

THE INVISIBLE BOOMTOWNS: TEXAS AND THE  
LOCAL COSTS OF ENERGY DEVELOPMENT

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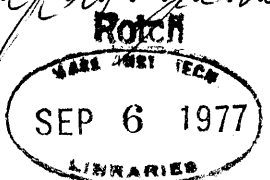
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ABSTRACT

Petroleum development in Texas historically has generated statewide benefits in the form of direct and indirect employment, tax revenue, and personal income. While Texans generally overestimate their economic dependence on petroleum, state education subsidies do depend on it heavily. Petroleum production has been decreasing in recent years, but utility companies have caused lignite development and consumption to increase dramatically. Despite these statewide benefits, both petroleum and lignite development impose local costs. The adverse impacts most often perceived by local officials are (i) inadequacy of public services; (ii) financial inability to expand public services; (iii) housing shortages; (iv) disruption of agriculture; and (v) social problems. The severity of these impacts depend on the initial size of the local population, the growth rate, and quality of public management preceding and following the boom, the type of energy development, and the social milieu.

State officials respond to the presence of these local costs in a variety of ways. Some say costs are insignificant and therefore are a local responsibility. Others recognize them as significant costs which the localities could manage if state obstructions were removed. A third but less common response is that the costs are significant and that the state should take action to reduce them. Despite this last recognition, a state decision-maker may take no action to reduce costs because to do so would (i) result in net statewide costs or (ii) would be politically impossible. He may decide that current state programs and regulations will adequately reduce the local costs. Or he may decide some new action should be taken, which could involve either incremental changes in current procedures, additional programs, or a major restructuring of state government. Although existing programs in Texas cannot reduce these local costs, decision-makers seldom

suggest new action other than incremental changes. In order to acquire new programs, one must show (i) that the problems are significant, (ii) that the state has a responsibility to reduce them, and (iii) that some new program is the only workable option.

### Acknowledgements

The people of Texas -- from state officials down to boomtown residents -- spent hours of their time providing me with information and an understanding of energy development in Texas. One official, David White of the Governor's Energy Advisory Council, became my Texas contact who helped me arrange interviews with the appropriate state officials and kept me abreast of legislative changes. Donald Patterson of the National Governor's Conference participated in some interviews, acted as my liaison with Texas state officials, and guided the preparation of parts of this thesis. The guidance and criticisms supplied by my thesis committee deserve special notice. This research was partially funded by the Division of Biomedical and Environmental Research of the United States Energy Research and Development Administration.

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THE INVISIBLE BOOMTOWNS: TEXAS AND THE  
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Introduction

Energy developments cause certain changes in the communities which host them.\* Each change can be viewed in more than one way, because of the different ideologies and experiences of those affected. For example, residents in Wyoming "boomtowns" are more bothered by a large influx of newcomers than are people in Texas; Wyoming farmers often view these people as destroying their lifestyle, whereas Texans often see them as bearers of progress and a better future. Residents in energy "boomtowns" in both states experience higher taxes, overutilized public services, and social problems -- but they associate different net costs or benefits with the development [54].

While Texas as a whole experiences net benefits from intensive energy development, localities often suffer net costs. Section I of this document portrays Texas' fiscal and economic dependence on continued energy production. Although some localities benefit more than others, many of these benefits (jobs, state revenue, public schools) are evenly dispersed throughout the state. The costs, on the other hand, tend to concentrate in communities experiencing rapid population growth because of intensive nearby energy development, especially communities hosting the newcomers supporting the development but not the actual development itself. As Section II explains, they get a larger population demanding public services without the expanded tax base. State officials respond to the existence of these local costs in a variety of ways. Section III analyzes a decision-making process that produces these different state responses; from this analysis, Section IV outlines the process for implementing new state policies aimed at reducing these localized costs.

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\* Host communities support the facility's population and may or may not host the facility itself.

## I. ENERGY PRODUCTION AND THE TEXAS ECONOMY: A STORY OF STATEWIDE DEPENDENCE ON ENERGY INDUSTRIES

A claim that Texas benefits from, and economically depends on, the production of fuel may restate the obvious, but the specific nature of this relationship is not readily apparent. Energy production has not simply provided the state with revenue, but has fostered and reinforced a particular approach to state fiscal management. State assistance for some services, especially education, depends directly on energy production revenues. Should oil and natural gas production decrease substantially, Texans would be forced to decide between taxing themselves more heavily or drastically reducing state assistance to both public and higher education. Through taxation of energy production Texans have historically used highly "exportable" taxes -- those whose incidence is thought to rest on consumers outside the state. Unless replaced by some other energy source (such as coal) significant decreases in oil and natural gas production would mean more than just locating new revenue sources. It would impose a whole new way of approaching revenue and expenditure decisions. The following section describes both the state's economic ties with and its fiscal marriage to energy production and the predicted future of the relationship.

### Oil and Natural Gas Development

The history of energy development in Texas involves three important fuels: oil and natural gas have dominated energy production for most of the twentieth century; lignite recently has been revived as an alternative for natural gas. Although Texas is still a leading producer of both oil and gas, its production and its reserves are both declining (see Table 1). Attention has shifted to increased offshore drilling, but so far offshore wells contribute less than one percent of the state's annual total production. Despite the decline, petroleum production\* is still pervasive across the state, occurring in 211 of Texas' 254 counties [1].

Besides being a major petroleum producer, the state has also become

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\* In this study "petroleum" refers to both oil and natural gas.



Table 1

## TEXAS PRODUCTION AND RESERVES OF OIL AND NATURAL GAS

	Oil	Natural Gas
<b>Production:</b>		
Peak Year	1972	1972
% of National Production	37	35
<b>Predicted % annual decreases:</b>		
without price deregulation	4.7	3.1
with price deregulation	3.1	1.4
<b>Reserves:</b>		
Peak Year	1963	1967
% of National reserves	33	31.1

Source: [5].

a major consumer. Texas industries use more than 11% of the nation's natural gas, and its electric generating plants burn almost an additional 9% of it [1]. Even agriculture and ranching have become dependent on an abundance of inexpensive fuels needed to pump water and feed.

### Economic Dependence

People in Texas tend to believe that the Texas economy and the government's fiscal structure depend on the petroleum industry (as indicated by comments reported later in this study). However, statistics indicate this assumption about economic dependence may be overstated. In 1967 petroleum-related industries were directly responsible for 6% of the state's employment, 14% of its gross output, and 8% of its total revenue [61]. Demand multipliers characterize the petroleum industry's indirect impact on the economy through its interdependence with other Texas industries. Chemical-related industries' multipliers (about 2.0) are among the highest. However, petroleum refining and food processing each have multipliers slightly less than two, crude oil production about 1.4, and Livestock and Poultry about 2.2. Multipliers for the petroleum industries have been decreasing in recent years because of its increasing dependence on imported crude oil [61].

With the assistance of an input/output model, the Governor's Energy Advisory Council in Texas has predicted changes in the Texas economy resulting from various changes in the production of petroleum products [61]. Without any change in price, they estimate by 1986 production will decrease by 44%, total employment will increase by 12-18%,\* personal income will increase by 37-50%, tax revenue will increase by 28-41%, and oil and gas tax revenue will decrease by 32-18%. In other words, even if production is almost halved, employment, income, and taxes will still increase. If the prices increase so that production remains almost constant, then employment will be about 10% higher than the level expected for decreased petroleum production. Likewise, personal income will be about 13% higher, taxes about 27% higher,

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\* A range of percentage changes are given for each variable; the former assumes a linear increase in government spending and export demand and the latter an exponential increase.

and energy industry demand multipliers will increase rather than decrease. If either import prices increase or imports are restricted, these increases will be slightly less, but still above the baseline, reduced-production estimates.

What do these figures tell us about Texas' economic dependence on petroleum? First, petroleum's share of direct employment is less than that of several other industries, including "agriculture, forestry and fisheries," construction, and wholesale. Their share of the gross product (14%) could easily pass through the state, especially since large, multinational firms finance petroleum development. The demand multipliers tell us that the petroleum industry's output does have a strong impact on the rest of the Texas economy (because the multipliers are relatively high); however, they are not significantly higher than other industries which also account for a large portion of the state's output, i.e., agricultural industries and food processing. Even if production is drastically reduced, employment and personal income will continue to grow. Should petroleum production cease, other industrial sectors, such as farming and livestock, may eventually expand, leaving the state's total economy only slightly worse off than before (allowing time for adjustment). Despite this possibility, people in Texas assume the state depends on the petroleum industry and act accordingly -- taking care not to hamper petroleum production or increase prices.

#### Fiscal Dependence

The state's fiscal structure is more clearly dependent on petroleum production. Over time Texans have become accustomed to taxing energy production and processing, which tend to be highly exportable taxes. Should these tax revenues decrease, Texans would have to decide whether to increase taxes with a greater state and local incidence, to find another source of exportable taxes, or to decrease government services. In 1976 direct taxes on petroleum accounted for 8% of total revenue and 20% of state tax revenue.

The state expenditure most dependent on petroleum industry is state aid to education. About one fourth of all petroleum production takes place on state mineral leases, whose revenues support public education. Last year

state-owned mineral leases produced more than \$180 million for Texas public education and \$200 million for university education [2,3]. The state supplements the lease revenue with tax revenue, about 30% of which comes from direct taxation of petroleum production \* [5]. Currently proposed legislation would increase the state's fiscal dependence on the oil and natural gas industry by substituting a refinery tax for the current ad valorem tax that supports school districts [4].

The state retains mineral rights to 22.5 million acres [35], of which 4.25 million are submerged offshore lands and 3.25 million are owned by the University of Texas system. All of these lands have been designated either public or university school lands. Before the discovery of oil and natural gas, much of this acreage appeared worthless, but the state's mineral holdings in west Texas include the oil-rich Permian Basin, and the offshore lands host extensive oil and natural gas production (See Figure 1). Profits from the University of Texas lands, rich with oil reserves, support the operating costs of the University of Texas and Texas Agriculture and Mechanical University.

State aid to school districts averages 80% of their calculated operating costs and comes from three funds: the Available School Fund, the Foundation School fund, and the General Fund. The revenue earned from the Permanent School Fund and public school lands, including lease sales, lease revenues, mineral bonuses, and royalties are placed in the Available School Fund along with one-fourth of motor fuel taxes. The Foundation School Fund is partially supported by the Omnibus Tax Fund, half of which comes from oil and gas revenues. The state funds available for Texas public education thus depend heavily on petroleum production. \*\*

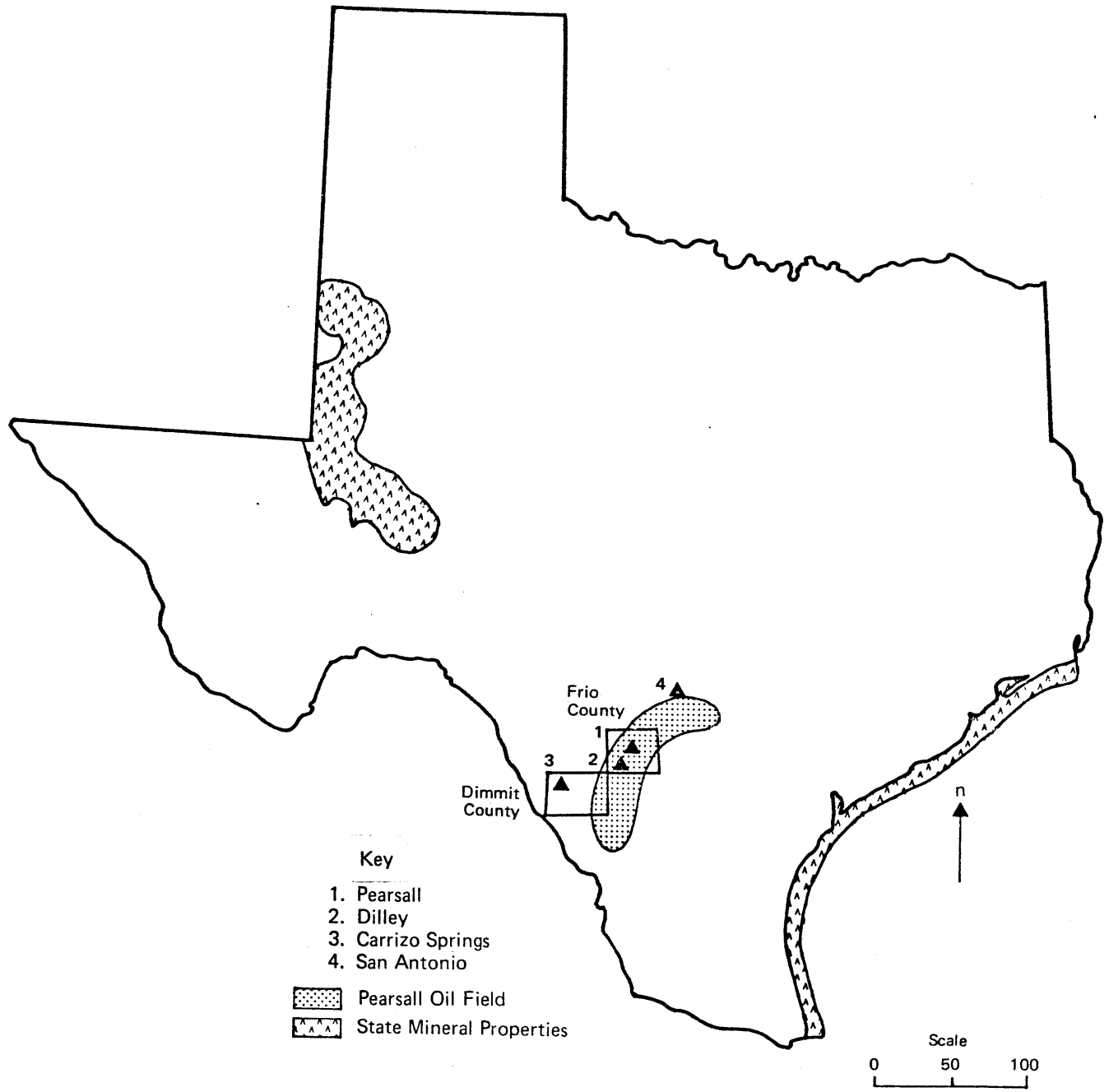
Some environmental regulations have been imposed on oil and natural gas drilling and production. The Railroad Commission now issues drilling permits on the condition that proper transportation and disposal of waste water from drilling activities are assured, effectively preventing pollution of the water supply. Water and air pollution regulation has reduced

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\* Texas currently taxes crude oil production at 4.5% of its wellhead value and natural gas at 7.5%.

\*\* The Mid-Continent Oil and Gas Association estimates that oil and gas taxes pay 28% of state funds spent on public education [1].

Figure 1. Location of Intensive Oil and Gas Developments in Texas



environmental damage attributable to processing facilities. The recently authorized Water Conservation and Subsidence Districts\* and a series of coastal zone management acts protect environmentally sensitive areas along the Texas coast.

But while previous oil and natural gas development has taught Texans to protect the physical environment, they have drawn a different conclusion about the social environment: cities with serious rapid growth problems during the oil boom days have "survived;" give the current generation long enough, and they'll catch up with the demand for public services. Present day Beaumont and Houston are cited as examples. In the minds of some long-time rural residents along the coast, "We've boomed and busted and survived before; we can boom and bust and survive again." In the past people viewed efforts to mitigate adverse environmental, social, or economic impacts as a hindrance to energy development. But an increasingly common attitude maintains that efforts to alleviate impacts can peacefully coexist with the desire for increased energy production.

#### Lignite Development

Texas lignite development began in the 1880's when railroad companies discovered lignite to be a better fuel than wood. Production of Texas coal and lignite peaked about 1913 but declined to almost nothing by the end of World War II. One coal-fired electric generating plant started operation in 1926 and many more followed, but they either shut down or converted to natural gas as it became a more plentiful, inexpensive and cleaner fuel [6].

Lignite has recently been "rediscovered" in Texas as an economical substitute for now expensive natural gas. New surface mining equipment and transportation vehicles, combined with the higher natural gas prices, have made it profitable to extract near-surface lignite for on-site conver-

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\* Rapid extraction of water can cause land subsidence, or sinking, and can be prevented by slower rate of groundwater extraction.

sion into electricity.\* In 1954 Alcoa's Sandow aluminum plant began using Texas lignite, followed by Texas Utility's Big Brown plant in 1972. Since then numerous lignite surface mines and lignite-fired generating plants have either been proposed or begun (see Figure 2). Annual lignite production is expected to reach 55 million tons by 1985, placing Texas among the top ten coal producing states. Texas has an estimated 10 billion tons of near-surface lignite and over 100 billion tons of deep basin lignite. At current prices, about one fifth of the combined Texas lignite reserves are recoverable, and its BTU value exceeds that of Texas oil and natural gas reserves combined [8].

Most lignite development in Texas has been sponsored by utility companies. Private utility companies have concentrated along the Wilcox Formation while municipal and cooperative (property-tax exempt) utilities have developed lignite in the Jackson-Yegua Formation (see Figure 2). Wilcox lignite has a higher BTU content per pound and less sulfur than lignite in the Jackson-Yegua Formation. Utility companies began developing lignite several years ago, but non-utility companies are just beginning. About ten non-utility companies are now developing lignite.

