant Valley, the remaining communities in Carbon County would not experience major impacts from the proposed action. This includes Price, which would provide residences, public facilities and service, and commercial services directly for more than 170 project-related persons, and indirectly to much of the total project-related growth. Relative to the total growth anticipated under the UPED-BASELINE and the likely impacts from other mine development located closer to Price, the Belina #2 impacts would be minor. However, by contributing to otherwise significant growth and impact, the Belina #2 related effects could also be viewed as significant.

Scofield is the exception to this conclusion. Given its location in Pleasant Valley, Scofield would be the preferred location of residence for a reasonable number of miners. However, given its current population and extremely limited capacity for water, wastewater, and solid waste disposal, the addition of even 200 persons would create severe impacts. If, and until, a comprehensive plan is designed and implemented to expand Scofield's capacity to accommodate growth, local officials are likely to continue the moratorium on new construction in Scofield. The experiences of other communities has shown that without stringent enforcement, the existence of moratoriums, zoning ordinances, and so forth, may not be sufficient to minimize problems. Local planning, law enforcement, and industry officials will have to work together to reduce the impact on Scofield. Scofield hopefully will not experience significant adverse impact from the on-going development in Pleasant Valley. If the necessary improvements can be made, the residency patterns of the work force at the Valley Camp mines could shift away from these other communities and concentrate in Scofield.

The local transportation network would also experience significant impacts under the BASELINE scenario. State Route 96 would be the most severely impacted. Detailed estimates are not available, however, the combined development of all projects in Pleasant Valley could easily lead to a four to five fold increase in traffic. This is particularly true since there will be no, or only limited, residential development in Scofield over the short-term, thereby forcing all employees to commute. Virtually all of this traffic would flow through Scofield. The completion of the Eccles Canyon connector will help reduce the severity of the impact, but it will nevertheless remain significant. Likely effects include congestion all along the route to U.S. 6, congestion and delays at the intersection of U.S. 6/S.R. 96, and an increase in accidents, particularly during the winter months. Traffic volume through Scofield will also increase dramatically and will require new alignment and construction to reduce the impacts of this traffic. Transportation impacts beyond S.R. 96, Eccles Canyon, and S.R. 31 would not be significant.

Valley Camp's current busing program provides a good model for its own expanded operations and other operators in the area as one alternative to significantly reduce traffic impacts.²⁵ It also offers other benefits to the company and employee in terms of increased productivity, reduced absenteeism, and reduced worker fatigue. The applicant has stated an intention to expand the program into Sanpete County as part of his effort to recruit employees there in the future.^{1c}

The obvious constraint to meeting the additional demands for facilities and services is limited financial resources. Over the past decade, the local service providers have been attempting to keep pace with the increasing demands of already rapid growth. Their ability to

generate sufficient tax revenues to finance this growth is limited. First, there is currently no severance tax levied on coal production in Utah. Several attempts to impose such a tax have been defeated in the state legislature. Another problem lies in the method which Utah law only allows local governments to collect property taxes from residential and commercial property. Property tax assessments for industrial, utility, and railroad facilities are collected by the State and are then redistributed. However, the revenues are not redistributed fully back to the county of origin. Thus, the recent increases in mining and electric generation in Carbon and Emery Counties have made them net "exporters" of state property tax assessments, i.e., receiving considerably less than they have produced. They have thus been receiving only limited benefits from this development, while being burdened with the costs of providing service to an expanding population. Unless the distribution formula for state collected property taxes is altered or a severance tax on coal is passed, with a major portion of revenues returned to the locality of production, these problems will continue in the future.^{31,32}

Another element of the local financial situation deals with the bonding capacity and bonding obligation of local government entities. According to a report from the Southeastern Utah Association of Governments, no non-school taxing district in Carbon County, other than the Price River Water Improvement District, had any significant outstanding debt obligations in 1978. This is unusual in an area which has experienced the growth that occurred locally since 1970. The North Sanpete School District does however have significant outstanding bonded debt. Its ability to support additional growth is limited.

