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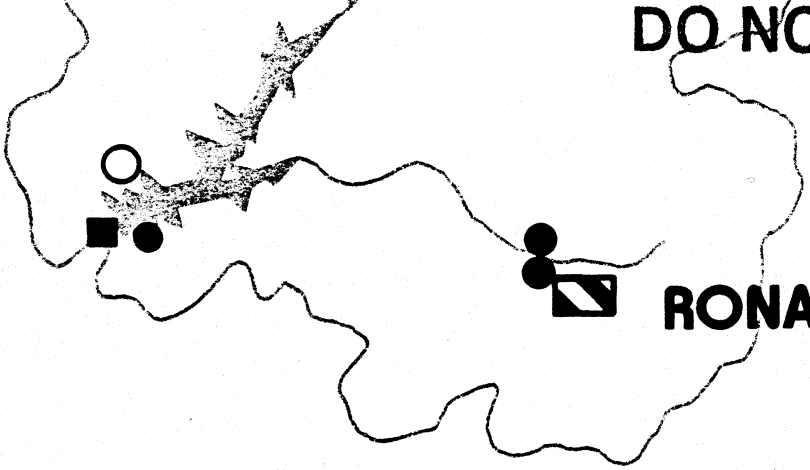

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Research Applied to National Needs

SOME SOCIAL CONSEQUENCES OF BOOMTOWNS

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LAKE POWELL RESEARCH PROJECT

The Lake Powell Research Project (formally known as Collaborative Research on Assessment of Man's Activities in the Lake Powell Region) is a consortium of university groups funded by the Division of Advanced Environmental Research and Technology in RANN (Research Applied to National Needs) in the National Science Foundation.

Researchers in the consortium bring a wide range of expertise in natural and social sciences to bear on the general problem of the effects and ramifications of water resource management in the Lake Powell region. The region currently is experiencing converging demands for water and energy resource development, preservation of nationally unique scenic features, expansion of recreation facilities, and economic growth and modernization in previously isolated rural areas.

The Project comprises interdisciplinary studies centered on the following topics: (1) level and distribution of income and wealth generated by resources development; (2) institutional framework for environmental assessment and planning; (3) institutional decision-making and resource allocation; (4) implications for federal Indian policies of accelerated economic development of the Navajo Indian Reservation; (5) impact of development on demographic structure; (6) consumptive water use in the Upper Colorado River Basin; (7) prediction of future significant changes in the Lake Powell ecosystem; (8) recreational carrying capacity and utilization of the Glen Canyon National Recreation Area; (9) impact of energy development around Lake Powell; and (10) consequences of variability in the lake level of Lake Powell.

One of the major missions of RANN projects is to communicate research results directly to user groups of the region, which include government agencies, Native American Tribes, legislative bodies, and interested civic groups. The Lake Powell Research Project Bulletins are intended to make timely research results readily accessible to user groups. The Bulletins supplement technical articles published by Project members in scholarly journals.

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ABSTRACT

Hollywood films and popular publications have romanticized the notion of the western boomtown. Scientific data indicate that romantic images are fallacious and social problems are the rule, not the exception. Residents of boomtowns are faced with numerous problems, both social and physical. Phenomenal rates of population growth stimulate direct and indirect, obvious, and subtle problems. In addition to the obvious shortages of public goods and inadequate municipal services, there are dramatic increases in both social problems and psychological maladies which suggest deterioration in the quality of life experienced by local residents. Social scientists and politicians have typically emphasized that these problems are largely the result of inadequate planning and financial resources. Data from Page, Arizona, lead to the conclusion that many of the social consequences of boomtown development are <u>not</u> ameliorated by front-end money and advance planning. Early planning and front-end money were both available through the federal government in Page, yet serious social problems still emerged and tend to persist. Even though planning and front-end money are important considerations for communities about to undergo rapid industrial development, they are not the solution to many of the social problems which will ultimately be faced. Without increased levels of funding for social science research on such communities, the understanding of the social consequences of boomtown growth will remain elusive, and community and individual disorganization will continue.

THE NATURE OF BOOMTOWNS

History as well as myths of the old American West have both contributed to the contemporary view of boomtowns.[1] The popular conception of Virginia City, Nevada, and Leadville, Colorado, for instance, is that they and others like them were wide-open and free, with few restrictions placed on individual prerogatives. Formal social control mechanisms such as police and courts were either absent or ineffectual, yet nevertheless good (with the aid of a few dedicated citizens) always triumphs over evil in such fantasies. Such notions, while inaccurate, are at least consistent with the generally held American belief that hard work conquers adversity.

Unfortunately, romantic images of boomtowns fostered by movies and television are at odds with current reality. Communities such as Conrad, Forsyth, and Colstrip, Montana; Center, North Dakota; Rock Springs and Green River, Wyoming; and Page, Arizona, testify to their decidedly unromantic nature. After studying boom growth in Rock Springs and Green River, Wyoming, Gilmore concludes: "The energy boom town in the western United States is apt to be a bad place to live. It's apt to be a bad place to do business."[2]

Before discussing the issues and problems associated with boom growth, it is necessary to examine the factors which determine whether or not a community is classified as a boomtown. Any difficulty in identifying an extant boomtown is primarily conceptual rather than empirical. Even untrained observers can readily identify most communities suffering from the boom syndrome; it is only in marginal instances that conceptual clarification is necessary for identification after the boom phenomenon has occurred. Conceptual

rigor is essential, however, if boom communities are to be identified prior to their inception in order that plans be developed and implemented to avoid the phenomenon.

In addition to increased economic activity, the most distinguishing characteristic of boomtowns is an accelerated population growth. The source of this growth typically is external economic pressures seeking to develop some local resource, social or natural.[3] Rapid population growth leads in turn to a breakdown in municipal services and other institutional facets of the community.[4] Planning lags behind need, and control of the community seems to rest with forces outside the immediate environs. Empirical evidence provides no readily available clear-cut indicator of the point at which these breakdowns occur. Most communities can probably absorb an annual population growth rate of 5 percent,[5] but they cannot absorb, without a great many problems, an annual growth rate in excess of 15 percent.[6] It would seem safe to infer, then, that as a community's annual rate of population growth approaches 10 percent, severe institutional malfunctioning has already begun or is awaiting its debut.

Boomtown growth rates (10 to 15 percent annually) generally result from one or more related industries entering an underpopulated area at the same time. The new industries are usually related for the simple reason that it is highly unlikely that several small industries would begin dissimilar projects at the same time in the same locale. Problems of obtaining a construction work force, facilities for employees, and project financing would work against such an eventuality. Historically, boomtowns were associated to a large extent with the extraction and processing of mineral deposits. The contemporary scene is similar.[7] Coal, oil,

and uranium have provided the impetus for most contemporary booms, at least in the western United States.

Because the breakdown of local community services and structures can be attributed to unusually high population growth rates, it logically follows that boom conditions will seldom be found in large metropolitan areas. Even a new industry which added 20,000 persons to a large urban community such as Chicago would be unlikely to strain the existing social structures. Despite the magnitude of the increase in absolute numbers, it would represent only a small percentage population increase which existing structures could absorb without undue strain.