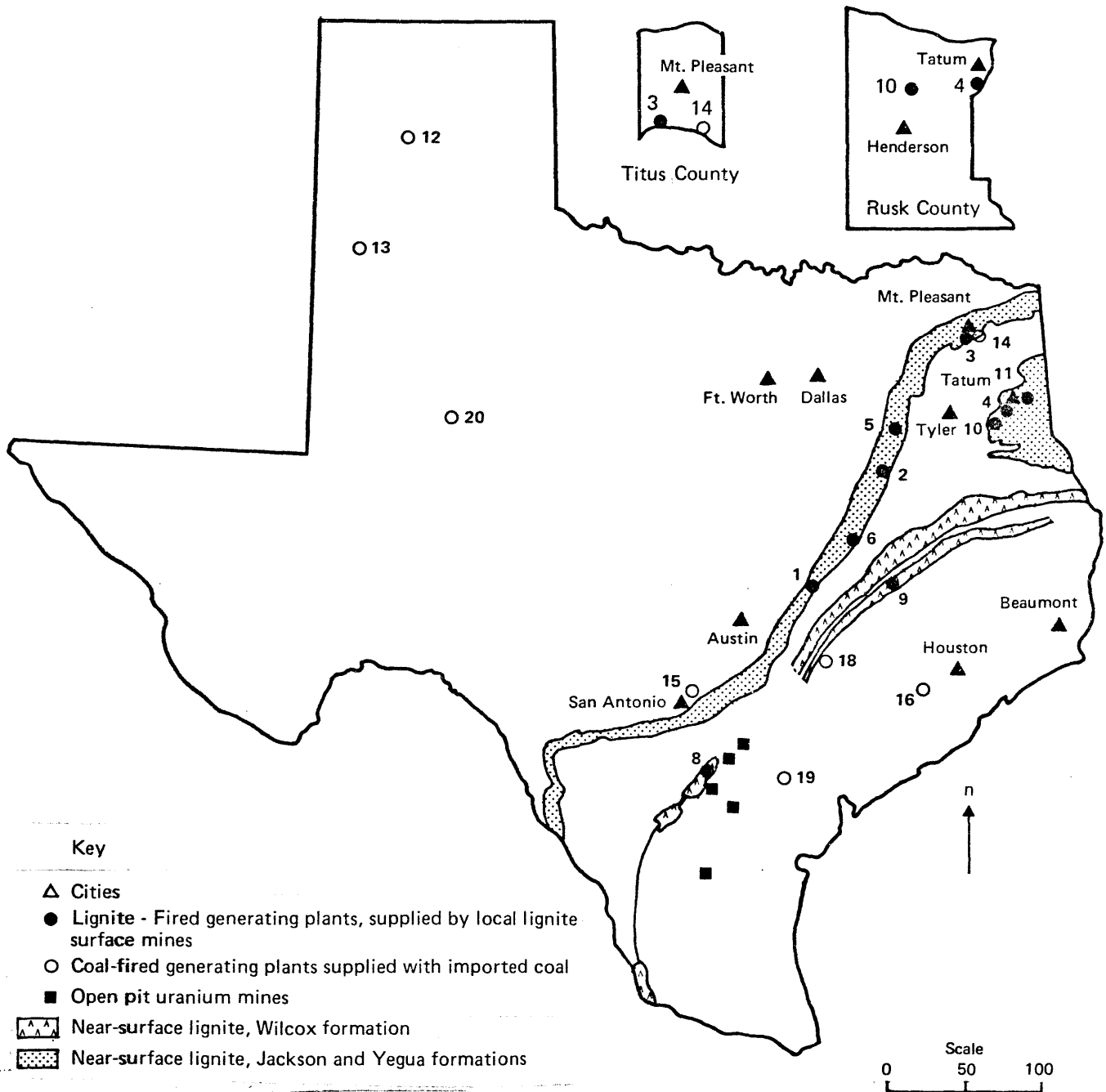
Besides showing interest in its own coal, Texas companies are also showing increased interest in Western coal. At least eight utility companies are building facilities which will burn Montana, New Mexico, and Wyoming coal (see Figure 2 and Table 3).

Although lignite mining and consumption have increased dramatically since 1972, currently the state's economy does not depend on it either as a source of employment opportunities or as a fuel source. Texas utilities are the major consumers of lignite and in 1975 only 9% of their fuel was lignite. However, by 1985 this figure is expected to increase to about 23% [10]. State policy encourages utility companies to convert from natural gas to either lignite or coal for generating electricity; given the current cost and supply advantages, this policy receives substantial voluntary support.

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\* In 1976, lignite cost about 35¢ per million BTU and natural gas cost about \$2 (on the intrastate market). Even though lignite-fired generating plants are more expensive to build than natural gas-fired plants, Texas Utilities' lignite plants (built in the early 1970's) saved consumers about \$1.17 per million BTU. Recently required stack scrubbers will reduce that economy somewhat [7].

Figure 2. Texas Surface Mining Operation and Coal-Fired Generating Plants



Sources:

John R. Adams and John H. Vanston. *Coal and Lignite in Texas: A Brief Review*. University of Texas at Austin, Center for Energy Studies, July 1975. Public Information Report No. 1.

David White. "Coal and Lignite Power Generation – Part 1 and 2" *Texas Energy Report*, Nos. 20 and 21, 1976.

Research and Planning Consultants. *An Impact Evaluation Report: City of Mount Pleasant and Titus County, Texas*. Austin, Texas: The Coastal Management Program, General Land Office at Texas, May 1976.

Documentation received from the Surface Mining and Reclamation Division of the Texas Railroad Commission, Austin, Texas.



Table 3a  
LIGNITE-FIRED GENERATING PLANTS UTILIZING  
LOCALLY AVAILABLE NEAR-SURFACE LIGNITE

Plant	Location: County (City)	Company	Coal Formation	Megawatts	Operation Date
1. Sandow	Milam (Rockdale)	Alcoa	Wilcox	360	1954
2. Big Brown	Freestone (Fairfield)	TUGCO <sup>1</sup>	Wilcox	575 575	1971 1972
3. Monticello	Titus (Mt. Pleasant)	TUGCO	Wilcox	575 575 750	1974 1975 1978
4. Martin Lake	Rusk (Tatum)	TUGCO	Wilcox	750 750 750 750	1977 1978 1979 1981
5. Forest Grove	Henderson (Athens)	TUGCO	Wilcox	750	1981
6. Twin Oak	Robertson (Franklin)	TUGCO	Wilcox	750 750	1982 1983
7. Unnamed	Unsited	TUGCO	Wilcox	1150	1985
8. San Miguel	Atascosca (Tilden)	So. Texas & Medina Elec. Coop; T.M.P.A. <sup>2</sup>	Jackson-Yegua	400 400	1979 1980
9. Grimes	Grimes	T.M.P.A.	Jackson-Yegua	400 400 400	1982 1983 1984
10. Mills Creek	Rusk (Henderson)	TUGCO	Wilcox	750	1985
11. Darco	Harrison	ICI	Wilcox	---	----

<sup>1</sup>Texas Utilities Generating Company

<sup>2</sup>Texas Municipal Power Agency (sometimes referenced as Texas Municipal Power Pool).

Table 3b  
COAL-FIRED GENERATING PLANTS  
USING IMPORTED COAL

Plant	Location: County (City)	Company	Source of Coal	Megawatts	Operation Date
12. Harrington	Potter (Amarillo)	SWPS <sup>1</sup>	Wyoming	360	1976
			Wyoming	360	1978
			Wyoming	360	1980
13. Plant X*	Lamb (Muleshoe)	SWPS		475	1982
				475	1984
14. Welsh	Titus (Carson)	SWEPCO <sup>2</sup>	Wyoming	528	1977
			Wyoming	528	1980
			Wyoming	528	1982
15. J.T. Deeley	Bexar	City Public Service Board of San Antonio	Wyoming	447	1977
			Wyoming	447	1977
			(May use lignite)	375	1983
16. W.A. Parrish	Fort Bend (Richmond)	Houston Lighting and Power Company	Wyoming	750	1973
			Wyoming	750	1979
			Wyoming	750	1981
			Wyoming	750	1982
17. Unnamed*	Unsited	Houston Lighting and Power Company	Unspecified	750	1985
18. Fayette	Fayette (La Grange)	LCRA <sup>3</sup> and City of Austin	Montana	550	1979
			Unspecified	550	1980
19. Coletto Creek	Goliad (Fannin)	Central Power and Light	Wyoming	550	1979
			Wyoming	550	1986
20. Morgan Creek*	Howard (Big Spring)	TUGCO <sup>4</sup>	New Mexico	---	----

\*Estimated Location reported here

<sup>1</sup>Southwestern Public Service Company

<sup>2</sup>Southwestern Electric Power Company

<sup>3</sup>Lower Colorado River Authority

<sup>4</sup>Texas Utilities Generating Company

Lignite development has very little impact on state revenues. The state currently imposes no tax on coal extraction, and no lignite leasing is expected to occur on public lands. A severance tax has been proposed but its passage is doubtful [9], (Both the Governor and many of the legislators pledged "no new taxes" and thus far have kept that campaign promise.) Should the severance tax pass, one fourth of its revenue would accrue to the Available School Fund [48].

By 1973, lignite mining had disturbed only 3,200 acres in Texas, little of which was left unreclaimed. An effective Surface Mining and Reclamation Act, adopted in 1975, prevents lignite (and uranium) miners from either polluting the water or leaving land unreclaimed [11]. Fortunately, reclamation adds only 4% to the cost of Texas lignite, as calculated for Wilcox Formation lignite in East Texas [49].

The preceding analysis portrays energy development in Texas as a pervasive activity which benefits the state through its impact on the economy and on government revenues. These benefits are dispersed throughout the state, as exemplified by state assistance to education in Texas. The state currently encourages the development of both coal and petroleum resources, in an effort to perpetuate these benefits; what they overlook are the local costs these developments create. The following analysis of these local costs will facilitate our later discussion of the state's response to the expected dispersed benefits and local costs from energy development.

## II. EVIDENCE OF BOOMTOWN PROBLEMS: THEIR APPARENT CAUSES AND THE LOCAL GOVERNMENT RESPONSES

### Overview of Local Impacts

The adverse impacts of energy development most often perceived by local officials are (i) inadequacy of public services; (ii) financial inability to expand public services; (iii) housing shortages; (iv) disruption of agriculture; and (v) social problems. Judgements on service quality included in this study are those reported to us by local officials. In general, they emphasize public service problems that reflect local governments' inability to manage rapid -- even if expected -- population growth and increased business activity. The following analysis of five communities shows how the severity of these problems often depends on the initial size of the local population, the growth rate, the quality of public management preceding and following the boom, the type of energy development, and the social milieu. These variables thread their way throughout the following analysis. The conclusion shapes them into a picture portraying their impact on the local costs of energy development.

The communities studied are experiencing rapid population growth because of either oil or lignite development. Three oil development towns, located in southwest Texas, are of special interest: Pearsall and Dilley (Frio County) and Carrizo Springs (Dimmit County). This part of southwest Texas has traditionally depended on ranching, but in the last fifteen years agriculture has gained economic importance. The key ingredient is water, since there is ample rich soil and a long growing season. If irrigated, this arid land provides a wide variety of vegetables; watermelons and peanuts are its major crops. In the center of Dilley there is a monument to the World's Largest Peanut (the Manager claims their area produces more peanuts than Jimmy Carter ever thought about), and nearby Pearsall claims to be the home of the World's Largest Watermelon! Many seasonal

farm laborers have made these towns their homes. While the population is typically poor and of Mexican descent (see Table 2) recent racial conflicts have caused major shifts in local political power which favor this group.

New oil development has attracted many new businesses to this area, especially a large number of small drilling and service companies\* whose dispersed nature makes it difficult to get "company" estimates of the number of immigrating families. Thus towns have little forewarning about population growth. The rapid turnover in drilling crew employment means that operators may not even know where their employees come from.

Residents in these communities often recite the benefits from economic development and population growth, but the costs tend to catch them by surprise. According to local officials, water and sewer services in Dilley have become seriously overutilized, and its schools are now overcrowded. Both fire and police protection have become ineffective, and vacant housing is scarce. Pearsall's officials report that its water and sewerage capacities have been surpassed and expansions are planned. Currently its schools are overcrowded and in disrepair, but future improvements and expansions have been approved. Neither its fire nor its police departments can adequately manage the demand for services, although the former has been improving. Pearsall also suffers from a housing shortage. A Carrizo Springs' official claims population growth has resulted in overutilized water and sewerage systems. The quality of their police protection has deteriorated, but their current fire service is expected to be sufficient for the near future. Their schools will need expansion in another one and a half years, despite their recent construction of new facilities.

In East Texas, new lignite mines and coal-fired generating facilities have also imposed some social and economic costs. The experiences of two small towns, Mt. Pleasant (Titus County) and Tatum (Rusk County) are

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\*"Service companies" maintain drilling apparatus and provide operating supplies, such as drilling mud, required by the drilling activities. "Drilling companies" actually drill the well and contract "service companies" for maintenance.

Table 2  
POPULATION AND ECONOMIC DATA FOR ENERGY BOOMTOWNS

	Pearsall	Dilley	Carrizo Springs	Tatum	Mount Pleasant
1970 Population	5545	2362	5600	684	8877
Estimated Current Population	7000	3000	10000	1100	14000
Estimated Annual Growth Rate, 1975 and 1976.					
Population	20%	20%	20%	20%	10%
School Attendance	13%	15%	---	10%	3% - 5%
Starting Date, Rapid Population Growth	1/1975	1/1975	1972	1974	1972
1970 Median Income <sup>1</sup>	\$3,739	----	\$4,059	----	\$5976
Effective Property Tax Rate <sup>2</sup>	\$.55	\$.39	\$.81	\$.63	\$.90

<sup>1</sup>For families and Unrelated Individuals.

<sup>2</sup>Mill rate times the assessment ratio; rate per \$100 market value.

illuminating. Each town lies adjacent to a surface mining operation and a generating facility sponsored by Texas Utilities Generating Company (TUGCO). Mt. Pleasant has experienced rapid growth for the past several years and Tatum is just beginning to grow. Both have populations with low to medium incomes and are heavily dependent on farming, ranching, and food processing industries. Unemployment levels are relatively low in both communities.

Although Mt. Pleasant aggressively attacked the expected problems of rapid growth, local officials believe its public services have deteriorated. Water and sewerage capacities were surpassed and have been expanded. Its schools are just adequate for the number of new students and will be expanded soon. Both police and fire departments face tasks beyond their current capacity, as do municipal employees in general. In Tatum, city officials claim the water and sewerage systems are operating at their maximum capacity and cannot be expanded in the near future. Its schools have kept up with demand but must be expanded shortly. Currently, Tatum has no police force but plans to create one in the near future.

#### Inadequacy of Public Services

Provision of public services, especially those heavily constrained by the size and condition of capital facilities, often falters during periods of rapid growth. Prior to the advent of energy development, several impacted communities maintained facilities that were barely adequate -- perhaps in poor condition or operating at capacity for a small population. The rapid influx of people has required service expansion and improvement, but few boomtown areas were forewarned about coming developments or the need to enhance their fiscal capacity. Delays in providing services have caused serious problems for residents in some host communities.

### Water Services

Water is often an initial problem for these communities. Some have funds for expanding service capacity, but others must suffer inadequate service systems. Before the recent oil drilling began in Dilley, water was supplied without charge. Newly arrived industries and drilling operations began drawing from the same sources, and the city began charging all consumers for water as it sought additional funds to build a new well and storage tank. Besides threatening the city's water supply, the increased usage accelerated the drop in the ground-water level, which increased the cost of pumping and treating water. Eight wells out of ten in Carrizo Springs, located on the edge of the Carrizo Aquifer, have gone dry because of the drop in the water level. The influx of people over the last four years (not due entirely to energy development) has hastened the decline of Carrizo Springs' previously inadequate water service. For the surrounding area, the water shortage has been described as a serious threat to agriculture.

### Sewerage

Overutilized sewerage facilities also plague these communities. Some were fortunate to have excess capacity or the ability to expand their facilities to prevent overutilization. But others operate at capacity and cannot issue more bonds.\* At least two cities, Dilley and Carrizo Springs, have been reprimanded by the Texas Water Quality Board for continual discharge of almost raw sewage. Dilley had made arrangements to irrigate surrounding farmland with partially treated sewage, but the system has not functioned properly. The farmers have failed to irrigate regularly, as planned, leaving the city with partially treated sewage and no disposal system. During the peak of its boom, one of Mt. Pleasant's sewage treatment plants was operating at almost twice its designed capacity, causing its discharge

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\* Cities may issue bonds for amounts up to a certain percentage (usually 10%) of their assessed taxable property value; usually separate maxima are set for water and sewer bonds and other capital improvements.



to fall below EPA standards. The city faced long delays in expanding its sewage collection system. Even after doubling its Sewerage Department staff and adding new equipment, demands for sewer service were still twice what the department could handle -- and maintenance jobs were six to eight months behind schedule [53]. A new policy in Mt. Pleasant helps control the demand placed on their sewerage system. All industries must hold sewage, pretreat it, and discharge it over a 24 hour period rather than during an eight-hour work day. This policy has allowed the city to delay further sewerage expansion for several years.

### Public Schools

A sudden increase in school-age children has caused overcrowding in some of the public schools, even where steps were taken to prevent it. Total enrollment has increased as much as 15% a year and has concentrated in the elementary grades.\* Class size often exceeds 35 students. Schools in poor physical repair before the oil boom are now seriously overcrowded. For example, Pearsall added six temporary class rooms in October of 1976, and approved a bond issue to construct new permanent facilities. But its kindergarten still meets in a condemned building,\*\* and the area's housing shortage makes it difficult to recruit teachers (although some new teachers are wives of oil field workers).

Other schools had some excess capacity before the boom which prevented immediate overcrowding. School officials have assumed a continuation of their current growth rates and have approved school expansions to handle the anticipated boom. However, as Carrizo Springs recently discovered, their predictions may be conservative and further expansions may be required sooner than expected. Only the Mt. Pleasant Independent School District received both forewarning about energy

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\*A Superintendent disappointedly noted that the growth brought them only one additional football player!

\*\*The city owns this building which is being renovated and converted to a community center.

development and offers of advance tax payments to meet the expected demands.\* With this cooperation, they have been able to prepare adequately for additional students.

### Protective Services

A decrease in the quality of protective services in these boomtown areas stems from two pressures: increased demand causes services to become overutilized; overutilization elevates previously insignificant flaws to serious dimensions. Despite its recent expansion, Mt. Pleasant's Fire Department faces an increase in fire calls beyond what they feel they can manage.\*\* In 1976 the State Insurance Board penalized Mt. Pleasant because of its low firemen/population ratio; to remove the penalty requires adding at least ten more firemen, another sub-station, and a pumper [53]. Unfortunately, the city currently has no funds for such expansion. Several smaller cities with volunteer fire departments can no longer provide adequate service as they did before the boom.