Federal and state grants provided much financing in the past. Such funding will not be as readily available in the future. Thus, local officials would like to see those responsible for the growth share the burden of financing the improvements and cooperating in an on-going mitigation program. At the present time, there is no local ordinance or permitting process which allows this the local government to enforce any such requirement. However, a local special use permit ordinance which could require some industry participation is being considered in Carbon County. The coal industry is fighting the adoption of this ordinance. Local mining companies believe that they are already bearing a high tax burden. Industry's attitude is that it is the allocation mechanism for distributing tax revenues that are creating the problems, not the lack of adequate tax revenues.^{31,32} Even if adopted, any relief gained would not benefit other counties, such as Sanpete, which experience impact, but do not share as greatly in the revenues generated by the project.

Combining the anticipated demands of future growth, both in total and relative to the impacts of Belina #2, it is apparent that difficulties will occur in the future. While additional financial resources are not the only element required to address local needs, they are certainly a critical factor. Thus, it is likely that one or more of the following alternative actions will occur as a means of addressing the problems.

- 1) The allocation process for state versus local property taxes will change.
- 2) A state coal mineral severance tax will be implemented.
- 3) A local coal mineral severance tax will be created.

- 4) Local property taxes will increase (unless prevented from doing so by law).
- 5) Local governments will have to resort to bonded debt to finance capital improvements.
- 6) Carbon County will institute a special use permit system which will allow them to require coal operators to actively assist in mitigating problems.
- 7) Public facilities and services will not keep pace with demand and the quality of service will diminish.

A final element of this assessment included a review of the applicant's assessment of socioeconomic impacts. The formal application by Valley Camp does not address the impacts other than to indicate the anticipated level of employment. In this context, the application might be considered deficient. However, communications from the applicant to the OSM indicate an awareness of possible problems and a willingness to address problems. For example, Valley Camp has indicated that it will expand its busing program to include the Belina #2 employees. It will also recruit in Sanpete and Utah Counties in an attempt to reduce burdens on Carbon County communities. Valley Camp has also provided data on the residency patterns of existing employees to assist in this analysis. By continuing these types of active mitigation programs and cooperation with planning officials, Valley Camp could effectively minimize many of the adverse impacts on the local socioeconomic environment.

IV. Potential Mitigation Measures

The development of the Belina #2 mine by Valley Camp would generate local population growth of over 900 persons in Carbon and Sanpete Counties. Total project-related population would total more than 1,150 persons. Generally, the estimated growth is not significant, contributing approximately 6.6 percent of the total growth projected to occur in the two county area by 1990. However, in several communities, especially Scofield, and the local transportation network, these impacts do assume a higher level of significance.

In order to minimize the adverse effects of the significant impact, one or more of the following mitigation programs should be considered for implementation. Parties to the program should include the applicant, local government officials, and state and federal regulatory agencies.

- 1) A formal mitigation plan should be developed and adopted by the applicant in cooperation with local officials outlining plans for dealing with adverse impacts in a comprehensive manner. The plan should include those actions already being done by the applicant. Special emphasis should be directed to the adverse impacts in Fairview and Helper.
- 2) Formal quarterly reports should be provided to the County Commissioners and local planners of Carbon and Sanpete Counties, through the end of 1985. The reports should detail current status of the development schedule, the number and residency patterns of employees, and any proposed modification in the mitigation program. These reports would provide valuable input to the planning process.
- 3) The existing company-provided busing programs should be continued and expanded. (The applicant has already indicated their intention to do so).
- 4) The applicant has stated an intention to recruit new employees from Sanpete County. Such action will reduce pressure on Carbon County, but shift some im-

pacts to Sanpete. Sanpete would not benefit from some local tax revenues generated by the project. Therefore, the company should make an effort to define ways of generating some revenues in Sanpete. For example, it could fuel its buses in the local community, not at the mine.