Small rural communities, however, lack the capability to absorb relatively large demands upon their municipal services. It can, therefore, be expected that the boom phenomenon all too frequently will be observed in communities least well-equipped to cope with it. Furthermore, rural communities typically have antiquated or already seriously strained public facilities, without the additional stress created by the location of new industries in the town. Energy developments in Hanna[8] and Gillette, Wyoming,[9] provide vivid examples of the stress faced by rural areas experiencing rapid population growth. In fact, available evidence leads to the inevitable conclusion that rural western communities will experience the boom phenomenon with a vengeance in the next decades unless comprehensive planning is carried out and implemented.[10]

The Arab oil embargo of 1973-1974, in conjunction with assorted economic and political events, has pushed American government and industry toward a national goal of energy self-sufficiency.[11] Major energy reserves in the United

States are located in the sparsely populated areas of the Northern Great Plains[12] and Rocky Mountains,[13] including coal, oil, natural gas, uranium, tar sands, oil shale, and geothermal resources. Even in the absence of a push for national energy self-sufficiency, the diminishing supply of imported oil and continuing growth in America would eventually lead to the extraction and processing of these vast reserves. To further compound the problem, several pieces of federal legislation, such as the Rural Development Act of 1972, are working to redistribute westward the urban population of the eastern seaboard and the Midwest.[14] The end result of this predicted activity may well be to make the Northern Great Plains and the Rocky Mountain regions the "Boom Capital" of the United States, a distinction few communities would welcome.[15]

BOOMTOWN PROBLEMS

Economic Factors

Among city, county, and state officials, it is economic factors which are considered most important and which receive the most attention when an area is faced with large population increases resulting from industrial projects. Federal officials charged with evaluating a broad range of socioeconomic impacts in environmental impact statements mirror this concern and give undue attention to economic factors to the relative exclusion of equally important social factors.[16] That this is the case is not surprising. The American commitment to the spirit of capitalism explains part of this tendency. Further, economic problems become immediately evident. There is very little delay between the onset of the new population and the economic costs of providing community services for these new residents.

Many social factors, on the other hand, are not observed until some time after the influx of new residents, and some may be observed only by trained social scientists. Their effects, however, are experienced by all, even if unarticulated by the populace. Finally, economic costs and benefits are readily quantifiable, thus simplifying efforts to comply with the apparent mandates of the National Environmental Policy Act of 1969 as well as evaluations by local officials.

Business Taxes

The economic aspects of boom conditions are generally examined in terms of new taxes generated and the concomitant costs for increased social services. The latter include increased capital and operating expenditures for education, water and sewer services, fire and police protection, health care facilities, and transportation systems. If reasonable population projections can be obtained, which is no easy task in some instances,[17] costs for increased public services can be estimated prior to the population flood in a relatively simple and straightforward manner.

Even though estimates of population growth represent no insurmountable obstacle, estimates of increased tax revenues for any given project may prove somewhat more difficult; contingencies associated with construction and projection schedules, as well as fluctuations in local mill levies and property valuations, make accurate appraisals difficult. Furthermore, in some instances the tax revenues are collected by one taxing unit whereas the increased population and therefore increased municipal services are located elsewhere. Many times equity and justice require that legislative action must be taken to remedy the situation. To rectify the

imbalance, the creation of special service districts, the pre-payment of taxes by industry, or the establishment of special state revenue-sharing plans may be necessary. In extreme cases, amendments to state constitutions may provide the only solutions.[18]

Unfortunately, sought-after increased tax revenues sometimes fall short of the costs of increased services. Hawks, in a study of energy development in Colstrip, Montana, has indicated that the taxes paid by Montana Power did not cover the increased school costs, let alone the costs of other impacts.[19] A similar conclusion seems justified from data presented in a draft environmental impact statement for a uranium development on the Navajo Reservation.[20]

More commonly, however, tax revenues do eventually cover the expense of improved facilities, despite a considerable time lag between incurring additional costs and receiving increased tax revenues sufficient to pay for the improvements. Several studies have come to this conclusion.[21] For example,

> The Wyoming Select Committee on Industrial Development Impacts analyzed time required to balance costs and revenues and concluded that school districts would balance in one year after completion of the project, counties in three years, but that cities would take 25 years to balance.[22]

In addition to the direct costs of the improvements, there are interest costs, and the time lag deficit could reach into the hundreds of millions of dollars. Thus, even though most energy projects will eventually pay for the increased community services required because of population growth, the

city, county, and/or states involved must carry a considerable tax burden between the onset of the community service needs and the time when tax revenues catch up. With energy projects typically having a lag time of from 5 to 10 years between the beginning of construction and the beginning of operations when tax revenues increase dramatically, the period in which local government units must bear excessive improvement costs is relatively long. Until revenues match costs, industry is in effect being subsidized by the local population.

Personal Taxes

Apart from taxes generated by industry, additional problems are encountered because of increased property taxes borne by local property owners. Although it is frequently argued that the increased tax base created by industrial developments will relieve the tax burden, such is not always the case.[23] Inasmuch as energy development inevitably increases local property valuation, taxes will increase even if tax rates remain the same. The effect is especially damaging to the elderly, those on fixed incomes, and those whose salaries or wages have not kept pace with the higher wages of the new industry.[24]

One final problem which must be briefly mentioned is the danger faced by the permanent residents in communities undergoing rapid industrialization. It is entirely possible that bond issues necessary to finance improved services may outlive the industry. In such instances, taxes are forced even higher as the population dwindles after the close of the industry. Sweet Home, Oregon, is one such community which was left with unretired municipal bonds after the construction personnel for a dam project left the community.[25]

Planners and citizens alike must remain alert to such potential problems, even in the excitement and confusion surrounding new projects and rapid population growth.

Social Factors[26]

Although the various economic problems resulting from the boom phenomenon have social consequences, strictly speaking, these problems are not in and of themselves social. Analytically, economic and social issues must be kept distinct. The economic realm is more appropriately conceived of as being exterior to the social environment, in much the same way that the natural environment is exterior to the social environment. Alterations in either the economic or natural environments, however, have consequences for the social environment. For example,[27] if the coal reserve supplying the Jim Bridger powerplant near Rock Springs, Wyoming, were to become depleted, a wise economic decision might require closure of the plant. The resultant social consequences would include a jobless work force, with some men thrust onto the welfare rolls and others forced to gather up their families and move on to another similar project. Conversely, changes in the social structure[28] may alter the patterns in the natural and economic environments. Thus, the systems are interdependent and a change in any system results in changes in the others.

That a Pandora's box of potential social problems might result from the large population influxes associated with massive energy projects is self-evident. Even so, both the popular media and, more importantly, public decision-making documents give such problems only the most cursory attention. It thus is important to emphasize that the recognition and analysis of social considerations are absolutely critical

if an understanding of the boom phenomenon is to be attained.

Because the social environment of a boomtown is so varied, it is impossible here to discuss all of the relevant issues, even if all of them were already catalogued. Some are still only imperfectly understood. For others, good empirical evidence is lacking. For these reasons, a few of the more critical and better understood social considerations are discussed in the following subsections.

Mental Health

The least-well-developed body of literature dealing specifically with boom problems probably is in the area of personal adjustments to the stresses and strains of dwelling in a boom community. Yet even so, some important, and perhaps startling, behaviors have been observed. In an extensive study of Gillette, Wyoming, Kohrs has abstracted from his experiences and has vividly portrayed a typical scene as follows:

> A housewife, after fighting mud, wind, inadequate water and disposal systems, a crowded mobile home and muddy children all day, snaps at her husband as he returns from a 16-hour shift. He responds by heading back downtown and spending the night at a bar drinking and trading stories with men from similar circumstances.[29]

The Gillette syndrome, as this behavior patterns is frequently referred to, is not uncommon in boomtowns. In addition to the problems of inadequate municipal facilities, recreational outlets, and housing, boredom for wives and extreme work-related stress for husbands contribute to the

syndrome. One of the manifestations of the strains the milieu induces is high unemployment, absenteeism, and turnover.[30]

More serious symptoms of the boom experience are also evidenced by alarmingly high instances of divorce, depression, alcoholism, and attempted suicides.[31] The ratio of marriages to divorces in Gillette, Wyoming, was 1.8:1, while in a nearby county the ratio was 3.3:1, nearly twice as great. The extent of alcoholism is reflected by the fact that almost 23 percent of the county arrests were related to drinking. The jail became a holding pen to restrain drunks and protect wives from their husbands.[32]

More tragic is the effect boomtown living had upon the children. Schools provided the stage for their dramas. Gillette students demonstrated poor adjustment to school. Low achievement levels accompanied by truancy and high delinquency rates were observed.[33] In Forsyth, Montana, which is also undergoing energy development, Gold observed a large increase in the number of assaults and cases of venereal disease among students.[34]

The general conclusion that must be reached from these studies is that the social milieu of boomtowns is not conducive to good mental health. The fact that the Southwest Counseling Service, Rock Springs Mental Health Center, saw an almost 90-percent increase in cases between 1970 and 1975 provides additional support for this conclusion.[35]

Similar consequences in other boomtowns cannot be avoided, however, merely by improving municipal facilities. Part of the solution must be found by addressing the psychological problems created by overcrowding. However, a more

important causal variable resides in the transformation of the existing social structure into something new. Because of the rapid population growth rate, a new social structure is superimposed upon an old one, and until a new equilibrium is attained, many forms of conflict are likely to be observed.