The additional demands from rapid growth not only have caused an overutilization of services but also have exaggerated some of the weaknesses of existing services. Within volunteer departments poor response rates were tolerable before the number of calls increased. But additional calls meant conscientious firemen missed substantial numbers of work days; this brought complaints from employers. To overcome this problem, Pearsall purchased better equipment, it increased the fire department's budget, and the men elected a new, more aggressive fire chief. Together these actions improved morale and participation.

Before the boom the more rural towns typically had no police force and depended on the county sheriff for protection. As the demands on county services increased, the counties often placed more officers

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\*These taxing arrangements will be discussed in detail below.

\*\*Reported grass fires, for example, have increased ten fold.

outside towns and encouraged the towns to supply their own protective services. Because the towns had no experience in operating police forces, these new officers tended to be ineffective and inadequate for the job. For example, before the oil boom the Frio County Sheriff's office voluntarily provided city protection; when their workload almost doubled, these services to the cities were discontinued. Dilley now has a two-officer police force where it had none before the boom, and the city manager describes it as ineffective and expensive.

The increase in crime experienced by smaller communities involves mostly nuisance problems, but the increased criminal activity in Mt. Pleasant is more serious. From 1973 to 1975, major crimes (Class A offenses) per capita increased from .006 to .105, and the incidence increased from 59 to 197. From 1970 to 1975 robberies, burglaries and thefts in industrial/commercial areas rose 759%. The police force remained at 18 men, but their hours increased and they stopped patrolling residential areas (unless answering a call) [53]. This increase in crime has been attributed to organized criminal activity in the nearby Dallas metropolitan area, about an hour and a half drive away.

#### General Government Services

City services have also fallen short of local needs because the increase in municipal personnel has not kept pace with the population growth. A recent survey of public employees in Texas reveals that cities of a size similar to Mt. Pleasant have approximately 350 public employees per 10,000 inhabitants compared with only 100 per 10,000 in Mt. Pleasant. The city manager does not expect to "catch up" with demand for another three years.

#### Sources of Problems and Their Solutions

Although many factors affect the quality of public services in boomtowns, the main determinants appear to be the lack of forewarning and the lack of front-end financing. Because developments involve

land acquisition, business managers tend to hide their plans. If communities had expected rapid growth, they could have planned ahead more effectively. However, predicted growth is seldom guaranteed growth. A decision to expand public facilities prior to the actual arrival of new inhabitants involves risks that most local officials are not willing to take. A sudden decrease in oil prices, for example, could have caused drilling in the Pearsall Field to cease suddenly. Unlike the Carrizo Springs Independent School District, many communities have been unwilling to expand facilities unless company representatives agree to reveal the number of newcomers expected. When growth depends on decisions by many companies, ascertaining this number can be difficult indeed. For example, the Pearsall I.S.D. received word from the Western Company in September 1976 that approximately 82 families would arrive that fall. The school officials assumed that six new classrooms would be sufficient to serve these and other new students, but their estimates fell short by approximately 4 classrooms. Enrollment exceeded the predicted level by more than 100 students.

Even where accurate forecasts are available, local governments may lack the resources needed to provide services. Passing a bond issue, letting bids, adding properties to the tax rolls, and acquiring grants and loans all take time. While the process proceeds the problems intensify.

But these problems can be prevented. When energy development began in Titus County, TUGCO officials notified the school district of the expected increase in children. They suggested that the school district adjust TUGCO's assessed property values so the schools would receive enough tax revenue in the initial years to manage the sudden enrolment increase. The adjustment process started with the total amount of property taxes TUGCO was expected to pay over the coming three year period. By adjusting the company's assessed property value, they effectively shifted these tax payments toward the earlier years to help meet the school district's sudden revenue needs. While school officials have applauded TUGCO for their forethought and consideration, a few have become suspicious of their apparent good

intentions. The tax pre-payment has helped the school district in the shortrun, but it has saved TUGCO tax dollars in the long-run. Intentionally or not, TUGCO underestimated the market value of its property, and therefore the expected tax payments for the three-year period. Thus the company paid fewer taxes than if there had been no agreement and property values had been set annually.

Zoning policies have also been used to help alleviate the pressures placed on public services. Both Pearsall and Mt. Pleasant attempt to improve service delivery by restricting mobile homes to parks. Long-time residents have resisted the arrival of mobile homes, but landscaping and lawns can reduce some of this resistance. In order to prevent widespread destruction of their city streets, Pearsall is creating an industrial park to concentrate movement of heavy vehicles on roads built for that type of traffic.

Financial Problems Affecting the Provision  
of Additional Public Services

Increased Public Service Costs

Few Texans seem to believe that energy development can create financial problems for local governments. Increased net costs for either residents, businesses, or the public sector catch them unaware. When oil drillers coming from the east Texas fields found the cost of living 30% higher in Dilley, they decided to return to the lower wages and the lower cost of living in east Texas. When converting a dilapidated school into a community center, the Pearsall city manager found building materials 30% more expensive than in San Antonio, only 50 miles away. And grocery stores increase prices on weekends and evenings to capture extra dollars from oil drillers.

Increased costs for municipal personnel stems from competition with construction firms and service industries. At least two towns have increased some salaries by as much as 40% in order to hold their more experienced skilled and semi-skilled employees. The city of Mt. Pleasant competes with TUGCO for employees. Even after increasing firemen's salaries to \$500 per

month, the city still pays far less than the utility company.\* Pearsall competes with a drilling service company which recently launched an intensive campaign to attract local employees. The firm requires that employees live within 10 miles of the plant, which precludes the possibility of commuting from metropolitan San Antonio. Previously they had transferred employees to the area, but the local housing shortage prevented many from staying. Employment on drilling crews, being much less secure than that for construction or service industries, apparently does not compete with municipal jobs. With the driller's higher salary comes job insecurity -- a price greater for most municipal workers than the salary difference.\*\* However, a municipality offering less job security might face competition from these drilling jobs. At a time when these local governments want desperately to expand their services, when their staffs are working week-ends and evenings, they find that increased salaries have absorbed much of their increased personnel allocations.

#### Revenue Shortages

Since growth increases sales tax and property tax bases, it might appear that revenues should increase faster than costs. At least in the short-run they have not. Despite a 19% increase last year in sales tax revenue, Mt. Pleasant has already increased property tax rates several times. Even with its 68% increase in sales tax revenues, Dilley finds itself short of operating funds.\*\*\* One city manager (who wishes to remain anonymous) believes his town faces bankruptcy.

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\* Before the energy development booms, municipalities had to compete mainly with agricultural wages, which were generally low. For example, the Pearsall city manager claims agricultural wages averaged about \$1.50/hour, giving the city \$2.30/hour a competitive advantage. New drilling service companies started workers at \$3.75 to \$4.00 per hour, substantially above the area's usual wage rate.

\*\* Drilling jobs have successfully competed with farming jobs.

\*\*\* All Texas cities have a one-percent local option sales tax [12].

With revenue-producing activities increasing everywhere, what causes these financial problems? Although sales tax revenue responds more quickly to growth than other major revenue sources, there is about a six-month delay between the commercial establishment's payment to the state and the state's reimbursement of the city. Pending legislation in Texas might remove all state and local sales taxes on gas and electric bills [13]. To at least one local official, this move would further hinder local ability to "keep up" with increasing public service demands. Communities experiencing rapid growth perceive the sales tax revenues as the key to survival.

School districts receive no sales tax revenue; they depend entirely on property taxes and contributions from the state. There is a one and a half to two year delay between the time property is purchased and the time the taxing jurisdiction receives its revenue. The state's contributions through the Foundation School Program, based on the previous year's average daily attendance, lags actual needs.

Since most energy development takes place on property located outside the city limits, counties receive more financial benefits (from increased property values) and experience fewer costly problems. While Dilley, Pearsall, and their school districts are suffering from increased costs and insufficient revenues, the County of Frio has managed its affairs quite well. The County's financial reserves have covered necessary expenditure increases and have forestalled increases in the already low property tax rate (30 cents per \$100 market value). Texas counties typically provide few social services and concentrate on road maintenance; thus their expenditures correlate less dramatically with population changes than do a city's.

Counties may face financial problems when tax-exempt companies sponsor developments. Municipal utility companies pay no property tax and have met resistance in rural counties. The Texas Municipal Power Agency (T.M.P.A), a consortium of municipal utility companies in Garland, Greenville, Denton and Bryan, is mining lignite and constructing an electric generating plant in Grimes County (outside its service area). T.M.P.A. is a tax exempt

"political subdivision"\* that finances its operations by selling bonds and power (although it cannot sell power to anyone but the member utilities). When T.M.P.A. started its operation in Grimes County, they explained to the local people what they were doing and that they were tax exempt. Initially there was no resistance, but eventually the school district officials openly opposed the development. In response to local criticism and complaints, the company hired a consultant to study the social and economic impacts that its development might have and to outline possible solutions. A bill to remove the tax-exempt status from such companies was proposed but dropped because its legality was questionable [50].

#### Inadequacy of Available Solutions

These boomtown communities face at least a temporary cash flow problem, a period when tax revenues fall short of expenditure needs because the tax base has not yet reflected the new growth. To solve the cash flow problem, why not sell bonds that can be repaid when the tax base "catches up" to growth? Unfortunately, bonding capacity, under state enabling legislation, also lags growth. It is based either on taxable property value or on excess operating revenues. In order to get some types of revenue bonds (for sewer and water facilities) a city must collect excess revenues equalling 1.5 times the expected monthly bonding payments for a twelve month period. General obligation bonds are limited to 10% of the jurisdiction's market value. Delays in reporting increased property values affect this bond limit. In many instances, jurisdictions have already issued bonds up to their current limit. Further improvements will depend on future grants, loans, surplus tax revenues, or property value increases.

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\*The municipal power companies' qualification as a "political subdivision" of the state specifies their rights and privileges, specifically their tax-exempt status. The current controversy is whether political subdivisions, including counties, cities, special districts, and municipal power companies, are forbidden from making payments in lieu of taxes to other political subdivisions [51].



Loan-granting agencies often avoid lending money to high risk jurisdictions, which by definition include energy boomtowns. These agencies expect a population exodus before all their loans have been repaid. Residents who remain will probably face low-paying jobs similar to those they held before the boom. Thus banks and other lending institutions concerned with security and return on investments consider these towns a poor financial risk.

While the expected "bust" reduces a city's chances for loans, its current "boom" minimizes its prospects for receiving certain government grants. Energy development brings in higher paid workers, which increases the city's income level; it provides some local employment, which reduces joblessness. High income and low unemployment rates disqualify certain communities experiencing energy development from receiving some grants, even though many long-time residents' incomes remain unchanged. Without grants or loans, providing additional services for the newcomers means taxing both those with and those without increased financial benefits.

Both public and private utility companies appear genuinely confused over the legality of giving financial assistance to local governments. TUGCO believes it cannot make payments to Mt. Pleasant to alleviate pressures from rapid growth because the company owns no property there.\* However, a Public Utilities Commission representative claims they may donate money to Mt. Pleasant. T.M.P.A. believes it cannot make payments in lieu of taxes to local jurisdictions although another tax-exempt utility company is currently negotiating payments in lieu to taxes with impacted communities. Texas Supreme Court rulings in the late 1940's prohibited municipal utility companies from making payments in lieu of taxes. The state's constitution is unclear on this issue, and the municipal utility companies have asked the Attorney General's office for a ruling on their tax-exempt status [51].

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\*To avoid the legality question, TUGCO has "lent" Mt. Pleasant electricians to string lights in the city's new ballpark.

## Local Responses to Fiscal Disparities

### Control the Development

Neither counties nor municipalities have much control over energy development. Although utility companies avoid using their power of eminent domain, the threat precludes the county and local jurisdictions from rejecting the lignite operations. Recently adopted legislation removes the power of eminent domain from the mineral development activities of both public and private utilities in the state [14]. Texas counties, lacking ordinance making powers, have almost no control over energy developments within their jurisdiction. The past three legislative sessions have seen proposals to give zoning authority to counties, but the real estate and ranching lobbies have been able to defeat them. When the current proposal [15] was reported out of committee, its broad ordinance-making authority was considerably trimmed. Certain types of ordinance-making powers, such as land-use zoning and control over food and fiber production, explicitly were denied counties. But the remaining powers would allow counties to adopt building codes, housing codes, health and sanitation licensing, and subdivision regulations. Although the House has passed the bill, it is facing stiff opposition in the Senate committee. Should the proposal pass, counties would be better able to manage problems of energy development.

### Increase Local Tax Burdens

Both state officials and the general public unfamiliar with boomtown problems often resent the boomtown's reluctance to finance additional public facilities with loans, bonds or increased property taxes. They see no reason for state assistance to communities not yet taxing themselves to the maximum. However, considering the nature of energy boomtowns, this reluctance has merit and deserves closer attention. First, newcomers generally have higher income than long-time residents, yet those least able to pay end up bearing the brunt of initial facility expansion.

Second, a "bust" period (substantial population decrease) will follow the current "boom" unless cities can attract permanent replacement industries -- a possible but not probable event. Facilities which accomodate the larger boom population will be excessive for the smaller permanent population, but the latter gets left with bills for both themselves and those who have moved. Communities perceive higher taxes as a subsidy for energy, especially where utility companies are developing lignite outside their own service areas.

### Seek Federal Assistance

Rather than burden their own people -- or the state -- with excessive capital costs, local governments have sought federal financial assistance to improve their public services and housing. This approach conflicts with a desire among rural residents to avoid dependence on federal funding, but they "justify" their action by arguing that no other assistance is available and that the federal dollars are partially "theirs" -- why suffer higher taxes when money already paid to the federal government can solve the problems? Although people express uneasiness about federal funds (they would prefer state assistance), they have turned to federal funds as a last resort, having tried unsuccessfully to acquire state funds.

The smaller cities affected by the oil boom have found Farmers' Home Administration grants easier to come by than funds from other agencies. Both Pearsall and Dilley have received funds for subsidized rental housing (24 units and 46 units, respectively) and area residents have qualified for Farmers' Home low-interest loans. Dilley has received a \$275,000 Farmers' Home grant to construct a water treatment facility and is seeking an additional \$325,000 loan.

The cities have used General Revenue Sharing funds as well as Community Development Block Grants for capital improvements and repairs. Mt. Pleasant used \$150,000 of its Community Development fund to make water and sewerage improvements. Pearsall spent last years' \$63,611 revenue sharing installment on road improvements.

Through the Texas Parks and Wildlife Department, the U.S. Bureau of Outdoor Recreation provided Mt. Pleasant with \$44,000 for park construc-

tion. Dilley has recently requested \$129,000 to build a park.

Several boomtowns are using or have applied for Economic Development Administration money for industrial parks. Pearsall has requested \$500,000 for this purpose, and is seeking a \$1.5 million EDA grant for a new Municipal Complex. Dilley received a \$145,000 EDA grant for a new City Hall. Carrizo Springs has a \$2.3 million EDA grant to build a new water treatment facility.

Housing and Urban Development funds have helped several boomtowns: Dilley has used HUD Section 8 funds for low-income housing and \$100,000 from another HUD fund for street improvements; Pearsall has a \$150,000 HUD grant to convert an old kindergarten building into the West Side Community Center in a low-income neighborhood.

The City of Pearsall has received \$4,000 through the Intergovernmental Personnel Act to survey and analyze local salaries.

Two conditions explain the "grantsmanship" among these rural communities previously unfamiliar with federal programs. First, both the Councils of Governments and the Department of Community Affairs inform towns about available federal programs and teach them how to apply. Second, the more "successful" towns have new professionally-trained managers, hired specifically to solve public service problems.

#### Cooperate with Other Jurisdictions

One very unusual and effective solution to energy impact problems runs contrary to common expectations. A few years ago, Mt. Pleasant and Titus county operated as many do in Texas, with little cooperation between them. At the city's suggestion, they now participate in a "Progress Through Unity" program.

City officials sensed that the city, county, and school district could all benefit by cooperating. To demonstrate this philosophy, the city lent the school district its paving equipment to construct a new parking lot. Soon after that the city organized a basketball team; the school district donated the use of its facility. Then the county

needed a new land fill site and couldn't find one. The city offered to share its site with the county, splitting the expenses accordingly. Through these moves the city demonstrated to both county and school district officials that cooperation could work -- to everyone's advantage

The city became more aggressive. It sponsored dinners for representatives from all county, city, school, and non-profit agencies. The organizations eventually adopted the motto, "Progress Through Unity", and a logo (appearing on letterheads), and they meet monthly to discuss problems and possible solutions.

In the first year the city spent several thousand dollars developing this program, but the payoffs for participants justify the expenditures. The creation of a new water district covering part of the county provided the needed bonding capacity to construct Lake Bob Sandlin. A new hospital district has supplied improved ambulance service to the county and city. The city police and the county sheriff help each other when the need arises. Both the county and the city finance the fire services -- the county donated a brush truck and pumper which are housed in the city fire station and operated by city employees. The city responds to fire calls in the surrounding countryside. The state's provisions for special districts and its Interlocal Contracting Act are the primary enabling laws which permit this type of cooperation among jurisdictions within a county [16].

What caused the Mt. Pleasant/Titus County cooperation to succeed when attempts in other counties have failed?\* A recent shift in attitudes increased the political power of people bent on solving the problems produced by rapid energy development. They avoided cooptation, by carefully maintaining the balance of power among county, city, and school district. They let officials experience the benefits from cooperation before they began formalizing it.

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\*Carrizo Springs and Dimmit County merged police forces but city residents claim the county has controlled it and has reduced coverage of the city.

### Adopt Commerce Location Policies

Despite the benefits of cooperation, each locality must solve the bulk of its financial problems on its own. While "Home Rule" cities, like Mt. Pleasant, may initiate annexation proceedings, "General Law" cities, like Dilley and Pearsall, can only try to motivate taxable businesses to locate within their boundaries.\* Boomtowns have used utility rates\*\* to pull businesses into the city, at which point the city can gain sales and property tax revenue [17]. The boomtowns charge utility rates as much as 50% higher outside the city than inside and charge higher connection fees outside the city. Several also charge businesses the full cost of extending utility lines to property outside the city. Officials in Pearsall do not feel that this policy has affected the location of new businesses, although it has helped them to recoup losses incurred when mobile home owners' leave without paying utility bills.\*\*\*

Another utility policy has affected business location. Dilley has more requests for service connections than it can handle, so it gives no guarantee that services will ever be provided outside the city limits. Yet owners of commercial property outside the city limits who petition for annexation find themselves suddenly near the top of the city's work schedule. The additional city property taxes appear to be less costly to businesses than either long delays in receiving city services or the cost of supplying their own.