- 5) Valley Camp should support the vocational training programs at Snow College in Ephraim as well as that at the College of Eastern Utah in Price. Assistance could be a grant, a scholarship, or contributions of equipment.
- 6) Valley Camp should work with local planners and law enforcement agencies to minimize the potentially significant adverse impacts on Scofield.
- 7) In the event that State and County resources prove inadequate, Valley Camp should consider participating in the maintenance of the Eccles Canyon connector if an attempt is made to provide year-around access to the North Sanpete Valley via this route.

REFERENCES AND FOOTNOTES

1. Valley Camp of Utah, Inc.; Application for an Underground Mining and Reclamation Permit, Belina Mine, 1981. On file at the U.S. Office of Surface Mining, Denver, Colorado.
 - a) Volume I, Introduction
 - b) Volume III, Operations Plan
 - c) Personal communications from Mr. Whiteside and Mr. Haynes to the OSM
2. U.S. Department of the Interior, United States Geologic Survey; Development of Coal Resources in Central Utah-Site Specific Analysis: Belina No. 2, 1979, Washington, D.C.
3. Southeastern Utah Association of Local Governments; personal communications with Keith Burnett, Community Planner, Price, Utah, and the Sun Advocate, newspaper; various articles including "Mine access road work continues," September 3, 1981, and "Road Projects boost access to mines," September 18, 1981, Price, Utah.
4. Utah Department of Employment Security; Castle Country Community Profile, 1981, Price, Utah.
5. The Richfield Reaper, newspaper; "Pacific Trail Will Close Richfield, Manti Plans," October 15, 1981, Richfield, Utah.
6. U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System; Personal Income by Type and Industrial Source, 1979, as reported in Utah Economic and Business Review, April-May 1981, University of Utah, Salt Lake City, Utah.
7. The Pyramid, newspaper; "Draycutt sets March date to open plant, February 19, 1981, Mt. Pleasant, Utah.
8. U.S. Department of Commerce, Bureau of the Census; Census of Population, selected years, Washington, D.C.
9. Abt/west; 1981, Denver, Colorado. Statements with this reference are based in part on the knowledge and personal observations of Abt/west staff.
10. Southeastern Utah Association of Governments and Economic Development District; Four Corners Regional Commission Southeastern Utah Regional Report and Investment Strategy, 1980, 1980, Price, Utah.
11. Sun Advocate, newspaper; various articles including "Wellington eyes land, not revenue," September 11, 1981, Price, Utah.
12. Ibid; "Pleasant Valley gears for population explosion," August 21, 1981, and "Scofield takes step to limit its growth," June 24, 1981, Price, Utah.

13. University of Utah, Bureau of Business and Economic Research; Community Economic Facts: 1980 Edition - Mt. Pleasant, 1980, Salt Lake City, Utah.
14. North Sanpete School District; informational packet on growth, September, 1980, and personal communications with Mr. Blackam, Assistant Superintendent, Mt. Pleasant, Utah.
15. Utah State Department of Transportation; Utah State Rail Plan, 1978, Salt Lake City, Utah.
16. Utah Office of the State Planning Coordinator; Utah 2000: A High Development Scenario, 1980, Salt Lake City, Utah.
17. The UPED-BASELINE did not specifically include the Belina #2 mine in its assumptions. However, the assumed growth in mining production to 24.0 million tons per year by 1990 was considered sufficient to allow the use of the BASELINE to evaluate the impacts of Belina #2.
18. Abt/west; 1981, Denver, Colorado. Abt/west staff are responsible for the summaries of growth assumptions. These summaries are based on outputs of the UPED-BASELINE and revisions of articles in the local newspapers.
19. Disaggregations of outputs to the community level were not reported by UPED. For these projections, disaggregations were either prepared by Abt/west based on historical trends, or on local planning documents. Specific references are provided later for each example of such calculations.
20. 1980 population data are from the 1980 U.S. Census. The UPED-BASELINE estimates of county population were slightly higher than the official census counts.
21. Community level population projections for 1985 and 1990 are from the Southeastern Utah Economic Development District; Overall Economic Development Program - 1980, 1980, Price, Utah, and from Abt/west, based on data from the Six-County Commissioners Organization, Allen Fawcett, Planner, Richfield, Utah.
22. 1980 housing data from the 1980 U.S. Census, U.S. Department of Commerce. Estimated needs were calculated by Abt/west using future county population projections and average household size.
23. Calculations by Abt/west; 1981, Denver, Colorado. The major relationships used in the calculations are:
 - Construction induced residential emp. = $0.4 \times \text{Const. Emp.}$
 - Operations induced residential emp. = $0.7 \times \text{Perm. Emp.}$
 - Construction related population = $(1.8 \times \text{Const. Emp.}) + (2.6 \times \text{Const. Induced Emp.})$
 - Permanent population changes = $2.6 \times \text{Total Perm. Emp. Changes}$
 - Average jobs/household for permanent and residential employment is about 1.26 and 1.0 for construction employment
 - The gravity model is based on linear distance, 1980 population and an exponent of 1.7

