

THE URBAN EXPANSION PROGRAM FOR THE CITY OF BOZEMAN

by

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ABSTRACT

Six months ago this study was initiated for the purpose of assessing the problem of urban sprawl around Bozeman and making appropriate recommendations regarding the city's growth policy. It was intended that the historical and future growth in population as well as development trends be analyzed in order to specify the problem of sprawl and discern its course and impact.

Data collected from the Bozeman Housing Element and the Bozeman Area Growth Study and compiled in Chapter One will be merged to define four development alternatives for the future of Bozeman. A close investigation into the problems of sprawl in Bozeman will help to prove that Bozeman is experiencing this problem. After reviewing the potential impacts that sprawl could have in Bozeman, the study recommends that measures be taken to avoid this type of development.

Chapter II examines the tools of planning which can prevent sprawl. The first section examines the early development of land use planning. Next, the City of Ramapo v. Amber Reality, a landmark case which began time-phased development, will be summarized. Then an examination of the application of growth management in a city which is outlined. This section also examines the tools at the disposal of Bozeman's Planning Board and concludes by proving that Bozeman could enter the field of growth management with little change in existing policy.

Chapter III examines the objectives and criteria around which the proposed growth management program will function. This chapter also examines the methodology used to evaluate the suitability of the property under study. These evaluated properties are then ranked and compared to the land use requirements for the residential, commercial, industrial and public sectors in five-year segments. A process for annual updating is also provided.

Chapter IV looks at the means of implementation (i.e. policies) and establishes new approaches to existing ordinances which could implement time-phased development in Bozeman. These policies include Inducement Zoning, a new approach to future SID approval, a new R-S zoning category for the Urban Expansion Area, and a new R-S zoning category for the Urban Reserve Area.

In Chapter V, recommendations on future growth management policies will be examined. Also, the administrative process of acceptance by the various governmental bodies will be outlined.

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Chapter 1

INTRODUCTION

Historically, land use in the Gallatin Valley had been based upon the premise that market forces ought to be the sole determinant of land use planning.¹ This belief has been prevalent in many areas of Montana because the abundance of land, combined with the sparsity of population created little friction between property owners, and consequently, little need for the planning of land uses. In today's world, this perspective of planning has been virtually abandoned by city governments because of the many problems associated with conflicting uses of adjoining parcels of land.² As the densities of housing and population increase, the growth of urbanization and the incipient development of urban sprawl have prompted many local governments to utilize zoning and other techniques of planning in order to promote the effective use of the land resources within their jurisdiction.³

In Bozeman, the traditional technique of zoning has been in operation since 1935. This tool has been used to divide and classify land into land use districts within the City's zoning jurisdictional area, an area which extends up to three miles beyond the City limits. This tool can be

effective in relieving the problems associated with conflicting uses of property because it segments lands into use categories such as agricultural, residential, commercial, and industrial, and requires that those activities remain in their designated areas.⁴ Although zoning is useful, this planning tool is a negatively directed technique which states what cannot be done in an area rather than what should be done to an area.⁵

In an effort to alleviate the negative emphasis of zoning, the City of Bozeman adopted the Bozeman City-County Planning Area Subdivision Regulations in 1975. These regulations are designed to direct the development of subdivisions in a manner which would enhance the environment of the developing area and the site itself. Specifically, the goals of the Bozeman Area Subdivision Regulations are "to promote the public health, safety, and general welfare by establishing procedures and requirements which are designed to encourage orderly development in harmony with the natural environment; prevent overcrowding on the land and congestion in the streets; avoid excessive expenditure of public funds for the supply of public services; provide adequate light, air, water, drainage and sanitary facilities; reserve adequate open

spaces for travel and recreation; and set forth uniform standards for survey monumentation and for the form and content of records of survey."⁶

Although zoning and subdivision regulations have been useful in alleviating many of the problems associated with conflicting, inappropriate or environmentally unsound land uses, the problem of urban sprawl is still confronting the city.

Urban sprawl is a relatively new land use problem which was created when the freedom of mobility of the average citizen was increased. This new freedom was created by many factors. The first major factor is the increased use of the private automobile. Secondly, the construction of high-speed interstate highway systems reduced the travel time of commuters. When this increased mobility was combined with the availability of cheap land for homesites in the rural areas, the desire of families to live and raise families in a "country" lifestyle environment, and the rapid increase in population after World War II, the stage was set for a vast migration of people to the rural suburb.⁷

Unfortunately, the desire of people to live in rural areas often creates sprawl development. This form

of development is accompanied by many adverse impacts. According to the H.U.D./E.P.A.'s, The Costs of Sprawl, these costs are, "the most expensive form of residential development in terms of economic costs, environmental costs, natural resource consumption, and many types of personal costs."⁸

Sprawl is a costly form of development to the city which it surrounds.⁹ This form of development often results in a condition where city services such as roads and police are overutilized by the commuting suburbanites and resident city dwellers, while the revenue which pays for these services comes only from the local tax sources.¹⁰

The widespread development of sprawl in many areas of the country has demonstrated the propensity of this development pattern to occur on the edge of any city. Sprawl can often cause the decay of the inner city by making the central city grow at a slower rate than its suburbs. The attraction of low-priced property draws a large number of buyers who might have constructed new homes and businesses, away from the bounds of the city.¹¹

Sprawl development is also costly because cities have to extend services over a larger geographical area. The

increased distance to existing services and number of geological constraints such as rivers and mountain slopes which must be overcome will raise the capital outlays of the city or the developer while also raising the costs of operation and maintenance of those facilities.¹²

In terms of environmental costs, sprawl generates 20 to 30 percent more air pollution from automobile travel, reduces significant wildlife and vegetation habitats, increases the amount of soil disturbed and paved, and reduces the amount of open space and increases noise levels.¹³

In the realm of energy consumption, automobile traffic under sprawl consumes from eight to fourteen percent more energy. Adding to this figure and repair and maintenance of the auto, the increased miles of road needed, traffic congestion and the need to commute for services provided in the central city, the personal expenses of the commuter must be considered high.¹⁴

In response to these problems, the powers of local governments have been centering on programs and policies which can prevent urban sprawl by encouraging the development of areas which are closer to the existing developments of the city.¹⁵ The techniques employed to accomplish

this end are varied.¹⁶ Each town must have its own unique approach to growth management in order that its particular environmental, legal and financial constraints can be observed.¹⁷

Growth in Bozeman

Early Development - The first known explorer to come into the Bozeman area was Sieur de la Valendry in 1743 who found the area populated by Indians.¹⁸ Well after the Lewis and Clark expedition came through the valley in 1805, large numbers of immigrants began to settle the area in the 1850 to 1860 period.¹⁹

The high quality of the agricultural soils combined with the need of Virginia City miners for foodstuffs made Bozeman a focal point of county activity. "The extension of the railroad to Bozeman in the 1880's and the development of many local area flour mills shaped Bozeman's destiny into a strong agricultural marketing hub, a vital service point and a center for governmental administration."²⁰

Recent Growth - The growth of population in Bozeman was gradual until the 1960's.²¹ In the last half of the 1960's rapid growth began and has continued to date.

Specifically between 1960 and 1975, the population swelled from 13,361 to 21,700. Between 1975 and 1978, the population grew to 25,500. When the population of the city is combined with that of its jurisdictional area, the total figure becomes 32,400.²²

Future Growth - In 1978, the Bozeman City-County Planning Board completed its work on the Housing Element which updated the population projections of the city and its jurisdictional area. Its findings were that the city itself is growing at 3 1/2 percent a year. The population of its jurisdictional area, which extends up to 4 1/2 miles from the City Limits, is growing at 10 percent a year. The weighted average of the city population growth plus its jurisdictional area is 4 1/2 percent a year.²³ The study did a long-range (22 years) projection of total populations from 1978 to the year 2000. Its findings are as follows:

TABLE 1
FUTURE BOZEMAN CITY AND PLANNING
AREA POPULATIONS (1978-2000)

<u>Year</u>	<u>Bozeman</u>	<u>Planning Area</u>	<u>Combined Total</u>	<u>% of Total Jurisd Area</u>
1978	25,500	6,900	32,400	21%
1980	27,000	8,400	35,400	23.7%
1985	31,400	12,800	44,200	28.9%
1990	36,900	18,400	55,300	33%
1995	43,800	25,200	69,000	36.5%
2000	52,400	33,800	86,200	39%

Based upon previous population growth and an equal distribution of all future gains into both areas, city and planning.²⁴

Reasons for Growth - The reasons why a person moves from one area to another are often only known to that individual and they cannot be generalized to the population as a whole. With this understanding, the reasons for growth in the Bozeman area can only be assumed. Since there are no larger concentrations of population within close proximity which might have influenced the growth of Bozeman, growth can be only attributed to the

attractiveness of the area. The attractive force of Bozeman consists of "the unique and high quality natural resources of the area combined with a relatively crime free, pollution free, and pleasant way of life, plus a high quality university, and a reasonably viable economic situation."²⁵

The Costs of Municipal Services Under Alternative Growth Patterns in Bozeman - In light of the potential problem of urban sprawl, the Bozeman City-County Planning Board constructed a study of the historical, present and future growth patterns of the areas in and surrounding Bozeman. They presented their findings in the Bozeman Area Growth Study²⁶ which examines the political constraints, strategies for development and a discussion of what items can and cannot be influenced.

In addition, this study examined two alternative growth patterns under high and low population projections. Then municipal costs for each alternative were computed. The two growth alternatives are as follows:

- 1a - Contained Growth *
with low population increases
- 1b - Contained Growth
with high population increases

2a - Peripheral Growth**
with low population increases

2b - Peripheral Growth
with high population increases

* The development of areas within the City Limits or close to them.

** The development of areas within the proposed sewer service area as delineated in the Thomas, Dean and Hoskins' Facility Plan for the City of Bozeman dated 1974 (See Map No. 3.2)

This analysis examined the complex capital costs and operating expenses of the police, fire, library, sanitary disposal system, sewer, water, parks, streets and street lights. Under each of the four growth alternatives the total projected municipal costs were as follows:

TABLE 2
TOTAL MUNICIPAL COSTS

<u>Alternative</u>	<u>Dollars Per Year</u>
1a	\$3,542,269
1b	\$5,384,905
2a	\$4,976,928
2b	\$8,743,853

The analysis further demonstrates "that costs vary with population and land area." In addition to the stated costs, the individual homeowner is responsible for the installation of municipal improvements such as streets, storm drains, and sanitary and water sewers through the financial medium of a special improvement district bond issue (SID).

In 1990, the average SID assessment per dwelling will be \$560 per year for 20 years or a total of \$11,200 (in 1974 dollars) for peripheral growth. The SID cost per dwelling for contained growth would average \$153 per year for 20 years or a total of \$3,600 (in 1974 dollars).

The analysis also examined the land absorption rates (i.e., the land used for development) under the four alternatives. One more alternative called Gross Sprawl was also examined. The findings of the study are as follows:

ALTERNATIVE 1a
CONTAINED GROWTH WITH LOW POPULATION INCREASES

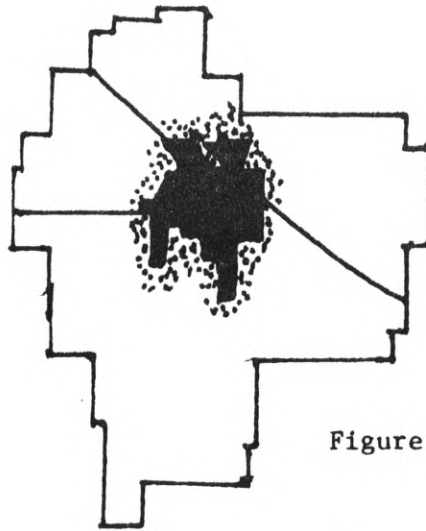


Figure 1.1

This alternative assumes a use of the existing vacant lots within the jurisdictional area and the 830 acres of zoned but undeveloped land within the City limits at densities specified in the Bozeman Area Master Plan.

TABLE 3
BUILDING SITES 1a

<u>Site</u>	<u>Increase</u>	<u>Required</u>	<u>Available</u>	<u>Additional</u>	<u>Addn'l Req.</u>
City	7,858	2,619	4,995	2,370	0
Jurisd	1,862	620	1,926	1,306	0
Combine	9,720	3,239	6,921	3,682	0

ALTERNATIVE 1b
CONTAINED GROWTH WITH HIGH POPULATION INCREASES

This alternative assumes a utilization of the 830 acres of zoned but undeveloped land within the City Limits and a partial (50%) utilization of the 1,926 lots within the jurisdictional area. Additionally needed land would be developed at 5.5 units per acre throughout the city and at one unit per 2 acres outside the City Limits (Jurisdictional Area).

TABLE 4
BUILDING SITES 1b

<u>Site</u>	<u>Increases</u>	<u>Required</u>	<u>Available</u>	<u>Additional</u>	<u>Add'l Req</u>
City	20,679	6,893	4,995	- 1,898	345
Jurisd	4,621	1,540	963	- 577	1,154
Combine	25,300	8,433	5,958	- 2,475	499

ALTERNATIVE 1 (a & b)
CONTAINED GROWTH WITH HIGH AND LOW POPULATIONS

Alternative 1 (a & b) examines a high density development of the planning area. This approach assumes that the utilization of the natural environment will minimize undesirable impacts on open space, soils, agricultural land, vegetation, natural wildlife habitats, and scarce energy supplies.

Contained growth policies do not attempt to limit economic development. This growth pattern requires, however, that industrial and community establishments which locate within the planning area be of a high-environmental quality (eg., balanced with the surrounding community).

The contained growth alternative virtually eliminates the traditional single-family home on a large one-acre lot. This form of development is not a viable consideration given the space limitation of contained growth, but other forms of desirable shelter such as planned unit developments, incorporating such features as recreation centers and commercial centers, would be acceptable. Homes sited on city-size lots (eg. 7,500 to 10,000 square feet) would also be acceptable.

This alternative would encourage variety in living accommodations. In turn, this could generate rewards such as more community recreational facilities and lower living costs than a sprawl development would realize.

ALTERNATIVE 2a
PERIPHERAL GROWTH WITH LOW POPULATION INCREASES

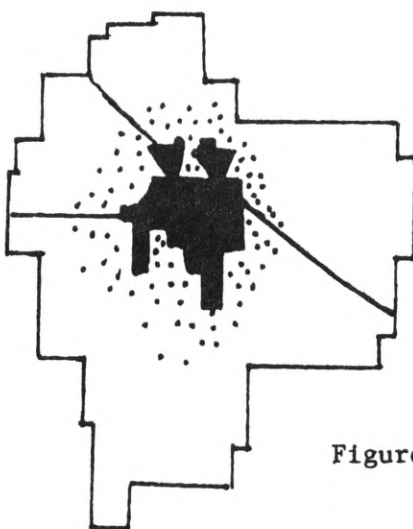


Figure 1.2

This alternative assumes partial (50%) utilization of the 830 acres within the city and the 1,926 lots in the jurisdictional area.

TABLE 5
BUILDING SITES 2a

<u>Site</u>	<u>Increases</u>	<u>Required</u>	<u>Available</u>	<u>Additional</u>	<u>Add'l Req.</u>
City	7,858	2,619	2,498	-121	22
Jurisd	1,862	620	963	0	0
Combine	9,720	3,239	3,461	-121	22

ALTERNATIVE 2b
PERIPHERAL GROWTH WITH HIGH POPULATION INCREASES

This alternative assumes partial (50%) utilization of the 830 acres within the city and of the 1,926 lots in the jurisdictional area. Additionally needed land would be developed at one unit per 2 acres in the jurisdictional area and at 3.3 units per acre around the city (average density of a new city subdivision on the edge of the City Limits (i.e. Figgins Addition)).

TABLE 6
BUILDING SITES 2b

<u>Site</u>	<u>Increase</u>	<u>Required</u>	<u>Available</u>	<u>Additional</u>	<u>Add'l Req.</u>
City	20,679	6,898	2,498	-4,398	1,332
Jurisd	4,621	1,540	963	- 577	1,154
Combine	25,300	8,433	3,461	-4,972	2,486

ALTERNATIVE 2 (a & b)
PERIPHERAL GROWTH WITH HIGH AND LOW POPULATIONS

These alternatives assume that development takes place at moderate and low density levels and that the practice of permitting single-family homes on large lots continues. Another assumption is that there would not be any strong policy enacted which would promote the utilization of land within the City Limits or of existing lots within the jurisdictional area. New subdivisions would be permitted only on the basis of need and the major control on future development would be the marketplace (i.e., the cost of the land and the land's demand by the consumer).

Peripheral growth further assumes that some consideration be given to the natural environment when

permitting a development. The major determinant of development would, however, still be the marketplace. The growth that takes place under the peripheral alternative could conceivably still promote large amounts of open space in areas in and surrounding the City Limits.

Peripheral growth, like the contained alternative, would not attempt to limit economic development, but it would allow for increased flexibility in the type of industry which would locate in Bozeman. Some costs of this alternative's industrial development include road development costs and an occasional pollution of the ground water. Industrial developments could be justified because the higher taxes received from industrial development could offset the costs of potential development.

Peripheral growth also assumes that the Bozeman central business district would cease to be the only economic and social center of the city. Shopping centers servicing outlying residential areas would be permitted to develop and would probably command the bulk of the retail trade. The social and recreational facilities would also be disbursed throughout the community and be located in those areas which could afford to have them installed.

Other Development Patterns

In addition to the Contained and Peripheral Growth Alternatives, the Bozeman Growth Study did a brief analysis of selective development and urban sprawl. In order that a study of the potential problems of urban sprawl in Bozeman be constructed an investigation of Bozeman's sprawl has been added. The urban sprawl analysis will prove that this development pattern is an imminent problem which must be dealt with.

SELECTIVE GROWTH A COMBINATION OF CONTAINED AND PERIPHERAL GROWTH

This alternative postulates a development which has the features of both contained and peripheral growth. Its basic assumption is that apartment living, condominium living, and other forms of higher density residential units are acceptable to Bozemanites. Also, it assumes that citizens are concerned about the physical environment and that they desire to do everything possible to prevent environmental degradation, to maintain open space, and to avoid the unnecessary costs associated with development on poorly suited soils.

To accomplish this alternative, the utilization of existing subdivision and zoned residential land within the city would be encouraged by promoting activity centers in certain areas. An activity center could consist of local convenience stores, recreational and social facilities. Additionally, the city would encourage development of existing subdivisions by providing incentives for development.

When the existing building lots are developed to full capacity and there is a need for additional land, growth will be encouraged to take place in locations where the natural constraints are at a minimum and in areas contiguous to the City Limits. This may necessitate the annexation of land into the city, thus increasing the scope of the 4 1/2 mile jurisdictional area boundary. The city will need to provide services to these annexed areas. The cost to accomplish this plan will be more than the cost of the contained growth alternative, but then the citizens may be willing to pay to have what they want while still preserving the environment. The promotion of industrial development, however, could provide additional tax resources to provide for the additional expense.

GROSS SPRAWL

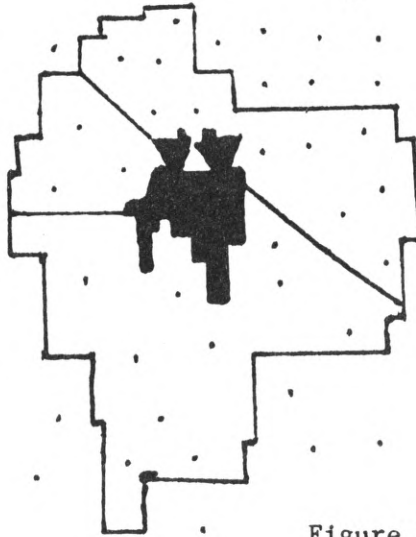


Figure 1.3

This alternative assumes that most of the projected growth for Bozeman and its jurisdictional area takes place outside the City Limits but within the jurisdictional area at the present average density of one unit per 2 acres. Little of the available 830 acres or subdivided land would be utilized.

TABLE 7
POPULATION INCREASE
AND LAND REQUIREMENTS UNDER GROSS SPRAWL

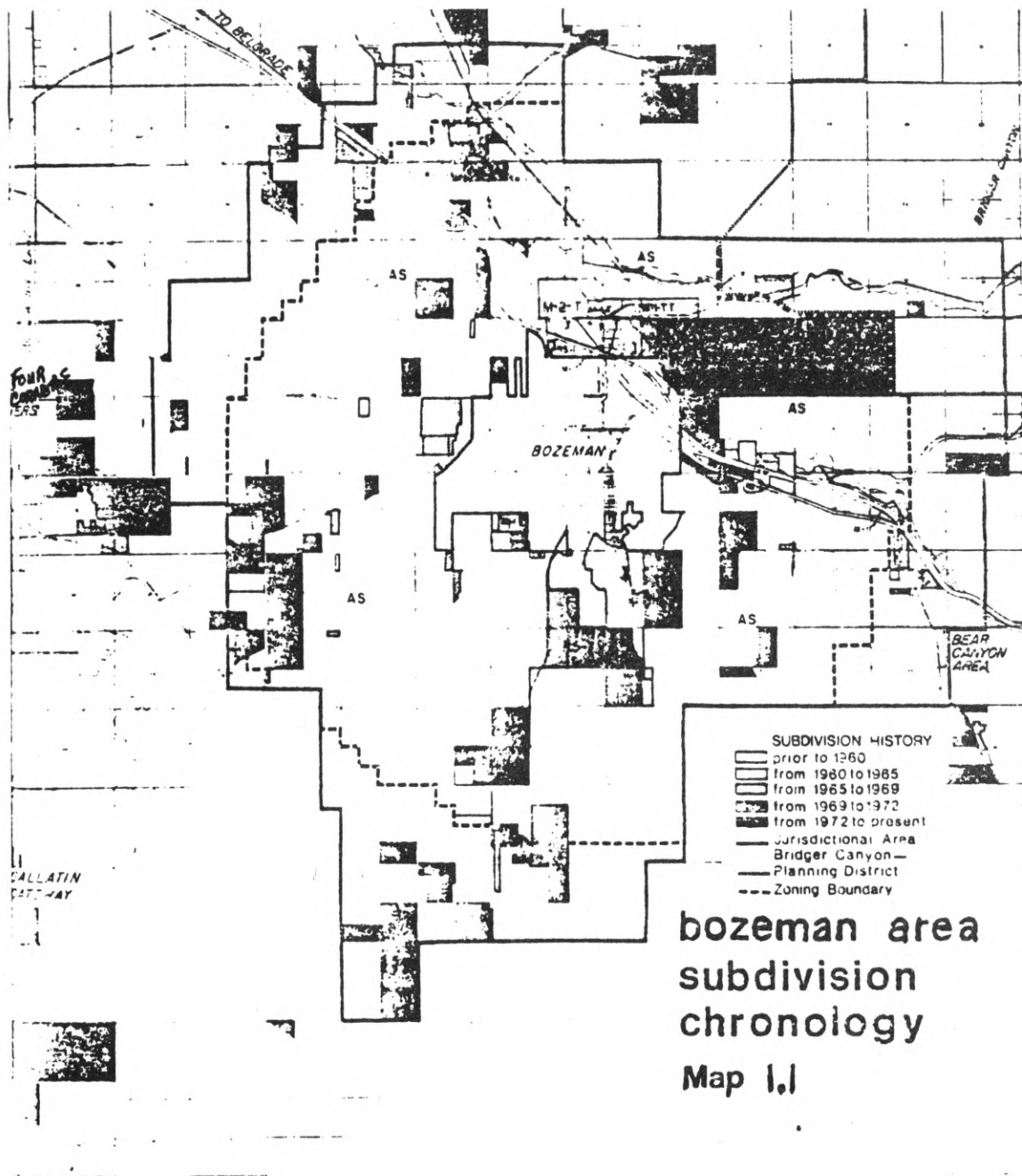
	<u>Jurisdictional Area Population Increases</u>	<u>Additional Land Requirements</u>
Low	9,720	6,480 acres
High	25,300	16,866 acres

Sprawl Development Within the Bozeman Planning Area

A glance at the map (1.1) shows the development trend in the Bozeman area. Since the Bozeman Area Growth Study did not reflect this problem in great detail, this segment of the paper will examine the various impacts of the urban sprawl which is presently developing around the city. What can easily be seen is the dispersed pattern of rural subdivisions throughout the jurisdictional area and in areas surrounding the city's sphere of influence. This form of development is known as urban sprawl because of its "leapfrog" pattern.

