AN INTERINDUSTRY ANALYSIS OF THREE FRONT RANGE FOOTHILLS COMMUNITIES: ESTES PARK, GILPIN COUNTY, AND WOODLAND PARK, COLORADO

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COLORADO WATER RESOURCES RESEARCH INSTITUTE

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CHAPTER 1

INTRODUCTION

INTRODUCTION

The purpose of this report is to provide a description and analysis of three Front Range foothills economies in eastern Colorado. The intent of the researchers is to provide policy makers with specific information contributing to Forest Service decision-making and planning processes and to provide a planning tool having the capability of analyzing a number of alternative development scenarios in the study regions.

The resource base of the Front Range foothills regions, while relatively abundant in terms of the capability to satisfy outdoor recreation demands, is nonetheless quite limited with respect to other factor inputs. Ownership of a major part of the regional resources is vested largely with the Federal Government. Thus, from a regional perspective, policies affecting the disposition of the regional resource base are largely determined outside of the region. From this same perspective, there is a need to develop a detailed description of the economy as it presently exists and an analytical framework which is capable of assessing the direct and indirect consequences of alternative scenarios for resource management by the public and private sectors of the economy. This description and analysis constitutes the major thrust of the research reported here.

OVERVIEW OF THE STUDY

This study estimates and compares impacts on the economic fabric of Front Range communities imposed by Mountain Pine Beetle and Western Spruce Budworm infestations. Specifically, the local economies of Estes Park, Nederland, and Woodland Park, Colorado will be studied. Losses, gains or shifts in economic activity, caused by infestation, will be measured and related to change in forest outputs (primarily recreational and aesthetic). The economic effects of pest mitigation measures can be estimated through the development of information concerning the dependence of Front Range economies to forest outputs.

Construction of economic input-output models for each of the three Front Range communities will provide both a descriptive tabulation and an analytical tool which is prerequisite to an understanding of the interrelationship of forest outputs and the local economies. The richness of detail and variety of economic indicators arising from the input-output technique is a unique feature of the methodology. Input-output models provide a simulation of the particular workings of a regional economy through a set of simultaneous equations showing the interrelatedness and necessary consistency of needs and supplies among both private and public sectors. The input-output technique mirrors the real world exchange process and can be used to track structural economic change. To the extent that local products and local labor make up the inputs to "basic" sectors (such as forest-related exports), cumulative impacts on local requirements may result. Economic multipliers, estimated by the input-output technique, show how changes in forest outputs (which affect tourism and other exports) result in cumulative impacts on particular industries or sectors of the local

economy. The sector-by-sector approach offered by input-output allows more accurate projection of the numerous socio-economic indicators which vary proportionately with the output of particular industries. Employment, income, population, and related requirements for housing, schools, local government services, and transportation systems are important examples.

THE TECHNICAL APPROACH TO IMPACT ASSESSMENT

The chosen methodology for the study consists of three input-output models (I-O models hereafter) for the local economies of Estes Park, Nederland, and Woodland Park, Colorado. The I-O technique provides the most effective means to describe and analyze a region's economy. It is the only economic model which simultaneously accounts for all components of the regional economy so that growth or change in each industry or sector is consistent with that in all other sectors. Construction of I-O models is a practical investment since they can be applied to many facets of the regional economy and thus a new model need not be constructed each time a new phenomenon is to be studied. Although a linear model may seem overly simplistic to simulate a complex structure of relationships existing in an economy, such models are much more flexible and versatile than is often recognized. Modifications, such as a household consumption function which is disaggregated by income source, can allow for differing spending patterns. We have disaggregated household consumption patterns by type of household (commuter, tourist, or local employed) in order to more accurately trace the impacts of changes in forest outputs on local spending.

The strength of the I-O method lies in its unique capability to not only describe the interdependence existing among sectors of an economy but also in its capacity to demonstrate, sector by sector, the total consequences of any number of different scenarios. The model is thus both descriptive and analytical. An expanded description and explanation of the I-O model, including an algebraic example, is shown in Appendix I.

As shown in some detail in the Appendix, the I-O model describes the local economy through a set of double entry accounts which measure sales and purchases among industries, households, local, state, and federal agencies, imports, exports and investment in a region. Usually the model is operated or "driven" through exogenous changes in final demand. Final demand is defined as that part of demand which is determined by forces outside the local economy. Examples of possible final demands with respect to this study include: the export of services to tourists, and export sales to commuters or "foot-loose" retirees.

For example, the Woodland Park region acts as a "bedroom" community and attracts commuters who reside in the region but work elsewhere. The attractiveness of the region for commuters depends partly upon the forest and its attendant benefits. A somewhat similar phenomenon exists for the retiree, who forms an above normal share of the population in some of the study communities. Retirees are attracted to certain regions because of the recreational and scenic attributes of the forests.

Once the necessary survey data were collected and organized (aggregated, cross-tabulated, verified and expanded to the population), an economic snapshot of spending patterns for year 1979 was revealed

for each economy by the transactions tables. Then, division of each element of the columns of the transactions tables by the respective column sums produced the direct coefficient tables. The direct coefficients show the input requirements of a sector as a percentage of total sector input (or output). Each column represents a budget distribution for a particular industry or sector. These data may be further manipulated (see Appendix) to arrive at various economic multipliers which indicate the direct plus indirect local inputs required for a sector to deliver an additional dollar of output to final demand. The multipliers, as represented by the Leontief or inverse matrix, and numerous related coefficients (such as labor or consumptive water use) may be conveniently processed via computer. Alternative scenarios of final demand change drive the local economy through the multiplier effects.

Projected changes in forest outputs within a given study region imply certain changes in final demands. Tourism, recreation, wood products exports, commuting, and retirement immigration react to change in forest outputs. Likewise, forest quality change reflects management decisions by responsible public and private agencies. The impact of these management decisions may thus first be traced first to changes in forest quality and then to changes in final demand. The indirect or secondary economic impacts of management decisions are estimated by entering the projected final demand changes into the input-output model. The I-O model projects total effects on spending, income, employment, population, occupational mix, local taxes and other related socio-economic measures.

Information necessary to implement the I-O models includes: spending distributions by each four-digit SIC defined industry,

spending distributions for local, state, and federal governments, and purchases distributions by tourists, recreationists, commuters, retirees and locally employed households within the study regions. Specific categories of interest include: picnicking, camping, water-based recreation, dispersed non-motorized recreation, dispersed motorized recreation, non-game wildlife recreation, and fishing. Economic sectors of the I-O models of particular interest for the study include: various recreation and tourist services, including ski tows, gas stations, restaurants, tourist-related retail, lodging and developers. Sectors, such as hotels and motels, eating and drinking places, rental and guide services, and other similar services, are strongly dependent on forest-related sales.

Data collection was through direct interviewer survey of business firms and consumers within the study regions. Secondary data, such as confidential state employment 202 forms and detailed files, were essential to the construction of the models. Definition of industry makeup, and survey design was accomplished through examination of telephone directories, trade association listings, the Annual Directory of Manufacturers, and the like. Stratified sampling was based upon the degree of heterogeneity within the sectors. A complete description of data sources which were found most accurate for constructing the foothills models is shown in the following chapter.

I-O data collected by Dr. Warren Trock (Department of Economics, Colorado State University) for Woodland Park, Colorado, was compiled and analyzed using our interactive computer program. Close cooperation prevented costly and detrimental duplication in the direct survey and secondary data collection effort in the Woodland Park region.

Particular note should also be made concerning the measurement of the impact of forest pests upon the final demands in the study regions. Very few operational studies of forest-related impacts exist (see Walsh et al.). No existing studies adequately describe both the change in visits or exports induced by change in forest outputs and the spending distributions of those visitors. However, an on-going Forest Service research project was modified to help accomplish this goal. Dr. Richard Walsh (Economics Department, Colorado State University) conducted a concurrent study to assess impacts of Mountain Pine Beetle infestations on recreation demands in the Colorado Front Range.

At our request, his survey included spending distributions by those visitors who are impacted by changes in forest outputs. (See Forest Service Contract No. 53-82X9-9-180.) Also we surveyed residents in Estes Park in detail to assess their spending patterns and their sensitivity to forest conditions. These surveys provide evidence to justify changes in final demand sales when forest outputs change.

OUTLINE OF THE REPORT

The remainder of the report consists of a description of the method of the study which is presented in Chapter 2; and the analysis of the regional economies which is the concern of Chapter 3.

In addition to the main text of the report, there are several appendices. These contain a description of the I-O technique, a bibliography, the input-output and related survey forms, a detailed critique of I-O data sources and sales distributions for the Front Range foothills economies.

CHAPTER 2

THE METHODOLOGY OF THE STUDY

The interindustry model identifies the interdependent structure of an economy. No producing sector is autonomous (independent of the other sectors); rather, each sector interacts with other sectors (industrial, commercial, labor, government) through the purchase of goods and services and the sale of outputs. Structural interdependence means, quite simply, that the activities in one sector have impacts on others. The identification of the nature and magnitude of this interdependence is one of the most useful results of the interindustry model.

The model is driven by what are termed final demands. Final demands (as opposed to intermediate demands) reflect the demand for goods and services in final form. Thus, final demand sectors use or consume a finished good. Intermediate demands, on the other hand, reflect the demand for goods and services which are processed before becoming available for final consumption. Thus, changes in final demands result in changes in the processing (or intermediate) sectors of the economy. The primary purpose of the interindustry model is to trace these impacts throughout the economy. Tracing these direct and indirect impacts allows the derivation of the multiplier effects on production, income, employment, or water use, and also allows the use of the model in providing consistent forecasts of economic activity.

PROCEDURES FOLLOWED

The discussion of procedures followed in conducting the research may be conveniently condensed into several categories including: the definition of the regions; delineation of economic sectors; the data collection effort; selection of the base year; and data processing. Each is discussed, as briefly as possible, in the following pages.

DEFINITION OF THE REGIONS

The Estes Park Region

Estes Park is located 30 miles east of Loveland, Colorado, in Larimer County. The town is served by Highway 34 running east and west and passing through Rocky Mountain National Park to the west of Estes Park. Also, Highway 36 runs southeast from Estes Park to Longmont and Boulder and Highway 66 runs south towards the Gilpin County-Nederland study region. Located at the eastern entrance to Rocky Mountain National Park, Estes is known primarily as a resort and retirement community. The region offers a variety of summer and winter sports activities with much greater tourist visitation during the summer. (Note the relatively large number of tourist-related business firms shown in Table 2-1.)

The topography of the region strongly influences the general climatic characteristics of the area. Local topographic features result in wide variation in climate within a short distance. The location experiences large temperature changes from summer to winter and from day to night. Low humidity and high amounts of sunlight are typical but the high mountains surrounding Estes Park catch the atmospheric moisture originating from the Pacific Ocean. The transport of

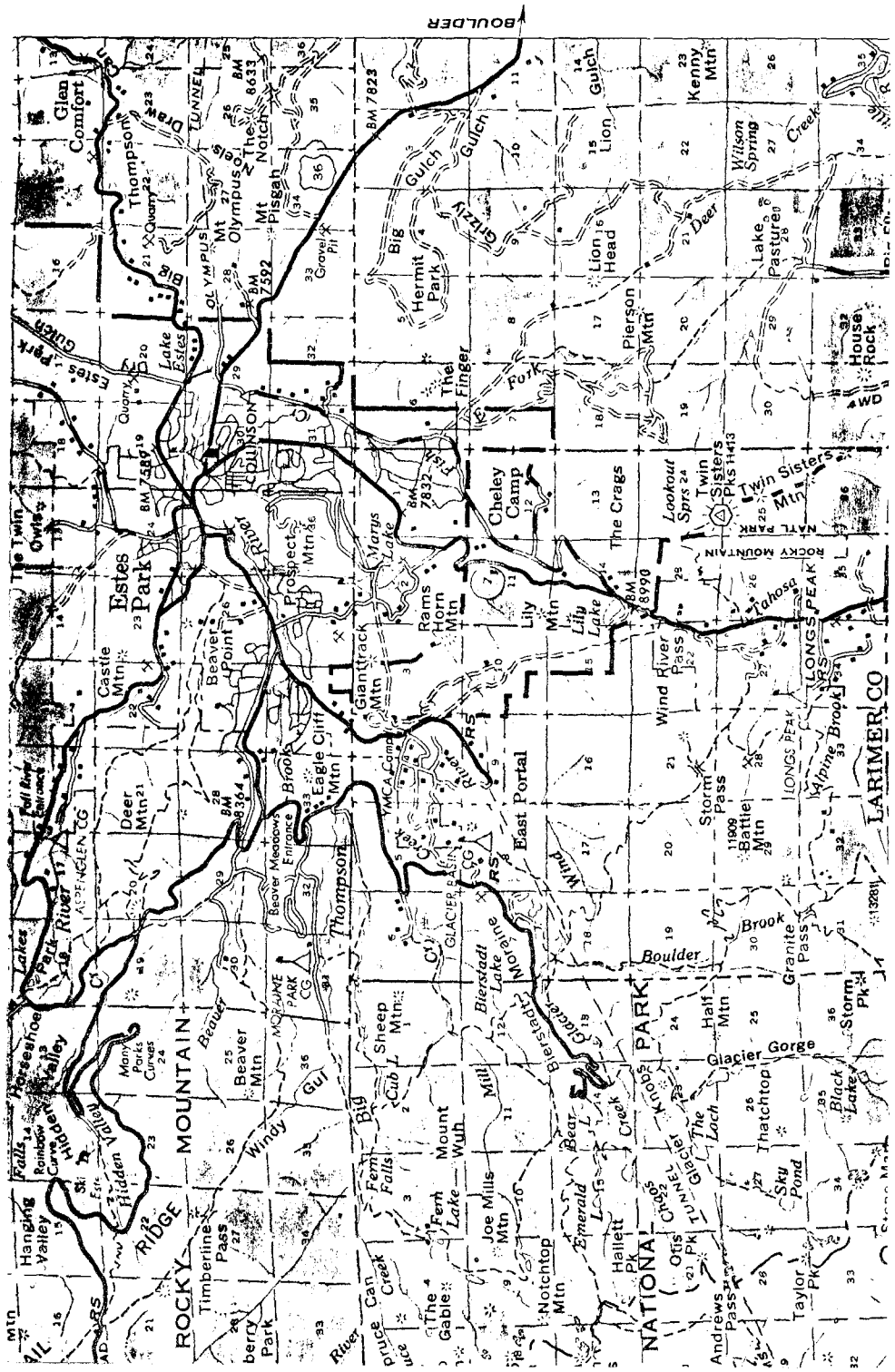

Figure 2-1. Map of Estes Region.

Table 2-1. Number of Businesses in Estes Park, 1979.[1]

ag/for/min	2
constructn	39
manufact	11
trn/com/ut	11
food-rtl	10
gas/auto	9
restaurant	39
tour-rtl	36
other-rtl	38
whlsl	2
fire	20
developers	3
lodging	42
tour-serv	11
other-serv	64
Total	337

[1]List compiled from confidential files of the Colorado Department of Labor and Employment and from survey.

atmospheric water from the Gulf of Mexico is not consistent, consequently each year is not an average year with regard to weather. Estes Park lies at an elevation of over 7,500 feet with the plains on the east at 4,900 feet and the Rocky Mountains extending to 14,000 feet on all other sides. Precipitation varies from over 25 inches per year in the mountains to about 13 inches on the plains. Rainfall is erratic and usually below average. About 70 inches of snowfall per year occurs in Estes Park but yearly variation is even more extreme than for rainfall. The geographic location of Estes Park is shown by the map in Figure 2-1.

The generally pleasant climate, mountain scenery, and resort atmosphere is attractive to retirees, tourists, and worker-entrepreneurs who prefer this lifestyle.[1] The Estes Park region is surrounded by Roosevelt National Forest and Rocky Mountain National Park and private land is limited. Recent growth of the population (and of housing) has prompted interest among major retail establishments to establish a shopping center for the region.

The large amount of national forest surrounding the region draws many Colorado tourists and recreationists in addition to those attracted nationwide to the national park. The national forest provides a greenbelt around the south, east and north sides of the city and could eventually constrain expansion of the region's economy.

The population of Estes Park (1980) is reported to be 2,703, up from 1,616 in 1970. The Estes Park county census division (CCD) has a

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[1] Physical description obtained from Larimer County, Colorado, County Information Service, Cooperative Extension Service, Colorado State University, Fort Collins, Colorado.

reported population of 6,733, up from 3,554 in 1970.[1] (A CCD represents community areas focused on a trading center with visible, permanent and easily described boundaries.)

The twisty canyon roads discourage commuters but the area is desired by retirees (notwithstanding complaints of limited transport services for the area). Our postcard survey, discussed in Chapter 4, found that about 42 percent of the residents were retired.

The Gilpin County-Nederland Region

Gilpin County lies in a mountainous region 37 miles by road west and north of Denver. Land ownership is slightly over half private with most of the public land held by the federal government (national forest). Structures left over from an earlier mining era provide the basis for a thriving summer tourist business. Cultural and entertainment services and related tourist attractions provide the economic base of the region. Our survey of forest recreationists showed that the Gilpin County business community provided little or no goods and services desired by forest-oriented visitors. These recreationists, almost without exception, made their purchases in their home community (Coloradoans) or in larger communities at the edge of the foothills in Boulder or Larimer counties. Although a significant population exists in Gilpin County, it is markedly devoid of trade and service establishments to serve residents or tourists. (See Table 2-2.)

The region is served by typical mountain highways connecting to Denver, Boulder and Longmont to the east, and running north towards the

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[1] U.S. Department of Commerce, Bureau of the Census, March 1981, 1980 Census of Population and Housing: Advance Reports, Final Population and Housing Unit Counts.

Figure 2-2. Map of Gilpin County Region.

Table 2-2. Number of Businesses in Gilpin County and Nederland, 1979.[1]

ag/for/min	5
constructn	7
manufact	8
trn/com/ut	4
food-rtl	4
gas/auto	2
restaurant	17
tour-rtl	10
other-rtl	5
whlsl	0
fire	3
developers	1
lodging	1
tour-serv	4
other-serv	10
Total	81

[1]List compiled from confidential files of the Colorado Department of Labor and Employment and from survey.

Estes Park study area. The county has a relatively severe winter climate at higher levels. It is bounded by the continental divide on the west. Elevations range from 6,900 to over 13,000 feet.

Gilpin County has a 1980 population of 2,441, up from 1,272 in 1970. The town of Nederland, which lies in Boulder County, at the north border of Gilpin County, has a population of 1,212, up from 492 in 1970.[1]

Our postcard survey, discussed in Chapter 4, indicated that about 47 percent of the residents of Gilpin County-Nederland commute outside the region to work. About 31.5 percent are employed locally and 16.4 percent are retired.

The absence of a well-developed trade center precludes even local residents from extensive local spending. Business activity in the region is centered on entertainment services to the exclusion of other trade and service business. The location of schools within the region provides a second source of local employment. Schooling services make up an additional export from the region.

The area provides both summer and winter recreation activities of all kinds and has great natural scenic attraction. The rugged terrain, harsh climate (in the winter) and limited local provision of goods and services act to limit settlement by either commuters or retirees. The minimal export base precludes large numbers of local workers.[2]

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[1] U.S. Department of Commerce, Bureau of the Census, March 1981, 1980 Census of Population and Housing: Advance Reports, Final Population and Housing Unit Counts.

[2] Physical characteristics of the region obtained from information presented in Gilpin County, Colorado, County Information Service, Cooperative Extension Service, Colorado State University, Fort Collins, Colorado.

The Woodland Park Region[1]

Woodland Park is located 18 miles northwest of Colorado Springs, Colorado, partly in Douglas and El Paso counties but mainly lying in Teller County. Figure 2-3 shows the location of the study area relative to the rest of the state. The region studied was slightly larger than the Trout Creek watershed. The watershed covers approximately 132 square miles, is over 20 miles in length, and 8 miles in width.

Located within the watershed are the city of Woodland Park and the town of Divide. Highway 24, especially the four-lane section running out of Colorado Springs, over Ute Pass, and into Woodland Park, is the principle artery. It serves as the main commercial street in both communities. The area is crossed north-south by Highway 67, which connects the northern part of Teller County with the County Seat, Cripple Creek.

The watershed's elevation ranges from 7,000 feet to over 9,000 feet. The topography varies from steep forest-covered slopes to rolling grass-covered meadows. Even though the watershed is located in a mountainous area, the climate is relatively mild. The area's precipitation falls mainly during the spring and summer months, although heavy winter snows are not uncommon.[2]

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[1]The Woodland Park description is excerpted from "Input-Output Analysis of the Woodland Park Economy," M.S. thesis at Colorado State University by David R. Senf and part of a Forest Service study directed by Dr. Warren Trock.

[2]Physical description obtained from Teller County, Colorado, County Information Service, Cooperative Extension Service, Colorado State University, Fort Collins, Colorado.

Figure 2-3. Map of Woodland Park Region.

The pleasant climate, mountain scenery, rural atmosphere, and the surrounding Pike National Forest make the area quite an attractive place to visit and settle.

Within the watershed there are almost 45 square miles of privately owned land. The privately owned land represents about 34 percent of the total watershed area. The other 66 percent is part of the Pike National Forest. Most of the private land is concentrated in the southern half of the watershed.

The large amount of national forest in the area is important for three reasons. First, the national forest creates a greenbelt around Woodland Park which is attractive to potential residents. Secondly, the abundant recreational opportunities available in the immediate area draw tourists and recreationists to the area. These visitors are important to the local economy. Thirdly, the national forest may become the limiting factor to growth in the area. Forest Service policies on issues such as right of ways and water rights may determine the eventual size of Woodland Park.

The residential subdivision boom that occurred within the city of Woodland Park and the northern half of Teller County started sometime during the mid-sixties. Since then, a considerable amount of land has been converted from ranches into rural subdivisions. Well over 30 subdivision developments have been platted in the area since 1965.[1]

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[1] Information gathered from Teller County Planning Department files and Woodland Park City Engineer files.

Table 2-3. Population[1] and Retail Sales[2] in Woodland Park and Teller County, 1970-1980.

	Woodland Park	Teller County
1970 Population	1,022	3,316
1980 Population	2,634	8,034
1970 Retail Sales	$ 5,662,000	$ 8,994,000
1979 Retail Sales	$ 21,250,000	$ 29,420,000

[1]U.S. Department of Commerce, Bureau of the Census, various publications.

[2]Figures obtained from Colorado State and County Retail Sales by SIC Classification, University of Colorado, Business Research Division, Boulder, Colorado, 1968-79.

The population of Woodland Park today is estimated to be 2,634,[1] while the study area's estimated population is approximately 4,800.[2] The influx of residents into the area continued in 1979 as evidenced by the 3.6 million dollars worth of residential construction occurring in the City.[3] As the area's population has expanded, a more highly developed, less tourist dependent, local economy has evolved. (See Table 2-4.) Over 260 businesses exist in the area today, forming a moderately diverse economy. Although the area's economy has developed, it is still a relatively open economy.

Many new residents are moving to Woodland Park but commuting to work in Colorado Springs. The completion of Highway 24 as a four-lane highway between the two cities in 1975 has made daily commuting relatively easy.[4] The area's growth seems then to be a spillover from Colorado Springs' growth.[5]

SECTOR DELINEATIONS

The interindustry model requires the separation of the economy into various economic entities or "sectors." Total output, by

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[1] U.S. Department of Commerce, Bureau of the Census, March 1981, 1980 Census of Population and Housing: Advance Reports, Final Population and Housing Unit Counts.

[2] This estimate implies that approximately 60 percent of Teller County's population resides in the study area.

[3] Woodland Park Building Department files.

[4] The conclusion that many Woodland Park residents do commute to Colorado Springs is drawn from observation of daily traffic patterns, interviews with local citizens, and from Bureau of Economic Analysis publications which show income sources.

[5] Our postcard survey, discussed in Chapter 4, found that over 17 percent of those contacted by random survey were commuters to Colorado Springs.

Table 2-4. Number of Businesses in Woodland Park Area.

	1958[1]	1966[2]	1979[3]
Manufacturers	1	7	5
Utilities	1	2	5
Construction	0	4	60
Gasoline Service Stations	6	10	13
Eating and Drinking	8	4	17
Other Retail	18	24	64
Ins., Real Estate, and Finance	0	6	30
Lodging	10	17	18
Other Services	3	6	53
Total	47	80	264

[1] Colorado State Directory of Business and Industry 1958, Rocky Mountain Directory Co., Loveland, Colorado.

[2] Cole's Directory, 1966.

[3] List compiled through direct observation, 1979 Business License List of Woodland Park, yellow pages of phone book, and Chamber of Commerce pamphlet.

interindustry accounting procedures, is the aggregate value of all sales or purchases that take place, i.e., the total sales or purchases during a year. This total output must be divided up into sectors in order to assess the interindustry structural dependence that prevails. The model structures economic activity into two major components, suppliers (or sellers) and purchasers (or users). Each of these is further subdivided according to the following scheme. Suppliers include: 1) intermediate or processing suppliers who are producers who must purchase inputs to be processed into output which they sell to final users or as inputs to other processors; and 2) primary suppliers whose output is not directly dependent on purchased inputs. This latter category includes non-local suppliers (or imports). Purchasers include: 1) intermediate or processing purchasers who buy the outputs of suppliers for use as inputs for further processing; and 2) final purchasers who buy the outputs of suppliers in their final form and for final use. This latter category includes purchases by non-local users (or sales to exports). The level of demand by final purchasers, and its composition, are determined outside the processing sector. Production to meet the exogenously determined final demands generates intermediate purchases and sales. Primary suppliers and final purchasers may or may not be one and the same. However, in the interindustry model, their activities are treated as if they were completely independent of one another.

In summary, the two major divisions of suppliers are the intermediate suppliers, which we call the processing sector, and the primary suppliers, which we call the final payments sector. (The suppliers are conventionally shown along the left hand border of an interindustry

table.) The two major divisions of the purchasers are the intermediate purchasers, which we label as the processing sector (just as with the intermediate suppliers) and the final purchasers which we label final demand. (The purchasers are conventionally shown along the top of an interindustry or input-output table.) It is within this general framework that a further sector disaggregation must be accomplished.

The ideal sector delineation would allow unique recognition of industries or producer groups which provide a homogenous good or service. This ideal is very difficult to achieve because of the large amounts of time and finances required for detailed disaggregation, disclosure problems, and lack of data. Any of these factors or a combination of them lead to a violation of the homogenous product ideal.

Sector selection, in addition to dependence upon financing, time, and data availability, is determined to a large extent by the objectives of the study. Research objectives can often be achieved without detailed disaggregation in all sectors. Since our purpose here is largely to determine the impacts of household behavior as affected by forest management policies, more detail is provided for these sectors. The final delineation of the sectoring plan adopted for this study is shown in Table 2-5. The sector plan for the existing Woodland Park I-O model is shown in Table 2-6.

I-O QUESTIONNAIRE DESIGN AND USE

Previous experience with questionnaires employed to obtain primary information for interindustry models suggested that a mail questionnaire should not be used in the pursuit of the primary data. The reason behind this is that no firm accounts for expenditure and revenue

Table 2-5. Processing Sector Identification by Standard Industrial Classification, Estes Park and Gilpin County-Nederland.

Computer Abbreviation	Sector Name	SIC Codes
ag/for/min	Agriculture, Forestry and Mining	01-14
constructn	Construction	15-17
manufact	Manufacturing	20-39
trn/com/ut	Transportation, Communication and Utilities	40-49
food-rtl	Retail Food Stores	54
gas/auto	Gas Stations and Auto Dealers	551, 554
restaurant	Restaurants and Fast Food Places	581
tour-rtl	Retail Stores for Tourists	56, 592, 594, 599
other-rtl	Other Retail Stores	52, 53, 552, 553, 555-559, 57, 591, 593, 596, 598
whlsl	Wholesale Establishments	50, 51
fire	Finance, Insurance and Real Estate	60-67, except 655
developers	Residential and Commercial Developers	655
lodging	Hotels and Motels	70
tour-serv	Services for Tourists	722, 78, 79, 84, 723, 725
other-serv	Other Services	721, 726, 729, 73, 75, 76, 80-83, 86, 89
loc-gov	County and City Government	91-96

Table 2-6. Processing Sector Identification by Standard Industrial Classification, Woodland Park

Computer Abbreviation	Sector Name	SIC Codes
AG	Agriculture	02
CONSTRUCTN	Building Construction	15
SPEC/TRD	Special Trade Contractors	17
MFG	Manufacturing	27, 32
UTILITIES	Utilities	41, 48, 49
BLDG/MATRL	Building Materials	52
FOOD/STRS	Food Stores	54
GS-Aut/DLRS	Automotive Dealers and Gasoline Service Stations	55
APPRL/STRS	Apparel and Accessory Stores	56
FURN/STRS	Furniture Stores	57
EAT-DRINK	Eating and Drinking Places	58
MISC/RTL	Miscellaneous Retail	50, 51, 53, 59
INS/FNCE	Insurance and Finance	60, 63
RE/ESTATE	Real Estate	65
DEVELOPERS	Developers	655
LODGING	Lodging	70
PRO/SER	Professional Services	80, 81, 89
NONPRO/SER	Nonprofessional Services	72, 73, 75, 76, 78
LOC/GVT	Local Government	495, 82, 83, 91, 92, 93
HOUSEHOLDS	Households	--

patterns on a SIC basis, the language ultimately employed in an inter-industry model. Rather, a firm's books are designed around process or product activities. The use of a questionnaire presupposes adequate translation from a firm's accounting language into SIC codes. The typical entrepreneur or manager does not ordinarily work with SIC descriptions, a rather precise and technical language.

Accordingly, a determination was made to conduct personal interviews using basic accounting language tailored to the individual firms involved and for the researcher to make the translation to SIC classification. Thus, the questionnaire form which appears in the Appendix represents the format for the final translation by the researcher. A large majority of the primary data were originally collected in field notes that described the detail behind profit and loss statements for the firms interviewed.

Not all interviews could, however, be conducted as planned. It was found, for example, that some firms would have to refer for legal advice while others did not want to reveal information in the form desired. Even though it was established that the research should not solicit primary data through the mail, it was necessary to design a questionnaire for use both as an interview focal point and as an item that could be left with an interviewed firm.

The questionnaire was designed to fit three sheets of paper. A cover sheet was used to briefly explain the nature of the research and to solicit information on the nature of the firm's product lines and the number of employees. Outlay patterns, both of a cash flow and a non-cash flow nature, were the concern of the second sheet; information on sales distribution was solicited on the third. Both sales and

outlay patterns were disaggregated by sector and regionalized according to (a) Front Range foothills of Colorado, (b) Colorado other than the Front Range foothills region, and (c) activity outside Colorado.

SELECTION OF THE BASE YEAR

Other than a consumer price index for the Denver metropolitan area there is no price index constructed specifically for Colorado. This effectively removes one criterion (relatively stable prices) from consideration when selecting a base year for Colorado economic studies. The 1979 base year was selected for the following two reasons.

Interviewing for the Front Range foothills models commenced in 1980. Calendar 1979 was the most recently completed accounting cycle for most firms; it was anticipated that the information from this cycle would be qualitatively speaking, foremost in the command of the interviewees. Also, activities of relatively new firms were automatically incorporated in the primary data base by soliciting what was then the most current information.