Two current legislative proposals would increase the ability of small cities to annex tax paying property. One bill would reduce the minimum population requirement for Home Rule cities from 5,000 people to 1,500

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\* Cities with at least 5,000 inhabitants may adopt Home Rule Charters, which allows them to annex set amounts of contiguous property, with the consent of the property owners to be annexed. The smaller General Law cities have fewer local powers. They may not initiate annexation proceedings, but must wait until contiguous properties petition for annexation.

\*\* "Utilities" refer to water, sewerage, and gas services supplied by the city. Cities also may set rates for privately supplied gas services.

\*\*\* Several cities reported mobile home owners leaving without paying \$200 utility bills. Cities usually depend heavily on these service charges to finance city operations, since mobile home owners pay little property taxes. Some towns are raising deposits in order to protect themselves from the loss of utility service charges.

[18]. Another proposal would give annexation privileges to all municipalities, whatever their size or classification [19]. Relaxed annexation laws would help municipalities acquire benefits more commensurate with the costs they bear.

To guarantee a stable tax base in the long run, several cities are creating industrial parks and are seeking permanent industries. So far their searches have failed; a commercial food processing plant planned for Dilley has been postponed, as area farmers, suffering a farm-labor shortage, could no longer guarantee the quantity of produce needed to support the operation.

#### Housing Shortages

A shortage of housing plagues all boomtowns. The conventional housing industry cannot respond quickly enough to the demand for new homes, and there are almost no older homes for sale. Private market housing supply lags demand by about a year, reflecting both the time required to shift resources to new areas and the homebuilders' demands for a guaranteed market. Rural areas in Texas have few local builders, and contractors from nearby metropolitan areas are reluctant to supply these new markets. For example, local builders in Pearsall and Dilley cannot respond to the demand for housing, and the San Antonio builders, only fifty to sixty miles away, have shown no interest in the Pearsall-Dilley market. Originally the local builders could not meet Mt. Pleasant's housing demand; after a one and one half year delay, Dallas area builders, about 100 miles away, began serving the Mt. Pleasant area.

This absence of non-local builders has complicated the housing situation in Pearsall, since the local builders generally provide "substandard" housing ineligible for FHA and VA housing programs. If mortgage money were readily available, the lack of federal guarantees would not matter. However, local bankers follow very conservative lending policies and are reluctant to provide mortgage money to well-paid employees associated with the oil development. Even when service company employees intend to stay twenty years, banks perceive them as unstable and as a risky venture.

Increased costs of both buying and renting housing also point to a housing supply shortage. In the oil boom areas, small modular homes which sold two years ago for \$18,000 now sell for \$30,000; small brick homes increased in price from \$28,000 to \$45,000. Residential lots within cities more than doubled in price. Even the cost of mobile homes now exceeds the previous cost of some housing; mobile homes have been selling for \$12,000 to \$15,000.

Mobile homes are a common short-term solution to the housing shortage. The city of Tatum reports approximately 140 mobile homes, and Carrizo Springs has almost 400 in its vicinity. But the shortage of public services described earlier affects even this solution to the housing problem. Several towns are a month or more behind in providing utility connections. Tatum recently spent almost \$100,000 extending utility lines to 114 sites for new single family homes. They have no additional bonding capacity to finance additional utility extensions.

A shortage of available mobile home sites has also restricted the supply of temporary housing. Several boomtowns have relaxed mobile home restrictions because other available housing is inadequate. Pearsall limits mobile homes to parks, but the existing parks are full. A revised ordinance permits mobile homes on single residential lots if all nearby land owners consent. The condition requiring neighborhood approval was designed to permit property owners to exclude mobile homes when land owners felt threatened or bothered by their presence in a single-family area. Some neighborhoods, especially lower-income areas, consistently have done that. However, other people admittedly have used this power to exclude particular kinds of people rather than a particular type of housing. At least two incidences have been reported where property owners excluded mobile homes because their owners were either black or involved with the oil development.

The response of one service company in Pearsall reflects the seriousness of this housing shortage. The company recently transferred almost 100 families to Pearsall. When many could not find homes, the company had to transfer them elsewhere. To avoid that problem in the



future, the company leased 23 mobile homes and made arrangements with a Pearsall land-owner to create a mobile home park for them. The company had never been involved in the housing business before and disliked it greatly. They realized, however, that without at least a temporary supply of housing their operation was restricted to the local labor force.

TUGCO's response to the shortage of mortgage money in Mt. Pleasant reflects that area's housing problem. The company made prior arrangements with local banks and savings and loan associations for mortgage financing for new homes constructed by local contractors. Although interest rates and downpayment requirements were high, the high-salaried TUGCO and subsidiary workers could afford it. After solving the financing problem, the shortage of local contractors and available public service utilities still restricted the supply of housing [53].

Another common response to the housing shortage is construction of federally subsidized housing for low and moderate income families. However, that solution does not affect the supply of housing for middle and upper income families.

### Disruption of Agriculture

#### Oil Development Areas -- Southwest Texas

The conflict between energy development and current land uses is perceived to be short term. The nature of energy development in Texas, the supply of water, and the attitudes of farmers and ranchers cause people to define current conflicts as temporary. Some farmers and ranchers have ceased operations because of their new oil revenues, but people generally expect them to return to work or to lease their land to others.

Oil drilling causes little conflict with ranching: drilling activities are locally concentrated and the locations are sparsely scattered over a large area. Once drilling is completed, only a pump and its surrounding embankment occupy space.

While it goes on, drilling does conflict with farming schedules and procedures, and it has definitely drained farming of its unskilled and semi-skilled laborers. A shortage of farm labor in the Frio County area made a proposed food processing plant unpromising. One farmer, not to be defeated by oil development, turned to a previously latent labor market -- women. He's been so pleased with their work that he claims in the future he'll only hire men for heavy labor.

A water shortage appears to be serious in the Carrizo Springs area; both oil drilling and refining consume significant amounts of water. The area has reportedly begun a permanent shift away from farming toward ranching and oil development, specifically because of the water shortage.

#### Lignite Mining Areas -- East Texas

Strip mining and the submersion of land for new reservoirs to support lignite mining and electric generation in East Texas has threatened agriculture and ranching. Over the next 25 years, a projected 65% of Titus County will be strip-mined, and reservoirs will cover much of the unmined land [53]. Strip-mining takes land out of production for nine to ten years. Actual mining activities usually take three or four years, and the Texas reclamation law requires an additional six-year test period--with no grazing or farming--to guarantee complete and proper land reclamation [20].

With or without energy development, East Texas lands would probably soon be converted to big business ranching operations; energy development simply accelerates that trend. Many elderly ranchers and farmers are selling their properties outright and are moving to the city. While many of these properties have been in the same family for several generations, the children of current owners have left the area or have taken up other occupations. Although these people and their children are leaving farming and ranching permanently, their property is expected to return to production once the land has been reclaimed. The utility company purchasing the land is expected to sell the property eventually in several large parcels to be operated as ranches and farms. Until mining is complete

and the land has been reclaimed energy development is expected to conflict with previous agricultural and ranching land uses.

### Social Disruption and Resistance to Development

#### Attitudes Toward Rapid Growth and Newcomers

##### Sources of Disfavor or Opposition

One explanation for the relatively positive view toward energy development in Texas is the absence of serious social disruption such as that experienced in Montana and Wyoming. Texans have seldom directed their efforts toward stopping energy development. Within this overall pattern, however, differences can be discerned. Ranchers and farmers, the influential landowners, have shown less enthusiasm than other groups for energy development. These land-owners have been influential in county politics for several generations, and they stand to lose local political control. In Dilley they have courted the newcomers by sponsoring a barbeque, but these immigrants appear uninterested in local affairs. Immigrants employed by power companies have been more active politically than either construction workers or drillers and have contributed to a shift in political power in Mt. Pleasant.

Bankers in Southwest Texas have resisted the new arrivals, causing some newcomers to feel so uneasy that they bank outside the city just to avoid contact with these people. Some long-time middle and lower-income residents also regret the arrival of these newcomers. Many people interviewed in the course of this study commented on the newcomers' orderly behavior, but complained about their air of superiority. Certain city staff in Dilley resent the newcomers because they create extra work for the city and often leave large unpaid bills. While Dilley residents reject open resistance, some neighboring Pearsall residents have used their veto over mobile homes to exclude the "oil people."

Several cities reported that residents have an initial aversion to additional growth; while these feelings seem to subside after a year or so, active resistance to development has occurred in two cases. In the first case, two utility companies, TUGCO and SWEPCO, want to build coal-fired generating plants in an area that already has two such plants and that happens to be in SWEPCO's service area. SWEPCO representatives have claimed that the ambient air quality standards will permit only one more facility. Some of SWEPCO's customers oppose the proposed TUGCO plant because they want SWEPCO to receive the permit for the third and supposedly final facility. The residents are not concerned with the arrival of another generating plant -- as long as their service company owns it. In the second case, Grimes County residents oppose the T.M.P.A. development because it pays no property taxes.

Residents in neither area have opposed the facilities on environmental grounds. Environmentalists in Texas have resisted some projects, but only if they are expected to cause significant pollution or to seriously endanger the physical environment. For example, some San Antonio residents have resisted a request by their municipal power company for a six-month variance from state air pollution regulations. At the state level, the Texas Environmental Coalition has succeeded in stopping an allocation for unspecified water development projects.\* Texans balance their need for economic development against their need to protect the environment. This trade-off is displayed through the Air Quality Control Board's enforcement procedures discussed in greater detail in Section III.

In areas experiencing energy development, people have not vocalized much opposition to facilities on environmental grounds. To date almost all lignite mines have been properly reclaimed and more serious water pollution has been prevented. Air pollution from lignite-fired generating plants has not incurred popular alarm. Units #1 and #2 of TUGCO's

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\*The Coalition unites various Texas chapters of state environmental groups and national groups, such as the Sierra Club and the Audubon Society; however, it has little clout at the local level and is only marginally effective at the state level.

Monticello Plant were under construction before the EPA's new source standards and thus are subject only to Texas standards (which are lower). Their particulate emissions of 4000 pounds per hour (50 to 60% opacity) exceed the 1500 pounds per hour (30% opacity) required by Texas law. By December 1977 the Air Quality Control Board anticipates only 1000 pounds per hour emission, the reduction being due to TUGCO's retrofitting with bag houses [52]. The facilities have no scrubbers to reduce sulfur dioxide emissions, which are about twelve to thirteen thousand pounds per hour (within Texas regulations). When the facility first began operating, the excessive particulates emission (at 100% opacity) instigated only a few local complaints. And despite this incidence, local residents have shown no resistance to proposed additional generating facilities. If the Monticello plant's current emission level does not offend people, then it is unlikely that the newer facilities (subject to stiffer emission standards) will disturb them. It appears that as long as state forests and wildlife reserves are maintained, and as long as projects don't pollute or leave surface land less valuable than it was at the outset, environmental advocates in local communities are satisfied that the environment has been properly protected.

#### Sources of Approval -- A Desire for Growth

Rural Texans tend to perceive rapid population growth as long-desired economic development. But they fail to distinguish between normal growth and rapid growth. In order to get any growth, people assume they must tolerate all the problems peculiar to rapid growth. In Dilley, the majority of the city councilors are businessmen. They are so fearful of discouraging growth that they have avoided restrictive policies, including a mobile home ordinance, and have

hesitated to enforce even existing zoning regulations.

Besides the business leaders, other citizens express a desire for growth because it means "progress" -- new ideas, new faces, opportunities for their children, better stores, etc. They often explain, with some humility, that they are somewhat provincial and "out of date", arguing that growth will "bring them into the mainstream" of modern America and will broaden their perspectives. As long as newcomers "behave", many townspeople are not threatened by them and even welcome them.

Texans also tend to believe growth from energy development will bring financial benefits -- better salaries, employment opportunities, revenues from leases and sales, and increased property tax revenues. This faith in financial gain seems to obscure any realization that not all people will benefit financially. The city manager of Mt. Pleasant estimates that 20% of the city's population will face higher property taxes, rents, and living cost without realizing any increase in income or wealth. The manager in Dilley believes his city is in the same situation.

One indicator of local attitudes toward growth is a desire to attract other industries to replace the boom's temporary businesses. Instead of discouraging temporary growth, boomtowns in Texas tend to construct permanent facilities and to seek permanent industries to replace the temporary businesses.

Mt. Pleasant residents have been the most active in attracting newcomers, as indicated by their participation in financing a new community center. When city and county officials together could not finance a new community center, city residents decided to supplement the government's money with private donations. Eventually residents raised more than \$200,000 to build a community center. Earlier, city officials tried to raise funds for the project but were unsuccessful. Long-time residents felt a growing town should have a civic center large enough to handle community meetings. A new center might make the town look more inviting to newcomers and new industries. Also, in Mt. Pleasant

an enterprising young couple is converting several contiguous and empty downtown stores into a small shopping mall, expected to discourage the loss of downtown business to two new shopping centers.

Social conflict between newcomers and long-time residents has not developed into open confrontation, but Mt. Pleasant's leaders have still taken steps to ameliorate what little animosity has surfaced. The city sponsors barbeques during good weather, inviting city, county, school district, and company officials and citizens. Their philosophy is that social events facilitate friendships that will ultimately develop into mutual understanding.

Informal help has come from TUGCO. Initially people perceived immigrant TUGCO workers as "uppity" -- displaying an air of superiority, trying to control local politics, but thinking themselves immune from local regulations. In response to community complaints, the company instructed its employees to mind their manners, to participate in community organizations and events (but not to run for office), and to show more respect for Mt. Pleasant's social ways. People report a noticeable change in employee behavior; they are more active and socially accepted than are newcomers in the oil development areas.

Why has TUGCO shown so much concern about local reactions? Several explanations seem probable, although none can be "proved." Sources indicate that the company believes its future depends heavily on their reception at the local level. If suspicion and hostility develop, then the long-run efficiency of their operation is threatened. Another explanation is that TUGCO is strictly an intrastate company and, therefore, feels a responsibility toward Texas.

Some land owners, administrators, and politicians have bargained effectively with the power companies over lease terms; others have not. One rancher, when asked why she accepted a lower lease price than others, responded, "I was afraid if I tried to bargain for a higher price, they would change their mind. They told me it was a now-or-never offer." Like many people in East Texas, where TUGCO is developing the lignite mines, she displayed great faith in the utility company and took them at their word.

These Texans believe that TUGCO is genuinely concerned with their welfare.

Defining the Problem: Comparing Costs and Benefits

Temporary Costs

How do people reconcile the conflict between the new problems they face everyday because of energy development and the high value they place on the benefits from growth? Their tax bills have increased; they must pay for water that used to be free; roads are in disrepair; farm help is scarce; their schools are crowded, houses and cars must be locked. In part, they perceive these as temporary costs or inconveniences that must be tolerated in order to reap the expected long-term benefits.

Their image of energy development is incompatible with an image of poverty and social problems. The prevalent perception combines energy development and prosperity and makes it very difficult for Texans living outside the impacted areas to imagine adverse impacts from energy development. A great many Texas cities began as boomtowns, serving either oil, natural gas, or cattle production activities. Any previous cost/benefit disparities in these towns apparently have disappeared. People now see prosperous communities offering residents a variety of activities, employment opportunities, and community amenities. However, history may be a poor teacher, since it immortalizes only selective stories -- people remember the good and forget the bad. Stories of suffering and hardship have not been retold from generation to generation. In addition, the public's definition of "adequate" public services and living conditions in the late-nineteenth and early-twentieth centuries differs substantially from today's expectation of municipal services. Past and current definitions of problems are not comparable. The major lesson history has taught Texans is that somehow, whatever their problems during the boom, some towns survived and became pleasant places to live. (Of course, the story does not report the locality "attrition rate.") In light of their historical experience and their expected future benefits,



communities perceive their current problems as temporary and tolerable and, indeed, as the price for future benefits.

### Long-term Benefits

Texans tend to believe that energy developments in the 1930s and 1940s saved Texas from the worst of the Great Depression, and that energy production has since shielded them from the worst of this country's recessions. But past and current definitions of "long-term benefits" may not be comparable. People fail to see the differences between previous and current energy development. Houston and Beaumont have refineries as well as oil and natural gas wells, whereas Dilley and Pearsall have no refinery and, currently, no wells. Refineries are built to operate for an indefinite number of years, since they are not entirely dependent on a local supply of fuel, but lignite-fired generating plants in Rusk and Titus Counties have a 20-year life expectancy, at which time the lignite will have been extracted and the generating plants shut down (or converted to another type of fuel). The expected long-term benefits from growth entice people to overlook today's problems. Many current boomtowns have never had significant growth but have long dreamed of it. Their failure to distinguish between moderate and rapid growth may blind them to the true cost of growth's benefits.

Some city administrators, especially in oil drilling areas, are less confident that these problems will disappear. Most mineral properties being developed are those outside the city limits; municipal residents will still have low incomes when drilling ceases; they will still face loan payments after service industries and mobile homes have left. Their intent is to reap what short-term benefits they can and try to attract permanent industries that are independent of drilling activities. Unfortunately, the short-term problems consume most of their time.

### Responses to Expected New Costs

Why is it that these officials, perceiving the costs of extensive energy development and rapid growth, have not tried to stop them? Prevalent

support for two ideological values discourages that response: (i) freedom to develop one's property, within legal standards, and (ii) freedom of movement. Large, politically influential landowners with power at stake in maintaining the status quo may grumble about the newcomers but they will not try to stop them -- if we remove development rights from one person we may remove them next from a rancher. Maintaining the character of their town is not as important to them as maintaining the status of individual property rights. The freedom to move, to live anywhere one pleases, is also held in high esteem. While some of the townspeople would just as soon not see drilling crews walking their streets or troublesome migrant children in their schools, they do not see that they have the right to exclude newcomers from immigrating.