The map indicates three distinct "growth nodes":

- 1) The Four Corners Area, generally east of Highway 191;
- 2) the foothills near the Hodgeman Canyon-Hyalite Canyon



vicinity south of Bozeman; and 3) the areas surrounding the Riverside Country Club to the northwest of Bozeman.²⁷ These three areas are presently beyond the scope of the city's ability to extend services and will probably remain in that state for the foreseeable future.²⁸ Along with the major growth nodes thus far delineated are numerous subdivision developments typically of the one dwelling unit per acre, Residential Suburban type which dot the zoning and planning jurisdictional area.

Constraints of Site Design and Topography on City Expansion

The major problem associated with sprawl development in the Bozeman area is that Residential Suburban developments which require a density of one dwelling unit on a minimum of one acre have been able to develop in areas which could conceivably be incorporated into the city in the future. Since sewers, water, and roads are a necessity when a subdivision is incorporated and since the cost of special improvement district bonds for their installation on a one-acre home site is from \$13,158 to approximately \$48,160 per dwelling,²⁹ these developments will more than likely protest their annexation into the city because of the costs involved.

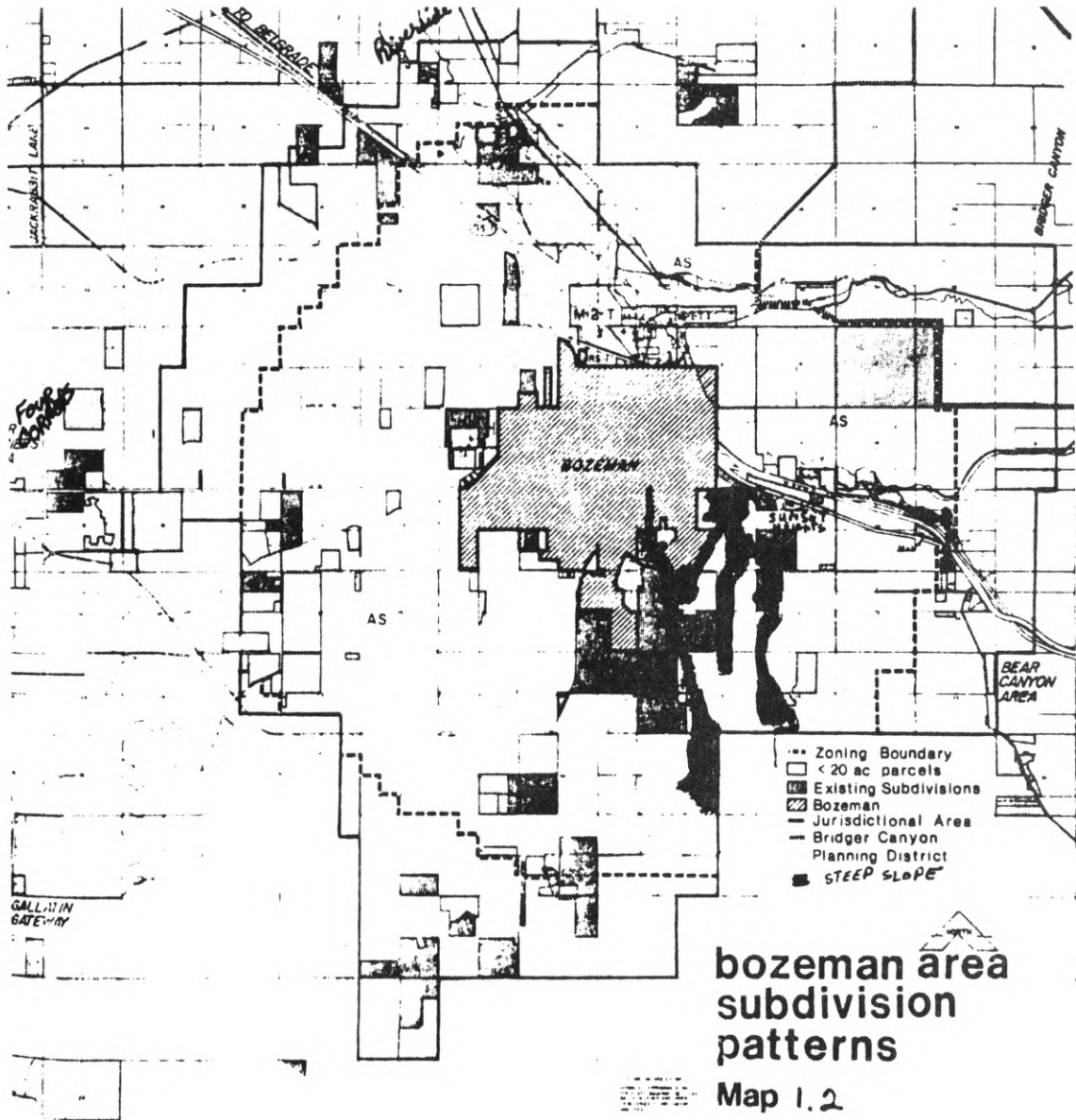
This also means that the expansion of the City Limits will be halted at every development of the Residential Suburban (RS type). This type of development will be investigated further in the RS Site Design section in Chapter Four. Suffice it to say here that the RS-1 development should not be considered as a viable form of development in areas which could be annexed unless new regulations are placed on their development.

Another set of problems associated with sprawl development in Bozeman deal with the environmental limitations to development. Many areas of Bozeman are affected by the floodplain, a high groundwater table, steep slopes, or fault traces³⁰ and these environmental constraints sometimes act as barriers to the expansion of City Limits. For example, if a development is atop a ridge and it desires infrastructure services such as sewers or water, it must install lift stations to pump water or sewage. The cost of this station, the cost of running lines up a slope, the cost of operation, maintenance and power are high and would likely result in the use of alternate means to acquire the same services. Thus, the city's boundaries would then be precluded from expansion.

Where steep slopes combine with RS-1 subdivisions, an economic and a physical boundary is created which prevents the city from annexing the contiguous property. These barriers also halt the possibility of annexing properties beyond these areas. A good example of this problem can be seen on the map (1.2) where the Sunset Heights subdivision combines with Sourdough Ridge and effectively halts annexations in the southeastern quadrant of the Bozeman jurisdictional area.

Water and Sewer Limitations

The impact of sprawl development on the supply of available drinking water and adequate sewage capacities is especially critical in Bozeman's situation.³¹ Specifically, there is evidence that the sewage treatment facilities are overburdened, and might pose a threat to the environment and the health of the city's downstream neighbors.³² These water pollution problems are heightened when upstream pollutants from towns and new developments are added to the river system. For these reasons, new developments in the Bozeman area should be phased in a manner so that future pollution problems do not pose an added burden to the environment.



Another aspect of the sewage problem in the Bozeman area is the use of on-site individual septic systems. The high groundwater table and the porosity of the soils in many areas within Bozeman's jurisdiction often makes the installation of individual septic systems impractical.³³ The problem of groundwater contamination on the development site as well as a possibility of those contaminants spreading to adjoining sites³⁴ is a major concern in Bozeman.

In the past, subdivisions have been able to develop in and around the city if they could overcome the adverse environmental and community impacts of their development. The increase in the number of subdivisions can create, however, a cumulative effect, not reflected in the impact statement of just a single development. Specifically, the environmental impact statements of a large number of closely situated developments would not reflect the effect that all of these developments combined would have on the groundwater and groundwater table levels. For example, a development which employs individual wells for its drinking water creates a "draw down" of the water

table at each well site which lowers the table so that it then resembles an inverted cone. A large number of wells could conceivably lower the water table of a development significantly on its own site, and possibly on adjoining parcels of land as well. The cumulative effect of many of these subdivisions could dramatically increase the cost of future wells to all of the affected parties.³⁵ In terms of the cumulative effects of individual septic systems, the author of the Blue Ribbons of the Big Sky County's report entitled Groundwater Pollution From Septic Tank Drainfields concluded,

"that existing laws in the State of Montana relative to drainfield installation are adequate with respect to all parameters except nitrate. Nitrate build-up in the groundwater could occur if several one-acre lots (the minimum sized lot allowed by Montana Statutes if both a well and a septic tank are located on the lot) were located along the direction of groundwater flow. The 2.4 mg/litre increase per lot would soon result in excessive nitrate concentrations."

"The existing pattern of development around Bozeman should not, however, cause general problems with respect to nitrate pollution in the near future. Although several large blocks of land are being developed into one acre lots, there are considerable undeveloped acres around these developments which provide dilution of the nitrate. However, if future growth should begin to fill up these undeveloped areas, a problem could occur with nitrates."

"Several options are available for dealing with nitrate problems should they arise. These include providing a drinking water supply from an uncontaminated source and allowing nitrate pollution in the upper groundwater level to go unabated; collecting and treating the wastewater, thus eliminating septic tanks altogether; or, restricting the size of lot to provide still more dilution."

"While each alternative has its merits and limitations, all would require positive action by appropriate governmental agencies or legally constituted planning bodies. Ideally, legal and institutional capabilities to handle the problem should be developed before the problem becomes serious."³⁶

The amount and quality of drinking water in Bozeman is another question which requires investigation. During the spring run-off (April - June), the turbidity (suspended contaminants) in the drinking water exceeds the maximum permissible level and poses a health problem. The city is presently attempting to acquire permission from the Public Service Commission to increase water rates so that two turbidity filters can be purchased and installed. These filters will be able to process ten million gallons of water per day (MGD); however, both filters will only be able to satisfy the present rate of water consumption.³⁷

In order for the water treatment facility to provide clean drinking water to new areas, additional

turbidity filter cells costing \$375,000 each will have to be installed. The extension of debt capacity to finance these new cells will probably cost more because the level of interest which has to be paid on the new issue of revenue bonds increases with the total amount borrowed. Without a program for the development of undeveloped areas, water rates will likely increase. Also, each new cell can only process five million gallons per day (MGD), and the future plans only envision the installation of a total of four cells or 20 MGD. A 20 MGD capacity can only supply water to a population of 50,000 (Bozeman's projected population in the year 2,000). Assuming that the trend in suburban growth continues at its present rate (ten percent a year), and urban sprawl occurs, the water treatment facility may need to supply water to those areas outside the city jurisdictional area as well.³⁸ This could mean that the facility would be serving 86,200 people (city and jurisdictional area's projected population in the year 2,000).

Another financial factor to consider is the costs of the SID's. To a land owner or a developer, a major item is the development of a piece of land is the cost of installing sewers, water mains, and roads. Presently,

the average cost of extending water or sewer mains is \$25 a foot, and the average cost of road installation is \$115 a foot. These costs can be exorbitant if the development is not contiguous to the existing services and roads. Assuming that the average lot size in Bozeman is between eight and ten thousand square feet, the development cost to owners of raw, undeveloped land would be approximately \$7,130 per dwelling unit. If there are no developments between a proposed subdivision and the existing service mains and road, the entire cost of the SID(s) would be borne by the developer until developments between those two points took their share of the SID(s).

Along with the cost of SID's to the developer, there are many costs in infrastructure installation which are borne by the city. Specifically, the operating and maintenance costs of sewers, water mains and roads are higher if the amount needing service is increased because of distance.⁴⁰

Another cost to the city arises out of the practice of permitting a grace period of three years on the first payment of the SID(s). Often, a developer will

install infrastructure services, hold off payment for three years, accumulate late charges and then, pass on the SID payment as well as the late charges to the new homeowner. In order to finance the delinquent developer's late charges, the city levies a half-mill of property tax to create a fund to cover these delinquencies. In 1978, this fund had \$160,000 in it to subsidize the delinquent SID payments.⁴¹

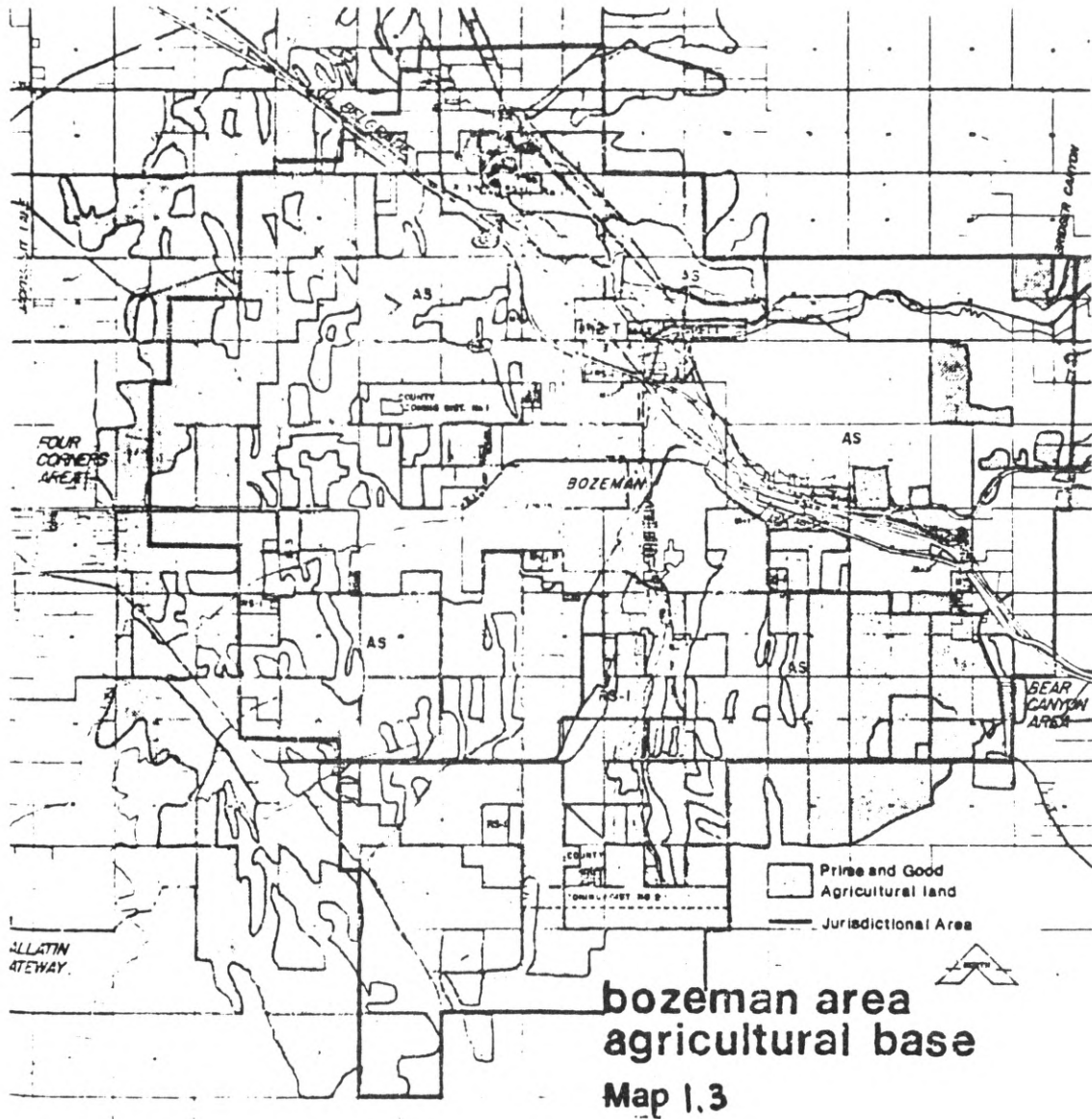
Loss of Prime Agricultural Land

The development of sprawl around Bozeman has a detrimental impact on the agricultural community of the area. Bozeman's local economy is, in part, based upon agriculture. The city must therefore be concerned with the adverse effects that urban sprawl would have upon the prime agricultural lands in its surrounding area. Some of the lands that the City and its jurisdictional area are sited on are considered to be "prime" to "very good" for crop production. This land has been increasingly utilized for residential development, in some cases, unnecessarily or prematurely.⁴²

Whether or not the agricultural lands are being developed to their "highest and best" use is not the total question before us now. Although it is sometimes economically advantageous for some local agriculturalist to develop a residential subdivision, the development of agricultural areas may contribute to the critical food-stuff shortages of the world community. In turn, this dictates a responsibility to rural areas to preserve this ever-diminishing national resource.⁴³

The precise number of acres devoted to agricultural pursuits has not been tabulated as of this date; however, a rough estimate is that "there are 25,000 acres of prime and good agricultural land within the 55,000 acre jurisdictional area."⁴⁴ Map (1.3) indicates those areas which are well-suited for crop production.

According to the Soil Conservation Service, prime farm land is defined as the "best suited for producing food, feed, forage and oil seed crops and also available for these uses....It has the soil quality, growing season and moisture supply needed to produce, sustain high yield crops economically when treated and managed, including water management, according to modern



farming methods."⁴⁵ Good farm land is land which can be made prime farm land through the use of irrigation and/or fertilization.⁴⁶

An additional cost of the early conversion of farm lands to residential use is that the farmer will not realize a maximum profit through the sale of that land.⁴⁷ According to Gary Pryputniewicz, "The optimum time to convert the land is when the sum of the rate of return from agricultural activity and the rate of appreciation of the land are equal to the rate of return on the next best alternative investment."⁴⁸ In terms of the rate of appreciation, Pryputniewicz states, "The development value of land is highest at the service center and value decreases as distance from the service center increases."⁴⁹ In short, farm lands which are the closest to the services provided by the city will demand the highest prices and might be ready for conversion to other uses. Those farms which are further away from the existing city services are not yet "ripe" enough for the full maximization of the owner's profit.

Summary of the Impacts

The costs of urban sprawl in Bozeman which stem from the financial limitations imposed by poor site design, topography, geological constraints, and limited municipal facilities remove gross sprawl as an acceptable alternative to growth. This alternative is the most expensive form of development in Bozeman. If it is permitted to occur, sprawl would limit many of the city's options for the future by consuming most of the city's fiscal resources for operation and maintenance expenses. Besides the cost to the city (and its taxpayers), sprawl would be extremely costly to the suburban community both environmentally as well as fiscally. Finally, the loss of prime agricultural land through premature development is costly in terms of an economic loss to the farmer and a loss of the aesthetic quality which makes the area an attractive place to live.

This type of growth is, and will continue to be the pattern of growth in Bozeman unless new guidelines for development are adopted.

Conclusions of the Growth Study

The subject of growth management is a legitimate concern in Bozeman. The following growth-management studies revealed a number of rapid growth symptoms in other cities similar to the Bozeman situation. The major conclusion of the Bozeman Area Growth Study is that land developments in cities without a strategy for growth create expansion patterns burdensome to municipal governments. Bozeman is now showing signs of a sprawl pattern development that knowledgeable planners are urging towns to avoid.

The growth alternatives discussed in this study indicate that land use patterns impose varying degrees of costs. The current land use pattern in Bozeman, judging from the subdivision pattern, resembles a sprawl form. This trend serves to extend urban sprawl rather than create a genuine rural life environment. This is exemplified in the Bozeman area by the residential developments in the Four Corners Area, the Riverside Country Club-Valley Center vicinity, and the area south of Bozeman in the foothills of Hodgeman Canyon - Hyalite Canyon. This form of development will likely continue to occur so

long as speculators view land as a marketable commodity
and not as a finite resource.

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Chapter 2

THE TECHNIQUES OF GROWTH MANAGEMENT

Early Development

The first comprehensive zoning ordinance was drawn in New York City in 1913 and enacted in 1916 after the arrival of the skyscraper forced the city to take the lead in land use controls.¹ Previous to this act, only Modesto, California had a "zoning" ordinance which was primarily enacted as a discriminatory device against the Chinese settlers. In 1885, Modesto enacted an ordinance making it "...unlawful for any person to establish, maintain, or carry on the business of a public laundry...within the City of Modesto, except that part of the city which lies west of the railroad track and south of G Street."²

In 1924, the first model Standard State Zoning Enabling Act was released for distribution to the states. It was the product of a three-year study conducted by the Advisory Committee on Zoning which was chaired then by the Secretary of Commerce, Herbert Hoover.³ The purpose of this land use control was "to promote the health, safety, morals, or the general welfare of the general community as specified under the Tenth Amendment of the U.S. Constitution."⁴

By 1930, 35 states had zoning legislation on their books. Today, all 50 states have passed zoning enabling legislation.