CONDUCT OF THE SURVEY

Interview schedules were arranged by telephone between three days and a week in advance. Every effort was made to gain an interview with the person who would have immediate authority to release information. The length of time spent on an individual interview varied from firm to firm: several were conducted in less than an hour; some took place over several days. The interviews were conducted over an eight-month period. Many establishments are closed during the winter months and others are too rushed during the peak tourist season to take part in the detailed personal interviews required.

PROCESSING THE DATA

Information gathered on the outlay and sales patterns for any given enterprise was tabulated to conform to the sector delineations and regional descriptions as defined in Table 2-5. Care was exercised at this step to assure a balance between survey outlays and sales. Any anomalies were checked and corrected before proceeding further.

The next step was to aggregate questionnaire forms within a sector and to expand the information to represent gross flows. An iterative process was used to accomplish this so that the relative size composition of firms in a given sector delineated for the interindustry models would be more truly reflected. Total employment per dollar of output found by survey and total employment by sector from secondary sources was the basis for sample expansion. The gross flows identified in this manner provided the border totals for the initial transactions statements.

Reconciling discrepancies in any given transaction cell is to be expected; only if the research yielded perfect knowledge about outlays and sales would this be avoided. A discrepancy can emanate from one of several sources or a combination thereof. The sales or purchases of one industry to or from another industry can be misrepresented, or the total gross output value for individual sectors can be in error. In the former case other rows and columns are affected by the error. In the latter, there is an aggregate distribution error in both outlays and sales for that sector. Each discrepancy is examined individually and reconciled on a case-by-case basis. Fortunately, the sources of relatively large discrepancies could be isolated and remedied through

additional examination. Small discrepancies were reconciled by using world imports and exports as residual accounts.

DATA SOURCES FOR ESTES PARK AND GILPIN COUNTY-NEDERLAND

Agricultural Production SIC 01, 02, 07

Colorado. Department of Agriculture. Colorado Crop and Libestock Reporting Service. Colorado Agricultural Statistics. Annual.

Colorado State University. Cooperative Extension Service Data. Department of Economics.

Industry survey data.

U.S. Department of Commerce. Bureau of the Census. Census of Agriculture: 1969. Volume 1, Area Reports, part 41, Colorado, Section 2, County Data. Washington, D.C.: Government Printing Office, 1972.

Colorado Agricultural Statistics reports crops on a production and market value basis. By contrast the total gross output in the interindustry model is reported on a market receipts basis. The implication of this difference is not too critical when virtually all production is marketed; this is not the case with hay. Thus to obtain an estimate of the market receipts from hay the ratio of hay marketings reported in the 1974 Federal Census of Agriculture to the 1974 market value of hay reported in Colorado Agriculture Statistics must be applied to the latter's 1979 report.

Coal Production SIC 12

Colorado. Department of Natural Resources. Division of Mines. A Summary of Mineral Industry Activities in Colorado. Part I: Coal. Annual.

Colorado. Public Utilities Commission. Files.

Hebb, D. H., and Curtin, M. S. "Colorado Coal: A Production and Shipment Directory." (U.S. Department of Interior, Bureau of Mines.) Golden, Colorado: Colorado School of Mines Mineral Economics Institute, 1977. (Xerox reproduction.)

Industry survey data.

Data on tonnage and labor days are available in the Division of Mines publication on a mine by mine basis. The PUC files, the Hebb-Curtin study, and survey information provided the data used in estimating price. Observe that the sale by coal production to the investment component of the region's economy is an inventory accumulation figure that in due time will be influenced by electric power generation.

Construction SIC 14, 15, 16, 17

Colorado. Department of Labor and Employment. Files.

Industry survey data.

Information gained by interviews with contractors was used to calculate a ratio between contract value and outlay for labor on a two-digit SIC level. This ratio was then applied to the annualized employment and wage data for 1980 provided by the Colorado Department of Labor and Employment to estimate total gross output.

Manufacturing SIC 20, 24, 25, 27, 28. 32, 35, 38, 39

Colorado. Department of Labor and Employment. Colorado Manpower Review. Monthly.

Colorado. Department of Labor and Employment. Files.

Industry survey data.

Transportation and Communication SIC 40, 41, 42, 45, 47, 48

Colorado. Department of Labor and Employment. Files.

Colorado. Public Utilities Commission. Files.

Colorado. State Auditor. Files.

Industry survey data.

Information pertinent to telephone communications was gained from filed PUC reports and survey. Because of the nature of the accounting systems employed by the firms involved, a significant amount of prorating was required to scale the data to approximate the regional definitions. The methods of prorating, originally developed for the nine northwestern Colorado counties[1] were applied to reported 1979 data.

Electric and Natural Gas Utilities SIC 491,492

Colorado. Department of Labor and Employment. Files.

Colorado. Public Utilities Commission. Files.

Colorado. State Auditor. Files.

Industry survey data.

A certain amount of prorating and imputation was involved in this sector because of geographic location of activity.

Water, Sewer and Trash SIC 494, 495

Colorado. State Auditor. Files.

Industry survey data.

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[1] The Economy of Northwestern Colorado: Description and Analysis, Contract Report, Bureau of Land Management, March 1977, S. L. Gray, J. R. McKean and J. Weber.

Information gained from the Colorado Department of Labor and Employment and from interviews provided cross checks throughout the estimation of the activities of this sector.

Wholesale Trade SIC 50, 51;

Retail Trade SIC 52, 53, 54, 55, 56, 57, 58, 59

Colorado. Department of Labor and Employment. Colorado Manpower Review. Monthly.

Colorado. Department of Labor and Employment. Files.

Colorado. Department of Revenue. Annual Report. Annual.

Industry survey data.

Mention is made here of the practice of "margining" the trade account sectors. Convention often dictates that the trade sectors are entered in the interindustry model at the level of gross margins. The reasoning behind this is to facilitate showing the direct economic links between producers and users. The absence of margining would interject the trade sector dollar turnover between producers and consumers. The Front Range foothills models were not margined. Margining would serve no useful purpose in the study regions because virtually all manufactured inputs are imported. The retail sector and the wholesale sectors are relatively small also. No wholesale activity is reported in Gilpin County.

Finance, Insurance, and Real Estate SIC 60, 61, 62, 63, 64, 65, 66

Colorado. Department of Labor and Employment. Colorado Manpower Review. Monthly.

Colorado. Department of Labor and Employment. Files.

Colorado. Department of Regulatory Agencies. Division of Insurance. Insurance Industry in Colorado: Statistical Report. Annual.

Colorado. Department of Revenue. Annual Report. Annual.

County Clerk Offices, respective counties. Files.

Federal Credit Banks of Wichita. Files.

Federal Home Loan Bank Board. Combined Financial Statements - Member Savings and Loan Associations of the Federal Home Loan Bank System. Annual.

Industry survey data.

Sheshunoff & Company, Inc. The Banks of Colorado. (A private publication.) Annual.

The output value of the finance sector was entered in the models as the estimated value of interest charges incurred within the region. Interest earnings by commercial banks were readily estimated using the Sheshunoff publication; likewise, the Federal Credit Banks of Wichita provided data relevant to the operations of the Production Credit Association and Federal Land Bank Association. Regional information on the activities of savings and loan associations is not readily available so the data published for Colorado in the Federal Home Loan Bank Board's Combined Financial Statements was prorated by a wage and salary formula. Survey data were used both as a cross check to published data and to estimate financing from outside the region, e.g., certain school bonds, Rural Electrification Association loans, insurance company loans, and so forth.

Information gained in interviews with several major insurance companies in other studies suggested that a precise accounting for insurance premiums paid on per county basis was a near impossibility. Another difficulty observed was with respect to loss claims;

specifically, in a small region the losses incurred by any one economic sector can not be predicted with any certainty. Thus, the insurance sector was handled as follows.

Gross insurance premiums paid in the regions were approximated by prorating premiums paid in the State of Colorado by a personal adjusted gross income figure. Premiums paid in Colorado are reported in the State Division of Insurance's Statistical Report; personal income is reported in the Department of Revenue's Annual Report.

Information on documentary fees paid for real estate transactions was secured from the county clerks in the respective counties. The fee information was used to estimate the gross value of transactions and survey information provided a means to estimate the commissions which make up the gross output of the real estate sector.

Survey information provided the means to make a first approximation distribution of the total gross outlays in the finance, insurance, and real estate sector.

Services SIC 70, 72, 73, 75, 76, 78, 79, 81, 86, 89

Colorado. Department of Labor and Employment. Colorado Manpower Review. Monthly.

Colorado. Department of Labor and Employment. Files.

Colorado. Department of Revenue. Annual Report. Annual.

Industry survey data.

U.S. Department of Commerce. Bureau of the Census. Census of Selected Service Industries, 1972: Area Series, Colorado, 72-A-6. Washington, D.C.: Government Printing Office. 1974.

Sales by the hotels and other lodging facilities sector were estimated by annualizing the pertinent information reported in the Department of Revenue's Annual Report.

Estimation of the output value of the other service sectors was accomplished as follows. The Census of Selected Service Industries provided certain information on output and employment in the study counties and the entire state. Census disclosure requirements cause a considerable amount of data aggregation to take place at the county level. Thus by using Department of Labor and Employment data for the respective counties and Colorado productivity ratios, calculated from the Census, the county output data were disaggregated on a three-digit SIC basis. Outlay distributions were estimated from information gained by interview.

Health SIC 80

Colorado. Department of Labor and Employment. Files.

Colorado. Department of Revenue. Annual Report. Annual.

Colorado. State Auditor. Files.

Industry survey data.

Health facilities owned by local public authorities had current financial statements on file with the State Auditor.

Education SIC 82

Colorado. Department of Education. Files.

Colorado. Department of Education. Revenues and Expenditures: Colorado School Districts. Annual.

Industry survey data.

Information on public school districts is published on a school year basis in Revenues and Expenditures annualized and distributed on the basis of survey information.

Local and County Roads; also

Local and County Government

Colorado. State Auditor. Files.

Industry survey data.

The 1980 audit reports for all local and county government authorities were examined and the data contained therein were aggregated. Information gained in select interviews facilitated the distribution of the various sectors' outlays.

Households

Colorado. Department of Labor and Employment. Files

Colorado. Department of Revenue. Annual Report. Annual.

Colorado. Public Employees Retirement Association. Files.

Colorado State University. Cooperative Extension Service. Trade Areas Study: Northwest Colorado Area. Fort Collins, Colorado, May 1966.

Community Services Administration. Federal Outlays in Colorado. Annual. (Prior to fiscal 1975 published by Office of Economic Opportunity.)

Industry survey data.

U.S. Department of Commerce. Bureau of the Census. Census of Population, 1970: General Social and Economic Characteristics, Final Report, Colorado, PC (1)-C7. Washington, D.C.: Government Printing Office, 1972.

U.S. Department of the Treasury. Internal Revenue Service. Statistics of Income 1969, ZIP Code Area Data from Individual Income Tax Returns. Washington, D.C.: Government Printing Office, 1972.

Household income in the Front Range foothills is shown as emanating from wages and salaries subject to withholding, proprietorship, partnership, and Sub-Chapter S Corporation income, interest, rent, and dividend income, and transfer payments.

The Department of Revenue's Annual Report publishes on a county basis, personal adjusted gross income figures.

Audit reports for the respective counties provided information on the level of payments made to households by the departments of social services. An estimate of payments by the Colorado Public Employees Retirement Association was made based on information provided by the Association. The value of transfer payments made by the U.S. Government was approximated by annualizing the reported information in Federal Outlays.

Payments made to the household account by the respective regional economic sectors reflect an estimate of wages paid subject to withholding. For most of the private enterprise portion of the economy, this estimate reflects the place of work data base provided by the Colorado Department of Labor and Employment files. These data are adjusted to include local branches of firms reporting employment at a central office outside the study regions. Estimates on the earnings of agricultural and government employees reflect the information sources peculiar to those sectors.

Households were partially surveyed to gain information on their outlay patterns. There was a reliance on the sales information

provided by regional producers to backstop consumer surveys. Total tourist spending is largely a residual value after local purchases have been accounted for.

State Government; also

Federal Government

Colorado. Department of Education. Revenues and Expenditures: Colorado School Districts. Annual.

Colorado. Department of Highways. Colorado's Annual Highway Report. Annual.

Colorado. Department of Natural Resources. Division of Wildlife. Colorado Big Game Harvest. Annual.

Colorado. Department of Natural Resources. State Board of Land Commissioners. Summary of Transactions. Annual.

Colorado. Department of Planning and Budget. Files.

Colorado. Department of Revenue. Annual Report. Annual.

Colorado. State Auditor. Files.

Colorado. Public Employees Retirement Association. Files.

Colorado. Public Utilities Commission. Files.

Community Services Administration. Federal Outlays in Colorado. Annual. (Prior to fiscal 1975 published by Office of Economic Opportunity.)

Industry survey data.

Sheshunoff & Company, Inc. The Banks of Colorado. (A private publication.) Annual.

U.S. Department of the Treasury. Bureau of Government Financial Operations. Combined Statement of Receipts, Expenditures and Balances of the United States Government. Washington, D.C.: Government Printing Office. Annual.

U.S. Department of the Treasury. Internal Revenue Service. Statistics of Income 1969, ZIP Code Area Data from Individual Income Tax Returns. Washington, D.C.: Government Printing Office, 1972.

Total gross output for the government sectors is defined in terms of the estimate of revenues from all sources. For private enterprise in the endogeneous portion of the model an estimate was made of income and payroll tax liabilities and fees and royalties paid by each respective sector. There is no real cross check against these estimates because neither Colorado nor the U.S. Government report business tax liabilities on a county basis. Further, previous research experience has demonstrated that prorating the reported state level of collections (reported in the Treasury's Combined Statement of Receipts, Expenditures and Balances and the Department of Revenue's Annual Report) by such factors as population or personal income produces questionable results.

Personal tax and fee liabilities were much more readily estimated by using such publications as the Department of Revenue's Annual Report, the Division of Wildlife's Big Game Harvest, and the IRS's ZIP Code Area Data. The exports by the State of Colorado include estimates of sales taxes and non-resident hunting fees collected from tourists in the three county region.

All estimates of government revenues were annualized and put on a 1980 basis. Expenditures were likewise adjusted.

For the U.S. Government, the publication Federal Outlays was used as a first approximation of expenditures. Select interviews with the larger agencies, such as the U.S. Forest Service, U.S. Park Service, and U.S. Postal Service, provided the information to estimate agency operating expenditure patterns. Information on direct payments for such things as schools, interest on government securities held by commercial banks, highways, and local government activities was taken from

the Colorado Department of Education's Revenues and Expenditures, Sheshunoff's The Banks of Colorado, Colorado's Annual Highway Report, and files in the Colorado State Auditor's Office.

Imports - Colorado; also

Exports - Colorado; also

Imports - World; also

Exports - World

Imports and exports in the Front Range foothills interindustry models were estimated by using survey information. Also, in the process of reconciling and balancing the transactions table, the entries in these rows and columns were used as the residual adjustment mechanism.

Labor

Colorado. Department of Labor and Employment. Colorado Manpower Review. Monthly.

Colorado. Department of Labor and Employment. Files.

Industry survey data.

U.S. Department of Commerce. Bureau of the Census. Census of Population, 1970: General Social and Economic Characteristics, Final Report, Colorado, PC (1)-C7. Washington, D.C.: Government Printing Office, 1972.

The labor estimates are annualized full-time equivalents of wage and salaried employees. Further, the estimates refer to work performed within the study regions. The private sector of the economy, with the exception of agriculture, was estimated by using the quarterly report information by place of work submitted to the Colorado Department of

Labor and Employment. This information was secured for 1980 on a three-digit SIC basis.

Caution is exercised to the fact that employment levels as defined in the three county interindustry model do not approximate employment levels as defined in certain commonly distributed publications. The Colorado Manpower Review, for example, publishes county estimates on the resident adjusted labor force. Aside from the definitional difference, and the fact that employment by industry is not reported for low population counties, the current method used to estimate the resident adjusted labor force is extremely questionable. The reader is referred to the January 1977 Manpower Review for a complete discussion on this matter. (Excerpts are attached.)

Colorado Manpower Review

Vol. XIV, No. 1, January 1977
(Includes Vol. XIII, No. 12, December 1976)
Marvin H. Wojahn, Editor

Released March 1977
Research and Analysis Section

COLORADO TRENDS

Colorado labor force estimates have recently been benchmarked to the 1976 national Current Population Survey on a state-wide basis. This benchmarking process has introduced substantial adjustments to previously published employment and unemployment estimates for the State as far back as January 1970. Consult the article beginning on page 3 of this edition for a discussion of this development and its effect on future data presented in the Manpower Review.

On a seasonally adjusted basis the Colorado unemployment rate dropped to 5.2 percent in January, an improvement over the 5.5 percent registered during December 1976 and the lowest level achieved since December 1974. The State unemployment rate last year at this time was 6.0 percent.

The number of Colorado jobless dipped to 63,800 in January after seasonal adjustment -- down 3,900 from December and 7,800 from a year ago. The level of unemployment in the State has been declining since November 1976, according to the seasonally adjusted series, indicating a definite trend toward improvement in Colorado labor market conditions during this period.

Seasonally adjusted January employment showed a growth of 14,600, rising to 1,170,800. This is 56,200 above the year ago figure of 1,114,400 and the highest level reached to date in this series. Colorado employment has registered steady monthly growth since August 1976.

The unadjusted unemployment rate for January in Colorado was 5.9 percent, up from December's 5.7. Unadjusted employment dropped 21,600 and unemployment rose 900 from December. The relative movements in the seasonally adjusted and unadjusted Colorado labor force series indicate that historically January has generally been a month of rising unemployment and falling employment. (For a discussion of seasonal adjustment see "Seasonally Adjusted Labor Force Data Introduced," in the November 1976 issue of the Manpower Review.) The magnitudes (continued on page 2)

IN THIS ISSUE:

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COLORADO LABOR FORCE ESTIMATES BENCHMARKED TO CURRENT POPULATION SURVEY

Introduction of Statewide Survey:

Due to an overall expansion in coverage the national Current Population Survey (CPS) is now being used as an annual benchmark for all Colorado labor force estimates. The revisions in the originally published data series caused by this benchmarking process will affect estimates back to January 1970 for every Colorado area except the Denver-Boulder LMA. The Denver area has been benchmarked to the CPS for the past several years and thus revisions prior to 1974 are minimal.

Since 1940 the household survey procedure known as the CPS has been utilized to compile labor force statistics on the national level. At the present time some 55,000 housing units around the country are assigned for interview each month in this survey. In contrast, labor force data on the local level is derived through a federally developed procedure involving the use of locally available information from administrative data systems and derived statistical relationships. It is widely believed that the household survey technique utilized at the national level is much more consistent and reliable than the mathematical building block approach used locally.

In 1974 the federal Bureau of Labor Statistics (BLS) made provisions for the benchmarking of local labor force data to the CPS in those areas in which the CPS sample was of sufficient size to produce a locally valid annual average. In Colorado this meant that employment and unemployment estimates for the Denver-Boulder LMA began to be benchmarked annually to the CPS, while figures for the balance of the State area were computed in the historical manner without benchmarking.

State Methodology and BLS Methodology:

At the time of the 1975 CPS benchmark for the Denver-Boulder LMA, which occurred in early 1976, the BLS also instituted a program of adjusting labor force data in non-CPS areas of the country to broad national CPS totals. This had the net affect of lowering unemployment rates in all Colorado areas outside Metropolitan Denver for 1975 and 1976 at the same time that the regular CPS benchmarking process in the Denver-Boulder LMA drastically raised the area's unemployment. (For a more in-depth discussion of these events, see the April 1976 issue of the "Colorado Manpower Review.")

During this period the Research and Analysis (R & A) unit of the Colorado Division of Employment and Training, after much study, felt that the BLS mandated adjustments to the Colorado labor force series did not take into account Colorado's unique situation of being partially a CPS area and partially a non-CPS area. R & A decided to produce, in addition to the data calculated utilizing all the BLS mandated adjustment for federal program purposes, another labor force series for all Colorado areas which could be used for economic analysis. Thus came about the division of "State methodology" and "BLS methodology." In the State methodology series for economic analysis, the BLS method of extrapolating the 1975 CPS level into 1976 for the Denver area was modified to allow for changing economic conditions. The result of utilizing this variable extrapolator was an overall lowering of the unemployment rate in the Denver Metropolitan area during 1976, as compared to the rate calculated under strict BLS methodology. For areas

outside the Denver-Boulder LMS, the State methodology series disregarded the procedure of adjusting employment and unemployment data in non-CPS areas to meet broad national CPS levels. The result was a higher unemployment rate for these "balance of the State" areas than that recorded by the BLS methodology. It should be re-emphasized that the distribution of federal monies to high unemployment areas was based on the federally mandated BLS series of labor force data.

The recent release of 1976 CPS data for both the Denver-Boulder LMA and the State of Colorado as a whole indicates that the position adopted by the R & A staff during 1976 was justified. Revisions introduced from the 1976 CPS benchmark have substantially lowered the estimated unemployment rate in the Denver metropolitan area even below the level produced by the State methodology. In areas outside Denver, the expanded 1976 CPS indicates that unemployment was being significantly underestimated by the strict BLS methodology and also to a lesser extent by State methodology. The net result of the 1976 CPS benchmark is statewide 1976 unemployment rates that are very similar to the ones originally published under both State and BLS methodologies. Large adjustments, however, are made from the BLS methodology in the distribution of unemployment between the Denver-Boulder LMA and the balance of the State.

According to the current CPS benchmark, the annual average unemployment rate for the State of Colorado was 5.9 percent in 1976. Both State and BLS methodologies indicated a 1976 Colorado unemployment rate of 6.0 In the Denver-Boulder LMA, however, the 1976 CPS derived unemployment rate was 6.1 percent, compared to 6.6 under State methodology and 6.8 percent under the BLS mandated procedure. In the balance of the State, CPS figures showed a 1976 annual average unemployment rate of 5.6 percent, while computed under State methodology the 1976 rate was 5.2 percent and under BLS methodology it was 4.8 percent.

State Methodology Series Discontinued:

As previously indicated, the adjustment in Colorado unemployment rates which have come about as a result of expanded CPS measurements are in line with the anticipations of the Research and Analysis staff. They indicate that the variations from the strict BLS procedures which were encompassed in the State methodology series of labor force calculation were, indeed, a step in the right direction. However, with the introduction of statewide CPS benchmarking, the contradictory treatment of labor force computations in Colorado's non-CPS areas which occurred under mandated BLS procedures has been abolished. It is now felt that the State methodology concept of labor force calculation has served its purpose and the primary cause of its inception has disappeared. Since all Colorado labor areas are now benchmarked directly to the CPS, there will no longer be published separate labor force estimates computed under State and BLS methodologies. Labor force statistics computed under BLS/CPS methodology will be put forth as both a tool for economic analysis and a requirement for federal program eligibility purposes. Hopefully, this approach will also result in less confusion concerning employment and unemployment data.

This is not to say that R & A analysis of the computational processes and the validity of Colorado labor force estimates will cease. Even under the current system of statewide benchmarking to CPS levels, there is room for questioning and discussion.

Reliability of Current CPS Data:

In the past, the unemployment side of labor force estimating has usually received the most emphasis. The level of unemployment and the unemployment rate has tended to be the overriding concern of people interested in the validity of statistics for Colorado or any other area. It should be realized, however, that the calculation of employment is also important and changes in the rate of job growth can be very meaningful in the analysis of economic trends.

According to CPS figures, in 1976 Colorado showed a gain of some 72,000 jobs over the prior year. That would be the second highest annual employment growth for the State since the compilation of labor force data began--in the only higher instance employment grew by 93,000 during the 1972-73 period according to the CPS. 1976 was definitely a year of recovery for the Colorado economy, but an expansion of 72,000 people on the employment side does not appear to be justified at this point.

This magnitude of job growth has, so far, not materialized in any other data systems which reflect on the total employment level. The Current Employment Statistics (CES) program data on nonagricultural wage and salary employment by place of work, which is derived from a monthly mail sample survey of employers and appears regularly in the Manpower Review, indicates job growth between 1975 and 1976 in Colorado of just over 27,000. Admittedly, this series is not equivalent to the total employment calculation, and due to the benchmark timing of the CES program, some growth occurring in employment is not registered. The currently published CES data on place of work, nonagricultural wage and salary employment is based on a March 1974 benchmark primarily with an Employment Service report known as the ES-202. The ES-202 is a compilation of confidential reports on employment and earnings which each eligible employer is required to file with the Colorado Division of Employment and Training under the State's Employment Security Act. Employment attributed to firms which have come into being during the 1976 period of economic growth in Colorado would be unrepresented in CES data based on the March 1974 benchmark.

Preliminary data from the ES-202 through the third quarter of 1976 registers approximately 37,000 new jobs in Colorado over the same period in 1975. There are certain portions of nonagricultural wage and salary employment that are not included in this report--primarily related to government--but that still leaves a good deal of CPS registered growth unaccounted for.

Neither of the two above-mentioned series on employment (the CES program or the ES-202) can be utilized as a direct substitute for a total employment estimate. Both are based on the measurement of jobs by place of work, rather than the employment of people by place of residence definition, which determines total area employment. Conceptually, however, the number of jobs by place of work should tend to be higher than the number of people employed by residence, and that would serve to widen the gap between the CPS employment growth rate and that indicated by these data series. On the whole, when allowances are made for the employment areas not covered and the conceptual differences, the CES program and the ES-202 do not support the growth of 72,000 new jobs in Colorado indicated by the 1976 Current Population Survey.

Questions on the reliability of the CPS to serve as a benchmark for local labor force estimates are not unique to the Colorado situation. Nationally 23 states were benchmarked to the CPS for the first time this year. A preliminary review

of the 1976 data for these areas indicates significant revisions from originally calculated data in many states. In some cases, the number of unemployed, as measured by payments for unemployment compensation, actually exceeded the CPS estimate of total unemployment. This state of affairs prompted the Research and Statistics Committee of the Interstate Conference of Employment Security Agencies to express "strong misgivings and serious doubts concerning the 1976 revisions proposed by BLS to state and local area unemployment statistics necessitated by adjustments to the Current Population Survey" in their December 1976 meeting.

The R & A staff will continue to monitor and analyze the concepts utilized in the calculation of Colorado labor force statistics. For at least the immediate future, however, all Colorado area unemployment rates utilized by this publication for economic analysis will be based on methodology which strictly follows the guidelines established by the federal Bureau of Labor Statistics.

Publication of Series Revisions:

Colorado and Denver-Boulder LMA monthly and annual average labor force data incorporating all recent revisions for the 1970 through 1976 period are included on pages 7 to 11 of this issue. On pages 12 and 13 are revised Colorado county labor force estimates for annual average 1976 and January 1977. Monthly 1976 data is available for all Colorado counties in this format upon request to the Research and Analysis Unit of the Colorado Division of Employment and Training. Revised county labor force figures are not yet available for periods prior to January 1976. When these historical revisions are completed, they will be announed in the Manpower Review. A monthly summary of current Colorado county labor force estimates similar to that on page 13 will be a regular feature in upcoming issues of the Review.

Revisions to previously published Colorado and the Denver-Boulder LMA seasonally adjusted labor force estimates for 1970 through 1976 appear on pages 14, 15, and 16 of this issue. Revised 1976 seasonally adjusted data for the Colorado Springs, Pueblo, Fort Collins, and Greeley SMSA's is included on page 14. Previously published data for periods prior to 1976 have not yet been revised for these areas and are not comparable to the current series.

DATA SOURCES FOR WOODLAND PARK[1]

Secondary data sources listed below were used in estimating final control totals and verifying primary data.

Agriculture

Colorado. Department of Agriculture. Colorado Crop and Livestock Reporting Service. Colorado Agricultural Statistics. Annual.

Final control total for sector from interviews.

Building Construction

Teller County. Teller County Building Department. "Yearly Report for 1979."

City of Woodland Park. Building Department. "Building Permits Issued."

Final control total for sector from Teller County and Woodland Park Building Department's files. Only local construction activity was included in control total.

Special Trade Contractors

Teller County. Teller County Building Department. "Yearly Report for 1979."

City of Woodland Park. Building Department. "Building Permits Issued."

Final control total for sector from interviews and Teller County and Woodland Park Building Departments' files.

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[1]Source: "Input-Output Analysis of the Woodland Park Economy," M.S. Thesis at Colorado State University by David R. Senf and part of a Forest Service study by Dr. Warren Trock.

Manufacturing

University of Colorado. Business Research Division. Colorado City Retail Sales By Standard Industrial Classification. Annual.

Final control total for sector from interviews.

Utilities

University of Colorado. Business Research Division. Colorado City Retail Sales By Standard Industrial Classification. Annual.

Final control total from Colorado City Retail Sales.

Building Materials; also

Food Stores; also

Automotive Dealers and Gasoline Service Stations; also

Apparel and Accessory Stores; also

Furniture Stores; also

Eating and Drinking Places; also

Miscellaneous Retail; also

Lodging

University of Colorado. Business Research Division. Colorado City Retail Sales By Standard Industrial Classification. Annual.

Colorado. Department of Revenue. Annual Report. Annual.

U.S. Department of Commerce. Bureau of Census. County Business Patterns, Colorado. Washington, D.C.: Government Printing Office. Annual.

Final control totals for sectors from Colorado City Retail Sales.

Insurance and Finance; also

Real Estate; also

Developers; also

Professional Services; also

Nonprofessional Services

Secondary data sources were very limited.

Final control totals for sectors from interviews.

Local Government

Colorado. Department of Local Affairs. Division of Local Government. Local Government Financial Compendium. Annual.

Colorado. Department of Education. Revenues and Expenditures. Annual.

Colorado Department of Highways. Colorado's Annual Highway Report. Annual.

Colorado. Department of Local Affairs. Division of Property Taxation. Annual Report to the Governor and the Legislature. Annual.

City Clerk Office. City of Woodland Park. "1979 City Budget."

Woodland Park District RE-2. Superintendent of Schools. "1978 Budget Report."

Teller County Financial Department. "1979 County Budget."

Final control total for sector from budgets and interviews.

Households

Colorado State University. Cooperative Extension Service. Department of Economics. County Information Service. Continually updated.

Colorado. Department of Health. Health Statistics Section. Demographic Profile, Colorado Planning and Management District 4. August 1979.

U.S. Department of Commerce. Bureau of Census. 1977 Per Capita Money Income Estimates for States, Counties, and Incorporated Places in the West Region of the United States. Washington, D.C.: Government Printing Office, 1978.

U.S. Department of Commerce. Bureau of Economic Analysis. Local Area Personal Income, Rocky Mountain Region. Washington, D.C.: Government Printing Office, 1980.

Colorado. Department of Labor and Employment. Division of Employment and Training. Colorado Trends. Vol. XVIII, No. 4, April 1980.

Final control total for sector from Local Area Personal Income, Rocky Mountain Region.

Nonlocal Government

Office of Economic Opportunity. Federal Outlays in Colorado. Annual.

Colorado. Department of Education. Revenues and Expenditures. Annual.

Colorado. Department of Highways. Colorado's Annual Highway Report. Annual.

Colorado. Department of Revenue. Annual Report. Annual.

Final control total for sector from interviews and Federal Outlays in Colorado.

CHAPTER 3

ANALYSIS OF THE FRONT RANGE FOOTHILLS REGIONS OF COLORADO

INTRODUCTION

The results of the descriptive analysis of the foothills economies are presented in this chapter. The discussion contained in the chapter includes: the description of the economies; an analysis of the nature and magnitude of economic interdependence among processing sectors; the various business activity and income multipliers; and an analysis of employment in the region.