24. Valley Camp of Utah, Inc.; personal communications from Mr. Haynes to the OSM provided residency patterns for current employees, 1981, Scofield, Utah.
25. Ibid; personal communications from Mr. Haynes to OSM, 1981, Scofield, Utah. A discussion of the current program can be found in the Sun Advocate, newspaper; "Workers pleased by bus services," March 13, 1981, Price, Utah.
26. Population allocations were derived by Abt/west; 1981, Denver, Colorado, on the basis of a standard gravity model (see reference #23) and input from the applicant regarding current distribution patterns.
27. Southeastern Utah Association of Local Governments; Southeastern Utah Housing Element - 1981 Update, 1981, Price, Utah.
28. Carbon County Planning Office, Mr. Richard Walker, County Planner; personal communication with OSM, 1981, Price, Utah.
29. Based on an average student enrollment projection of 22 percent of total population impact from the UPED-BASELINE. Calculations were performed by Abt/west; 1981, Denver, Colorado.
30. The Pyramid, newspaper; various articles including "Plans move forward on Narrows project," May 5, 1981, and "Narrows fate pending judge's decision," February 12, 1981.
31. These observations are the results of contacts with local officials by Abt/west staff and reviews of reports cited above.
32. Sun Advocate, newspaper; "Solons kill tax on coal," and "Semken raps tax policies," February 27, 1981, "Forces still fighting over coal tax," July 15, 1981, and "Commissioner likes mine ordinance," October 23, 1981, Price, Utah.

APPENDIX 1

The following pages contain brief overviews of the local communities in the region most likely to be directly effected by the development of additional coal mining operations. Without providing detailed needs assessments in each service area, the overviews are intended to summarize the roles of the various communities in the regional socioeconomic environment and to provide some indicators concerning areas of future need. The data presented here were compiled from the following sources:

- Southeastern Utah Association of Governments and Economic Development District; Four Corners Regional Commission Southeastern Utah Regional Report and Investment Strategy, 1980, 1980, Price, Utah.
- United States Geological Survey; Final Environmental Statement, Development of Coal Resources in Central Utah, 1979, Washington, D.C.
- University of Utah, Bureau of Business and Economic Research, Community Economic Facts, 1980, Salt Lake City, Utah.
- Various articles contained in the local newspapers: "The Sun Advocate" serving Carbon County, Utah, and "The Pyramid" serving northern Sanpete County.
- Observations by Abt/west personnel and discussions with local officials.

Data are presented for various broad categories of public services and infrastructure, historical population and housing data, and estimated future population and housing needs under the baseline described in Chapter III. To keep each summary brief, a set of codes was used to describe both the current level of service and the adequacy thereof. These codes are described below:

Health Care: The number of physicians (MD), dentists (DDS), registered and licensed nurses (R/LPN), and nurse practitioners (NPR) are shown. Also the existence of a nursing home (NH), or the nearest hospital are also shown. If the hospital is located in that particular community, the number of beds (B) is also shown.