In the 1940's and 1950's, zoning techniques were refined. The refinements included an increase in the number and kinds of zones, a greater flexibility through open space ratios, floor plan ratios, and performance standards.⁵ The new technique of Planned Unit Development, the relaxation of certain restrictions for broader scoped developments, was also introduced at this time.⁶

The Case of Ramapo, New York

Local zoning, virtually the only means of land use control in the United States for over 50 years, is a method which has proved inadequate in combating a myriad of land use problems.⁷ These problems include environmental pollution and destruction, social inequities, and overburdened municipal facilities.⁸ In light of the new problems of the rapid and disruptive population growth experienced by many cities in the 1960's, new approaches to land use management have begun to emerge.

The first successful attempt at time-phased development was in the town of Ramapo, New York. Here a small community to the north of New York City began to experience rapid increases in population in the late 1960's. In order to cope with the problem of overburdened facilities, the town enacted a phased-growth system into their zoning ordinance. The ordinance required that a permit for subdivision

development be obtained by the developer. However, before the permit was issued, the developer was required to show "that adequate municipal facilities and services were available or would be provided by the developer."⁸

Sewers, schools, drainage facilities, parks, firehouses, etc. were assigned a sliding point value based upon their degree of availability to the particular development. Before a special permit was granted, the developer had to obtain at least 15 points. Thus, if a development was too far away from the existing facilities, the developer would have to wait until sufficient services reached the development site. Since this plan was tied into a capital improvement plan, no development would have to wait more than 18 years to obtain the required level of services necessary to obtain the permit.⁹

This plan was attacked in the courts on the grounds that 18 years was too long a period to hold land and thus constituted a "taking" of the land in question. The town's position was upheld as being constitutional by the Court of Appeals of New York (the highest court) on May 3, 1972. The Court stated that 18 years was not an unreasonable period of time to hold property, and that, while "sequential" or "timing" controls were not specifically stated, in the enabling legislation, "it was necessarily implied by the power to restrict and regulate land use."¹⁰

After the Ramapo decision, many communities and states began to investigate the techniques of phased growth in order to combat the problems associated with rapid increases in population.¹¹

Applications of Growth Management in Salem, Oregon

Many cities around the country have been experiencing the dramatic increases in population which Ramapo experienced. These increases often threaten towns which feature a rural life style.

When researching the applications of growth management in various cities, it was decided that demonstrations of growth management systems in many different cities would be time consuming and not increase the reader's perception of the concept at hand. Instead, it was decided that a town which closely fit Bozeman and which had a plan similar to the one developed here would serve as a good example of an application of growth management.

A city which is legally, environmentally and demographically similar to Bozeman is Salem; located in Oregon's Willamette Valley. In 1960, Salem's population was 49,142. By 1970, the population had grown to 68,480.¹² This dramatic increase in population prompted the local government to investigate growth management.

Salem's plan entailed the establishment of an intergovernmental agreement between the city and Polk and Marion counties that

designated Salem as the exclusive supplier of sewage treatment in the Salem urban area. Salem's groundwater situation is similar in many ways to Bozeman and poses a similar problem in regard to septic tank installation (i.e., the groundwater table is too high to permit septic tanks).

In addition to the designation of Salem as the exclusive supplier of sewage treatment, the agreement (signed in 1961) required that, in order to gain access to the treatment facilities, the development needed to be located in or be annexed to the city or to a sewer service district in Marion County.

Since Salem's plan is intergovernmental, a brief look at the process from the perspective of county and city participation will now be examined. Also, Salem's plan will be reviewed in terms of its suitability for application in Bozeman.

Marion County

Access to Existing Facilities The 1961 agreement between Salem and Polk and Marion Counties designated Salem as the exclusive supplier of sewage treatment in the urban area of Salem. In order to hook on to the sewage facility, a development had to be in or be annexed to the city or to a sewer service district in Marion County.

This environmental control could be used for growth management in Bozeman. Many of the growth areas around the city are not suitable for individual septic tanks, yet the areas could be developed if they were on city sewer lines. Also, if they were on city services, higher density developments could be considered. This approach could be accomplished through the city's special improvement district (SID) process by only permitting subdivision developments which are on city sewer in areas where high groundwater tables create a problem.

Floodplain Control Marion County's zoning ordinance includes a floodplain zone which regulates the construction of dwellings in the floodplain. This regulation is similar to Bozeman's flood plain zoning ordinance; however, subdivisions in Salem are prohibited in the floodplain.

In 1975, the city of Salem adopted a more restrictive floodplain ordinance which included regulations for the floodway and the floodway fringe.

Here in Bozeman, a delineation of floodplain, floodway, and floodway fringe is being constructed by the U.S. Soil Conservation Service and should be ready in 1978. When this study is received, Bozeman will likely develop criteria for development in the areas designated floodway and floodway fringe.

Pollution Control The subdivision procedure for the approval of sewage systems in Marion County is basically the same as in Bozeman. A development must apply to the County Sanitarian (Marion County Health Department) for a Statement of Approval for Proposed Sewage Disposal. The State Department of Environmental Quality then determines if state standards are complied with for sewer and septic tank construction. If the development is to connect to city sewers, the developer must furnish a letter of commitment from the city or water district that says he has access to the system.

Conventional Subdivision Regulations Included in the subdivision regulations is the Marion Rural Development Policy which outlines development procedures in Salem's urban area. In Bozeman a development policy for sewage districts which utilize our treatment facility and trunk lines and charge a user-fee to pay for the service provided could be considered.

Exclusive Agricultural or Non-Residential Zoning Marion County created an exclusive farm use zone (EFU Zone), where permitted uses included single family, farm-related dwellings or mobile homes. Subdivisions were prohibited in this zone. In Bozeman, there are areas within the jurisdictional area which are so unsuited for septic tanks that ten to twenty acres of land are necessary to insure that

individual septic systems will not pollute the groundwater. At present, many of these areas are designated Agricultural Suburban (AS) which permits one dwelling on a minimum of ten acres. These areas should not be allowed to subdivide until adequate central city sewage treatment is provided.

Minimum Lot Size Marion County's zoning ordinance provides for suburban rural districts which, because of environmental limitations, must have a minimum lot size. This zoning is similar to the Residential Suburban zoning (RS) designation in Bozeman. In Bozeman, developments of the RS-type have been permitted to develop around the city. As it was explained in Chapter 1, this type of development poses potential problems to the environment and the city. In order to eliminate the problems associated with RS subdivisions, the city may wish to consider permitting only those RS subdivisions which make provision for a further re-subdivision of the property. This topic will be explored at length in Chapter 4.

Preferential Taxation The areas designated as exclusive farm use zones are given an automatic tax deferment. This technique is also used for property classed as permanent open-space by Marion County. In Bozeman, farms receive tax relief under the Greenbelt Laws.

Annexation - Including Timed and Conditional Boundary

Adjustments and Servicing Before a subdivision, rezoning or building permit application requiring sewer or water is approved, the county requires that property be annexed to the city or a service district. The approval for all such boundary adjustments comes from the Area Boundary Commission. In Bozeman, the annexation procedure should be simplified into a cost/benefit formula which would speed up the review process so that this tool will not create an administrative burden.

The Plan or Its Element The Marion County Rural Development Policy stipulated a 3 to 5 acre per dwelling unit density in rural areas and promoted the orderly development of rural lands. The criteria used to manage growth included productivity, site design, conformance to land use and comprehensive plans, water supply, traffic capacity, and public need.

The criteria needed for the development policy guideline in Bozeman should include public needs regarding housing needs, (i.e., Housing Element), water and sewage treatment facilities, (i.e., Facilities Plan - 1978), land use and comprehensive plans, (i.e., Bozeman Master Plan), public demands, (i.e., Goals and Policies and Citizen's Advisory Committees), site design (i.e., Chapter 4), and geological and environmental constraints (Chapter 4).

City of Salem

Access to Existing Facilities In Salem's subdivision regulations, it is stipulated that all subdivisions must be connected to the city water and sewage disposal systems before they are approved. City water and sewage must be provided to the lot line of each lot in the subdivision. The city has an additional agreement with the county that it be the sole builder and operator of sewage treatment facilities in the urban land in and around Salem.

As previously stated, because of high groundwater tables in a large area of Bozeman's jurisdictional area, central sewer is a necessity before development can occur. This factor should be utilized to the greatest extent possible.

Annexation Including Timed and Conditional Boundary

Adjustments and Servicing All subdivision, rezoning, or building permit applications require connection to city sewer and water before approval is given. The city or service district must also agree to provide sewer and water to the properties in question. The final step is the approval of the Boundary Commission to the annexation.

Bozeman's annexation procedure could be adapted for growth management purposes by only permitting subdivisions or rezonings which are next to the existing services of the city or near metropolitan sewer districts.

Capital Programming Salem adopted a capital improvement plan in 1974 for three years which specified the improvements which would take place in the sewer and water facility.

In 1978, Bozeman's City Commission is expected to adopt a facilities plan which will outline the improvements which will be constructed to the city's sewage treatment plant. This plan projects a sewage capacity of 55,000 people. In other words, the city is readying itself for the sewage needs of an increased population.

The Plan and Its Elements Salem adopted an area-wide sewer plan which defined its projected 20 year urban boundary.

In Bozeman, the 1978 Facilities Plan specifies the areas which can expect to receive central sewer service. This boundary will serve as a basic guideline to define Bozeman's service area (i.e., projected urban boundary).

Salem's Success

The similarity between Bozeman and Salem is pertinent to a review of growth management because it affords a model through which the success of Bozeman's plan can be forecast.

The processes of subdivision review, rezoning, and annexation in Salem are virtually identical with those processes in Bozeman. In addition, the practice of requiring special improvement districts for the installation of sewer, water, and roads is used in both towns.

Also, the environmental limitations of the groundwater table levels and the populations are similar.

In Bozeman, we have all of the legal tools at our disposal that Salem possesses. However, in Salem, these tools have been used for growth management, while in Bozeman there has not been an application of our tools for that purpose. Bozeman's tools tend to be instead, an extension of the building code and not the systematic approach of growth management.

In order to examine the success of Salem's approach, their planning office was contacted. According to Anne Munteer, Salem's planning director, the plan has accomplished its objectives regarding growth management. The only problem which Salem has had subsequent to the plan's implementation has been the unwillingness of metropolitan sewer districts in the surrounding urban area to incorporate into the City of Salem.

Bozeman's proposed growth management plan will be examined in Chapter 4 of this paper. The policies developed for our plan are nearly identical to Salem's. Many of Salem's techniques such as site design will, of necessity, be modified to adapt to Bozeman's situation.

Summary of Bozeman's Planning Tools

In order to review the state of the art, the following table has been constructed on the land use tools available in Bozeman. Two other columns will delineate :

1. the percent of 191 cities involved in growth management which use this technique¹⁴
2. whether Salem uses the tool.¹⁵

In Appendix A, a brief description of the technique will be defined. Also, Appendix A will define all of the 55 growth management tools available to local governments and their popularity of use.

TABLE 8
LAND USE TOOLS AVAILABLE IN BOZEMAN

	<u>Bozeman</u>	<u>Percent of Cities Using Tool</u>	<u>Salem</u>
Fee Simple Acquisition	U	89.5%	
Location of Facilities to Influence Growth	OE	17.1%	SI
Access to Existing Facilities	OE	14.3%	S
Floodplain Regulations	OE	17.1%	S
Critical Environmental Areas	OE	46.7%	
Pollution Controls	OE	62.9%	SI
Covenants and Agreements	U	59%	O
Conventional Zoning	OE	92.4%	S
Planned Unit Development	O	76.2%	O
Clustering	E	39%	O
Performance Standards	OE	22.9%	O
Special Permit (Cond. Use)	OE	61%	
Variance	O		O
Subdivision - Conventional	OE	96.2%	S
Exclusive Agricultural or Non-Residential	OE		S
Minimum Floor Area	O		
Minimum Lot Size	OE		
Height Restriction	O		
Off-site Adequacy of Facilities	OE	17.1%	S
Mandatory Dedications	O	9.5%	U
Money-in-Lieu	O	39%	U
Low/Moderate Income Housing Requirement	E	18%	

TABLE 8
LAND USE TOOLS AVAILABLE IN BOZEMAN
(continued)

	<u>Bozeman</u>	<u>Percent of Cities Using Tool</u>	<u>Salem</u>
User and Benefit Fee	OE	43%	S
Special Assessment	OE	57.1%	S
Preferential Taxation	OE	60%	S
Development Districts	OE	46%	
Annexation	OE		SI
Capital Programming	OE	42.9%	S
Plan or Elements	OE		S
Long-term Limit Line/ Serviced Area	E		S
Environmental Impact	OE	92%	O

Legend: S - System Element; E - Emerging System Elements; O - Other Tool not integrated with the system; I - Intergovernmental; U - Used Previously.

Table Interpretation

Of the 55 growth management tools available, Bozeman already is using 29. Salem's plan only utilizes 26 of the available tools, yet it appears to have a successful program for growth management and uses these tools to prevent urban sprawl.

The table also indicates that Bozeman is an innovative community since it employs techniques which are relatively unused in the 191 cities polled.

It can also be assumed that Bozeman could enter into the field of growth management with little alteration of its planning function. The next chapter will examine the concept of a program for growth management in Bozeman.

Summary

Growth management planning has evolved from the basic planning tools of zoning and subdivisions in order to cope with the problems of rapid, and often disruptive increases in population.

One of the first towns to develop a growth management system was Ramapo in New York. A legal challenge to the Ramapo plan was based on the argument that development could not be forestalled by requiring that the land in question be connected to proposed facilities such as sewers, water mains, roads, etc., before it could develop. The courts upheld the validity of Ramapo's plan as being an extension of the state's enabling legislation to manage land use.

In order to examine a growth management system in operation, the Salem, Oregon approach was examined. Salem is demographically,

environmentally, and legally similar to Bozeman and its approach to growth management is similar to the system being proposed for Bozeman.

During the investigation of Salem's planning function, it was discovered that Salem possesses fewer planning tools than Bozeman, yet it has a growth management program and Bozeman does not. It has therefore been posited that Bozeman could easily engage in a more effective program for growth management if this is desired.

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Chapter III

THE BOZEMAN URBAN EXPANSION PROGRAM

Introduction

The Urban Expansion Program (U.E.P.) is a guideline document. It is used for the implementation of the various growth management techniques at the disposal of city government, structuring them on a delineated time frame in order to promote the efficient and economical expansion of future urban growth. The UEP can systematically direct the growth patterns of the residential, commercial, industrial, and public sectors through an assessment of each sector's land use requirements, apportioning urban land to meet its respective needs. This process emphasizes that land use planning should be environmentally sound as well as economically beneficial to the city, the taxpayer, the potential developer, and the eventual occupant of the community.

In Chapter I the various alternatives for growth in Bozeman were examined. It was demonstrated that Bozeman is presently experiencing urban sprawl and that this was the most expensive manner in which to develop. Chapter II demonstrated that Bozeman possesses the tools necessary for the implementation of a growth management system. In this chapter the various processes which have gone into the formulation of this program will be examined. Also, the Urban Expansion

Program itself will be constructed.

Goals and Policies

In order that the Urban Expansion Program reflect the actual desires of the electorate, the program has sought out citizen input. In preparing for a revision to the Master Plan for the City of Bozeman, the City-County Planning Board worked with the various Citizen Advisory committees during 1978 to develop the following goals and policies.¹ Listed below are some of the preliminary recommendations developed to date which pertain to growth in Bozeman.

1. Managed Residential Growth

- a) The City and County will establish policies on the location of residential growth, designate specific urban and rural growth centers, and establish an urban service boundary line (i.e. where infrastructure services can be provided).
- b) Potential residential areas should be evaluated according to 1) the City's ability to provide services, 2) the carrying capacity of the environment, 3) the need to maintain and improve existing housing stock, and 4) the compatibility of developments with adjacent agricultural and open space areas.

- c) Residential development should take place in areas where there is an available circulation capacity (i.e. adequate roads for efficient movements of traffic), before such development takes place in undeveloped areas.
- d) Residential development should be directed to those areas within recommended short-range service areas before such development takes place in long-range service areas, as specified in the Bozeman Area Water/Sewer Facility Plans.
- e) The land use plan should provide for a reasonable supply of land for future development.
- f) Unsewered housing will be prohibited in areas of the Urban Service Area where the City's public sewer system is available or planned.

2. Preservation and Enhancement of Established Neighborhoods

- a) Zoning and planning restrictions should not reduce the variety of housing options available in the community.
- b) Neighborhoods should be maintained as viable and sound through scheduled improvements of supportive services and municipal services to those areas which are deficient and in need of such services.
- c) Neighborhood changes must be made in an orderly and consistent manner to protect the quality of life and the investments of the residents in those areas.

3. Balancing Social and Community Characteristics

- a) Zoning or planning restrictions should not reduce the variety of housing options available.
- b) Developers should receive written confirmation by appropriate school district officials that school capacity presently exists to accommodate increasing enrollments which can be anticipated as a result of a proposed subdivision.
- c) Rehabilitation projects should be designated and planned on a selective basis to upgrade deteriorated or substandard areas.
- d) Future residential development will be planned on a large enough integrated neighborhood scale to meet a variety of housing needs, to include complementary patterns, a variety of employment services, open space, and access to transportation and other related living amenities.
- e) The supply of reasonably priced and located housing will be increased for low and moderate income people, handicapped persons, senior citizens, and students.

4. Preservation and Environmental Quality

- a) Residential developments shall not be permitted in areas exhibiting a lack of carrying capacity such as flood plains, unstable soils, and/or fault zones.
- b) Prime agricultural lands should not be prematurely developed

for non-agricultural uses.

- c) As an alternative to strip development (i.e. N. 7th Avenue), more aesthetically pleasing retail establishments of limited area should be harmoniously integrated with residential neighborhoods.
- d) Land use should result in no alternation of the groundwater quality.
- e) There should be a policy which will facilitate the timely construction of waste water collection and treatment facilities.
- f) Development in areas which can logically be served through the extension of existing collection systems will be encouraged.
- g) Development which maintains natural open spaces will be encouraged.

5. Maintaining a Viable Economy

- a) Industrial uses will be separated from incompatible residential or commercial uses or other conflicting industrial uses.
- b) The City will encourage future industrial development to locate in existing designated industrial districts to prevent proliferation of uncoordinated, partially developed districts. Ample, but not excessive areas will be provided for industrial development.

- c) Development of industrial areas with sewer and water facilities, paved streets, and proper flood control measures where necessary will be encouraged.
- d) Land zoned for neighborhood commercial uses will be correlated with population projections for all planning sectors and should be located to conveniently serve the public and to implement planning area goals.

6. Municipal Fiscal

- a) A reduction in the development cost of residential communities should be developed through policies which facilitate the timely construction of waste water collection and treatment facilities.
- b) The development of sufficiently dense residential areas in locations which minimize capital expenditures should be encouraged.

In short, the basic objective of the Urban Expansion Program will be to maintain the present character of the City by providing for orderly growth of the residential, commercial, and industrial sectors in the most economical and environmentally feasible manner possible, thereby creating savings for the developer, the new home buyer, the city, and the taxpayer.

Criteria for Program Development

In order to develop a growth management program, it is necessary to establish the basic criteria around which the planning tools must function.

The first criterion is administrative in character. The program should not significantly increase the existing administrative workload. This means that the program should utilize the existing administrative apparatus (i.e. the Planning Board, Zoning Commission, City Commission, etc.) similar to its present function.

The second criterion is also administratively oriented. The program should utilize the existing legislation. The legislation should not be altered to any great degree. However, its application will be broadened to attain the objective of growth management.

The third criterion is legal. The program shall not be, in any way, exclusionary in effect toward any religious, racial or economic group. Further, it should conform to all Federal, State, and local laws regarding the freedom of mobility of U.S. Citizens.

The fourth criterion concerns itself with equity. The program will provide for an equal application of policies to all properties affected by the program.

The fifth criterion for the program concerns itself with the flexibility of application. In other words, the policy must be able to

meet a variety of different situations with equity while also considering variance relief for cases of extreme hardship.

Methodology of the Bozeman Urban Expansion Program

The 1978 Facilities Plan The Urban Expansion Program is a method of growth management. It is primarily utilized as a tool for the development of sequential growth patterns contiguous or close to the existing serviced areas of the City.

The basic foundation of the Urban Expansion Program is a plan for the timely installation of needed sewer and water mains and treatment facilities. This work began in 1974 when consultants for the City of Bozeman drew up an engineering report on the sanitary sewer system. This work was later updated in the 1978 Facilities Plan.