Insistence on local control and local individualism encourages localities to manage their own problems alone, rather than combine forces with others. This attitude precludes regional approaches to the land use problems. At least one incident hints that this attitude is changing. Several counties in east Texas are working together with a private consultant to help them understand the impacts from lignite development and the alternative solutions. Rather than give blind allegiance to growth, they are beginning to question its role as the bearer of abundant gifts. While they have not opposed growth, they realize that serious problems may result.

### The Complication of Racial Conflict

In Southwest Texas the response to growth has been complicated by racial antagonism between the Mexican-Americans and the Anglos. Although Dilley is about 75% Mexican-American and Pearsall about 80%, until a few years ago most elected officials in both communities were Anglo. Recent political activism among the Mexican-Americans caused tension between the two ethnic groups but shifted political power toward Mexican-Americans, a shift coincident in time with the oil boom. As a result Frio County faces court-ordered redistricting, and a special election for all county commissioner positions.

In general, the political leaders of both ethnic groups face an uncertain future. By September of 1976 they had developed a working rela-

tionship in many places, but recently they have lined up on opposite sides of the rapid growth issue. Anglos who are losing control appear less eager for oil related growth, whereas the Mexican-Americans, many of whom operate small businesses, tend to favor growth.\*

In the Dilley Independent School District, all property outside the city limits had been classified as ranch property assessed at \$35 per acre, and improvements were tax exempt. The wealthier families often live outside the city limits whereas the poor, predominantly Mexican-American families, tend to live within the city. Mexican-American representatives to the School Board proposed and won (i) repeal of special tax status for properties outside the city limits and (ii) property revaluation. This move reinforced popular support for new Mexican-American leaders and quickly increased tax revenues.

Carrizo Springs has also been affected indirectly by racial strife in a neighboring community, Crystal City.\*\* Conflicts in the community of Crystal City caused large numbers of its Anglo residents to move to Carrizo Springs. Both Anglos and Mexican-Americans, shaken by the experience of Crystal City, have worked to prevent a repeat in Carrizo Springs.

### Variables Affecting the Severity of Local Costs

#### Initial City Size

The five categories of costs discussed above are found in almost every energy development town, but the severity of each cost varies according to the particular characteristics of each town, its region, and the

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\*The influential Anglos hope the immigrants will increase their political power, but the drilling personnel have displayed little interest in local politics.

\*\*Conflicts in Crystal City began in 1963 with the organization of a Mexican-American political party, which fielded candidates for city offices. Although there was no violence, the city split politically over the race issue which created tension and apparent hatred between the two ethnic groups.

type of energy development it hosts. The severity of a particular cost may be a function of more than one variable. For example, one town characteristic may cause the public service cost to increase while a second causes it to decrease. The previous discussion concentrated on the final outcome, the severity of each cost; the following discussion emphasizes the factors affecting these costs.

As mentioned earlier, five variables influence the severity of local costs. The initial city size partially determines the types of public services available before the boom and the city's ability to improve them, both of which affect the severity of boomtown costs. Larger cities tend to provide more public services than smaller cities, and expanding an existing police force or sewerage facility is easier and cheaper than creating an entirely new police force or facility. A service's excess capacity is also a function (in part) of city size, and it can reduce the impacts of initial population growth. In Texas, cities under 5,000 population must wait until property owners petition for annexation whereas larger cities may initiate the process themselves. Annexation of surrounding property allows the city to expand both its sales and property tax bases, which affect not only its tax revenue but also its bonding capacity.

#### Population Growth Rate

Because of bonding and tax revenue limitations and delays, the population growth rate in large part determines whether demands on public services will increase faster than the localities can expand them. A moderate growth rate notifies officials that services will soon need expansion, and it leaves them ample time to do so. But a rapid growth rate exposes the need for expansion almost at the same time it is needed. Unless a facility has excess capacity, a rapid growth rate creates overutilized services and high costs. For example, Mt. Pleasant's 3% annual increase in school enrollment first filled the excess capacity (caused by decreasing birth rates), but the 13% enrollment increase in Pearsall immediately surpassed its excess capacity and resulted in overcrowded classrooms.

### Poor Public Management

Poor public management preceding the rapid influx of people often means public services are poorly maintained, outdated, and barely adequate for the long-time population. These services simply break down under the additional strain imposed by rapid population growth. Expanding well-maintained, modern facilities is easier, quicker, and cheaper than replacing antiquated, poorly maintained services. During and following the boom, the quality of public management also affects how quickly and effectively cities can provide acceptable public services and can reduce the costs from development. For example, before the oil boom, both Dilley and Pearsall had poor police and fire services. These services are still inadequate in Dilley, but Pearsall's managers have been able to correct them. Likewise, Mt. Pleasant's manager effectively regulates commercial demands on some services and thereby prevents further facility overutilization. Less effective managers in other cities forget about reducing demand and therefore the need to expand facilities.

### Types of Energy Development

Different types of energy development produce different types of rapid population growth and land use, both of which affect the severity of local costs. Coal development's surface mines and supporting coal-fired generating facilities disturb large tracts of land and disrupt ranching. However, a coal-development project involves only a few companies, making it easier for localities to predict population growth, to negotiate with companies, and thus to decrease local costs. Petroleum developments involve many small companies which makes it difficult for cities to ascertain the number and expected arrival time of immigrants. A larger portion of these employees take temporary work than do lignite development workers. This temporariness reduces chances for capital loans and discourages construction of public facilities to serve the newcomers. Despite these pressures, which increase local costs in oil boomtowns, oil development's minimal disturbance of the land and its low visibility decrease local costs.

### Social Milieu

The local attitude toward growth and the existing social problems influence the public's perceptions of energy development, which affects their responses to it. Since many people perceive rapid population growth as a blessing rather than a problem, they welcome it and avoid responses which might discourage it. While this attitude reduces the frequency of mental disorders and social conflict, it discourages cost-saving policies which impose upon newcomers. Societal traditions of public involvement and of acceptable social class behavior also affect the types of activities people seriously consider. For example, middle and lower-income residents of southwest Texas traditionally have left governing to the landed class, perpetuating a type of paternal government prevalent in many rural towns; their day-to-day approach to problems discourages participation in projects requiring extensive public involvement. Existing social problems preoccupy the public's attention and blind them to energy development impacts until the costs reach severe proportions. These customs and preoccupations create an inertia which precludes the active, aggressive public involvement displayed in Mt. Pleasant.

### III. STATE RESPONSES TO LOCALIZED COSTS WROUGHT BY ENERGY DEVELOPMENT

#### Overview

The preceding discussion creates two images of energy development in Texas: dispersed statewide benefits and localized costs. While localities can partially alleviate these adverse impacts from rapid energy development, much of this control rests with the state government. In general, state officials' decisions on the use of this control progress through five stages of questions and answers, which together form a decision-tree helpful in analyzing their decisions (Figure 3). By using this decision-tree to analyze responses by Texas officials to energy development's local costs, we can infer not only the reasons behind their responses but also the constraints that must be addressed before choosing different responses.

#### Framework for Analysis

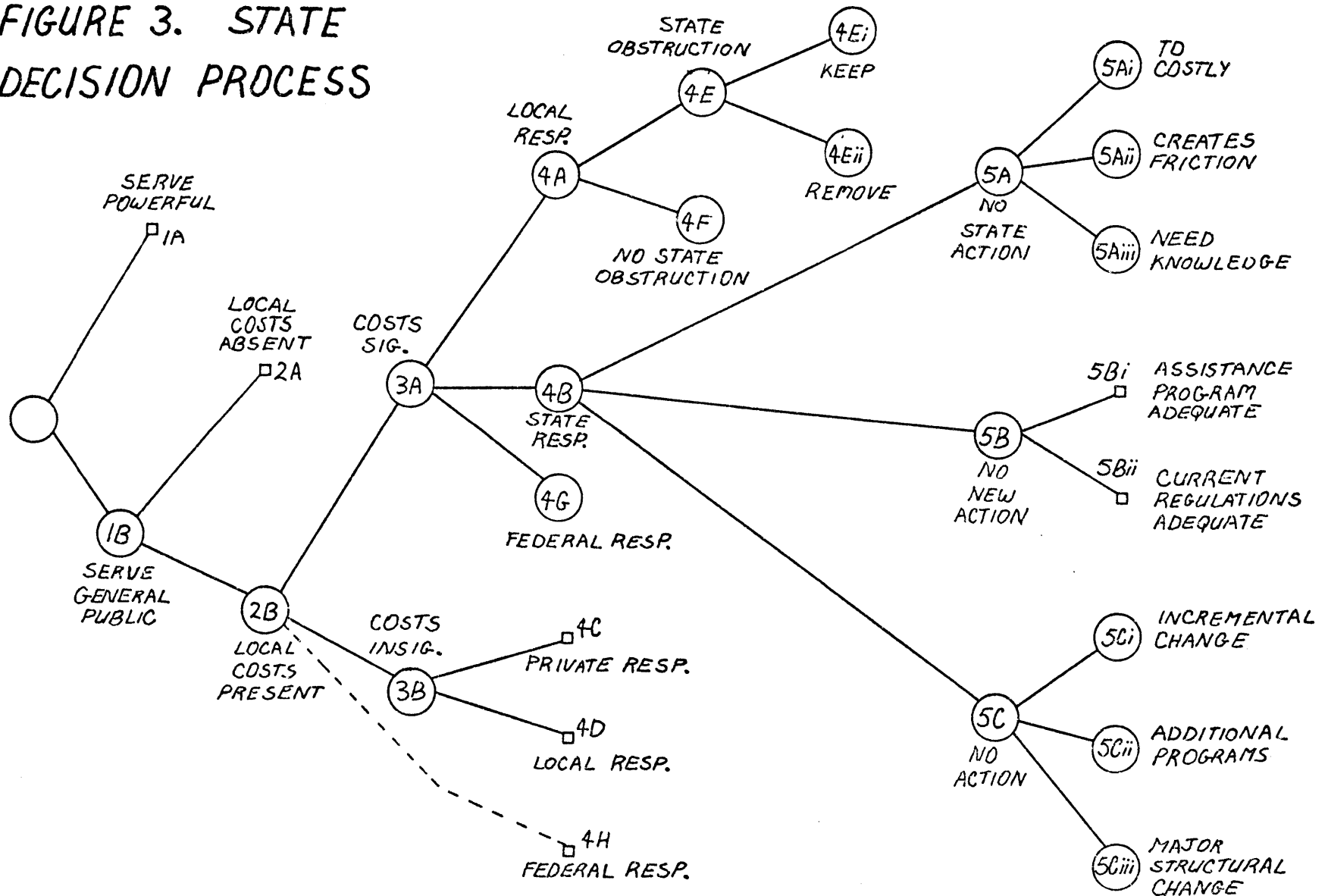
##### Question 1: Whose Needs do we Accomodate?

State governments exist to increase the welfare of all state residents, but a decision-maker (DM)\* cannot serve everyone's needs equally and at any given time will assign some group higher priority than another. For example, a government may claim to serve the "ordinary citizen" when in reality it favors those with power and wealth. When choosing a response to local costs, a DM first asks, "Should I serve the general public, those with minimal power (Decision 1B), or some special group with wealth or influence, such as those who in fact can perpetuate my position (Decision 1A)?" Those choosing 1A have little reason to publicize their decision, but the long-term effects of their actions often become indicators of their choice.

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\*"Decision-maker" refers to elected and appointed state officials, agencies, and other governmental organizations. These decision-makers influence either the direction of state policy or the implementation of state programs and regulations.

FIGURE 3. STATE DECISION PROCESS





Question 2: Does Energy Development Impose  
Local Costs or Suffering?

Assuming a DM chooses Decision 1B (ignoring for the moment whether or not that interest is genuine or a "front" for a different policy), then he must decide if local costs really exist. Two situations could lead to a decision that no such costs exist (Decision 2A): (i) he may not be aware of the costs, either because he has no source of information about local conditions or because local people have not made an issue of them; (ii) on the other hand, an official may see the changes that are taking place without defining them as costs. The fact that some people attend overcrowded schools may be viewed as a valueless phenomenon (i.e., a conscious local choice) rather than as a cost. However, if the DM recognizes and acknowledges costs and suffering (Decision 2B), he proceeds to define these costs.

Question 3: What is the Nature of These Costs?

Once costs are recognized, a decision-maker categorizes them as either significant (Decision 3A) or insignificant (Decision 3B). Significant costs appear long-term and serious, whereas insignificant costs are short-term or minimal, i.e., inconveniences that will disappear in the near future without state government involvement. A DM might define significant costs as insignificant if the welfare of those affected is of little concern to him. Obviously, one's prejudices and ideologies affect the classification given these local costs.

Question 4: Who is Responsible for Mitigating These Costs?

A variety of criteria can be used to assign responsibility for mitigating costs. A legal interpretation of responsibility assigns it according to some formal set of rules, such as a state constitution or set of statutes; other rules reflect ideologies about government involvement. A second criterion assigns responsibility to whomever can be blamed for

creating the costs, and a third assigns responsibility to the actor with the most efficient and effective solution.

Each criterion is used by some DM, and each has its shortcomings. A criterion reflecting formal rules assumes a governmental structure designed to handle previous situations will be appropriate for future ones. A strictly ideological criterion can easily lose sight of the major objective, in this case alleviating costs, in its adherence to what is proper and improper for government to do. Assigning responsibility according to blame is simplistic and can lead to problems in the long run: it may be more efficient for government to absorb the program costs than for a development company, especially if the costs act as disincentives for future development, and it may be impossible to force the "guilty party" to respond. Fault must be imputed whereas the costs from energy development may result from normal operational procedures rather than from a mistake or wrong behavior. Decisions based just on efficiency and effectiveness overlook other, less quantifiable considerations.

In assigning responsibility, a DM tends to balance a consideration for efficiency and effectiveness against his perception of the role of state government. A slight gain in efficiency probably would not justify state involvement in an area generally considered private or local domain. The group assigned responsibility decides what portion, if any, of the costs will be ameliorated and by what means.

Insignificant costs usually do not warrant state involvement and are assigned to local governments (Decision 4D) or to the private market system (Decision 4C). If costs are defined as significant (Decision 3A), then either the local (4A), federal (4G), or state (4B) government will be considered responsible. When localities are considered responsible, state regulations (or the lack thereof) may obstruct localities from managing these costs (Decision 4E). Therefore the state may face a decision about keeping (4Ei) or removing (4Eii) these obstructions. People perceiving significant local costs may encourage the federal government to reduce them (Decision 4G) for one of several reasons: (i) federal policy created them, (ii) energy development benefits the nation and therefore the nation is responsible, (iii) state governments "lack the resources" to reduce costs, or (iv) the situation's complexity requires action by a higher

level of government.

People might also request federal action without considering the significance of the costs (Decision 4H). If federal resources are available, some might think the state should participate in the program--just to get its share--as long as it does not entail federal control over state and local affairs. The federal government has depended on such responses to implement some of its policies.

Question 5: If the State Has a Responsibility  
What Action Should it Take?

If a decision assigns the state responsibility for mitigating costs, then one must decide what action, if any, is in order. A DM could decide not to act (5A) for several reasons: Mitigating the costs may not be "worth it" (5Ai)--the correction process may be more costly, either politically or financially than the original condition. In another situation the solution may be available at the right price, but adopting it may be impossible because of insurmountable political opposition (5Aii). Thus "no action" may be an unavoidable rather than a preferred choice. A lack of knowledge about which actions would help (5Aiii) may also be reason for stasis.

A DM might assume no new programs are needed because existing programs and regulations (created for other reasons) are sufficient (5B). Rather than create a new program aimed specifically at mitigating local costs of energy development--for example, overcrowded schools, overutilized water system, inadequate health facilities, damaged natural environment--he might assume existing programs aimed at a particular kind of cost (no matter what its source) can sufficiently reduce the boomtown costs. For example, assume a state has a program guaranteeing a certain level of public education services. An official may decide no additional effort is needed to reduce energy development's adverse impacts on local public education. Such a symptomatic response, Decision 5B, may be piecemeal and short-sighted. It ignores the situations creating the costs when designing programs to mitigate them. Unless a state's social programs address every type of cost experienced by boomtowns, this approach will be

incomplete.

A DM might, however, recommend some new state action, aimed directly at the local costs of energy development (5C). The action could be minimal, involving only incremental changes in the current governmental system (5Ci). If the structure appears deficient, state action could call for an additional program or regulation designed specifically to mitigate boom-town costs (5Cii). In other cases, the government structure may be so unresponsive, ineffective, or inappropriate that mitigating costs requires major structural changes in the basic system (5Ciii).

The decision tree described above represents the logical decision-making process followed by state DM's when responding to some situation that imposes both statewide benefits and local costs. In the following pages we use this framework to analyze the responses of Texas DM's to the local costs from rapid energy development, in particular revealing how their perception of the costs and the role of state government determine the actions they take.

#### Texas' Responses to Local Costs

Texas state officials have no single perception of the local costs from energy development. Some see no specifically local costs, while others perceive significant costs worthy of a whole new state program. Their responses to these costs vary accordingly, from no action to creation of a Coastal Management Program. The following analysis of responses made by Texas officials reveals not only the types of responses chosen and the reasons behind those decisions, but also the reasons certain responses have not been made.

#### Decisions 1A and 1B: Whose Needs Do We Accomodate?

The first decision, seldom verbalized, is whether to serve the general public (1B) or the powerful (1A). Because it is a discreet decision, we can only examine who appears to have been served in the long run, an indicator of the actual choice.

The analysis and data in hand do not allow us to "convict" Texas officials of decision 1A nor to acquit them fully. Railroad Commissioner Wallace's attitude toward secondary impacts from petroleum development hints at an allegiance to the powerful, especially big business. If people do not like what petroleum development does to their city, he thinks they should leave. The Railroad Commission's Oil and Gas Division avoids any policy which might be distasteful to petroleum developers. Governor Briscoe's policies demonstrate allegiance to large landowners, at the expense of the general public. His budgetary policies have made it more difficult for state officials to maintain contact with localities.