Fire Dept.: All fire departments in the region are volunteer (Vol.) organizations. The adequacy of the department is shown by an (A), while an (I) reflects some type of inadequacy. In several cases there are also some statements of needed improvements, e.g., need 4 Vol. These indicate local plans for further improvements and are not necessarily an indication of inadequacy.

Law Enforcement: An indication of the number of police officers (PO) and their status, full-time (FT) or part-time (PT). Reliance on the county sheriff's offices is shown by (CSH). Statements of (in)adequacy and needs are also shown. In several cases, 'SDS' indicates a service being provided under a special district service arrangement.

School District and
Education:

First the name of the school district is given, followed by summary data on the number and location of schools, their approximate enrollment and design capacity. Special symbols include 'PR' for private school followed by the grade level offered; 'JC' for a local junior college; and 'VS' for vocational school.

Water System: Most systems are community owned (CO), although there are the Castle Gate special service districts (SDS) and the Price River Water Improvement District (PRWID) systems. Where available, levels of capacity (DC=delivery capacity), usage (DF=daily flow), or service population (PE=population equivalents in number of persons) are shown. MGD=millions of gallons/day. 'FCP/years' indicates a future construction plan

in the indicated years. Finally, the symbols for (in)adequacy are supplemented by (AC)-adequate, for existing population only, (AD)-adequate but deteriorating, and (A,N)-adequate, new facility. Finally, if a particular type of improvement is planned, it is shown.

Wastewater System: Similar to water system. TF=Trickling Filter system, while L=lagoon system, CP=capacity figure, either in terms of population or MGD.

Solid Waste: Two pieces of data are shown. First, the type of collection service provided: PUB=Public, PRV=Private, followed by a designation for the operator; CNTY=County, CO=City, and the adequacy of the facility.

Recreation: The opportunities for local recreation are indicated by a number between 1 and 4. A 1 indicates only one facility from the following list; a 2 indicates 2 or 3 facilities; a 3 for 4 or 5 different types; and a 4 for 6 or more. The possible types of recreation opportunities include:

Baseball fields	Country Clubs	Fair Grounds	Riding Facilities
Movie Theatre	Golf Course	Community Center	Roller Rink
Boating/Fishing	City Park	Indoor/Outdoor	Bowling Alley
		Swimming Pool	

Social Services: A partial listing of facilities, organizations, and services. In most cases there are indications for a public library (PL) or bookmobile (BK), and a stake of the Church of Latter Day Saints (LDS), a very active participant. An office of the Job Service is shown by JS while a senior citizens center is shown by SR. An SS denotes an office of the Utah Department of Social Services (welfare programs, counseling, etc.). If facilities are not available locally, some reference is made to the nearest location.

Commercial Base: "Minimal" is used to represent the existence of very limited services, e.g., a general store and post office. "Local" indicates a slightly higher level of service availability, possibly including a service station, a grocery store, a liquor store, and a bank. These would serve essentially the local community only.

A more completely developed service base is represented by "Regional." These economies provide shopping opportunities and services beyond stores considered essential. These include hardware/appliances, new vehicle dealerships, etc., and some degree of selection/competition. These centers serve not only the local population, but also the surrounding areas.

Finally, a brief section for special comments is provided.