The description and analysis of the economy hinges on three major components of the interindustry model. These are: the gross flows or transactions table; the table of direct production requirements; and the table of direct plus indirect production requirements. These tables are discussed and interpreted in turn. The Estes Park tables are used in our explanations. The tables for Woodland Park and Gilpin County-Nederland are similar and only the differences need be commented upon.

THE TRANSACTIONS TABLE

The first essential component of any interindustry study is the collection and tabulation of data which serve to describe the flows of commodities from each supplying sector to each purchasing sector. These flows are typically expressed in terms of the dollar value of transactions occurring in a specific period of time, normally one year. The information is arrayed in tabular form with the suppliers (selling

sectors) listed at the left of the table and the purchasing sectors listed at the top. The information in this table, termed the transactions table, does two things simultaneously: it identifies the estimated dollar value of sales by each sector to each of the other sectors (thus, the distribution of each sector's output), and it identifies the purchases of ingredients of production by each sector from each of the other sectors (the distribution of purchases). In essence, the material contained in the transactions table represents a double-entry system of bookkeeping in which every sale is simultaneously described as a purchase. Thus, the system deliberately double counts. A description of the computer abbreviations for sector identification is shown in Tables 3-1 and 3-2. Table 3-3 shows the transactions for the Estes Park economy.

The rows and columns of Table 3-1 which are numbered 1-16, are processing, or intermediate demand, sectors. Row and column 17 represent subtotals of activities within the processing sector except for local households. This portion of the table describes, in dollar terms, the flow of goods and services necessary to satisfy intermediate processing demands. Final demands, i.e., demands for goods and services that will not be further processed within the region, are identified in columns 19-25. Rows 19-25 identify the final payments sector. Final payments include, then, federal and state taxes, wages, profits, rents, losses, net inventory depletions, and payments for goods and services imported from outside the region. Row and column 18 is local households. This sector may be treated either as endogenous (part of processing) or exogenous. The last row and column of Table 3-2 contain, respectively,

Table 3-1. Processing Sector Description and Computer Abbreviations for Estes Park and Gilpin County-Nederland.

ag/for/min	Ranches, farms, tree farms, forest protective services, forest management services, mining
constructn	Special trade contractors such as electricians, plumbers, carpenters, heating specialists, etc.
manufact	Builders of wood products, publishers, print shops, jewelry, leather and furniture manufacturers
trn/com/ut	Electricity, natural gas, water, sewer, trash removal, advertising on radio or TV, telephone, post office, trucking, air travel, other transport
food-rtl	Groceries, candy stores, bakeries
gas/auto	Gas stations and automobile dealers
restaurant	Restaurants, cafeterias, drive-ins, taverns, bars
tour-rtl	Gift and souvenir shops, jewelry shops, sporting goods stores, liquor dealers, leather and apparel stores
other-rtl	Hardware and lumber stores, variety stores, appliance dealers, furniture stores, merchandise stores, fuel and wood dealers, catalog stores
whlsl	All firms that principally sell only to other firms (as opposed to retail that sells to the general public)
fire	Interest and fees to banks, savings and loans, insurance agents, real estate offices, title insurance offices
developers	Property developers and subdividers, residential and commercial
lodging	Motels, inns, hotels, trailer parks, campgrounds
tour-serv	Ski tows, museums, tours, opera, photography studies, movies, theatres, golf courses, sports clubs
other-serv	Laundry, business services, computer services, leasing, auto repair, appliance repair, doctors, hospitals, clubs, churches, legal services, accounting, engineering
loc-gov	City and county governments and improvements districts all taxes and fees excluding water, sewer and electricity contained in the trn/com/ut sector

Table 3-2. Processing Sector Description and Computer Abbreviations for Woodland Park.

AG	This sector includes those establishments primarily engaged in the production of beef cattle.
CONSTRUCTN	This sector includes those establishments primarily engaged in construction of buildings (residential or commercial). Only construction activity done in the study area by local construction firms is included in this sector.
SPEC/TRD	This sector includes contractors who undertake special activities such as plumbing, painting, plastering, roofing. etc. Activities performed in the study area and outside are included.
MFG	This sector includes those establishments engaged in the manufacturing of products.
UTILITIES	This sector includes those establishments engaged in the supplying of electricity, gas, telephone, sanitary, and bus services. Firms located outside the study area but supply services to the area had their sales treated endogenously but purchases treated as imports except when the purchases were local.
BLDG/MATRL	This sector includes those establishments primarily engaged in selling of lumber, building materials, and hardware supplies.
FOOD/STRS	This sector includes those establishments engaged in selling food primarily for household consumption.
GS-AUT/DLRS	This sector includes those establishments engaged in selling new and used automobiles; auto parts; and gasoline service stations.
APPRL/STRS	This sector includes establishments primarily engaged in selling clothes, shoes, hats, and related personal wear articles.
FURN/STRS	This sector includes establishments primarily engaged in selling home furnishings, floor coverings, draperies, and other household appliances.
EAT-DRINK	This sector includes those establishments engaged in selling prepared foods and drinks for consumption.

Table 3-2. Continued.

MISC/RTL	This sector includes retail stores not mentioned elsewhere and wholesale stores. These stores include drug stores, liquor stores, stationery stores, sporting good stores, farm supply stores, jewelry stores, and gift stores.
INS-FNCE	This sector includes establishments engaged in deposit banking and insurance selling.
RE/ESTATE	This sector is comprised of real estate offices primarily engaged in the buying and selling of residential property.
DEVELOPERS	This sector is comprised of establishments engaged in the development of subdivisions and commercial buildings.
LODGING	This sector includes commercial and institutional establishments engaged in furnishing lodging and camping space. Included in this sector are summer camps.
PRO/SER	This sector includes establishments primarily engaged in providing such services as legal, health, engineering, and accounting services.
NONPRO/SER	This sector includes establishments offering such services as laundry, beauty, auto repair, miscellaneous repair, amusement, and recreation services.
LOC/GVT	This sector includes all the services offered by Teller County, City of Woodland Park, and Woodland Park School District RE-2.
HOUSEHOLDS	This sector is comprised of all wages, salaries, interest payments, and transfer payments which accrue to individuals. Expenditure by households include all personal consumption and tax payments.

total outlay (purchases) and total output (sales) for each sector of the Estes Park economy.

Our multiplier estimates are shown for both assumptions. Our projections assume households as a part of the processing sector.

The distribution of total output of each sector, according to the sectors in which the output is sold, may be readily discerned by reading across the rows of Table 3-3. The bill of purchases by each sector is found by reading down any column of the table. These column entries show the allocation of purchases by cost component.

For example, consider sector 14, tourist services. Reading across row 14 of Table 3-3 shows that the total output of tourist services was distributed in the following way: $300 worth of output was sold to ag/for/min; $459,091 to loc-hh; $448,016 to retired-hh; and $1,150,992 to tour-hh. Total sales by tour-serv are $2,058,399.

The distribution of purchases by tour-serv, by cost category, are shown in column 14 of Table 3-3. Purchases by tour-serv from constructn were estimated at $6,019; from trn/com/ut, $73,991; from food-rtl, $15,320; from gas-auto, $26,838; from other-rtl, $67,128; from whlsl, $31,000; from fire, $104,597; from other-serv, $192,671; from loc-gov, $7,939; from loc-hh, $669,284; from state-gov, $48,477; from fed-gov, $58,410; deprec, $119,751; rents, $323,747; Colo-imp, $288,392; and world-imp, $1,812.

The payments to governments are taxes and fees and payments to rent include profits and royalties of the firms. The transfer payment reflects the average insured losses for the respective sectors.

Table 3-3. Estes Park, Gross Flows Table, 1979 Dollars.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		1	2	3	4	5	6	7	8	9	10
		ag/for/min	constructn	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	whlsl
1	ag/for//mi	0.	0.	0.	0.	0.	0.	602.	0.	0.	0.
2	constructn	1360.	1700307.	619.	4921.	13578.	2775.	69192.	22444.	8803.	3147.
3	manufact	1275.	42588.	2274.	15862.	42215.	2154.	12287.	123974.	80225.	675.
4	trn/com/ut	7196.	68824.	72920.	176513.	87234.	59905.	280512.	273898.	129488.	27035.
5	food-rtl	1500.	0.	0.	0.	0.	1653.	43870.	504.	0.	0.
6	gas/auto	3844.	196877.	3200.	173481.	0.	14269.	3209.	57669.	95759.	9390.
7	restaurant	2080.	4071.	867.	0.	0.	1835.	24799.	1254.	0.	0.
8	tour-rtl	1200.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	other-rtl	1665.	1694411.	10953.	27799.	9875.	11028.	27505.	74325.	130648.	805.
10	whlsl	0.	152486.	64859.	11459.	179252.	764458.	504093.	81166.	21336.	21086.
11	fire	15064.	40319.	26062.	144102.	1659.	19210.	92280.	200014.	53621.	171045.
12	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	lodging	0.	0.	206.	0.	0.	0.	0.	0.	0.	0.
14	tour-serv	300.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	other-serv	4914.	65961.	9907.	55547.	9628.	19772.	34959.	219667.	29044.	10459.
16	loc-gov	2764.	34378.	9919.	91017.	6308.	8070.	82951.	22691.	32560.	6259.
17	subtotals	43162.	4000222.	201786.	700701.	349749.	905129.	1176259.	1077606.	581484.	249901.
18	loc-hh	14017.	1554217.	931185.	977097.	476212.	247842.	1770184.	813337.	1066100.	97146.
19	state-gov	866.	58257.	35894.	65997.	16972.	10888.	80941.	8748.	58317.	2379.
20	fed-gov	6725.	239455.	227602.	82992.	34562.	25418.	234071.	78244.	305384.	6138.
21	transfers	3316.	8874.	5736.	31718.	365.	4228.	20312.	44074.	11802.	37648.
22	deprec	5500.	203546.	15300.	324240.	15306.	30342.	196937.	209934.	75292.	20877.
23	rents	71483.	531931.	287779.	372266.	600758.	97572.	1099055.	991935.	1142400.	100439.
24	colo-imp	24391.	1103942.	1023275.	5978963.	11406076.	1237124.	2832734.	1847620.	5327014.	2150842.
25	world-imp	1280.	183558.	46611.	52228.	0.	551456.	1364.	1564880.	1435029.	43875.
26	totals	170740.	7884002.	2775168.	8586202.	12900000.	3109999.	7411857.	6636378.	10002822.	2709245.

1 EMPLOYMENT 0.3927E 01 0.1577E 03 0.1388E 03 0.4293E 02 0.6450E 02 0.2799E 02 0.4151E 03 0.1261E 03 0.1700E 03 0.1084E 02

Table 3-3. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		11 fire	12 developers	13 lodging	14 tour-serv	15 other-serv	16 loc-gov	17 subtotals	18 loc-hh	19 state-gov	20 retired-hh
1	ag/for//mi	0.	0.	0.	0.	0.	0.	602.	0.	600.	0.
2	constructn	11000.	385765.	214912.	6019.	36289.	700.	2481831.	0.	0.	0.
3	manufact	118737.	0.	51283.	0.	14115.	7067.	514731.	0.	0.	0.
4	trn/com/ut	130970.	35617.	672879.	73991.	193062.	205494.	2495538.	2688960.	7000.	3270514.
5	food-rtl	300.	0.	21000.	15320.	5518.	0.	89665.	3672726.	0.	4659362.
6	gas/auto	31630.	9657.	31627.	26838.	1083.	30198.	688731.	985634.	0.	896031.
7	restaurant	3930.	0.	869.	0.	2849.	0.	42554.	524675.	0.	784027.
8	tour-rtl	2500.	0.	0.	0.	289.	0.	3989.	0.	0.	0.
9	other-rtl	92082.	3530.	34234.	67128.	38543.	25119.	2249650.	2844998.	2970.	648690.
10	whlsl	0.	0.	90580.	31000.	39338.	0.	1961113.	159000.	31360.	292143.
11	fire	1227817.	134980.	351168.	104597.	54250.	41527.	2677715.	1128812.	0.	1413695.
12	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	lodging	0.	0.	17763.	0.	279.	300.	18548.	0.	0.	0.
14	tour-serv	0.	0.	0.	0.	0.	0.	300.	459091.	0.	448016.
15	other-serv	153985.	38015.	112021.	192671.	99275.	1743641.	2799466.	163961.	479824.	156805.
16	loc-gov	33232.	11733.	462478.	7939.	15588.	18263.	846150.	1718080.	0.	3001926.
17	subtotals	1806183.	619297.	2060814.	525503.	500478.	2072309.	16870583.	14345937.	521754.	15571209.
18	loc-hh	820652.	28570.	2121895.	669284.	2399022.	726262.	14713022.	0.	122881.	0.
19	state-gov	50482.	22637.	47222.	48477.	188244.	33784.	730105.	1770779.	15361.	1660681.
20	fed-gov	376760.	108305.	192197.	58410.	34140.	41669.	2052072.	642721.	0.	6628175.
21	transfers	270252.	29710.	77295.	23023.	11941.	9140.	589434.	248460.	0.	311165.
22	deprec	327938.	12980.	1027463.	119751.	146198.	0.	2731604.	0.	0.	0.
23	rents	956023.	181204.	1024386.	323747.	555965.	10400.	8347343.	3016882.	0.	1926467.
24	colo-imp	547590.	30000.	1535333.	288392.	458895.	3034660.	38826851.	4361363.	21877.	3830533.
25	world-imp	64342.	94.	464701.	1812.	201253.	21552.	4634035.	2164285.	0.	873630.
26	totals	5220222.	1032797.	8551306.	2058399.	4496136.	5949776.	89495049.	32334977.	681873.	30801860.

1	EMPLOYMENT	0.7830E 02	0.1033E 02	0.2394E 03	0.8028E 02	0.2922E 03	0.5355E 02	0.	0.	0.	0.

Table 3-3. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		21	22	23	24	25	26
		fed-gov	transfers	investment	tour-hh	other-exp	totals
1	ag/for//mi	14924.	0.	0.	0.	154614.	170740.
2	constructn	70580.	0.	5331591.	0.	0.	7884002.
3	manufact	0.	0.	0.	0.	2260437.	2775168.
4	trn/com/ut	124190.	0.	0.	0.	0.	8586202.
5	food-rtl	0.	0.	0.	4478247.	0.	12900000.
6	gas/auto	0.	0.	0.	539603.	0.	3109999.
7	restaurant	0.	0.	0.	3802154.	2258447.	7411857.
8	tour-rtl	0.	0.	0.	6632189.	200.	6636378.
9	other-rtl	7440.	0.	0.	4249074.	0.	10002822.
10	whlsl	265629.	0.	0.	0.	0.	2709245.
11	fire	0.	0.	0.	0.	0.	5220222.
12	developers	0.	0.	1032797.	0.	0.	1032797.
13	lodging	0.	0.	0.	8532758.	0.	8551306.
14	tour-serv	0.	0.	0.	1150992.	0.	2058399.
15	other-serv	51268.	0.	0.	844812.	0.	4496136.
16	loc-gov	0.	0.	0.	383620.	0.	5949776.
17	subtotals	534031.	0.	6364388.	30613449.	4673698.	89495049.
18	loc-hh	2682616.	2100000.	0.	0.	12716458.	32334977.
19	state-gov	0.	0.	0.	629430.	0.	4806356.
20	fed-gov	0.	0.	0.	30900.	0.	15138418.
21	transfers	19968000.	0.	0.	0.	0.	21117059.
22	deprec	0.	0.	0.	0.	0.	2731604.
23	rents	0.	0.	0.	0.	0.	13290692.
24	colo-imp	1047150.	0.	0.	0.	0.	48087774.
25	world-imp	184400.	1149059.	0.	0.	0.	9005409.
26	totals	24416197.	3249059.	6364388.	31273779.	17390156.	236007342.
1	EMPLOYMENT	0.	0.	0.	0.	0.	0.

Table 3-4. Gilpin County-Nederland, Gross Flows Table, 1979 Dollars.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		1 ag/for/mi	2 constructn	3 manufact	4 trn/com/ut	5 food-rtl	6 gas/auto	7 restaurant	8 tour-rtl	9 other-rtl	10 fire
1	ag/for/mi	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	constructn	1667.	49279.	4775.	0.	2398.	3426.	11734.	4281.	0.	4397.
3	manufact	58.	135.	0.	187.	6572.	685.	3932.	26.	2104.	6405.
4	trn/com/ut	17703.	16356.	28582.	20100.	14453.	14390.	101781.	74264.	26866.	17229.
5	food-rtl	3882.	0.	4150.	0.	0.	0.	638.	0.	0.	1200.
6	gas/auto	12373.	14347.	3979.	3847.	2670.	0.	31593.	11576.	8235.	7587.
7	restaurant	272.	0.	853.	0.	0.	0.	0.	1377.	0.	1700.
8	tour-rtl	0.	0.	0.	0.	0.	0.	0.	0.	0.	463.
9	other-rtl	916.	71605.	568.	2130.	0.	232.	0.	2895.	1272.	4316.
10	fire	0.	5407.	227.	2910.	0.	20557.	0.	1478.	260.	885443.
11	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	other-serv	1390.	7416.	568.	40183.	267.	64074.	25048.	1191.	1388.	2978.
15	loc-gov	22630.	8494.	30607.	131000.	6752.	2946.	37656.	21393.	7864.	13886.
16	subtotals	60891.	173039.	74309.	200357.	33112.	106310.	212382.	118481.	47989.	945604.
17	loc-hh	172616.	142172.	360463.	144408.	103926.	18827.	375801.	181549.	90759.	93958.
18	state-gov	7294.	5110.	10515.	94.	1634.	405.	7534.	11886.	1075.	1238.
19	fed-gov	13103.	14705.	75291.	7317.	6745.	1286.	30897.	17028.	5804.	5170.
20	transfers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	deprec	33616.	55386.	125238.	77029.	12834.	7880.	10212.	12448.	25872.	11057.
22	rents	-142136.	73952.	109493.	25797.	72684.	7815.	122345.	72313.	59349.	71029.
23	colo-imp	723992.	926500.	432754.	441471.	1080073.	198030.	474404.	430343.	655990.	145244.
24	world-imp	0.	0.	239523.	0.	0.	872.	0.	423525.	18765.	2500.
25	totals	869376.	1390864.	1427586.	896473.	1311008.	341425.	1233575.	1267573.	905603.	1275800.

1 EMPLOYMENT 0.3043E 02 0.1391E 02 0.4283E 02 0.6275E 01 0.6555E 01 0.4097E 01 0.1049E 03 0.3549E 02 0.1358E 02 0.3062E 01

Table 3-4. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		11 developers	12 lodging	13 tour-serv	14 other-serv	15 loc-gov	16 subtotals	17 loc-hh	18 state-gov	19 fed-gov	20 transfers
1	ag/for/mi	0.	0.	0.	0.	0.	0.	0.	1500.	112352.	0.
2	constructn	142900.	6065.	8642.	1605.	23833.	265002.	0.	0.	2500.	0.
3	manufact	0.	527.	10643.	827.	5175.	37276.	0.	0.	0.	0.
4	trn/com/ut	13200.	10930.	129141.	66149.	31385.	582529.	110656.	0.	83000.	0.
5	food-rtl	0.	100.	0.	99.	975.	11044.	508681.	0.	0.	0.
6	gas/auto	3600.	1235.	14227.	14568.	53715.	183552.	78201.	0.	200.	0.
7	restaurant	0.	27.	0.	220.	1200.	5649.	153490.	0.	0.	0.
8	tour-rtl	0.	0.	5058.	0.	0.	5521.	0.	0.	0.	0.
9	other-rtl	1300.	2946.	3162.	5597.	3946.	100885.	290080.	641.	0.	0.
10	fire	61000.	8000.	10538.	1032.	41552.	1038404.	132942.	0.	0.	0.
11	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	20023.	0.	0.	20023.	0.	0.	0.	0.
14	other-serv	25200.	6060.	6323.	2510.	468643.	653239.	85000.	950073.	103000.	0.
15	loc-gov	4350.	5250.	62061.	3792.	12900.	371581.	587500.	120000.	92000.	0.
16	subtotals	251550.	41140.	269818.	96399.	643324.	3274705.	1946550.	1072214.	393052.	0.
17	loc-hh	12586.	30993.	722844.	1113650.	745564.	4310116.	0.	189768.	371257.	1125000.
18	state-gov	8400.	2984.	6284.	129449.	6264.	200166.	210207.	23721.	228000.	0.
19	fed-gov	40100.	3015.	88076.	3937.	35382.	347856.	850835.	0.	0.	0.
20	transfers	0.	0.	0.	0.	0.	0.	0.	0.	1125000.	0.
21	deprec	4800.	4091.	200232.	8029.	11644.	600368.	0.	0.	0.	0.
22	rents	66960.	15584.	15808.	834683.	34748.	1440424.	0.	0.	0.	0.
23	colo-imp	0.	35979.	908876.	828631.	450326.	7732613.	2988549.	133910.	107652.	0.
24	world-imp	0.	36.	391805.	241534.	33429.	1351989.	0.	0.	0.	0.
25	totals	384396.	133822.	2603743.	3256312.	1960681.	19258237.	5996141.	1419613.	2224961.	1125000.

1 EMPLOYMENT 0.1922E 01 0.6022E 01 0.1146E 03 0.1335E 03 0.6274E 02 0. 0. 0.7098E 01 0.1557E 02 0.

Table 3-4. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		21 commut-hh	22 tour-hh	23 other-exp	24 totals
1	ag/for/mi	0.	0.	755524.	869376.
2	constructn	0.	0.	1123362.	1390864.
3	manufact	0.	0.	1390310.	1427586.
4	trn/com/ut	120288.	0.	0.	896473.
5	food-rtl	395641.	395642.	0.	1311008.
6	gas/auto	39101.	40371.	0.	341425.
7	restaurant	153492.	920944.	0.	1233575.
8	tour-rtl	0.	1262052.	0.	1267573.
9	other-rtl	244242.	269755.	0.	905603.
10	fire	104454.	0.	0.	1275800.
11	developers	0.	0.	384396.	384396.
12	lodging	0.	133822.	0.	133822.
13	tour-serv	0.	2583720.	0.	2603743.
14	other-serv	60000.	0.	1405000.	3256312.
15	loc-gov	638600.	60000.	91000.	1960681.
16	subtotals	1755818.	5666306.	5149592.	19258237.
17	loc-hh	0.	0.	0.	5996141.
18	state-gov	490207.	81850.	0.	1234151.
19	fed-gov	2341035.	2400.	0.	3542126.
20	transfers	0.	0.	0.	1125000.
21	deprec	0.	0.	0.	600368.
22	rents	0.	0.	0.	1440424.
23	colo-imp	4865965.	0.	0.	15828689.
24	world-imp	0.	0.	0.	1351989.
25	totals	9453025.	5750056.	5149592.	50377125.

Table 3-5. Woodland Park, Gross Flows Table, 1979 Dollars.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		1 AG	2 CONSTRUCTN	3 SPEC/TRD	4 MFG	5 UTILITIES	6 BLDG/MATRL	7 FOOD/STRS	8 GS-AUT/DLR	9 APPRL/STRS	10 FURN/STRS
1	AG	13000.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	SPEC/TRD	0.	1534361.	0.	0.	0.	0.	0.	0.	0.	0.
4	MFG	0.	467260.	26929.	969.	3288.	31700.	15709.	6900.	5497.	1927.
5	UTILITIES	400.	3571.	4321.	13617.	14321.	20003.	38091.	13298.	10847.	9321.
6	BLDG/MATRL	12488.	1125830.	34097.	4255.	8220.	0.	0.	11321.	0.	0.
7	FOOD/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	GS-AUT/DLR	2734.	38431.	147799.	11800.	139740.	25391.	0.	32565.	3451.	21477.
9	APPRL/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	FURN/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	EAT-DRINK	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	MISC/RTL	29501.	23714.	4091.	6382.	3210.	3137.	2200.	1051.	1252.	1137.
13	INS-FNCE	2000.	49471.	47596.	4032.	5810.	2000.	5032.	1031.	9318.	3720.
14	RE/ESTATE	0.	48150.	0.	0.	0.	0.	0.	0.	0.	0.
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	PRO/SER	3431.	7832.	4359.	0.	0.	1130.	10012.	1958.	2880.	0.
18	NONPRO/SER	1971.	26193.	20876.	16701.	28882.	11530.	6260.	1752.	417.	0.
19	LOC/GVT	0.	90904.	62627.	2500.	28500.	32622.	35764.	13469.	2950.	1322.
20	SUBTOTALS	65525.	3415717.	352695.	60256.	231971.	127513.	113068.	83345.	36612.	38904.
21	HOUSEHOLDS	20349.	973210.	855902.	375226.	352130.	312173.	319479.	165479.	115550.	168513.
22	NONLOC/GVT	4321.	112197.	86982.	28042.	60434.	37231.	53702.	89591.	20650.	20236.
23	PROFITS	-24598.	401321.	270688.	162385.	123300.	15000.	211346.	203915.	66580.	79300.
24	LND/PAYMNT	0.	130321.	0.	0.	0.	0.	0.	0.	0.	0.
25	DEPREC	25437.	132716.	136109.	59412.	158394.	251321.	77730.	14134.	15307.	34857.
26	IMP-CO/SPG	7123.	1269673.	1065399.	186385.	841358.	3743662.	478420.	2292432.	97410.	6388.
27	IMP-WORLD	6273.	534307.	363575.	795411.	698413.	98100.	3210975.	698124.	305326.	243802.
28	TOTALS	104430.	6969462.	3131350.	1667117.	2466000.	4585000.	4464720.	3547020.	657435.	592000.

Table 3-5. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		11 EAT-DRINK	12 MISC/RTL	13 INS-FNCE	14 RE/ESTATE	15 DEVELOPERS	16 LODGING	17 PRO/SER	18 NONPRO/SER	19 LOC/GVT	20 SUBTOTALS
1	AG	0.	0.	0.	0.	0.	0.	0.	0.	0.	13000.
2	CONSTRUCTN	0.	0.	0.	9000.	75000.	7434.	0.	0.	102390.	193824.
3	SPEC/TRD	0.	0.	0.	0.	433500.	0.	0.	0.	50321.	2018182.
4	MFG	39043.	31719.	9700.	21681.	0.	1111.	4351.	21273.	4934.	693991.
5	UTILITIES	58264.	52172.	19305.	53106.	9500.	46726.	29354.	31103.	350321.	777641.
6	BLDG/MATRL	0.	5321.	0.	0.	117000.	0.	0.	61531.	53004.	1433067.
7	FOOD/STRS	16301.	0.	0.	214.	0.	8891.	0.	0.	0.	25406.
8	GS-AUT/DLR	1956.	16604.	8440.	19487.	0.	16746.	10428.	83539.	109664.	690252.
9	APPRL/STRS	0.	0.	80.	0.	0.	0.	0.	0.	6000.	6080.
10	FURN/STRS	0.	0.	3040.	41302.	0.	0.	438.	0.	0.	44780.
11	EAT-DRINK	0.	0.	0.	7542.	0.	0.	0.	0.	0.	7542.
12	MISC/RTL	8150.	5729.	4236.	9409.	12000.	16455.	1827.	18975.	61868.	214324.
13	INS-FNCE	5200.	16557.	4000.	1606.	111500.	12425.	4321.	9031.	23985.	318635.
14	RE/ESTATE	0.	26100.	12200.	10707.	136360.	8699.	0.	0.	0.	242216.
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.	0.	2700.	0.	0.	2223.	3785.	0.	1000.	9708.
17	PRO/SER	4890.	12267.	8900.	281118.	34000.	0.	0.	3131.	33966.	409874.
18	NONPRO/SER	50536.	5790.	6800.	0.	20800.	13707.	0.	1420.	52842.	266477.
19	LOC/GVT	25577.	15401.	17450.	9593.	5031.	17294.	5177.	8206.	120000.	494387.
20	SUBTOTALS	209917.	187660.	96851.	464765.	954691.	151711.	59681.	238209.	970295.	7859386.
21	HOUSEHOLDS	516792.	465954.	295535.	1047799.	190150.	142487.	611807.	204017.	2192648.	9325200.
22	NONLOC/GVT	129527.	55782.	26862.	11321.	17321.	13401.	41040.	31185.	124198.	964023.
23	PROFITS	65698.	275517.	301130.	513166.	779813.	48051.	127418.	222976.	0.	3843006.
24	LND/PAYMNT	0.	0.	0.	0.	200000.	0.	0.	0.	0.	330321.
25	DEPREC	40754.	26323.	17505.	27235.	393500.	25934.	21700.	5733.	0.	1464101.
26	IMP-CO/SPG	525693.	731784.	154385.	120964.	153400.	175822.	188681.	182659.	328218.	12549856.
27	IMP-WORLD	239619.	1393980.	638022.	84572.	174300.	119094.	367208.	157221.	1220495.	11348817.
28	TOTALS	1728000.	3137000.	1530290.	2269822.	2863175.	676500.	1417535.	1042000.	4835854.	47684710.

Table 3-5. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		21 HOUSEHOLD	22 NONLOC/GVT	23 NEW/RESDNT	24 INVESTMENT	25 EXP-CO/SPG	26 EXP-WORLD	27 TOTALS
1	AG	0.	0.	0.	0.	0.	91430.	104430.
2	CONSTRUCTN	134000.	0.	5203761.	1437877.	0.	0.	6969462.
3	SPEC/TRD	313135.	7321.	0.	0.	535519.	257193.	3131350.
4	MFG	112014.	1100.	0.	0.	289907.	570105.	1667117.
5	UTILITIES	1684107.	4252.	0.	0.	0.	0.	2466000.
6	BLDG/MATRL	1707064.	3210.	0.	0.	1256487.	185172.	4585000.
7	FOOD/STRS	2495657.	0.	0.	0.	1184408.	759249.	4464720.
8	GS-AUT/DLR	1547582.	5000.	0.	0.	621532.	682654.	3547020.
9	APPRL/STRS	264181.	0.	0.	0.	109636.	277538.	657435.
10	FURN/STRS	336013.	0.	0.	0.	115557.	95650.	592000.
11	EAT-DRINK	829440.	0.	0.	0.	394813.	496205.	1728000.
12	MISC/RTL	1654361.	3000.	0.	0.	729847.	535468.	3137000.
13	INS-FNCE	457373.	4748.	0.	0.	112358.	637176.	1530290.
14	RE/ESTATE	73206.	0.	432110.	184278.	704644.	633368.	2269822.
15	DEVELOPERS	0.	0.	855000.	92175.	970622.	945378.	2863175.
16	LODGING	16672.	0.	0.	0.	114842.	535278.	676500.
17	PRO/SER	671270.	0.	0.	0.	241668.	94723.	1417535.
18	NONPRO/SER	647461.	4100.	0.	0.	100581.	23381.	1042000.
19	LOC/GVT	2340340.	2001127.	0.	0.	0.	0.	4835854.
20	SUBTOTALS	15283876.	2033858.	6490871.	1714330.	7482421.	6819968.	47684710.
21	HOUSEHOLDS	735224.	5516000.	0.	0.	11031816.	4453760.	31062000.
22	NONLOC/GVT	2334604.	0.	0.	0.	0.	0.	3298627.
23	PROFITS	1713623.	0.	0.	0.	0.	0.	5556629.
24	LND/PAYMNT	0.	0.	0.	0.	0.	0.	330321.
25	DEPREC	0.	0.	0.	0.	0.	0.	1464101.
26	IMP-CO/SPG	4189968.	35000.	0.	0.	0.	0.	16774844.
27	IMP-WORLD	6804685.	49565.	0.	0.	0.	0.	18203067.
28	TOTALS	31062000.	7634423.	6490871.	1714330.	18514237.	11273728.	124374299.