Value Conflicts

Values can be conveniently thought of as abstract standards for behavior which are shared by groups or subgroups of a society. As such, they are general principles by which persons and groups evaluate alternative behaviors. The sources of values are to be found in religious doctrines, regional and/or national traditions, and unique personal histories, to name just a few.

The manner in which values are interpreted in concrete social situations and the degree to which they are held in common by members of a geographically bounded community are variable. Rural communities are, by and large, surprisingly homogeneous and relatively conservative in both their value orientations and their interpretations of these values. In contrast, in-migrants to energy developments are decisively more varied in their value orientations and considerably more liberal in their applications thereof. Evidence of such differences can be inferred from the fact that in-migrants tend to be from urban areas, are younger and better educated, have fewer children, and are better paid than their rural counterparts.[36]

Given these differences, it is clear that the potential for value conflicts and eventual change is large. Both Turner[37] and Smith[38] have noted that rural values change as

the communities modernize or become more urban. One of the obvious changes brought about by the boom phenomenon of energy development is urbanization, making it very likely that rural value orientations will change in that direction, perhaps after a period of conflict.

Even strongly supported religious tenets are not immune to such shifts. Smith found that urbanization brought with it changes in Mormon (Latter-Day Saints) adherence to their strict dietary code, i.e., taboos about smoking and drinking. The more urban the experience, the less orthodox in behavior the Mormons were.[39] The implications for energy resource states with large Mormon populations like Utah, and to a lesser degree Arizona, New Mexico, and Wyoming, are clear; energy development may well seriously threaten adherence to religious dogma. Other religious groups will undoubtedly face similar threats, with the degree of threat related to the particular tenets of each creed. From the perspective of some religionists, therefore, moral decay will be a likely outcome of energy development in the Rocky Mountains and Northern Great Plains.

Personal Interaction Patterns

One of the least obvious types of structural dislocations that may occur in boomtowns involves shifts in friendship patterns. Friends who disagree on the merits of energy developments, or on the means for overcoming the resultant local problems, may become enemies. On the other hand, individuals who have nothing in common prior to the boom may develop strong friendships. Personal interaction patterns will thus fluctuate as a result of economic and social factors over which local residents have little or no control. In an ethnographic study of coal development in eastern

Montana, Gold found that a merchant-rancher alliance disintegrated as the population increased. Merchants were reaping the economic benefits of increased retail trade, while their old friends, the ranchers, were fighting to maintain their livelihood and way of life.[40] Because of this, friendships between ranchers and merchants dissolved and new friendships between merchants and the energy industry evolved.

More subtle consequences of economic shifts have also been observed in rural areas. While many justify energy developments because of anticipated increased incomes for local residents, not all residents share equally in the economic boom. Even when income is increased, women and the elderly do not fair as well as other segments of the community.[41] Thus, in some respects economic growth provides the means for increased social stratification in a community. The elderly and female will lose status, which can have a significant effect on friendship patterns; friends tend to possess similar social statuses.

Even if old friends do not become fast enemies, there is always the potential for conflict between the oldtimers and the newcomers. The basis for these conflicts is to be found, of course, in the different value and cultural orientations of the two groups. Local prices and services may serve to engender animus, not to mention local customs and laws. In a state like Utah, such a simple issue as local liquor laws could well serve as stimulus for hostility toward coal miners who will migrate in as coal reserves are exploited.

Antagonisms need not develop only within the community but may stretch beyond the local environment. A ready

example of conflict which extends beyond community boundaries has recently been observed in southern Utah regarding the proposed Kaiparowits power project.[42] Local boosters for the proposed project (which was cancelled in April 1976) actively sought to negate the activities of those who opposed the facility and blamed them for its demise. When the sponsoring companies withdrew from the project, a rally was held in Kanab, Utah, where those perceived as active opponents of the project were hung in effigy. Media accounts of these events lead to the conclusion that the observed behavior represented more than a mere public demonstration.

The point of all this is not to evaluate the appropriateness of either groups' behavior, but rather to point out that the potential for conflict and hostile interactions is present even when the individuals or groups involved do not reside in the same community. Energy developments are apt to create numerous conflict situations before agreement is finally reached upon how the United States ought to proceed in the matter, and the conflicts can and will precede the actual projects.

Institutional Interaction Patterns

Changing friendship patterns and the establishment of conflict boundaries can also influence the structural arrangements in voluntary organizations such as community service and recreational groups. For example, it becomes difficult to participate in a bridge or literary club if past friendships with members of the group have vanished. Reduced activities in voluntary groups create more problems for wives than for husbands and for in-migrants than for locals. Wives of in-migrants to boomtowns especially suffer from boredom

resulting from too few recreational activities and too few friends.[43]

At the same time that conflict boundaries change friendship patterns, they provide the basis for the creation of interest groups. For example, a group ("ALIVE"--American League for Industry and Vital Energy) has been organized in southern Utah with the main purpose of promoting energy development in general and the Kaiparowits Plateau coal reserves in particular. Ideologically at least, it is opposing various environmental groups such as the Sierra Club and the Environmental Defense Fund. ALIVE has also been involved in lobby activities in Washington, D.C., for the currently defunct Kaiparowits power project.

Special interest groups such as ALIVE, as well as in-migrants with no recognizable organizational structure, could easily alter the existing political and influence structures in boom communities. With reference to formal political structures, Nellis has noted that as a result of energy developments in Hanna, Wyoming, the size of the Democratic majority was drastically reduced, but the Republican Party increased its ranks by only about 1 percent. Instead, the shift which occurred was to the Independent Party.[44]

By way of example once again, similar consequence might be expected if large-scale coal production materializes in predominantly Republican southern Utah. In the first place, if a project the size of the proposed Kaiparowits development were to be undertaken in the Kane or Garfield County area of Utah, roughly 20,000 new residents would descend upon two counties whose combined population in 1970 was less than 6,000. Second, coal miners as a group are predominantly Democrats. If the Hanna, Wyoming, model holds true,

then the in-migrating coal miners are likely to vote either Democrat or Independent. The results could be politically devastating, as political power and philosophic dominance shifts away from the local residents. Municipal as well as county ordinances could be readily altered. A real possibility exists that county seats, those traditional sources of pride and generators of retail trade in rural counties, could be moved to new boomtowns, thereby denying extant county seats income, pride, and convenience.