Community: Price			Count	Carbon
Population:	1970	1980	1985*	1990*
City:	6,218	9,407	11,640	12,560
County:	15,647	22,179	29,100	31,400
Housing (City):	2,082	3,202	3,615	3,817

Community Services:

Health Care:	23 MD, 11 DDS 48 R/LPN 1 Hospital, 70 B (A), NH	Water System:	A(C) FCP/1980-85, storage system up- grade, CO, DC=4MGD
Fire Dept :	Vol. (A); Need 4 Vol. & larger station	Wastewater System:	A(C), FCP/1980-85 (upgrade) CP=1.8MGD 24000=PE, PRWID
Law Enforcement:	12 PO/FT; need jail, 4 PO & vehicles	Solid Waste :	PUB,PRV/CNTY (A,N)
School District:	Carbon County	Recreation :	4
Education :	H.S.: 1 E=833, C=900 J.H.S.: 1 E=618, C=600 Elem.: 3 E=1216, C=1250 Other: JC,E=970; PR 1-9 E=285; VS E=25	Social Services:	PL, BK, SR, LDS, JS SS
		Commercial Base:	Regional

Comments: A new elementary school has significantly increased capacity. Price would experience some growth due to Belina #2. Direct employment plus and service sector growth for industry and population.

Community: Helper			County: Carbon	
Population:	1970	1980	1985*	1990*
City:	1,964	3,290	4,074	4,396
County:	15,647	22,179	29,100	31,400
Housing (City):	826	1,072	1,265	1,336

Community Services:

Health Care:	2 MD, 1 DDS 21 R/LPN Price Hospital	Water System:	CO, AD, FCP/1980-82/ System Upgrade DC=4MGD
Fire Dept :	Vol. (A) Need equip & station	Wastewater System:	TF, CP=1.8 MGD (A) 24K=PE (A), PRWID FCP/1980-83 Upgrade
Law Enforcement:	5 PO/FT; CSH Need 2 PO & 1 vehicle	Solid Waste :	PUB/CNTY (A)
School District:	Carbon County	Recreation :	3
Education :	H.S.: Price J.H.S.: 1 E=235, C=250 Elem.: 1 E=411, C=400 Other: 1 PR 1-9, Price	Social Services:	PL, LDS; JS, SR, NH in Price
		Commercial Base:	Local

Comments: Impact of Belina #2 on Helper could be 230+ people. Comprehensive planning needed for residential growth. More growth would increase need for Fire Dept. improvements.

*Estimated Population and Housing Needs Under the Baseline Scenario.

Community:	Mt. Pleasant		County:	Sanpete
Population:	1970	1980	1985*	1990*
City:	1,516	2,049	3,030	3,560
County:	10,996	14,900	18,950	20,950
Housing (City):	584	788	956	1,092
Community Services:				
Health Care:	7 MD, D DDS 7 R/LPN, NH 1 Hospital, 25 B		Water System:	CO, DC= 2 MGD, DE=.54 MGD, (A)
Fire Dept :	Vol. (A)		Wastewater System:	CP=.36 MGD PE=10,000 (A) L
Law Enforcement:	5 PO/FT (A) Need Jail (I)		Solid Waste :	PRV/CO (I)
School District:	North Sanpete		Recreation :	4
Education :	H.S.: 1 E=417, C=327 J.H.S.: Moroni E=240, C=327 Elem.: 1 E=400, C=360 Other: 1 PR J/HS, E=140		Social Services:	PL, BK, JS, SR, LDS NH
			Commercial Base:	Local/Regional

Comments: Moderate impact from Belina #2. Some growth has been related to mining in Pleasant Valley; will increase when new access road completed. Schools and housing needed. Also impacted by Skyline Mine.

Community:.	Fairview		County:	Sanpete
Population:	1970	1980	1985*	1990*
City:	696	916	1,520	1,890
County:	10,996	14,900	18,950	20,950
Housing (City):	295	358	479	580
Community Services:				
Health Care:	Hospital and Medical Facilities in Mt. Pleasant		Water System:	CO, DC=.5 MGD, DF=.3 MGD (A)
Fire Dept :	Vol. (A)		Wastewater System:	Septic Systems, central treatment needed to grow, (I)
Law Enforcement:	2 PO/FT, CSH (A)		Solid Waste :	PRV/CNTY (I)
School District:	North Sanpete		Recreation :	2, Mt. Pleasant
Education :	H.S.: Mt. Pleasant J.H.S.: Moroni Elem.: 1 E=215, C=300 (N) Other: Mt. Pleasant		Social Services:	LDS, BK; SR, JS, NH in Mt. Pleasant :
			Commercial Base:	Minimal

Comments: Significant impact from Belina #2. Some growth has been related to mining in Pleasant Valley; will increase when new access road completed. Sewer and water improvements needed. Also impacted by Skyline Mine.