Other information can be obtained directly from the transactions table. The household rows represent wages paid subject to withholding. This row shows household income. The leading contributors to local household income are: federal government, other services (includes schools), lodging, restaurants, construction, other retail, and transport-communication and utilities. Similarly, sector-by-sector contributions to taxes may be directly obtained from Table 3-3. The sectors showing the greatest dollar outlay for local and county taxes are: retired households, local employed households, and lodging. Comparable information for the Gilpin County-Nederland and Woodland Park economies is shown on Tables 3-4 and 3-5.

While these items, obtained directly from the transactions tables, are useful as initial indicators of the relative importance of each sector in the regional economy, the important question of interdependence is not addressed. In order to do so, it is first necessary to isolate the direct production relationships existing in the economy.

DIRECT PRODUCTION REQUIREMENTS

The direct production requirements, or coefficients, represent the second major component of the interindustry analysis. These direct requirements are presented in Table 3-6. Computation of the direct production requirements is not difficult, given the transactions table and requires only that each column entry of the transactions table be divided by the respective column total. The resulting coefficients describe the direct purchases necessary from each supplier (at the left of the table) in order for the purchasing sector (at the head of the column) to produce one dollar's worth of output. The coefficients,

then, are interpreted as the direct requirements per dollar of output produced by each sector.

As an example consider the tourist-services sector, sector 14 (column 14 of Table 3-6). For every dollar's worth of output produced by tour-serv in the region, $.002924 worth of inputs are required from the constructn sector; $.035946, from trn/com/ut; $.007443, from food-rtl; $.013038, from gas/auto; and so on down the column. It is obvious from the table that far and away the largest direct purchases made by the tour-serv sector are those for labor services, with a direct outlay of over 32 cents per each dollar of output produced. This says that a dollar's worth of production in tour-serv requires labor input valued at 32 1/2 cents. Each column of Tables 3-6, 3-7 and 3-8 is interpreted in this manner.

These direct impacts identify only a portion of the total economic impacts that would accompany a change in final demands for the output of a given sector. There are additional, or indirect, impacts which can be quite important. Assessment of all direct and indirect impacts of these exogenous (final demand) changes is made possible through the third analytical component of interindustry analysis. This component is the table of direct plus indirect production requirements.

DIRECT PLUS INDIRECT EFFECTS

The concept of interdependence can be quite easily established with a brief example. Suppose that the export demand for tourist services increases. There will be immediate, or direct, responses of the following type. Tourist service production will have to increase. In order for it to increase, inputs must be obtained from sectors such as

Table 3-6. Estes Park, Direct Requirements Per Dollar of Output, 1979.

DIRECT INPUT COEFFICIENTS (% of purchases by sector at top of table from sectors at the left)

		1	2	3	4	5	6	7	8	9	10
		ag/for/min	constructn	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	whlsl
1	ag/for//mi	0.	0.	0.	0.	0.	0.	0.000081	0.	0.	0.
2	constructn	0.007965	0.215665	0.000223	0.000573	0.001053	0.000892	0.009335	0.003382	0.000880	0.001162
3	manufact	0.007467	0.005402	0.000819	0.001847	0.003272	0.000693	0.001658	0.018681	0.008020	0.000249
4	trn/com/ut	0.042146	0.008730	0.026276	0.020558	0.006762	0.019262	0.037846	0.041272	0.012945	0.009979
5	food-rtl	0.008785	0.	0.	0.	0.	0.000532	0.005919	0.000076	0.	0.
6	gas/auto	0.022514	0.024972	0.001153	0.020205	0.	0.004588	0.000433	0.008690	0.009573	0.003466
7	restaurant	0.012182	0.000516	0.000312	0.	0.	0.000590	0.003346	0.000189	0.	0.
8	tour-rtl	0.007028	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	other-rtl	0.009752	0.214918	0.003947	0.003238	0.000766	0.003546	0.003711	0.011200	0.013061	0.000297
10	whlsl	0.	0.019341	0.023371	0.001335	0.013896	0.245807	0.068012	0.012230	0.002133	0.007783
11	fire	0.088228	0.005114	0.009391	0.016783	0.000129	0.006177	0.012450	0.030139	0.005361	0.063134
12	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	lodging	0.	0.	0.000074	0.	0.	0.	0.	0.	0.	0.
14	tour-serv	0.001757	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	other-serv	0.028781	0.008366	0.003570	0.006469	0.000746	0.006358	0.004717	0.033100	0.002904	0.003860
16	loc-gov	0.016188	0.004360	0.003574	0.010600	0.000489	0.002595	0.011192	0.003419	0.003255	0.002310
17	loc-hh	0.082096	0.197136	0.335542	0.113799	0.036916	0.079692	0.238831	0.122557	0.106580	0.035857
18	state-gov	0.005072	0.007389	0.012934	0.007686	0.001316	0.003501	0.010920	0.001318	0.005830	0.000878
19	fed-gov	0.039387	0.030372	0.082014	0.009666	0.002679	0.008173	0.031581	0.011790	0.030530	0.002266
20	transfers	0.019421	0.001126	0.002067	0.003694	0.000028	0.001359	0.002740	0.006641	0.001180	0.013896
21	deprec	0.032213	0.025818	0.005513	0.037763	0.001187	0.009756	0.026571	0.031634	0.007527	0.007706
22	rents	0.418666	0.067470	0.103698	0.043356	0.046570	0.031374	0.148283	0.149469	0.114208	0.037073
23	colo-imp	0.142855	0.140023	0.368725	0.696345	0.884192	0.397789	0.382190	0.278408	0.532551	0.793890
24	world-imp	0.007497	0.023282	0.016796	0.006083	0.	0.177317	0.000184	0.235803	0.143462	0.016195

Table 3-6. Continued.

		11	12	13	14	15	16	17	18	19	20
		fire	developers	lodging	tour-serv	other-serv	loc-gov	loc-hh	state-gov	retired-hh	fed-gov
1	ag/for//mi	0.	0.	0.	0.	0.	0.	0.	0.000880	0.	0.000611
2	constructn	0.002107	0.373515	0.025132	0.002924	0.008071	0.000118	0.	0.	0.	0.002891
3	manufact	0.022746	0.	0.005997	0.	0.003139	0.001188	0.	0.	0.	0.
4	trn/com/ut	0.025089	0.034486	0.078687	0.035946	0.042940	0.034538	0.083159	0.010266	0.106179	0.005086
5	food-rtl	0.000057	0.	0.002456	0.007443	0.001227	0.	0.113584	0.	0.151269	0.
6	gas/auto	0.006059	0.009350	0.003698	0.013038	0.000241	0.005075	0.030482	0.	0.029090	0.
7	restaurant	0.000753	0.	0.000102	0.	0.000634	0.	0.016226	0.	0.025454	0.
8	tour-rtl	0.000479	0.	0.	0.	0.000064	0.	0.	0.	0.	0.
9	other-rtl	0.017639	0.003418	0.004003	0.032612	0.008572	0.004222	0.087985	0.004356	0.021060	0.000305
10	whlsl	0.	0.	0.010593	0.015060	0.008749	0.	0.004917	0.045991	0.009485	0.010879
11	fire	0.235204	0.130694	0.041066	0.050815	0.012066	0.006980	0.034910	0.	0.045896	0.
12	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	lodging	0.	0.	0.002077	0.	0.000062	0.000050	0.	0.	0.	0.
14	tour-serv	0.	0.	0.	0.	0.	0.	0.014198	0.	0.014545	0.
15	other-serv	0.029498	0.036808	0.013100	0.093602	0.022080	0.293060	0.005071	0.703685	0.005091	0.002100
16	loc-gov	0.006366	0.011360	0.054083	0.003857	0.003467	0.003070	0.053134	0.	0.097459	0.
17	loc-hh	0.157206	0.027663	0.248137	0.325148	0.533574	0.122065	0.	0.180211	0.	0.109870
18	state-gov	0.009670	0.021918	0.005522	0.023551	0.041868	0.005678	0.054764	0.022528	0.053915	0.
19	fed-gov	0.072173	0.104866	0.022476	0.028376	0.007593	0.007003	0.198771	0.	0.215187	0.
20	transfers	0.051770	0.028767	0.009039	0.011185	0.002656	0.001536	0.007684	0.	0.010102	0.817818
21	deprec	0.062821	0.012568	0.120153	0.058177	0.032516	0.	0.	0.	0.	0.
22	rents	0.183138	0.175450	0.119793	0.157281	0.123654	0.001748	0.093301	0.	0.062544	0.
23	colo-imp	0.104898	0.029047	0.179544	0.140105	0.102064	0.510046	0.134881	0.032084	0.124360	0.042888
24	world-imp	0.012326	0.000091	0.054343	0.000680	0.044761	0.003622	0.066933	0.	0.028363	0.007552

Table 3-6. Continued.

		21 transfers	22 investment	23 tour-hh	24 other-exp
1	ag/for//mi	0.	0.	0.	0.008891
2	constructn	0.	0.837722	0.	0.
3	manufact	0.	0.	0.	0.129984
4	trn/com/ut	0.	0.	0.	0.
5	food-rtl	0.	0.	0.143195	0.
6	gas/auto	0.	0.	0.017254	0.
7	restaurant	0.	0.	0.121576	0.129869
8	tour-rtl	0.	0.	0.212069	0.000012
9	other-rtl	0.	0.	0.135867	0.
10	whlsl	0.	0.	0.	0.
11	fire	0.	0.	0.	0.
12	developers	0.	0.162278	0.	0.
13	lodging	0.	0.	0.272841	0.
14	tour-serv	0.	0.	0.036804	0.
15	other-serv	0.	0.	0.027013	0.
16	loc-gov	0.	0.	0.012267	0.
17	loc-hh	0.646341	0.	0.	0.731245
18	state-gov	0.	0.	0.020126	0.
19	fed-gov	0.	0.	0.000988	0.
20	transfers	0.	0.	0.	0.
21	deprec	0.	0.	0.	0.
22	rents	0.	0.	0.	0.
23	colo-imp	0.	0.	0.	0.
24	world-imp	0.353659	0.	0.	0.

Table 3-7. Gilpin County-Nederland, Direct Requirements Per Dollar of Output, 1979.

DIRECT INPUT COEFFICIENTS (% of purchases by sector at top of table from sectors at the left)

		1	2	3	4	5	6	7	8	9	10
		ag/for/mi	construcin	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	fire
1	ag/for/mi	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	constructn	0.001917	0.035430	0.003345	0.	0.001829	0.010034	0.009512	0.003377	0.	0.003446
3	manufact	0.000067	0.000097	0.	0.000209	0.005013	0.002006	0.003187	0.000021	0.002323	0.005020
4	trn/com/ut	0.020363	0.011760	0.020021	0.022421	0.011024	0.042147	0.082509	0.058588	0.029666	0.013504
5	food-rtl	0.004465	0.	0.002907	0.	0.	0.	0.000517	0.	0.	0.000941
6	gas/auto	0.014232	0.010315	0.002787	0.004291	0.002037	0.	0.025611	0.009132	0.009093	0.005947
7	restaurant	0.000313	0.	0.000598	0.	0.	0.	0.	0.001086	0.	0.001332
8	tour-rtl	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.000363
9	other-rtl	0.001054	0.051482	0.000398	0.002376	0.	0.000680	0.	0.002284	0.001405	0.003383
10	fire	0.	0.003888	0.000159	0.003246	0.	0.060209	0.	0.001166	0.000287	0.694030
11	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	other-serv	0.001599	0.005332	0.000398	0.044823	0.000204	0.187666	0.020305	0.000940	0.001533	0.002334
15	loc-gov	0.026030	0.006107	0.021440	0.146128	0.005150	0.008629	0.030526	0.016877	0.008684	0.010884
16	loc-hh	0.198552	0.102218	0.252498	0.161085	0.079272	0.055142	0.304644	0.143226	0.100219	0.073646
17	state-gov	0.008390	0.003674	0.007366	0.000105	0.001246	0.001186	0.006107	0.009377	0.001187	0.000970
18	fed-gov	0.015072	0.010573	0.052740	0.008162	0.005145	0.003767	0.025047	0.013434	0.006409	0.004052
19	transfers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	deprec	0.038667	0.039821	0.087727	0.085925	0.309789	0.023080	0.008278	0.009820	0.028569	0.008667
21	rents	-0.163492	0.053170	0.076698	0.028776	0.055441	0.022889	0.099179	0.057048	0.065535	0.055674
22	colo-imp	0.832772	0.666133	0.303137	0.492453	0.823849	0.580010	0.384577	0.339502	0.724368	0.113845
23	world-imp	0.	0.	0.167782	0.	0.	0.002554	0.	0.334123	0.020721	0.001960

Table 3-7. Continued.

		11 developers	12 lodging	13 tour-serv	14 other-serv	15 loc-gov	16 loc-hh	17 state-gov	18 fed-gov	19 transfers	20 commut-hh
1	ag/for/mi	0.	0.	0.	0.	0.	0.	0.001057	0.050496	0.	0.
2	constructn	0.371752	0.045321	0.003319	0.000493	0.012155	0.	0.	0.001124	0.	0.
3	manufact	0.	0.003938	0.004088	0.000254	0.002639	0.	0.	0.	0.	0.
4	trn/com/ut	0.034340	0.081676	0.049598	0.020314	0.016007	0.018455	0.	0.037304	0.	0.012725
5	food-rtl	0.	0.000747	0.	0.000030	0.000497	0.084835	0.	0.	0.	0.041853
6	gas/auto	0.009365	0.009229	0.005464	0.004474	0.027396	0.013042	0.	0.000090	0.	0.004136
7	restaurant	0.	0.000202	0.	0.000068	0.000612	0.025598	0.	0.	0.	0.016237
8	tour-rtl	0.	0.	0.001943	0.	0.	0.	0.	0.	0.	0.
9	other-rtl	0.003382	0.022014	0.001214	0.001719	0.002013	0.048378	0.000452	0.	0.	0.025837
10	fire	0.158691	0.059781	0.004047	0.000317	0.021193	0.022171	0.	0.	0.	0.011050
11	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	0.007690	0.	0.	0.	0.	0.	0.	0.
14	other-serv	0.065557	0.045284	0.002428	0.000771	0.239021	0.014176	0.669248	0.046293	0.	0.006347
15	loc-gov	0.011316	0.039231	0.023835	0.001165	0.006579	0.097980	0.084530	0.041349	0.	0.067555
16	loc-hh	0.032742	0.231599	0.277617	0.341997	0.380258	0.	0.133676	0.166860	1.000000	0.
17	state-gov	0.021852	0.022298	0.002413	0.039753	0.003195	0.035057	0.016709	0.102474	0.	0.051857
18	fed-gov	0.104320	0.022530	0.033827	0.001209	0.018046	0.141897	0.	0.	0.	0.247649
19	transfers	0.	0.	0.	0.	0.	0.	0.	0.505627	0.	0.
20	deprec	0.012487	0.030570	0.076902	0.002466	0.005939	0.	0.	0.	0.	0.
21	rents	0.174195	0.116453	0.006071	0.256328	0.017722	0.	0.	0.	0.	0.
22	colo-imp	0.	0.268857	0.349065	0.254469	0.229678	0.498412	0.094329	0.048384	0.	0.514752
23	world-imp	0.	0.000269	0.150478	0.074174	0.017050	0.	0.	0.	0.	0.

Table 3-7. Continued.

		21 tour-hh	22 other-exp
1	ag/for/mi	0.	0.146715
2	constructn	0.	0.218146
3	manufact	0.	0.269984
4	trn/com/ut	0.	0.
5	food-rtl	0.068801	0.
6	gas/auto	0.007020	0.
7	restaurant	0.160149	0.
8	tour-rtl	0.219466	0.
9	other-rtl	0.046909	0.
10	fire	0.	0.
11	developers	0.	0.074646
12	lodging	0.023271	0.
13	tour-serv	0.449299	0.
14	other-serv	0.	0.272837
15	loc-gov	0.010434	0.017671
16	loc-hh	0.	0.
17	state-gov	0.014233	0.
18	fed-gov	0.000417	0.
19	transfers	0.	0.
20	deprec	0.	0.
21	rents	0.	0.
22	colo-imp	0.	0.
23	world-imp	0.	0.

Table 3-8. Woodland Park, Direct Requirements Per Dollar of Output, 1979.

DIRECT INPUT COEFFICIENTS (% of purchases by sector at top of table from sectors at the left)

		1	2	3	4	5	6	7	8	9	10
		AG	CONSTRUCTN	SPEC/TRD	MFG	UTILITIES	BLDG/MATRL	FOOD/STRS	GS-AUT/DLR	APPRL/STRS	FURN/STRS
1	AG	0.124485	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	SPEC/TRD	0.	0.220155	0.	0.	0.	0.	0.	0.	0.	0.
4	MFG	0.	0.067044	0.008600	0.000581	0.001333	0.006914	0.003518	0.001945	0.008361	0.003255
5	UTILITIES	0.003830	0.000512	0.001380	0.008168	0.005807	0.004363	0.008532	0.003749	0.016499	0.015745
6	BLDG/MATRL	0.119582	0.161538	0.010889	0.002552	0.003333	0.	0.	0.003192	0.	0.
7	FOOD/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	GS-AUT/DLR	0.026180	0.005514	0.047200	0.007078	0.056667	0.005538	0.	0.009181	0.005249	0.036279
9	APPRL/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	FURN/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	EAT-DRINK	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	MISC/RTL	0.282495	0.003403	0.001306	0.003828	0.001302	0.000684	0.000493	0.000296	0.001904	0.001921
13	INS-FNCE	0.019152	0.007098	0.015200	0.002419	0.002356	0.000436	0.001127	0.000291	0.014173	0.006284
14	RE/ESTATE	0.	0.006909	0.	0.	0.	0.	0.	0.	0.	0.
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	PRO/SER	0.032855	0.001124	0.001392	0.	0.	0.000246	0.002242	0.000552	0.004381	0.
18	NONPRO/SER	0.018874	0.003758	0.006667	0.010018	0.011712	0.002515	0.001402	0.000494	0.000634	0.
19	LOC/GVT	0.	0.013043	0.020000	0.001500	0.011557	0.007115	0.008010	0.003797	0.004487	0.002233
20	HOUSEHOLDS	0.194858	0.139639	0.273333	0.225075	0.142794	0.068086	0.071556	0.046653	0.175759	0.284650
21	NONLOC/GVT	0.041377	0.016098	0.027778	0.016821	0.024507	0.008120	0.012028	0.025258	0.031410	0.034182
22	PROFITS	-0.235545	0.057583	0.086445	0.097405	0.050000	0.003272	0.047337	0.057489	0.101272	0.133953
23	LND/PAYMNT	0.	0.018699	0.	0.	0.	0.	0.	0.	0.	0.
24	DEPREC	0.243579	0.019043	0.043467	0.035638	0.064231	0.054814	0.017410	0.003985	0.023283	0.058880
25	IMP-CO/SPG	0.068208	0.182177	0.340236	0.111801	0.341183	0.816502	0.107156	0.646298	0.148167	0.010791
26	IMP-WORLD	0.060069	0.076664	0.116108	0.477118	0.283217	0.021396	0.719188	0.196820	0.464420	0.411828

Table 3-8. Continued.

		11 EAT-DRINK	12 MISC/RTL	13 INS-FNCE	14 RE/ESTATE	15 DEVELOPERS	16 LODGING	17 PRO/SER	18 NONPRO/SER	19 LOC/GVT	20 HOUSEHOLD
1	AG	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.	0.	0.	0.003965	0.026195	0.010989	0.	0.	0.021173	0.004314
3	SPEC/TRD	0.	0.	0.	0.	0.151405	0.	0.	0.	0.010406	0.010081
4	MFG	0.022594	0.010111	0.006339	0.009552	0.	0.001642	0.003069	0.020416	0.001020	0.003606
5	UTILITIES	0.033718	0.016631	0.012615	0.023397	0.003318	0.069070	0.020708	0.029849	0.072442	0.054218
6	BLDG/MATRL	0.	0.001696	0.	0.	0.040864	0.	0.	0.059051	0.010961	0.054957
7	FOOD/STRS	0.009433	0.	0.	0.000094	0.	0.013143	0.	0.	0.	0.080344
8	GS-AUT/DLR	0.001132	0.005293	0.005515	0.008585	0.	0.024754	0.007356	0.080172	0.022677	0.049822
9	APPRL/STRS	0.	0.	0.000052	0.	0.	0.	0.	0.	0.001241	0.008505
10	FURN/STRS	0.	0.	0.001987	0.018196	0.	0.	0.000309	0.	0.	0.010817
11	EAT-DRINK	0.	0.	0.	0.003323	0.	0.	0.	0.	0.	0.026703
12	MISC/RTL	0.004716	0.001826	0.002768	0.004145	0.004191	0.024324	0.001289	0.018210	0.012794	0.053260
13	INS-FNCE	0.003009	0.005278	0.002614	0.000708	0.038943	0.018367	0.003048	0.008667	0.004960	0.014725
14	RE/ESTATE	0.	0.008320	0.007972	0.004717	0.047625	0.012859	0.	0.	0.	0.002357
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.	0.	0.001764	0.	0.	0.003286	0.002670	0.	0.000207	0.000537
17	PRO/SER	0.002830	0.003910	0.005816	0.123850	0.011875	0.	0.	0.003005	0.007024	0.021611
18	NONPRO/SER	0.029245	0.001846	0.004444	0.	0.007265	0.020262	0.	0.001363	0.010927	0.020844
19	LOC/GVT	0.014802	0.004909	0.011403	0.004226	0.001757	0.025564	0.003652	0.007875	0.024815	0.075344
20	HOUSEHOLDS	0.299069	0.148535	0.193124	0.461622	0.066412	0.210624	0.431599	0.195794	0.453415	0.023670
21	NONLOC/GVT	0.074958	0.017782	0.017554	0.004988	0.006050	0.019809	0.026952	0.029928	0.025683	0.075159
22	PROFITS	0.038020	0.087828	0.196780	0.226082	0.272360	0.071029	0.089387	0.213988	0.	0.055168
23	LND/PAYMNT	0.	0.	0.	0.	0.069853	0.	0.	0.	0.	0.
24	DEPREC	0.023584	0.008391	0.011439	0.011999	0.137435	0.038336	0.015308	0.005502	0.	0.
25	IMP-CD/SPG	0.304220	0.233275	0.100886	0.053292	0.053577	0.259899	0.133105	0.175297	0.067872	0.134891
26	IMP-WORLD	0.138668	0.444367	0.416929	0.037259	0.060876	0.176044	0.259047	0.150884	0.252385	0.219068

Table 3-8. Continued.

		21	22	23	24	25
		NONLOC/GVT	NEW/RESINT	INVESTMENT	EXP-CO/SPG	EXP-WORLD
1	AG	0.	0.	0.	0.	0.008110
2	CONSTRUCTN	0.	0.801705	0.838740	0.	0.
3	SPEC/TRD	0.000959	0.	0.	0.028925	0.022813
4	MFG	0.000144	0.	0.	0.015659	0.050569
5	UTILITIES	0.000557	0.	0.	0.	0.
6	BLDG/MATRL	0.000420	0.	0.	0.067866	0.016425
7	FOOD/STRS	0.	0.	0.	0.063973	0.067347
8	GS-AUT/DLR	0.000655	0.	0.	0.033570	0.060553
9	APPRL/STRS	0.	0.	0.	0.005922	0.024618
10	FURN/STRS	0.	0.	0.	0.006242	0.008484
11	EAT-DRINK	0.	0.	0.	0.021325	0.044014
12	MISC/RTL	0.000393	0.	0.	0.039421	0.047497
13	INS-FNCE	0.000622	0.	0.	0.006069	0.056519
14	RE/ESTATE	0.	0.066572	0.107493	0.038060	0.056181
15	DEVELOPERS	0.	0.131723	0.053767	0.052426	0.083857
16	LODGING	0.	0.	0.	0.006203	0.047480
17	PRO/SER	0.	0.	0.	0.013053	0.008402
18	NONPRO/SER	0.000537	0.	0.	0.005433	0.002074
19	LOC/GVT	0.262119	0.	0.	0.	0.
20	HOUSEHOLDS	0.722517	0.	0.	0.595856	0.395057
21	NONLOC/GVT	0.	0.	0.	0.	0.
22	PROFITS	0.	0.	0.	0.	0.
23	LND/PAYMNT	0.	0.	0.	0.	0.
24	DEPREC	0.	0.	0.	0.	0.
25	IMP-CO/SPG	0.004584	0.	0.	0.	0.
26	IMP-WORLD	0.006492	0.	0.	0.	0.

labor, utilities, finance and insurance, and other locally supplied inputs. These are direct impacts. As transportation and utilities increase their output to meet the increasing requirements in the tourist services sector their own requirements for productive ingredients increase, e.g., labor, services, transportation, and the like. The chain of events goes on. The total impacts are readily estimated through the input-output framework.

Before proceeding to a discussion of Table 3-9, a few comments regarding the treatment of households are in order. Households may be treated as either a part of the processing sector of the economy or as a part of the final demand component. In the first instance, households are treated in precisely the same manner as any other production sector. The estimate of the direct and indirect production impacts of a change in final demand include the induced production impacts which derive from increased household incomes and increased consumption. In the latter, with households a component in final demand, the induced impacts of successive rounds of consumer spending are omitted. For purposes of this report, the discussion of economic interdependencies and the subsequent business and income analysis includes households both as a member of the processing sector of the economy (Type II multipliers) and as a final demand sector (Type I multipliers).

The direct plus indirect coefficients are interpreted as the production required or generated in all sectors of the economy in order to sustain the delivery of one dollar's worth of output to final demand by any single sector. It should be noted that these coefficients reflect production generated per dollar of final demand as opposed to

requirements per dollar of output. This, of course, reflects the fact that the model is driven by changes in final demand.

For purposes of interpretation, consider the tour-serv sector. Suppose that the export demand for tourist services increases by $1 million. What is the estimated impact that this increase will have on the entire economy of Estes Park? The answer to this question may be obtained directly by reading down column 14 of Table 3-9 and summing the individual sector impacts. Thus, the increase of $1 million in the final demand for tour-serv generates a total direct plus indirect production valued at $5,500 in constructn ($1 million x .0055); $3,500 in manufact; $84,600 in trn/com/ut; $56,800 in food-rtl; $29,900 in gas/auto; $7,200 in restaurants; and so on down the column. Any column of Tables 3-9, 3-10 and 3-11 is interpreted in this same manner. (Tables 3-12, 3-13 and 3-14 show the direct plus indirect impacts when all households are assumed exogenous.) The sum of the entries in column 14 show the total production generated locally as a result of the increase in fixed demands for tourist services. Thus, the total business activity generated per dollar increase in final demand for tour-serv is $1.9641 or, in our example assuming a $1 million increase, $1.96 million worth of business activity results. These column sums are one of the various multipliers concepts which are derived from input-output analysis.

BUSINESS MULTIPLIERS

The column sums of the direct plus indirect requirements table are termed business activity (or production) multipliers. They identify the total value of production in the region which results from a

Table 3-9. Estes Park, Direct and Indirect Requirements Per Dollar Delivered to Final Demand (Households in Processing Sector), 1979.

(I-A) INVERSE MATRIX

		1	2	3	4	5	6	7	8	9	10
		ag/for/min	constructn	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	whlsl
1	ag/for//mi	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
2	constructn	0.0113	1.2759	0.0008	0.0011	0.0014	0.0018	0.0126	0.0051	0.0014	0.0019
3	manufact	0.0112	0.0104	1.0023	0.0029	0.0035	0.0019	0.0032	0.0205	0.0087	0.0024
4	trn/com/ut	0.0650	0.0478	0.0627	1.0362	0.0114	0.0342	0.0675	0.0627	0.0262	0.0188
5	food-rtl	0.0265	0.0368	0.0423	0.0160	1.0050	0.0132	0.0379	0.0203	0.0144	0.0070
6	gas/auto	0.0303	0.0464	0.0147	0.0259	0.0018	1.0101	0.0117	0.0164	0.0145	0.0065
7	restaurant	0.0149	0.0060	0.0064	0.0023	0.0007	0.0024	1.0080	0.0032	0.0021	0.0011
8	tour-rtl	0.0071	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
9	other-rtl	0.0296	0.3081	0.0387	0.0171	0.0052	0.0150	0.0329	0.0301	1.0254	0.0080
10	whlsl	0.0108	0.0401	0.0305	0.0092	0.0149	0.2514	0.0746	0.0189	0.0071	1.0102
11	fire	0.1271	0.0313	0.0345	0.0308	0.0039	0.0353	0.0381	0.0521	0.0147	0.0870
12	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	lodging	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	tour-serv	0.0040	0.0046	0.0053	0.0020	0.0006	0.0016	0.0040	0.0025	0.0018	0.0009
15	other-serv	0.0437	0.0232	0.0153	0.0147	0.0023	0.0126	0.0172	0.0417	0.0079	0.0092
16	loc-gov	0.0266	0.0250	0.0247	0.0189	0.0031	0.0099	0.0277	0.0144	0.0106	0.0065
17	loc-hh	0.1547	0.3231	0.3714	0.1401	0.0436	0.1111	0.2804	0.1773	0.1263	0.0611

Table 3-9. Continued.

		11 fire	12 developers	13 lodging	14 tour-serv	15 other-serv	16 loc-gov	17 loc-hh
1	ag/for//mi	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	constructn	0.0043	0.4777	0.0331	0.0055	0.0113	0.0037	0.0011
3	manufact	0.0310	0.0084	0.0088	0.0035	0.0055	0.0035	0.0029
4	trn/com/ut	0.0621	0.0696	0.1168	0.0846	0.1022	0.0790	0.1001
5	food-rtl	0.0305	0.0248	0.0396	0.0568	0.0697	0.0364	0.1219
6	gas/auto	0.0183	0.0321	0.0183	0.0299	0.0223	0.0173	0.0367
7	restaurant	0.0054	0.0040	0.0055	0.0072	0.0105	0.0054	0.0175
8	tour-rtl	0.0006	0.0001	0.0000	0.0001	0.0001	0.0000	0.0000
9	other-rtl	0.0495	0.1314	0.0430	0.0762	0.0669	0.0372	0.0984
10	whlsl	0.0082	0.0201	0.0193	0.0275	0.0201	0.0099	0.0182
11	fire	1.3240	0.1899	0.0753	0.0937	0.0496	0.0321	0.0559
12	developers	0.	1.0000	0.	0.	0.	0.	0.
13	lodging	0.0000	0.0000	1.0021	0.0000	0.0001	0.0001	0.0000
14	tour-serv	0.0038	0.0031	0.0046	1.0061	0.0085	0.0045	0.0152
15	other-serv	0.0498	0.0584	0.0415	0.1114	1.0406	0.3103	0.0280
16	loc-gov	0.0240	0.0279	0.0741	0.0293	0.0376	1.0224	0.0594
17	loc-hh	0.2667	0.2172	0.3255	0.4321	0.6009	0.3161	1.0712

Table 3-10. Gilpin County-Nederland, Direct and Indirect Requirements Per Dollar Delivered to Final Demand (Households in Processing Sector), 1979.