On a less formal level, political control, i.e., leadership in various voluntary organizations, would also likely shift to the in-migrants. Andrews and Bauder have observed this occurrence to some extent in a rural Ohio county undergoing an industrialization process nowhere nearly as massive as proposed western energy developments. Even with the smaller influx of population, newcomers tended to occupy leadership positions formerly held by oldtime residents, and the number of power groups tended to increase.[45] This occurred despite the fact industry management by and large resided out of the county. Gold has also noted a shift in the power base from ranchers to industrial personnel in eastern Montana.[46]

It should be stressed that conscious, organized takeovers of local politics by newcomers can provide only a partial explanation for shifting political power. In addition, the numerical majority enjoyed by newcomers in boomtowns makes it highly probable that they will be nominated for office in greater numbers than will oldtimers. Also, many of the energy industry's executives will possess skills relatively rare in rural populations as well as experience in dealing with boomtown problems, which will make them popular with voters. Finally, oldtimers holding political office

at the time of the boom are faced with problems few are capable of dealing with. As problems arise, public indignation follows, with blame heaped upon the incumbent. The likely result is that the incumbent will be voted out of office. Although this particular phenomenon would occur whether the official were an oldtimer or a newcomer, previously elected officials are especially vulnerable during boom periods. Turnovers are rapid--they go with the territory.

Community Overview

Boom communities are like a too-full kettle simmering over the flame of industrial development. The contents of the kettle are continually shifting and threatening to spill out and dampen the fire. An aura of uncertainty pervades many boom communities. The constant shifts in both personal and institutional arrangements are hard on industry and community alike. The changing behavioral norms are adhered to by only limited segments of the total community at any given time. Life becomes very difficult for many individuals as they attempt to order their lives in the absence of firm and widely accepted norms.[47]

While oldtimers watch their old, familiar community change in directions over which they may have no control, newcomers attempt to adjust to a community they are in, but not of. The bulk of the in-migrants to most boomtowns are transients, by choice or by chance. The bulk of the in-migrants during the actual boom phase are construction workers; they are notoriously mobile, moving from one site to another. In their study of five energy-impacted communities in Montana, North Dakota, and Wyoming, Mountain West Research Incorporated[48] discovered that just over 10 percent of the

in-migrant construction workers planned on remaining in the community. Fifty-one percent of those same workers indicated that they would stay only so long as the job lasted.[49] Presumably because their plans include only temporary residence in a community, construction workers feel little identification with the town; home is where their trailer or mobile home is parked, and home can move on 24-hour notice. Home in the traditional sense of family, friends, and permanence, if it exists at all, is located elsewhere.

Transient populations both in the popular mind and in reality have come to be associated with high crime rates. Boomtowns prove no exception to the rule. Even though details of the types of crimes committed in boomtowns are generally not available, gross measures are illustrative of the severity of the problem. In Rock Springs, Wyoming, Gilmore and Duff report that between 1972 and 1973 complaints received by the police increased 60 percent.[50] The police budget in Colstrip, Montana, was increased 40 percent in a year's time.[51] And Kohrs found that police expenditures in Gillette, Wyoming, doubled between 1968 and 1971.[52]

The high crime rates in boomtowns not only indicate a deterioration in the quality of life, but they also present special problems for law enforcement officials. Two such problems should be discussed. First, with boom growth there is always the danger that a double standard of law enforcement will develop, one for oldtimers and one for newcomers. This is analogous to the problem faced by travelers passing through rural hamlets, except that in this instance the travelers are residents in the community, even if they are not of it. The ethical and legal implications of such a dual system are clear and need not be discussed further.

Second, under boom conditions there is a breakdown of informal social controls. As the population increases, it becomes even more difficult for community residents to apply informal sanctions effectively. At a minimum, they are effective only when shared beliefs exist and when the male-factor is personally known, at least in terms of his/her kin network, and is willing--for whatever reason--to accept the sanctions as legitimate. Many problems typically processed by metropolitan police departments are routinely handled in rural villages through informal social pressures to affect conformance with local law. Friends, relatives, and church leaders, acting singly or in concert, pressure the wrongdoer to alter his behavior so as to conform with both laws and local expectations, i.e., norms.

Informal social control mechanisms cannot function effectively, however, when population size precludes community residents from becoming acquainted with one another. They do not function at all when the scope of shared beliefs and norms is extremely restricted, as is the case in boomtowns.

Rural police have been known in the past to actively relinquish police and court functions to the friends, family, or religious leaders of a lawbreaker. Moreover, like the community, the police have frequently relied upon informal sanctions--a stiff lecture, a cuff behind the ear--rather than upon more universally accepted police procedures. But as population increases during a boom and rural communities become more urban, a perceptible shift in the attitudes of the citizenry occurs, bringing into question the use of informal social controls. The source of this change is to be found in the urban experiences of the in-migrants, many of whom have discovered through personal experience that

equal protection can be achieved only when universal criteria are applied to all offenders. In their view, a personalized justice system depends too heavily upon social status, political power, and kin.

For a change, the solution to this boom-related problem is simple and straightforward. Prior to the boom, police should be given specialized training as is received in metropolitan police departments. The emphasis should be upon dealing with all offenders in a professional manner, i.e., value neutral, uniform, and in accordance with codified laws. Such training, however, does not negate the need for increased personnel and operating budgets also which must precede the boom period.

PAGE, ARIZONA: AN ATYPICAL BOOMTOWN

In the early 1950s Manson Mesa was an isolated, desolate, sun-soaked, and wind-swept area on the northwestern border of the Navajo Reservation. From the top of the mesa one could look down upon the Glen Canyon of the Colorado. The nearest paved road was U.S. 89, approximately 20 miles (32.2 kilometers) to the southeast.

In August 1957 ground was broken in preparation for the construction of a 900-megawatt Glen Canyon Dam (GCD) hydroelectric facility. With it came a radical alteration in the mesa landscape. Under the auspices of the Bureau of Reclamation, Page, Arizona, was conceived, planned, and operated to provide housing and municipal services for the government employees and construction workers at the site.[53]

A short 4 years after the completion and dedication of Glen Canyon Dam, construction was begun on the 2,250-megawatt

coal-fired Navajo Generating Station (NGS). Thus in the span of just 9 years, two major electric generating facilities were begun, both of which stimulated population growth of truly epidemic proportions. Between 1957 and 1958 the population of Page grew over 150 percent as GCD construction got underway. The construction start at NGS led to a growth rate of approximately the same magnitude in the interim 1970 to 1971 period (Table 1).[54]

Implicit in the notion of boom is the obverse: bust. Population declines in Page in various years between 1957 and 1976 were very nearly as radical as the growth had been. Nevertheless, during the several growth years, yearly growth rates nearly always exceeded 15 percent. But Page is a unique community which has survived population fluctuations which would have crippled normal communities. Not only has Page experienced two booms in less than 20 years, it is an atypical boomtown inasmuch as until March 1975 it was a federal community.

Prior to 1975, Page was under the sole jurisdiction of the Bureau of Reclamation.[55] Every aspect of the community, with the exception of the schools, was under the direct control of the Bureau and hence the federal government. The Bureau controlled even the number and nature of retail outlets acceptable in the fledgling community. More important, however, is the fact that federal funds were used for planning and installation of all municipal services. After the municipal facilities were completed, the Bureau continued to subsidize the costs of these services. For example, it charged residents only about 33 percent of the actual cost of delivering water to homes and businesses.[56]

Table 1: Average population, number of crimes, and percent change in Page, Arizona, 1957 to 1976

Year	Population	Percent Change	Number of Crimes	Percent Change
1957[a]	1330		--	
		+152.5		--
1958[a]	3358		--	
		-2.5		--
1959[a]	3274		--	
		+15.9		--
1960	3794		333	
		+50.6		--
1961	5712		--	
		-1.0		--
1962	5653		--	
		-14.9		--
1963	4813		--	
		-41.4		--
1964	2822		--	
		-38.4		--
1965	1737		244	
		-2.5		--
1966	1694		--	
		-22.2		--
1967	1318		--	
		+2.9		--
1968	1356		--	
		+34.7		--
1969[a]	1826		--	
		-21.2		--
1970[b]	1439		395	
		+150.4		+118.7
1971	3603		864	
		+55.9		+63.7
1972	5618		1414	
		+28.9		-3.0
1973	7240		1372	
		-4.7		-52.2
1974	6902		656	
		-14.6		--
1975	5892		--	
		-19.3		--
1976[a]	4754		--	

[a]Estimate using regression techniques from Ives, Schulze, and Brookshire, supra note 3

[b]U.S. Bureau of Census, U.S. Census of the Population: 1970, Volume 1, Characteristics of the Population, Part 4, Arizona (1973)

Source: Page, Arizona, City Offices, U.S. Bureau of Reclamation

Page was thus protected from the economic burdens of supplying public services to a rapidly expanding population even as incomes were augmented indirectly, for example, by the subsidized utility rates. Given these factors, one might be tempted to rhapsodize about the idyllic situation and speculate that boom problems were nonexistent in the town. Such has not been the case, however. Page, too, has suffered from the same social problems faced by other boom communities, even though the major economic burdens of expansion were accepted by the federal government.