*Estimated Population and Housing Needs Under the Baseline Scenario.

Community:	Eas Carbon City/Sunnyside		Coun.	Carbon
Population:	1970	1980	1985*	1990*
City:	2,099	2,554	3,201	3,297
County:	15,647	22,179	29,100	31,500
Housing (City):	N.A.	928	994	1,002

Community Services:

Health Care:	1 MD, 2 DDS 6 R/LPN 1 Day Clinic Price Hospital	Water System:	CO, DC=1.5 MGD, (I) FCP/1980-82, Total upgrade underway
Fire Dept :	Vol. (A)	Wastewater System:	CO, L, CP=2.2 MGD, ADF=.3 MGD, (A,N)
Law Enforcement:	5 PO/FT, (A)	Solid Waste :	PUB/CO (I)
School District:	Carbon County	Recreation :	4
Education :	H.S.: 1 J/HS, E=195, J.H.S.: C=250 Elem.: 1 E= 236, C=250 Other: 1 PR 1-9, Price	Social Services:	LDS, PL, BK; JS, SR in Price
		Commercial Base:	Minimal

Comments: The communities of E. Carbon City/Sunnyside would not be impacted by Belina #2. On-going facility improvements will provide adequate capacity for overall anticipated growth.

Community:	Wellington		County:	Carbon
Population:	1970	1980	1985*	1990*
City:	922	1,406	2,328	2,512
County:	15,647	22,179	29,100	31,500
Housing (City):	277	433	723	764

Community Services:

Health Care:	Price Hospital	Water System:	A (C), FCP/1980-82 (system upgrade) PRWID
Fire Dept :	Vol. (A)	Wastewater System:	A(C), FCP/1980-83 sewer system up- grade. PRWID
Law Enforcement:	1 PO; CSH	Solid Waste :	N.A./CNTY (A)
School District:	Carbon County	Recreation :	3
Education :	H.S.: Price J.H.S.: Price Elem.: 1 E=296, C=300 Other: 1 PR 1-9, Price	Social Services:	SR, JS, NH, PL, SS in Price
		Commercial Base:	Local

Comments: Wellington could expect very limited growth from the development of Belina #2. No specific improvements needed. Some improvements needed to handle overall growth.

*Estimated Population and Housing Needs Under the Baseline Scenario.

Community:	Cast Dale		Count	Emery
Population:	1970	1980	1985*	1990*
City:	541	1,910	2,835	3,312
County:	5,137	11,451	15,750	18,400
Housing (City):	201	626	880	1,007

Community Services:

Health Care:	2 MD, 2 DDS 1 County Clinic Price Hospital	Water System:	CO, DC=.75 MGD, FCP/ 1980-82, (SDS up- grade underway), (A)
Fire Dept :	Vol. (A)	Wastewater System:	L, CP=7,500 PE, (A) ADF=.5 MGD, FCP/1980 -82 (upgrade) SDS
Law Enforcement:	1 CSH, SDS (A)	Solid Waste :	PRV/CNTY (I)
School District:	Emery County	Recreation :	4
Education : H.S.:	1 E=470, C=850	Social Services:	PL, BK, JS, SS, LDS
J.H.S.:	1 E=370, C=350	Commercial Base:	Local
Elem.:	1 E=236, C=350		
Other:			

Comments: Castle Dale would experience very limited impact from Belina #2. Local growth will occur to mining growth in Emery County.

Community:	Scofield		County:	Carbon
Population:	1970	1980	1985*	1990*
City:	71	105	N.A.	N.A.
County:	15,647	22,179	29,100	31,500
Housing (City):	74	89	N.A.	N.A.