(I-A) INVERSE MATRIX

		1	2	3	4	5	6	7	8	9	10
		ag/for/mi	constructn	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	fire
1	ag/for/mi	1.0000	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	constructn	0.0031	1.0373	0.0045	0.0028	0.0022	0.0119	0.0116	0.0044	0.0006	0.0133
3	manufact	0.0006	0.0005	1.0005	0.0012	0.0052	0.0034	0.0040	0.0004	0.0026	0.0171
4	trn/com/ut	0.0293	0.0190	0.0297	1.0359	0.0144	0.0554	0.0984	0.0666	0.0349	0.0575
5	food-rtl	0.0250	0.0115	0.0280	0.0239	1.0081	0.0146	0.0335	0.0158	0.0107	0.0296
6	gas/auto	0.0196	0.0141	0.0090	0.0142	0.0040	1.0060	0.0346	0.0137	0.0120	0.0270
7	restaurant	0.0066	0.0035	0.0082	0.0073	0.0025	0.0047	1.0100	0.0059	0.0033	0.0124
8	tour-rtl	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	1.0000	0.0000	0.0012
9	other-rtl	0.0132	0.0602	0.0153	0.0168	0.0048	0.0108	0.0200	0.0119	1.0077	0.0273
10	fire	0.0255	0.0276	0.0280	0.0467	0.0090	0.2137	0.0420	0.0239	0.0147	3.3023
11	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	other-serv	0.0235	0.0168	0.0213	0.0968	0.0071	0.2033	0.0575	0.0203	0.0137	0.0385
15	loc-gov	0.0552	0.0236	0.0561	0.1812	0.0171	0.0366	0.0851	0.0459	0.0268	0.0768
16	loc-hh	0.2410	0.1348	0.2953	0.2795	0.0948	0.1693	0.3874	0.1857	0.1258	0.3111

Table 3-10. Continued.

		11 developers	12 lodging	13 tour-serv	14 other-serv	15 loc-gov	16 loc-hh
1	ag/for/mi	0.	0.	0.	0.	0.	0.
2	constructn	0.3883	0.0494	0.0048	0.0015	0.0147	0.0025
3	manufact	0.0031	0.0057	0.0048	0.0008	0.0039	0.0015
4	trn/com/ut	0.0560	0.1005	0.0623	0.0320	0.0394	0.0309
5	food-rtl	0.0157	0.0303	0.0288	0.0325	0.0457	0.0931
6	gas/auto	0.0213	0.0197	0.0130	0.0117	0.0392	0.0198
7	restaurant	0.0053	0.0094	0.0088	0.0099	0.0144	0.0282
8	tour-rtl	0.0002	0.0001	0.0020	0.0000	0.0000	0.0000
9	other-rtl	0.0343	0.0427	0.0184	0.0207	0.0296	0.0539
10	fire	0.5446	0.2325	0.0459	0.0346	0.1210	0.0918
11	developers	1.0000	0.	0.	0.	0.	0.
12	lodging	0.	1.0000	0.	0.	0.	0.
13	tour-serv	0.	0.	1.0077	0.	0.	0.
14	other-serv	0.0893	0.0816	0.0291	1.0209	0.2728	0.0492
15	loc-gov	0.0464	0.0924	0.0681	0.0448	1.0678	0.1157
16	loc-hh	0.1780	0.3451	0.3386	0.3826	0.5302	1.0957

Table 3-11. Woodland Park, Direct and Indirect Requirements Per Dollar Delivered to Final Demand (Households in Processing Sector), 1979.

(I-A) INVERSE MATRIX

		1	2	3	4	5	6	7	8	9	10
		AG	CONSTRUCTN	SPEC/TRD	MFG	UTILITIES	BLDG/MATRL	FOOD/STRS	GS-AUT/DLR	APPRL/STRS	FURN/STRS
1	AG	1.1422	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.0023	1.0021	0.0025	0.0016	0.0013	0.0007	0.0007	0.0004	0.0014	0.0021
3	SPEC/TRD	0.0045	0.2239	1.0045	0.0033	0.0024	0.0012	0.0012	0.0008	0.0027	0.0042
4	MFG	0.0076	0.0725	0.0115	1.0028	0.0031	0.0076	0.0043	0.0024	0.0101	0.0058
5	UTILITIES	0.0363	0.0227	0.0258	0.0261	1.0191	0.0108	0.0153	0.0080	0.0315	0.0383
6	BLDG/MATRL	0.1599	0.1815	0.0317	0.0189	0.0150	1.0054	0.0056	0.0068	0.0130	0.0200
7	FOOD/STRS	0.0290	0.0227	0.0272	0.0214	0.0144	0.0069	1.0073	0.0047	0.0174	0.0270
8	GS-AUT/DLR	0.0574	0.0358	0.0694	0.0245	0.0697	0.0115	0.0064	1.0132	0.0196	0.0578
9	APPRL/STRS	0.0031	0.0025	0.0029	0.0023	0.0016	0.0008	0.0008	0.0005	1.0019	0.0029
10	FURN/STRS	0.0040	0.0032	0.0037	0.0029	0.0020	0.0009	0.0010	0.0006	0.0024	1.0037
11	EAT-DRINK	0.0096	0.0076	0.0090	0.0071	0.0048	0.0023	0.0024	0.0016	0.0058	0.0090
12	MISC/RTL	0.3439	0.0201	0.0205	0.0188	0.0116	0.0056	0.0057	0.0036	0.0140	0.0206
13	INS-FNCE	0.0301	0.0156	0.0211	0.0070	0.0056	0.0020	0.0027	0.0013	0.0179	0.0119
14	RE/ESTATE	0.0040	0.0079	0.0012	0.0009	0.0006	0.0003	0.0003	0.0002	0.0008	0.0011
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.0004	0.0002	0.0003	0.0002	0.0001	0.0001	0.0001	0.0000	0.0002	0.0002
17	PRO/SER	0.0478	0.0092	0.0096	0.0063	0.0044	0.0023	0.0044	0.0019	0.0096	0.0079
18	NONPRO/SER	0.0315	0.0135	0.0153	0.0166	0.0163	0.0048	0.0038	0.0020	0.0062	0.0084
19	LOC/GVT	0.0327	0.0424	0.0484	0.0233	0.0269	0.0144	0.0157	0.0087	0.0225	0.0299
20	HOUSEHOLDS	0.3602	0.2822	0.3376	0.2652	0.1792	0.0861	0.0910	0.0582	0.2159	0.3355

Table 3-11. Continued.

		11 EAT-DRINK	12 MISC/RTL	13 INS-FNCE	14 RE/ESTATE	15 DEVELOPERS	16 LODGING	17 PRO/SER	18 NONPRO/SER	19 LOC/GVT	20 HOUSEHOLD
1	AG	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.0026	0.0013	0.0018	0.0078	0.0277	0.0135	0.0032	0.0018	0.0252	0.0069
3	SPEC/TRD	0.0048	0.0024	0.0032	0.0085	0.1596	0.0065	0.0062	0.0033	0.0225	0.0141
4	MFG	0.0261	0.0117	0.0084	0.0149	0.0058	0.0058	0.0067	0.0232	0.0074	0.0081
5	UTILITIES	0.0610	0.0300	0.0303	0.0675	0.0190	0.0932	0.0544	0.0488	0.1132	0.0750
6	BLDG/MATRL	0.0243	0.0131	0.0149	0.0371	0.0586	0.0215	0.0299	0.0749	0.0496	0.0676
7	FOOD/STRS	0.0397	0.0152	0.0197	0.0496	0.0151	0.0372	0.0407	0.0207	0.0459	0.0925
8	GS-AUT/DLR	0.0288	0.0182	0.0220	0.0490	0.0213	0.0502	0.0391	0.0992	0.0641	0.0687
9	APPRL/STRS	0.0032	0.0016	0.0022	0.0053	0.0016	0.0026	0.0043	0.0022	0.0062	0.0099
10	FURN/STRS	0.0041	0.0022	0.0048	0.0250	0.0030	0.0035	0.0058	0.0028	0.0062	0.0125
11	EAT-DRINK	1.0100	0.0051	0.0065	0.0197	0.0052	0.0080	0.0135	0.0069	0.0152	0.0306
12	MISC/RTL	0.0264	1.0125	0.0167	0.0386	0.0155	0.0420	0.0294	0.0329	0.0452	0.0635
13	INS-FNCE	0.0098	0.0086	1.0069	0.0116	0.0450	0.0242	0.0116	0.0133	0.0154	0.0190
14	RE/ESTATE	0.0012	0.0090	0.0088	1.0067	0.0490	0.0143	0.0016	0.0010	0.0020	0.0035
15	DEVELOPERS	0.	0.	0.	0.	1.0000	0.	0.	0.	0.	0.
16	LODGING	0.0003	0.0001	0.0020	0.0007	0.0002	1.0035	0.0030	0.0002	0.0006	0.0007
17	PRO/SER	0.0119	0.0094	0.0126	0.1388	0.0228	0.0091	1.0118	0.0093	0.0207	0.0267
18	NONPRO/SER	0.0392	0.0068	0.0107	0.0154	0.0134	0.0290	0.0125	1.0085	0.0261	0.0275
19	LOC/GVT	0.0465	0.0207	0.0318	0.0551	0.0219	0.0524	0.0450	0.0303	1.0736	0.0929
20	HOUSEHOLDS	0.3751	0.1885	0.2437	0.6140	0.1872	0.2979	0.5041	0.2570	0.5696	1.1473

Table 3-12. Estes Park, Direct and Indirect Requirements Per Dollar Delivered to Final Demand (Households in Final Demand), 1979.

INVERSE OF I-A MATRIX AFTER HOUSEHOLDS REMOVED

		1	2	3	4	5	6	7	8	9	10
		ag/for/min	constructn	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	whlsl
1	ag/for//mi	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
2	constructn	0.0112	1.2756	0.0005	0.0010	0.0014	0.0017	0.0123	0.0049	0.0012	0.0018
3	manufact	0.0108	0.0096	1.0013	0.0025	0.0033	0.0016	0.0025	0.0200	0.0084	0.0022
4	trn/com/ut	0.0505	0.0176	0.0280	1.0231	0.0073	0.0238	0.0413	0.0462	0.0144	0.0131
5	food-rtl	0.0089	0.0000	0.0000	0.0000	1.0000	0.0006	0.0060	0.0001	0.0000	0.0000
6	gas/auto	0.0250	0.0353	0.0020	0.0211	0.0003	1.0063	0.0021	0.0103	0.0102	0.0044
7	restaurant	0.0124	0.0007	0.0003	0.0000	0.0000	0.0006	1.0034	0.0003	0.0000	0.0001
8	tour-rtl	0.0071	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
9	other-rtl	0.0154	0.2784	0.0045	0.0042	0.0012	0.0048	0.0072	0.0138	1.0138	0.0023
10	whlsl	0.0082	0.0346	0.0242	0.0068	0.0142	0.2495	0.0698	0.0159	0.0050	1.0091
11	fire	0.1191	0.0144	0.0151	0.0235	0.0016	0.0295	0.0235	0.0428	0.0081	0.0838
12	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	lodging	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	tour-serv	0.0018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	other-serv	0.0396	0.0148	0.0057	0.0110	0.0011	0.0097	0.0099	0.0371	0.0046	0.0076
16	loc-gov	0.0181	0.0070	0.0041	0.0112	0.0006	0.0037	0.0121	0.0045	0.0036	0.0031

Table 3-12. Continued.

		11	12	13	14	15	16
		fire	developers	lodging	tour-serv	other-serv	loc-gov
1	ag/for//mi	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	constructn	0.0041	0.4775	0.0327	0.0051	0.0107	0.0034
3	manufact	0.0303	0.0078	0.0080	0.0024	0.0039	0.0027
4	trn/com/ut	0.0372	0.0493	0.0364	0.0443	0.0461	0.0495
5	food-rtl	0.0001	0.0001	0.0025	0.0076	0.0013	0.0004
6	gas/auto	0.0092	0.0247	0.0071	0.0150	0.0017	0.0065
7	restaurant	0.0010	0.0004	0.0002	0.0001	0.0007	0.0002
8	tour-rtl	0.0006	0.0001	0.0000	0.0000	0.0001	0.0000
9	other-rtl	0.0250	0.1114	0.0131	0.0365	0.0118	0.0081
10	whlsl	0.0036	0.0164	0.0138	0.0202	0.0099	0.0045
11	fire	1.3101	0.1786	0.0583	0.0712	0.0183	0.0156
12	developers	0.	1.0000	0.	0.	0.	0.
13	lodging	0.0000	0.0000	1.0021	0.0000	0.0001	0.0001
14	tour-serv	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
15	other-serv	0.0428	0.0528	0.0330	0.1001	1.0249	0.3020
16	loc-gov	0.0092	0.0158	0.0560	0.0054	0.0043	1.0048

Table 3-13. Gilpin County-Nederland, Direct and Indirect Requirements Per Dollar Delivered to Final Demand (Households in Final Demand), 1979.

INVERSE OF I-A MATRIX AFTER HOUSEHOLDS REMOVED

		1	2	3	4	5	6	7	8	9	10
		ag/for/mi	constructn	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	fire
1	ag/for/mi	1.0000	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	constructn	0.0026	1.0370	0.0038	0.0021	0.0020	0.0115	0.0108	0.0040	0.0003	0.0126
3	manufact	0.0002	0.0004	1.0001	0.0008	0.0050	0.0031	0.0034	0.0002	0.0024	0.0167
4	trn/com/ut	0.0225	0.0152	0.0214	1.0280	0.0117	0.0507	0.0875	0.0614	0.0313	0.0488
5	food-rtl	0.0045	0.0000	0.0029	0.0001	1.0000	0.0002	0.0006	0.0000	0.0000	0.0032
6	gas/auto	0.0153	0.0117	0.0037	0.0091	0.0023	1.0030	0.0276	0.0103	0.0097	0.0214
7	restaurant	0.0003	0.0000	0.0006	0.0001	0.0000	0.0003	1.0000	0.0011	0.0000	0.0044
8	tour-rtl	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	1.0000	0.0000	0.0012
9	other-rtl	0.0014	0.0536	0.0007	0.0031	0.0002	0.0024	0.0010	0.0027	1.0016	0.0120
10	fire	0.0054	0.0163	0.0033	0.0233	0.0011	0.1996	0.0096	0.0084	0.0041	3.2763
11	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	other-serv	0.0126	0.0103	0.0080	0.0842	0.0029	0.1957	0.0401	0.0120	0.0080	0.0246
15	loc-gov	0.0298	0.0094	0.0249	0.1517	0.0071	0.0188	0.0441	0.0263	0.0136	0.0440

Table 3-13. Continued.

		11 developers	12 lodging	13 tour-serv	14 other-serv	15 loc-gov
1	ag/for/mi	0.	0.	0.	0.	0.
2	constructn	0.3879	0.0486	0.0040	0.0006	0.0135
3	manufact	0.0029	0.0052	0.0043	0.0003	0.0032
4	trn/com/ut	0.0509	0.0908	0.0528	0.0212	0.0245
5	food-rtl	0.0005	0.0010	0.0000	0.0000	0.0006
6	gas/auto	0.0181	0.0134	0.0069	0.0047	0.0296
7	restaurant	0.0007	0.0005	0.0000	0.0001	0.0007
8	tour-rtl	0.0002	0.0001	0.0020	0.0000	0.0000
9	other-rtl	0.0255	0.0257	0.0017	0.0018	0.0035
10	fire	0.5297	0.2036	0.0176	0.0025	0.0766
11	developers	1.0000	0.	0.	0.	0.
12	lodging	0.	1.0000	0.	0.	0.
13	tour-serv	0.	0.	1.0077	0.	0.
14	other-serv	0.0813	0.0661	0.0139	1.0037	0.2490
15	loc-gov	0.0276	0.0559	0.0324	0.0044	1.0118

Table 3-14. Woodland Park, Direct and Indirect Requirements Per Dollar Delivered to Final Demand (Households in Final Demand), 1979.

(I-A) INVERSE MATRIX

		1 AG	2 CONSTRUCTN	3 SPEC/TRD	4 MFG	5 UTILITIES	6 BLDG/MATRL	7 FOOD/STRS	8 GS-AUT/DLR	9 APPRL/STRS	10 FURN/STRS
1	AG	1.1422	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.0001	1.0004	0.0004	0.0000	0.0003	0.0002	0.0002	0.0001	0.0001	0.0001
3	SPEC/TRD	0.0001	0.2205	1.0003	0.0000	0.0002	0.0001	0.0001	0.0001	0.0001	0.0000
4	MFG	0.0051	0.0705	0.0091	1.0009	0.0018	0.0070	0.0036	0.0020	0.0086	0.0034
5	UTILITIES	0.0128	0.0043	0.0037	0.0088	1.0074	0.0051	0.0094	0.0042	0.0174	0.0163
6	BLDG/MATRL	0.1387	0.1649	0.0118	0.0032	0.0044	1.0003	0.0003	0.0033	0.0002	0.0002
7	FOOD/STRS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
8	GS-AUT/DLR	0.0359	0.0189	0.0492	0.0086	0.0589	0.0063	0.0009	1.0097	0.0067	0.0377
9	APPRL/STRS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000
10	FURN/STRS	0.0001	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
11	EAT-DRINK	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12	MISC/RTL	0.3240	0.0045	0.0018	0.0041	0.0017	0.0009	0.0007	0.0004	0.0021	0.0020
13	INS-FNCE	0.0241	0.0109	0.0155	0.0026	0.0026	0.0005	0.0012	0.0003	0.0143	0.0064
14	RE/ESTATE	0.0029	0.0071	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	PRO/SER	0.0394	0.0026	0.0017	0.0001	0.0002	0.0003	0.0023	0.0006	0.0045	0.0001
18	NONPRO/SER	0.0229	0.0067	0.0072	0.0102	0.0120	0.0027	0.0017	0.0006	0.0011	0.0003
19	LOC/GVT	0.0036	0.0196	0.0211	0.0018	0.0123	0.0074	0.0084	0.0040	0.0051	0.0027

Table 3-14. Continued.

		11 EAT-DRINK	12 MISC/RTL	13 INS-FNCE	14 RE/ESTATE	15 DEVELOPERS	16 LODGING	17 PRO/SER	18 NONPRO/SER	19 LOC/GVT
1	AG	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.0003	0.0001	0.0003	0.0041	0.0265	0.0117	0.0001	0.0002	0.0218
3	SPEC/TRD	0.0002	0.0001	0.0002	0.0010	0.1573	0.0029	0.0001	0.0001	0.0155
4	MFG	0.0235	0.0104	0.0067	0.0105	0.0045	0.0037	0.0032	0.0214	0.0034
5	UTILITIES	0.0365	0.0177	0.0144	0.0273	0.0068	0.0738	0.0215	0.0320	0.0760
6	BLDG/MATRL	0.0022	0.0020	0.0006	0.0009	0.0475	0.0039	0.0002	0.0598	0.0161
7	FOOD/STRS	0.0094	0.0000	0.0000	0.0001	0.0000	0.0132	0.0000	0.0000	0.0000
8	GS-AUT/DLR	0.0063	0.0069	0.0074	0.0122	0.0101	0.0323	0.0089	0.0838	0.0300
9	APPRL/STRS	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0013
10	FURN/STRS	0.0000	0.0002	0.0021	0.0183	0.0010	0.0003	0.0003	0.0000	0.0000
11	EAT-DRINK	1.0000	0.0000	0.0000	0.0033	0.0002	0.0000	0.0000	0.0000	0.0000
12	MISC/RTL	0.0056	1.0021	0.0032	0.0046	0.0052	0.0255	0.0015	0.0186	0.0137
13	INS-FNCE	0.0036	0.0054	1.0029	0.0014	0.0419	0.0193	0.0032	0.0090	0.0059
14	RE/ESTATE	0.0001	0.0084	0.0081	1.0048	0.0484	0.0134	0.0001	0.0002	0.0003
15	DEVELOPERS	0.	0.	0.	0.	1.0000	0.	0.	0.	0.
16	LODGING	0.0000	0.0000	0.0018	0.0003	0.0001	1.0033	0.0027	0.0000	0.0002
17	PRO/SER	0.0031	0.0050	0.0070	0.1245	0.0185	0.0022	1.0001	0.0033	0.0075
18	NONPRO/SER	0.0302	0.0023	0.0049	0.0006	0.0090	0.0218	0.0004	1.0023	0.0125
19	LOC/GVT	0.0161	0.0055	0.0121	0.0054	0.0067	0.0283	0.0042	0.0095	1.0275

dollar's worth of output delivered to final demand. Tables 3-15, 3-16 and 3-17 present the business multipliers. These estimates indicate that the greatest business activity generated per dollar of delivery to final demand is in the developer sector. The business multiplier for this sector is 2.26 which indicates that, as the "final demand" for developers increases by $1, a total production of $2.26 is generated in the Estes Park economy. Other sectors of the economy which have relatively large business multipliers are: construction, 2.18; other services, 2.05; tourist services, 1.96; finance, insurance and real estate, 1.80; and local government, 1.88. These sectors show the greatest degree of interdependence with other sectors of the regional economy. At the margin, these sectors generate the greatest business activity per dollar of output delivered to final demand. In using the business multipliers, the argument should be stated in terms of the impacts of an equal dollar increase in final demands. That is, for an equal increase (in dollar terms) in final demands, developers will generate more business activity in the local economy than will any other private sector. Certain sectors may have high multipliers but low output. If these sectors are unlikely to expand sales to final demand, their multipliers have little significance.

INCOME MULTIPLIERS

Other multiplier effects can also be estimated from the interindustry model. For example, there are income multipliers which relate to changes in income paid to the household sector. The following discussion presents what are termed the Type I and Type II income multipliers.

The Type I and Type II income multipliers are estimated ratios: Type I is the ratio of direct plus indirect income to the direct income paid households; Type II is the ratio of direct plus indirect plus induced income to direct income. Thus, while the business activity multipliers are related to changes in sales to final demand, the income multipliers are related to changes in income paid to the household sector. The Type I multiplier describes the direct plus indirect income increases emanating from an additional dollar of direct income paid to households. The Type II multiplier takes into account not only the direct plus indirect changes in income, but also the induced income increases generated by additional consumer spending. Accordingly, the Type II income multiplier identifies the direct plus indirect plus induced income generated by an additional dollar of income paid directly to households. Income multipliers are useful in situations where an exogenous change in income is predicted for households rather than an exogenous change of final demand. Both the business and income multipliers for the three study regions are shown in Tables 3-15, 3-16 and 3-17.

EMPLOYMENT ANALYSIS

Direct employment requirements as is the case with direct business activity and direct income payments, are, by themselves, of limited use for assessing the total impacts of various changes in economic activity in the tri-county region. This limitation arises because direct requirements are less than total requirements, the difference being indirect requirements that emanate from sectoral interdependence. The interindustry model provides a framework within which both direct and

Table 3-15. Business Multipliers, and Income Multipliers, of the Estes Park Economy, 1979.

Sector	Business Multiplier[1]		Income Multiplier[1]	
ag/for/min	1.3280	(1.5629)	1.7588	(1.8841)
constructn	1.6882	(2.1788)	1.5300	(1.6390)
manufact	1.0857	(1.6498)	1.0334	(1.1070)
trn/com/ut	1.1044	(1.3172)	1.1493	(1.2312)
food-rtl	1.0310	(1.0973)	1.1033	(1.1819)
gas/auto	1.3318	(1.5004)	1.3009	(1.3936)
restaurant	1.1901	(1.6158)	1.0958	(1.1739)
tour-rtl	1.1959	(1.4651)	1.3504	(1.4466)
other-rtl	1.0694	(1.2611)	1.1062	(1.1850)
whlsl	1.1276	(1.2203)	1.5897	(1.7030)
fire	1.4733	(1.8783)	1.5838	(1.6966)
developers	1.9349	(2.2647)	7.3291	(7.8512)
lodging	1.3133	(1.8076)	1.2245	(1.3117)
tour-serv	1.3079	(1.9641)	1.2406	(1.3290)
other-serv	1.1336	(2.0461)	1.0512	(1.1261)
loc-gov	1.3978	(1.8778)	2.4175	(2.5897)
loc-hh	--	(1.6267)	--	--

[1]Type II multipliers shown in brackets.

Table 3-16. Business Multipliers, and Income Multipliers, of the Gilpin County-Nederland Economy, 1979.

Sector	Business Multiplier[1]		Income Multiplier[1]	
ag/for/min	1.0945	(1.4426)	1.1079	(1.2139)
constructn	1.1544	(1.3491)	1.2036	(1.3187)
manufact	1.0695	(1.4960)	1.0674	(1.1695)
trn/com/ut	1.3027	(1.7063)	1.5835	(1.7351)
food-rtl	1.0323	(1.1693)	1.0917	(1.1961)
gas/auto	1.4853	(1.7298)	2.8026	(3.0707)
restaurant	1.2247	(1.7842)	1.1606	(1.2717)
tour-rtl	1.1264	(1.3946)	1.1833	(1.2965)
other-rtl	1.0710	(1.2526)	1.1455	(1.2551)
whlsl	N.A.	N.A.	N.A.	N.A.
fire	3.4651	(3.9143)	3.8552	(4.2241)
developers	2.1254	(2.3826)	4.9628	(5.4377)
lodging	1.5109	(2.0092)	1.3598	(1.4899)
tour-serv	1.1434	(1.6324)	1.1130	(1.2195)
other-serv	1.0394	(1.5919)	1.0209	(1.1186)
loc-gov	1.4130	(2.1787)	1.2726	(1.3944)
loc-hh	--	(1.5823)	--	--

[1]Type II multipliers are shown in brackets.

Table 3-17. Business Multipliers, and Income Multipliers, of the Woodland Park Economy, 1979.

Sector	Business[1] Multiplier		Income[1] Multiplier	
Agriculture	1.75	(2.31)	1.61	(1.84)
Building Construction	1.53	(1.97)	1.76	(2.02)
Special Trade Contractors	1.12	(1.64)	1.08	(1.23)
Manufacturing	1.04	(1.45)	1.03	(1.17)
Utilities	1.10	(1.38)	1.09	(1.25)
Building Materials	2	2	2	2
Food Stores	2	2	2	2
Automotive Dealers and Gasoline Service Stations	1.03	(1.12)	1.08	(1.25)
Apparel and Accessory Stores	1.06	(1.39)	1.07	(1.23)
Furniture Stores	1.07	(1.59)	1.03	(1.18)
Eating and Drinking Places	1.14	(1.71)	1.09	(1.25)
Miscellaneous Retail	1.07	(1.36)	1.11	(1.27)
Insurance and Finance	1.07	(1.45)	1.10	(1.26)
Real Estate	1.22	(2.17)	1.16	(1.33)
Developers	1.38	(1.67)	2.46	(2.82)
Lodging	1.26	(1.71)	1.23	(1.41)
Professional Services	1.05	(1.82)	1.02	(1.17)
Nonprofessional Services	1.24	(1.64)	1.14	(1.31)
Local Governments	1.23	(2.11)	1.10	(1.26)
Households	--	(1.77)	--	

[1]Type II multipliers are shown in brackets.

[2]Deleted because of possible disclosure violation.

indirect employment requirements can be addressed. Basic to the analysis are data on employment levels in the respective sectors and the table of direct plus indirect requirements per dollar of output delivered to final demand.

To assess the total employment impacts of exogenous changes in final demand, the respective tables of direct and indirect requirements per dollar of delivery to final demand, households exogenous, were premultiplied by a diagonal matrix of direct labor use requirements (workers per dollar of sales). This results in the matrices shown as Tables 3-20, 3-21 and 3-22. Summing down the respective columns of the resulting matrix yielded the estimates of the direct and indirect labor requirements per dollar delivered to final demand. These multipliers are shown in the first column of Tables 3-23, 3-24 and 3-25.

The interpretation of the entries in Table 3-23 is demonstrated by an example from the tourist services sector. As the final demand for the output of tour-serv expands by $1, there will be a direct expansion of employment in that sector as well as those sectors responsible for supplying production ingredients to the production of tour-serv. The sectors supplying ingredients to the tour-serv sector will in turn require production ingredients from others and this will further expand indirect employment impacts; and so forth. The magnitude of the direct and indirect employment impacts, .000051, shows the total employment generated in the entire Estes Park economy as this single sector, tour-serv, increases by $1, its deliveries to final demand. That is to say that an increase of $1 million in the final demands, e.g., exports to the Front Range or out of state, for tour-serv would result in an estimated additional employment of 51 persons in Estes Park. All

Table 3-18. Number of Full-Time Equivalent Workers in Gilpin County-Nederland and Estes Park, 1979.[1]

Sector	Gilpin-County Nederland	Estes Park
ag/for/min	30	4
constructn	14	155
manufact	43	139
trn/com/ut	6	39
food-rtl	6	67
gas/auto	4	29
restaurant	105	412
tour-rtl	35	128
other-rtl	14	168
whlsl	0	11
fire	3	80
developers	2	10
lodging	6	238
tour-serv	114	80
other-serv	135	294
loc-gov	62	55

[1]Source: Confidential files of the Colorado Department of Labor and Employment and survey.

Table 3-19. Number of Full-Time Equivalent Workers in Woodland Park, 1979.[1]

Sector	
AG	3
CONSTRUCTN	139
SPEC/TRD	63
MFG	83
UTILITIES	12
BLDG/MATRL	78
FOOD STRS	22
GS-AUT/DLR	32
APPRL/STRS	12
FURN/STRS	10
EAT-DRINK	97
MISC/RTL	53
INS-FNCE	23
RE/ESTATE	34
DEVELOPERS	29
LODGING	19
PRO/SER	92
NONPRO/SER	41
LOC/GVT	44

[1]Estimated by applying labor coefficients calculated in the Estes Park study to the total sales by sector reported in the Woodland Park study.

Table 3-20. Estes Park, Direct and Indirect Labor Requirements Per Dollar Delivered to Final Demand (*Households in Processing Sector*), 1979.