The 1978 Facilities Plan delineated three areas outside of the City Limits which are viewed as being the most likely areas for immediate development. The areas include 440 acres on or near Bridger Drive to the northeast of the City; 1,100 acres in the area west of the City Limits between West Main and the mid-section line north of Durston Road; 1,760 acres to the south of the City Limits along South 19th Avenue, South 3rd Avenue, and Sourdough Road. These areas were selected because they are within close proximity of the existing

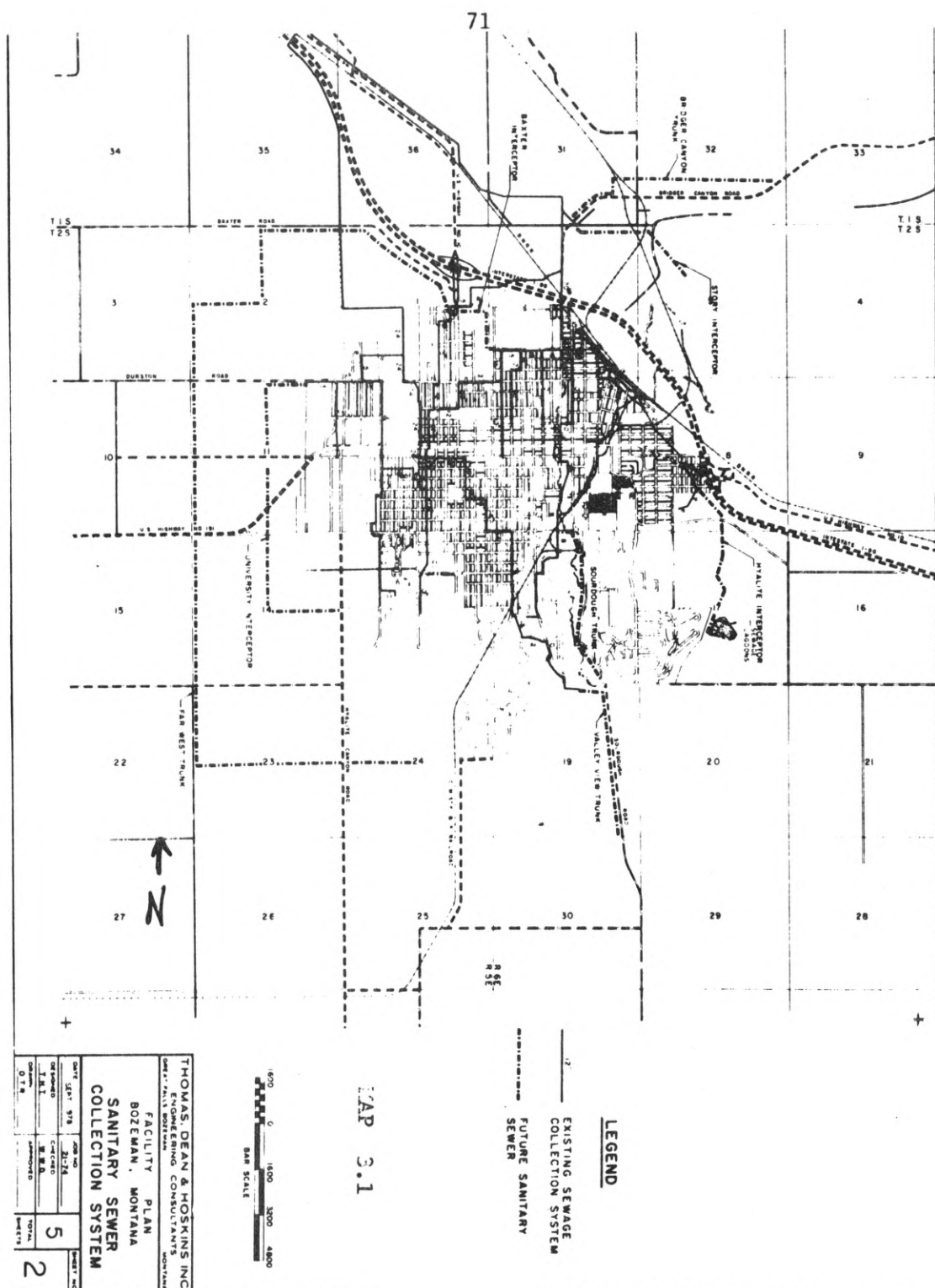
sewer. Also, the majority of properties in these areas are "designated as having severe limitations for septic tanks in the 1972 Bozeman area plan."² The total land area described above is 3,300 acres.

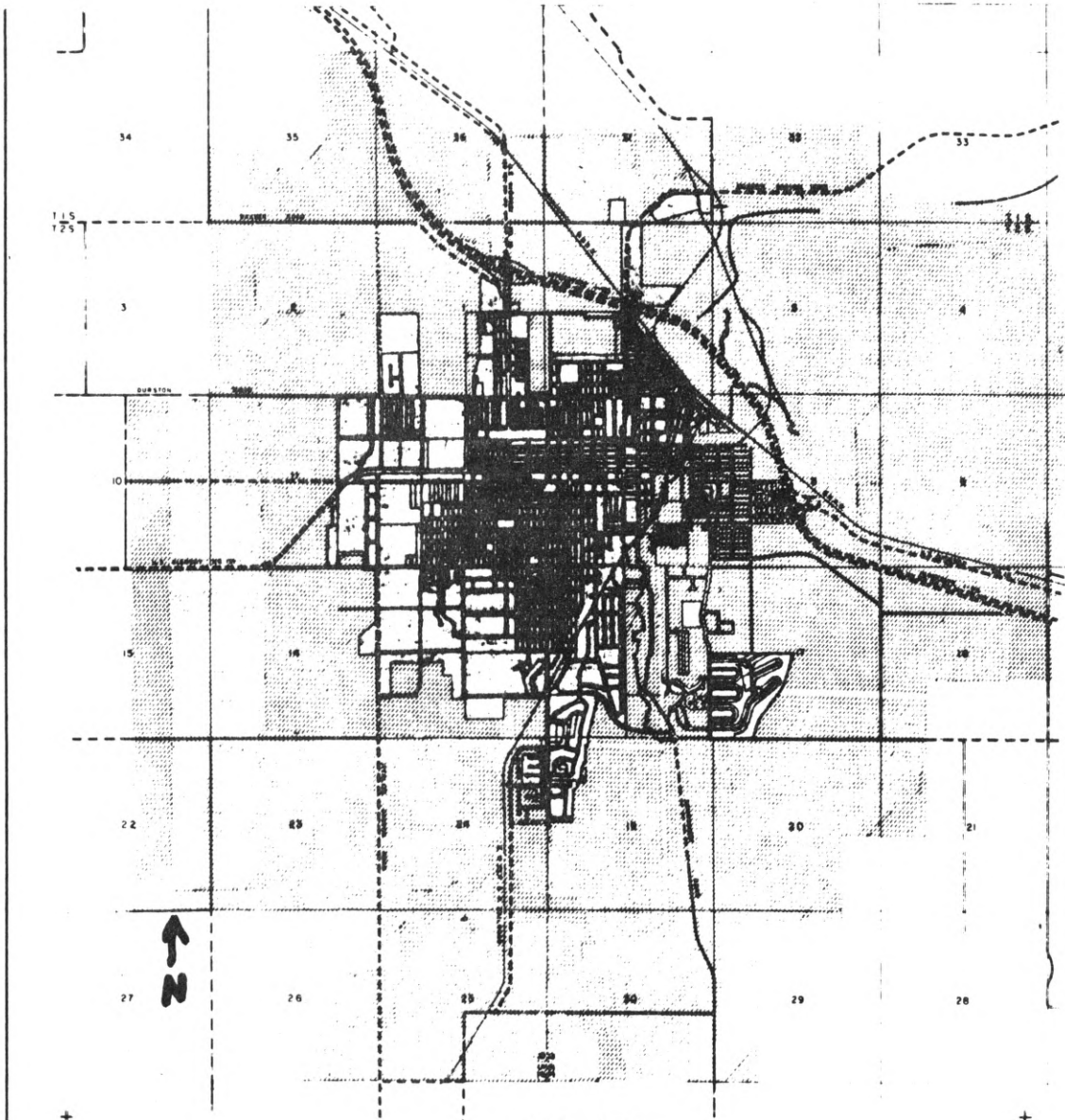
A further investigation of the suitability of the above parcels will be undertaken in this chapter and other variables such as topography and water table levels will be included in the calculations.

The 1978 Facilities Plan goes on to describe alternatives for sewage treatment plan improvements. The improvements are estimated to increase secondary treatment to a capacity which could serve 55,000 people.³ This is Bozeman's projected population in the year 2000.⁴ In other words, the sewage treatment plant will provide service for an additional 29,500 people. If development occurs at a density of 1.9 dwelling units per acre and each unit contains three people per unit (1.7 people per acre),⁵ the treatment plant could handle the sewage from 5,175 acres figured as follows:

$$29,500 \text{ people} + 5.7 \text{ people per acre} = 5,175 \text{ acres}$$

This population and acreage does not include commercial and industrial developments; however, it helps to delineate a sewer service area. Map number 3.1 shows where the expected sewer trunk lines will be installed. Map 3.2 shows the extent of the sewer service area. The area under the sewer service area is greater than 5,175 acres because it is assumed that approximately 35 percent of the





APPENDIX 3.2



LEGEND

EXISTING SERVICE AREA

FUTURE SERVICE AREA

THOMAS, DEAN & HOSKINS INC	ENGINEERING CONSULTANTS	ONE AT FALLS BOZEMAN	MONTANA
FACILITY PLAN	BOZEMAN, MONTANA	SANITARY SEWER	SERVICE AREA

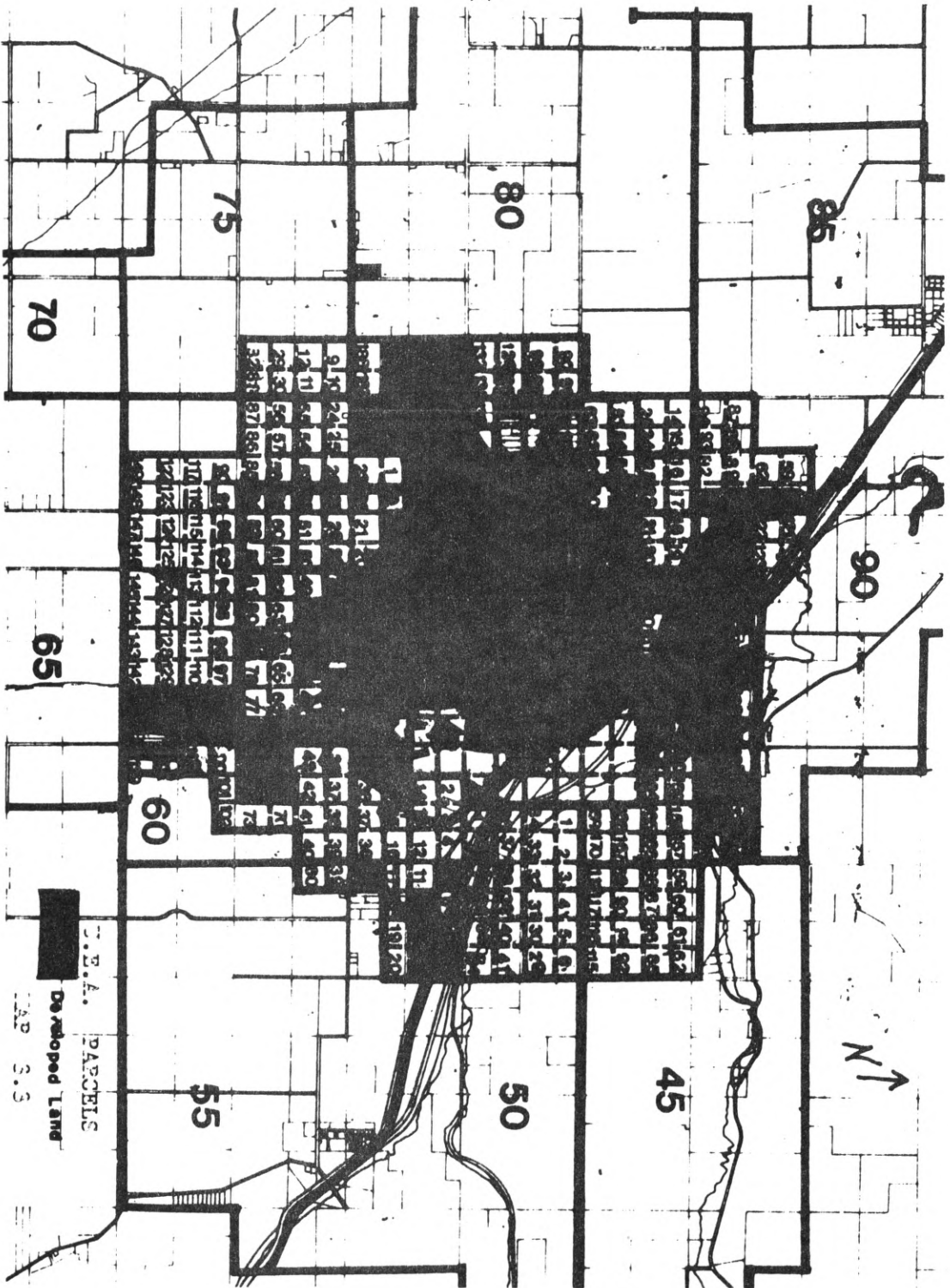
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DRAWN O.Y.M.	APPROVED	TOTAL SHEET 13	

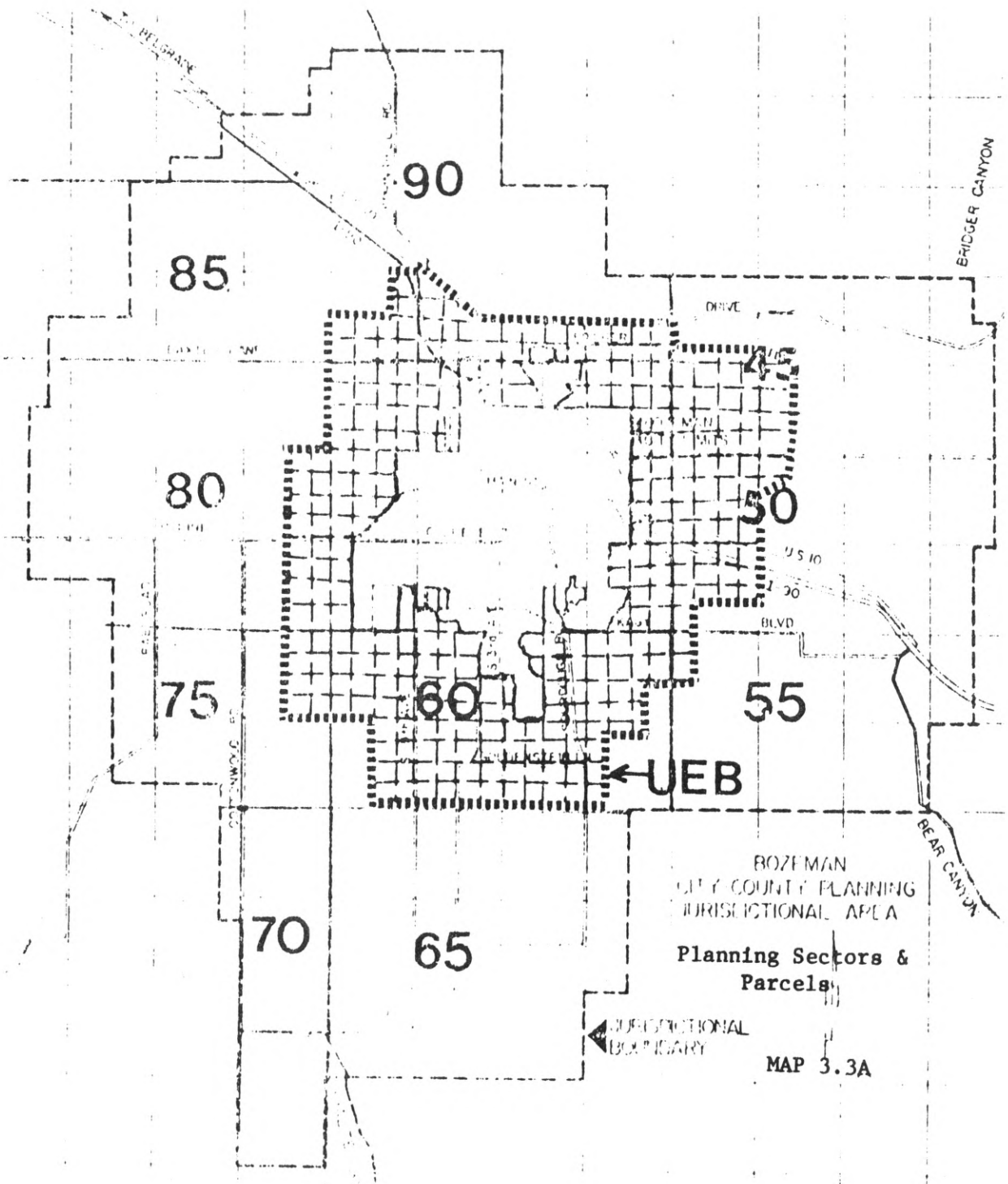
area is diverted to roads, parks, flood plain, or is unsuitable for urban development.⁶

The Urban Expansion Area The area delineated as the future sewer service area will be defined as the Urban Expansion Area. The exterior boundary of this area will be called the Urban Expansion Boundary Line. Properties within this boundary will be subject to the policies outlined in the Urban Service Area Policies contained in Chapter Four.

The Urban Reserve Area A glance at Map 3.3 will show that there are areas outside of the Urban Expansion Area Boundary Line, yet which lie within the City's zoning and planning jurisdictional areas. The areas outside the Expansion Boundary Line yet within the City's planning jurisdictional area will be called Urban Reserve Areas. Properties within this boundary will be subject to the policies outlined in the Urban Reserve Area Policies in Chapter Four.

Planning Sectors In order to more finely tune the planning of land within the Bozeman planning area, both the areas within the City Limits as well as those outside of the City have been segmented into planning sectors. These sectors attempt to define the City and its planning jurisdiction according to each sector's present and possible future use. Policies for land use in the Urban Expansion Area and the Urban Reserve Area sectors will be delineated in Chapter Four.





Also, each map is further segmented into parcels. Each parcel is approximately 40 acres large and will be the smallest segment of the Urban Expansion Program. These parcels will be evaluated on their degree of suitability for development after the sectors are defined. What follows is a description of the sectors within and outside of the City Limits.

Planning Sectors Outside the City Limits

Sector 45 Sector 45 is bounded on the north by the Bridger Canyon Zoning District, traverses the eastern and southern sections of Story Hills and extends to the limit of Bozeman's City-County Planning jurisdictional boundary. There are approximately 25 parcels (1,000 acres) delineated in this sector of the Urban Expansion Area (U.E.A.).

This sector's major feature is Story Hills, and it is included in the U.E.A. study area because current plans for its installation of central sewer and water mains in the near future. A road system has already been installed, and initial development is imminent. Also, there are a few northerly sited parcels at the base of Story Hills which are relatively flat and conducive to immediate development.

Sector 50 Sector 50 is bounded on the north by the southern boundary of Sector 45 and part of Sector 90, on the west by

the City Limits, on the south by I-90, and the west by the jurisdictional area boundary. There are 23 parcels (920 acres) of the U.E.A. delineated in this sector which are suited for development.

This Sector's major feature is Story Hills on the north. However, on the southern side of Story Hills, there are areas which are relatively flat. A major impediment to the future development of these flat areas is I-90 which should raise the cost of the future installation of services; however, Highway 10 traverses the entire section. Some of the present uses in this area include mobile home parks, retail stores, and light industrial development.

Sector 55 This Sector is bounded on the north by I-90, on the west by the City Limits, Kagy Boulevard, and Sector 60's eastern boundary. and on the south and east by the jurisdictional area boundary. There are 20 parcels (800 acres) of the U.E.A. which are clear for development. The slope of the ridges in Sector 55 combined with the RS-1 subdivisions make it unlikely that sewer and water could be installed (see RS-1, R-1 Site Design Criteris) because of the expense of installing sewer and water mains to large, built up lots. A further constraint to City expansion in this Sector are the

large tracts of State controlled properties which form a barrier from I-90 down to ridge areas.

Sector 60 This Sector is bounded on the north by the City Limits and Kagy Boulevard, on the west by Sector 75's boundary line, on the south by S. 19th and the northern boundary of Sector 65, and on the west by the boundary of Sector 55. Sector 60 contains 99 parcels (3,460 acres) which are clear for development. This sector is characterized by gently sloping fields. On the eastern side of this sector is Sourdough Ridge which makes City sewer and water installation complex yet possible.

Sectors 65 and 70 Both sectors are beyond a reasonable distance for them to be considered for annexation in the near future. Neither sector will be included in the Urban Expansion Area, however, they are in the Urban Reserve Area.

Sector 75 Sector 75 is in the southwestern section of the jurisdictional area and is bounded on the west by that boundary line, on the south by Sector 70, on the east by Sector 60 and the north by Sector 80. Sector 75 contains 8 parcels (320 acres) of the U.E.A. which are suited for development. This Sector is characterized by gently sloping fields and is traversed by Rae Road and Cottonwood Road.

Sector 80 Sector 80 is in the western section of the jurisdictional area and is bounded on the west by that boundary line, on the south by Section 75, on the east by the City Limits, and on the north by Baxter Lane. There are 45 parcels (1,640 acres) of the U.E.A. in Sector 80 which are suited for development.

This Sector is a gently sloping area characterized by a high water table. This sector contains County Zoning District Number One as well as large tracts of State farm land. The road system in this sector is good. This Sector is traversed by U.S. 191, Baxter Lane, Durston Road, Rae Road and Cottonwood Road.

Sector 85 Sector 85 is bounded on the north and east by I-90, on the south by Baxter Lane and on the north and west by the jurisdictional boundary. There are 11 parcels (440 acres) in this Sector which are suited for development. This Sector is similar in character to Sector 80.