Besides openly favoring the powerful interests, actions which avoid problems created by these interests indicate the Dms favorable disposition toward the powerful. In response to evidence of local problems, the legislature is prone to fund studies, whose recommendations they ignore. This response is consistent with a desire to give the appearance of "doing something" when officials have no real intentions of addressing the problem through real changes. Texas has also passed legislation without appropriating money to implement it. The 1973 Coastal Public Lands Management Act was funded only for a study. Agencies adopted Environmental Impact State Guidelines [24] knowing they would have no staff to implement them; the Guidelines have in fact been ignored almost completely.

Despite this evidence that at least some state officials prefer serving the powerful to serving the general public, we cannot overlook evidence to the contrary. The Surface Mining Division of the Railroad Commission has not been afraid to vex large energy developers. Indeed, the main opponent of its surface mining regulations has been Conoco, a petroleum company responsible for most Texas uranium mines. Both the General Land Office and the Attorney General's Office have reputations for advocating the needs of the general public, especially those with little power. While the Texas Air Quality Control Board shows a healthy respect for private development incentives, its history of litigation shows that it is not bashful about implementing air quality regulations. The recently created Public Utilities Commission, long sought by liberals and moderates in Texas, clearly advocates the consumers' interest.

In the following analysis we give Texas officials the benefit of the doubt and assume their intentions are to serve the needs of the

general public rather than the powerful and wealthy; the alternative assumption cannot be supported without extensive research. However, the reader should recognize that our assumption about Texas' behavior is an operational one not adopted by many residents of the state of Texas.

#### Decisions 2A and 2B: Acknowledging Costs

Texas DMs tend to answer the second question in our model--do costs exist--in the affirmative (2B). When pressed few will say that energy development "imposes no local costs." However, after that point, consensus disappears; people differ substantially in estimating the significance of these costs.

#### Decisions 3B and 4D: Local Responsibility for Insignificant Costs

Perceiving insignificant costs (3B) manageable by local communities (4D) follows a view held by many Texas residents before they actually experience rapid energy development--that local costs will be minimal and short-term in comparison to the benefits. DMs often have the same perception. Once they define costs as insignificant, further decisions about state responsibility disappear. Private developers could reduce costs, but no one expects them to do so voluntarily. By process of elimination, they shift responsibility to localities. These DMs tend to believe that localities have sufficient tools to correct any problems or short-term fiscal imbalances (4D). Communities claiming to suffer from these impacts are assumed (i) to face temporary problems, (ii) to be lazy or uncreative, or (iii) actually to prefer their new situation. These common perceptions discourage state assistance to localities.

Railroad Commission representatives exemplify these views. Commissioner Wallace sees no serious problems at the local level and questions whether the state should alter its permitting process to accommodate local needs. If people do not like the changes which accompany oil development, this Commissioner feels they should move, since

they have the freedom to live anywhere they want. People complaining of energy development impacts have chosen that particular community, problems and all. Staff members are less severe in their judgements; at least one recognizes that places like Pearsall and Dilley have serious problems, through no fault of their own. But he views these situations as the exception rather than the rule, not warranting adjustment in Railroad Commission permitting policy.

Several officials in other agencies recognize local costs, but they differentiate the Texas experience from those in other energy development states. The frequently made comment, "Texas doesn't really have boomtown problems like the Western states do," reflects their relegation of Texas local costs to insignificant proportions. Recognition that Texas might face significant local costs in the future does not justify, in their minds, state preventive action now.

#### Decisions 3A and 4A: Local Responsibility for Significant Costs

Other state officials (and especially local officials) believe that energy development imposes significant local costs (3A), but that localities can manage them (4A). Two reasons underlie the decision that costs are significant. In some cases, benefits expected to accompany energy development do not appear on schedule. Localities anticipating temporary and minimal costs suddenly realize "temporary" may become permanent and "minimal" exceed the costs borne before the boom. Second, they also notice that the phenomenon of net costs is not unique to their locality, but that other energy development towns face a similar situation.

Despite their recognition of the issue's breadth, many officials still assign responsibility to localities. The criterion for this decision is mostly ideological, i.e., that providing public services and controlling land use are local powers. Protecting this division between state and local power is an important political constraint in Texas.

Decisions 4F and 4E: State Obstructions  
to Local Costs

A portion of those assigning localities responsibility for reducing these costs believe local governments currently have ample power to do so--they perceive no state obstructions to effective local control (4F). Rather than point to state obstruction of local efforts, they point to local reluctance to act. Several officials would condition any state assistance on evidence that localities have tried every means available for mitigating these costs. This decision reflects the assumption that state government responsibility begins only when local governments cannot act. It also assumes significant problems are manageable by local governments and that their existence means local governments have chosen not to act.

Other DMs come to a different conclusion: no matter how extensive local governments' efforts to improve public services and to retard the growth rate of local costs, state enabling legislation restricts local options for managing their own affairs (4E). Counties have almost no power over development that eventually affects county costs. They lack ordinance-making powers, except for specific problems, i.e., implementing flood plain management, licensing private sewerage facilities, and zoning land around airports. (Additional zoning powers have sometimes been authorized on a county-by-county basis in response to particular problems; three counties may zone property around two state recreation areas and counties near astronomical observatories may regulate outdoor lighting. [64]) Annexation regulations restrict cities from expanding their tax base, and bonding requirements limit their ability to raise capital for expanding public service facilities. State procedures and regulations also increase the time it takes for cities to receive property and sales tax revenues.

Several current legislative proposals would remove part of these obstructions (4Eii). Although the pressure behind these recommendations did not grow out of the boomtown experience, people concerned about local effectiveness in reducing boomtown costs support them. Proposed House Bill 179 (1977) would provide counties with optional ordinance making powers and proposed Senate Bill 171 (1977) would allow cities to extend



their building codes into their extraterritorial jurisdictions. The county ordinance making bill started with broad ordinance powers; but by the time it left its committees, few were left [55]. Other proposals would relax annexation requirements, permitting all cities of 1,500 population or more to initiate annexation procedures [56].

Other people would rather see these obstructions to local power stay in place (4Ei). The real estate lobby (the Texas Association of Realtors), ranchers, and large landowners see these proposed expansions of county and local powers as threats to private property rights. They argue that counties have all the regulatory power they need, noting the specific powers given selective counties to meet particular problems. Rather than give all counties the same power, they prefer allocating power on a case-by-case basis, as the specific need arose. In this manner counties receive no more control over private property than absolutely needed. It is not their concern that counties be left with too little power.

While localities can help minimize local costs, without assistance they cannot effectively reduce significant costs to the level desired. Current proposals have not addressed all of the state-imposed obstructions facing localities; even without these obstructions it is doubtful that strictly local actions can ameliorate these costs.

#### Decisions 4G and 4H: Federal Responsibility to Boomtowns

Texans rarely assign the federal government responsibility for reducing local costs (4G). Most people interviewed want federal assistance only after both local and state efforts have proved inadequate. They fear federal controls might accompany federal assistance. The few who have recommended federal assistance in reducing these costs are impressed that "the money is there" (4H). For example, the only reference to local public service costs found in the policy paper adopted by the Governor's Energy Advisory Council reads as follows:

It is recommended . . . that revenue sharing should be made available to the adjoining coastal states to aid in offsetting the costs of required public services and environmental costs. [57]

This recommendation evolved out of the awareness that communities impacted

by the development of federal coal leases receive financial assistance to mitigate local costs, therefore so should communities affected by federal OCS development. But nothing else in this policy paper even implies that the Energy Advisory Council believes local communities suffer significant costs from energy development.

#### Decision 5A: No State Action

Some officials recognize significant costs from energy development (3A), and the state's responsibility to mitigate those costs (4B), but they choose not to act (5A). People frequently fear that state efforts to mitigate these costs will discourage development of energy resources, thus creating net costs for the state. In this view, consideration for local social and economic impacts will destroy the benefits received from energy development. Commissioner Wallace maintains that people in Texas recognize their economic dependence on petroleum production and will not "bite the hand that feeds them," i.e., by being concerned with secondary impacts from drilling activities. The Railroad Commission, the Air Quality Control Board, and the Governor's Energy Advisory Council have made it plain that their policies will not dampen private development incentives.

For a different reason other officials also have decided not to act. They believe the state should take some action, but they realize influential people perceive such action as a disincentive to development and therefore will veto it. Proposing the necessary action would create insurmountable political friction. The story behind the proposed Coastal Management Program reflects this kind of reasoning. The consultants preparing that program believe the state should help reduce the social and economic costs imposed by offshore petroleum development. Yet their proposed program makes no provisions for such assistance. When asked why the program addresses only physical environmental conditions, a spokesman pointed out that specifying social and economic impacts amelioration would have been political suicide for the proposal and therefore was excluded. However, the program's structure allows addition of those concerns at a later date, if Texas officials desire to include them.

A third reason for choosing inaction is a lack of knowledge about the most appropriate response. Studying "the problem" may reveal the appropriate action but does not imply that any action will be taken. This type of inaction occurs frequently in Texas: over the last ten years about \$120 million has been spent to study coastal management problems but the proposed Coastal Management Program includes more analysis of coastal problems [2].

No matter which reason they use, these DMS know that significant costs exist and that the state is responsible for minimizing them but has previously chosen not to. When they choose inaction, these DMS realize that costs will not be mitigated at all.

#### Decision 5B: No New State Action

Another decision (5B) also leads to no new programs but assumes state action will occur through existing programs and regulations. An official may assume current state programs and regulations will effectively minimize local costs and therefore will fulfill the state's responsibility to do so. Costs not affected by these programs are by implication insignificant or the responsibility of local government.

These existing programs were not designed to reduce local costs from energy development, but they happen to do so. State assistance was designed to help all localities provide a minimal level of services; boomtowns can take advantage of these services like any other community. Other programs and regulations were designed to minimize statewide environmental costs from various types of developments, and some reduce local costs in the process.

In Texas a decision to channel future state action through existing programs and regulations reflects a high value on minimal state involvement in local and private affairs. The degree to which state government will assist (and therefore interfere with) local provision of services has previously been defined; boomtowns requiring greater assistance are simply out of luck. The ideological limits to state involvement take precedence over efficiency and effectiveness. The underlying objective appears to be providing a certain level of state

assistance rather than guaranteeing a given quality of public service.

### Existing Local Assistance Programs

There are three types of local assistance programs in Texas which DMs point to as fulfilling the state's responsibility to mitigate significant local costs. One type (Foundation School Program) subsidizes local operating costs in order to guarantee a minimal level of a public service. Another (Water Development Fund, Rural Industrial Development Fund) provides low-interest loans for financing capital improvements. These loan programs require state funds initially but expect to be self-supporting eventually. A third program category (Department of Community Affairs, Councils of Governments, Texas Parks and Wildlife Department) facilitate local acquisition of federal funds and require state funds only for program operating costs. The DM choosing "no new action" believes these assistance programs minimize local costs, but the following analysis of these programs demonstrates their inability to do so.

#### i. Subsidizing operating costs

Only one state program, the Foundation School Program operated through the Texas Education Agency (TEA), subsidizes public service operating expenses incurred by localities. DMs adopting Decision 5B assume the state has no responsibility (i) to subsidize public education beyond the amount this program provides or (ii) to guarantee a minimal level for any other public services. Implicit in Decision 5B is the assumption that communities can provide "basic education" by combining this subsidy and local resources.

Each school district pays 35¢ per \$100 of real market value; the state pays the difference between this figure and each district's Foundation School Program cost, the operating expenses estimated from the previous year's average daily attendance. When funds are available, as they have been for the past several years, the TEA can make two of the ten monthly payments in September, giving schools some help with large

initial expenditures.\*

The TEA does not aid schools with capital improvements, since such assistance is often perceived as encouraging state control over local affairs. Subsidizing operating expenses may help boomtowns in the long-run, but it ignores the serious costs imposed by overcrowded and outdated school facilities.

ii. Capital assistance loans

Recognizing the difficulties energy boomtowns have in financing new or expanded capital facilities, a DM may assume the current loan programs respond to localities' immediate capital needs and reduce their long-term costs from constructing new facilities. The Water Development Fund provides low-interest capital loans for expanding the local water capacity; the Rural Industrial Development Fund loans part of the cost of constructing an industrial park.

However, because of conservative fiscal policies, neither of these programs have effectively reduced local costs from energy development. Although the Water Development Fund was created to aid small communities experiencing financial hardship\*\* [42, 43], it cannot assist financially unstable communities. The Texas Constitution restricts the Fund's allocation to local funds "certified to be available" [44]. As the Board has stated:

The possibility of the State of Texas emulating the City of New York by indiscriminate and irresponsible issuance of State supported debt is extremely remote, if not impossible. Additional bonds will be issued only after the need is aptly demonstrated to our highly qualified six-member citizen board [45].

In the interest of all state taxpayers, the Board is extremely hesitant to extend funds to financially unstable communities. They review a community's long-term ability to repay loans; those with large temporary populations, such as oil drilling areas, and with no guarantee of future

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\*When a district's enrollment is greater than expected, the TEA will recalculate its payments and make reimbursements at the end of the year.

\*\*The Fund was designed to be self supporting (through repaid loans) by the 1990s, and to date has needed only \$29.4 million in general state revenue to cover debt service [44].

permanent industries are considered a bad credit risk.\* Since 1972 the demand for this financial assistance has increased dramatically, thus increasing boomtowns' competition and reducing their probability of funding.

The Rural Industrial Development Fund [39] has had even less impact on local costs from energy development. A similarly conservative loan policy, minimal funds,\*\* and stiff competition from more stable communities has made it difficult for energy development localities to receive funding.

### iii. Local self-help programs

A DM choosing response 5B assumes the state has little responsibility for any local costs not mitigated through education subsidies or local loan programs; programs helping communities find other resources fulfill this responsibility. Since most of these "other resources" are federally funded, Texas finances only the state agencies' operating costs.

The services provided through the Department of Community Affairs (DCA) provide the best example of this approach to reducing local costs. Created as a clearinghouse for federal community programs, the DCA helps Texas communities receive their "share" of federal financial assistance, at minimal cost to the state. It helps communities discover and apply for federal funds and provides assistance only (i) when problems cannot be "totally solved with local resources," (ii) when they do not "fit" other aid programs, and (iii) when either local communities request assistance or federal programs require it. Any initiative for new programming must come from either the Governor or the Legislature [47].

DCA provides no special services to energy impacted communities; indeed, the staff assumes local costs are insignificant and manageable by the private market: they reason that energy developments are close to

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\*By August, 1976, \$228,793,804 of the available \$400,000,000 had been committed for 88 projects, 80 percent of which smaller communities have received.

\*\*The 1973 Legislature allocated only \$600,000 (permitting only six loans), but the 1977 Legislature's proposed budget includes a \$2 million per year allocation for this biennium.

urban centers that can provide needed services for rural areas, including private housing. The DCA sees no reason for state government involvement unless basic public services are severely threatened and they do not believe energy development can induce such conditions in Texas.

Other local self-help programs have a similarly small impact on energy development communities. The Parks and Wildlife Department sets priorities for distributing federal recreation funds [40, 41]; communities with large temporary populations and unstable fiscal conditions receive low priority. The Councils of Governments "publicize" federal programs and provide planning assistance but cannot effectively help communities reduce the serious local costs. The Texas Industrial Commission teaches localities how to attract new industries, but they only work with communities that actively participate. Certain types of energy development communities have difficulty making this commitment, given the many other problems demanding their attention.

These six programs represent the state's total effort to directly help localities provide services. For many decades the state has supported education in Texas, seen as an investment in the state's future development. The Rural Industrial Development Fund was justified by a similar rationale. State aid for water development projects was accepted only after localities suffered serious water shortages. Since many service costs experienced by boomtowns are neither frequent in other types of communities nor considered a threat to the state's future development, it is unlikely that the state will create special local assistance programs to reduce these costs. Therefore, this approach to reducing local costs will probably continue to be piecemeal and inadequate.

### Environmental Regulations

DMs choosing no new state action assume the previously discussed assistance programs will reduce social costs after or as they appear; they further assume the existing environmental regulations will prevent local costs involving damages to the physical environment. Taken together, these two types of state action are expected to meet Texas' responsibility to mitigate local costs from energy development.

These regulations fall into two categories: Regulations of mineral exploration and production prevent it from damaging the land, air, and water. Other regulations prevent mineral processing and supporting activities from damaging natural resources. Although DMs choosing response 5B assume these regulations sufficiently remove energy development's threat to the environment, including local environmental costs, the following discussion reveals shortcomings in these regulations that permit increases in local environmental and financial costs.

i. Mineral Exploration and Production

The Railroad Commission regulates petroleum activities on private leases, and the General Land Office does the same for state-owned leases. Despite the General Land Office's role, the immense power of the Railroad Commission means they effectively set the tone for petroleum production regulation in Texas.

Since 1919 the Oil and Gas division of the Railroad Commission has regulated drilling and extraction of petroleum resources, and since 1965 it has prevented pollution from drilling activities [26, 58]. Its main focus is maximizing long-term petroleum production while preventing water pollution [26], which it accomplishes by issuing drilling permits and by regulating drilling procedures, the discharge of water during drilling operations, and the rate of petroleum extraction.

Although the Railroad Commission effectively implements its specific conservation instructions, its regulatory activities do not address all types of natural resource damage done by petroleum production, to say nothing of the social and economic costs created. The Oil and Gas Division strictly regulates oil and gas developments and prevents water pollution from these operations; other implications from these activities do not concern them. For example, Young of the Oil and Gas Division recognizes that oil drilling, especially secondary recovery, consumes large quantities of already scarce groundwater in west Texas. The conflict over water exists, but the Railroad Commission has taken no steps to minimize this conflict. Their permitting policies could



consider drilling's impact on groundwater supplies, but the Railroad Commission will not venture beyond its prescribed responsibilities. When granting permits, the Commission views the state as a featureless plain, noting only the location of other wells and the mineral reserves. It shows no concern for petroleum's social and economic impacts at the local level.