Community Services:

Health Care:	Price Hospital	Water System:	CO, FCP/1980-82 (Water system up- grade) (I)
Fire Dept :	Vol. (I)	Wastewater System:	Ind. Septic, (I) system development needed, FCP/1980-83
Law Enforcement:	CSH	Solid Waste :	None/CNTY (A)
School District:	Carbon County	Recreation :	1
Education : H.S.:	Bused	Social Services:	No local; All in Price/Helper
J.H.S.:	Bused	Commercial Base:	Minimal
Elem.:	Bused		
Other:			

Comments: Scofield would normally expect significant growth from nearby mines, e.g., Belina #2. However, facility needs are so great that building moratorium is in effect. Capital improvement needs nearly \$4 million.

*Estimated Population and Housing Needs Under the Baseline Scenario.

Community:	Green River		County:	Emery
Population:	1970	1980	1985*	1990*
City:	696	956	1,575	1,840
County:	5,137	11,451	15,750	18,400
Housing (City):	342	358	489	559

Community Services:

Health Care:	1 MD, 1 NPR 4 R/LPN; 1 Day Clinic Moab Hospital	Water System:	CO, DC=1.5 MGD, (A,N) FCP/1980-82 (storage upgrade)
Fire Dept :	Vol.	Wastewater System:	FCP/1980-82 (system upgrade), TF, DF= .15 MGD, CP=.1600 PE
Law Enforcement:	1 PO/FT, CSH (I)	Solid Waste :	PRV/CNTY (A)
School District:	Emery County	Recreation :	2
Education : H.S.:		Social Services:	PL, BK, LDS; Others in Moab
J.H.S.:	J/HS E=160, C=250 (N)	Commercial Base:	Local
Elem.:	1 E=167, C=230 (N)		
Other:			

Comments: Green River would not be impacted by the development of Belina #2. Its isolation from most of the activity in Carbon and Emery Counties has left its economy stagnant. Some growth would actually be good.

Community:	Huntington		County:	Emery
Population:	1970	1980	1985*	1990*
City:	847	2,316	3,150	3,312
County:	5,137	11,451	15,750	18,400
Housing (City):	267	773	978	1,007

Community Services:

Health Care:	8 R/LPN Price Hospital	Water System:	CO, DC=1.0 MGD (A,N), SDS
Fire Dept :	Vol. (A)	Wastewater System:	L, CP=3,000 PE (A,N), SDS
Law Enforcement:	1 CSH, SDS (A)	Solid Waste :	PUB/CNTY, (I)
School District:	Emery County	Recreation :	2
Education : H.S.:	Castle Dale	Social Services:	PL, BK, SR, LDS; JS in Castle Dale/ Price
J.H.S.:	Castle Dale	Commercial Base:	Minimal
Elem.:	1 E=476, C=550		
Other:			

Comments: Huntington would experience very limited impact from Belina #2. Some facility expansion needed to meet overall growth. Growth due to mining in Emery County.

*Estimated Population and Housing Needs Under the Baseline Scenario.

Appendix II

Derivation of Belina #2 Impacts

	<u>1981</u>	<u>1984</u>	<u>1985</u>	<u>1990</u>
<u>Employment:</u>				
1) Direct Construction	-0-	50	-0-	-0-
2) Direct Permanent	12	261	261	261
3) Induced Construction (0.4 X 1)	-0-	20	-0-	-0-
4) Induced Permanent (0.7 X #1)	8	183	183	183
5) Total Employment	20	514	444	444
<u>Population:</u>				
6) Construction Population (1.8 X #1)	-0-	90	-0-	-0-
7) Permanent and Induced Population [(#2 + #3 + #4) X 2.6]	52	1206	1154	1154
8) Construction Household (#1)	-0-	50	-0-	-0-
9) Permanent Households (#7/3.2)	16	361	361	361

* Only year of construction impact