Sector 90 Sector 90 is bounded on the south by I-90, the City Limits, and Sector 50 and on the north and west by the jurisdictional area boundary. The major environmental limitation in this area is the floodplain and slopes of the Bridger

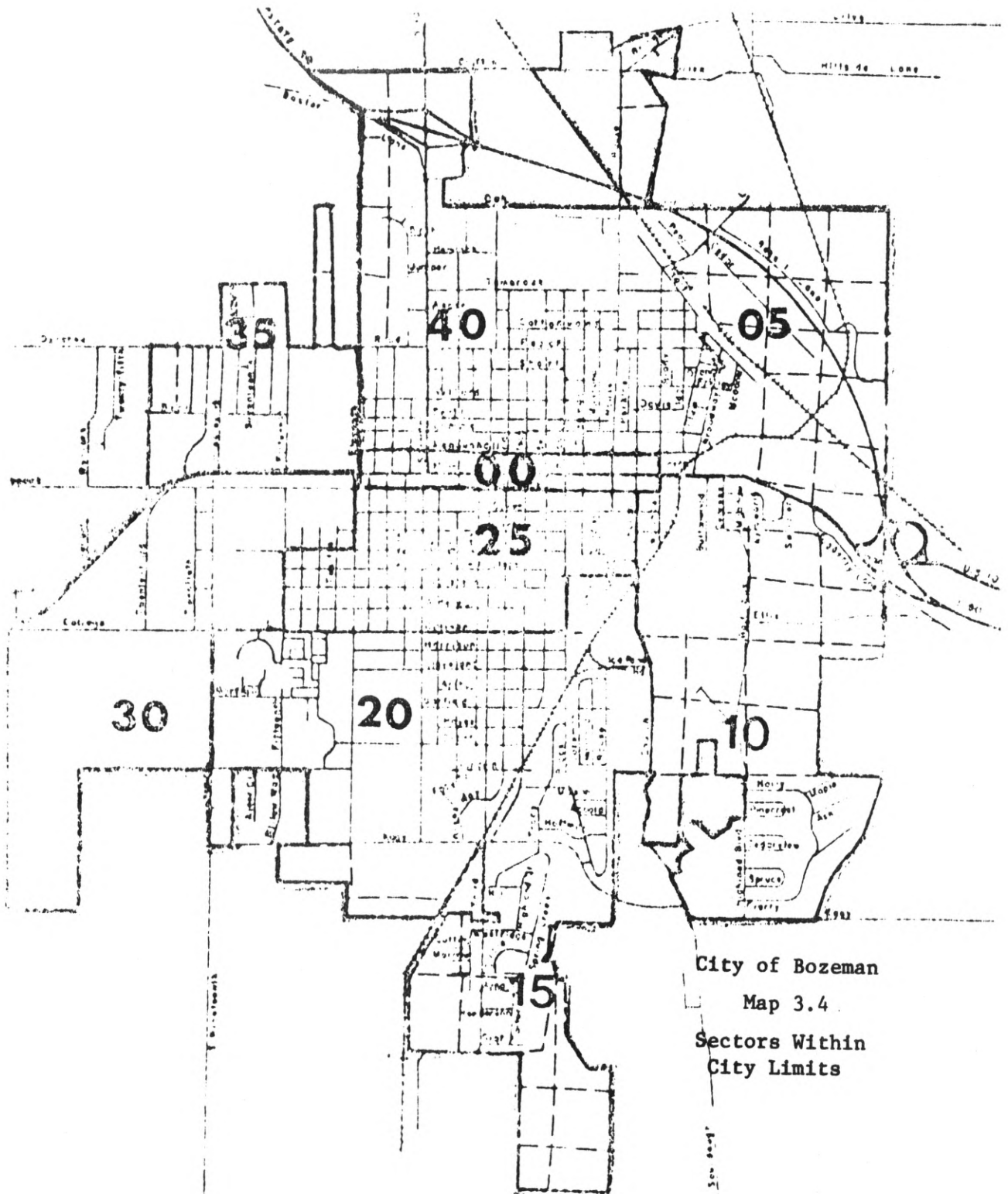
mountains. The roads include Highway 10 and Springhill Road. Another feature in this Sector is the presence of the sewage treatment plant. This area should be permitted individual or central well systems for water while being encouraged to connect to City sewers. There are 41 parcels (1,640 acres) in Sector 90 which are suited for development.

When the existing development in all of the sectors (i.e. state lands and developed subdivisions) were removed from consideration, the remaining parcels which are clear of developments within the Urban Expansion Area totaled 268 parcels (10,720 acres).

Planning Sectors Within the City Limits

Sector 05 Sector 05 is the northeastern sector of the City. This sector contains 9 parcels (360 acres) of the U.E.P. and is presently characterized by commercial and industrial uses. This Sector is located close to both east and west accesses to I-90 and has the advantage of west to east flows of air. This sector would be ideal for industrial development because of the above stated factors as well as easy access to the railroad. This sector is also traversed by Highway 10 which is a direct route to Bozeman Airport.

With new water and sewer mains scheduled for installation,



this sector could be home to an industrial base for Bozeman while having the advantage of being separated from all of the residential sectors of the City.

Sector 10 Sector 10 is the southeastern sector of the City. This sector contains 10 parcels (400 acres) of undeveloped land and is characterized by some commercial development on the north side, the undeveloped properties of the Hillcrest Retirement Home and a golf course to the south. Since none of these properties are scheduled for use in the near future, it is recommended that these areas remain in a holding category (see Parcel Evaluation).

Sector 15 Sector 15 is the southern corridor section and contains 3 parcels (120 acres) of the U.E.A. This Sector is characterized by gently sloping fields and should be considered ideally suited for residential development.

Sector 20 Sector 20 is the University Sector and contains 4 parcels (160 acres) which are characterized by gently sloping fields. These parcels should also be considered ideally suited for residential development.

Sector 30 Sector 30 is the southwestern Sector and contains one parcel (40 acres) which is characterized by a flat lying

ground surface. This parcel is contiguous to U.S. 191 and might partially serve as a good site for commercial development. This site has been recommended as a possible site for a shopping mall.

Sector 35 Sector 35 is the northwestern Sector and contains one parcel (40 acres) which is characterized by a gently sloping field. This sector is located on Durston Road and Eleventh Street and would possibly be suitable for residential or commercial development.

Sector 40 Sector 40 is the northern Sector and contains 4 parcels (160 acres) which are characterized by a gently sloping field. These areas are near or contiguous with the intersection of I-90 and North 7th and would therefore be likely areas for commercial or light industrial or office development.

There are a total of 32 parcels (1,280 acres) within the City Limits which are suited for development.

Parcel Evaluation

In order to compute the most suitable areas for development in the Bozeman Urban Expansion Area on a cost/beneficial basis to the City, the developer, and the eventual homeowner, the Planning Board has

incorporated many of the prime determinant costs of development into a process which can help predetermine the most developable sites.

Although the factors employed are gross approximations at best of the costs involved, a study of this magnitude requires this type of approach so that the data acquired is not overwhelming to the analysis or to the interpreter of the data.

Another reason for this approach is that the City possesses a limited amount of resources in terms of time, manpower, and dollars and thus, cannot provide a more exhaustive study into the costs of development until an annexation report is constructed for each area wishing to incorporate into the City.

The primary objective of this document, it must be remembered is to serve as a guideline for development policies for the more likely areas of future City growth. The computations which follow will specify those areas which will be the most cost/beneficial to the developer in terms of lessening development costs through annexation, as well as those areas which would reduce the operating and maintenance costs to the City in terms of sewer, water and road upkeep.

Beside the variables outlined in the following pages, an effort to more finely tune this report to reflect a myriad of obstacles of development. Consultations with the City Engineer's office, the City Building Inspector, and the Soil Conservation Service have been undertaken to specify these obstacles. The constraining factors will

be outlined for each of the parcels in question, and these parcels will be placed in a holding category. If, for instance, a parcel ranked for development is presently a golf course, the parcel will be placed in the holding category until such time as conditions warrant a change. At that time, the rank value of the parcel which was previously recorded will be updated (see Annual Update Section at the end of this Chapter) to reflect the growth which has occurred in the interim. The parcel will then be assigned its numerical rank.

The parcels included in the holding category might also be viewed as buffer areas. That is, as the economic pressures increase the "highest and best" uses of these properties, and the value of these properties for other uses should encourage alternate development policies on the part of the owners. Thus, these properties might be able to absorb any unusual surges of demand for land.

Factors of Development: Reasons for Inclusion or Exclusion

The following developmental factors were reviewed, and their relative compatability for use in evaluating the suitability of the U.E.A. parcels is defined. These factors are as follows:

School Location This variable is not considered because the school system is apparently not worried about expansion into different areas at this time. Thus, special bond issues would

place schools where and when they are needed as growth evolves.

Eyesore This factor is not considered because of its subjectivity.

Historical Area This variable is not considered because there are no significant historical areas existing in the study area.

Open Space This factor is not considered because of its subjective nature.

Water and Land Characteristics Should be considered and are addressed in the floodplain, water table and topography variables.

Recreational Facilities These items were not considered because no large scale or viable recreational facilities exist in the study area. Also land must be set aside by developers for such facilities under the present subdivision regulations.

Snow Removal and Street Maintenance These items were not considered because of the difficulty of determining costs and their lack of importance relative to this study.

Developer Holding Land This variable was not considered because of the difficulty of determining such a variable.

Transportation This factor was found to be a difficult variable to study and was therefore integrated into the street factor.

Relationship to City Limits This variable is considered in the street section.

Sewer This variable is considered because of its importance in determining the cost of development.

Water This variable is considered because of its importance in determining the cost of development.

Utilities These items are not considered because costs are not borne by the city or directly by the developer.

Streets Roads are considered because of developments needed for adequate arterials and access roads.

Fire This variable is not considered at this stage of review because protection facilities are hard to study and tend to follow development.

Police This factor is not considered at this time because police protection does not require extra base stations, only cars and men which must be provided for development in any area.

Storm Drainage This variable is considered under the street variable.

Farmland This factor is not evaluated because it is felt that economic conditions will control farmland conversion.

Forest Land This land is not considered because there is little forest land in the study area.

Lifetime Estates These are not considered because of the difficulty in finding and currently maintaining up to date information.

Fault Lines This item is not considered at this time because of difficulty in defining exact locations and the large time frequency involved in the study area.

Landslides This variable is considered in the topography section.

Slumping This factor is not considered because detail would overwhelm the report

Water Table This factor is considered because certain construction and development problems relate to water table depths.

Topography This factor is considered because slope relates to runoff, erosion, access, landslides, and construction problems.

Runoff This variable required much detail work and is only briefly considered in topography

Erosion This factor is considered, yet because of the detail, it is only considered in the topography variable.

Flood Plain This factor is considered because it reduces the amount of developable land.

Wildlife Habitat This variable is not considered, but should be studied as advanced planning proceeds in the growth areas.

Unique Vegetation This factor is not considered because there are no unique vegetative types known at this time within the study area.

Floodwater Storage This factor is considered only with the discussion of Flood Plain.

Unique Scenic Beauty This variable is not considered because of the high degree of subjectivity involved.

Parcel Suitability Appraisal

Since the parcels of the Expansion Area can be developed as soon as the developer is able to overcome the environmental limitations imposed by the natural environment and the various governmental regulations, a greater emphasis in the valuation of the parcels of the U.E.A. was placed upon helping this individual find those properties which are ideally suited to develop. This approach is also geared to identify those areas which will be most advantageous for future City annexations.

With this criteria serving as a guideline, this report has attempted to specify the costs of the installation of sewage, water, and roads while not attempting to compute the expected tax revenues to the City.

The variables of the preceeding section which have been chosen for consideration include the following:

- Groundwater Tables
- Floodplains
- Water Delivery System' s Cost Distance to Existing Service
- Sewer Delivery System' s Cost Distance to Existing Service
- Street Construction Costs and Their Distances
- Soil Type (As It Relates To Road Construction Costs)
- Topographical Constraints To Development Of Roads, Streets, And Sewers.

These variables are rated on a zero to ten scale with zero being the least desireable and ten the most desireable.

The following sections will attempt to quantify data. First on a dollar per unit valuation basis. This figure will then be translated into linear distances which, in turn will be assigned a weighted value. The numerical value derived at this stage will then specify the ranked order of the parcel. In other words, if a parcel receives a high numerical value, it will be considered as a prime development site.

Those parcels of lower values will accordingly be viewed as less desirable.

- Groundwater The type of well and septic system installed in a residence is often determined by the water table level, and the type of soil it is set in. In the Bozeman area, groundwater tables generally are very close to the surface and tend to acquire either a provision for large lot subdivisions if individual wells and/or septic systems are used, provisions for central sewer and water or connection to City service lines. Since the question of differing levels of expense will be covered in the Water Delivery section, the major aspect of groundwater discussed here is its relative depth.

The importance of the variable of hydrology is related to the degree of urbanization which can be afforded in areas of high groundwater tables. "For example, where the depth to the groundwater is between 0 - 3 feet it is considered a severe limitation for urbanization for reasons of potential groundwater pollution from on site sewage disposal systems." Also, there is the expense of having to adjust well depth to accommodate for the drawdown created by other wells (see Chapter One).

In view of the stated problems, the groundwater tables will cause the parcels of the U.E.A. to be rated as follows:

- If the groundwater of the parcel is from 0 to 3 feet, it will be scored zero (0). In other words, individual septic systems are prohibited.
- If the groundwater of the parcel is from 3 to 10 feet, it will be scored five (5).
- If the groundwater of the parcel is greater than 10 feet, it will be scored ten (10).

Also, if the parcel is within the designated Floodplain, it is rated zero (0). This variable will not be included in the ranking process because all of the ranked parcels will be required to connect to a central sewer and water system. However, this variable will provide a measure of the suitability of the parcel for development.

- Water Delivery System Since the capacity of the City's drinking water facility is limited by its reserves, and since the quality of water must be high (see Chapter One) for the health and safety of its users, a listing of those properties which can reasonably be expected to connect to this service is an important determinant of the suitability of those properties to provide for the following:

- 1) installation of individual septic systems
- 2) higher density development

If a development is connected to City water, the problem of groundwater pollution of drinking water is reduced. The problem of off-site groundwater pollution is still in existence; however, its impact on the site of development is somewhat reduced.

Also, with a connection to City water, higher densities of dwelling units could be permitted for the same reason.

Since the installation of City water is a cost to the developer, the likelihood of its installation would be on a cost/beneficial or environmentally constraining basis (see Chapter One). The ranking of the parcel is therefore based on its costs. Since a well costs between \$15 and \$20 a foot (exclusive of pump) to drill, and since the wells in the Bozeman area range upwards to 200 feet deep, the basic cost of a well could be as much as \$4,000. On the other hand, the cost of extending City water is approximately \$25 per linear foot.

Assuming that the lowest density permissible in a residential subdivision would be 40 dwelling units per 40-acre parcel, the cost of well installation (exclusive of pumps) could range between \$30,000 and \$80,000. Of course, if the density of dwelling units on individual wells is higher, then the costs would also be higher. For example, if there were 80 dwelling units per acre on individual wells, the costs could range upwards to \$320,000.

Since City water is obviously cheaper if the parcel is closer to the existing water mains, parcels within 1/2 mile of the existing or proposed water main would be ranked ten (10). If the parcel is within 1 mile, its rank is five (5); if the parcel is within 1 1/4 miles, its rank is three (3); and if further than 1 1/4 miles, its rank is zero (0).

The ranking is derived by taking a medium density development and the cost of individual well installations and computing the number of feet of water main that could be purchased for the same amount.

\$160,000 cost for individual wells on 1/2 acre per home densities + \$25 per foot average water main cost = 6,400 feet of water main at one home per 1/2 acre and interpolating the values. (see Topography for further directions when computing the distance to existing or proposed service.)

Since the expected density of developments in the undeveloped properties of the U.E.P. can only be assumed, the values assigned in the rankings are only a rough approximation.

- Sewage Since the installation of central sewage collection lines on undeveloped properties is advantageous to the developer on the basis of a savings of cost, he will be willing to install central sewers if they are cost beneficial, and/or required because of environmental limitations (i.e. high groundwater table). According to one

of the local septic system installers in Bozeman, the basic cost of a septic system is \$1,000 per 1,000 gallon septic tank (costs vary about \$200 to \$400 in environmentally sensitive areas), and its useful life is approximately ten years (at which time a new drain-field site is usually necessary).

Assuming a density of 40 to 80 units per 40 acre parcel, the cost of individual septic systems (exclusive of repair costs and drainfield replacement costs) could run from \$40,000 (40 x \$1,000) to \$96,000 (80 x \$1,200).

Since the cost of sewer mains is approximately \$25 per linear foot (exclusive of service charge), it is cost/beneficial for parcels nearer to sewer lines to develop on central sewer. Therefore, if a parcel is within 1/2 mile, it is ranked ten (10). If a parcel is within 3/4 mile, it is ranked five (5), and if a parcel is further than 3/4 mile, it is ranked zero (0).

The sewage rating of parcels is determined by taking a low density development (80 units per 40 acre parcel) and calculating the cost of individual septic systems on relatively stable sites in regard to percolation ability. The total cost using these calculations is approximately \$96,000 for 80 units (\$1,200 each). Since the average cost for sewers is \$25 a foot, 3,840 feet (3/4 mile) of sewer could be installed for the same price of septic systems for one parcel.

Since the density of developments of the underdeveloped properties can only be assumed, the values assigned to the rankings are only rough approximations.

- Streets One of the major costs to a developer is the provision for the installing of streets. The cost of road installation is directly related to the type of soil that it must be sited upon. The distance of a parcel from an existing country road or major arterial will also determine the cost of road installation. For these reasons, the ranking of roads will be determined by the following:

- 1) The distance of the parcel from country roads or arterials
- 2) The type of soil the road must be built upon.

If the parcel is within 0 to 1/4 mile its value is 4.55, beyond 1/4 mile to 1/2 mile its value is 3.38, 1/2 mile to 3/4 mile its value is 2.21, 3/4 mile to 1 mile its value is 1.17, further than 1 mile its value is zero (0).

This value is then multiplied by the type of soil on which it is constructed. On a Bozeman series soil which is rated as having none or only slight soil limitations, the factor is 10. On a soil rated as having moderate limitations the factor is 9, and on a soil rated as having severe limitations the value is 7. These values reflect the approximate differences in costs for road installation

over the different soil types.

If a proposed road passes different soil types, its rating factor will be determined by the following:

- 1) If 50 percent or more of the road passes over soils which are rated more restrictive, the more restrictive soil will be considered the determining factor.
- 2) If 50 percent or more of the road passes over soils which are rated less restricted, the less restrictive soil will be the determining factor. (See Topography for further directions when computing the distance to existing or proposed service.)

The end product of these two computations will be multiplied by .22 because the values computed are on a development/cost basis and must be correlated with the other segments of the rankings. This value was computed as follows:

$$\frac{\$25/\text{ft. for sewer or water } (\bar{x})}{\$115/\text{ft. for roads } (\bar{x})} = .22$$

- Topography and Geologic Hazards The slope of a given parcel of land can often be a determinant in the cost of sewer and water main installation as well as a factor in the cost of road installation. The cost of sewers are determined by many variables; however, the ones

specifically related to slope are as follows:

- 1) If a sewer must service a rolling slope such as the area of Sourdough Ridge, pumping lift stations must be installed. Beside the original cost of a lift station (\$35,000 to \$60,000), operating and maintenance costs per year are approximately \$2,500.
- 2) If a sewer main is on a "down slop" its slope must be sufficient to permit the sewers a quick enough flow so that a self-cleansing action can occur.

The installation costs of water are similar to the cost for sewers. Thus, both factors must consider excessive slope as a limiting factor to development.

In Bozeman, the Alluvial Plain is a gently sloping land form and affords many of the natural features for a good gravity flow of sewage and water in a northward direction. For this reason, distances of parcels from existing or proposed sewer lines or water mains will be computed by the feasibility of connection to the nearest southern connection. Water main distances will be computed by measuring the distance to the nearest northern existing or proposed connection. These directions are reversed on the northern borders of the flood-plain because of the change in the slope.

If the proposed services (i.e. sewer, water, and roads) must traverse a slope gradient greater than eight percent, the distance of a parcel to the nearest sewer and/or water line will follow the most likely direction for connection to an existing or proposed line.

Beside the costs thus far described, areas of moderate slope (i.e. greater than eight percent) are unstable and prone to land slides, and increase the costs of construction to compensate for the irregularity of the landscape. These areas are also major drainage ways for the plateaus atop these ridges.

For these reasons, a rating of parcels within the U.E.A. must reflect the slopes of the land as being a prime determinant to the cost of sewer, water, and road installation and the effect of slope will be determined by the following:

- 1) If the slope of a parcel is less than 8 percent, it will be rated 10.
- 2) If a slope gradient is between 8 and 15 percent, its suitability for development is lower than a gently sloping area and will thus be rated 5.
- 3) If a slope gradient is greater than 15 percent, it will be ranked zero (0) because of its hazardous character.

In cases where a parcel contains more than one type of slope, its value will be interpolated by taking the ratio of land in one category and the other category and arriving at a weighted average.

Parcel Rankings

Each parcel of the Urban Expansion Area is rated according to the variables thus far outlined. Their score in each of these suitability categories is included in a Goeller score card in Appendix B. Also, since the variables concerning water delivery systems, sewage and streets, were rated in dollar terms and then translated into distance, the total score of these variables can be merged (added) to determine where the most suitable property (in terms of development costs) is located.

The following section is a ranking of the suitability for development of the parcels of the Urban Expansion Area. Parcels are ranked according to their total parcel values as defined in Appendix B. In the event a parcel receives the same rating as another, a parcel with the most variables (which have a score of greater than four) will rank first. If this process does not resolve the tie, the parcels will be considered as having interchangeable rank orders.

Parcel Rank One of the parcels which received a perfect score of 40 was parcel 55-15. This parcel is one of the most suitable parcels for development and it provides a check on the accuracy of the scoring of the parcels.

Contained in this parcel is a sewage lagoon, Kagy Boulevard, a water main within close proximity and relatively flat topography. Although not included in the summed ranking figure, the water table is rated at 10. Because this parcel contains a large sewage lagoon, it will be left out of the ranking of parcels since it is assumed that development in this area is not feasible.

The remaining parcels are ranked and contained in Appendix C in their order of suitability.

Land Use Requirements: 1978-2000

Now that the parcels have been ranked, they must be applied to a projection of land use requirements to provide the land when it is needed.

In order to determine the total land use requirements for the City and its jurisdictional area, information on residential land use needs was gathered from the 1978 Housing Element of the Bozeman Master Plan. This data was in turn translated into the total land use requirements of the residential, commercial, industrial, and public

sectors. These figures were determined as follows:

- 1) The population projections for 1978 through the year 2000 were divided by 2.7 (persons per dwelling unit) to determine the dwelling units needed.
- 2) The dwelling unit figure was divided among the different housing types maintaining the present status quo of the housing mix.
- 3) These figures were then multiplied by the acreage per dwelling unit class (i.e. single family, multi-family, apartment, and mobile home) to obtain the land use needs of the residential sector.
- 4) These figures are then multiplied by 20 percent to provide a rough approximation of the industrial and commercial sector's land use requirements. This figure also includes this sector's street requirement.
- 5) The residential land use requirement figure is then multiplies by 25 percent to provide land for streets. Twenty five percent is a rough approximation of the average land per development which is necessary for streets/
- 6) The residential figure is again multiplied by 10 percent to provide for parks and other public land. This

10 percent figure is a combination of the 9 percent park dedication requirement of Bozeman's present subdivision regulations plus, 1 percent for public facilities such as schools, police and fire stations.

All of these figures are then summed. The land use requirements per time segment during 1978 to the year 2000 can be found in Appendix D.

Timetable for the Development of Parcels in the U.E.A.

A summary of the data compiled in Appendix D is as follows:

- 1) In the 1978-80 period, the land use needs for all sectors (i.e. residential, commercial, industrial and public) will be 313 acres.
- 2) In the 1981-85 period, the land use requirements for all sectors will be 834 acres.
- 3) In the 1986-90 period, the land use requirements will be 1,030 acres.
- 4) In the 1991-95 period, the land use requirements will be 1,291 acres.
- 5) In the 1996-2000 period, the land use requirements will be 1,610 acres.