The Railroad Commission regulates lignite, coal, and uranium mining through its Surface Mining and Reclamation Division. This new division (started in 1975) enforces standards for land reclamation and related water pollution by registering exploration activities, issuing mining permits, and inspecting mines. A Performance Bond, provided by permit applicants, equals the total cost of reclaiming the proposed mine and will be used for reclamation should an operation fail to comply with the state's standards [29]. All but one lignite mine have already conformed to standards, but uranium mine operators have generally resisted pressures to reclaim open-pit mines. All nonconforming mines are facing court-ordered compliance.

Despite their success in preventing environmental damage from surface mining, these regulations overlook other types of environmental costs. They deny mining permits where they would endanger surface water and clean air, but they do not deny them for endangering the supply of groundwater [31] or the availability of land for food production. The Division does not consider mining's full implications, including secondary impacts, for host communities. Indeed, a spokesman doubts that mining in Texas creates any significant second-order impacts.

#### ii. Regulating Mineral Processing and Supporting Activities

The DMs depending on existing programs and regulations assume the Railroad Commission's activities effectively prevent environmental damages from energy production; additional regulations are expected to do the same for mineral processing and its supporting activities. These regulations, designed to prevent water and air pollution, may reduce local costs imposed by environmental damages, but they may actually increase financial cost for localities.

Three state agencies regulate local water supplies. The Water Quality Board sets water pollution standards and implements a statewide water quality control program. If adhered to, these standards prevent costs from water pollution, but the Board cannot assist communities in maintaining these standards. They have no influence over distribution of state assistance funds--they can only force communities to comply with standards, at whatever costs. The Water Rights Commission may settle conflicts over rights to surface water, but it has little opportunity to minimize localized costs. It can help protect a locality's source of surface water, but it has no control over groundwater, the major supply of water in oil development areas.

Water Conservation and Subsidence Districts are the only governmental bodies with the authority to control the spacing of water wells and the water extraction rates [28]. They may regulate water extraction in order to prevent waste, to protect water reserves, or to prevent subsidence, but they have no mandate to establish priorities among users.

Although they have not been used for this purpose, the district's conservation measures could reduce local costs from energy development. In Southwest Texas, the water extraction rate exceeded the recharge rate before the recent oil development began. Since oil development (especially secondary recovery) requires substantial amounts of water, it has accelerated the decline of local water supplies, which increases costs for agriculture, ranching, and residential users.\* Water districts could slow the extraction rate, but to date these powers have not been used in this way within oil development areas.

The Air Quality Control Board restricts emission of particulates, sulfur compounds, toxic materials, volatile carbon compounds, and nitrogen compounds. It will not permit facility construction or operation if it (i) is expected to cause significant deterioration of existing ambient air quality; (ii) is located without "proper" consideration of current land use; or (iii) fails to use the best control technology available. Industries have learned, over the past eight years, that the Air Quality

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\*A lower water table means increased pumping and treatment costs, and could mean drilling new wells.

Control Board means business. They firmly enforce regulations they consider crucial to Texas air quality [37, 38].

Some Texas officials sense enforcement of air quality regulations could deter energy development, but the Board's staff has made it clear that their policies will not do so. Specifically, officials fear that substituting lignite for natural gas in electricity generation will conflict with the SO<sub>2</sub>, particulate emission, and "significant deterioration" standards. But staff members of the Air Quality Control Board maintain that this fear is unfounded and that the threat has been exaggerated. While boiler conversion could present problems along the Texas coast, they doubt it would in other parts of Texas. Requirements for "the best available control technology" on new facilities is conditioned on the "economic reasonableness" of investing in such equipment [38]. The Board will not strictly enforce particulate or ozone standards in the near future; neither will they enforce EPA's hydrocarbon standards since strict enforcement would mean a serious reduction of economic activities in almost all areas of the state.

DMs depending on existing programs and regulations to reduce local costs from energy development may be satisfied with the results: minimal financial assistance, extensive and easily accessible local self-help programs, effective prevention of most first-order environmental damages, minimal prevention of second-order environmental damages. These state actions may address all those costs a DM considers significant and within the state's responsibility. However, if a DM has a serious commitment to reduce local costs from energy development, he probably will consider new state action to ameliorate these costs.

#### Decision 5C: New State Action

##### Decision 5Ci: Incremental Change

Some DMs have decided these existing programs and regulations do not mitigate the significant local costs from energy development and that some new state action is in order. Their proposals do not add another "layer" (i.e., programs, regulations) to government, but just

make small adjustments in the current structure and procedures (Decision 5Ci). In Texas, these incremental changes usually mean (i) increased coordination of existing agencies or (ii) expansion of existing offices or their budgets.

Previous decisions to coordinate the actions of existing agencies have not been aimed at reducing local costs, but they provide insight into the implementation of such an approach in Texas.

i. The Need for Incremental Change

By the mid-1960s legislators realized that the state government's structure precluded effective state policy implementation. Indeed, that was the objective of the structural design in the first place. The Governor has limited power. He appoints most commissioners and agency heads, but (with one exception) he cannot remove them from office. The Lieutenant Governor appoints all the legislative committees, serves as President of the Senate, and competes with the Governor for political power. Four popularly elected Commissioners serve within the executive branch although they are politically independent of the Governor. The Commissions and agencies face few incentives to coordinate their efforts with any other office:

[E]ach agency was formed to respond to a particular need and tends to operate within its legislative or constitutional statement of purpose. . . . State agencies are very autonomous, they obtain their appropriations from the Legislature, and it is the Legislature and their governing boards they must answer to--not the Governor [64].

To correct for the agencies' provincial and narrow perception, the legislature has designed several interagency coordinating offices to facilitate cooperation and consistency.

ii. Early Effects of Increased Coordination

In 1965 the Planning Agency Council for Texas (PACT) was created within the Governor's office to review, coordinate, and unify state

improvement projects (i.e., water supply, parks, transportation). In 1967 it was replaced by the Division of Planning Coordination and four interagency councils formed along functional lines [23]. The Division was responsible for strengthening state policy-making, advocating natural and human resource concerns, coordinating state agencies, and supporting the interagency councils. Unfortunately, this office could not implement policies--dependence on the voluntary cooperation of state agencies and legislators limited its effectiveness.

iii. Interagency Council on Natural Resources and the Environment (ICNRE)

One of these four interagency councils was the Interagency Council on Natural Resources and the Environment (ICNRE). Its implementation problems contain a lesson for DMs proposing some incremental change as a method for mitigating local costs. The ICNRE sponsored the first action aimed specifically at mitigating local costs from energy developments--Environmental Impact Statement Guidelines [24]. (While the action did not address energy development per se, it specifically addressed secondary impacts.) The document outlined procedures for member agencies to use when reviewing permit applications. Each signatory agency agreed to use these or similar procedures in assessing the permit applications they received, but the Guidelines have been almost completely ignored and the ICNRE has no power to implement it.

Two characteristics of the document spelled its failure. First, the document is voluntary, a prerequisite for its adoption. Agencies carefully guard their independence from centralized state authority and avoid adopting any procedures threatening their power. Second, the ideologies expressed in this document differ from those expressed by most agency procedural rules. It stresses the importance of a "systems approach" that coordinates individual agency decisions and assesses their total and long term impact, whereas most agency permitting procedures consider only primary impacts. Its ideologies parallel those of the former Texas governor (in office when it was prepared) but not its current governor. His support would have encouraged implementation.

No public outcry demanded environmental impact statements, so legislators felt little pressure to support it. Permitting agency staff are still often unaware of the document and seemed to doubt the value of requesting information on second-order impacts as part of their permitting procedures.

iv. The Governor's Energy Advisory Council

A previous decision involving incremental change created the Governor's Energy Advisory Council in 1973. Despite its mandate to create a coherent state energy policy, it has not considered energy development's impacts on localities and has concentrated on more aggregate production and demand questions.

By executive order in 1973, Governor Briscoe created an Energy Advisory Council to advise him on energy-related matters and to administer energy-related research contracts. The Energy Policy Planning Act of 1975 (Senate Bill 519) established the Council legislatively and authorized it to conduct energy-related research, to advise the Governor, and to prepare an energy policy for consideration of the Legislature. The EAC maintains contact with energy companies, informs legislators of current technologies, and reviews energy-related legislation when asked, but it has not suggested comprehensive policies, prepared legislation, or endorsed legislation.

Because of the Council's dependence on the Governor and other agency heads, the staff has not been able to consider local costs from energy development. Their explicit opinions clearly reflect the prevalent ideologies of influential DMs: (i) an unincumbered private market system can "solve" most energy problems; (ii) energy development in rural areas causes few serious local problems; (iii) local governments can manage these problems; and (iv) the state has no additional responsibility to these communities because they are getting rich from energy development.

Their recently adopted recommendations reflect this preference for accelerated energy development [22]. As chairman of the EAC, the Governor calls its meetings and sets the tone for its work.

To date, these attempts at incremental change within the Texas government have not effectively coordinated government policy, much less

reduced local costs from energy development. Two conditions in particular have caused their failure. First, individual agencies are powerful and independent and they will not willingly relinquish that independence to centralized authority. Second, these incremental changes have depended on agency cooperation and the Governor's leadership. The previous Governor politically supported coordinating activities, but Governor Briscoe has undermined their ability to operate effectively and has discouraged any movement toward coordinated policy-making. The success of this approach to mitigating localized costs depends on the attitude and ideology of the current governor and agency heads.

v. Proposed Coastal Management Program

The proposed Coastal Management Program represents a new attempt to reduce local costs through incremental changes in government procedures. Although its title implies a new program, it actually involves an incremental change that increases inter-agency coordination.

In response to the 1972 Coastal Zone Management Act, the Texas Legislature authorized the General Land Office to develop a coastal zone management program [62].

Political support for this authorization rested on three conditions: (i) it involved public lands managed for the long-term benefit of Texas public schools; (ii) minimal private developments operate specifically on public lands; (iii) federal matching dollars were then available with an approved state coastal management program. Besides this authorization, other aspects of the legislation increased regulation of activities on coastal lands, but appropriations covered only the coastal program's preparation.

Under contract with the General Land Office, Research and Planning Consultants (RPC) of Austin began developing this program. It started as a new program, but the development process whittled away all but incremental changes in current procedures. The process, a "bottom-up" approach to planning, used eighteen public hearings and fifteen regional workshops to ascertain public limitations on state controls. A forty-one person advisory committee representing otherwise incompatible political forces

participated in a consensus-building process that produced the strongest controls politically acceptable [46]. Many environmentalists and some state officials preferred a new program with stronger state controls, but political reality allowed only these incremental changes.

The program provides for (i) an organized information system, (ii) procedures for assessing impacts from planned activities, and (iii) an interagency council, the Natural Resources Council, to replace the existing Interagency Council on Natural Resources and the Environment [36]. Several characteristics of the bills comprising the program have appeased those forces--real estate, ranching, and big business--usually opposing stronger state controls. It imposes no additional regulations, requirements, or site-specific criteria for operating in the coastal zone. Any regulatory changes would evolve through agency coordination within the Natural Resources Council. In other words, the program provides the structure and information needed to improve the management of coastal areas but does not specify improvements. The General Land Commissioner Bob Armstrong portrays the proposed Coastal Management Program in these words:

The program is a product from the people; not from the politician down. It is not a no-growth program. It is a "how we'll grow" program. It is not a "more government" program. It is a better and more effective government program, using existing structures [2].

His apologia touches on three common sources of opposition to new state government programs.

#### Decision 5Cii: Creating New Programs

A DM in Texas should choose the creation of new programs (Decision 5Cii) with caution. New programs have not been adopted to mitigate local costs from energy development. Resistance to expanded state government makes this option unwise politically--unless incremental changes in the existing procedures have already proved ineffective. A DM wanting to create new programs for mitigating local costs should pay attention to the characteristics and political histories of recently implemented new programs. An analysis of these programs and their supporting rationales



reveals six areas of concern to Texas lawmakers.

i. Local Subsidy/Fiscal Stability

Financial assistance to localities derive from self-supporting funds (Water Development Fund; Rural Industrial Development Fund) that only temporarily draw on state general revenue. Operating cost subsidies are favored over capital subsidies because the former involve only short-term commitments of state funds.

ii. Consideration for Other States

One condition encouraging political support for the recent surface mining legislation was the realization that other major coal producing states already regulated surface mining; without comparable regulations, Texas would be vulnerable to companies reducing operating costs by permanently destroying the long-term value of the surface land.

iii. Threat of Federal Intervention

Adoption of water quality regulations was independent of any federal pressure, but both air quality controls and surface mining regulations were adopted, at least in part, as a response to threatened federal intervention.

iv. Private Property Rights

Whenever possible proposed new programs should avoid state take-over of private property rights. Both the Water Conservation Districts and the Water Rights Commission were created to mitigate otherwise unresolvable conflicts over property rights. These state interferences with private property rights were justified because private entities could not settle the conflicts without state intervention. Surface mining

regulations deviate from this previous trend of limited state interference. These regulations were designed to protect the future value of surface property, i.e., the state's non-renewable resources, even if that property is privately owned.

v. Local Control

To the extent possible, efforts to mitigate local costs should minimize state interference with local control; such interference is justified when localities have proved ineffective in managing a task. Water Conservation Districts avoid state interference by only allowing localities to initiate creation of these districts. During the hearings for the surface mining regulation, the most pervasive type of mining (sand and gravel) was removed because it would affect almost all Texas localities and was seen as excessive interference with local affairs. Justification for a Public Utilities Commission was based on the realization that (i) consumers have a right to quality utility services and (ii) municipalities have failed to provide it without state intervention. The Public Utilities Commission may force municipalities to effectively regulate the quality of municipal utilities according to established state standards [32].

vi. Effect on the Private Enterprises

Programs interfering with private enterprises are justified only when the private sector has damaged a highly valued state resource. Regulations of petroleum extraction guarantee maximum production from Texas petroleum fields; without such regulations, owners may maximize current profits by extracting oil and gas at high but suboptimal rates. Air and water quality standards prevent people from destroying these natural resources; without such regulations, people will dispose wastes through the least costly (and most polluting) methods. The Public Utilities Commission determines when it is necessary for utility companies to expand their generating capacity; without such controls, utility companies have

little incentive to act in the best interest of consumers, since they do not face rate competition from other companies.

There is no absolute limit for any of these political constraints. An action's perceived costs will be balanced against its expected benefits and against the probable costs occurring without the action. The importance of each constraint also changes over time as people adjust their perceptions of the costs and of state government's role in reducing them. However, a DM should consider these constraints when designing a new program.

#### Decision 5Ciii: Major Structural Changes in State Government

These six political constraints are even more important when a DM proposes a structural change in state government operation. Indeed, major structural changes are seldom proposed in Texas because they are so difficult to implement. Texas officials have proposed none for mitigating local costs, but the story of two recent (and unsuccessful) attempts exemplify the type of resistance expected for this type of change.

The proposed 1971 Land Use Management Bill attempted to give statewide land use control to the Texas Land Commissioner [63]. A newly created Land Use Management Division would have prepared a land inventory and development plan. Subject to public hearings and the Governor's approval, the Regional Planning Commissions would have implemented the plan with restricted powers to zone unincorporated areas.

The same forces traditionally opposing county zoning power--the real estate lobby, large landowners, and ranchers--spelled defeat for this bill. They perceived the provisions as excessive and unnecessary interference with private property rights and local affairs. Despite the governor's support large landowners and the real estate interests still maintained effective control.

Another state land use bill, the Texas Land Resource Act of 1973 (Senate Bill 645), was defeated by the real estate, agriculture, and ranching lobbies. Similar to the 1971 Land Use Management Bill it provided for a land resources inventory and a development plan, but a newly created Land Resource Commission would have implemented it. The bill puts no specific limits on the state's power, and permits local review of the

Plan after it has been written. Proponents of the bill assumed the proposed National Land Use Policy Act would pass and therefore Texas needed state controls to prevent federal intervention. The federal threat was too weak to justify this structural change in state/local/private relations.

Major structural changes aimed at mitigating local costs from energy development will probably face similar types of opposition. Efforts to strengthen and centralize state control over energy development will conflict with those having vested interests in the current system--i.e., real estate interests and large landowners. Increased power in a centralized office will mean decreased power either within the agencies or within the local governments. Attempts to take power from either agencies or localities will meet resistance, as did the proposed land use bills. While the current government structure in Texas does not effectively respond to local needs, entrenched political power almost guarantees it will stay this way.

## IV. CONCLUSION

Although decisions by Texas officials follow no single path of our decision model, there is a trend toward adoption of new programs, as evidenced by the environmental programs created in the 1960s and 1970s and by the addition of the Public Utilities Commission in 1975. While the environmental programs were partially a response to threatened federal intervention, the Public Utilities Commission was solely a response to local pressure to "do something about inadequate services" in the state. Imposing incremental changes through interagency councils has recently become a common response. The proposed Natural Resources Council attempts to strengthen this approach, but some groups believe incremental changes will never be satisfactory and should be abandoned in favor of a new layer of decision-making.

The time is ripe for more centralized controls through creation of new programs, but we expect no rapid move in that direction-- especially for new programs ameliorating local costs. The conservative "no government" forces still have substantial influence, and anti-"welfare" attitudes are still quite strong, reinforcing a reluctance to create any more "give away" programs than are absolutely necessary. Local problems are often perceived as a fact of life not worthy of government intervention. However, the increasing concern for consumers and for social welfare compete with these restraining attitudes. Recently approved state regulation of utility services represents the attitude that the state should guarantee consumers a basic quality of local public services. A new breed of politicians, with slight but increasing influence, combine fiscal conservatism with a concern for "the little people," but their rise to power will be neither easy nor instant.

Several politicians representing this new power group believe energy development and concerns for local impacts can peacefully coexist, i.e., that the state can further regulate energy companies without repelling them. This conclusion assumes (i) energy development industries are not crucial to Texas' future economic health; (ii) demanding more of them will not necessarily damage energy development. The General Land

Commissioner has publicly pointed out that the Texas economy depends equally on Texas tourism, fishing, and agriculture industries. The state should not overlook the impact of energy development on these industries; the petroleum industry may require restraint in order to protect these others. Since Texas has a strong locational advantage for energy industries, it need not treat them so delicately. Further demands (within reason) will neither drive them away nor discourage other industries from locating in Texas. The rationale supporting the proposed refinery tax makes these very claims and recent experiences with surface mining regulation reinforce this belief.