Like other one-industry towns, Page has suffered whenever the industry has suffered. In 1959, construction on the dam was halted by a strike. Part of the population was forced to leave during the 6-month absence of construction employment, and some businesses were forced to shut down.[57] More important and less expected, Page has experienced interpersonal and interinstitutional conflicts just as have other boomtowns. This is all the more surprising since all of the residents were originally in-migrants. Also, because Page is such a new town, traditions and social structures have had relatively little time to coalesce and become rigid. Oldtimers in Page should better understand the problems and world views of newcomers than would longtime residents of other western boomtowns. Page residents, better than most, should understand the problems associated with transiency.

Transiency

The most obvious and readily obtained index of transiency is the nature of housing in a community. Residents in towns with a high proportion of mobile residential units

Table 2: Distribution of trailers as housing units in Page, Arizona, 1960 through 1975 (excluding 1969 and 1970)

Year	Reported Number of Units	Number of Trailers[b]	Percentage of Trailers
1960[a]	866	569	65.7
1961	1549	1151	74.3
1962	1521	1126	74.0
1963	1313	905	68.9
1964	809	458	56.6
1965	488	165	33.8
1966	463	135	29.2
1967	375	68	18.1
1968	405	90	22.2
1971	995	471	47.3
1972	1618	1108	68.5
1973	2160	1564	72.4
1974	2090	1476	70.6
1975	1854	1234	66.6

[a]Figures are for June, except 1975 which was available only for April

[b]Includes both mobile homes and travel trailers which are permanent dwellings

Source: Page, Arizona, City Offices, U.S. Bureau of Reclamation

are more transient than are those in communities with a lower proportion of houses on wheels. As can be seen in Table 2, Page has an extremely high proportion of mobile housing units. Only in the interim between the completion of GCD in 1966 and the beginning of construction of NGS does the proportion of mobile units approach what would be expected in a "normal" community.[58]

In 1974 the newcomers, those who arrived in Page after 1970, represented approximately 80 percent of the total population.[59] Of those sampled, nearly 95 percent stated they were residing in Page for business or economic reasons, whereas oldtimers gave economic reasons only 57.1 percent of the time (Table 3). The majority of oldtimers (64 percent) and newcomers (57 percent) alike originally lived in one of the Four Corners states (Utah, Colorado, Arizona, and New Mexico) immediately prior to arriving in Page. However, only 2.9 percent of the Page respondents have moved there from communities in the immediate vicinity. More illustrative of the degree of transiency is the fact that respondents indicated they had resided in an average of 12.6 communities before moving to Page, with newcomers averaging 14.6 and oldtimers 5.7. Thus, the newcomers were even more transient than the oldtimers who had migrated to Page between 1957 and 1969.

Further evidence of the high level of transiency in Page is provided in Table 4. As can be seen, 60.7 percent of the newcomers and 42.9 percent of the oldtimers plan on remaining in the community only until the job ends. Again, both groups are transient, but the newcomers are more transient.

Table 3: Reason for living in Page, Arizona for oldtimers and newcomers, 1974

Reasons	Oldtimers[a] (percent)	Newcomers (percent)
Family	21.4	1.8
Business[b]	57.1	94.6
Area Desirability	21.4	3.6
Total	100.0 (N=14)[c]	100.0 (N=56)

[a]Oldtimers are those residents who arrived in Page prior to 1970 and the construction of the Navajo Generating Station

[b]Includes employment transfers and retail trade activities

[c]N = number of respondents

Table 4: Plans for continued residence in Page, Arizona, 1974

Plans	Oldtimers[a] (percent)	Newcomers (percent)
Remain Permanently	42.9	21.4
Remain as Long as Job Lasts	42.9	60.7
Remain Until Obtain a Better Job	0.0	5.4
Remain Until Retirement	7.1	0.0
Leave as Soon as Possible	0.0	1.8
Other	7.1	10.7
Total	100.0 (N=14)[b]	100.0 (N=56)

[a]Oldtimers are those residents who arrived in Page prior to 1970 and the construction of the Navajo Generating Station

[b]N = number of respondents

In the period between the completion of construction on GCD and the beginning of construction on NGS, Page's population appears to have changed very little. Today's newcomers resemble newcomers of 15 years ago according to descriptions of the population at that time by Frost,[60] Smith and Sharda,[61] and Williams, Frost, and Sibley.[62] The same distinctions among Bureau personnel, merchants, and construction/energy company personnel can be made today as were made then, except the importance of Bureau personnel has decreased as their numbers have decreased. Many residents still do not identify strongly with the community, undoubtedly due in part to its transient nature. Transiency, then, remains one source of intracommunity conflicts and schisms.

Community Conflict

Status distinctions made by Page residents were obvious in 1974, even if local leaders attempted to mask them.[63] The divisions were between oldtimers and newcomers, with each group ranking itself above the other. Oldtimers seemed to base their estimates of status on permanency and respectability, while newcomers generally relied on income.[64] Moral and economic worth were thus the major yardsticks for measuring status, with each group using a different criterion. The ranking criterion used by the oldtimers seemed to generate the greater hostility, at least as evidenced by the surprising number of unsolicited comments made by newcomers during interviews. They did not feel they were receiving either proper respect or a fair shake in the local retail outlets.

The battle line for the conflict was drawn between the construction workers with their high wages and the local

merchants. This dichotomy very nearly coincides with the newcomer-oldtimer distinction, and for convenience will be treated here as identical. In any event, the local merchants resented the fact that they had difficulty in obtaining a labor force because of the higher wages available at NGS, while the construction workers thought they were being charged extremely high prices by the merchants. Part of the worker response to this was to purchase relatively large proportions of their goods in other communities.[65]

This behavior cannot be attributed solely to the attitude of the workers, however. Page prices were generally higher than those in the surrounding communities. For example, grocery prices in Page were almost 23 percent higher than in Flagstaff, Arizona, and almost 2 percent higher than in nearby Kanab, Utah, a community less than half the size of Page. Although the phenomenon of purchasing groceries in communities other than the one of residence is not unusual, it is exaggerated in Page.[66]

The community split was perhaps aggravated when the split was transferred from the interpersonal to the institutional level. The dispute focused on a $10 million school bond issue which was approved by the citizenry. Both oldtimers and newcomers frequently claimed that newcomers voted for the issue in order to spite the permanent residents.[67] Some even speculated that the school superintendent was hired for his organizational skills for the express purpose of passing the bonds.

The truth or falsity of the accusations is unimportant. What <u>is</u> important is that conflicts arose between oldtimers

and newcomers, conflicts that had serious consequences for both groups. The importance of the conflict is indicated by the attempts of leaders to mask it.[68] All of this points to a problem faced in most boomtowns: integrating new residents into the existing social structure. The evidence indicates that Page, even with the experience of GCD as a lesson, was unable to learn from past experiences and avoid all of the problems created by a new influx of people.