The total acreage needed during the 1978 to 2000 period will be approximately 5,089 acres.

Time Phased Development

In order to use the data thus far derived for growth management, the land use requirements and the ranked parcels must be merged. This process defines which areas will be developed during the five time segments.

Since many of the parcels have received the same parcel valuation and possess the same amount of variables greater than four, these parcels will be considered as being included into the phased growth program on a "first-come, first-served" basis. For example, during the 1978 to 2000 period, the parcels of the highest rank which develop first will receive the benefits of the program (see Chapter Four); however, only the specific amount of acreage projected land use requirements for that period will be permitted to engage in the development program.

In addition, in order that a variety of land uses (i.e. commercial, industrial), will be able to engage in the benefits of the program, 20 percent of each category's total land use requirements will be reserved for commercial and industrial development. In other words, only 80 percent of the residential land use requirements for

each period will benefit from phased development program (see Inducement Zoning in Chapter Four).

A breakdown of the acreage per sector per time period which will participate in inducement zoning is as follows:

TABLE 9
INDUCEMENT ZONING PARTICIPATION

<u>Period</u>	<u>Residential</u>	<u>Commercial/ Industrial</u>	<u>Streets & Parks</u>	<u>Cummulative Total</u>
1978-80	202 acres	40 acres	71	313
1981-85	538 acres	107.6 acres	188.4	1,147
1986-90	665 acres	133 acres	232	2,177
1991-95	833 acres	166.6 acres	290.4	3,468
1996-2000	1,039 acres	207.8 acres	373.2	5,089

The above acreage figures of the residential, commercial and industrial sectors, are exclusive of provisions for streets and park land dedications. Therefore, when developments occur, their use of the acreage for streets and parks will be reduced from the amount designated for these uses. However, since it is in the interest of the general community, a great deal of flexibility will be in the streets and parks category so that more land can be provided for those purposes. In other words, the streets and parks category are a minimum figure, while the residential and commercial/industrial categories are maximum figures.

Annual Review and Update of the Rankings, Land Use Requirements and U.E.A./U.R.A. Boundaries

The Planning Board will provide for annual update of the rankings of each parcel of property in the Urban Expansion Area. Each parcel will be weighed according to the five suitability variables. This process will commence on October 31, 1979, and it will be repeated each year on the same date.

The annual review of the parcels of the Urban Expansion Area shall essentially consist of a mapping of the existing areas of the Urban Expansion Area; inventorying the land absorption (i.e. the land developed) and population growth rates; determining the amount of land which can normally be expected to develop; and ascertaining the environmental and economic effects of new developments.

If amendments to the Urban Expansion Area or Urban Reserve Area boundary lines are recommended by the Planning Board, a proposal for the revision of the Urban Expansion Program map, along with supporting data, will be submitted to the City Commission by November 15th for their approval.

Summary

In Chapter Three, the basic goals as well as the criteria

for program implementation of the Urban Expansion Program were outlined. The overall objective of the Urban Expansion Program is to maintain the present character of the City by providing for an orderly growth of the residential, commercial, and industrial sectors in the most economical and environmentally feasible manner possible, thereby creating savings for the developer, the new home buyer, the City and the taxpayer. The five suitability variables used to rank the 40-acre parcels of property reflect the intent of this objective as does the ranking process. This is accomplished by finding the most inexpensive and environmentally stable areas and encouraging their development in a rational manner.

In Bozeman, the financial benefits of the Urban Expansion Program have three major elements. First, municipal operating and maintenance costs of the sewers, water mains, roads, schools, police and fire stations, etc., can be reduced through a program of pre-planned development (see Chapter One). Second, the City can reduce capital expenditures in areas such as the construction costs of fringe area schools, fire and police stations, their equipment, and a host of related expenses. Third, the general public can save their financial resources through a reduction in the costs of Special Improvement District projects (SID), in the expenses of municipal

government in general, and in related personal expenses such as a shortening of traveling distances and associated transportation costs.

A high degree of flexibility is introduced into the program by providing for a large number of equally evaluated parcels to enter into the program at the same time to satisfy the projected land use requirements. This flexibility will permit the circumvention of parcels which are unilaterally withheld rather than developed. Also, attempts at monopoly can be thwarted by supplying abundant alternative sites for developers.

In the next chapter, the policies (i.e. the "means") for initiating a program of phased growth will be defined.

END NOTES

- ¹ Bozeman Citizen Advisory Board, Goals and Policies, 1978
- ² Thomas, Dean and Hockins, Inc., 1978 Facilities Plan, P. II-1
- ³ Ibid #2, p. II-2
- ⁴ Bozeman City-County Planning Board, Housing Element, 1978, p. 5
- ⁵ Blue Ribbons of the Big Sky Country, Area Wide Planning Association, Groundwater Pollution from Septic Tank Drainfields, Jan., 1978
- ⁶ Ibid #2, p. II-1
- ⁷ Bozeman City-County Planning Board, Bozeman Area Master Plan, 1972, p. 27

Chapter IV

THE MEANS OF IMPLEMENTATION

Introduction

There are many techniques which can be utilized to implement a plan of pre-planned development. There are at least 55 tools at the disposal of city governments which can be utilized for the implementation of growth management policies, each exhibiting a certain degree of influence over growth. However, the major objective of the Bozeman Urban Expansion Program is to guide growth, not to stop it.

This objective is accomplished by incorporating the needs of the free marketplace into the framework of the Urban Expansion Program so that development which would have occurred in any event can be managed in a fashion which will financially and environmentally benefit all of the parties involved (i.e. the city, the taxpayer, the developer, the eventual homeowner, and the present owner of the properties under study), thus fulfilling the responsibility of city government to protect the health, safety, and general welfare of its citizens.

In this chapter, the potential tools of growth management in Bozeman will be outlined. Basically, the techniques are as follows:

- 1) An Inducement Zoning Policy which will give special consideration to developments which conform to the

Urban Expansion Area time frame as outlined in Chapter Three.

- 2) A new policy for Special Improvement District bond approval in the Urban Expansion Area.
- 3) A new approach to Residential Suburban Zoning which corrects the present planning and zoning conflicts.

Inducement Zoning

It is recommended that future development of the Urban Expansion Area conform to the Urban Expansion Program time frame (see Chapter Three) and be encouraged to develop within the designated areas rated as the prime development sites. This can be accomplished through a program of "Inducement Zoning". This technique encourages development in the designated growth areas by providing zoning incentives. For example, if the developer conforms to the time frame of the Expansion Program, the governing body and its boards will allow for increased flexibility when zone changes are desired. These changes must, however, be compatible with the zoning of adjoining parcels, and not contribute to a significant disruption of existing areas. This policy should insure that the residential, commercial, and industrial sectors will stay in the areas already developed for these respective capacities.

The second inducement to the conforming developer would be that, since a basic environmental impact statement has already been developed under the Urban Expansion Program, only a brief statement on unusual environmental constraints, not previously included would be required for a subdivision development.

This increased flexibility should encourage the development of the designated areas of the Urban Expansion Area by helping to ease the administrative uncertainty of having a development accepted or not. This reduction in uncertainty can also help the developer because he/she will be able to acquire financing at a more reasonable rate by being able to pick the time when he wishes to develop. This factor is also applicable to partnership and corporate arrangements. In the past, developers have had to search out available properties for their type of development within the City, or find a less than desirable site outside the City's jurisdictional area. These problems have forced the prices of land within the City upward which in turn sometimes precluded the development of some developments entirely, or so increased development costs as to create an adverse effect upon the ability to finance at reasonable rates. These development costs would then have to be passed on to the eventual consumer.

The Urban Expansion Program provides a mechanism where adequate supplies of land will be made available for development which will avoid the problem of inflated land prices created by a shortage of land.

The third inducement to conforming developers will be the certainty of special improvement district bond availability. Many of the areas in Bozeman have severe water table problems (i.e. the table is within four feet of the surface and developments need central city sewer).

Another problem for some developers in Bozeman is that the water table is deeper than 400 feet thus making central city water the only financially viable alternative for water supply.

At this time, the City of Bozeman has the ability to approve or deny the formation of SID's. Since the higher ranked parcels of the Urban Expansion Area are relatively contiguous to the City Limits (as well as existing trunk lines), the development of these properties on central city services will be in the financial interests of the developer as well as the City.

Special Improvement District Approval

The current city policy regarding SID's is that, in order for a development to be connected to the central city water or sewer system, the development must be located in an area contiguous with

the existing City Limits.

It is recommended here that the parcels of the Urban Expansion Area which conform to the timetable in Chapter III be permitted to connect with the central infrastructure services if they waive their right to a protest to future annexation.

The parcels which will conform to the timetable will be relatively contiguous to the City Limits due to the structure of the evaluative variables. Due to the flexibility built into the parcel ranking process, however, there may be developments viewed as suitable which are not contiguous to City Limits. These areas should be permitted to connect to the city infrastructure on a user-fee basis (i.e. charged for the amount of use) subject to the approval of the City Commission.

It is also recommended that, if subdivisions within the Urban Expansion Area wish to create Rural Improvement Districts (RID's) for sewer and/or water mains, that their connection to the City infrastructure be approved if: 1) they waive protest to future annexations and 2) are on a user-fee basis.

These policies should insure that the environmental integrity of the Urban Expansion Area be maintained while not precluding the City's ability to expand its borders in the future.

The Residential Suburban Zone

The Costs and Problems of Poor R-S Siting Chapter One

briefly examined the effects of Urban Sprawl in Bozeman, and reflected the many problems created when Residential Suburban (R-S) developments (one dwelling unit on a minimum of one acre) are permitted in areas where future city expansion is projected.

The problems associated with R-S development stem from the fact that, due to the developer's tendency to site homes in the center of the lot, these lots are not able to be re-divided into smaller lots. This factor is important because the cost of Special Improvement District Bonds (SID's) for the installation of roads, sewers, and water mains on a raw acre of land can run as high as \$48,160.¹ If these acre lots could be divided into quarter acre lots, the total SID package could be reduced to \$12,040 (or less) per lot. Also, the original owner of an acre would be able to sell off at least three 10,000 square foot lots while keeping the remaining lot for his own use. The financial breakdown is as follows:

\$16,000*	approximate cost of one acre of undeveloped land
\$44,000*	approximate cost of four 10,000 sq.ft lots**

By merely siting a house in a better position on the property the "highest and best" use of the property is increased thereby increasing the property value by approximately \$8,000. This increase in the "highest and best" use of the property can only be accomplished

by the installation of sewers, water mains, and/or roads. However, if the owner of the property sites his home correctly (i.e. on one 10,000 sq.ft. lot), and sells the remaining three lots, his cost for SID's is as follows:

\$33,000*	three 10,000 sq.ft. lots x \$11,000 (undeveloped)**
- \$12,040*	SID cost for sewer, water, and roads on one 10,000 sq.ft. lot
<u>\$20,940*</u>	Potential Profit to Homeowners

* These figures are approximations and will vary depending on on the property.

** The cost of an undeveloped 10,000 sq.ft. parcel in the Figgins Addition subdivision.

The previous calculation demonstrated the financial interest of the eventual R-S homeowner to have a home which is sited so as not to destroy the future utility of his property for other uses. In fact, the siting of homes on the center of the lot can cost the eventual homeowner the following:

- 1) \$33,000 of opportunity cost from being unable to re-divide the acre.
- 2) The total cost of SID's (\$48,140) less the \$12,040 which might have been paid on a 10,000 sq.ft. lot, leaving a \$36,120 loss.

In effect, the total cost of incorrectly siting a home could be as high as \$69,120. This cost is exclusive of the cost of the land, construction costs, and landscaping costs. This cost is an incredible loss to the potential, often unsuspecting homeowner.

To demonstrate the magnitude of this problem in terms of the cost to individual homeowners, if these costs are applied to the 2,728 R-S-1 lots already developed in the city and its jurisdictional area, the total loss would amount to approximately \$188,559,360.00

If the projected 2,310 R-S-1 homes are constructed by the year 2000,² the potential loss to the eventual homeowner could be as high as \$159,667,200.00. In terms of lost tax revenue to the city, if the areas surrounding the city are precluded from annexation due to the high cost of SID's in R-S areas, new R-S units could cost the city the following:

TABLE 10

EXPECTED TAX REVENUE LOSS TO CITY WITH R-S-1 DEVELOPMENT

<u>Period</u>	<u>Total R-S Units Projected (Per Period)</u>	<u>X</u>	<u>1977 Avrg. Market Value Per Home</u>	<u>X</u>	<u>Tax Factor *</u>	<u>=</u>	<u>Expected Tax Revenue Per Year</u>
1978-80	192		\$42,300		.0244		\$198,167
1981-85	415		"		"		\$428,329**
1986-90	479		"		"		\$494,385**
1991-95	544		"		"		\$561,473**
1996-2000	680		"		"		\$701,841**

* (Full value X 8.75% = Assessed value. Assessed value X mill levy (.279) = tax) or 8.75% X .279 = tax factor of .0244)

** This figure is not a cumulative balance and only reflects the expected property tax for newly constructed residences during that period.

When an average total tax loss on R-S units is constructed for just the year 2000, the figure amounts to a loss of \$2,384,197.00 (in 1977 dollars) for just that year. Rather than going through extensive calculations to provide cumulative tax (revenue) losses for the years before 2000, it can be assumed that the figures are substantial.

Another factor to be considered when computing the costs of R-S subdivisions is that the residents of these developments will more than likely utilize the services provided in the central city while not directly compensating the city for their use. Although no

figures on this cost are available, the past experiences of other cities such as Denver and New York have demonstrated the burden on services created by the non-tax paying, commuting suburbanite.

When the cost of the losses to the city and the eventual homeowner are combined with other factors such as the potential for environmental pollution (see Chapter One) and the inadequacy of existing facilities such as major roads and arterials, it can easily be seen that R-S developments which site homes in the center of an acre lot create a prohibitively expensive problem.

The Existing R-S Ordinance

According to the Intent Section (18.21.00) of the R-S Residential Suburban Country Estates of the Zoning Chapter of the Bozeman Municipal Codes,

"The intent of this district is to provide for reasonable single family development in areas with severe physical limitations and where central water and sewer systems are not available." (see Appendix E)

In the area defined by the Urban Expansion Area, central water and sewers are available as defined in the 1978 Bozeman Facilities Plan. It is therefore posited that only developments which are on central sewer and water should be permitted in the facilities programmed area.

Since many of the people who move into the Bozeman community move here to escape overcrowded conditions typical in many central cities, there should be an alternative available which permits a R-S type of development if the adverse effects of the development can be overcome.

In response to this need the Residential Suburban Facilities Programmed Area Zone (R-S-FPA) has been developed for use in the Urban Expansion Area. The proposed new zoning ordinance is as follows:

R-S-FPA Residential Suburban - Country Estates in Facilities
Programmed Areas

Intent The Intent of this district is to provide for reasonable* single family developments in areas where central City water and/or sewer systems are proposed for installation as per the Bozeman Facilities Plan, 1978.

* Reasonable - each site shall provide for at least one future lot split.

- Permitted Uses
- 1) Accessory uses
 - 2) Agriculture uses
 - 3) Barns and animal shelters
 - 4) Churches
 - 5) Conditional uses as provided in Chapter 18.72 of the Bozeman Zoning Code
 - 6) Fire Stations
 - 7) Home occupations
 - 8) Newly constructed one-family dwellings with private or City central sewer and water
 - 9) Temporary buildings for/during construction only.

Lot Area and Width R-S-FPA sites shall contain at least

four (4) lots with a minimum lot size of 10,000 square feet with a minimum total site acreage per dwelling of one acre.

Minimum total site area for each residential suburban dwelling unit shall be indicated by a numerical value following the district initials, i.e., R-S-1 will indicate one acre minimum, R-S-2 will indicate two acre minimum.

Lot Coverage and Floor Area Not more than 15 percent of the

total site area shall be occupied by the principal and accessory buildings. And, each dwelling unit shall have a minimum of 1000 square feet of floor area.

Yards Every lot shall have the following minimum yards:

Front yard	25 feet
Rear yard	25 feet
Side yards	12 feet each side

Building Height Maximum building height in this district shall be 24 feet.

Off-Street Parking Two off-street parking spaces shall be provided for each dwelling unit. Off street parking for non-residential uses shall be provided as specified in Chapter 18.72 or the Bozeman Zoning Code.

This ordinance establishes a medium whereby one acre subdivisions can occur while not cutting off the homeowner's or city's options for future development. At the same time, this ordinance also eliminates the problems of groundwater pollution by requiring that all newly constructed one-family dwellings be on public or private, central sewer and water.

The legal parameters through which this ordinance are justified are based originally on the state's enabling legislation which gives Bozeman the U.S. Tenth Amendment police power to protect the health, safety and general welfare of its constituents. Also, ever since the Ramapo decision (see Chapter Two) local governments have had the authority to limit developments in facilities programmed areas.

The Urban Reserve Area

Since the city is a perpetual entity whose existence can continue long past the existence of its present inhabitants, the planning of land usage should make every effort to prepare for the possible expansion of the city into areas which could one day become the city.

The areas under consideration here are those properties outside of the Urban Expansion Area yet, within the city's zoning

boundary (3 miles beyond the city limits). It is recommended here that the present R-S zoning be eliminated and a new Residential Suburban Zoning Code be approved. The new R-S zoning category is for those who wish a country estate in areas which have not been designated as being in the sewer service district (U.E.A.) as defined in the 1978 Bozeman Facilities Plan.

The recommended zoning change is as follows:

R-S-NFPA Residential Suburban - Country Estates not in
Facilities Programmed Areas

Intent The intent of this district is to provide for reasonable* single-family development in areas where central City water and/or sewer systems are not proposed for installation as per the Bozeman Facilities Plan, 1978 in areas with severe physical limitations.

* Reasonable - each site shall provide for at least one future lot split.

- Permitted Uses
- 1) Accessory uses
 - 2) Agriculture uese
 - 3) Barns and animal shelters
 - 4) Churches

- 5) Conditional uses as provided in Chapter 18.72 of the Bozeman Zoning Code
- 6) Fire stations
- 7) Home occupations
- 8) Newly constructed one-family dwellings
- 9) Temporary buildings for/during construction only
- 10) The keeping of animals and fowl for family food production and the keeping of horses for private use, together with their dependent young as hereinafter set forth per 2 1/2 acres:

One horse, or one cow, or two sheep, or two goats, or ten rabbits, or 36 fowl (chickens, pheasants, pigeons, etc.), or six larger fowl (ducks, geese, turkeys, etc.)

Lot Area and Width R-S-NFPA sites shall contain at least

four (4) lots with a minimum lot size of 10,000 square feet with a minimum total site acreage per dwelling of one acre.

Lot Coverage and Floor Area Not more than 15 percent of the

total site area shall be occupied by the principal and accessory buildings. And, each dwelling unit shall have a minimum of 1000 square feet of floor area.

Yards Every lot shall have the following minimum yards

Front yard	25 feet
Rear yard	25 feet
Side yard	12 feet each side

All pens, coops, barns, stables, or permanent corrals shall be set back not less than 100 feet from any residence or public road and not less than fifty (50) feet from any property line.

Building Height Maximum building height in this district shall be 24 feet.

Off-Street Parking Two off-street parking spaces shall be provided for each dwelling unit. Off-street parking for non-residential uses shall be provided as specified in Chapter 18.84 in the Bozeman Zoning Code.

This form of development will correct the dysfunction regarding center lot siting of dwellings which is permitted under the existing R-S zoning category. This change in site design will aid in the eventual expansion of the Urban Expansion Area when sewers and water mains are programmed for these new areas.

Summary

RS-FPA zoning will expect that new subdivisions in the Urban Expansion Area be connected to central sewer and water facilities while also requiring a better siting of homes so that they can be split into 10,000 square foot parcels. The policies of Inducement Zoning and a new approach to SID bond approval should encourage phased growth to occur in the time-phased areas. Development in the other areas of the Urban Expansion Area is not prohibited if it meets the requirements of central sewer and water (private or public) systems.

In the Urban Expansion Area, all of the existing zoned areas will be permitted to remain in their present category (i.e. R-S or Agricultural Suburban) however, if they wish a zone change, the old R-S zoning category will not be considered as an acceptable land use practice.

In the areas outside of the Urban Expansion Area but within the city's zoning jurisdiction, R-S developments will be permitted to develop if they site the houses in a manner which will allow for a future lot split.

Chapter V

SUMMARY AND FURTHER RECOMMENDATIONS

Synopsis

The purpose of this paper is to examine the problem of urban sprawl in the areas surrounding the City of Bozeman, and to recommend a program of growth management which can stop sprawl.

In Chapter I the historical development of land use tools in Bozeman were examined from the period when there were no land use regulations, through the adoption of zoning in 1935, to the adoption of subdivision regulations in 1975. This discussion then led into a general discussion of the costs of urban sprawl. Next, the history of growth in Bozeman was examined and population projections were given to the year 2000. This chapter goes on to examine alternative growth patterns in Bozeman and each alternative's related costs. This chapter also proves that Bozeman has the problem of urban sprawl and does a brief examination of the costs of sprawl development in Bozeman.

Chapter II examined the tools of planning which can prevent sprawl. The first section examined the early development of land use planning. Next, the City of Ramapo v. Amber Realty, a landmark case which began time-phased development, was summarized. Then, an

examination of the application of growth management in a city which is demographically, legally and environmentally similar to Bozeman was outlined. This section also examines the tools at the disposal of Bozeman's Planning Board and concluded by proving that Bozeman could enter the field of growth management with little alteration to existing policy.

Chapter III examined the objectives and criteria around which the proposed growth management program will function. This chapter also examined the methodology used to evaluate the suitability of the property under study. These evaluated properties were then ranked and compared to the land use requirements for the residential, commercial, industrial and public sectors in five-year segments. A process for annual updating was also provided.

Chapter IV looked at the means of implementation (i.e. policies) and established new approaches to existing ordinances which could implement time-phased development in Bozeman. These policies include Inducement Zoning, a new approach to future SID approval, a new R-S zoning category for the Urban Expansion Area, and a new R-S zoning category for the Urban Reserve Area.

In Chapter V recommendations on future growth management policies will be examined. Also, the administrative process of acceptance by the various governmental bodies will be outlined.