RESOURCE MATRIX for EMPLOYMENT REQUIREMENTS
(last row shows column totals which are resource multipliers...and last column shows row totals)

		1	2	3	4	5	6	7	8	9	10
		ag/for//mi	*constructn*	*manufact*	*trn/com/ut*	*food-rtl*	*gas/auto*	*restaurant*	*tour-rtl*	*other-rtl*	*whlsl*
1	ag/for/min	0.2300E-04	0.1119E-10	0.1197E-10	0.4354E-11	0.1341E-11	0.4562E-11	0.1883E-08	0.5904E-11	0.3894E-11	0.2001E-11
2	constructn	0.2269E-06	0.2552E-04	0.1691E-07	0.2227E-07	0.2866E-07	0.3686E-07	0.2512E-06	0.1018E-06	0.2744E-07	0.3763E-07
3	manufact	0.5612E-06	0.5224E-06	0.5011E-04	0.1453E-06	0.1733E-06	0.9295E-07	0.1618E-06	0.1025E-05	0.4361E-06	0.1204E-06
4	trn/com/ut	0.3249E-06	0.2392E-06	0.3136E-06	0.5181E-05	0.5680E-07	0.1708E-06	0.3375E-06	0.3136E-06	0.1311E-06	0.9386E-07
5	food-rtl	0.1327E-06	0.1841E-06	0.2115E-06	0.7988E-07	0.5025E-05	0.6597E-07	0.1893E-06	0.1016E-06	0.7195E-07	0.3484E-07
6	gas/auto	0.2730E-06	0.4174E-06	0.1325E-06	0.2328E-06	0.1581E-07	0.9091E-05	0.1055E-06	0.1474E-06	0.1305E-06	0.5825E-07
7	restaurant	0.8341E-06	0.3355E-06	0.3588E-06	0.1305E-06	0.4018E-07	0.1368E-06	0.5645E-04	0.1770E-06	0.1167E-06	0.5999E-07
8	tour-rtl	0.1347E-06	0.3133E-09	0.3326E-09	0.2986E-09	0.3793E-10	0.3367E-09	0.3786E-09	0.1900E-04	0.1436E-09	0.8030E-09
9	other-rtl	0.5026E-06	0.5238E-05	0.6572E-06	0.2905E-06	0.8786E-07	0.2547E-06	0.5598E-06	0.5114E-06	0.1743E-04	0.1352E-06
10	whlsl	0.4337E-07	0.1605E-06	0.1221E-06	0.3666E-07	0.5976E-07	0.1006E-05	0.2984E-06	0.7560E-07	0.2852E-07	0.4041E-05
11	fire	0.1907E-05	0.4696E-06	0.5173E-06	0.4626E-06	0.5794E-07	0.5296E-06	0.5715E-06	0.7812E-06	0.2209E-06	0.1305E-05
12	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	lodging	0.1371E-09	0.9752E-10	0.2149E-08	0.5839E-10	0.1551E-10	0.3981E-10	0.7588E-10	0.1357E-09	0.4685E-10	0.3013E-10
14	tour-serv	0.1542E-06	0.1789E-06	0.2057E-06	0.7758E-07	0.2416E-07	0.6149E-07	0.1552E-06	0.9817E-07	0.6993E-07	0.3381E-07
15	other-serv	0.2838E-05	0.1511E-05	0.9975E-06	0.9539E-06	0.1478E-06	0.8205E-06	0.1119E-05	0.2712E-05	0.5106E-06	0.5964E-06
16	loc-gov	0.2398E-06	0.2246E-06	0.2222E-06	0.1704E-06	0.2751E-07	0.8880E-07	0.2492E-06	0.1292E-06	0.9548E-07	0.5815E-07
17	loc-hh	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	RES MULTS	0.3117E-04	0.3500E-04	0.5387E-04	0.7784E-05	0.5745E-05	0.1236E-04	0.6045E-04	0.2517E-04	0.1927E-04	0.6575E-05

Table 3-20. Continued.

RESOURCE MATRIX for EMPLOYMENT REQUIREMENTS
(last row shows column totals which are resource multipliers...and last column shows row totals)

		11	12	13	14	15	16	17	18
		fire	developers	lodging	tour-serv	other-serv	loc-gov	loc-hh	ROW TOTALS
1	ag/for/min	0.1008E-10	0.7446E-11	0.1030E-10	0.1345E-10	0.1962E-10	0.1005E-10	0.3274E-10	0.2300E-04
2	constructn	0.8676E-07	0.9554E-05	0.6614E-06	0.1108E-06	0.2261E-06	0.7399E-07	0.2259E-07	0.3700E-04
3	manufact	0.1550E-05	0.4211E-06	0.4422E-06	0.1771E-06	0.2750E-06	0.1764E-06	0.1436E-06	0.5654E-04
4	trn/com/ut	0.3107E-06	0.3478E-06	0.5841E-06	0.4231E-06	0.5111E-06	0.3950E-06	0.5004E-06	0.1023E-04
5	food-rtl	0.1525E-06	0.1241E-06	0.1978E-06	0.2839E-06	0.3483E-06	0.1818E-06	0.6097E-06	0.7995E-05
6	gas/auto	0.1650E-06	0.2892E-06	0.1646E-06	0.2687E-06	0.2011E-06	0.1559E-06	0.3306E-06	0.1218E-04
7	restaurant	0.3022E-06	0.2232E-06	0.3089E-06	0.4031E-06	0.5881E-06	0.3014E-06	0.9813E-06	0.6174E-04
8	tour-rtl	0.1211E-07	0.1800E-08	0.7362E-09	0.9889E-09	0.1723E-08	0.6708E-09	0.5433E-09	0.1916E-04
9	other-rtl	0.8414E-06	0.2234E-05	0.7310E-06	0.1296E-05	0.1138E-05	0.6318E-06	0.1673E-05	0.3421E-04
10	whlsl	0.3268E-07	0.8043E-07	0.7725E-07	0.1102E-06	0.8059E-07	0.3953E-07	0.7293E-07	0.6365E-05
11	fire	0.1986E-04	0.2849E-05	0.1130E-05	0.1406E-05	0.7447E-06	0.4811E-06	0.8389E-06	0.3413E-04
12	developers	0.	0.1000E-04	0.	0.	0.	0.	0.	0.1000E-04
13	lodging	0.1851E-09	0.1587E-09	0.2806E-04	0.2428E-09	0.1877E-08	0.1994E-08	0.1387E-09	0.2807E-04
14	tour-serv	0.1477E-06	0.1203E-06	0.1802E-06	0.3924E-04	0.3327E-06	0.1750E-06	0.5932E-06	0.4185E-04
15	other-serv	0.3237E-05	0.3799E-05	0.2697E-05	0.7241E-05	0.6764E-04	0.2017E-04	0.1818E-05	0.1188E-03
16	loc-gov	0.2156E-06	0.2509E-06	0.6668E-06	0.2641E-06	0.3387E-06	0.9201E-05	0.5346E-06	0.1298E-04
17	loc-hh	0.	0.	0.	0.	0.	0.	0.	0.
18	RES MULTS	0.2691E-04	0.3029E-04	0.3590E-04	0.5122E-04	0.7243E-04	0.3199E-04	0.8119E-05	0.

Table 3-21. Gilpin County-Nederland, Direct and Indirect Labor Requirements Per Dollar Delivered to Final Demand (Households in Processing Sector), 1979.

RESOURCE MATRIX for EMPLOYMENT REQUIREMENTS
(last row shows column totals which are resource multipliers...and last column shows row totals)

		1	2	3	4	5	6	7	8	9	10
		ag/for/mi	constructn	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	fire
1	ag/for/mi	0.3500E-04	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	constructn	0.3106E-07	0.1037E-04	0.4515E-07	0.2770E-07	0.2247E-07	0.1188E-06	0.1165E-06	0.4408E-07	0.5834E-08	0.1331E-06
3	manufact	0.1708E-07	0.1641E-07	0.3002E-04	0.3493E-07	0.1553E-06	0.1010E-06	0.1193E-06	0.1303E-07	0.7754E-07	0.5133E-06
4	trn/com/ut	0.2048E-06	0.1331E-06	0.2081E-06	0.7251E-05	0.1006E-06	0.3881E-06	0.6890E-06	0.4664E-06	0.2440E-06	0.4026E-06
5	food-rtl	0.1248E-06	0.5739E-07	0.1401E-06	0.1193E-06	0.5040E-05	0.7301E-07	0.1674E-06	0.7902E-07	0.5354E-07	0.1480E-06
6	gas/auto	0.2357E-06	0.1691E-06	0.1082E-06	0.1703E-06	0.4859E-07	0.1207E-04	0.4147E-06	0.1640E-06	0.1435E-06	0.3245E-06
7	restaurant	0.5569E-06	0.2978E-06	0.6996E-06	0.6235E-06	0.2085E-06	0.3959E-06	0.8585E-04	0.5016E-06	0.2770E-06	0.1056E-05
8	tour-rtl	0.2596E-09	0.2808E-09	0.2844E-09	0.4749E-09	0.9192E-10	0.2172E-08	0.4272E-09	0.2800E-04	0.1490E-09	0.3356E-07
9	other-rtl	0.1982E-06	0.9035E-06	0.2289E-06	0.2527E-06	0.7239E-07	0.1617E-06	0.3006E-06	0.1783E-06	0.1512E-04	0.4100E-06
10	fire	0.6130E-07	0.6632E-07	0.6716E-07	0.1122E-06	0.2171E-07	0.5130E-06	0.1009E-06	0.5744E-07	0.3519E-07	0.7926E-05
11	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	other-serv	0.9622E-06	0.6899E-06	0.8738E-06	0.3967E-05	0.2925E-06	0.8334E-05	0.2356E-05	0.8337E-06	0.5603E-06	0.1580E-05
15	loc-gov	0.1767E-05	0.7558E-06	0.1794E-05	0.5799E-05	0.5465E-06	0.1172E-05	0.2722E-05	0.1469E-05	0.8588E-06	0.2459E-05
16	loc-hh	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	RES MULTS	0.3916E-04	0.1346E-04	0.3418E-04	0.1836E-04	0.6509E-05	0.2333E-04	0.9284E-04	0.3181E-04	0.1737E-04	0.1499E-04

Table 3-21. Continued.

RESOURCE MATRIX for EMPLOYMENT REQUIREMENTS
(last row shows column totals which are resource multipliers...and last column shows row totals)

		11 developers	12 lodging	13 tour-serv	14 other-serv	15 loc-gov	16 loc-hh	17 ROW TOTALS
1	ag/for/mi	0.	0.	0.	0.	0.	0.	0.3500E-04
2	constructn	0.3883E-05	0.4940E-06	0.4805E-07	0.1493E-07	0.1468E-06	0.2478E-07	0.1553E-04
3	manufact	0.9440E-07	0.1715E-06	0.1438E-06	0.2472E-07	0.1178E-06	0.4521E-07	0.3166E-04
4	trn/com/ut	0.3917E-06	0.7033E-06	0.4363E-06	0.2241E-06	0.2759E-06	0.2160E-06	0.1234E-04
5	food-rtl	0.7827E-07	0.1515E-06	0.1441E-06	0.1627E-06	0.2283E-06	0.4656E-06	0.7233E-05
6	gas/auto	0.2560E-06	0.2359E-06	0.1559E-06	0.1398E-06	0.4701E-06	0.2375E-06	0.1535E-04
7	restaurant	0.4522E-06	0.7999E-06	0.7460E-06	0.8445E-06	0.1225E-05	0.2401E-05	0.9694E-04
8	tour-rtl	0.5534E-08	0.2362E-08	0.5528E-07	0.3511E-09	0.1230E-08	0.9325E-09	0.2810E-04
9	other-rtl	0.5141E-06	0.6402E-06	0.2757E-06	0.3099E-06	0.4440E-06	0.8089E-06	0.2082E-04
10	fire	0.1307E-05	0.5579E-06	0.1102E-06	0.8293E-07	0.2904E-06	0.2202E-06	0.1153E-04
11	developers	0.5000E-05	0.	0.	0.	0.	0.	0.5000E-05
12	lodging	0.	0.4500E-04	0.	0.	0.	0.	0.4500E-04
13	tour-serv	0.	0.	0.4434E-04	0.	0.	0.	0.4434E-04
14	other-serv	0.3660E-05	0.3345E-05	0.1195E-05	0.4186E-04	0.1118E-04	0.2018E-05	0.8371E-04
15	loc-gov	0.1486E-05	0.2956E-05	0.2180E-05	0.1434E-05	0.3417E-04	0.3703E-05	0.6527E-04
16	loc-hh	0.	0.	0.	0.	0.	0.	0.
17	RES MULTS	0.1713E-04	0.5506E-04	0.4983E-04	0.4509E-04	0.4855E-04	0.1014E-04	0.

Table 3-22. Woodland Park, Direct and Indirect Labor Requirements Per Dollar Delivered to Final Demand (Households in Processing Sector), 1979.

RESOURCE MATRIX for EMPLOYMENT REQUIREMENTS
(last row shows column totals which are resource multipliers...and last column shows row totals)

		1	2	3	4	5	6	7	8	9	10
		AG	CONSTRUCTN	SPEC/TRD	MFG	UTILITIES	BLDG/MATRL	FOOD/STRS	GS-AUT/DLR	APPRL/STRS	FURN/STRS
1	AG	0.2627E-04	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.4535E-07	0.2004E-04	0.4979E-07	0.3286E-07	0.2691E-07	0.1356E-07	0.1456E-07	0.8746E-08	0.2827E-07	0.4174E-07
3	SPEC/TRD	0.8943E-07	0.4478E-05	0.2009E-04	0.6556E-07	0.4765E-07	0.2335E-07	0.2482E-07	0.1548E-07	0.5443E-07	0.8306E-07
4	MFG	0.3825E-06	0.3627E-05	0.5748E-06	0.5014E-04	0.1534E-06	0.3818E-06	0.2128E-06	0.1218E-06	0.5046E-06	0.2900E-06
5	UTILITIES	0.1816E-06	0.1136E-06	0.1289E-06	0.1307E-06	0.5096E-05	0.5376E-07	0.7650E-07	0.3990E-07	0.1576E-06	0.1913E-06
6	BLDG/MATRL	0.2719E-05	0.3086E-05	0.5388E-06	0.3207E-06	0.2550E-06	0.1709E-04	0.9557E-07	0.1150E-06	0.2202E-06	0.3401E-06
7	FOOD/STRS	0.1452E-06	0.1137E-06	0.1360E-06	0.1069E-06	0.7223E-07	0.3470E-07	0.5037E-05	0.2346E-07	0.8700E-07	0.1352E-06
8	GS-AUT/DLR	0.5168E-06	0.3222E-06	0.6245E-06	0.2202E-06	0.6271E-06	0.1035E-06	0.5734E-07	0.9119E-05	0.1766E-06	0.5203E-06
9	APPRL/STRS	0.5901E-07	0.4662E-07	0.5571E-07	0.4341E-07	0.2960E-07	0.1426E-07	0.1508E-07	0.9615E-08	0.1904E-04	0.5494E-07
10	FURN/STRS	0.6875E-07	0.5492E-07	0.6320E-07	0.4930E-07	0.3335E-07	0.1600E-07	0.1694E-07	0.1082E-07	0.4059E-07	0.1706E-04
11	EAT-DRINK	0.5394E-06	0.4235E-06	0.5050E-06	0.3967E-06	0.2681E-06	0.1288E-06	0.1361E-06	0.8709E-07	0.3229E-06	0.5019E-06
12	MISC/RTL	0.5847E-05	0.3425E-06	0.3486E-06	0.3188E-06	0.1980E-06	0.9580E-07	0.9691E-07	0.6124E-07	0.2388E-06	0.3502E-06
13	INS-FNCE	0.4510E-06	0.2341E-06	0.3161E-06	0.1045E-06	0.8328E-07	0.2946E-07	0.4107E-07	0.1958E-07	0.2687E-06	0.1791E-06
14	RE/ESTATE	0.5984E-07	0.1188E-06	0.1740E-07	0.1281E-07	0.8657E-08	0.4083E-08	0.4364E-08	0.2730E-08	0.1176E-07	0.1620E-07
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.1070E-07	0.5963E-08	0.7134E-08	0.4950E-08	0.3460E-08	0.1654E-08	0.1932E-08	0.1139E-08	0.4991E-08	0.6418E-08
17	PRO/SER	0.3109E-05	0.5962E-06	0.6223E-06	0.4074E-06	0.2834E-06	0.1512E-06	0.2885E-06	0.1267E-06	0.6215E-06	0.5144E-06
18	NONPRO/SER	0.1230E-05	0.5248E-06	0.5953E-06	0.6456E-06	0.6365E-06	0.1873E-06	0.1494E-06	0.7876E-07	0.2429E-06	0.3257E-06
19	LOC/GVT	0.2947E-06	0.3819E-06	0.4360E-06	0.2098E-06	0.2417E-06	0.1296E-06	0.1417E-06	0.7864E-07	0.2028E-06	0.2690E-06
20	HOUSEHOLD	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	RES MULTS	0.4202E-04	0.3451E-04	0.2511E-04	0.5321E-04	0.8064E-05	0.1846E-04	0.6410E-05	0.9919E-05	0.2222E-04	0.2088E-04

Table 3-22. Continued.

RESOURCE MATRIX for EMPLOYMENT REQUIREMENTS
(last row shows column totals which are resource multipliers...and last column shows row totals)

		11	12	13	14	15	16	17	18	19	20
	.	EAT-DRINK	MISC/RTL	INS-FNCE	RE/ESTATE	DEVELOPERS	LODGING	PRO/SER	NONPRO/SER	LOC/GVT	HOUSEHOLDS
1	AG	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.5219E-07	0.2578E-07	0.3564E-07	0.1563E-06	0.5532E-06	0.2696E-06	0.6332E-07	0.3513E-07	0.5041E-06	0.1388E-06
3	SPEC/TRD	0.9678E-07	0.4799E-07	0.6360E-07	0.1697E-06	0.3192E-05	0.1303E-06	0.1249E-06	0.6586E-07	0.4493E-06	0.2812E-06
4	MFG	0.1306E-05	0.5858E-06	0.4198E-06	0.7442E-06	0.2924E-06	0.2894E-06	0.3371E-06	0.1160E-05	0.3702E-06	0.4052E-06
5	UTILITIES	0.3051E-06	0.1502E-06	0.1516E-06	0.3373E-06	0.9510E-07	0.4661E-06	0.2721E-06	0.2442E-06	0.5661E-06	0.3750E-06
6	BLDG/MATRL	0.4134E-06	0.2232E-06	0.2536E-06	0.6306E-06	0.9956E-06	0.3648E-06	0.5081E-06	0.1274E-05	0.8433E-06	0.1149E-05
7	FOOD/STRS	0.1983E-06	0.7598E-07	0.9832E-07	0.2481E-06	0.7548E-07	0.1860E-06	0.2033E-06	0.1036E-06	0.2296E-06	0.4624E-06
8	GS-AUT/DLR	0.2589E-06	0.1638E-06	0.1979E-06	0.4411E-06	0.1915E-06	0.4516E-06	0.3519E-06	0.8930E-06	0.5772E-06	0.6184E-06
9	APPRL/STRS	0.6171E-07	0.3096E-07	0.4112E-07	0.1005E-06	0.3081E-07	0.4940E-07	0.8253E-07	0.4226E-07	0.1174E-06	0.1876E-06
10	FURN/STRS	0.6974E-07	0.3779E-07	0.8161E-07	0.4254E-06	0.5121E-07	0.6008E-07	0.9890E-07	0.4808E-07	0.1060E-06	0.2128E-06
11	EAT-DRINK	0.5656E-04	0.2836E-06	0.3660E-06	0.1105E-05	0.2890E-06	0.4481E-06	0.7541E-06	0.3846E-06	0.8522E-06	0.1716E-05
12	MISC/RTL	0.4489E-06	0.1721E-04	0.2831E-06	0.6555E-06	0.2637E-06	0.7137E-06	0.4993E-06	0.5585E-06	0.7682E-06	0.1079E-05
13	INS-FNCE	0.1466E-06	0.1285E-06	0.1510E-04	0.1738E-06	0.6753E-06	0.3634E-06	0.1733E-06	0.1996E-06	0.2304E-06	0.2850E-06
14	RE/ESTATE	0.1813E-07	0.1348E-06	0.1323E-06	0.1510E-04	0.7347E-06	0.2146E-06	0.2389E-07	0.1507E-07	0.3049E-07	0.5186E-07
15	DEVELOPERS	0.	0.	0.	0.	0.1000E-04	0.	0.	0.	0.	0.
16	LODGING	0.7299E-08	0.4095E-08	0.5471E-07	0.2057E-07	0.6894E-08	0.2810E-04	0.8433E-07	0.5408E-08	0.1714E-07	0.2079E-07
17	PRO/SER	0.7704E-06	0.6133E-06	0.8209E-06	0.9025E-05	0.1484E-05	0.5944E-06	0.6577E-04	0.6034E-06	0.1347E-05	0.1738E-05
18	NONPRO/SER	0.1527E-05	0.2643E-06	0.4181E-06	0.5987E-06	0.5241E-06	0.1129E-05	0.4871E-06	0.3933E-04	0.1019E-05	0.1072E-05
19	LOC/GVT	0.4182E-06	0.1864E-06	0.2866E-06	0.4963E-06	0.1970E-06	0.4714E-06	0.4048E-06	0.2727E-06	0.9662E-05	0.8359E-06
20	HOUSEHOLD	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	RES MULTS	0.6266E-04	0.2017E-04	0.1881E-04	0.3043E-04	0.1965E-04	0.3430E-04	0.7024E-04	0.4524E-04	0.1769E-04	0.1063E-04

remaining entries in Table 3-23 have analogous interpretations for their respective sectors. Thus, the leading sectors in terms of direct and indirect employment generation in the Estes Park economy are other-serv, restaurant, manufact, tour-serv and lodging. Tables 3-23, 3-24 and 3-25 also show the total employment impact of exogenous changes in workers hired. This information is found simply by dividing the direct plus indirect labor requirements per thousand dollars of final demand by workers directly employed per thousand dollars of final demand. The workers added per worker hired column shows that for each worker hired in Estes Park by tour-serv, 0.31 workers are hired throughout the region's economy. Thus the multiplier for exogenous changes in tour-serv employment is 1.31.

REGIONAL WATER REQUIREMENTS

The water use analysis requires data pertaining to water withdrawals and consumptive use on a sector-by-sector basis. It is further required that these data be related to economic activity on a per dollar sales basis.

Water use data are difficult to obtain on a sector-by-sector basis and for a rather small regional economy.

Water use by commercial establishments is very small relative to agriculture, the extractive industries and electricity generation.

Most of our estimates of water coefficients are based upon results from our past surveys and estimated by U.S. government agencies. The

Table 3-23. Employment Multipliers of the Estes Park Economy, 1979.

Sector	Employment Multiplier[1] (per dollar of sales to final demand)	Employment Multiplier[1] (per worker hired)	
ag/for/min	(.000031)	1.30	(1.36)
constructn	(.000035)	1.63	(1.75)
manufact	(.000054)	1.02	(1.08)
trn/com/ut	(.000008)	1.34	(1.56)
food-rtl	(.000006)	1.08	(1.15)
gas/auto	(.000012)	1.28	(1.37)
restaurant	(.000060)	1.04	(1.08)
tour-rtl	(.000025)	1.25	(1.32)
other-rtl	(.000019)	1.08	(1.13)
whlsl	(.000007)	1.53	(1.64)
fire	(.000027)	1.66	(1.79)
developers	(.000030)	2.86	(3.03)
lodging	(.000036)	1.19	(1.28)
tour-serv	(.000051)	1.23	(1.31)
other-serv	(.000072)	1.04	(1.11)
loc-gov	(.000032)	3.29	(3.55)
loc-hh	(.000008)	--	--

[1]Type II multipliers are shown in brackets.

Table 3-24. Employment Multipliers of the Gilpin County-Nederland Economy, 1979.

Sector	Employment Multiplier[1] (per dollar of sales to final demand)	Employment Multiplier[1] (per worker hired)	
ag/for/min	(.000039)	1.06	(1.12)
constructn	(.000013)	1.22	(1.35)
manufact	(.000034)	1.05	(1.14)
trn/com/ut	(.000018)	2.25	(2.62)
food-rtl	(.000007)	1.13	(1.30)
gas/auto	(.000023)	1.81	(1.94)
restaurant	(.000093)	1.05	(1.09)
tour-rtl	(.000032)	1.07	(1.14)
other-rtl	(.000017)	1.08	(1.16)
whlsl	N.A.[2]		N.A.[2]
fire	(.000015)	5.05	(6.25)
developers	(.000017)	3.10	(3.43)
lodging	(.000055)	1.15	(1.22)
tour-serv	(.000050)	1.06	(1.13)
other-serv	(.000045)	1.01	(1.10)
loc-gov	(.000049)	1.36	(1.52)
loc-hh	(.000010)	--	--

[1]Type II multipliers are shown in brackets.

[2]The wholesale sector does not exist in the Gilpin County-Nederland economy.

Table 3-25. Employment Multipliers of the Woodland Park Economy, 1979.

Sector	Employment Multiplier[1] (per dollar of sales to final demand)	Employment Multiplier[1] (per worker hired)	
Agriculture	(.000042)	1.68	(1.83)
Building Construction	(.000035)	1.60	(1.73)
Special Trade Contractor	(.000025)	1.10	(1.26)
Manufacturing	(.000053)	1.02	(1.06)
Utilities	(.000008)	1.28	(1.61)
Building Materials	(.000018)	1.04	(1.09)
Food Stores	(.000006)	1.11	(1.28)
Automotive Dealers and Gasoline Service Stations	(.000010)	1.04	(1.10)
Apparel and Accessory Stores	(.000022)	1.06	(1.17)
Furniture Stores	(.000021)	1.05	(1.23)
Eating and Drinking	(.000063)	1.06	(1.12)
Miscellaneous Retail	(.000020)	1.08	(1.19)
Insurance and Finance	(.000019)	1.10	(1.25)
Real Estate	(.000030)	1.65	(2.02)
Developers	(.000020)	1.79	(1.97)
Lodging	(.000034)	1.13	(1.23)
Professional Services	(.000070)	1.01	(1.08)
Nonprofessional Services	(.000045)	1.10	(1.16)
Local Governments	(.000018)	1.38	(1.97)

[1]Type II multipliers are shown in brackets.

Water Resources Council[1] Report provides no detail among commercial establishments. WRC data also was at variance with other data sources in the agricultural and manufacturing sectors. The primary data source for the agricultural sector was the Census of Agriculture.[2] The withdrawal rate per dollar of output for agriculture estimated from Census data was almost twice the size of the rate estimated from Water Resources Council data. Because of the indirect procedure required to convert the secondary data to a useful form for the input-output analysis, the exact source of the discrepancy is not easily traced. Water use estimates for the extractive sectors are based mainly upon the Census of Mineral Industries.[3] Unfortunately, disclosure problems limit the available data to rather large regions in some cases. Withdrawal and consumptive use figures vary considerably among regions and their accuracy for a relatively small region is questionable. Water

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[1] The Nation's Water Resources, 1975-2000, Vol. 3: Analytical Data Appendix II, Annual Water Supply and Use Analysis, Table II-4, Annual Water Requirements for Offstream Uses, Base Conditions, No/So Platte Region, Subregion 1007, December 1978; and as above, Analytical Data Appendix I, Social, Economic, and Environmental Data, and Table I-2, Earnings by Major Sectors, No/So Platte Region, Subregion 1007, December 1978, Second National Water Assessment by the U.S. Water Resources Council.

[2] 1974 Census of Agriculture, Vol. I, part 50, Wyoming, State and County Data, U.S. Department of Commerce, Bureau of the Census, Table 3, p. IV-8; Table 13, p. IV-12; Table 3, p. IV-26; Table 13, p. IV-30; Table 3, p. IV-116; Table 13, p. IV-120.

[3] 1972 Census of Mineral Industries, Subject Series, Water Use in Mineral Industries, MIC72(1)-2, September 1975, Table 2B, Gross Water Used and Water Intake, By Source and Kind, for Geographic Areas and Major Industry Groups; and as above, Table 2C, Gross Water Used and Water Intake, By Source and Kind, for Water Use Regions and Major Industry Groups; and as above, Table 1C, Selected Water Use Statistics for Water Use Regions: 1972, September 1975.

use in manufacturing is taken from the Census of Manufacturers.[1] In a few cases, disclosure prevents the use of regional water data for certain sectors. However, the magnitude of the error involved in the computation of the weighted average coefficients for the region is probably quite small.

Estimates of withdrawal and consumptive use requirements by sector are shown in Tables 3-26 and 3-27. Where more than one data source is available, multiple estimates are shown. In most cases, the larger numbers are derived from the source which is considered to be more authoritative for the region. In each sector we have used the largest figure shown in Tables 3-26 and 3-27 for the water analysis which follows.

Tables 3-28, 3-29 and 3-30 present the estimated withdrawals and consumptive use for each of the processing sectors of the regional economies in millions of gallons.

In Gilpin County-Nederland, ag/for/min has the highest water requirements. Ag/for/min makes up a very small part of the Estes and Woodland Park economies but still accounts for water use equivalent to that in other sectors.

It should be noted that the water use estimates presented here do not include water use in the final demand/final payments sectors. In order to assess total water use, it is necessary to have some indication of requirements in the final demand sectors, e.g., households and

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[1] 1972 Census of Manufacturers, Water Use in Manufacturing, Special Report Series, September 1975, Table 2C, Gross Water Used and Water Intake, By Source and Kind, For Water Use Regions and Major Industry Groups: 1973; and as above, Table 5C, Gross Water Used Including Recirculated, Total Water Intake, and Treated and Untreated Water Discharged, By Point of Discharge, For Water Use Regions and Major Industry Groups: 1973.

Table 3-26. Estimated Direct Withdrawal and Consumptive Use Requirements by Sector, Estes Park and Gilpin County-Nederland (in gallons per dollar of output).

Sector	Withdrawal			Consumptive Use		
ag/for/min	792.7[1]	1,550.0[5]	306.1[3]	314.2[1]	609.0[6]	
constructn		4.0[6]			0.4[6]	
manufact		27.6[2]		1.5[1]	8.9[2]	3.7[4]
trn/com/ut		267.0[6]		13.4[6]	13.6[4]	
food-rtl		3.4[6]		.6[6]	1.0[4]	
gas/auto		3.9[6]		.6[6]	1.0[4]	
restaurant		3.9[6]		.6[6]	1.0[4]	
tour-rtl		3.9[6]		.6[6]	1.0[4]	
other-rtl		3.9[6]		.66	1.0[4]	
whlsl		2.3[6]			0.6[4]	
fire		4.9[6]		.2[6]	1.2[4]	
developers		4.9[6]		.2[6]	1.2[4]	
lodging		3.5[6]		.7[6]	0.9[4]	
tour-serv		3.5[6]		.7[6]	0.9[4]	
other-serv		1.5[6]		.2[6]	0.4[4]	
loc-gov		1.5[6]		.2[6]	0.4[4]	

[1]Water Resources Council, based on ratio of withdrawal to wages and profits.

[2]Census of Water Use in Manufacturing, ratio of withdrawal or consumptive use to value of shipments.

[3]Census of Mineral Industries, ratio of withdrawal to value of shipments.

[4]Water Resources Council, ratio of consumption to withdrawal.

[5]Census of Agriculture, ratio of consumptive use to value of shipments.

[6]Survey data or estimated on a per capita basis.

Table 3-27. Estimated Direct Withdrawal and Consumptive Use Requirements by Sector, Woodland Park (in gallons per dollar of output).

Sector	Withdrawal	Comsumptive Use
AG	1,550.0	609.0
CONSTRUCTN	4.0	0.4
SPEC/TRD	4.0	0.4
MFG	27.6	8.9
UTILITIES	267.0	13.6
BLDG/MATRL	2.3	0.6
FOOD/STRS	3.9	1.0
GS-AUT/DLR	3.9	1.0
APPRL/STRS	3.9	1.0
FURN/STRS	3.9	1.0
EAT-DRINK	3.9	1.0
MISC/RTL	3.9	1.0
INS-FNCE	4.9	1.2
RE/ESTATE	4.9	1.2
DEVELOPERS	4.9	1.2
LODGING	3.5	0.9
PRO/SER	5.1	1.3
NONPRO/SER	1.5	0.4
LOC/GVT	1.5	0.4

governments. Aggregated data generally show depletions for irrigation as a separate category of water use and a second category consisting of municipal and industrial and domestic water use. Since industrial, commercial, mining, and agricultural water use has been estimated above, the final demand use of water could be computed as a residual if estimates of total withdrawal and total consumption were available.

Estimates of total withdrawal and total consumptive use of water are useful from a purely descriptive point of view. However, the model allows also the analysis of direct and indirect water use which parallels the previous discussion of direct and indirect production. The purpose of such analysis is to isolate the effect of economic interdependence on water requirements. The specific question to be addressed is that of determining the likely impact of expanding final demand in any or all processing sectors on the regional water requirements. The key element in the assessment is the derivation of the direct plus indirect water requirements per dollar of output delivered to final demand.