Crime

A community with the rapidly growing population which is not integrated into the social structure and which is highly transient, i.e., a boomtown, would be expected to experience an increase in crime rates. In this respect, Page is not atypical. Complete data for 1957 forward are unavailable, but data for 1960, 1965, and 1970 through 1974 are presented in Table 1 along with population data. The relationship between crime and population growth is presented in Figure 1, which shows that they roughly parallel one another.[69] The rates of increase each year vary considerably, with population increasing more rapidly than crime in some years and less rapidly in others. For example, between 1970 and 1971, as construction activities on NGS became more pronounced, the annual number of crimes increased 118.7 percent, while the population increased 150.4 percent. But the percent increase from 1971 to 1972 was higher for crimes than for population (63.7 percent versus 55.9 percent).[70]

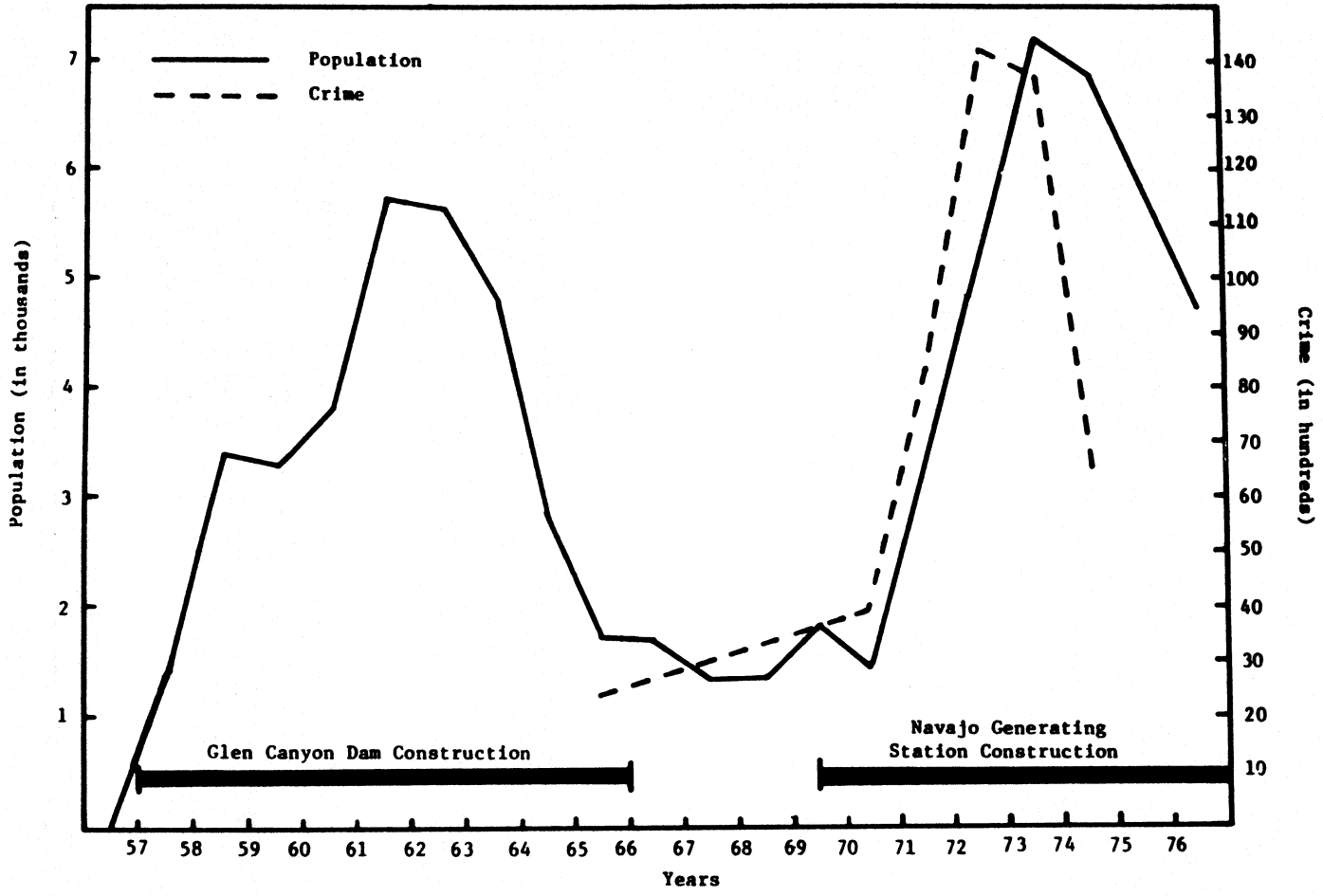

Figure 1: Population and Crime Statistics for Page, Arizona, 1957-1976

Sources: Population statistics from U.S. Bureau of the Census, 1 U.S. Census of Population: 1970, Part 4 (1970); Regression estimates from Ives, Schulze, and Brookshire, supra note 3; crime statistics from Page Police Department (1976) (Page, Arizona).

SUMMARY AND CONCLUSIONS

There can be no doubt that rapid population growth has in the past created social problems which have made the lives of thousands of Americans less enjoyable than they could and should have been. As Kohrs has noted, "The history of power production--synonymous with 'boom development' --in Wyoming is a dismal record of human ecosystem wastage. Frontier expansion without adequate planning has left cities crippled by shameful environments which cause human casualties."[71] And industry too is confronted with problems stemming from boom developments. As living conditions deteriorate, employees are absent more often and quit with greater frequency, thereby reducing productivity.[72]

Given the obvious social and less obvious industrial costs, why then do boomtowns and their resultant problems persist? It would seem such a simple matter to eliminate rapid population buildups by stretching the construction period over a longer period of time so that fewer employees would be necessary at any given time. As an additional benefit, employees would be able to remain at one site for a longer period of time, thereby increasing the likelihood they would gain a sense of community identification and integration.

Industry would not, however, find this solution acceptable. The economic costs of lowered productivity due to unfavorable living conditions appear to be more than offset by the savings attained by compressing the construction period into as short a time period as possible. The savings come from reduced interest accumulations on loans for salaries and wages.[73] The present national mania over energy self-sufficiency would also conflict with this solution.

If economics and ideology preclude lengthening the construction phase on energy projects, then the focus must continue to be upon planning to avoid problems--or if unavoidable, to mitigate them. Unfortunately, however, planning for the social consequences of boomtowns has, on the whole, been greatly neglected. In spite of the important interrelationships among natural, economic, and social environments, the major focus of most studies intended as tools for decision-makers has been limited largely to the former two categories. The Page example makes amply clear the fact that social problems exist even when planning and front-end monies have been provided to the impacted community.

Why the social aspects of the boom phenomenon have been so largely ignored is not entirely clear, but at least part of the answer is to be found in political decisions to allocate greater resources to solving problems of the natural and economic environments. Whatever the reasons, elected officials, planners, and ordinary citizens appear to pay little heed to the social consequences of boom growth. Whether family life is strengthened or weakened, whether the elderly are respected or eschewed, and whether life in boomtowns is above or below acceptable standards are just some of the issues which are virtually ignored.

The environmental impact statement is a prime example of the tendency to ignore potential social consequences. Typically there is only superficial, cursory attention in the impact statement to the social impacts a proposed development might engender. Unlike assessments of the possible impacts upon the natural environment, social impact assessments almost never utilize data collected specifically to answer the questions at hand. Instead, if data are used at all, they are primarily nothing more than demographic

information available from federal and state agencies, and such data only infrequently provide answers to the questions asked. In fact, the use of available data tends to direct attention away from questions that need to be answered and re-directs attention towards questions that can be answered.[74]

The end result of this practice is that social impact sections in impact statements give the appearance of afterthoughts, included merely to satisfy the formal requirements of the National Environmental Policy Act. The suspicion is confirmed when it is noted that available social science literature does not appear to have been consulted. Admittedly, much of the literature is of a fugitive nature; that is, it is frequently unpublished, or published in little-known sources. It is, nevertheless, available. Extensive research has been done on rural industrialization, and much of it is directly related to energy development. By ignoring such literature, including useful theories found therein, not only do known solutions go unheeded, but known questions go unasked.