It seems obvious that the state can make further demands on energy industries without seriously damaging the state's economy, but influential political leaders refuse to consider proposed demands or regulations on energy industries. These political leaders are dispersed throughout each level of state government, making it difficult to affect their influence. Within the executive branch, the current governor and several powerful agencies, such as the Railroad Commission and the Texas Parks and Wildlife Department, discourage political consideration of the local costs from energy. Other executive agencies, such as the General Land Office, the Attorney General's Office, and the Texas Industrial Commission, show more concern. The Senate contains the strongest support for natural resource protections, such as the surface mining legislation, but it hosts the strongest opposition to county ordinance-making power. The House of Representatives generally displays a stronger concern for local control--explaining their support for proposed county powers and their resistance to increased state power--even when local control hurts localities. Conservative leadership in the House of Representatives discourages additional regulation of energy industries.

The traditionally influential politician in Texas--with interests in big business, ranching, large land-holdings--appears to serve those interests by avoiding consideration of local costs and conditions among localities. The newer political forces--younger, politically sophisticated professionals and independent businessmen--show more sensitivity to those not endowed with large land holdings and wealth. A difference from previous generations of Texas liberals is this new type of politician's ability to survive.

The mere existence of influential officials opposed to state amelioration of these local costs does not mean new actions are automatically doomed to failure. Indeed, this analysis of previous state responses outlines the strategy most appropriate for implementing new state action aimed at reducing these costs. DMs perceiving significant costs that require new state action might consider the following four steps before proposing new action.

Since, many state officials still feel these costs are insignificant and therefore do not warrant state involvement, the first step in demonstrating that these costs are not only serious but also long-term, that they do not disappear quickly, and that, in the meantime, they burden localities.

Once their significance has been established, state officials must be convinced that local control, no matter how broad, cannot reduce these costs. Although localities might conceivably exclude developments (if their power were expended), they would not be able to anticipate developments and regulate all of these activities.

Once state responsibility has been established, one must show other DMs the need for a response differing from previous ones. Reasons for "no action" have disappeared: other states have addressed the local costs from energy development without discouraging it; studies both in Texas and in other states provide ample analysis of the problems and alternative solutions. "No new action" is also inappropriate. The existing assistance programs cover only a portion of the local costs. The symptoms may look the same (over-crowded schools), but the causes of boomtown costs differ enough from those of other local costs, that the same solution does not work. Current environmental regulations ignore developments' impacts on human resources, which are just as important for future generations as physical resources. The only option left is new state action.

Any proposal for new state action must be defensible on the ground that it does not include unnecessary expansion of state power. The costs it addresses must be pervasive and a serious threat to the state's future. Unless incremental change has been tried the wisest move in Texas is first to recommend small adjustments in state procedures

as a way of reducing local costs. If incremental change proves ineffective, then new programs are more acceptable politically. Recommendations for major structural changes should be made as a last resort, when other options are perceived as completely inadequate.

The currently proposed Coastal Management Program attempts to move the state from piecemeal environmental regulation, Decision 5B, to coordinated and thorough controls, Decision 5Ci. The consensus process used to design this program has convinced both the General Land Office and its consultants that the program represents the maximum amount of change acceptable in addressing local costs from energy development. If this observation is accurate, then influential DMs consider energy development impacts as either (i) insignificant, (ii) significant but a local responsibility, or (iii) significant but adequately covered by current programs and regulations. These three perceptions must be addressed and changed before a DM can successfully implement a new state action mitigating local costs.



## V. REFERENCES

1. Texas Mid-Continent Oil and Gas Association, "76 Facts About Texas Oil and Gas". Dallas, Texas, 1977.
2. Land Commissioner Bob Armstrong, Statement, for immediate release, Austin, Texas: General Land Office, March 4, 1977.
3. Bob Bullock, 1976 Annual Financial Report of the State of Texas, Volume 1. Austin: Comptroller of Public Accounts, November 1, 1976.
4. House Bill 1200 (1977), Nugent, et. al.
5. Milton L. Holloway, "Executive Summary" of Texas Energy Outlook: The Next Quarter Century. Austin: The Governor's Energy Council, 1977.
6. John R. Adams and John H. Vanston, Coal and Lignite in Texas: A Brief Review, Public Information Report No. 1. Austin: Center for Energy Studies, The University of Texas at Austin, July 1977, pp. 2-4.
7. Information Department, "Savings from Lignite", Texas Electric Service Department, March 4, 1977.
8. Adams and Vanston, Coal and Lignite in Texas, pp. 21-23.
9. House Bill 804 (1977), Blythe.
10. David White, "Coal and Lignite Power Generation -- Part 1", Texas Energy Report No. 20, July 1976. Austin: Governor's Energy Advisor Council.
11. Remarks of Senator Max Sherman, Surface Mining Seminar of the Texas Railroad Commission, May 19, 1976.
12. Article 1066c, V.T.C.S.
13. Senate Bill 2 (1977), Lombardino; House Bill 61 (1977), Wilson; House Bill 1 (1977) Wyatt.
14. Senate Bill 360 (1977), Moore.
15. House Bill 179 (1977), Tejada.
16. Texas Constitution, Article III, Section 64(b).

17. Article 1108 and Article 1119, V.T.C.S.
18. Senate Joint Resolution 52 (1977), G. Jones.
19. House Bill 1043 (1977), Cates.
20. Texas Surface Mining and Reclamation Act, Senate Bill 55 (1975), Sherman.
21. Energy Impact Project seminar discussion with Ron Little, March 1977.
22. Governor's Energy Advisory Council, "Policy Position on Selected Energy Issues". Austin, Texas, February 21, 1977.
23. House Bill 276, Acts 1967, 60th Legislature, Regular Session, Chapter 417.
24. The Interagency Council on Natural Resources and the Environment, "The Environment Policy -- Guidelines and Procedures for Processing Environmental Impact Statements". Austin: Division of Planning Coordination, Office of the Governor, November 1975.
25. Research and Planning Consultants, Inc., Texas Coastal Management Program: Current Permitting Process in State and Federal Natural Resources Agencies, Volume II. Austin: General Land Office of Texas, June 1976, pp. 606-608.
26. Office of Information Services, Railroad Commission of Texas, "Your Railroad Commission -- How it Serves Texas". Austin, August 1976.
27. Senate Bill 169 (1977), Clower,
28. House Bill 935 (1973); Texas Water Code, Section 52.
29. Texas Surface Mining and Reclamation Act, Senate Bill 55 (1975), Section 13.
30. Ibid., Section 4(11) and Section 18.
31. Ibid., Section 12(a)(3).
32. Public Utility Regulatory Act, (Article 1146c, V.T.C.S.) Article 1, Section 2.
33. Ibid., Article VII.

34. Gerald Seweall and Mary Beth Rogers, The Story of Texas Public Lands: A Unique Heritage. Austin: Texas General Land Office and J. M. West Texas Corporation, 1973.
35. Ibid., p. 40.
36. Senate Bill 576 (1977), Schwartz; Senate Bill 577 (1977), Schwartz; House Concurrent Resolution 64 (1977), Powers.
37. Texas Air Control Board, Biennial Report, September 1968 to August 31, 1970. Austin: Texas State Department of Health, 1971.
38. Texas Air Control Board, Regulation VI, "Control of Air Pollution by Permits for New Construction or Modification", Rule 603.1.
39. Texas Industrial Commission, "Facts on the Rural Industrial Development Fund". Austin, Texas, mimeo.
40. Texas Parks and Wildlife Department, Comprehensive Planning Branch, Texas Outdoor Recreation Plan, "State Summary". Austin, 1975.
41. Article 6081r, V.T.C.S. (Chapter 112, Acts of the 59th Legislature, Regular Session, 1965).
42. Texas Water Development Board, Texas Water Development Board and Water for Texans. Austin: Texas Water Development Board, 1974, p. 1.
43. Ibid., p. 2; Texas Constitution, Article III, Sections 49c and 49d.
44. Texas Water Development Board "Texas Water Development Fund, 1957 through 1976". Austin, mimeo, p. 4.
45. Ibid., p. 5.
46. Interview with Gary Catron, R.P.C., March 7, 1977
47. Texas Department of Community Affairs. Fact Sheet, mimeo, 1977.
48. Proposed severance tax legislation, House Bill 804 (1977), Blhtye,
49. Interview with Jerry Randall Hill, Surface Mining Division of the Texas Railroad Commission, March 7, 1977.
50. House Bill 1145 (1977) by Keese.

51. Telephone interview with Mr. Jerry Golden, Public Relations Director, Texas Municipal Power Agency, Waco, Texas, May 4, 1977.
52. Telephone conversation with Dennis Haverlah, Texas Air Quality Control Board, May 4, 1977.
53. Patrick Burke. An Impact Evaluation Report: City of Mount Pleasant and Titus County, Texas. Austin, Texas: The Coastal Management Program. The General Land Office, May 1976.
54. Robert B. Foster. State Responses to the Adverse Impacts of Energy Development in Wyoming. Cambridge, Mass.: Laboratory of Architecture and Planning, Massachusetts Institute of Technology, 1977.
55. Interview with Mr. Jay Stanford, Director of Governmental Services, Advisory Commission on Intergovernmental Relations, Austin, Texas, March 10, 1977.
56. Senate Joint Resolution 52 (1977), G. Jones; House Bill 1043 (1977), Cates.
57. Governor's Energy Advisory Council, "Policy Position," p. 13.
58. Research and Planning Consultants. "Report Number Two: Existing Mechanisms," of Texas Land Use: A Comprehensive Land Resource Management Study. Austin, Texas: Office of the Governor, 1973, p. 73.
59. David White, "Coal and Lignite Power Generation -- Part 2." Texas Energy Report, No. 21, 1976. Austin: Governor's Energy Advisory Council.
60. Documentation received from the Surface Mining and Reclamation Division of the Texas Railroad Commission, Austin, Texas, March 1977.
61. Holloway, Milton L.; Grubb, Herbert W.; Grossman, W. Larry. An Economic Analysis of Declining Petroleum Supplies in Texas: Income, Employment, Tax, and Production Effects as Measured by Input/Output and Supply-Demand Simulation Models. Austin, Texas: Governor's Energy Advisory Council, February 1975.
62. Article 5415-1, V.A.C.S., Senate Bill 644 (1973).
63. Research and Planning Consultants, "Existing Mechanisms," Texas Land Use, p. 97.
64. Texas Advisory Commission on Intergovernmental Relations. Ordinance-Making Authority for Texas Counties: A Local Option Approach. Austin, Texas, 1976.
65. Research and Planning Consultants, "Existing Mechanisms," Texas Land Use, p. 87.

## INTERVIEWS

- Mr. H. G. Adams, Superintendent of Schools, Tatum Independent School District, Tatum, Texas, September 23, 1976 and February 18, 1977 (telephone).
- Mrs. Inez Asher, Realtor, Dilley, Texas, September 20, 1976.
- Mr. Alvin Askew, Executive Director, Governor's Energy Advisory Council, Austin, Texas, September 16, 1976.
- Mr. Bruce A. Belvin, Texas Department of Community Affairs, Housing Division, Austin, Texas, September 17, 1976.
- Mr. Richard Bennett, Texas Education Agency, March 11, 1977 (telephone) and February 22, 1977.
- Mr. Leonard Browning, J. E. and L. Pipe and Supply Company, Dilley, Texas, September 20, 1976.
- Mr. Patrick Burke, Research Planning Consultants, Austin, Texas, September 17, 1976, March 7 and 9, 1977, February 22, 1977.
- Mr. Richard Cantu, Assistant City Manager, Pearsall, Texas, September 21, 1976.
- Mrs. Carroll, Curriculum Office, Henderson Independent School District, September 23, 1976.
- Mr. Gary Catron, Research and Planning Consultants, Austin, Texas, March 7, 1977.
- Mr. Al Cervera, Alamo Area Council of Governments, San Antonio, Texas, September 21, 1976.
- Mr. Chester Chaiken, Frio LaSalle Equipment Company, Dilley, Texas, September 20, 1976.

- Mr. John Clary, Assistant Director, Division of County and Rural Services, Department of Community Affairs, Austin, Texas, September 17, 1976.
- Mr. John Clemens, Public Utilities Commission, March 11, 1977.
- Mayor Robert Crooks, Mt. Pleasant, Texas, September 24, 1976.
- Mr. Jack Dickerson, City Manager, Henderson, Texas, September 23, 1976.
- Mr. Art Eatman, Research and Planning Consultants, Austin, Texas, February 22 and March 7, 1977.
- Mr. Martin Garcia, City Manager, Pearsall, Texas, July, 1976, February 18 and 22, 1977, May 4, 1977 (telephone).
- Ms. Laudia Gardner, Texas Education Agency, Austin, Texas, March 11, 1977 (telephone).
- Mr. Jack Gibberson, General Land Office, Austin, Texas, September 17, 1976 and March 9, 1977.
- Mr. Jerry Golden, Texas Municipal Power Agency, Waco, Texas, May 5, 1977 (telephone).
- Mr. A. C. Gonzales, City Manager, Dilley, Texas, September 20, 1976, July 1976 (telephone), February 23 and 24, 1977 (telephone).
- Mr. John Gozdin, Division of Budgeting and Planning, Austin, Texas, March 17, 1977 (telephone).
- Mr. Billy Hamilton, Department of Community Affairs, Austin, Texas September 17, 1976.
- Mrs. Travis Hardin, Chamber of Commerce, Henderson, Texas, September 23, 1976.
- Mr. Dennis Haverlah, Texas Air Quality Control Board, Austin, Texas, May 4, 1977 (telephone).
- Mr. Jerry Heare, Texas Industrial Commission, Community Development Division, March 19, 1977.
- Mr. Charles Hill, Comptrollers Office, Minerals Tax Division, Austin, Texas, September 22, 1976.
- Mr. Jepp Hill, Research and Planning Consultants, Austin, Texas, April 1977.
- Mr. Jerry Randall Hill, Railroad Commission, Surface Mining Division, March 7 and 16, 1977.
- Ms. Mona Hoyle, Frio County Clerk, Pearsall, Texas, September 21, 1976.

- Mr. Bob Huei, manager of a drilling company, Dilley, Texas, September 21, 1976.
- Mr. Richard Ingram, Texas Municipal League, Austin, Texas, March 17, 1977 (telephone).
- Mr. Ralph Kentaneya, Hearings Officer, Public Utilities Commission, March 14, 1977 (telephone).
- Mr. William Kopp, Grants-in-Aid Branch Chief, Texas Parks and Wildlife Department, Austin, Texas, March 10, 1977.
- Mayor Rubin Leal, Pearsall, Texas, September 21, 1976.
- Mr. Richard Lee, Texas Air Quality Control Board, Austin, Texas, May 4, 1977 (telephone).
- Mr. Dick Lewis, Interagency Council on Natural Resources and the Environment, Austin, Texas, March 7, 1977.
- Ms. Carol McDonald, Lt. Governor's Office, Austin, Texas, March 11, 1977.
- Mr. Lynn Moak, Lt. Governor's Office, Austin, Texas, March 18, 1977 (telephone).
- Mr. James Mont, Governor's Energy Advisory Council, Austin, Texas, March 9, 1977.
- Mr. Joe Moseley, Executive Director, Texas Coastal and Marine Council, Austin, Texas, March 8 and 10, 1977.
- Mr. Neil Mullins, City Secretary, Tatum, Texas, February 18, 1977 (telephone).
- Mr. Charles Nemir, Assistant Executive Director, Water Development Board, Austin, Texas, September 22, 1976 and March 10, 1977.
- Mr. Alfonso Obregon, Assistant Superintendent of Schools, Dilley Independent School District, Dilley, Texas, September 20, 1976.
- Mr. Obregon, Police Officer, Dilley, Texas, September 20, 1976.
- Dr. Terrell Ogg, Superintendent of Schools, Mt. Pleasant Independent School District, Mt. Pleasant, Texas, September 24, 1976 and February 18, 1977 (telephone).
- Ms. Leah Pagan, Research and Planning Consultants, Austin, Texas, March 11, 1977.
- Mr. James Riggs, Statewide Planning Coordinator, Texas Parks and Wildlife Department, Austin, Texas, March 10, 1977.
- Mr. Benney Sanders, Frio County Sheriff, Pearsall, Texas, September 21, 1976.

- Senator Max Sherman, Texas Senate, Austin, Texas, March 8, 1977.
- Mr. Tom Smyser, Director of Physical Planning, East Texas Council of Governments, Kilgore, Texas, September 23, 1976.
- Mr. Floyd Socia, City Manager, Mt. Pleasant, Texas, September 24, 1976 and February 22, 1977 (telephone).
- Mr. Steve Spaw, Texas Air Quality Control Board, Austin, Texas, March 11, 1977.
- Mr. Jay Stanford, Director of Governmental Services, Advisory Commission on Intergovernmental Relations, March 10, 1977.
- Mr. Bill Stewart, Control and Preservation Program, Texas Air Quality Control Board, Austin, Texas, March 11, 1977.
- Mr. and Mrs. (Joyce and Lucille) Stinson, residents, Mt. Pleasant, Texas, September 24, 1976.
- Mr. Frank Sturzl, Research and Planning Consultants, Austin, Texas, September 17, 1976, March 7 and 11, 1977.
- Mr. Charles D. Travis, Division of Budgeting and Planning, Austin, Texas, February 22, 1977.
- Commissioner Mack Wallace, Railroad Commission, Austin, Texas, September 22, 1976.
- Mr. Gibson Westbrook, Department of Community Affairs, Austin, Texas, September 17, 1976.
- Mr. David White, Governors' Energy Advisory Council, Austin, Texas, March 9, 10, 11 and 16, 1977, February 17, 1977.
- Mr. Wayne Wise, Superintendent of Schools, Pearsall, Texas, September 21, 1976, and February 22, 1977 (telephone).
- Mr. Troy Webb, Attorney General's Office, Environmental Protection Division, September 22, 1976 and March 10, 1977.
- Mr. Fred Young, Chief Legal Counsel, Railroad Commission, Oil and Gas Division, Austin, Texas, September 22, 1976 and March 10, 1977.