The calculation of water multipliers is not difficult once the direct water requirements and the table of direct plus indirect production requirements have been obtained. The matrix of direct and indirect production coefficients (shown in Tables 3-26 and 3-27) is premultiplied by a diagonal matrix consisting of the direct water requirements along the diagonal and zeros elsewhere. The columns of the resulting matrix are summed in order to obtain the direct plus indirect water requirements per dollar of output delivered to final demand by each sector. These water multipliers for the Front Range economies are shown in Tables 3-31, 3-32 and 3-33.

The importance of considering indirect as well as direct water requirements in the planning perspective can be readily seen by comparing Table 3-26 and Table 3-31. Consider, for example, the direct withdrawal and consumptive use requirements for loc-hh in Table 3-26. The direct requirements are 1.5 and 0.4 gallons for each dollar of output. However, as the final demand for the output of the loc-hh sector expands by one dollar, there is a total direct plus indirect water requirement of 28.3 gallons (withdrawal) and 1.8 gallons (consumptive) generated throughout the economy. Applying only the direct water requirements to assumed increases in deliveries to final demand can obviously result in an understatement of water use.

Table 3-28. Total Water Use, by Processing Sectors, Estes Park, 1979 (in millions of gallons).

Sector	Withdrawal	Consumptive Use
ag/for/min	264.6	104.0
constructn	31.5	3.2
manufact	76.6	24.7
trn/com/ut	2,293.0	116.8
food-rtl	43.9	12.9
gas/auto	12.1	3.1
restaurant	28.9	7.4
tour-rtl	25.9	6.6
other-rtl	39.0	10.0
whlsl	6.2	1.6
fire	25.6	6.3
developers	5.1	1.2
lodging	29.9	7.7
tour-serv	7.2	1.9
other-serv	6.7	1.8
loc-gov	8.9	2.4

Table 3-29. Total Water Use by Processing Sectors, Gilpin County-Nederland, 1979 (in millions of gallons).

Sector	Withdrawal	Consumptive Use
ag/for/min	1,348.0	529.4
constructn	5.6	0.6
manufact	39.4	12.7
trn/com/ut	239.4	12.2
food-rtl	5.1	1.3
gas/auto	1.3	0.3
restaurant	4.8	1.2
tour-rtl	4.9	1.3
other-rtl	3.5	0.9
fire	6.3	1.5
developers	1.9	0.5
lodging	0.5	0.1
tour-serv	9.1	2.3
other-serv	4.9	1.3
loc-gov	2.9	0.8

Table 3-30. Total Water Use by Processing Sectors, Woodland Park, 1979 (in millions of gallons).

Sector	Withdrawal	Consumptive Use
AG	161.9	63.6
CONSTRUCTN	27.9	2.8
SPE/TRD	12.5	1.3
MFG	46.0	14.8
UTILITIES	658.4	33.5
BLDG/MATRL	10.6	2.8
FOOD/STRS	17.4	4.5
GS-AUT/DLR	13.8	3.5
APPRL/STRS	2.6	0.7
FURN/STRS	2.3	0.6
EAT-DRINK	6.7	1.7
MISC/RTL	12.2	3.1
INS-FNCE	7.5	1.8
RE/ESTATE	11.1	2.7
DEVELOPERS	14.0	3.4
LODGING	2.4	0.6
PRO/SER	7.2	1.8
NONPRO/SER	1.6	0.4
LOC/GVT	7.3	1.9

Table 3-31. Water Withdrawal and Consumptive Use Multipliers, Estes Park, 1979 (gallons directly and indirectly required per dollar delivered to final demand).

Sector	Withdrawal (Type II)	Consumptive Use (Type II)
ag/for/min	1,569.0	610.3
constructn	20.0	1.7
manufact	45.1	10.0
trn/com/ut	277.2	14.2
food-rtl	6.6	1.2
gas/auto	14.0	1.7
restaurant	23.0	2.2
tour-rtl	21.9	2.2
other-rtl	11.5	1.5
whlsl	7.9	1.0
fire	24.5	2.9
developers	27.5	2.9
lodging	36.1	2.8
tour-serv	27.6	2.4
other-serv	30.1	2.1
loc-gov	23.8	1.8
loc-hh	28.3	1.8

Table 3-32. Water Withdrawal and Consumptive Use Multipliers, Gilpin County-Nederland, 1979 (gallons directly and indirectly required per dollar delivered to final demand).

Sector	Withdrawal (Type II)	Consumptive Use (Type II)
ag/for/min	1,558.0	609.5
constructn	9.8	0.8
manufact	36.1	9.4
trn/com/ut	277.5	14.3
food-rtl	8.0	1.3
gas/auto	20.4	2.2
restaurant	31.1	2.6
tour-rtl	22.1	2.0
other-rtl	13.5	1.6
fire	32.6	5.0
developers	24.7	2.9
lodging	37.5	2.8
tour-serv	21.0	2.0
other-serv	10.6	1.0
loc-gov	13.8	1.4
loc-hh	9.7	0.8

Table 3-33. Water Withdrawal and Consumptive Use Multipliers, Woodland Park, 1979.

Sector	Withdrawal (Type II)	Consumptive Use (Type II)
AG	1,783.0	696.8
CONSTRUCTN	14.0	1.7
SPEC/TRD	12.1	1.1
MFG	35.2	9.4
UTILITIES	272.8	14.0
BLDG/MATRL	5.6	0.9
FOOD/STRS	8.3	1.3
GS-AUT/DLR	6.2	1.2
APPRL/STRS	13.1	1.6
FURN/STRS	15.0	1.7
EAT-DRINK	21.7	2.3
MISC/RTL	12.7	1.6
INS-FNCE	13.8	1.8
RE/ESTATE	25.1	2.7
DEVELOPERS	11.9	1.8
LODGING	29.6	2.5
PRO/SER	20.7	2.3
NONPRO/SER	16.2	1.5
LOC/GOVT	33.3	2.3
HOUSEHOLD	22.0	1.5

CHAPTER 4

CONSUMER SPENDING AND FOREST QUALITY

INTRODUCTION

This chapter summarizes the data obtained during the Estes Park consumer survey as well as identifying weaknesses in the data, areas where the questionnaire could be improved, and general knowledge gained from the survey.[1]

First we outline the method used to obtain completed questionnaires; and second discuss the major points revealed by the questionnaire. We also discuss data weaknesses, strengths, and areas for questionnaire improvement. Finally, the three study areas are contrasted with regard to economic forest quality impacts and the sectors through which these effects occur. Maximum impacts are estimated in order to allow linear extrapolation to degrees of change in forest quality.

QUESTIONNAIRE ADMINISTRATION

The first effort to administer the questionnaire was via a random sample of residents listed in the Estes Park telephone book. Unfortunately, the contents of the questionnaire (particularly the income and expenditure pattern table) resulted in respondents refusing to answer sensitive questions about their income and spending patterns. To

[1] A survey of recreationists was conducted by Dr. Richard Walsh for this study. His survey found that outdoor recreationists make virtually all of their purchases outside of the Gilpin County-Nederland study region. Tourist spending in Central City and the Gilpin County region is primarily for entertainment and is not associated with forest quality.

counter the resistance, we approached the questionnaire administration from a group approach. We felt if various civic and community organizations were supportive of the study we could attract member participation in the study. We contacted a number of groups (i.e., Jaycees, Senior Citizens, Lions, Kiwanis, etc.) and met with them at their regularly scheduled meetings. We were usually the featured item on their program. This was a very successful method of administering the questionnaire.

We would open the questionnaire administration by outlining the Forest Service study--the objectives and purposes. We would then give a brief explanation of the questionnaire. We followed this brief introduction and presentation with the answering of the questionnaire. We would read each question and add any explanation if necessary to clarify the question. The questions would be answered en masse and any questions raised would be addressed promptly. Completing the questionnaire varied from meeting to meeting, but generally 30 to 45 minutes was required from start to finish.

The procedure developed was effective and response to the questions was excellent. The response rate was better than 90 percent overall for the most sensitive question (i.e., the expenditure pattern question). The approach of mass administration gave the respondents an increased sense of anonymity. As such, the willingness to answer questions was much improved over the one-to-one administration.

The meetings we attended usually lasted two or three hours. We felt that staying for the entire meeting increased our visibility with the community. Visiting with individuals after the meeting was very beneficial as we discussed the importance of the study to the

community. The study was well received by the community as we were genuinely interested in their welfare. In addition, we will send the summarized results to each of the groups we met with.

MAIL SURVEY

To aid in the economic analysis of spending habits, residents were divided into four major categories: employed locally, employed in another community, retired, and other. Postcards were sent to 405 (12.5 percent) of the residences listed in the Estes Park telephone directory. Seventy-eight were undeliverable and 255 were completed and returned--an outstanding reply by the residents. Gilpin County-Nederland and Woodland Park were also surveyed. The results of these surveys are shown in Table 4-1.

SOCIOECONOMIC DATA

The consumer spending questionnaire asked six sccioeconomic-type questions of the Estes Park residents. The results of these follow:

Item 1

Percent of residents in age categories

	Under 21	21-30	31-40	41-50	51-60	61-70	Over 70
Retired					3%	66%	31%
Employed	2%	27%	42%	13%	13%	2%	2%
TOTAL (weighted)	1%	16%	24%	8%	9%	29%	14%

Table 4-1. Front Range Foothills Estimated Population Distribution by Local Worker, Commuter or Retired, 1979.[1]

	Estes Park	Gilpin County-Nederland	Woodland Park
Local Worker	44%	31.5%	40.8%
Commuter	8%	46.6%	17.1%
Retired	42%	16.4%	30.3%
Other[2]	6%	5.5%	11.8%
	100%	100 %	100 %

[1]12.5 percent of the population was sampled in each study area. After non-deliverables the response rate was 78 percent in Estes Park, 54 percent in Gilpin County-Nederland and 41 percent in Woodland Park. A net sample exceeding 5 percent of the population was achieved in each study region.

[2]Include, unemployed and students.

Item 2

Percent of residents in household income categories

Under $9,999 12%	$10,000 to $14,999 24%	$15,000 to $19,999 11%
$20,000 to $24,999 16%	$25,000 to $29,999 17%	$30,000 to $39,000 12%
$40,000 to $49,999 7%	$50,000 or Over 1%	

Item 3

Average percent of income spent in Estes Park

Employed locally	75%
Commuters	35%
Retired	69%
Others	75%

Item 4

Average years of residence in Estes Park

Employed	9
Retired	9

Average People Per Household:	2 1/2
Average Employed Per Household: (excluding retirees):	1 1/2

ATTITUDES TOWARD TREES

Several questions in the survey were designed to determine the importance of trees to Estes Park residents. The classification groups had similar responses. About 50 percent of residents rated trees as extremely important; 40 percent as very important; and 10 percent as moderately important. In relation to other landscape characteristics of the Estes Park area such as rock outcroppings, topography, or lakes and streams, 50 percent responded that trees have the same importance;

over 40 percent responded that trees are more important; and less than 10 percent responded that trees have less importance. Many respondents noted that other environmental characteristics such as wildlife, low population density, clean air, as well as the overall characteristics, added greatly to Estes Park's appeal.

This section of the questionnaire also attempted to determine if and when respondents would respond to changes in tree densities. Respondents uniformly estimated the average tree density of the Estes Valley at a medium level--trees per acre. If half the trees disappeared, 40 percent would seriously consider moving, with slightly less than 20 percent of retirees and slightly more than 20 percent of those employed actually moving. If all the trees disappeared, 75 percent of retirees and 50 percent of those employed would move. (Based on slide projection pictures as shown in Figure 4-1.)

CONSUMER PURCHASE AND EXPENSE OUTLAYS

Respondents were asked to estimate their yearly personal expenditures for 12 sectors. In addition, the respondents were asked to break their yearly expenditures into three categories. The three categories were:

(1) Purchases in Estes Park;

(2) Purchases in other Colorado towns (respondents were asked to identify specific towns when possible); and

(3) Purchases outside Colorado.

The expenditure pattern results are presented in Table 4-2. The respondents were divided into two groups. Locally employed residents and retired residents are the two classifications. Spending

Figure 4-1. Slide Projection Pictures. (examples)

Table 4-2. Percentage Distribution of Purchases by Local Employees and Entrepreneurs, and by Retirees in Estes Park, 1979.

Sector	Local Employees and Entrepreneurs	Retired Persons
ag/for/min	000.	000.
constructn	000.	000.
manufact	000.	000.
trn/com/ut	008.3159	010.6179
food-rtl	011.3584	015.1269
gas/auto	003.0482	002.9090
restaurant	001.6226	002.5454
tour-rtl	000.	000.
other-rtl	008.7985	002.1060
whlsl	000.4917	000.9485
fire	003.4910	004.5896
developers	000.	000.
lodging	000.	000.
tour-serv	001.4198	001.4545
other-serv	000.5071	000.5091
loc-gov	005.3134	009.7459
loc-hh	000.	000.
state-gov	005.4764	005.3915
fed-gov	019.8771	021.5187
transfers	000.7684	001.0102
deprec	000.	000.
rents	009.3301	006.2544
colo-imp	013.4881	012.4360
world-imp	006.6933	002.8363

distributions have been adjusted slightly where secondary data on available goods and services within the study region constrain total local purchases.

QUESTIONNAIRE IMPROVEMENT

In reviewing the statistical results we noticed the age categories distribution differed from a standard mix in the 40-60 age groups. This indicates that our sample may not adequately include a consistent age mix. This could be rectified in future studies by including two questions on the postcard questionnaire, the second asking the respondent's age.

A major problem in the questionnaire administration dealt with accurate definition of near view, far view, and tree densities. Respondents had difficulty visualizing what was meant by far view or near view. They also believed that tree densities changed throughout the valley and picking an average density was not accurate. We believe more information and description (i.e., charts and graphs on slides) would improve their response.

Finally, the purchases and expense section remained too long, even after modification. Also, totals spent should be requested on a monthly basis, with special categories for major purchases during the year (i.e., cars and houses).

COMPARISON OF THE STUDY REGIONS HOUSEHOLD SECTORS

Observable characteristics of the study regions[1] and findings of our postcard survey provided a basis for determining forest-related household sectors. Estes Park has a significant number of locally

[1] Discussed in Chapter 2.

locally employed residents to justify a household sector for locally employed. The few commuters to the region are also placed in this sector. A second large group in Estes Park is the retiree household. Since retired households are not part of the local processing sector (they receive retirement income from outside the region), they are placed in the exogenous final demand portion of the Estes Park I-O model. A third important household sector in Estes Park is tourist households. This sector is also exogenous and is placed in final demand rather than in the interdependent processing part of the I-O model. Retirees and tourists are "foot-loose" and can easily leave an area if it no longer provides the environment which they desire. Forest quality change is shown to affect their location decision.

Gilpin County-Nederland has significant numbers of locally employed households but a relatively small retiree population (harsh climate and minimal local trade sources could help account for this). A local employee household sector is included as part of the processing component of the Gilpin County-Nederland I-O model. The largest single part of the population is commuters and a combined commuter-retiree sector is included as part of the exogenous or final demand component of the I-O model. A third household sector contains exogenous tourist spending.

The computer-retiree sector and the tourist sector spending will be affected by forest quality. However, the absence of tourist-related retail establishments and survey data show that forest-related tourist spending is very small in this region.

The existing Woodland Park I-O model contains a local household sector which is endogenous, a new-resident sector (which purchases only

Table 4-3. Changes in Final Demand When Tourist Household Spending is Removed from the Estes Park Economy.

	ORIGINAL FINAL DEMANDS (with households removed)		CHANGES IN FINAL DEMAND ENTERED BY USER		FINAL DEMANDS AFTER CHANGE (excludes households)	
1	ag/for//mi	170138.00	ag/for//mi	0.	ag/for//mi	170138.00
2	constructn	5402171.00	constructn	0.	constructn	5402171.00
3	manufact	2260437.00	manufact	0.	manufact	2260437.00
4	trn/com/ut	3401704.00	trn/com/ut	0.	trn/com/ut	3401704.00
5	food-rtl	9137609.00	food-rtl	-4478247.00	food-rtl	4659362.00
6	gas/auto	1435634.00	gas/auto	-539603.00	gas/auto	896031.00
7	restaurant	6844628.00	restaurant	-3802154.00	restaurant	3042474.00
8	tour-rtl	6632389.00	tour-rtl	-6632189.00	tour-rtl	200.00
9	other-rtl	4908174.00	other-rtl	-4249074.00	other-rtl	659100.00
10	whlsl	589132.00	whlsl	0.	whlsl	589132.00
11	fire	1413695.00	fire	0.	fire	1413695.00
12	developers	1032797.00	developers	0.	developers	1032797.00
13	lodging	8532758.00	lodging	-8532758.00	lodging	0.
14	tour-serv	1599008.00	tour-serv	-1150992.00	tour-serv	448016.00
15	other-serv	1532709.00	other-serv	-844812.00	other-serv	687897.00
16	loc-gov	3385546.00	loc-gov	-383620.00	loc-gov	3001926.00
17	loc-hh	17621955.00	loc-hh	0.	loc-hh	17621955.00

Table 4-4. Transactions Table for Estes Park When Tourist Household Spending is Removed.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		1	2	3	4	5	6	7	8	9	10
		ag/for/min	constructn	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	whlsl
1	ag/for//mi	0.	0.	0.	0.	0.	0.	283.	0.	0.	0.
2	constructn	1357.	1615273.	555.	3738.	7975.	1897.	32475.	11.	4193.	2149.
3	manufact	1273.	40458.	2038.	12049.	24795.	1473.	5767.	63.	38211.	461.
4	trn/com/ut	7183.	65382.	65368.	134077.	51237.	40958.	131658.	140.	61675.	18461.
5	food-rtl	1497.	0.	0.	0.	0.	1130.	20590.	0.	0.	0.
6	gas/auto	3837.	187031.	2869.	131774.	0.	9756.	1506.	30.	45610.	6412.
7	restaurant	2076.	3867.	777.	0.	0.	1255.	11639.	1.	0.	0.
8	tour-rtl	1198.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	other-rtl	1662.	1609672.	9819.	21116.	5800.	7540.	12909.	38.	62228.	550.
10	whlsl	0.	144860.	58142.	8704.	105284.	522676.	236595.	42.	10162.	14399.
11	fire	15036.	38303.	23363.	109458.	974.	13134.	43311.	102.	25540.	116799.
12	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	lodging	0.	0.	185.	0.	0.	0.	0.	0.	0.	0.
14	tour-serv	299.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	other-serv	4905.	62662.	8881.	42193.	5655.	13519.	16408.	112.	13834.	7142.
16	loc-gov	2759.	32659.	8892.	69136.	3705.	5518.	38933.	12.	15508.	4274.
17	subtotals	43081.	3800167.	180887.	532245.	205425.	618856.	552075.	552.	276961.	170646.
18	loc-hh	13991.	1476489.	834744.	742192.	279703.	169455.	830833.	417.	507783.	66337.
19	state-gov	864.	55344.	32177.	50131.	9968.	7444.	37990.	4.	27776.	1625.
20	fed-gov	6712.	227480.	204030.	63040.	20300.	1739.	109861.	40.	145454.	4191.
21	transfers	3310.	8430.	5142.	24093.	214.	2891.	9533.	23.	5621.	25708.
22	deprec	5490.	193366.	13715.	246289.	8990.	20745.	92432.	108.	35862.	14256.
23	rents	71349.	505329.	257974.	282769.	352855.	66712.	515839.	508.	544125.	68585.
24	colo-imp	24345.	1048733.	917296.	4541555.	6699350.	845847.	1329538.	946.	2537257.	1468714.
25	world-imp	1278.	174378.	41784.	39672.	0.	377042.	640.	801.	683504.	29960.
26	totals	170421.	7489715.	2487748.	6521985.	7576806.	2126371.	3478741.	3399.	4764344.	1850022.

1 EMPLOYMENT 0.3920E 01 0.1498E 03 0.1244E 03 0.3261E 02 0.3788E 02 0.1914E 02 0.1948E 03 0.6458E-01 0.8099E 02 0.7400E 01

Table 4-4. Continued.

GROSS FLOWS TABLE (Purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		11 fire	12 developers	13 lodging	14 tour-serv	15 other-serv	16 loc-gov
1	ag/for//mi	0.	0.	0.	0.	0.	0.
2	constructn	8062.	385765.	15.	2365.	21172.	541.
3	manufact	87027.	0.	3.	0.	8235.	5458.
4	trn/com/ut	95993.	35617.	46.	29077.	112639.	158711.
5	food-rtl	220.	0.	1.	6020.	3219.	0.
6	gas/auto	23183.	9657.	2.	10547.	632.	23323.
7	restaurant	2880.	0.	0.	0.	1662.	0.
8	tour-rtl	1832.	0.	0.	0.	169.	0.
9	other-rtl	67490.	3530.	2.	26380.	22487.	19400.
10	whlsl	0.	0.	6.	12182.	22951.	0.
11	fire	899912.	134980.	24.	41105.	31651.	32073.
12	developers	0.	0.	0.	0.	0.	0.
13	lodging	0.	0.	1.	0.	163.	232.
14	tour-serv	0.	0.	0.	0.	0.	0.
15	other-serv	112861.	38015.	8.	75716.	57920.	1346680.
16	loc-gov	24357.	11733.	31.	3120.	9095.	14105.
17	subtotals	1323818.	619297.	140.	206513.	291995.	1600523.
18	loc-hh	601486.	28570.	144.	263016.	1399667.	560920.
19	state-gov	37000.	22637.	3.	19051.	109828.	26093.
20	fed-gov	276141.	108305.	13.	22954.	19918.	32183.
21	transfers	198078.	29710.	5.	9048.	6967.	7059.
22	deprec	240358.	12980.	70.	47060.	85297.	0.
23	rents	700704.	181204.	70.	127226.	324368.	8032.
24	colo-imp	401349.	30000.	104.	113333.	267734.	2343783.
25	world-imp	47159.	94.	32.	712.	117418.	16645.
26	totals	3826093.	1032797.	580.	808911.	2623192.	4595237.

1 EMPLOYMENT 0.5739E 02 0.1033E 02 0.1625E-01 0.3155E 02 0.1705E 03 0.4136E 02

Table 4-5. Changes in Final Demand When Retiree Household Spending is Removed from the Estes Park Economy.

	ORIGINAL FINAL DEMANDS (with households removed)		CHANGES IN FINAL DEMAND ENTERED BY USER		FINAL DEMANDS AFTER CHANGE (excludes households)	
1	ag/for//mi	170138.00	ag/for//mi	0.	ag/for//mi	170138.00
2	constructn	5402171.00	constructn	0.	constructn	5402171.00
3	manufact	2260437.00	manufact	0.	manufact	2260437.00
4	trn/com/ut	3401704.00	trn/com/ut	-3270514.00	trn/com/ut	131190.00
5	food-rtl	9137609.00	food-rtl	-4659362.00	food-rtl	4478247.00
6	gas/auto	1435634.00	gas/auto	-896031.00	gas/auto	539603.00
7	restaurant	6844628.00	restaurant	-784027.00	restaurant	6060601.00
8	tour-rtl	6632389.00	tour-rtl	0.	tour-rtl	6632389.00
9	other-rtl	4908174.00	other-rtl	-648690.00	other-rtl	4259484.00
10	whlsl	589132.00	whlsl	-292143.00	whlsl	296989.00
11	fire	1413695.00	fire	-1413695.00	fire	0.
12	developers	1032797.00	developers	0.	developers	1032797.00
13	lodging	8532758.00	lodging	0.	lodging	8532758.00
14	tour-serv	1599008.00	tour-serv	-448016.00	tour-serv	1150992.00
15	other-serv	1532709.00	other-serv	-156805.00	other-serv	1375904.00
16	loc-gov	3385546.00	loc-gov	-3001926.00	loc-gov	383620.00
17	loc-hh	17621955.00	loc-hh	0.	loc-hh	17621955.00

Table 4-6. Transactions Table for Estes Park When Retiree Household Spending is Removed.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		1	2	3	4	5	6	7	8	9	10
		ag/for/min	constructn	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	whlsl
1	ag/for//mi	0.	0.	0.	0.	0.	0.	534.	0.	0.	0.
2	constructn	1359.	1690656.	598.	2670.	8340.	1782.	61409.	22440.	7912.	2288.
3	manufact	1274.	42346.	2198.	8608.	25930.	1383.	10905.	123952.	72101.	491.
4	trn/com/ut	7193.	68433.	70474.	95788.	53583.	38465.	248957.	273850.	116376.	19653.
5	food-rtl	1499.	0.	0.	0.	0.	1061.	38935.	504.	0.	0.
6	gas/auto	3842.	195760.	3093.	94142.	0.	9162.	2848.	57659.	86062.	6826.
7	restaurant	2079.	4048.	838.	0.	0.	1178.	22009.	1254.	0.	0.
8	tour-rtl	1200.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	other-rtl	1664.	1684794.	10586.	15086.	6066.	7081.	24411.	74312.	117419.	585.
10	whlsl	0.	151621.	62684.	6218.	110104.	490855.	447388.	81152.	19176.	15328.
11	fire	15058.	40090.	25188.	78199.	1019.	12335.	81899.	199979.	48191.	124338.
12	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	lodging	0.	0.	199.	0.	0.	0.	0.	0.	0.	0.
14	tour-serv	300.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	other-serv	4912.	65587.	9575.	30143.	5914.	12695.	31026.	219629.	26103.	7603.
16	loc-gov	2763.	34183.	9586.	49392.	3875.	5182.	73620.	22687.	29263.	4550.
17	subtotals	43145.	3977517.	195018.	380247.	214830.	581179.	1043942.	1077419.	522603.	181660.
18	loc-hh	14011.	1545395.	899952.	530237.	292509.	159138.	1571057.	813196.	958147.	70618.
19	state-gov	866.	57926.	34690.	35814.	10425.	6991.	71836.	8746.	52412.	1729.
20	fed-gov	6722.	238096.	219968.	45037.	21229.	16321.	207740.	78230.	274461.	4462.
21	transfers	3315.	8824.	5544.	17212.	224.	2715.	18027.	44066.	10607.	27367.
22	deprec	5498.	202391.	14787.	175954.	9402.	19482.	174784.	209898.	67668.	15176.
23	rents	71455.	528912.	278127.	202016.	369011.	62650.	975423.	991763.	1026720.	73012.
24	colo-imp	24381.	1097676.	988953.	3244580.	7006087.	794351.	2514081.	1847299.	4787600.	1563509.
25	world-imp	1279.	182516.	45048.	28342.	0.	354087.	1211.	1564608.	1289718.	31894.
26	totals	170672.	7839253.	2682086.	4659439.	7923717.	1996914.	6578101.	6635224.	8989935.	1969428.

1 EMPLOYMENT 0.3925E 01 0.1568E 03 0.1341E 03 0.2330E 02 0.3962E 02 0.1797E 02 0.3684E 03 0.1261E 03 0.1528E 03 0.7878E 01

Table 4-6. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		11 fire	12 developers	13 lodging	14 tour-serv	15 other-serv	16 loc-gov
1	ag/for//mi	0.	0.	0.	0.	0.	0.
2	constructn	6294.	385765.	214906.	4597.	25747.	319.
3	manufact	67942.	0.	51281.	0.	10015.	3222.
4	trn/com/ut	74942.	35617.	672859.	56512.	136977.	93678.
5	food-rtl	172.	0.	20999.	11701.	3915.	0.
6	gas/auto	18099.	9657.	31626.	20498.	768.	13766.
7	restaurant	2249.	0.	869.	0.	2021.	0.
8	tour-rtl	1431.	0.	0.	0.	205.	0.
9	other-rtl	52690.	3530.	34233.	51270.	27346.	11451.
10	whlsl	0.	0.	90577.	23677.	27910.	0.
11	fire	702569.	134980.	351158.	79887.	38490.	18931.
12	developers	0.	0.	0.	0.	0.	0.
13	lodging	0.	0.	17762.	0.	198.	137.
14	tour-serv	0.	0.	0.	0.	0.	0.
15	other-serv	88112.	38015.	112018.	147155.	70435.	794865.
16	loc-gov	19016.	11733.	462464.	6064.	11060.	8325.
17	subtotals	1033515.	619297.	2060753.	401359.	355087.	944694.
18	loc-hh	469585.	28570.	2121833.	511174.	1702096.	331078.
19	state-gov	28886.	22637.	47221.	37025.	133558.	15401.
20	fed-gov	215586.	108305.	192191.	44611.	24222.	18995.
21	transfers	154641.	29710.	77293.	17584.	8472.	4167.
22	deprec	187649.	12980.	1027433.	91461.	103727.	0.
23	rents	547045.	181204.	1024356.	247266.	394455.	4741.
24	colo-imp	313336.	30000.	1535288.	220263.	325584.	1383396.
25	world-imp	36817.	94.	464687.	1384.	142788.	9825.
26	totals	2987061.	1032797.	8551054.	1572128.	3189990.	2712297.

1 EMPLOYMENT 0.4481E 02 0.1033E 02 0.2394E 03 0.6131E 02 0.2073E 03 0.2441E 02

Table 4-7. Changes in Final Demand When Tourist Household Spending is Removed from the Gilpin County-Nederland Economy.

	ORIGINAL FINAL DEMANDS (with households removed)		CHANGES IN FINAL DEMAND ENTERED BY USER		FINAL DEMANDS AFTER CHANGE (excludes households)	
1	ag/for/mi	869376.00	ag/for/mi	0.	ag/for/mi	869376.00
2	constructn	1125862.00	constructn	0.	constructn	1125862.00
3	manufact	1390310.00	manufact	0.	manufact	1390310.00
4	trn/com/ut	203288.00	trn/com/ut	0.	trn/com/ut	203288.00
5	food-rtl	791283.00	food-rtl	-395642.00	food-rtl	395641.00
6	gas/auto	79672.00	gas/auto	-40371.00	gas/auto	39301.00
7	restaurant	1074436.00	restaurant	-920944.00	restaurant	153492.00
8	tour-rtl	1262052.00	tour-rtl	-1262052.00	tour-rtl	0.
9	other-rtl	514638.00	other-rtl	-269755.00	other-rtl	244883.00
10	fire	104454.00	fire	0.	fire	104454.00
11	developers	384396.00	developers	0.	developers	384396.00
12	lodging	133822.00	lodging	-133822.00	lodging	0.
13	tour-serv	2583720.00	tour-serv	-2583720.00	tour-serv	0.
14	other-serv	2518073.00	other-serv	0.	other-serv	2518073.00
15	loc-gov	1001600.00	loc-gov	-60000.00	loc-gov	941600.00
16	loc-hh	1686025.00	loc-hh	0.	loc-hh	1686025.00

Table 4-8. Transactions Table for Gilpin County-Nederland When Tourist Household Spending is Removed.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		1	2	3	4	5	6	7	8	9	10
		ag/for/mi	constructn	manufact	trn/com/ut	food-rtl	gas/auto	restaurant	tour-rtl	other-rtl	fire
1	ag/for/mi	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	constructn	1667.	47942.	4707.	0.	1421.	2091.	2560.	1.	0.	3563.
3	manufact	58.	131.	0.	110.	3893.	418.	858.	0.	1261.	5190.
4	trn/com/ut	17703.	15912.	28172.	11828.	8562.	8782.	22204.	22.	16108.	13960.
5	food-rtl	3882.	0.	4090.	0.	0.	0.	139.	0.	0.	972.
6	gas/auto	12373.	13958.	3922.	2264.	1582.	0.	6892.	3.	4937.	6147.
7	restaurant	272.	0.	841.	0.	0.	0.	0.	0.	0.	1377.
8	tour-rtl	0.	0.	0.	0.	0.	0.	0.	0.	0.	375.
9	other-rtl	916.	69663.	560.	1253.	0.	142.	0.	1.	763.	3497.
10	fire	0.	5260.	224.	1712.	0.	12545.	0.	0.	156.	717423.
11	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	other-serv	1390.	7215.	560.	23646.	158.	39102.	5464.	0.	832.	2413.
15	loc-gov	22630.	8264.	30168.	77089.	4000.	1798.	8215.	6.	4715.	11251.
16	subtotals	60891.	168346.	73243.	117904.	19616.	64876.	46332.	35.	28773.	766168.
17	loc-hh	172616.	138316.	355294.	84979.	61567.	11489.	81982.	54.	54416.	76129.
18	state-gov	7294.	4971.	10364.	55.	968.	247.	1644.	4.	645.	1003.
19	fed-gov	13103.	14306.	74211.	4306.	3996.	785.	6740.	5.	3480.	4189.
20	transfers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	deprec	33616.	53884.	123442.	45329.	7603.	4809.	2228.	4.	15512.	8959.
22	rents	-142136.	71946.	107923.	15181.	43059.	4769.	26690.	21.	35584.	57551.
23	colo-imp	723992.	901371.	426548.	259791.	639848.	120849.	103492.	127.	393312.	117683.
24	world-imp	0.	0.	236088.	0.	0.	532.	0.	125.	11251.	2026.
25	totals	869376.	1353141.	1407115.	527545.	776656.	208357.	269107.	375.	542973.	1033706.