So long as the assessment of social problems resulting from energy development continues on its present tack, boomtown problems will continue. Persons who, by choice or chance, reside in energy-rich areas will be subjected to living conditions which persons in more urban locations would find quite intolerable. Long-time residents must accept the new conditions or move, leaving friends, family, and traditions. Among in-migrants, the options are no better. Many possess skills which are dependent upon large-scale construction, e.g., energy projects; they thus have little choice but to accept conditions as they find them or to seek new occupations. The alternatives for in-migrants

and oldtime residents are the same: either accept living conditions which are marginal or surrender cherished objects or activities.

In order to eliminate or mitigate the problems associated with large-scale energy projects, i.e., boom problems, decision-makers and planners must be armed with adequate social impact assessments which satisfy the spirit as well as the letter of the National Environmental Policy Act. Although this will require more time, money, and effort, Americans can ill afford to ignore such pressing and important issues any longer.

FOOTNOTES

1. See generally Gurian, The Make-Up of a Mining Town, 4 Journal of the West 97-106 (1965); Mann, The Decade After the Gold Rush: Social Structure in Grass Valley and Nevada City, California, 1950-1960, 41 Pacific Historical Review 448-504 (1972); Lavender, This Wondrous Town: This Instant City, 4 American West 4-14 (1967).

2. Gilmore, Boom Towns May Hinder Energy Development, 191 Science 535 (1976).

3. See B. Ives, W. Schulze, and D. Brookshire, Boomtown Impacts of Energy Development in the Lake Powell Region, (1976) (Lake Powell Research Project Bulletin No. 28, Institute of Geophysics and Planetary Physics, University of California at Los Angeles).

4. See Gilmore, Boom Towns May Hinder Energy Development, 191 Science 535 (1976).

5. J. Gilmore and M. Duff, Boom Town Growth Management: A Case Study of Rock Springs - Green River, Wyoming 2 (1975) (Westview Press).

6. See note 2, supra at 536.

7. See note 5, supra. See also Nellis, What Does Energy Development Mean for Wyoming, 33 Human Organization 229-238 (1974); Mountain West Research, Incorporated [hereinafter cited as MWRI], Construction Worker Profile: Final Profile (1975) (prepared for the Old West Regional Commission); U.S. Bureau of Mines and Environmental Protection Agency [hereinafter cited as USBM&EPA], A Listing of Proposed, Planned or Under Construction Energy Projects in Federal Region VIII: A Joint Report (1975) (mimeograph prepared by the Subcommittee to Expedite Energy Development of the Bureau of Mines and the Socio-Economic Impacts of Natural Resource Development Committee of Environmental Protection Agency).

8. See Nellis, supra note 7.

9. See A. Blevins, J. Thompson and C. Ellis, Social Impact Analysis of Campbell County, Wyoming (1974) (Wyoming Environmental Institute, Laramie, Wyoming).

10. See, e.g., U.S. Department of Housing and Urban Development [hereinafter cited as USDHUD], Rapid Growth From Energy Projects: Ideas for State and Local Action: A Program Guide (1976).

11. See Cockburn and Ridgeway, Energy and the Politicians, 23 New York Review of Books 19-25 (1976); Montana Department of Natural Resources and Conservation [hereinafter cited as MDNRC], National Energy Self-Sufficiency: Its Viability and Implications for Montana, 1 Western Wildlands 6-15 (1974).

12. See Josephy, Agony of the Northern Plains, Audubon, July (1973).

13. D. Carey, J. Wegner, O. Anderson, G. Weatherford, and P. Perkins, Kaiparowits Handbook: Coal Resources (1975) (Lake Powell Research Project Interim Report, Institute of Geophysics and Planetary Physics, University of California at Los Angeles). See also USBM&EPA, supra note 7.

14. See P. Morrison, S. Mazie, R. Painey, S. Prunell, H. Boissevain, and S. Coleman, Review of Federal Programs to Alleviate Rural Deprivation (1974) (prepared for the Edna McConnell Clark Foundation: R-1651-CF, RAND Corporation); Nolan and Heffernan, The Rural Development Act of 1972: A Skeptical View, 39 Rural Sociology 536-545 (1974); G. Summers, Nonmetro Industrial Growth: Warts and All (1975) (Center of Applied Sociology, University of Wisconsin, Madison); G. Summers. S. Evans, F. Clemente, E. Beck, and J. Minkoff, Industrial Invasion of Nonmetropolitan America: A Quarter Century of Experience (1976) (Praeger Publishers).

15. See Federation of Rocky Mountain States, Resource City, Rock Mountains (1974) (Denver, Colorado); Northern Great Plains Resources Program, Effects of Coal Development in the Northern Great Plains: A Review of Major Issues and Consequences at Different Rates of Development (1975) (Denver, Colorado).

16. See, e.g., U. S. Department of the Interior [hereinafter cited as USDI], Final Environmental Impact Statement: Kaiparowits Project (1976); USDI, Draft Environmental Impact Statement: Navajo - Exxon Uranium Development (1976); USDI, Final Environmental Impact Statement: Proposed Coal Gasification Project and Expansion of Navajo Mine by Utah International Inc. (1976); USDI, Draft Environmental Impact Statement: Kaiparowits Project (1975); USDI, Draft Environmental Impact

Statement: Western Gasification Company (WESCO) Coal Gasification Project and Expansion of Navajo Mine by Utah International Inc. (1974).

17. See USDHUD, supra note 10 at 3-9.

18. See Wilson, Managing a Growth Explosion (1976) (Third Biennial Report to the U.S. Congress); USDHUD, supra note 10.

19. Hawks, Units 3 and 4 at Colstrip, 1 Western Wildlands 29-32 (1974).

20. USDI, Draft Environmental Impact Statement: Navajo - Exxon Uranium Development (1976). For criticism see USDI, Final Environmental Impact Statement: Navajo - Exxon Uranium Development pp. 1-12 (1976).

21. E.g., USDHUD, supra note 10.

22. USDHUD, supra note 10 at 29.

23. See, e.g., D. Derr and V. Casper, Urbanization and Its Effects on Land Use, Local Services and Public Finance (1970) (Economic Information Report, Department of Agricultural Economics and Marketing, Rutgers University); Gold, How Southeastern Montanans View the Coal Development Issue, 1 Western Wildlands 16-20 (1974); Hawks, supra note 19; P. Polzin, Water Use and Coal Development in Eastern Montana (1974) (Montana University Joint Water Resources Research Center, Bozeman).

24. See S. Albrecht, Sociological Aspects of Power Plant Siting (1972) (unpublished paper, Brigham Young University); Clement and Summers, Industrial Development and the Elderly: A Longitudinal Analysis, 28 Journal of Gerontology 479-483 (1973); Gold, supra note 23; Hawks, supra note 19; Nellis, supra note 7.

25. Smith, Hogg, and Regan, Effects of Industrial Development on Heads of Households, 14 Growth and Change, July, 16-19 (1973); Smith, Hogg, and Regan, Economic Development: Panacea or Perplexity for Rural Areas? 35 Rural Sociology, June, 173-186 (1971).

26. Psychologists may wish to claim that some of the problems discussed in this section are not social but rather psychological. Technically, of course, this claim would be accurate. However, inasmuch as the consequences of psychological disorders are intimately

linked to the social structure, both psychological and social problems are discussed together here.