Additional Techniques of Growth Management

Rather than going into an intensive investigation of the 55 growth management tools contained in Appendix A, an examination of the tools which could augment the Bozeman Urban Expansion Program will be presented here.

The first policy from Chapter Four which might be augmented is the technique of Inducement Zoning. Although there are three major inducements to encourage the early development of areas which are relatively contiguous to the city, further inducements to development could be introduced.

Additional inducements could include the following:

- Differential Taxation In order to encourage new industry to locate in Bozeman, property taxes could be waived during the construction period and for any number of years after construction if the new industry conforms to the Urban Expansion Area time frame in Chapter Three.
- SID Default Privilege The present policy of permitting SID's to go delinquent for three years (see Chapter One) should only be extended to those developments which conform to the Urban Expansion Area time frame.

These two approaches would require that the existing state statutes regarding municipal taxing authority and SID creation be altered to permit their use.

The second policy which can be augmented is the time-phased acceptance of application of SID's. If the 1978 Facilities Plan can be updated to specify the incremental improvements of the new sewage treatment plant, applications for SID's can be accepted or denied on the basis of expected plant capacity for a given period of time (i.e. five year increments). This approach can limit growth during the 1978 to 2000 period (as is done by the 1978 Facilities Plan under the U.E.P.) however, this update would be more specific as to capital improvements and place a burden upon the developer to prove that there are adequate central city sewage and water treatment facility capacities available to serve his proposed development

New developments could be required to go through an acceptance procedure similar to the one employed in Salem, Oregon's growth management program (see Chapter Two) before they are given approval to develop.

At this point, approval for future development can be augmented by inducing competition between developers. For example, if a large number of developers are competing for the limited number of sewer and water hookups, those which propose developments which

meet or exceed designated performance standards will win acceptance.

The performance standards could include the following:

- The percent of the development dedicated to landscaped parks and open space
- The percent of the development which provides for low and moderate income housing
- The developments which incorporate a Planned Unit Development as specified in Section 18.75 of the Bozeman Zoning Ordinance will be rated higher.

Many other performance criteria can be incorporated into the evaluation of developments yet an indepth investigation at this point might be premature. Suffice it to say here that these performance standards will be able to utilize the existing framework of the Urban Expansion Program when a more indepth facilities plan is developed.

The use of performance standards can be used to contain and limit growth while simultaneously improving the overall social, environmental and aesthetic character of the development. These improvements are dependent upon the type and quality of performance standard imposed.

Method of Acceptance

Before the Urban Expansion program is implemented, it must be submitted to the various governmental bodies for their review and

acceptance. The process is as follows:

1. The program is submitted to the Bozeman City-County Planning Board for review and approval.
2. Next, the program is submitted to the Bozeman Zoning Commission for its review and approval.
3. A Public Hearing is then called for citizen comments and input.
4. The program is then submitted to the Bozeman City Commission for review and approval.
5. Lastly, the program is submitted to the Gallatin County Commissioners for their review and approval.

When all of these processes have been completed, the Urban Expansion Program is officially adopted.

During this approval process period, it can be expected that the program will be modified. This modification is often the result of many different pressures including special interest groups who either have an interest in seeing the program adopted or not.

This program has attempted to satisfy the majority of groups (i.e. the taxpayer, the developer, the eventual homeowner, the present owner of undeveloped property & the City) by basically ascertaining all of their needs, and attempting to fulfill them. However, it is inevitable that different groups will attempt to influence this

program to more favorably affect their interest.

In view of these factors, I do not expect this program to be the final document on growth management in Bozeman but rather a tool for the construction of the final approach.

APPENDICES

APPENDIX A

THE TOOLS OF GROWTH MANAGEMENT

The following is a synopsis of the available tools and constraints as documented in the texts, Urban Growth Management Systems, and Constitutional Issues of Growth Management which contains an analysis of 191 cities and counties employing growth management tools. (The ASPO Press and D. Godschalk et. al., 1977, p. 232-250) (ASPO Report Nos. 309, 310 Planning Advisory Service p. 35-49).

Public Acquisitions

Government has the greatest capability of managing land when it is publicly owned. There are four mutually exclusive methods of acquisition.

- 1) Fee Simple Acquisition This technique is used when the full use of the property is required. Under law, when all reasonable and profitable use of private land has been removed, purchase by the public in fee simple is required. Thus, the land use cannot be restricted, for example, through zoning, to such a point that the owner has lost all chance to use or gain a profit from his property. Such instances are considered a "taking". This technique has been used by Bozeman for the purchase

of park land. Eighty nine point five percent of the questioned cities and counties utilize this tool as part of their growth management systems.

- 2) Land Banking This technique involves public acquisitions of land where urban expansion is expected. The land is held or timely and appropriate resale for use by the public or private sector. IT is used to minimize or eliminate urban sprawl, redevelop the inner city, reduce the cost of urban land, curb public land speculation, and provide for public uses. Essentially the local governments get involved in the real estate business. They purchase land and sell it later for a profit. Bozeman has occassionally been involved in a type of land banking. Sources of funding are the H.U.D. Act of 1970 and the Urban Growth and New Development Act of 1970. Land Banks are public corporations and have the power to issue bonds for financing. The use of eminent domain by a public land bank has been upheld by the Supreme Court of the United States on the grounds that the acquisition was a public use.

- 3) Compensable Regulation The municipality "down zones" the property and compensates the owner. For example, a residential property is down zoned to agricultural. Thus, the property has fewer uses. This tool has not been used in Bozeman.
- 4) Less Than Fee Simple Acquisition This technique involves the purchase of easements by the municipality from the owner of the property. Thrity three point three percent of the respondents utilize this tool to some extent and it is used in Bozeman.

Public Improvements

- 1) Location of Facilities to Influence Growth Placement of roads, sewers, water, and other support facilities is a means of influencing the location of development. Its success depends upon how necessary the facilities are. Sixty four point eight percent of the respondents use this tool. An example would be the locating of a road and its effect on the property's "highest and best" use.
- 2) Access to Existing Facilities Regulating access to public facilities such as sewers, water lines, or limiting curb cuts to a street through the use of a permit can limit development. Fifty five percent of the cities and counties

responding use this tool. This tool is used in Bozeman.

Environmental Controls

- 1) Environmentally Sensitive Land Areas Ordinances can use resources such as fault zones, floodplains, and unstable soils to prevent or limit development. Seventy six point two percent of the respondents employ this technique. This tool is presently used in Bozeman.
- 2) Critical Areas Environmentally sensitive areas where the interest extends beyond the local jurisdiction can be prevented from developing. Forty six point seven percent use this tool. In Bozeman, this tools use has not been extensively investigated.
- 3) Development of Regional Impact (only if it is in the state laws) An environmental impact of a large area can be developed which shows environmentally sensitive or critical areas. These areas can then be designated sensitive or critical. The area covered is usually multi-jurisdictional. Thirty eight point one percent of those responding use this technique. This tool is also used in Bozeman.
- 4) Pollution Controls In environmentally sensitive areas or in the areas of substantial development, air or water pollution standards directly or indirectly affect future

development location, type, and density. Sixty two point nine percent of the respondents utilized this tool.

Bozeman utilizes an environmental impact statement process to control adverse environmental impacts.

Development Rights Transfer

- 1) Development Rights Transfer Before a builder can develop, he must possess all the rights in his property which designates a designated use and intensity of development. He must buy these rights and, the number of rights he is able to buy is determined by the local planning board. Only nine point five percent use this tool and twenty one percent intend to use it. An example would be the Bridger Canyon Zoning district where property owners must purchase the development rights to 40 acres in order to build a house.

Restrictive Covenants and Other Agreements Running With The Land

- 1) Restrictive Covenants and Other Agreements Running With The Land This encompasses the entire gamut of privat deed restrictions which the land owner incorporates into his deed. Fifty nine percent of the answering cities and counties utilize this technique. An example of this

tool use is the Four Corners Area where property use is controlled through restrictions written into the deed.

Restrictive Covenants are used in Bozeman.

Zoning Techniques

- 1) Coventional Zoning This is the usual method of land use restrictions employed by most local governments. This is the most widely utilized tool for growth management having a ninety two point four percent usage. The purpose of zoning is stated in Chapter One.
- 2) Conditional and Contract Zoning Landowners enter into a contract with the municipality in which he promises to subject his property to deed restrictions in exchange for a desired rezoning. If this is done through the use of a contract (i.e. Contract Zoning), the courts generally hold the practice invalid. If, however, a condition is a prerequisite to a zone change (i.e. Conditional Zoning), it is permissible. Bozeman uses conditional zoning.
- 3) Planned Unit Development Planned Unit Development involves specific plans that require administrative discretion. It does away with the lot-by-lot approach found in standard zoning and subdivision regulations. P.U.D. allows large-scale development to be planned with flexible designs.

P.U.D. provisions begin when the proposed development exceeds a minimum number of acres and a minimum number of dwelling units (as established by local ordinance).

Also, land use of the P.I.D. must conform to the zone it is in. This tool is used by seventy six point two percent of the respondents and is already in Bozeman's zoning ordinances.

- 4) Flexible (Cluster, Average Density) Zoning This allows an adjustment in location and density of development on a site so long as the total number of units does not exceed a set density ratio. It is good for use in environmentally unstable areas. This is used by sixty nine point five percent of the responding cities.
- 5) Performance Standard These standards relate to acceptable levels of nuisance or side effects of a development rather than specifying acceptable uses. In the past, it was only used for industrial areas. However, recently, it has been used to review application for subdivisions regarding their support services such as traffic, sewage, etc. This is used by thirty nine percent of the responding cities and also to some extent in Bozeman.
- 6) Bonus or Incentive Zoning The community obtains certain amenities in a development in exchange for additional

financial benefits to the developer, (i.e., the city allows a developer a higher density if they agree to sequenced expansion over a period of time). Usually, the builder is allowed a variance to existing zoning in exchange for an amenity of benefit to the community. Twenty five point seven percent use this tool and Bozeman also uses this tool. Bonuses are usually workable techniques in the central business district but can be developed city-wide.

- 7) Floating Zones These zones are usually provided for in the zoning ordinance but are not usually shown on the zoning map. These zones may be used for the installation of a commercial district that is desired in a given area but not identified in advance. This technique is good for the late incursion of a shopping or commercial district in an established neighborhood. Twenty one percent of the respondents use floating zones.
- 8) Conditional Use Permit This may be used in floating zone areas where a certain activity is desirable but requires a special control. The drafters of a C.U.P. must specify all the conditions which must be met in the permit. Fifty five point two percent of the respondents use this

tool. Bozeman also uses this tool.

A C.U.P. can be used to channel development according to a comprehensive master plan. Municipalities have been declaring a new developments a special permit rather than a right of use (i.e. cities provide for large lot zoning and other measures allowed only by special permit. In Ramapo, residential development required a special permit, the issuance of which depended on a certain level of municipal services. The capital budget plan specified that all of the necessary service facilities were to be operative in all areas no later than 18 years from the plans's inception (restrictions must be temporary and allow the owner to retain a reasonable use of his property).

- 9) Variance This provision gives a property owner relief from from zoning ordinance because of unnecessary hardship associated with the property or practical difficulty. Variances relief is used in Bozeman.

Conventional Subdivision Regulations

- 1) Exclusive Agricultural or Non-Residential Zones These exclude residential use. Used in Sacramento County

California, this provision also has several classes of agricultural zones. A municipality cannot arbitrarily designate land for agricultural use simply to control growth. The land must actually be agricultural or environmentally unsuited for other uses. Fifty one point four percent of the respondents use this technique and it is used in Bozeman.

2) Exclusion of Multi-Family, Mobile, or Industrialized Housing

The justification for excluding multi-family housing is that it imposes greater costs for public services than it returns in ad valorem taxes. Courts usually refuse to uphold such ordinances. Twenty two percent use this tool and it is used in Bozeman.

Small cities often exclude mobile homes. This action is often upheld on the ground that mobile homes were not aesthetically pleasing, were detrimental to property values, and might hinder growth along desired lines. Also, trailers might not conform to local building codes governing single family housing.

Generally, since mobile homes are not a nuisance to public health and welfare, a municipality cannot exclude them as a legitimate exercise of the police power.

- 3) Minimum Floor Area A Master plan should specify any floodplain or drainage problems to justify its use under the "health" section of the Tenth Amendment of the U.S. Constitution. Also, it can be upheld on the grounds that the City is preserving the tax base and aesthetically adding to the city. This tool is used in Bozeman.
- 4) Minimum Lot Size This is found in virtually all zoning ordinances. It is used to control population densities. The courts have upheld its use on the grounds of inadequate municipal service capacity. It is also upheld on the grounds of safeguarding the health and safety of the public. This tool is used in Bozeman.

The courts tend to invalidate excessive minimum lot size requirements (i.e., a lot over an acre) where the primary purpose is exclusionary in urban areas.
- 5) Height Restrictions This technique is being replaced by the "floor-area ratio" technique. Bozeman still uses height restrictions.

Zoning and Subdivision Controls Relating to Off-Site Facilities

- 1) Zoning and Subdivision controls Relating to Off-Site Facilities This is a new technique which is used in

conjunction with the programing of public capital improvements.

Developments will be permitted in locations where adequate service exists, and services will be provided to areas ripe for development. The variation comes in deciding how to provide the necessary facilities.

Subdivision regulations now take into account the relationship of the proposed subdivision to its environment and the community's comprehensive plan. Since the community, through its planning board has a duty to protect the public and the future owner of property in a subdivision before approval is granted, and since these conditions generally relate to the needs of the entire community also, the quality of water and sewers and roads must be adequate, and an excessive level of water pollution off-site cannot be allowed. Not only does the community have the duty to deny subdivisions under adverse circumstances, but the state or municipality may be liable for the resulting damages. Sixty four point eight percent of the cities and counties utilize this system.

E.P.A. regulation: requires state and municipalities to prohibit new subdivisions if they will cause deterioration of ambient air quality standards.

Exactions and Other Requirements1) Mandatory Dedication of Land or Capital Facilities

Communities often require developers to install roads, sewer and water lines in their subdivisions and to dedicate them to the public as prerequisites to plat approval.

Also included are reservations and park and school dedications. These dedications help to save tax dollars. Sixty six point seven percent of the respondents have this requirement in force and this tool is used in Bozeman.

2) Money in Lieu of Land or Capital Facilities This allows a payment of cash instead of a dedication. This technique allows for a great deal of flexibility. Only thirty nine percent of the respondents use this technique and it is used in Bozeman.3) Low and Moderate Income Housing Requirements These require subdivisions of a certain size to include a percentage of low and moderate income housing. This has been done in Boulder, Colorado, however, the courts have occasionally overturned the requirement. Eighteen percent have used this tool and twelve point four percent wish to use it. This tool is not in use in Bozeman.

Tax And Fee Systems

- 1) Urban and Rural Service Area This technique distinguishes areas by the level of service they can be expected to receive and therefore the level of taxation to pay for those services. The public decision to limit urban services to specified areas significantly reduces the tax burden on the farmlands. Thrity three percent of the local governments employ this practice.

A difference in taxes on developed service areas and undeveloped areas has been upheld as Constitutional. This system should logically be combined with other controls, such as the capital program, that specifies where facilities will be made available and where they will not, or where development will occur and where it will be deferred.

- 2) User and Benefit Fees These are not taxes, they are charges to uses by a governmental agency for providing a service. An example of this in Bozeman is the fee charged for water and sewer use to the user of the services.
- 3) Special Assessment This is a widely used method in which the cost of a facility such as sewer, water, or roads, is assigned fully or partially against the adjacent, benefiting property. Bozeman uses this tool.

- 4) Preferential Taxation Property is taxed on the basis of its use. For example, an agricultural property is taxed on its agricultural use. (i.e. the Greenbelt Laws of Montana).
- 5) Development Districts This allows and enables a jurisdiction to develop land and to tax for that purpose. An example in Montana would be the establishment of a Rural or Special Improvement District for the installation of roads, sewers, water, schools, etc.

Annexation

- 1) Annexation Specifying time periods and conditional municipal boundary limit adjustments and services is a good tool to integrate into a growth management system. Bozeman is actively engaged in annexations.

Official Mapping

- 1) Official Mapping This provides for the future location of facilities such as roads, streets, parks, and drainage facilities. With the official map, the municipality reserves uncompensated land on which it plans to construct future improvements. The map is adopted legislatively.

The designation operates as a reservation only; title and possession remain with the owner. Compensation is only paid when the actual condemnation proceedings begin. However, courts hold mapping for parks invalid unless compensation is made for the reservation. Sixty two point nine percent of the replies utilized this technique.

Capital Programming

- 1) Capital Programming This involves the timed allocation of public investments. Under this system, the community projects its needs for six to ten years, the costs of the various improvements, and the sources and methods of financing. This process is critical to virtually all the newer development control processes because they focus on the timing and location of development, i.e., Ramapo. This technique is employed by 42.9 percent of the respondents, and Bozeman has constructed various facilities plans for sewer and water utilizing this concept.

The Plan or Its Elements

- 1) The Plan or Its Elements Most states require zoning and other development control measures to be based upon a comprehensive plan (i.e. Master Plan).

Geographic Restraints

- 1) Longer-Term Limit or Serviced Area The longer-term areas tend to identify where urban development should occur in the next 15 to 20 years. Beyond this perimeter, land is designated for rural use. This boundary line has yet to be tested in the courts.
- 2) Shorter-Term Serviced Area This identifies areas to be serviced in five to ten years and tends to be tied to the capital program and comprehensive plan. While Ramapo covered long-term development, they did it in short-term phases.

Numerical Restraints or Quota Systems

- 1) Total Population Charter Provisions This technique attempts to limit population sizes however, it has been invalidated by the New York Supreme Court in *Albrecht Realty Co. v. Town of New Castle*.
- 2) Annual Permit Limits This technique limits population growth by dictating the number of building permits. This technique has been used in Petaluma but not in Bozeman.
- 3) Population and Employment Targets By setting annual targets for new employment and new population, a community balances development between homes and jobs and attempts to avoid

becoming a bedroom community. This tool has not been used in Bozeman.

- 4) Fair Share Allocations These plans distribute low and moderate income housing or similar land uses throughout a region. Twenty four point eight percent use this technique. This has not been used in Bozeman.

Other Planning and Management Techniques

- 1) Planning Moratoriums and Interim Development Controls
Interim development controls are an old device used to accomplish managed growth. A temporary ordinance is enacted to prevent or restrict further development until planning is completed and permanent controls to implement the plan have been developed. This plan is useful to prevent land uses that could destroy the effectiveness of a new plan. Twenty five point seven percent are presently using this technique. This tool has not been used in Bozeman.
- 2) Administrative Processing and Delay Red tape and "creative foot dragging" can hold up projects to the point of making them financially infeasible.

- 3) Environmental Impact Assessment This is a process of evaluating the expected environmental effects of a proposed project. These statements affect development by limiting negative environmental effects and by delaying processing. Ninety two percent of the polled cities anticipated the use of EIS's and it is used in Bozeman:
- 4) Cost/Benefit Analysis This study is undertaken to evaluate the major development proposals. This tool has not been used in Bozeman.
- 5) Impact Zoning This new technique involves the specifying of the types of impacts; measuring impacts against performance standards and thresholds using cost/benefit analysis and environmental impact statements. The process uses computer printouts and graphics to analyze and correlate the following:
 - a. the growth rate of the surrounding region
 - b. the community's infrastructure
 - c. the economic picture
 - d. the project's impact on the environment of its site.

This tool has not been used in Bozeman.

- 6) Information, Education, Monitoring, and Technical Assistance Development can be guided by providing the market place with better information on land values, support services, and natural resources problems.