1	EMPLOYMENT	0.3043E 02	0.1353E 02	0.4221E 02	0.3693E 01	0.3883E 01	0.2500E 01	0.2287E 02	0.1050E-01	0.8145E 01	0.2481E 01

Table 4-8. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		11 developers	12 lodging	13 tour-serv	14 other-serv	15 loc-gov
1	ag/for/mi	0.	0.	0.	0.	0.
2	constructn	142900.	0.	0.	1508.	18919.
3	manufact	0.	0.	0.	777.	4108.
4	trn/com/ut	13200.	0.	0.	62170.	24914.
5	food-rtl	0.	0.	0.	93.	774.
6	gas/auto	3600.	0.	0.	13692.	42641.
7	restaurant	0.	0.	0.	207.	953.
8	tour-rtl	0.	0.	0.	0.	0.
9	other-rtl	1300.	0.	0.	5260.	3132.
10	fire	61000.	0.	0.	970.	32985.
11	developers	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	0.	0.	0.
14	other-serv	25200.	0.	0.	2359.	372024.
15	loc-gov	4350.	0.	0.	3564.	10240.
16	subtotals	251550.	0.	0.	90600.	510691.
17	loc-hh	12586.	0.	0.	1046663.	591852.
18	state-gov	8400.	0.	0.	121662.	4973.
19	fed-gov	40100.	0.	0.	3700.	28087.
20	transfers	0.	0.	0.	0.	0.
21	deprec	4800.	0.	0.	7546.	9243.
22	rents	66960.	0.	0.	784476.	27584.
23	colo-imp	0.	0.	0.	778788.	357483.
24	world-imp	0.	0.	0.	227005.	26537.
25	totals	384396.	0.	0.	3060441.	1556450.

1	EMPLOYMENT	0.1922E 01	0.	0.	0.1255E 03	0.4981E 02

Table 4-9. Changes in Final Demand When Commuter Household Spending is Removed from the Gilpin County-Nederland Economy.

	ORIGINAL FINAL DEMANDS (with households removed)		CHANGES IN FINAL DEMAND ENTERED BY USER		FINAL DEMANDS AFTER CHANGE (excludes households)	
1	ag/for/mi	869376.00	0.		ag/for/mi	869376.00
2	constructn	1125862.00	0.		constructn	1125862.00
3	manufact	1390310.00	0.		manufact	1390310.00
4	trn/com/ut	203288.00	-120288.00		trn/com/ut	83000.00
5	food-rtl	791283.00	-395641.00		food-rtl	395642.00
6	gas/auto	79672.00	-39101.00		gas/auto	40571.00
7	restaurant	1074436.00	-153492.00		restaurant	920944.00
8	tour-rtl	1262052.00	0.		tour-rtl	1262052.00
9	other-rtl	514638.00	-244242.00		other-rtl	270396.00
10	fire	104454.00	-104454.00		fire	0.
11	developers	384396.00	0.		developers	384396.00
12	lodging	133822.00	0.		lodging	133822.00
13	tour-serv	2583720.00	0.		tour-serv	2583720.00
14	other-serv	2518073.00	-60000.00		other-serv	2458073.00
15	loc-gov	1001600.00	-638600.00		loc-gov	363000.00
16	loc-hh	1686025.00	0.		loc-hh	1686025.00

Table 4-10. Transactions Table for Gilpin County-Nederland When Commuter Household Spending is Removed.

GROSS FLOWS TABLE (Purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		1 ag/for/mi	2 constructn	3 manufact	4 trn/com/ut	5 food-rtl	6 gas/auto	7 restaurant	8 tour-rtl	9 other-rtl	10 fire
1	ag/for/mi	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	constructn	1667.	48766.	4749.	0.	1585.	2629.	10127.	4280.	0.	2840.
3	manufact	58.	134.	0.	148.	4345.	526.	3393.	26.	1461.	4136.
4	trn/com/ut	17703.	16186.	28424.	15858.	9556.	11043.	87840.	74254.	18661.	11127.
5	food-rtl	3882.	0.	4127.	0.	0.	0.	551.	0.	0.	775.
6	gas/auto	12373.	14198.	3957.	3035.	1765.	0.	27266.	11575.	5720.	4900.
7	restaurant	272.	0.	848.	0.	0.	0.	0.	1377.	0.	1098.
8	tour-rtl	0.	0.	0.	0.	0.	0.	0.	0.	0.	299.
9	other-rtl	916.	70860.	565.	1681.	0.	178.	0.	2895.	884.	2787.
10	fire	0.	5351.	226.	2296.	0.	15776.	0.	1478.	181.	571822.
11	developers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	other-serv	1390.	7339.	565.	31703.	177.	49172.	21617.	1191.	964.	1923.
15	loc-gov	22630.	9406.	30438.	103356.	4464.	2261.	32498.	21390.	5462.	8968.
16	subtotals	60891.	171239.	73898.	158077.	21892.	81584.	183293.	118466.	33334.	610675.
17	loc-hh	172616.	140693.	358467.	113934.	68711.	14448.	324329.	181526.	63042.	60678.
18	state-gov	7294.	5057.	10457.	74.	1080.	311.	6502.	11884.	747.	800.
19	fed-gov	13103.	14552.	74874.	5773.	4459.	987.	26665.	17026.	4032.	3339.
20	transfers	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	deprec	33616.	54810.	124544.	60774.	8485.	6047.	8813.	12446.	17971.	7141.
22	rents	-142136.	73183.	108887.	20353.	48055.	5997.	105588.	72304.	41224.	45871.
23	colo-imp	723992.	916861.	430358.	348309.	714094.	151972.	409427.	430287.	455656.	93799.
24	world-imp	0.	0.	238197.	0.	0.	669.	0.	423470.	13034.	1615.
25	totals	869376.	1376393.	1419681.	707294.	866778.	262016.	1064617.	1267409.	629039.	823916.

1 EMPLOYMENT 0.3043E 02 0.1376E 02 0.4259E 02 0.4951E 01 0.4334E 01 0.3144E 01 0.9049E 02 0.3549E 02 0.9436E 01 0.1977E 01

Table 4-10. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		11 developers	12 lodging	13 tour-serv	14 other-serv	15 loc-gov
1	ag/for/mi	0.	0.	0.	0.	0.
2	constructn	142900.	6065.	8642.	1470.	14811.
3	manufact	0.	527.	10643.	757.	3216.
4	trn/com/ut	13200.	10930.	129141.	60582.	19504.
5	food-rtl	0.	100.	0.	91.	606.
6	gas/auto	3600.	1235.	14227.	13342.	33381.
7	restaurant	0.	27.	0.	201.	746.
8	tour-rtl	0.	0.	5058.	0.	0.
9	other-rtl	1300.	2946.	3162.	5126.	2452.
10	fire	61000.	8000.	10538.	945.	25822.
11	developers	0.	0.	0.	0.	0.
12	lodging	0.	0.	0.	0.	0.
13	tour-serv	0.	0.	20023.	0.	0.
14	other-serv	25200.	6060.	6323.	2299.	291237.
15	loc-gov	4350.	5250.	62061.	3473.	8017.
16	subtotals	251550.	41140.	269818.	88286.	399792.
17	loc-hh	12586.	30993.	722844.	1019927.	463328.
18	state-gov	8400.	2984.	6284.	118555.	3893.
19	fed-gov	40100.	3015.	88076.	3606.	21988.
20	transfers	0.	0.	0.	0.	0.
21	deprec	4800.	4091.	200232.	7353.	7236.
22	rents	66960.	15584.	15808.	764437.	21594.
23	colo-imp	0.	35979.	908876.	758895.	279854.
24	world-imp	0.	36.	391805.	221207.	20774.
25	totals	384396.	133822.	2603743.	2982265.	1218459.

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1 EMPLOYMENT 0.1922E 01 0.6022E 01 0.1146E 03 0.1223E 03 0.3899E 02

Table 4-11. Changes in Final Demand When Colorado Springs Household Spending and Investment is Removed from the Woodland Park Economy.

	ORIGINAL FINAL DEMANDS (with households removed)	
1	AG	91430.00
2	CONSTRUCTN	6641638.00
3	SPEC/TRD	800033.00
4	MFG	861112.00
5	UTILITIES	4252.00
6	BLDG/MATRL	1444869.00
7	FOOD/STRS	1943657.00
8	GS-AUT/DLR	1309186.00
9	APPRL/STRS	387174.00
10	FURN/STRS	211207.00
11	EAT-DRINK	891018.00
12	MISC/RTL	1268315.00
13	INS-FNCE	754282.00
14	RE/ESTATE	1954400.00
15	DEVELOPERS	2863175.00
16	LODGING	650120.00
17	PRO/SER	336391.00
18	NONPRO/SER	128062.00
19	LOC/GVT	2001127.00
20	HOUSEHOLDS	21001576.00

	CHANGES IN FINAL DEMAND ENTERED BY USER	
1	AG	0.
2	CONSTRUCTN	-1437877.00
3	SPEC/TRD	-535519.00
4	MFG	-289907.00
5	UTILITIES	0.
6	BLDG/MATRL	-1256487.00
7	FOOD/STRS	-1184408.00
8	GS-AUT/DLR	-621532.00
9	APPRL/STRS	-109636.00
10	FURN/STRS	-115557.00
11	EAT-DRINK	-394813.00
12	MISC/RTL	-729847.00
13	INS-FNCE	-112358.00
14	RE/ESTATE	-704644.00
15	DEVELOPERS	-970622.00
16	LODGING	-114842.00
17	PRO/SER	-241688.00
18	NONPRO/SER	-100581.00
19	LOC/GVT	0.
20	HOUSEHOLDS	-11031816.00

	FINAL DEMANDS AFTER CHANGE (excludes households)	
1	AG	91430.00
2	CONSTRUCTN	5203761.00
3	SPEC/TRD	264514.00
4	MFG	571205.00
5	UTILITIES	4252.00
6	BLDG/MATRL	188382.00
7	FOOD/STRS	759249.00
8	GS-AUT/DLR	687654.00
9	APPRL/STRS	277538.00
10	FURN/STRS	95650.00
11	EAT-DRINK	496205.00
12	MISC/RTL	538468.00
13	INS-FNCE	641924.00
14	RE/ESTATE	1249756.00
15	DEVELOPERS	1892553.00
16	LODGING	535278.00
17	PRO/SER	94703.00
18	NONPRO/SER	27481.00
19	LOC/GVT	2001127.00
20	HOUSEHOLDS	9969760.00

Table 4-12. Transactions Table for Woodland Park When Colorado Springs Household Spending and Investment is Removed.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		1 AG	2 CONSTRUCTN	3 SPEC/TRD	4 MFG	5 UTILITIES	6 BLDG/MATRL	7 FOOD/STRS	8 GS-AUT/DLR	9 APPRL/STRS	10 FURN/STRS
1	AG	13000.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	SPEC/TRD	0.	1191203.	0.	0.	0.	0.	0.	0.	0.	0.
4	MFG	0.	362758.	16716.	650.	1861.	14915.	7341.	3745.	3518.	980.
5	UTILITIES	400.	2772.	2682.	9132.	8107.	9412.	17801.	7218.	6943.	4739.
6	BLDG/MATRL	12488.	874039.	21165.	2854.	4653.	0.	0.	6145.	0.	0.
7	FOOD/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	GS-AUT/DLR	2734.	29836.	91743.	7913.	79106.	11947.	0.	17676.	2209.	10919.
9	APPRL/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	FURN/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	EAT-DRINK	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	MISC/RTL	29501.	18410.	2539.	4280.	1817.	1476.	1028.	570.	801.	578.
13	INS-FNCE	2000.	38407.	29544.	2704.	3289.	941.	2352.	560.	5964.	1891.
14	RE/ESTATE	0.	37381.	0.	0.	0.	0.	0.	0.	0.	0.
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	PRO/SER	3431.	6080.	2706.	0.	0.	532.	4679.	1063.	1843.	0.
18	NONPRO/SER	1971.	20335.	12958.	11200.	16350.	5425.	2926.	951.	267.	0.
19	LOC/GVT	0.	70573.	38875.	1677.	16134.	15349.	16714.	7311.	1888.	672.
20	SUBTOTALS	65525.	2651795.	218929.	40409.	131317.	59997.	52841.	45238.	23433.	19779.
21	HOUSEHOLDS	20349.	755553.	531285.	251638.	199338.	146882.	149304.	89818.	73957.	85672.
22	NONLOC/GVT	4321.	87104.	53992.	18806.	34211.	17518.	25097.	48628.	13217.	10288.
23	PROFITS	-24598.	311566.	168025.	108900.	69799.	7058.	98770.	110680.	42614.	40316.
24	LND/PAYMNT	0.	101175.	0.	0.	0.	0.	0.	0.	0.	0.
25	DEPREC	25437.	103034.	84487.	39843.	89666.	118250.	36326.	7672.	9797.	17721.
26	IMP-CO/SPG	7123.	985712.	661327.	124995.	476287.	1761444.	223584.	1244281.	62347.	3248.
27	IMP-WORLD	6273.	414810.	225682.	533427.	395366.	46157.	1500609.	378926.	195422.	123949.
28	TOTALS	104430.	5410749.	1943727.	1118019.	1395985.	2157305.	2086531.	1925243.	420788.	300972.

Table 4-12. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		11 EAT-DRINK	12 MISC/RTL	13 INS-FNCE	14 RE/ESTATE	15 DEVELOPERS	16 LODGING	17 PRO/SER	18 NONPRO/SER	19 LOC/GVT	20 SUBTOTALS
1	AG	0.	0.	0.	0.	0.	0.	0.	0.	0.	13000.
2	CONSTRUCTN	0.	0.	0.	5755.	49575.	6048.	0.	0.	75214.	136592.
3	SPEC/TRD	0.	0.	0.	0.	286543.	0.	0.	0.	36965.	1514710.
4	MFG	21166.	15798.	6929.	13863.	0.	904.	2184.	11016.	3624.	487968.
5	UTILITIES	31586.	25985.	13789.	33957.	6279.	38017.	14736.	16106.	257339.	507000.
6	BLDG/MATRL	0.	2650.	0.	0.	77337.	0.	0.	31863.	38936.	1072130.
7	FOOD/STRS	8837.	0.	0.	137.	0.	7234.	0.	0.	0.	16208.
8	GS-AUT/DLR	1060.	8270.	6029.	12460.	0.	13625.	5235.	43260.	80557.	424579.
9	APPRL/STRS	0.	0.	57.	0.	0.	0.	0.	0.	4407.	4465.
10	FURN/STRS	0.	0.	2171.	26409.	0.	0.	220.	0.	0.	28801.
11	EAT-DRINK	0.	0.	0.	4822.	0.	0.	0.	0.	0.	4822.
12	MISC/RTL	4418.	2853.	3026.	6016.	7932.	13388.	917.	9826.	45447.	154826.
13	INS-FNCE	2819.	8246.	2857.	1027.	73701.	10109.	2169.	4677.	17619.	210876.
14	RE/ESTATE	0.	12999.	8714.	6846.	90134.	7078.	0.	0.	0.	163152.
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.	0.	1929.	0.	0.	1809.	1900.	0.	735.	6372.
17	PRO/SER	2651.	6110.	6357.	179752.	22474.	0.	0.	1621.	24951.	264250.
18	NONPRO/SER	27396.	2884.	4857.	0.	13749.	11152.	0.	735.	38817.	171973.
19	LOC/GVT	13866.	7671.	12464.	6134.	3325.	14071.	2599.	4249.	88150.	321721.
20	SUBTOTALS	113798.	93465.	69180.	297179.	631049.	123434.	29960.	123355.	712760.	5503444.
21	HOUSEHOLDS	280159.	232071.	211099.	669982.	125689.	115929.	307126.	105649.	1610678.	5962177.
22	NONLOC/GVT	70218.	27783.	19187.	7239.	11449.	10903.	20602.	16149.	91234.	587946.
23	PROFITS	35616.	137223.	215095.	328128.	515455.	39095.	63964.	115467.	0.	2383172.
24	LND/PAYMNT	0.	0.	0.	0.	132200.	0.	0.	0.	0.	233374.
25	DEPREC	22093.	13110.	12504.	17415.	260103.	21100.	10893.	2969.	0.	892421.
26	IMP-CO/SPG	284984.	364469.	110276.	77347.	101397.	143051.	94717.	94589.	241103.	7062279.
27	IMP-WORLD	129900.	694279.	455736.	54077.	115212.	96896.	184338.	81416.	896553.	6529028.
28	TOTALS	936767.	1562400.	1093077.	1451367.	1892553.	550408.	711599.	539593.	3552327.	29153840.

Table 4-13. Changes in Final Demand When Tourist Household Spending is Removed from the Woodland Park Economy.

	ORIGINAL FINAL DEMANDS (with households removed)		CHANGES IN FINAL DEMAND ENTERED BY USER		FINAL DEMANDS AFTER CHANGE (excludes households)	
1	AG	91430.00	AG	-91430.00	AG	0.
2	CONSTRUCTN	6641638.00	CONSTRUCTN	0.	CONSTRUCTN	6641638.00
3	SPEC/TRD	800033.00	SPEC/TRD	-257193.00	SPEC/TRD	542840.00
4	MFG	861112.00	MFG	-570105.00	MFG	291007.00
5	UTILITIES	4252.00	UTILITIES	0.	UTILITIES	4252.00
6	BLDG/MATRL	1444869.00	BLDG/MATRL	-185172.00	BLDG/MATRL	1259697.00
7	FOOD/STRS	1943657.00	FOOD/STRS	-759249.00	FOOD/STRS	1184408.00
8	GS-AUT/DLR	1309186.00	GS-AUT/DLR	-682654.00	GS-AUT/DLR	626532.00
9	APPRL/STRS	387174.00	APPRL/STRS	-277538.00	APPRL/STRS	109636.00
10	FURN/STRS	211207.00	FURN/STRS	-95650.00	FURN/STRS	115557.00
11	EAT-DRINK	891018.00	EAT-DRINK	-496205.00	EAT-DRINK	394813.00
12	MISC/RTL	1268315.00	MISC/RTL	-535468.00	MISC/RTL	732847.00
13	INS-FNCE	754282.00	INS-FNCE	-637176.00	INS-FNCE	117106.00
14	RE/ESTATE	1954400.00	RE/ESTATE	-633368.00	RE/ESTATE	1321032.00
15	DEVELOPERS	2863175.00	DEVELOPERS	-945378.00	DEVELOPERS	1917797.00
16	LODGING	650120.00	LODGING	-535278.00	LODGING	114842.00
17	PRO/SER	336391.00	PRO/SER	-94723.00	PRO/SER	241668.00
18	NONPRO/SER	128062.00	NONPRO/SER	-23381.00	NONPRO/SER	104681.00
19	LOC/GVT	2001127.00	LOC/GVT	0.	LOC/GVT	2001127.00
20	HOUSEHOLDS	21001576.00	HOUSEHOLDS	-4453760.00	HOUSEHOLDS	16547816.00

Table 4-14. Transactions Table for Woodland Park When Tourist Household Spending is Removed.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		1 AG	2 CONSTRUCTN	3 SPEC/TRD	4 MFG	5 UTILITIES	6 BLDG/MATRL	7 FOOD/STRS	8 GS-AUT/DLR	9 APPRL/STRS	10 FURN/STRS
1	AG	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	SPEC/TRD	0.	1517623.	0.	0.	0.	0.	0.	0.	0.	0.
4	MFG	0.	462163.	22696.	583.	2524.	27147.	11062.	4615.	2685.	1327.
5	UTILITIES	0.	3532.	3642.	8186.	10994.	17130.	26823.	8894.	5298.	6420.
6	BLDG/MATRL	0.	1113548.	28737.	2558.	6310.	0.	0.	7572.	0.	0.
7	FOOD/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	GS-AUT/DLR	0.	38012.	124567.	7094.	107275.	21744.	0.	21780.	1686.	14792.
9	APPRL/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	FURN/STRS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	EAT-DRINK	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	MISC/RTL	0.	23455.	3448.	3837.	2464.	2686.	1549.	703.	611.	783.
13	INS-FNCE	0.	48931.	40115.	2424.	4460.	1713.	3543.	690.	4551.	2562.
14	RE/ESTATE	0.	47625.	0.	0.	0.	0.	0.	0.	0.	0.
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	PRO/SER	0.	7747.	3674.	0.	0.	968.	7050.	1310.	1407.	0.
18	NONPRO/SER	0.	25907.	17595.	10040.	22172.	9874.	4408.	1172.	204.	0.
19	LOC/GVT	0.	89912.	52783.	1503.	21879.	27937.	25184.	9008.	1441.	911.
20	SUBTOTALS	0.	3378455.	297256.	36223.	178078.	109199.	79621.	55742.	17882.	26795.
21	HOUSEHOLDS	0.	962593.	721365.	225569.	270321.	267336.	224972.	110674.	56436.	116063.
22	NONLOC/GVT	0.	110973.	73310.	16858.	46394.	31884.	37816.	59920.	10086.	13938.
23	PROFITS	0.	396943.	228139.	97619.	94654.	12846.	148827.	136381.	32518.	54618.
24	LND/PAYMNT	0.	128899.	0.	0.	0.	0.	0.	0.	0.	0.
25	DEPREC	0.	131268.	114714.	35716.	121595.	215224.	54736.	9453.	7476.	24008.
26	IMP-CO/SPG	0.	1255822.	897932.	112046.	645890.	3205966.	336896.	1533208.	47576.	4400.
27	IMP-WORLD	0.	528478.	306426.	478165.	536154.	84010.	2261122.	466914.	149124.	167919.
28	TOTALS	0.	6893432.	2639142.	1002196.	1893087.	3926464.	3143991.	2372293.	321097.	407741.

Table 4-14. Continued.

GROSS FLOWS TABLE (purchases by sector at top of table from sectors at the left....last rows show resource inputs) DOLLARS

		11 EAT-DRINK	12 MISC/RTL	13 INS-FNCE	14 RE/ESTATE	15 DEVELOPERS	16 LODGING	17 PRO/SER	18 NONPRO/SER	19 LOC/GVT	20 SUBTOTALS
1	AG	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	CONSTRUCTN	0.	0.	0.	6145.	50236.	1464.	0.	0.	89365.	147210.
3	SPEC/TRD	0.	0.	0.	0.	290365.	0.	0.	0.	43920.	1851907.
4	MFG	23664.	21862.	4493.	14803.	0.	219.	3223.	16394.	4306.	623764.
5	UTILITIES	35313.	35958.	8942.	36260.	6363.	9201.	21744.	23969.	305757.	574426.
6	BLDG/MATRL	0.	3667.	0.	0.	78368.	0.	0.	47418.	46261.	1334440.
7	FOOD/STRS	9880.	0.	0.	146.	0.	1751.	0.	0.	0.	11777.
8	GS-AUT/DLR	1186.	11444.	3909.	13305.	0.	3298.	7725.	64378.	95714.	537907.
9	APPRL/STRS	0.	0.	37.	0.	0.	0.	0.	0.	5237.	5274.
10	FURN/STRS	0.	0.	1408.	28200.	0.	0.	324.	0.	0.	29933.
11	EAT-DRINK	0.	0.	0.	5150.	0.	0.	0.	0.	0.	5150.
12	MISC/RTL	4940.	3949.	1962.	6424.	8038.	3240.	1353.	14623.	53998.	138064.
13	INS-FNCE	3152.	11412.	1853.	1097.	74684.	2447.	3201.	6960.	20934.	234727.
14	RE/ESTATE	0.	17989.	5651.	7311.	91336.	1713.	0.	0.	0.	171624.
15	DEVELOPERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	LODGING	0.	0.	1251.	0.	0.	438.	2804.	0.	873.	5365.
17	PRO/SER	2964.	8455.	4122.	191942.	22774.	0.	0.	2413.	29645.	284469.
18	NONPRO/SER	30629.	3991.	3150.	0.	13932.	2699.	0.	1094.	46120.	192987.
19	LOC/GVT	15502.	10615.	8083.	6550.	3370.	3406.	3835.	6324.	104735.	392976.
20	SUBTOTALS	127228.	129340.	44860.	317333.	639466.	29876.	44209.	183571.	846864.	6541998.
21	HOUSEHOLDS	313222.	321148.	136886.	715417.	127365.	28059.	453200.	157222.	1913722.	7121574.
22	NONLOC/GVT	78505.	38446.	12442.	7730.	11602.	2639.	30401.	24032.	108399.	715372.
23	PROFITS	39819.	189894.	139478.	350380.	522330.	9462.	94386.	171832.	0.	2720126.
24	LND/PAYMNT	0.	0.	0.	0.	133963.	0.	0.	0.	0.	262862.
25	DEPREC	24701.	18143.	8108.	18596.	263572.	5107.	16074.	4418.	0.	1072909.
26	IMP-CO/SPG	318617.	504365.	71508.	82592.	102750.	34624.	139767.	140763.	286466.	9721186.
27	IMP-WORLD	145231.	960768.	295520.	57744.	116749.	23452.	272012.	121159.	1065236.	8036184.
28	TOTALS	1047322.	2162104.	708802.	1549792.	1917797.	133219.	1050049.	802997.	4220687.	36192212.

from construction, real estate and developers), and export sectors which show spending by residents of Colorado Springs (vacation cabins, etc. and recreation) and spending by the rest of the world (mainly tourism). Our postcard survey indicated that 17 percent of the residents received their major incomes from working in Colorado Springs. This should show up as an export to Colorado Springs by the HOUSEHOLD sector. Examination of the sales coefficient table for Woodland Park (see Appendix V) reveals that almost 36 percent of household income is received from Colorado Springs. This is not inconsistent since income among commuters might be expected to be considerably higher than among locally employed and retired residents. Only about one-third of Woodland Park resident's income is received from local businesses.

None of the study regions has a significant amount of forest wood products extraction or wood processing sales. Estes Park exports $155,000, Gilpin County-Nederland exports $756,000 and Woodland Park exports $91,000 worth of agricultural and extractive materials. A total of only 36 workers are required in the forest and extractive sector in all three regions combined. In these regions, it is the various household sectors through which forest quality change causes economic impact.

MEASURING THE DIRECT AND INDIRECT IMPACTS OF CHANGES IN FOREST QUALITY

The Estes Park survey revealed that about 20 percent of both retirees and locally employed households would actually move from the region if 50 percent of the forest was destroyed (40 percent would consider moving). If 75 percent of the forest was destroyed our survey indicated that 75 percent of the retirees and 50 percent of the local

employees (including entrepreneurs) would move. Commuters did not make up a significant portion of the Estes Park population so we were unable to measure their reaction accurately. It might be assumed that retirees and commuters would have roughly similar reactions to forest quality since they are not tied to the location by a local job.

Tables 4-3 through 4-14 show the maximum change expected directly and indirectly to the local economies of the three study regions when household tourist, household commuter or household retiree spending is removed from the economies. The Estes Park and Gilpin County-Nederland Projected Transactions Tables also show employment by sector at the bottom of each column.

The impact in Estes Park of removing tourist spending is to reduce employment in the processing sectors from 1,909 to 962. If retiree spending is removed from the economy local employment falls from 1,909 to 1,617. It is also notable that certain tourist sector's employment falls to zero as tourism is removed.

In the Gilpin County-Nederland economy the removal of tourism spending reduces local employment in processing sectors from 519 to 308. The removal of commuter household spending cuts local processing sectors employment from 579 to 519. These impacts are linear and additive. Thus if both tourism and commuter spending is removed from Gilpin County-Nederland, the decline in employment would equal the sum of the two changes described above or a decline from 579 to 248 with removal of tourism cutting employment by 271 and removal of commuters cutting employment by 60. Since the extrapolation is linear with regard to the I-O model, we can easily find the reduction in local employment by sector and in-total simply by applying the appropriate

fraction to each number. If, for example, 50 percent of the trees were destroyed, and this caused a 20 percent reduction in commuter spending, the total employment impact would be to remove about (.2)(60)=12 jobs. Also the impact through tourist household spending must be included. The study by Walsh and Olienyk, "Recreation Demand Effects of Mountain Pine Beetle Damage to the Quality of Forest Recreation Resources in the Colorado Front Range," presents detailed estimates of the effects of change in forest quality on tourist visitation rates. "Demand would decrease by 0.28 percent with a one percent decrease in number of trees at recreation sites."[1] (Of course, we are ignoring Walsh's estimates of impacts via changes in the trees at a distance, etc. in this simplified example.) If 50 percent of the trees were destroyed then tourist spending might fall by a minimum of (.5)(.28)=.14, so that the employment due to tourism would fall by (.14)(271)= 38. Total impact would then be to remove 12 + 38 = 50 jobs from the local economy if 50 percent of the trees were destroyed by pine beetle and spruce budworm. However, it is clear that those employed locally would seek other jobs if the local environment were degraded. This implies that local entrepreneurs might themselves prefer to leave the area both because employees would be harder to find and more expensive to hire and also because the entrepreneur might prefer living in a better environment. The reduction of business caused by the decline of the forest quality might be the final impetus for business firms to relocate. It should be noted that there are only a few reasons that cause most persons to

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[1](Page 49 of draft copy) Richard Walsh and John Olienyk, "Recreation Demand Effects of Mountain Pine Beetle Damage to the Quality of Forest Recreation Resources in the Colorado Front Range," U.S.D.A. Forest Service Contract Number 53-82X9-9-180, July 1981.

locate in an isolated region where living costs are high and general living conditions somewhat more difficult. One important reason is the environment. Much larger environmental impacts thus could be expected in foothills communities than would occur in metropolitan areas. This contention is strongly borne out by our findings. Thus, the example in which 50 jobs are lost due to reduction in commuter and tourist spending might be more than matched by a voluntary reduction in the work force since 20 percent of local employees would desire to leave because of the degradation of the environment. Although 50 jobs would be lost directly and indirectly, over 115 workers would desire to leave the area after the destruction of the trees!

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