28. For reasons previously discussed and given current planning procedures, it is assumed for convenience that major energy projects imply boom conditions in a rural atmosphere.

28. Refers to patterned behaviors, at both the personal and institutional levels.

29. E. Kohrs, Social Consequences of Boom Growth in Wyoming (1974) (unpublished paper, University of Wyoming).

30. Boom conditions thus create problems for industry. Ives, Schulze, and Brookshire, supra note 3; see also Gilmore and Duff, supra note 5.

31. Unsuccessful suicides were the rule rather than the exception in Gillette. Kohrs relates this to the need "to regulate the lack of human concern," rather than viewing them as merely clumsy attempts. The purpose of the attempts was to dramatize problems--a plea for help (1974:3).

32. Kohrs, supra note 29.

33. Kohrs, supra note 29.

34. R. Gold, Social Impacts of Strip Mining and Other Industrializations of Coal Resources (no date) (unpublished paper, Institute of Social Science Research, University of Montana).

35. MWRI, supra note 7 at 55.

36. MWRI, supra note 7; Nellis, supra note 7.

37. Turner, Patterns of Value Change During Economic Development: An Empirical Study, 30 Human Organization, Summer, 126-136 (1971).

38. Smith, The Urban Threat to Mormon Norms, 24 Rural Sociology 355-361 (1959).

39. Smith, supra note 38.

40. Gold, supra note 23; Gold, supra note 34.

41. Clemente, Effects of Industrial Development on Heads of Households: Comment, 14 Growth and Change, July, 20-21 (1973); Clement and Summers, supra note 23; see also, Kohrs, supra note 29; Gold, supra note 34.

42. See USDI, Final Environmental Impact Statement: Kaiparowits Project (1976) at IX-447 - IX-816.

43. See Kohrs, supra note 29; Gilmore, supra note 2.

44. Nellis, supra note 7.

45. W. Andrews and W. Baudner, The Effects of Industrialization on a Rural County: A Comparison of Social Change in Monroe and Noble Counties of Ohio (1967); (Department Series 407, Ohio Agricultural Research and Development Center).

46. Gold, supra note 34.

47. Norms can usefully be thought of as rules for behavior. In the social science literature, the state of normlessness is referred to as anomie. See Gold (no date) for a brief discussion of the issues in Montana.

48. MWRI, supra note 7.

49. MWRI, supra note 7 at 54.

50. Gilmore and Duff, supra note 5 at 14.

51. Hawks, supra note 19.

52. Kohrs, supra note 29. Because of municipal problems so prevalent in boomtowns, it is fair to assume that budget expenditures probably represent low estimates of the crime rate.

53. Duffy, Page, Arizona: The Town a Dam Built, Arizona Highways January (1964).

54. Unless otherwise noted, the data reported were obtained in the summer of 1974 from an interview schedule administered to a random sample of household heads in Page, Arizona; Kanab, Escalante, Blanding, and Monticello, Utah.

55. In 1964 a local citizens' council was formed to serve in an advisory capacity to Bureau of Reclamation officials.

56. Vickers, Page, Arizona: A Study of Factors Affecting Incorporation of a "Federal" Community, 7 Public Affairs Bulletin No. 3 (1968)(Arizona State University).

57. Duffy, supra note 53.

58. See Ives, Schulze, and Brookshire, supra note 3.

59. Population estimates are based on a simple random sample of 70 household interviews. For a complete description of the research methods refer to Little, Rural Industrialization: The Four Corners Region in Energy Scarcity in America (1976)(Washington State University).

60. H. Frost, Successful Transiency--Some Findings from the Page, Arizona, Community Research Project (1961) (unpublished paper, University of Utah).

61. T. Smith and B. Sharda, Migration and Belongingness: The Emergence of a Community (1976) (unpublished paper, University of Utah).

62. Williams, Frost, and Sibley, Page, Arizona - A Rootless Community, 37 Proceedings of the Utah Academy of Sciences, Arts and Letters 97-101 (1959-1960).

63. In extended interviews with community leaders they denied or played down distinctions between newcomers and oldtimers, even though interviews with other community residents forced the conclusion that the distinction was real and critical.

64. The median annual family income for newcomers was $20,938, while for oldtimers it was $18,333. The median for the combined groups was $20,635.

65. For a discussion of commodity purchasing patterns for residents in the Lake Powell region, see R. Krannich, An Analysis of Factors Contributing to Rural Economic Underdevelopment in the Lake Powell Area (1977) (unpublished Masters thesis, Utah State University).

66. Id. See also Polzin, supra note 23 for a general discussion of this phenomenon.

67. For a discussion of bond indebtedness extending beyond the life of a dam construction work force in Sweet Home, Oregon, see Smith, Hogg, and Regan, supra note 5.

68. See supra note 63.

69. The Pearson's Product-Moment Correlation Coefficient for population and crime is 0.72. It should be noted that the scales for population and crime in Figure 1 are not identical. This scaling difficulty was necessary for graphic reasons.

70. In all likelihood, the crime statistics during growth periods underrepresent the true number of crimes committed. This is because as crime increases more rapidly than police capacity to control, police officers are inclined to ignore the less serious offenses in order to focus on more serious crimes.

71. Kohrs, supra note 28 at 1.

72. See Gilmore, supra note 2; Gilmore and Duff, supra note 5; Ives, Schulze, and Brookshire, supra note 3, view this problem slightly differently.

73. Ives, Schulze, and Brookshire, supra note 3.

74. Current environmental impact statements are vivid examples of this, see, e.g., USDI, supra note 16.

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Social science research projects such as this one undertaken by the Sociology Subproject of the Lake Powell Research Project (LPRP) are difficult to complete without extensive help from the populations being studied. It would be impossible to list all the individuals in southern Utah and northern Arizona who gave their time and energy to make the data collection procedures a success. However, in each community two or more individuals deserve special mention, for they provided assistance seldom tendered to strangers in twentieth century America. Perhaps such hospitality and assistance could only be found in rural western America.

In Page, Arizona, extensive help was given to the project by Dan and Eddy Brown, Larry O'Neil, Joyce Palmer, and Paul Winter. Marion Brown, James Carrico, Merrill MacDonald, and Roselyn Wilcox provided invaluable aid while the project was located in Kanab, Utah. In Escalante, Utah, Mohr Christensen, Helen Schurtz, and Nethella Woolsey gave unselfishly of their time and effort. Work in Monticello, Utah, would have been impossible without the help of Robert Anderson, Bruce and Sue Halliday, Sam and Gwen Halls, Shirley Redd, and Roy Verner, while Mr. and Mrs. Francis (Bud) Nielson and Calvin Black lent their support to the project in Blanding, Utah.

The LPRP Sociology Subproject wishes to thank the above-named citizens as well as the numerous other residents who made the data collection procedures not only possible but positively enjoyable. The friendliness and cooperation of the local residents in the face of our inquiring eyes and ears is nothing short of miraculous.

Any scientific study examining social issues and concerns is bound to collect information that the inhabitants of the study community would rather had remained unnoticed. Furthermore, the conclusions reached from such data are all too frequently at odds with the desires and wishes of at least some local citizens. That this is sometimes the case is truly regrettable, but is unavoidable if scientific standards are to be maintained. The LPRP Sociology Subproject has attempted to maintain a high level of scientific objectivity, and provides public access not only to the conclusions, but the data on which the conclusions were based. Thus, decision-makers and interested scientists, as well as local residents, will have the opportunity to evaluate the conclusions reached in light of the data.

It is sincerely hoped that any disagreements between this author and local denizens will be viewed by the latter as the result of an honest scientific endeavor. Additionally, it is hoped that the information derived from LPRP efforts will help the inhabitants of the five study communities to better understand their communities and facilitate future decisions affecting their communities.

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