APPENDIX B

PARCEL SUITABILITY APPRAISAL

Parcel Number	Water		Sewage	Streets		Topography	Total Parcel Value
	Groundwater	Delivery System		Distance X	Soil Limitations		
45-59	10	0	5	1.17	10	2	7
-60	10	0	0	0	10	0	0
-61	0	0	0	0	10	0	0
-62	10	0	0	0	10	0	0
-85	10	0	0	0	10	0	1
-86	10	0	0	0	10	0	0
-87	10	0	0	0	10	0	0
-88	10	0	5	0	10	0	5
-89	10	0	0	0	9	0	0
-90	10	0	0	0	9	0	3
-91	10	0	0	0	10	0	5
-92	10	0	0	0	10	0	4
-115	10	0	0	0	10	0	1
-116	10	0	0	0	9	0	5
-117	10	0	0	0	9	0	5
-118	10	0	0	0	9	0	5
50-1	3	5	10	4.55	10	10	31
-2	10	0	5	3.38	10	8	15
-3	10	0	0	2.21	10	5	10

50-4	10	0	0	1.17	10	3	2	5
-5	10	0	0	0	10	0	5	5
-6	10	0	0	0	10	0	2	2
-29	10	0	0	1.17	10	3	2	5
-30	10	0	0	2.21	10	5	0	5
-31	10	0	0	3.38	10	8	0	8
-32	10	0	0	4.55	10	10	0	10
-33	7	5	5	4.55	10	10	3	23
-34	0	10	10	4.55	7	7	10	37
-36	0	10	10	4.55	7	7	10	37
-37	0	10	10	4.55	7	7	10	37
-38	5	5	5	4.55	7	7	10	27
-39	5	0	0	4.55	7	7	6	13
-40	7	0	0	4.55	7	7	8	17
-41	8	0	0	3.38	7	5	8	13
-64	0	0	0	4.55	7	7	10	17
-65	0	0	0	4.55	7	7	10	17
-66	0	0	0	4.55	7	7	10	17
-67	0	5	5	4.55	7	7	10	27
-68	0	10	10	4.55	7	7	10	37

PARCEL SUITABILITY APPRAISAL

(Continued)

55-1	1	10	10	4.55	10	10	5	35
-2	5	0	10	3.38	7	5	5	20
-3	2	0	10	4.55	10	10	5	25
-4	10	0	10	4.55	7	7	10	27
-5	5	0	5	3.38	7	5	10	20
-11	10	5	10	4.55	7	7	10	32
-12	10	0	10	4.55	7	7	10	27
-13	7	0	10	3.38	10	8	5	23
-14	10	5	10	3.38	10	8	5	28
-15	10	10	10	4.55	10	10	10	40
-16	10	5	10	4.55	10	10	10	35
-17	10	0	10	4.55	7	7	10	27
-18	10	0	5	4.55	7	7	10	22
-19	10	0	0	3.38	7	5	10	15
-20	10	0	0	2.21	7	3	10	13
-36	10	5	10	4.55	10	10	7	32
-37	5	10	10	3.38	7	5	5	36
-38	10	10	10	4.55	10	10	10	40
-39	10	0	0	4.55	10	10	5	15
-60	10	0	0	3.38	10	8	5	13

PARCEL SUITABILITY APPRAISAL
(Continued)

60-1	0	10	10	4.55	10	10	40
-2	0	10	10	4.55	9	9	39
-3	0	10	10	4.55	9	9	39
-4	0	10	10	4.55	10	10	40
-20	0	10	10	4.55	7	7	37
-21	0	10	10	4.55	9	9	39
-22	0	10	10	4.55	9	9	39
-23	0	10	10	4.55	9	9	39
-24	0	5	10	4.55	7	7	32
-25	0	10	10	4.55	7	7	37
-26	0	10	10	4.55	7	7	37
-27	0	10	10	4.55	9	9	39
-28	0	10	10	4.55	9	9	39
-29	0	10	10	4.55	7	7	37
-30	5	10	10	4.55	7	7	37
-31	5	10	10	4.55	7	7	37
-34	0	10	10	4.55	7	7	35
-36	10	10	10	4.55	7	7	33
-37	10	10	10	4.55	10	10	37
-38	10	5	10	4.55	7	7	27
-39	10	5	10	4.55	7	7	32

PARCEL SUITABILITY APPRAISAL

(Continued)

60-40	10	5	5	3.38	7	8	9	32
-41	10	10	0	3.38	10	8	10	28
-42	10	10	10	3.38	10	7	7.5	34.5
-43	10	10	10	4.55	7	7	10	37
-45	0	10	10	3.38	7	5	10	35
-48	5	10	10	4.55	7	7	10	37
-49	5	10	10	4.55	7	7	10	37
-50	3	10	10	3.38	7	5	10	35
-51	0	10	10	4.55	9	9	10	39
-52	0	10	10	4.55	9	9	10	39
-53	0	10	10	3.38	7	5	10	35
-54	0	10	10	3.38	9	7	10	37
-55	0	5	10	4.55	9	9	10	34
-56	0	5	10	4.55	9	9	10	34
-57	0	10	10	3.38	7	5	10	35
-58	0	10	10	3.38	7	5	10	35
-59	0	10	10	4.55	9	9	10	39
-60	0	10	10	4.55	9	9	10	39
-61	2	10	10	3.38	7	5	10	35
-62	5	10	10	4.55	7	7	10	37
-63	5	10	10	4.55	7	7	10	37

PARCEL SUITABILITY APPRAISAL

(Continued)

60-64	3	10	10	4.55	7	7	10	37
-65	0	10	10	3.38	7	5	10	35
-66	0	10	10	3.38	7	5	8	35
-72	10	5	0	0	9	0	9	14
-73	10	5	0	0	9	0	9	14
-77	0	10	10	4.55	7	7	10	37
-78	0	10	10	2.21	7	3	10	33
-79	0	10	10	3.38	7	5	10	35
-80	5	10	10	4.55	7	7	10	37
-81	5	10	10	4.55	7	7	10	37
-82	5	10	10	3.38	7	5	10	35
-83	0	10	10	4.55	9	9	10	39
-84	0	10	10	4.55	9	9	10	39
-85	0	10	10	4.55	9	9	10	39
-86	0	10	10	4.55	7	7	10	37
-87	0	5	10	4.55	9	9	10	34
-90	0	10	5	4.55	9	9	10	34
-91	0	10	5	4.55	9	9	10	34
-92	0	10	5	4.55	9	9	10	34
-93	5	10	5	4.55	9	9	10	34
-94	5	10	5	4.55	7	7	10	32

PARCEL SUITABILITY APPRAISAL

(Continued)

60-95	5	10	5	4.55	7	7	10	32
-96	0	10	5	4.55	7	7	10	32
-97	0	10	5	4.55	7	7	10	32
-100	10	10	0	3.38	9	7	8	25
-101	10	10	0	2.21	9	4	7	21
-102	10	10	0	1.17	9	2	10	22
-107	10	10	0	4.55	10	10	0	20
-110	0	10	0	4.55	7	7	10	27
-111	0	10	0	4.55	7	7	10	27
-112	3	10	0	4.55	9	9	10	29
-113	5	10	0	4.55	7	7	10	27
-114	5	10	0	4.55	9	9	10	29
-115	0	10	0	4.55	9	9	10	29
-116	0	10	0	4.55	9	9	10	29
-117	0	10	0	3.38	9	7	10	27
-122	0	5	0	3.38	9	7	10	22
-123	0	5	0	4.55	9	9	10	24
-124	0	5	0	4.55	9	9	10	24
-125	3	5	0	3.38	9	7	10	22
-126	0	5	0	4.55	7	7	10	22
-127	0	5	0	4.55	9	9	10	24

PARCEL SUITABILITY APPRAISAL

(Continued)

60-128	0	5	0	4.55	7	7	10	22
-129	2	5	0	4.55	7	7	10	22
-132	10	10	0	4.55	7	7	0	17
-139	10	10	0	4.55	7	7	0	17
-142	3	0	0	3.38	7	5	10	15
-143	0	0	0	3.38	7	5	10	15
-144	0	0	0	3.38	7	5	10	15
-145	0	0	0	4.55	7	7	10	17
-146	2	0	0	4.55	7	7	10	17
-147	0	0	0	4.55	9	9	10	19
-148	0	0	0	4.55	9	9	10	19
-149	0	0	0	4.55	9	9	10	19
75-9	0	0	10	4.55	7	7	10	27
-10	0	0	10	4.55	9	9	10	29
-11	0	0	10	4.55	7	7	10	27
-12	0	0	10	3.38	7	5	10	25
-29	0	0	10	3.38	7	5	10	25
-30	0	0	10	4.55	9	9	10	29
-31	0	0	10	4.55	7	7	10	27
-32	0	0	5	3.38	7	5	10	20

PARCEL SUITABILITY APPRAISAL

(Continued)

80-14	4	5	10	4.55	7	7	10	32
-15	1	10	10	4.55	7	7	10	37
-16	2	10	10	4.55	7	7	10	37
-17	0	10	10	4.55	7	7	10	37
-18	3	10	10	4.55	7	7	10	37
-19	0	10	10	4.55	7	7	10	37
-20	0	10	10	4.55	7	7	10	37
-21	2.5	10	10	4.55	7	7	10	37
-22	0	10	10	4.55	7	7	10	37
-23	1	10	10	3.38	7	5	10	35
-24	4	10	10	3.38	7	5	10	35
-25	4.5	5	10	3.38	7	5	10	30
-53	.5	10	10	3.38	7	5	10	35
-54	1	10	10	3.38	7	5	10	35
-55	1	10	10	3.38	7	5	10	35
-56	0	10	10	4.55	7	7	10	37
-58	0	10	10	4.55	7	7	10	37
-59	0	10	10	4.55	9	9	10	39
-60	0	10	10	4.55	7	7	10	37
-61	0	10	10	4.55	7	7	10	37
-62	3	10	10	4.55	7	7	10	37

PARCEL SUITABILITY APPRAISAL

(Continued)

80-63	0	5	10	4.55	7	7	10	32
-90	0	0	10	4.55	9	9	10	29
-91	0	0	10	4.55	9	9	10	29
-92	0	5	10	4.55	7	7	10	32
-93	0	10	10	4.55	7	7	10	37
-94	0	10	10	4.55	7	7	10	37
-95	0	10	10	4.55	7	7	10	37
-96	0	10	10	4.55	9	9	10	39
-97	0	10	10	4.55	7	7	10	37
-98	0	5	10	4.55	9	9	10	34
-99	0	5	10	4.55	9	9	10	34
-124	0	10	10	4.55	9	9	10	39
-125	0	10	10	4.55	9	9	10	39
-126	0	10	10	4.55	9	9	10	39
-127	0	10	10	4.55	9	9	10	39
-130	0	10	10	4.55	7	7	10	37
-131	0	10	10	4.55	7	7	10	37
-132	0	10	10	4.55	9	9	10	39
-187	0	10	10	4.55	9	9	10	39
-188	0	10	10	4.55	7	7	10	37

PARCEL SUITABILITY APPRAISAL

(Continued)

85-59	5	0	10	2.21	7	3	10	23
-60	5	0	10	2.21	7	3	10	23
-61	5	0	10	3.38	7	5	10	25
-62	5	0	10	3.38	7	5	10	25
-87	3	0	10	4.55	7	7	10	27
-88	1	0	10	4.55	7	7	10	27
-89	2.5	0	10	4.55	7	7	10	27
-92	2	0	10	4.55	7	7	10	27
-93	0	0	10	4.55	7	7	10	27
-94	3	0	10	4.55	7	7	10	27
90-121	5	0	10	4.55	7	7	10	27
-122	5	0	10	4.55	7	7	10	27
-123	3	0	10	4.55	7	7	10	27
-124	5	0	10	4.55	10	10	10	35
-134	0	10	10	4.55	10	10	10	40
-135	0	10	10	4.55	10	10	10	40
-136	0	10	10	4.55	10	10	10	40
-137	0	10	10	4.55	10	10	10	40
-138	0	10	10	4.55	10	10	10	40
-139	0	10	10	4.55	10	10	10	40

PARCEL SUITABILITY APPRAISAL

(Continued)

90-141	0	10	10	4.55	7	7	10	37
-142	0	10	10	4.55	7	7	10	37
-156	0	10	10	4.55	10	10	10	40
-157	7	5	10	4.55	10	10	0	25
-158	7	10	10	4.55	10	10	0	30
-159	4	10	10	4.55	10	10	0	30
-160	0	10	10	4.55	10	10	10	40
-161	0	10	10	4.55	7	7	10	37
-162	0	10	10	4.55	7	7	10	37
-163	0	10	10	4.55	7	7	10	37
-164	5	10	10	4.55	10	10	10	40
-165	10	5	10	3.38	10	8	0	23
-166	10	0	5	2.21	10	5	0	10
-167	10	0	0	1.17	9	2	0	2
-168	10	0	0	2.21	10	5	0	5
-169	10	0	0	3.38	10	8	0	8
-170	10	0	0	2.21	10	5	0	5

APPENDIX C

PARCEL RANKINGS

<u>40 Acre</u> <u>Parcel Number</u>	<u>Value</u>	<u>Number of Variables</u> <u>Greater Than Four</u>
55-38	40	4
60-1	40	4
60-4	40	4
90-134	40	4
90-135	40	4
90-136	40	4
90-137	40	4
90-138	40	4
90-139	40	4
90-156	40	4
90-160	40	4
90-164	40	4
60-2	39	4
60-3	39	4
60-20	39	4
60-21	39	4
60-22	39	4
60-27	39	4
60-28	39	4
60-51	39	4
60-52	39	4
60-59	39	4
60-60	39	4

PARCEL RANKINGS

<u>40 Acre</u> <u>Parcel Number</u>	<u>Value</u>	<u>Number of Variables</u> <u>Greater Than Four</u>
80-59	39	4
80-96	39	4
80-124	39	4
80-125	39	4
80-126	39	4
80-127	39	4
80-132	39	4
80-187	39	4
60-20	37	4
60-25	37	4
60-26	37	4
60-29	37	4
60-30	37	4
60-31	37	4
60-37	37	4
60-43	37	4
60-48	37	4
60-49	37	4
60-54	37	4
60-62	37	4
60-63	37	4
60-64	37	4
60-77	37	4
60-80	37	4
60-81	37	4

PARCEL RANKINGS

<u>40 Acre</u> <u>Parcel Number</u>	<u>Value</u>	<u>Number of Variables</u> <u>Greater Than Four</u>
60-86	37	4
80-15	37	4
80-16	37	4
80-17	37	4
80-18	37	4
80-19	37	4
80-20	37	4
80-21	37	4
80-22	37	4
80-56	37	4
80-58	37	4
80-60	37	4
80-61	37	4
80-62	37	4
80-93	37	4
80-94	37	4
80-95	37	4
80-97	37	4
80-130	37	4
80-131	37	4
80-188	37	4
80-141	37	4
80-142	37	4
90-161	37	4

PARCEL RANKINGS

40 Acre <u>Parcel Number</u>	<u>Value</u>	<u>Number of Variables Greater Than Four</u>
90-162	37	4
90-163	37	4
55-1	35	4
55-16	35	4
60-34	35	4
60-45	35	4
60-50	35	4
60-53	35	4
60-58	35	4
60-61	35	4
60-65	35	4
60-66	35	4
80-79	35	4
80-82	35	4
85-23	35	4
85-24	35	4
85-53	35	4
85-54	35	4
85-55	35	4
90-124	35	4
60-42	34.5	4
60-55	34	4
60-56	34	4
60-57	34	4
60-86	34	4

PARCEL RANKINGS

<u>40 Acre</u>		
<u>Parcel Number</u>	<u>Value</u>	<u>Number of Variables</u> <u>Greater Than Four</u>
60-87	34	4
60-90	34	4
60-91	34	4
60-92	34	4
80-98	34	4
80-99	34	4
60-33	33	4
60-78	33	4
55-11	32	4
55-36	32	4
60-24	32	4
60-39	32	4
60-40	32	4
60-94	32	4
60-95	32	4
60-96	32	4
60-97	32	4
80-14	32	4
80-63	32	4
80-92	32	4
50-1	31	3
80-25	30	3
90-158	30	3
90-159	30	3
55-37	30	4
60-112	29	3
60-114	29	3

PARCEL RANKINGS

40 Acre <u>Parcel Number</u>	<u>Value</u>	<u>Number of Variables Greater Than Four</u>
60-115	29	3
60-116	29	3
75-10	29	3
75-30	29	3
80-90	29	3
80-91	29	3
55-14	28	4
60-41	28	3
60-38	27	4
50-38	27	4
50-67	27	4
55-4	27	3
55-12	27	3
55-17	27	3
60-110	27	3
60-111	27	3
60-113	27	3
60-117	27	3
75-9	27	3
75-11	27	3
75-31	27	3
85-87	27	3
85-88	27	3
85-89	27	3

PARCEL RANKINGS

<u>40 Acre</u> <u>Parcel Number</u>	<u>Value</u>	<u>Number of Variables</u> <u>Greater Than Four</u>
85-92	27	3
85-93	27	3
85-94	27	3
90-121	27	3
90-122	27	3
90-123	27	3
55-3	25	3
60-100	25	3
75-12	25	3
75-29	25	3
85-61	25	3
85-62	25	3
90-157	25	3
60-123	24	3
60-124	24	3
60-127	24	3
50-33	23	3
55-13	23	3
85-59	23	3
85-60	23	3
90-165	23	3
55-18	22	3
60-122	22	3
60-125	22	3
60-126	22	3

PARCEL RANKINGS

<u>40 Acre Parcel Number</u>	<u>Value</u>	<u>Number of Variables Greater Than Four</u>
60-128	22	3
60-129	22	3
60-102	22	2
60-101	21	3
55-2	20	3
55-5	20	3
75-32	20	3
60-107	20	2
60-147	19	2
60-148	19	2
60-149	19	2
50-40	17	2
50-64	17	2
50-65	17	2
50-66	17	2
60-132	17	2
60-139	17	2
60-145	17	2
60-146	17	2
50-2	15	2
55-19	15	2
55-39	15	2
60-142	15	2
60-143	15	2
60-144	15	2

PARCEL RANKINGS

<u>40 Acre Parcel Number</u>	<u>Value</u>	<u>Number of Variables Greater Than Four</u>
60-72	14	2
60-73	14	2
50-39	13	2
50-41	13	2
55-20	13	2
55-60	13	2
50-3	10	2
90-166	10	2
50-32	10	1
50-31	8	1
90-169	8	1
45-59	7	1
45-88	5	1
45-91	5	1
45-116	5	1
45-117	5	1
45-118	5	1
50-4	5	1
50-5	5	1
50-30	5	1
90-168	5	1
90-170	5	1
50-29	5	0

PARCEL RANKINGS

<u>40 Acre</u> <u>Parcel Number</u>	<u>Value</u>	<u>Number of Variables</u> <u>Greater Than Four</u>
45-92	4	1
45-90	3	0
50-6	2	0
90-167	2	0
45-85	1	0
45-115	1	0
45-60	0	0
45-62	0	0
45-86	0	0
45-87	0	0
45-89	0	0
45-61	0	0

APPENDIX D

EXPECTED HOUSING NEEDS FOR THE CITY AND JURISDICTIONAL AREA

Years	Single Family		Multiplex		Apartment		Mobile Home		Units	Acres/Per Unit Factor	* Ac. Req	Sub total for City & J.A.
	City	J.A.	City	J.A.	City	J.A.	City	J.A.				
1978-80	288	245	246	N/A	298	N/A	99	N/A				
	@.25	@.25	@.125	N/A	@.071	N/A	@.169					
	72	61	31		21		17					
	133		31		21		17					

This Period Total Acreages Required- 202 Acres

1981-85	755	465	555	N/A	600	N/A	225	493	Units
	@.25	@.25	@.125	N/A	@.071	N/A	@.169	@.169	Acres/Per Unit Factor
	189	116	69		43		38	83	Ac. Req.
	305		69		43		121		Sub total for City & J.A.

This Period Total Acreages Required- 538 Acres

This Period Total Acreages Required- 665 Acres

This Period Total Acreages Required- 833 Acres

EXPECTED HOUSING NEEDS FOR THE CITY AND JURISDICTIONAL AREA

Years	Single Family		Multiplex		Apartment		Mobile Home	
	City	J.A.	City	J.A.	City	J.A.	City	J.A.
1996-2000	1,634	680	1,060	N/A	1,280	N/A	441	960
	@.25	@.25	@.125	N/A	@.071	N/A	@.169	@.169
								Units
	408	170	133		91		75	162
	578		133		91		237	
								Ac Req
								Sub total
								for City &
								J.A.
								Unit Factor
								Acres/Per
								Unit Factor
								Ac Req
								Sub total
								for City &
								J.A.
								Unit Factor
								Acres/Per
								Unit Factor
								Ac Req
								Sub total
								for City &
								J.A.
								Unit Factor
								Acres/Per
								Unit Factor
								Ac Req
								Sub total
								for City &
								J.A.
								Unit Factor
								Acres/Per
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								Ac Req
								Sub total
								for City &
								J.A.
								Unit Factor
								Acres/Per
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								Sub total
								for City &
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								Unit Factor
								Ac Req
								Sub total
								for City &
								J.A.
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								Acres/Per
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								Sub total
								for City &
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								Unit Factor
								Acres/Per
								Unit Factor
								Ac Req
								Sub total
								for City &
								J.A.
								Unit Factor
								Acres/Per
								Unit Factor
								Ac Req
								Sub total
								for City &
								J.A.
								Unit Factor
								Acres/Per
								Unit Factor

TOTAL ACREAGE REQUIREMENT FROM 1978 - 2000 BY HOUSING TYPE

Single Family		Multiplex		Apartment		Mobile Home	
City	J.A.	City	J.A.	City	J.A.	City	J.A.
4,991	2,413	2,321	N/A	4,041	N/A	1,398	3,084
1,320	630	423	N/A	287	N/A	237	479
							Housing Units
							Acres/Type
<u>Total Housing Units</u>		<u>Total Acres</u>		<u>Total Acres</u>		<u>Total Parcels</u>	
-		-		-		-	
18,248		3,349		72			

CUMULATIVE RESIDENTIAL, INDUSTRIAL, COMMERCIAL, PARK, AND STREET REQUIREMENTS

<u>Year</u>	<u>Total Residential Land Requirements</u>	<u>25% Street Requirement</u>	<u>10% Park Requirement</u>	<u>20% Comm. & Indus. Requirement</u>	<u>Total Acres Required</u>	<u>Cumulative Balance</u>
1978-80	202	50.5	20.2	40.4	313.1	313.1
1981-85	538	134.5	53.8	107.6	833.9	1,147
1986-90	665	166.25	66.5	133	1,030.75	2,177.75
1991-95	833	208.25	83.3	166.6	1,291.15	3,168.9
1996-2000	1,039	259.75	103.9	207.8	1,610.45	5,089.35
					<u>Total Parcels Required</u>	<u>127.19</u>

APPENDIX E

CHAPTER 18.21

R-S RESIDENTIAL SUBURBAN - COUNTRY ESTATES

18.21.010 INTENT

The intent of this district is to provide for reasonable single-family development in areas with severe physical limitation and where central water and sewer systems are not available.

18.21.020 PERMITTED USES

1. Accessory uses
2. Agriculture Uses
3. Barns and Animal Shelters
4. Churches
5. Conditional uses as provided in Chapter 18.72
6. Fire stations
7. Home Occupations
8. Newly constructed one-family dwellings
9. Temporary buildings for and during construction, only
10. The keeping of animals and fowl for family food production and the keeping of horses for private use, together with their dependent young as hereinafter set forth per 2 1/2 acres:

one horse, or one cow, or two sheep, or two goats, or ten rabbits, or 36 fowl (chickens, pheasants, pigeons, etc.), or six larger fowl (ducks, geese, turkeys, etc.)

18.21.030 LOT AREA AND WIDTH

Lot area for this district shall be determined by existing soil conditions and groundwater, and other limitations for urban development. Under no circumstances shall the lot area be less than one acre with a lot width not less than 150 feet.

Minimum lot areas for each residential suburban district shall be indicated by a numerical value following the district initials, i.e., R-S - 1--will indicate one acre minimum, R-S - 2 -- will indicate two acre minimum.

18.21.040 LOT COVERAGE AND FLOOR AREA

Not more than 15 percent of the lot area shall be occupied by the principal and accessory buildings. And, each dwelling unit shall have a minimum of 1000 square feet of floor area.

18.21.050 YARDS

1. Every lot shall have the following minimum yards:

Front yard 35 feet

Rear yard 25 feet

Side yard 25 feet each side

2. All pens, coops, barns, stables, or permanent corrals shall be set back not less than 100 feet from any residence or public road and not less than fifty (50) feet from any property line.

18.21.060 BUILDING HEIGHT

Maximum building height in this district shall be 24 feet.

18.21.070 OFF-STREET PARKING

Two off-street parking spaces shall be provided for each dwelling unit. Off-street parking for non-residential uses shall be provided as specified in Chapter 18.84.